

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2008 ENGINE

Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Application	Specification	
	Metric	English
Accessory Drive Belt Idler Pulley Bolt	50 N.m	37 lb ft
Accessory Drive Belt Tensioner Bolts	50 N.m	37 lb ft
Active Fuel Management Oil Pressure Relief Valve	27 N.m	20 lb ft
Air Conditioning Drive Belt Tensioner Bolts	50 N.m	37 lb ft
Automatic Transmission Flex Plate Bolts - First Pass	20 N.m	15 lb ft
Automatic Transmission Flex Plate Bolts - Second Pass	50 N.m	37 lb ft
Automatic Transmission Flex Plate Bolts - Final Pass	100 N.m	74 lb ft
Battery Cable Channel Bolt	12 N.m	106 lb in
Camshaft Position (CMP) Actuator Magnet Bolts	12 N.m	106 lb in
Camshaft Position (CMP) Actuator Solenoid Valve - First Pass	65 N.m	48 lb ft
Camshaft Position (CMP) Actuator Solenoid Valve - Final Pass	90 degrees	
Camshaft Position (CMP) Sensor Bolt	12 N.m	106 lb in
Camshaft Position (CMP) Sensor Wire Harness Bolt	12 N.m	106 lb ft
Camshaft Retainer Bolts - Hex Head Bolts	25 N.m	18 lb ft
Camshaft Retainer Bolts - TORX Head Bolts	15 N.m	11 lb ft
Camshaft Sprocket Bolt - First Pass	75 N.m	55 lb ft
Camshaft Sprocket Bolt - Final Pass	50 degrees	
Connecting Rod Bolts - First Pass	20 N.m	15 lb ft
Connecting Rod Bolts - Final Pass	85 degrees	
Coolant Air Bleed Pipe and Cover Bolts	12 N.m	106 lb in
Coolant Temperature Sensor	20 N.m	15 lb ft
Crankshaft Balancer Bolt - Installation Pass - to	330 N.m	240 lb ft

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Ensure the Balancer is Completely Installed		
Crankshaft Balancer Bolt - First Pass - Install a NEW Bolt After the Installation Pass and Tighten as Described in the First and Final Passes	50 N.m	37 lb ft
Crankshaft Balancer Bolt - Final Pass	140 degrees	
Crankshaft Bearing Cap M8 Bolts	25 N.m	18 lb ft
Crankshaft Bearing Cap M10 Bolts - First Pass in Sequence	20 N.m	15 lb ft
Crankshaft Bearing Cap M10 Bolts - Final Pass in Sequence	80 degrees	
Crankshaft Bearing Cap M10 Studs - First Pass in Sequence	20 N.m	15 lb ft
Crankshaft Bearing Cap M10 Studs - Final Pass in Sequence	51 degrees	
Crankshaft Oil Deflector Nuts	25 N.m	18 lb ft
Crankshaft Position (CKP) Sensor Bolt	25 N.m	18 lb ft
Crankshaft Rear Oil Seal Housing Bolts	30 N.m	22 lb ft
Crossbar Bolts/Nuts - 1500 Series	100 N.m	74 lb ft
Crossbar Bolts/Nuts - 2500 Series	120 N.m	89 lb ft
Cylinder Head M8 Bolts - in Sequence	30 N.m	22 lb ft
Cylinder Head M11 Bolts - First Pass in Sequence	30 N.m	22 lb ft
Cylinder Head M11 Bolts - Second Pass in Sequence	90 degrees	
Cylinder Head M11 Bolts - Final Pass in Sequence	70 degrees	
Cylinder Head Plug	20 N.m	15 lb ft
Differential Carrier-to-Crossbar Nuts	100 N.m	74 lb ft
Engine Block Coolant Drain Hole Plug	60 N.m	44 lb ft
Engine Block Coolant Heater	50 N.m	37 lb ft
Engine Block Oil Gallery Plugs	60 N.m	44 lb ft
Engine Harness Ground Strap Bolt/Stud	16 N.m	12 lb ft
Engine Harness-to-Generator Bracket Bolt	9 N.m	80 lb in
Engine Harness Retainer-to-Intake Manifold Nut	5 N.m	44 lb in
Engine Mount Bracket Through Bolt	100 N.m	74 lb ft
Engine Mount-to-Engine Block Bolts	50 N.m	37 lb ft
Engine Mount-to-Frame Bolts	65 N.m	48 lb ft
Engine Shield-to-Crossbar Bolts	20 N.m	15 lb ft

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Evaporative (EVAP) Emission Pipe Bracket Nut	20 N.m	15 lb ft
Exhaust Manifold Bolts - First Pass	15 N.m	11 lb ft
Exhaust Manifold Bolts - Final Pass	20 N.m	15 lb ft
Exhaust Manifold Heat Shield Bolts	9 N.m	80 lb in
Exhaust Manifold Studs	20 N.m	15 lb ft
Flex Plate-to-Torque Converter Bolts - 4L60-E/4L70-E/6L80 Transmission	63 N.m	47 lb ft
Flex Plate-to-Torque Converter Bolts - 4L80-E Transmission	60 N.m	44 lb ft
Front Cover Bolts	25 N.m	18 lb ft
Front Drive Axle Bracket Bolts	90 N.m	67 lb ft
Fuel Injection Fuel Rail Bolts	10 N.m	89 lb in
Fuel Injection Fuel Rail Crossover Tube Bolts	3.8 N.m	34 lb in
Fuel Rail Stop Bracket Bolt	50 N.m	37 lb ft
Generator Bracket Bolts	50 N.m	37 lb ft
Heater Hose Bracket Nut	9 N.m	80 lb in
Ignition Coil Bracket-to-Valve Rocker Arm Cover Studs	12 N.m	106 lb in
Ignition Coil-to-Bracket Bolts	10 N.m	89 lb in
Intake Manifold Bolts - First Pass in Sequence	5 N.m	44 lb in
Intake Manifold Bolts - Final Pass in Sequence	10 N.m	89 lb in
Intake Manifold Sight Shield Retainer Bolts	5 N.m	44 lb in
J 41798 M8 Bolt	25 N.m	18 lb ft
J 41798 M10 Bolts	50 N.m	37 lb ft
Knock Sensor Bolts	25 N.m	18 lb ft
Negative Battery Cable Stud	25 N.m	18 lb ft
Oil Filter	30 N.m	22 lb ft
Oil Filter Fitting	55 N.m	40 lb ft
Oil Level Indicator Switch	20 N.m	15 lb ft
Oil Level Indicator Tube Bolt	25 N.m	18 lb ft
Oil Pan Baffle Bolts	9 N.m	80 lb in
Oil Pan Closeout Cover Bolt - Left Side	9 N.m	80 lb in
Oil Pan Closeout Cover Bolt - Right Side	9 N.m	80 lb in
Oil Pan Cover Bolts	9 N.m	80 lb in
Oil Pan Drain Plug	25 N.m	18 lb ft

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Oil Pan M6 Bolts - Oil Pan-to-Rear Housing	12 N.m	106 lb in
Oil Pan M8 Bolts - Oil Pan-to-Engine Block and Oil Pan-to-Front Cover	25 N.m	18 lb ft
Oil Pan Skid Plate Bolts	28 N.m	21 lb ft
Oil Pressure Sensor	35 N.m	26 lb ft
Oil Pump Cover Bolts	12 N.m	106 lb in
Oil Pump Relief Valve Plug	12 N.m	106 lb in
Oil Pump Screen Nuts	25 N.m	18 lb ft
Oil Pump Screen-to-Oil Pump Bolts	12 N.m	106 lb in
Oil Pump-to-Engine Block Bolts	25 N.m	18 lb ft
Power Steering Pump-to-Engine Block Bolts	50 N.m	37 lb ft
Spark Plugs	15 N.m	11 lb ft
Throttle Body Bolts	10 N.m	89 lb in
Throttle Body Nuts	10 N.m	89 lb in
Throttle Body Studs	6 N.m	53 lb in
Timing Chain Tensioner Bolts	25 N.m	18 lb ft
Transfer Case Vent Hose Bracket Nut	20 N.m	15 lb ft
Transmission Housing-to-Engine Bolts/Studs	50 N.m	37 lb ft
Transmission Oil Cooler Line Clip Bolt	9 N.m	80 lb in
Transmission Oil Level Indicator Tube Nut	18 N.m	13 lb ft
Valley Cover Bolts	25 N.m	18 lb ft
Valve Lifter Guide Bolts	12 N.m	106 lb in
Valve Lifter Oil Manifold Bolts	25 N.m	18 lb ft
Valve Rocker Arm Bolts	30 N.m	22 lb ft
Valve Rocker Arm Cover Bolts	12 N.m	106 lb in
Water Inlet Housing Bolts	15 N.m	11 lb ft
Water Pump Bolts - First Pass	15 N.m	11 lb ft
Water Pump Bolts - Final Pass	30 N.m	22 lb ft

ENGINE MECHANICAL SPECIFICATIONS (RPO LY5 VIN J)

Application	Specification	
	Metric	English
General		
• Engine Type	V8	

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Displacement	5.3L	325 CID
• RPO	LY5	
• VIN	J	
• Bore	96.0-96.018 mm	3.779-3.78 in
• Stroke	92.0 mm	3.622 in
• Compression Ratio	9.95:1	
• Firing Order	1-8-7-2-6-5-4-3	
• Active Fuel Management Cylinders	1-4-6-7	
• Spark Plug Gap	1.02 mm	0.04 in
Block		
• Camshaft Bearing Bore 1 and 5 Diameter	59.58-59.63 mm	2.345-2.347 in
• Camshaft Bearing Bore 2 and 4 Diameter	59.08-59.13 mm	2.325-2.327 in
• Camshaft Bearing Bore 3 Diameter	58.58-58.63 mm	2.306-2.308 in
• Crankshaft Main Bearing Bore Diameter	69.871-69.889 mm	2.75-2.751 in
• Crankshaft Main Bearing Bore Out-of-Round	0.006 mm	0.0002 in
• Cylinder Bore Diameter	96.0-96.018 mm	3.779-3.78 in
• Cylinder Head Deck Height - Measuring from the Centerline of Crankshaft to the Deck Face	234.57-234.82 mm	9.235-9.245 in
• Cylinder Head Deck Surface Flatness - Measured Within a 152.4 mm (6.0 in) Area	0.11 mm	0.004 in
• Cylinder Head Deck Surface Flatness - Measuring the Overall Length of the Block Deck	0.22 mm	0.008 in
• Valve Lifter Bore Diameter	21.417-21.443 mm	0.843-0.844 in
Camshaft		
• Camshaft End Play	0.025-0.305 mm	0.001-0.012 in
• Camshaft Journal Diameter	54.99-55.04 mm	2.164-2.166 in
• Camshaft Journal Out-of-Round	0.025 mm	0.001 in
• Camshaft Lobe Lift - Exhaust - Non Active Fuel Management Cylinders	7.2 mm	0.283 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Camshaft Lobe Lift - Exhaust - Active Fuel Management Cylinders	7.33 mm	0.289 in
• Camshaft Lobe Lift - Intake - Non Active Fuel Management Cylinders	7.2 mm	0.283 in
• Camshaft Lobe Lift - Intake - Active Fuel Management Cylinders	7.33 mm	0.289 in
• Camshaft Runout - Measured at the Intermediate Journals	0.05 mm	0.002 in
Connecting Rod		
• Connecting Rod Bearing Clearance - Production	0.023-0.065 mm	0.0009-0.0025 in
• Connecting Rod Bearing Clearance - Service	0.023-0.076 mm	0.0009-0.003 in
• Connecting Rod Bore Diameter - Bearing End	56.505-56.525 mm	2.224-2.225 in
• Connecting Rod Bore Out-of-Round - Bearing End - Production	0.004-0.008 mm	0.00015-0.0003 in
• Connecting Rod Bore Out-of-Round - Bearing End - Service	0.004-0.008 mm	0.00015-0.0003 in
• Connecting Rod Side Clearance	0.11-0.51 mm	0.00433-0.02 in
Crankshaft		
• Connecting Rod Journal Diameter - Production	53.318-53.338 mm	2.0991-2.0999 in
• Connecting Rod Journal Diameter - Service	53.308 mm	2.0987 in
• Connecting Rod Journal Out-of-Round - Production	0.005 mm	0.0002 in
• Connecting Rod Journal Out-of-Round - Service	0.01 mm	0.0004 in
• Connecting Rod Journal Taper - Maximum for 1/2 of Journal Length - Production	0.005 mm	0.0002 in
• Connecting Rod Journal Taper - Maximum for 1/2 of Journal Length - Service	0.02 mm	0.00078 in
• Crankshaft End Play	0.04-0.2 mm	0.0015-0.0078 in
• Crankshaft Main Bearing Clearance - Production	0.02-0.052 mm	0.0008-0.0021 in
	0.02-0.065 mm	0.0008-0.0025 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Crankshaft Main Bearing Clearance - Service		
• Crankshaft Main Journal Diameter - Production	64.992-65.008 mm	2.558-2.559 in
• Crankshaft Main Journal Diameter - Service	64.992 mm	2.558 in
• Crankshaft Main Journal Out-of-Round - Production	0.003 mm	0.000118 in
• Crankshaft Main Journal Out-of-Round - Service	0.008 mm	0.0003 in
• Crankshaft Main Journal Taper - Production	0.01 mm	0.0004 in
• Crankshaft Main Journal Taper - Service	0.02 mm	0.00078 in
• Crankshaft Rear Flange Runout	0.05 mm	0.002 in
• Crankshaft Reluctor Ring Runout - Measured 1.0 mm (0.04 in) Below Tooth Diameter	0.7 mm	0.028 in
• Crankshaft Thrust Surface - Production	26.14-26.22 mm	1.029-1.0315 in
• Crankshaft Thrust Surface - Service	26.22 mm	1.0315 in
• Crankshaft Thrust Surface Runout	0.025 mm	0.001 in
Cylinder Head		
• Cylinder Head Height/Thickness - Measured from the Cylinder Head Deck to the Valve Rocker Arm Cover Seal Surface	120.2 mm	4.732 in
• Surface Flatness - Block Deck - Measured Within a 152.4 mm (6.0 in) Area	0.08 mm	0.003 in
• Surface Flatness - Block Deck - Measuring the Overall Length of the Cylinder Head	0.1 mm	0.004 in
• Surface Flatness - Exhaust Manifold Deck	0.13 mm	0.005 in
• Surface Flatness - Intake Manifold Deck	0.08 mm	0.0031 in
• Valve Guide Installed Height - Measured from the Spring Seat Surface to the Top of the Guide	17.32 mm	0.682 in
Intake Manifold		
• Surface Flatness - Measured at Gasket Sealing Surfaces and Measured Within a 200 mm (7.87	0.3 mm	0.118 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

in) Area that Includes 2 Runner Port Openings		
Lubrication System		
• Oil Capacity - with Filter	5.68 liters	6.0 quarts
• Oil Capacity - without Filter	5.20 liters	5.5 quarts
• Oil Pressure - Minimum - Hot	41 kPa at 1,000 engine RPM 124 kPa at 2,000 engine RPM 165 kPa at 4,000 engine RPM	6 psig at 1,000 engine RPM 18 psig at 2,000 engine RPM 24 psig at 4,000 engine RPM
• Active Fuel Management Relief Valve Oil Pressure - as Measured at Oil Pressure Sensor Location	379-517 kPa Maximum	55-75 psig Maximum
Oil Pan		
• Front Cover Alignment - at Oil Pan Surface	0.0-0.5 mm	0.0-0.02 in
• Crankshaft Rear Oil Seal Housing Alignment - at Oil Pan Surface	0.0-0.5 mm	0.0-0.02 in
• Oil Pan Alignment - to Rear of Engine Block at Transmission Bell Housing Mounting Surface	0.0-0.1 mm	0.0-0.004 in
Piston Rings		
• Piston Ring End Gap - First Compression Ring - Measured in Cylinder Bore - Production	0.23-0.44 mm	0.009-0.017 in
• Piston Ring End Gap - First Compression Ring - Measured in Cylinder Bore - Service	0.23-0.5 mm	0.009-0.0196 in
• Piston Ring End Gap - Second Compression Ring - Measured in Cylinder Bore - Production	0.44-0.7 mm	0.017-0.027 in
• Piston Ring End Gap - Second Compression Ring - Measured in Cylinder Bore - Service	0.44-0.76 mm	0.0173-0.03 in
• Piston Ring End Gap - Oil Control Ring - Measured in Cylinder Bore - Production	0.18-0.75 mm	0.007-0.029 in
• Piston Ring End Gap - Oil Control Ring - Measured in Cylinder Bore - Service	0.18-0.81 mm	0.007-0.032 in
• Piston Ring-to-Groove Clearance - First	0.04-0.085 mm	0.00157-0.00335

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Compression Ring - Production		in
<ul style="list-style-type: none"> ● Piston Ring-to-Groove Clearance - First Compression Ring - Service 	0.04-0.085 mm	0.00157-0.00335 in
<ul style="list-style-type: none"> ● Piston Ring-to-Groove Clearance - Second Compression Ring - Production 	0.04-0.078 mm	0.00157-0.0031 in
<ul style="list-style-type: none"> ● Piston Ring-to-Groove Clearance - Second Compression Ring - Service 	0.04-0.078 mm	0.00157-0.0031 in
<ul style="list-style-type: none"> ● Piston Ring-to-Groove Clearance - Oil Control Ring - Production 	0.012-0.2 mm	0.0005-0.0078 in
<ul style="list-style-type: none"> ● Piston Ring-to-Groove Clearance - Oil Control Ring - Service 	0.012-0.2 mm	0.0005-0.0078 in
Pistons and Pins		
<ul style="list-style-type: none"> ● Pin - Piston Pin Clearance-to-Piston Pin Bore - Production 	0.002-0.01 mm	0.00008-0.0004 in
<ul style="list-style-type: none"> ● Pin - Piston Pin Clearance-to-Piston Pin Bore - Service 	0.002-0.015 mm	0.00008-0.0006 in
<ul style="list-style-type: none"> ● Pin - Piston Pin Diameter 	23.952-23.955 mm	0.943-0.943 in
<ul style="list-style-type: none"> ● Pin - Piston Pin Fit in Connecting Rod Bore - Production 	0.007-0.02 mm	0.00027-0.00078 in
<ul style="list-style-type: none"> ● Pin - Piston Pin Fit in Connecting Rod Bore - Service 	0.007-0.022 mm	0.00027-0.00086 in
<ul style="list-style-type: none"> ● Piston - Piston Diameter - Measured Over Skirt Coating 	96.002-96.036 mm	3.779-3.78 in
<ul style="list-style-type: none"> ● Piston - Piston to Bore Clearance - Production 	-0.036 to +0.016 mm	-0.0014 to +0.0006 in
<ul style="list-style-type: none"> ● Piston - Piston to Bore Clearance - Service Limit with Skirt Coating Worn Off 	0.071 mm	0.0028 in
Valve System		
<ul style="list-style-type: none"> ● Valves - Valve Face Angle 	45 degrees	
<ul style="list-style-type: none"> ● Valves - Valve Face Width 	1.25 mm	0.05 in
<ul style="list-style-type: none"> ● Valves - Valve Lash 	Net Lash - No Adjustment	
<ul style="list-style-type: none"> ● Valve Lift - Exhaust - Non Active Fuel Management 	12.24 mm	0.488 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Valve Lift - Exhaust - Active Fuel Management	12.46 mm	0.491 in
• Valve Lift - Intake - Non Active Fuel Management	12.24 mm	0.488 in
• Valve Lift - Intake - Active Fuel Management	12.46 mm	0.491 in
• Valves - Valve Seat Angle	46 degrees	
• Valves - Valve Seat Runout	0.05 mm	0.002 in
• Valves - Valve Seat Width - Exhaust	1.78 mm	0.07 in
• Valves - Seat Width - Intake	1.02 mm	0.04 in
• Valves - Valve Stem Diameter - Production	7.955-7.976 mm	0.313-0.314 in
• Valves - Valve Stem Diameter - Service	7.95 mm	0.313 in
• Valves - Valve Stem-to-Guide Clearance - Production - Exhaust	0.025-0.066 mm	0.001-0.0026 in
• Valves - Valve Stem-to-Guide Clearance - Service - Exhaust	0.093 mm	0.0037 in
• Valves - Valve Stem-to-Guide Clearance - Production - Intake	0.025-0.066 mm	0.001-0.0026 in
• Valves - Valve Stem-to-Guide Clearance - Service - Intake	0.093 mm	0.0037 in
• Rocker Arms - Valve Rocker Arm Ratio	1.70:1	
• Valve Springs - Valve Spring Free Length	52.9 mm	2.08 in
• Valve Springs - Valve Spring Installed Height	45.75 mm	1.8 in
• Valve Springs - Valve Spring Load - Closed	340 N at 45.75 mm	76 lb at 1.8 in
• Valve Springs - Valve Spring Load - Open	980 N at 33.55 mm	220 lb at 1.32 in

ENGINE MECHANICAL SPECIFICATIONS (RPO LC9 VIN 3)

Application	Specification	
	Metric	English
General		
• Engine Type	V8	

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Displacement	5.3L	325 CID
• RPO	LC9	
• VIN	3	
• Bore	96.0-96.018 mm	3.779-3.78 in
• Stroke	92.0 mm	3.622 in
• Compression Ratio	9.95:1	
• Firing Order	1-8-7-2-6-5-4-3	
• Active Fuel Management Cylinders	1-4-6-7	
• Spark Plug Gap	1.02 mm	0.04 in
Block		
• Camshaft Bearing Bore 1 and 5 Diameter	59.58-59.63 mm	2.345-2.347 in
• Camshaft Bearing Bore 2 and 4 Diameter	59.08-59.13 mm	2.325-2.327 in
• Camshaft Bearing Bore 3 Diameter	58.58-58.63 mm	2.306-2.308 in
• Crankshaft Main Bearing Bore Diameter	69.871-69.889 mm	2.75-2.751 in
• Crankshaft Main Bearing Bore Out-of-Round	0.006 mm	0.0002 in
• Cylinder Bore Diameter	96.0-96.018 mm	3.779-3.78 in
• Cylinder Head Deck Height - Measuring from the Centerline of Crankshaft to the Deck Face	234.57-234.82 mm	9.235-9.245 in
• Cylinder Head Deck Surface Flatness - Measured Within a 152.4 mm (6.0 in) Area	0.11 mm	0.004 in
• Cylinder Head Deck Surface Flatness - Measuring the Overall Length of the Block Deck	0.22 mm	0.008 in
• Valve Lifter Bore Diameter	21.417-21.443 mm	0.843-0.844 in
Camshaft		
• Camshaft End Play	0.025-0.305 mm	0.001-0.012 in
• Camshaft Journal Diameter	54.99-55.04 mm	2.164-2.166 in
• Camshaft Journal Out-of-Round	0.025 mm	0.001 in
• Camshaft Lobe Lift - Exhaust - Non Active Fuel Management Cylinders	7.2 mm	0.283 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Camshaft Lobe Lift - Exhaust - Active Fuel Management Cylinders	7.33 mm	0.289 in
• Camshaft Lobe Lift - Intake - Non Active Fuel Management Cylinders	7.2 mm	0.283 in
• Camshaft Lobe Lift - Intake - Active Fuel Management Cylinders	7.33 mm	0.289 in
• Camshaft Runout - Measured at the Intermediate Journals	0.05 mm	0.002 in
Connecting Rod		
• Connecting Rod Bearing Clearance - Production	0.023-0.065 mm	0.0009-0.0025 in
• Connecting Rod Bearing Clearance - Service	0.023-0.076 mm	0.0009-0.003 in
• Connecting Rod Bore Diameter - Bearing End	56.505-56.525 mm	2.224-2.225 in
• Connecting Rod Bore Out-of-Round - Bearing End - Production	0.004-0.008 mm	0.00015-0.0003 in
• Connecting Rod Bore Out-of-Round - Bearing End - Service	0.004-0.008 mm	0.00015-0.0003 in
• Connecting Rod Side Clearance	0.11-0.51 mm	0.00433-0.02 in
Crankshaft		
• Connecting Rod Journal Diameter - Production	53.318-53.338 mm	2.0991-2.0999 in
• Connecting Rod Journal Diameter - Service	53.308 mm	2.0987 in
• Connecting Rod Journal Out-of-Round - Production	0.005 mm	0.0002 in
• Connecting Rod Journal Out-of-Round - Service	0.01 mm	0.0004 in
• Connecting Rod Journal Taper - Maximum for 1/2 of Journal Length - Production	0.005 mm	0.0002 in
• Connecting Rod Journal Taper - Maximum for 1/2 of Journal Length - Service	0.02 mm	0.00078 in
• Crankshaft End Play	0.04-0.2 mm	0.0015-0.0078 in
• Crankshaft Main Bearing Clearance - Production	0.02-0.052 mm	0.0008-0.0021 in
	0.02-0.065 mm	0.0008-0.0025 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Crankshaft Main Bearing Clearance - Service		
• Crankshaft Main Journal Diameter - Production	64.992-65.008 mm	2.558-2.559 in
• Crankshaft Main Journal Diameter - Service	64.992 mm	2.558 in
• Crankshaft Main Journal Out-of-Round - Production	0.003 mm	0.000118 in
• Crankshaft Main Journal Out-of-Round - Service	0.008 mm	0.0003 in
• Crankshaft Main Journal Taper - Production	0.01 mm	0.0004 in
• Crankshaft Main Journal Taper - Service	0.02 mm	0.00078 in
• Crankshaft Rear Flange Runout	0.05 mm	0.002 in
• Crankshaft Reluctor Ring Runout - Measured 1.0 mm (0.04 in) Below Tooth Diameter	0.7 mm	0.028 in
• Crankshaft Thrust Surface - Production	26.14-26.22 mm	1.029-1.0315 in
• Crankshaft Thrust Surface - Service	26.22 mm	1.0315 in
• Crankshaft Thrust Surface Runout	0.025 mm	0.001 in
Cylinder Head		
• Cylinder Head Height/Thickness - Measured from the Cylinder Head Deck to the Valve Rocker Arm Cover Seal Surface	120.2 mm	4.732 in
• Surface Flatness - Block Deck - Measured Within a 152.4 mm (6.0 in) Area	0.08 mm	0.003 in
• Surface Flatness - Block Deck - Measuring the Overall Length of the Cylinder Head	0.1 mm	0.004 in
• Surface Flatness - Exhaust Manifold Deck	0.13 mm	0.005 in
• Surface Flatness - Intake Manifold Deck	0.08 mm	0.0031 in
• Valve Guide Installed Height - Measured from the Spring Seat Surface to the Top of the Guide	17.32 mm	0.682 in
Intake Manifold		
• Surface Flatness - Measured at Gasket Sealing Surfaces and Measured Within a 200 mm (7.87	0.3 mm	0.118 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

in) Area that Includes 2 Runner Port Openings		
Lubrication System		
• Oil Capacity - with Filter	5.68 liters	6.0 quarts
• Oil Capacity - without Filter	5.20 liters	5.5 quarts
• Oil Pressure - Minimum - Hot	41 kPa at 1,000 engine RPM 124 kPa at 2,000 engine RPM 165 kPa at 4,000 engine RPM	6 psig at 1,000 engine RPM 18 psig at 2,000 engine RPM 24 psig at 4,000 engine RPM
• Active Fuel Management Relief Valve Oil Pressure - as Measured at Oil Pressure Sensor Location	379-517 kPa Maximum	55-75 psig Maximum
Oil Pan		
• Front Cover Alignment - at Oil Pan Surface	0.0-0.5 mm	0.0-0.02 in
• Crankshaft Rear Oil Seal Housing Alignment - at Oil Pan Surface	0.0-0.5 mm	0.0-0.02 in
• Oil Pan Alignment - to Rear of Engine Block at Transmission Bell Housing Mounting Surface	0.0-0.1 mm	0.0-0.004 in
Piston Rings		
• Piston Ring End Gap - First Compression Ring - Measured in Cylinder Bore - Production	0.23-0.44 mm	0.009-0.017 in
• Piston Ring End Gap - First Compression Ring - Measured in Cylinder Bore - Service	0.23-0.5 mm	0.009-0.0196 in
• Piston Ring End Gap - Second Compression Ring - Measured in Cylinder Bore - Production	0.44-0.7 mm	0.017-0.027 in
• Piston Ring End Gap - Second Compression Ring - Measured in Cylinder Bore - Service	0.44-0.76 mm	0.0173-0.03 in
• Piston Ring End Gap - Oil Control Ring - Measured in Cylinder Bore - Production	0.18-0.75 mm	0.007-0.029 in
• Piston Ring End Gap - Oil Control Ring - Measured in Cylinder Bore - Service	0.18-0.81 mm	0.007-0.032 in
• Piston Ring-to-Groove Clearance - First	0.04-0.085 mm	0.00157-0.00335

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Compression Ring - Production		in
<ul style="list-style-type: none"> ● Piston Ring-to-Groove Clearance - First Compression Ring - Service 	0.04-0.085 mm	0.00157-0.00335 in
<ul style="list-style-type: none"> ● Piston Ring-to-Groove Clearance - Second Compression Ring - Production 	0.04-0.078 mm	0.00157-0.0031 in
<ul style="list-style-type: none"> ● Piston Ring-to-Groove Clearance - Second Compression Ring - Service 	0.04-0.078 mm	0.00157-0.0031 in
<ul style="list-style-type: none"> ● Piston Ring-to-Groove Clearance - Oil Control Ring - Production 	0.012-0.2 mm	0.0005-0.0078 in
<ul style="list-style-type: none"> ● Piston Ring-to-Groove Clearance - Oil Control Ring - Service 	0.012-0.2 mm	0.0005-0.0078 in
Pistons and Pins		
<ul style="list-style-type: none"> ● Pin - Piston Pin Clearance-to-Piston Pin Bore - Production 	0.002-0.01 mm	0.00008-0.0004 in
<ul style="list-style-type: none"> ● Pin - Piston Pin Clearance-to-Piston Pin Bore - Service 	0.002-0.015 mm	0.00008-0.0006 in
<ul style="list-style-type: none"> ● Pin - Piston Pin Diameter 	23.952-23.955 mm	0.943-0.943 in
<ul style="list-style-type: none"> ● Pin - Piston Pin Fit in Connecting Rod Bore - Production 	0.007-0.02 mm	0.00027-0.00078 in
<ul style="list-style-type: none"> ● Pin - Piston Pin Fit in Connecting Rod Bore - Service 	0.007-0.022 mm	0.00027-0.00086 in
<ul style="list-style-type: none"> ● Piston - Piston Diameter - Measured Over Skirt Coating 	96.002-96.036 mm	3.779-3.78 in
<ul style="list-style-type: none"> ● Piston - Piston to Bore Clearance - Production 	-0.036 to +0.016 mm	-0.0014 to +0.0006 in
<ul style="list-style-type: none"> ● Piston - Piston to Bore Clearance - Service Limit with Skirt Coating Worn Off 	0.071 mm	0.0028 in
Valve System		
<ul style="list-style-type: none"> ● Valves - Valve Face Angle 	45 degrees	
<ul style="list-style-type: none"> ● Valves - Valve Face Width 	1.25 mm	0.05 in
<ul style="list-style-type: none"> ● Valves - Valve Lash 	Net Lash - No Adjustment	
<ul style="list-style-type: none"> ● Valve Lift - Exhaust - Non Active Fuel Management 	12.24 mm	0.488 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Valve Lift - Exhaust - Active Fuel Management	12.46 mm	0.491 in
• Valve Lift - Intake - Non Active Fuel Management	12.24 mm	0.488 in
• Valve Lift - Intake - Active Fuel Management	12.46 mm	0.491 in
• Valves - Valve Seat Angle	46 degrees	
• Valves - Valve Seat Runout	0.05 mm	0.002 in
• Valves - Valve Seat Width - Exhaust	1.78 mm	0.07 in
• Valves - Seat Width - Intake	1.02 mm	0.04 in
• Valves - Valve Stem Diameter - Production	7.955-7.976 mm	0.313-0.314 in
• Valves - Valve Stem Diameter - Service	7.95 mm	0.313 in
• Valves - Valve Stem-to-Guide Clearance - Production - Exhaust	0.025-0.066 mm	0.001-0.0026 in
• Valves - Valve Stem-to-Guide Clearance - Service - Exhaust	0.093 mm	0.0037 in
• Valves - Valve Stem-to-Guide Clearance - Production - Intake	0.025-0.066 mm	0.001-0.0026 in
• Valves - Valve Stem-to-Guide Clearance - Service - Intake	0.093 mm	0.0037 in
• Rocker Arms - Valve Rocker Arm Ratio	1.70:1	
• Valve Springs - Valve Spring Free Length	52.9 mm	2.08 in
• Valve Springs - Valve Spring Installed Height	45.75 mm	1.8 in
• Valve Springs - Valve Spring Load - Closed	340 N at 45.75 mm	76 lb at 1.8 in
• Valve Springs - Valve Spring Load - Open	980 N at 33.55 mm	220 lb at 1.32 in

ENGINE MECHANICAL SPECIFICATIONS (RPO LY2 VIN C)

Application	Specification	
	Metric	English
General		
• Bore	96.0-96.018 mm	3.779-3.78 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Compression Ratio	9.08:1	
• Displacement	4.8L	293 CID
• Engine Type	V8	
• Firing Order	1-8-7-2-6-5-4-3	
• RPO	LY2	
• Stroke	83.0 mm	3.27 in
• VIN	C	
• Spark Plug Gap	1.02 mm	0.04 in
Block		
• Camshaft Bearing Bore 1 and 5 Diameter	59.58-59.63 mm	2.345-2.347 in
• Camshaft Bearing Bore 2 and 4 Diameter	59.08-59.13 mm	2.325-2.327 in
• Camshaft Bearing Bore 3 Diameter	58.58-58.63 mm	2.306-2.308 in
• Crankshaft Main Bearing Bore Diameter	69.871-69.889 mm	2.75-2.751 in
• Crankshaft Main Bearing Bore Out-of-Round	0.006 mm	0.0002 in
• Cylinder Bore Diameter	96.0-96.018 mm	3.779-3.78 in
• Cylinder Head Deck Height - Measuring from the Centerline of Crankshaft to the Deck Face	234.57-234.82 mm	9.235-9.245 in
• Cylinder Head Deck Surface Flatness - Measured Within a 152.4 mm (6.0 in) Area	0.11 mm	0.004 in
• Cylinder Head Deck Surface Flatness - Measuring the Overall Length of the Block Deck	0.22 mm	0.008 in
• Valve Lifter Bore Diameter	21.417-21.443 mm	0.843-0.844 in
Camshaft		
• Camshaft End Play	0.025-0.305 mm	0.001-0.012 in
• Camshaft Journal Diameter	54.99-55.04 mm	2.164-2.166 in
• Camshaft Journal Out-of-Round	0.025 mm	0.001 in
• Camshaft Lobe Lift - Exhaust	7.2 mm	0.283 in
• Camshaft Lobe Lift - Intake	7.2 mm	0.283 in
• Camshaft Runout - Measured at the	0.05 mm	0.002 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Intermediate Journals		
Connecting Rod		
• Connecting Rod Bearing Clearance - Production	0.023-0.065 mm	0.0009-0.0025 in
• Connecting Rod Bearing Clearance - Service	0.023-0.076 mm	0.0009-0.003 in
• Connecting Rod Bore Diameter - Bearing End	56.505-56.525 mm	2.224-2.225 in
• Connecting Rod Bore Out-of-Round - Bearing End - Production	0.004-0.008 mm	0.00015-0.0003 in
• Connecting Rod Bore Out-of-Round - Bearing End - Service	0.004-0.008 mm	0.00015-0.0003 in
• Connecting Rod Side Clearance	0.11-0.51 mm	0.00433-0.02 in
Crankshaft		
• Connecting Rod Journal Diameter - Production	53.318-53.338 mm	2.0991-2.0999 in
• Connecting Rod Journal Diameter - Service	53.308 mm	2.0987 in
• Connecting Rod Journal Out-of-Round - Production	0.005 mm	0.0002 in
• Connecting Rod Journal Out-of-Round - Service	0.01 mm	0.0004 in
• Connecting Rod Journal Taper - Maximum for 1/2 of Journal Length - Production	0.005 mm	0.0002 in
• Connecting Rod Journal Taper - Maximum for 1/2 of Journal Length - Service	0.02 mm	0.00078 in
• Crankshaft End Play	0.04-0.2 mm	0.0015-0.0078 in
• Crankshaft Main Bearing Clearance - Production	0.02-0.052 mm	0.0008-0.0021 in
• Crankshaft Main Bearing Clearance - Service	0.02-0.065 mm	0.0008-0.0025 in
• Crankshaft Main Journal Diameter - Production	64.992-65.008 mm	2.558-2.559 in
• Crankshaft Main Journal Diameter - Service	64.992 mm	2.558 in
• Crankshaft Main Journal Out-of-Round - Production	0.003 mm	0.000118 in
• Crankshaft Main Journal Out-of-Round -	0.008 mm	0.0003 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Service		
• Crankshaft Main Journal Taper - Production	0.01 mm	0.0004 in
• Crankshaft Main Journal Taper - Service	0.02 mm	0.00078 in
• Crankshaft Rear Flange Runout	0.05 mm	0.002 in
• Crankshaft Reluctor Ring Runout - Measured 1.0 mm (0.04 in) Below Tooth Diameter	0.7 mm	0.028 in
• Crankshaft Thrust Surface - Production	26.14-26.22 mm	1.029-1.0315 in
• Crankshaft Thrust Surface - Service	26.22 mm	1.0315 in
• Crankshaft Thrust Surface Runout	0.025 mm	0.001 in
Cylinder Head		
• Cylinder Head Height/Thickness - Measured from the Cylinder Head Deck to the Valve Rocker Arm Cover Seal Surface	120.2 mm	4.732 in
• Surface Flatness - Block Deck - Measured Within a 152.4 mm (6.0 in) Area	0.08 mm	0.003 in
• Surface Flatness - Block Deck - Measuring the Overall Length of the Cylinder Head	0.1 mm	0.004 in
• Surface Flatness - Exhaust Manifold Deck	0.13 mm	0.005 in
• Surface Flatness - Intake Manifold Deck	0.08 mm	0.0031 in
• Valve Guide Installed Height - Measured from the Spring Seat Surface to the Top of the Guide	17.32 mm	0.682 in
Intake Manifold		
• Surface Flatness - Measured at Gasket Sealing Surfaces and Measured Within a 200 mm (7.87 in) Area that Includes 2 Runner Port Openings	0.3 mm	0.118 in
Lubrication System		
• Oil Capacity - with Filter	5.68 liters	6.0 quarts
• Oil Capacity - without Filter	5.2 liters	5.5 quarts
• Oil Pressure - Minimum - Hot	41 kPa at 1,000 engine RPM 124 kPa at 2,000 engine RPM	6 psig at 1,000 engine RPM 18 psig at 2,000 engine RPM

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

	165 kPa at 4,000 engine RPM	24 psig at 4,000 engine RPM
<ul style="list-style-type: none"> Active Fuel Management Relief Valve Oil Pressure - as Measured at Oil Pressure Sensor Location 	379-517 kPa Maximum	55-75 psig Maximum
Oil Pan		
<ul style="list-style-type: none"> Front Cover Alignment - at Oil Pan Surface 	0.0-0.5 mm	0.0-0.02 in
<ul style="list-style-type: none"> Crankshaft Rear Oil Seal Housing Alignment - at Oil Pan Surface 	0.0-0.5 mm	0.0-0.02 in
<ul style="list-style-type: none"> Oil Pan Alignment - to Rear of Engine Block at Transmission Bell Housing Mounting Surface 	0.0-0.1 mm	0.0-0.004 in
Piston Rings		
<ul style="list-style-type: none"> Piston Ring End Gap - First Compression Ring - Measured in Cylinder Bore - Production 	0.23-0.44 mm	0.009-0.017 in
<ul style="list-style-type: none"> Piston Ring End Gap - First Compression Ring - Measured in Cylinder Bore - Service 	0.23-0.5 mm	0.009-0.0196 in
<ul style="list-style-type: none"> Piston Ring End Gap - Second Compression Ring - Measured in Cylinder Bore - Production 	0.44-0.7 mm	0.017-0.027 in
<ul style="list-style-type: none"> Piston Ring End Gap - Second Compression Ring - Measured in Cylinder Bore - Service 	0.44-0.76 mm	0.0173-0.03 in
<ul style="list-style-type: none"> Piston Ring End Gap - Oil Control Ring - Measured in Cylinder Bore - Production 	0.18-0.75 mm	0.007-0.029 in
<ul style="list-style-type: none"> Piston Ring End Gap - Oil Control Ring - Measured in Cylinder Bore - Service 	0.18-0.81 mm	0.007-0.032 in
<ul style="list-style-type: none"> Piston Ring-to-Groove Clearance - First Compression Ring - Production 	0.04-0.085 mm	0.00157-0.00335 in
<ul style="list-style-type: none"> Piston Ring-to-Groove Clearance - First Compression Ring - Service 	0.04-0.085 mm	0.00157-0.00335 in
<ul style="list-style-type: none"> Piston Ring-to-Groove Clearance - Second Compression Ring - Production 	0.04-0.078 mm	0.00157-0.0031 in
<ul style="list-style-type: none"> Piston Ring-to-Groove Clearance - Second Compression Ring - Service 	0.04-0.078 mm	0.00157-0.0031 in
<ul style="list-style-type: none"> Piston Ring-to-Groove Clearance - Oil Control 		

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Ring - Production	0.012-0.2 mm	0.0005-0.0078 in
<ul style="list-style-type: none"> • Piston Ring-to-Groove Clearance - Oil Control Ring - Service 	0.012-0.2 mm	0.0005-0.0078 in
Pistons and Pins		
<ul style="list-style-type: none"> • Pin - Piston Pin Clearance-to-Piston Pin Bore - Production 	0.002-0.01 mm	0.00008-0.0004 in
<ul style="list-style-type: none"> • Pin - Piston Pin Clearance-to-Piston Pin Bore - Service 	0.002-0.015 mm	0.00008-0.0006 in
<ul style="list-style-type: none"> • Pin - Piston Pin Diameter 	23.952-23.955 mm	0.943-0.943 in
<ul style="list-style-type: none"> • Pin - Piston Pin Fit in Connecting Rod Bore - Production 	0.007-0.02 mm	0.00027-0.00078 in
<ul style="list-style-type: none"> • Pin - Piston Pin Fit in Connecting Rod Bore - Service 	0.007-0.022 mm	0.00027-0.00086 in
<ul style="list-style-type: none"> • Piston - Piston Diameter - Measured Over Skirt Coating 	96.002-96.036 mm	3.779-3.78 in
<ul style="list-style-type: none"> • Piston - Piston to Bore Clearance - Production 	-0.036 to +0.016 mm	-0.0014 to +0.0006 in
<ul style="list-style-type: none"> • Piston - Piston to Bore Clearance - Service Limit with Skirt Coating Worn Off 	0.071 mm	0.0028 in
Valve System		
<ul style="list-style-type: none"> • Valves - Valve Face Angle 	45 degrees	
<ul style="list-style-type: none"> • Valves - Valve Face Width 	1.25 mm	0.05 in
<ul style="list-style-type: none"> • Valves - Valve Lash 	Net Lash - No Adjustment	
<ul style="list-style-type: none"> • Valve Lift - Exhaust 	12.2 mm	0.48 in
<ul style="list-style-type: none"> • Valve Lift - Intake 	12.2 mm	0.48 in
<ul style="list-style-type: none"> • Valves - Valve Seat Angle 	46 degrees	
<ul style="list-style-type: none"> • Valves - Valve Seat Runout 	0.05 mm	0.002 in
<ul style="list-style-type: none"> • Valves - Valve Seat Width - Exhaust 	1.78 mm	0.07 in
<ul style="list-style-type: none"> • Valves - Seat Width - Intake 	1.02 mm	0.04 in
<ul style="list-style-type: none"> • Valves - Valve Stem Diameter - Production 	7.955-7.976 mm	0.313-0.314 in
<ul style="list-style-type: none"> • Valves - Valve Stem Diameter - Service 	7.95 mm	0.313 in
<ul style="list-style-type: none"> • Valves - Valve Stem-to-Guide Clearance - 		

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Production - Exhaust	0.025-0.066 mm	0.001-0.0026 in
• Valves - Valve Stem-to-Guide Clearance - Service - Exhaust	0.093 mm	0.0037 in
• Valves - Valve Stem-to-Guide Clearance - Production - Intake	0.025-0.066 mm	0.001-0.0026 in
• Valves - Valve Stem-to-Guide Clearance - Service - Intake	0.093 mm	0.0037 in
• Rocker Arms - Valve Rocker Arm Ratio	1.70:1	
• Valve Springs - Valve Spring Free Length	52.9 mm	2.08 in
• Valve Springs - Valve Spring Installed Height	45.75 mm	1.8 in
• Valve Springs - Valve Spring Load - Closed	340 N at 45.75 mm	76 lb at 1.8 in
• Valve Springs - Valve Spring Load - Open	980 N at 33.55 mm	220 lb at 1.32 in

ENGINE MECHANICAL SPECIFICATIONS (RPO LH6 VIN M)

Application	Specification	
	Metric	English
General		
• Engine Type	V8	
• Displacement	5.3L	325 CID
• RPO	LH6	
• VIN	M	
• Bore	96.0-96.018 mm	3.779-3.78 in
• Stroke	92.0 mm	3.622 in
• Compression Ratio	9.95:1	
• Firing Order	1-8-7-2-6-5-4-3	
• Displacement-on-Demand Cylinders	1-4-6-7	
• Spark Plug Gap	1.02 mm	0.04 in
Block		
• Camshaft Bearing Bore 1 and 5 Diameter	59.58-59.63 mm	2.345-2.347 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Camshaft Bearing Bore 2 and 4 Diameter	59.08-59.13 mm	2.325-2.327 in
• Camshaft Bearing Bore 3 Diameter	58.58-58.63 mm	2.306-2.308 in
• Crankshaft Main Bearing Bore Diameter	69.871-69.889 mm	2.75-2.751 in
• Crankshaft Main Bearing Bore Out-of-Round	0.006 mm	0.0002 in
• Cylinder Bore Diameter	96.0-96.018 mm	3.779-3.78 in
• Cylinder Head Deck Height - Measuring from the Centerline of Crankshaft to the Deck Face	234.57-234.82 mm	9.235-9.245 in
• Cylinder Head Deck Surface Flatness - Measured Within a 152.4 mm (6.0 in) Area	0.11 mm	0.004 in
• Cylinder Head Deck Surface Flatness - Measuring the Overall Length of the Block Deck	0.22 mm	0.008 in
• Valve Lifter Bore Diameter	21.417-21.443 mm	0.843-0.844 in
Camshaft		
• Camshaft End Play	0.025-0.305 mm	0.001-0.012 in
• Camshaft Journal Diameter	54.99-55.04 mm	2.164-2.166 in
• Camshaft Journal Out-of-Round	0.025 mm	0.001 in
• Camshaft Lobe Lift - Intake - Non Displacement-on-Demand Cylinders	7.20 mm	0.283 in
• Camshaft Lobe Lift - Intake - Displacement-on-Demand Cylinders	7.33 mm	0.289 in
• Camshaft Lobe Lift - Exhaust - Non Displacement-on-Demand Cylinders	7.20 mm	0.283 in
• Camshaft Lobe Lift - Exhaust - Displacement-on-Demand Cylinders	7.33 mm	0.289 in
• Camshaft Runout - Measured at the Intermediate Journals	0.05 mm	0.002 in
Connecting Rod		
• Connecting Rod Bearing Clearance - Production	0.023-0.065 mm	0.0009-0.0025 in
• Connecting Rod Bearing Clearance - Service	0.023-0.076 mm	0.0009-0.003 in
• Connecting Rod Bore Diameter - Bearing End	56.505-56.525 mm	2.224-2.225 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Connecting Rod Bore Out-of-Round - Bearing End - Production	0.004-0.008 mm	0.00015-0.0003 in
• Connecting Rod Bore Out-of-Round - Bearing End - Service	0.004-0.008 mm	0.00015-0.0003 in
• Connecting Rod Side Clearance	0.11-0.51 mm	0.00433-0.02 in
Crankshaft		
• Connecting Rod Journal Diameter - Production	53.318-53.338 mm	2.0991-2.0999 in
• Connecting Rod Journal Diameter - Service	53.308 mm	2.0987 in
• Connecting Rod Journal Out-of-Round - Production	0.005 mm	0.0002 in
• Connecting Rod Journal Out-of-Round - Service	0.01 mm	0.0004 in
• Connecting Rod Journal Taper - Maximum for 1/2 of Journal Length - Production	0.005 mm	0.0002 in
• Connecting Rod Journal Taper - Maximum for 1/2 of Journal Length - Service	0.02 mm	0.00078 in
• Crankshaft End Play	0.04-0.2 mm	0.0015-0.0078 in
• Crankshaft Main Bearing Clearance - Production	0.02-0.052 mm	0.0008-0.0021 in
• Crankshaft Main Bearing Clearance - Service	0.02-0.065 mm	0.0008-0.0025 in
• Crankshaft Main Journal Diameter - Production	64.992-65.008 mm	2.558-2.559 in
• Crankshaft Main Journal Diameter - Service	64.992 mm	2.558 in
• Crankshaft Main Journal Out-of-Round - Production	0.003 mm	0.000118 in
• Crankshaft Main Journal Out-of-Round - Service	0.008 mm	0.0003 in
• Crankshaft Main Journal Taper - Production	0.01 mm	0.0004 in
• Crankshaft Main Journal Taper - Service	0.02 mm	0.00078 in
• Crankshaft Rear Flange Runout	0.05 mm	0.002 in
• Crankshaft Reluctor Ring Runout - Measured 1.0 mm (0.04 in) Below Tooth Diameter	0.7 mm	0.028 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Crankshaft Thrust Surface - Production	26.14-26.22 mm	1.029-1.0315 in
• Crankshaft Thrust Surface - Service	26.22 mm	1.0315 in
• Crankshaft Thrust Surface Runout	0.025 mm	0.001 in
Cylinder Head		
• Cylinder Head Height/Thickness - Measured from the Cylinder Head Deck to the Valve Rocker Arm Cover Seal Surface	120.2 mm	4.732 in
• Surface Flatness - Block Deck - Measured Within a 152.4 mm (6.0 in) Area	0.08 mm	0.003 in
• Surface Flatness - Block Deck - Measuring the Overall Length of the Cylinder Head	0.1 mm	0.004 in
• Surface Flatness - Exhaust Manifold Deck	0.13 mm	0.005 in
• Surface Flatness - Intake Manifold Deck	0.08 mm	0.0031 in
• Valve Guide Installed Height - Measured from the Spring Seat Surface to the Top of the Guide	17.32 mm	0.682 in
Intake Manifold		
• Surface Flatness - Measured at Gasket Sealing Surfaces and Measured Within a 200 mm (7.87 in) Area that Includes Two Runner Port Openings	0.3 mm	0.118 in
Lubrication System		
• Oil Capacity - with Filter	5.68 liters	6.0 quarts
• Oil Capacity - without Filter	5.20 liters	5.5 quarts
• Oil Pressure - Minimum - Hot	41 kPa at 1,000 engine RPM 124 kPa at 2,000 engine RPM 165 kPa at 4,000 engine RPM	6 psig at 1,000 engine RPM 18 psig at 2,000 engine RPM 24 psig at 4,000 engine RPM
• Displacement-on-Demand Relief Valve Oil Pressure - as Measured at Oil Pressure Sensor Location	379-517 kPa Maximum	55-75 psig Maximum
Oil Pan		

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Front Cover Alignment - at Oil Pan Surface	0.0-0.5 mm	0.0-0.02 in
• Crankshaft Rear Oil Seal Housing Alignment - at Oil Pan Surface	0.0-0.5 mm	0.0-0.02 in
• Oil Pan Alignment - to Rear of Engine Block at Transmission Bell Housing Mounting Surface	0.0-0.1 mm	0.0-0.004 in
Piston Rings		
• Piston Ring End Gap - First Compression Ring - Measured in Cylinder Bore - Production	0.23-0.44 mm	0.009-0.017 in
• Piston Ring End Gap - First Compression Ring - Measured in Cylinder Bore - Service	0.23-0.5 mm	0.009-0.0196 in
• Piston Ring End Gap - Second Compression Ring - Measured in Cylinder Bore - Production	0.44-0.7 mm	0.017-0.027 in
• Piston Ring End Gap - Second Compression Ring - Measured in Cylinder Bore - Service	0.44-0.76 mm	0.0173-0.03 in
• Piston Ring End Gap - Oil Control Ring - Measured in Cylinder Bore - Production	0.18-0.75 mm	0.007-0.029 in
• Piston Ring End Gap - Oil Control Ring - Measured in Cylinder Bore - Service	0.18-0.81 mm	0.007-0.032 in
• Piston Ring-to-Groove Clearance - First Compression Ring - Production	0.04-0.085 mm	0.00157-0.00335 in
• Piston Ring-to-Groove Clearance - First Compression Ring - Service	0.04-0.085 mm	0.00157-0.00335 in
• Piston Ring-to-Groove Clearance - Second Compression Ring - Production	0.04-0.078 mm	0.00157-0.0031 in
• Piston Ring-to-Groove Clearance - Second Compression Ring - Service	0.04-0.078 mm	0.00157-0.0031 in
• Piston Ring-to-Groove Clearance - Oil Control Ring - Production	0.012-0.2 mm	0.0005-0.0078 in
• Piston Ring-to-Groove Clearance - Oil Control Ring - Service	0.012-0.2 mm	0.0005-0.0078 in
Pistons and Pins		
• Pin - Piston Pin Clearance-to-Piston Pin Bore - Production	0.002-0.01 mm	0.00008-0.0004 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Pin - Piston Pin Clearance-to-Piston Pin Bore - Service	0.002-0.015 mm	0.00008-0.0006 in
• Pin - Piston Pin Diameter	23.952-23.955 mm	0.943-0.943 in
• Pin - Piston Pin Fit in Connecting Rod Bore - Production	0.007-0.02 mm	0.00027-0.00078 in
• Pin - Piston Pin Fit in Connecting Rod Bore - Service	0.007-0.022 mm	0.00027-0.00086 in
• Piston - Piston Diameter - Measured Over Skirt Coating	96.002-96.036 mm	3.779-3.78 in
• Piston - Piston-to-Bore Clearance - Production	-0.036 to +0.016 mm	-0.0014 to +0.0006 in
• Piston - Piston-to-Bore Clearance - Service Limit with Skirt Coating Worn Off	0.071 mm	0.0028 in
Valve System		
• Valves - Valve Face Angle	45 degrees	
• Valves - Valve Face Width	1.25 mm	0.05 in
• Valves - Valve Lash	Net Lash - No Adjustment	
• Valve Lift - Intake - Non Displacement on Demand	12.24 mm	0.482 in
• Valve Lift - Intake - Displacement on Demand	12.41 mm	0.489 in
• Valve Lift - Exhaust - Non Displacement on Demand	12.24 mm	0.482 in
• Valve Lift - Exhaust - Displacement on Demand	12.41 mm	0.489 in
• Valves - Valve Seat Angle	46 degrees	
• Valves - Valve Seat Runout	0.05 mm	0.002 in
• Valves - Valve Seat Width - Exhaust	1.78 mm	0.07 in
• Valves - Seat Width - Intake	1.02 mm	0.04 in
• Valves - Valve Stem Diameter - Production	7.955-7.976 mm	0.313-0.314 in
• Valves - Valve Stem Diameter - Service	7.95 mm	0.313 in
• Valves - Valve Stem-to-Guide Clearance - Production - Intake	0.025-0.066 mm	0.001-0.0026 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Valves - Valve Stem-to-Guide Clearance - Service - Intake	0.093 mm	0.0037 in
• Valves - Valve Stem-to-Guide Clearance - Production - Exhaust	0.025-0.066 mm	0.001-0.0026 in
• Valves - Valve Stem-to-Guide Clearance - Service - Exhaust	0.093 mm	0.0037 in
• Rocker Arms - Valve Rocker Arm Ratio	1.70:1	
• Valve Springs - Valve Spring Free Length	52.9 mm	2.08 in
• Valve Springs - Valve Spring Installed Height	45.75 mm	1.8 in
• Valve Springs - Valve Spring Load - Closed	340 N at 45.75 mm	76 lb at 1.8 in
• Valve Springs - Valve Spring Load - Open	980 N at 33.55 mm	220 lb at 1.32 in

ENGINE MECHANICAL SPECIFICATIONS (RPO LMG VIN 0)

Application	Specification	
	Metric	English
General		
• Engine Type	V8	
• Displacement	5.3L	325 CID
• RPO	LMG	
• VIN	0	
• Bore	96.0-96.018 mm	3.779-3.78 in
• Stroke	92.0 mm	3.622 in
• Compression Ratio	9.95:1	
• Firing Order	1-8-7-2-6-5-4-3	
• Active Fuel Management Cylinders	1-4-6-7	
• Spark Plug Gap	1.02 mm	0.04 in
Block		
• Camshaft Bearing Bore 1 and 5 Diameter	59.58-59.63 mm	2.345-2.347 in
• Camshaft Bearing Bore 2 and 4 Diameter	59.08-59.13 mm	2.325-2.327 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Camshaft Bearing Bore 3 Diameter	58.58-58.63 mm	2.306-2.308 in
• Crankshaft Main Bearing Bore Diameter	69.871-69.889 mm	2.75-2.751 in
• Crankshaft Main Bearing Bore Out-of-Round	0.006 mm	0.0002 in
• Cylinder Bore Diameter	96.0-96.018 mm	3.779-3.78 in
• Cylinder Head Deck Height - Measuring from the Centerline of Crankshaft to the Deck Face	234.57-234.82 mm	9.235-9.245 in
• Cylinder Head Deck Surface Flatness - Measured Within a 152.4 mm (6.0 in) Area	0.11 mm	0.004 in
• Cylinder Head Deck Surface Flatness - Measuring the Overall Length of the Block Deck	0.22 mm	0.008 in
• Valve Lifter Bore Diameter	21.417-21.443 mm	0.843-0.844 in
Camshaft		
• Camshaft End Play	0.025-0.305 mm	0.001-0.012 in
• Camshaft Journal Diameter	54.99-55.04 mm	2.164-2.166 in
• Camshaft Journal Out-of-Round	0.025 mm	0.001 in
• Camshaft Lobe Lift - Exhaust - Non Active Fuel Management Cylinders	7.2 mm	0.283 in
• Camshaft Lobe Lift - Exhaust - Active Fuel Management Cylinders	7.33 mm	0.289 in
• Camshaft Lobe Lift - Intake - Non Active Fuel Management Cylinders	7.2 mm	0.283 in
• Camshaft Lobe Lift - Intake - Active Fuel Management Cylinders	7.33 mm	0.289 in
• Camshaft Runout - Measured at the Intermediate Journals	0.05 mm	0.002 in
Connecting Rod		
• Connecting Rod Bearing Clearance - Production	0.023-0.065 mm	0.0009-0.0025 in
• Connecting Rod Bearing Clearance - Service	0.023-0.076 mm	0.0009-0.003 in
• Connecting Rod Bore Diameter - Bearing End	56.505-56.525 mm	2.224-2.225 in
• Connecting Rod Bore Out-of-Round - Bearing	0.004-0.008 mm	0.00015-0.0003 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

End - Production		
• Connecting Rod Bore Out-of-Round - Bearing End - Service	0.004-0.008 mm	0.00015-0.0003 in
• Connecting Rod Side Clearance	0.11-0.51 mm	0.00433-0.02 in
Crankshaft		
• Connecting Rod Journal Diameter - Production	53.318-53.338 mm	2.0991-2.0999 in
• Connecting Rod Journal Diameter - Service	53.308 mm	2.0987 in
• Connecting Rod Journal Out-of-Round - Production	0.005 mm	0.0002 in
• Connecting Rod Journal Out-of-Round - Service	0.01 mm	0.0004 in
• Connecting Rod Journal Taper - Maximum for 1/2 of Journal Length - Production	0.005 mm	0.0002 in
• Connecting Rod Journal Taper - Maximum for 1/2 of Journal Length - Service	0.02 mm	0.00078 in
• Crankshaft End Play	0.04-0.2 mm	0.0015-0.0078 in
• Crankshaft Main Bearing Clearance - Production	0.02-0.052 mm	0.0008-0.0021 in
• Crankshaft Main Bearing Clearance - Service	0.02-0.065 mm	0.0008-0.0025 in
• Crankshaft Main Journal Diameter - Production	64.992-65.008 mm	2.558-2.559 in
• Crankshaft Main Journal Diameter - Service	64.992 mm	2.558 in
• Crankshaft Main Journal Out-of-Round - Production	0.003 mm	0.000118 in
• Crankshaft Main Journal Out-of-Round - Service	0.008 mm	0.0003 in
• Crankshaft Main Journal Taper - Production	0.01 mm	0.0004 in
• Crankshaft Main Journal Taper - Service	0.02 mm	0.00078 in
• Crankshaft Rear Flange Runout	0.05 mm	0.002 in
• Crankshaft Reluctor Ring Runout - Measured 1.0 mm (0.04 in) Below Tooth Diameter	0.7 mm	0.028 in
• Crankshaft Thrust Surface - Production	26.14-26.22 mm	1.029-1.0315 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Crankshaft Thrust Surface - Service	26.22 mm	1.0315 in
• Crankshaft Thrust Surface Runout	0.025 mm	0.001 in
Cylinder Head		
• Cylinder Head Height/Thickness - Measured from the Cylinder Head Deck to the Valve Rocker Arm Cover Seal Surface	120.2 mm	4.732 in
• Surface Flatness - Block Deck - Measured Within a 152.4 mm (6.0 in) Area	0.08 mm	0.003 in
• Surface Flatness - Block Deck - Measuring the Overall Length of the Cylinder Head	0.1 mm	0.004 in
• Surface Flatness - Exhaust Manifold Deck	0.13 mm	0.005 in
• Surface Flatness - Intake Manifold Deck	0.08 mm	0.0031 in
• Valve Guide Installed Height - Measured from the Spring Seat Surface to the Top of the Guide	17.32 mm	0.682 in
Intake Manifold		
• Surface Flatness - Measured at Gasket Sealing Surfaces and Measured Within a 200 mm (7.87 in) Area that Includes 2 Runner Port Openings	0.3 mm	0.118 in
Lubrication System		
• Oil Capacity - with Filter	5.68 liters	6.0 quarts
• Oil Capacity - without Filter	5.2 liters	5.5 quarts
• Oil Pressure - Minimum - Hot	41 kPa at 1,000 engine RPM 124 kPa at 2,000 engine RPM 165 kPa at 4,000 engine RPM	6 psig at 1,000 engine RPM 18 psig at 2,000 engine RPM 24 psig at 4,000 engine RPM
• Active Fuel Management Relief Valve Oil Pressure - as Measured at Oil Pressure Sensor Location	379-517 kPa Maximum	55-75 psig Maximum
Oil Pan		
• Front Cover Alignment - at Oil Pan Surface	0.0-0.5 mm	0.0-0.02 in
• Crankshaft Rear Oil Seal Housing Alignment -		

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

at Oil Pan Surface	0.0-0.5 mm	0.0-0.02 in
<ul style="list-style-type: none"> Oil Pan Alignment - to Rear of Engine Block at Transmission Bell Housing Mounting Surface 	0.0-0.1 mm	0.0-0.004 in
Piston Rings		
<ul style="list-style-type: none"> Piston Ring End Gap - First Compression Ring - Measured in Cylinder Bore - Production 	0.23-0.44 mm	0.009-0.017 in
<ul style="list-style-type: none"> Piston Ring End Gap - First Compression Ring - Measured in Cylinder Bore - Service 	0.23-0.5 mm	0.009-0.0196 in
<ul style="list-style-type: none"> Piston Ring End Gap - Second Compression Ring - Measured in Cylinder Bore - Production 	0.44-0.7 mm	0.017-0.027 in
<ul style="list-style-type: none"> Piston Ring End Gap - Second Compression Ring - Measured in Cylinder Bore - Service 	0.44-0.76 mm	0.0173-0.03 in
<ul style="list-style-type: none"> Piston Ring End Gap - Oil Control Ring - Measured in Cylinder Bore - Production 	0.18-0.75 mm	0.007-0.029 in
<ul style="list-style-type: none"> Piston Ring End Gap - Oil Control Ring - Measured in Cylinder Bore - Service 	0.18-0.81 mm	0.007-0.032 in
<ul style="list-style-type: none"> Piston Ring-to-Groove Clearance - First Compression Ring - Production 	0.04-0.085 mm	0.00157-0.00335 in
<ul style="list-style-type: none"> Piston Ring-to-Groove Clearance - First Compression Ring - Service 	0.04-0.085 mm	0.00157-0.00335 in
<ul style="list-style-type: none"> Piston Ring-to-Groove Clearance - Second Compression Ring - Production 	0.04-0.078 mm	0.00157-0.0031 in
<ul style="list-style-type: none"> Piston Ring-to-Groove Clearance - Second Compression Ring - Service 	0.04-0.078 mm	0.00157-0.0031 in
<ul style="list-style-type: none"> Piston Ring-to-Groove Clearance - Oil Control Ring - Production 	0.012-0.2 mm	0.0005-0.0078 in
<ul style="list-style-type: none"> Piston Ring-to-Groove Clearance - Oil Control Ring - Service 	0.012-0.2 mm	0.0005-0.0078 in
Pistons and Pins		
<ul style="list-style-type: none"> Pin - Piston Pin Clearance-to-Piston Pin Bore - Production 	0.002-0.01 mm	0.00008-0.0004 in
<ul style="list-style-type: none"> Pin - Piston Pin Clearance-to-Piston Pin Bore - Service 	0.002-0.015 mm	0.00008-0.0006 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

● Pin - Piston Pin Diameter	23.952-23.955 mm	0.943-0.943 in
● Pin - Piston Pin Fit in Connecting Rod Bore - Production	0.007-0.02 mm	0.00027-0.00078 in
● Pin - Piston Pin Fit in Connecting Rod Bore - Service	0.007-0.022 mm	0.00027-0.00086 in
● Piston - Piston Diameter - Measured Over Skirt Coating	96.002-96.036 mm	3.779-3.78 in
● Piston - Piston to Bore Clearance - Production	-0.036 to +0.016 mm	-0.0014 to +0.0006 in
● Piston - Piston to Bore Clearance - Service Limit with Skirt Coating Worn Off	0.071 mm	0.0028 in
Valve System		
● Valves - Valve Face Angle	45 degrees	
● Valves - Valve Face Width	1.25 mm	0.05 in
● Valves - Valve Lash	Net Lash - No Adjustment	
● Valve Lift - Exhaust - Non Active Fuel Management	12.24 mm	0.488 in
● Valve Lift - Exhaust - Active Fuel Management	12.46 mm	0.491 in
● Valve Lift - Intake - Non Active Fuel Management	12.24 mm	0.488 in
● Valve Lift - Intake - Active Fuel Management	12.46 mm	0.491 in
● Valves - Valve Seat Angle	46 degrees	
● Valves - Valve Seat Runout	0.05 mm	0.002 in
● Valves - Valve Seat Width - Exhaust	1.78 mm	0.07 in
● Valves - Seat Width - Intake	1.02 mm	0.04 in
● Valves - Valve Stem Diameter - Production	7.955-7.976 mm	0.313-0.314 in
● Valves - Valve Stem Diameter - Service	7.95 mm	0.313 in
● Valves - Valve Stem-to-Guide Clearance - Production - Exhaust	0.025-0.066 mm	0.001-0.0026 in
● Valves - Valve Stem-to-Guide Clearance - Service - Exhaust	0.093 mm	0.0037 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Valves - Valve Stem-to-Guide Clearance - Production - Intake	0.025-0.066 mm	0.001-0.0026 in
• Valves - Valve Stem-to-Guide Clearance - Service - Intake	0.093 mm	0.0037 in
• Rocker Arms - Valve Rocker Arm Ratio	1.70:1	
• Valve Springs - Valve Spring Free Length	52.9 mm	2.08 in
• Valve Springs - Valve Spring Installed Height	45.75 mm	1.8 in
• Valve Springs - Valve Spring Load - Closed	340 N at 45.75 mm	76 lb at 1.8 in
• Valve Springs - Valve Spring Load - Open	980 N at 33.55 mm	220 lb at 1.32 in

ENGINE MECHANICAL SPECIFICATIONS (RPO LY6 VIN K)

Application	Specification	
	Metric	English
General		
• Engine Type	V8	
• Displacement	6.0L	364 CID
• RPO	LY6	
• VIN	K	
• Bore	101.618-101.636 mm	4.0007-4.0017 in
• Stroke	92.0 mm	3.622 in
• Compression Ratio	9.67:1	
• Firing Order	1-8-7-2-6-5-4-3	
• Spark Plug Gap	1.02 mm	0.04 in
Block		
• Camshaft Bearing Bore 1 and 5 Diameter	59.58-59.63 mm	2.345-2.347 in
• Camshaft Bearing Bore 2 and 4 Diameter	59.08-59.13 mm	2.325-2.327 in
• Camshaft Bearing Bore 3 Diameter	58.58-58.63 mm	2.306-2.308 in
• Crankshaft Main Bearing Bore Diameter	69.871-69.889 mm	2.75-2.751 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Crankshaft Main Bearing Bore Out-of-Round	0.006 mm	0.0002 in
• Cylinder Bore Diameter	101.618-101.636 mm	4.0007-4.0017 in
• Cylinder Head Deck Height - Measuring from the Centerline of Crankshaft to the Deck Face	234.57-234.82 mm	9.235-9.245 in
• Cylinder Head Deck Surface Flatness - Measured Within a 152.4 mm (6.0 in) Area	0.11 mm	0.004 in
• Cylinder Head Deck Surface Flatness - Measuring the Overall Length of the Block Deck	0.22 mm	0.008 in
• Valve Lifter Bore Diameter	21.417-21.443 mm	0.843-0.844 in
Camshaft		
• Camshaft End Play	0.025-0.305 mm	0.001-0.012 in
• Camshaft Journal Diameter	54.99-55.04 mm	2.164-2.166 in
• Camshaft Journal Out-of-Round	0.025 mm	0.001 in
• Camshaft Lobe Lift - Exhaust	7.13 mm	0.281 in
• Camshaft Lobe Lift - Intake	6.96 mm	0.274 in
• Camshaft Runout - Measured at the Intermediate Journals	0.05 mm	0.002 in
Connecting Rod		
• Connecting Rod Bearing Clearance - Production	0.023-0.065 mm	0.0009-0.0025 in
• Connecting Rod Bearing Clearance - Service	0.023-0.076 mm	0.0009-0.003 in
• Connecting Rod Bore Diameter - Bearing End	56.505-56.525 mm	2.224-2.225 in
• Connecting Rod Bore Out-of-Round - Bearing End - Production	0.004-0.008 mm	0.00015-0.0003 in
• Connecting Rod Bore Out-of-Round - Bearing End - Service	0.004-0.008 mm	0.00015-0.0003 in
• Connecting Rod Side Clearance	0.11-0.51 mm	0.00433-0.02 in
Crankshaft		
• Connecting Rod Journal Diameter - Production	53.318-53.338 mm	2.0991-2.0999 in
• Connecting Rod Journal Diameter - Service	53.308 mm	2.0987 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Connecting Rod Journal Out-of-Round - Production	0.005 mm	0.0002 in
• Connecting Rod Journal Out-of-Round - Service	0.01 mm	0.0004 in
• Connecting Rod Journal Taper - Maximum for 1/2 of Journal Length - Production	0.005 mm	0.0002 in
• Connecting Rod Journal Taper - Maximum for 1/2 of Journal Length - Service	0.02 mm	0.00078 in
• Crankshaft End Play	0.04-0.2 mm	0.0015-0.0078 in
• Crankshaft Main Bearing Clearance - Production	0.02-0.052 mm	0.0008-0.0021 in
• Crankshaft Main Bearing Clearance - Service	0.02-0.065 mm	0.0008-0.0025 in
• Crankshaft Main Journal Diameter - Production	64.992-65.008 mm	2.558-2.559 in
• Crankshaft Main Journal Diameter - Service	64.992 mm	2.558 in
• Crankshaft Main Journal Out-of-Round - Production	0.003 mm	0.000118 in
• Crankshaft Main Journal Out-of-Round - Service	0.008 mm	0.0003 in
• Crankshaft Main Journal Taper - Production	0.01 mm	0.0004 in
• Crankshaft Main Journal Taper - Service	0.02 mm	0.00078 in
• Crankshaft Rear Flange Runout	0.05 mm	0.002 in
• Crankshaft Reluctor Ring Runout - Measured 1.0 mm (0.04 in) Below Tooth Diameter	0.7 mm	0.028 in
• Crankshaft Thrust Surface - Production	26.14-26.22 mm	1.029-1.0315 in
• Crankshaft Thrust Surface - Service	26.22 mm	1.0315 in
• Crankshaft Thrust Surface Runout	0.025 mm	0.001 in
Cylinder Head		
• Cylinder Head Height/Thickness - Measured from the Cylinder Head Deck to the Valve Rocker Arm Cover Seal Surface	120.2 mm	4.732 in
• Surface Flatness - Block Deck - Measured	0.08 mm	0.003 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Within a 152.4 mm (6.0 in) Area		
• Surface Flatness - Block Deck - Measuring the Overall Length of the Cylinder Head	0.1 mm	0.004 in
• Surface Flatness - Exhaust Manifold Deck	0.13 mm	0.005 in
• Surface Flatness - Intake Manifold Deck	0.08 mm	0.0031 in
• Valve Guide Installed Height - Measured from the Spring Seat Surface to the Top of the Guide	17.32 mm	0.682 in
Intake Manifold		
• Surface Flatness - Measured at Gasket Sealing Surfaces and Measured Within a 200 mm (7.87 in) Area that Includes 2 Runner Port Openings	0.3 mm	0.118 in
Lubrication System		
• Oil Capacity - with Filter	5.68 liters	6.0 quarts
• Oil Capacity - without Filter	5.20 liters	5.5 quarts
• Oil Pressure - Minimum - Hot	41 kPa at 1,000 engine RPM 124 kPa at 2,000 engine RPM 165 kPa at 4,000 engine RPM	6 psig at 1,000 engine RPM 18 psig at 2,000 engine RPM 24 psig at 4,000 engine RPM
• Active Fuel Management Relief Valve Oil Pressure - as Measured at Oil Pressure Sensor Location	379-517 kPa Maximum	55-75 psig Maximum
Oil Pan		
• Front Cover Alignment - at Oil Pan Surface	0.0-0.5 mm	0.0-0.02 in
• Crankshaft Rear Oil Seal Housing Alignment - at Oil Pan Surface	0.0-0.5 mm	0.0-0.02 in
• Oil Pan Alignment - to Rear of Engine Block at Transmission Bell Housing Mounting Surface	0.0-0.1 mm	0.0-0.004 in
Piston Rings		
• Piston Ring End Gap - First Compression Ring - Measured in Cylinder Bore - Production	0.20-0.41 mm	0.008-0.016 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Piston Ring End Gap - First Compression Ring - Measured in Cylinder Bore - Service	0.20-0.41 mm	0.008-0.016 in
• Piston Ring End Gap - Second Compression Ring - Measured in Cylinder Bore - Production	0.37-0.69 mm	0.015-0.027 in
• Piston Ring End Gap - Second Compression Ring - Measured in Cylinder Bore - Service	0.37-0.69 mm	0.015-0.027 in
• Piston Ring End Gap - Oil Control Ring - Measured in Cylinder Bore - Production	0.22-0.79 mm	0.009-0.031 in
• Piston Ring End Gap - Oil Control Ring - Measured in Cylinder Bore - Service	0.22-0.79 mm	0.009-0.031 in
• Piston Ring-to-Groove Clearance - First Compression Ring - Production	0.030-0.100 mm	0.0012-0.0040 in
• Piston Ring-to-Groove Clearance - First Compression Ring - Service	0.030-0.100 mm	0.0012-0.0040 in
• Piston Ring-to-Groove Clearance - Second Compression Ring - Production	0.035-0.078 mm	0.0014-0.0031 in
• Piston Ring-to-Groove Clearance - Second Compression Ring - Service	0.035-0.078 mm	0.0014-0.0031 in
• Piston Ring-to-Groove Clearance - Oil Control Ring - Production	0.013-0.201 mm	0.0005-0.0079 in
• Piston Ring-to-Groove Clearance - Oil Control Ring - Service	0.013-0.201 mm	0.0005-0.0079 in
Pistons and Pins		
• Pin - Piston Pin Clearance-to-Piston Pin Bore - Production	0.002-0.01 mm	0.00008-0.0004 in
• Pin - Piston Pin Clearance-to-Piston Pin Bore - Service	0.002-0.015 mm	0.00008-0.0006 in
• Pin - Piston Pin Diameter	23.952-23.955 mm	0.9429-0.9431 in
• Pin - Piston Pin Fit in Connecting Rod Bore - Production	0.007-0.02 mm	0.00027-0.00078 in
• Pin - Piston Pin Fit in Connecting Rod Bore - Service	0.007-0.0022 mm	0.00027-0.000086 in
• Piston - Piston Diameter - Measured Over	101.611-101.642	4.0-4.001 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Skirt Coating	mm	
• Piston - Piston-to-Bore Clearance - Production	-0.022 to +0.08 mm	-0.0009 to +0.0012 in
• Piston - Piston-to-Bore Clearance - Service Limit with Skirt Coating Worn Off	0.024-0.08 mm	0.00094-0.0031 in
Valve System		
• Valves - Valve Face Angle	45 degrees	
• Valves - Valve Face Width	1.25 mm	0.05 in
• Valves - Valve Lash	Net Lash - No Adjustment	
• Valve Lift - Exhaust	12.12 mm	0.477 in
• Valve Lift - Intake	11.83 mm	0.466 in
• Valves - Valve Seat Angle	46 degrees	
• Valves - Valve Seat Runout	0.05 mm	0.002 in
• Valves - Valve Seat Width - Exhaust	1.78 mm	0.07 in
• Valves - Valve Seat Width - Intake	1.02 mm	0.04 in
• Valves - Valve Stem Diameter - Production	7.955-7.976 mm	0.313-0.314 in
• Valves - Valve Stem Diameter - Service	7.95 mm	0.313 in
• Valves - Valve Stem-to-Guide Clearance - Production - Exhaust	0.025-0.066 mm	0.001-0.0026 in
• Valves - Valve Stem-to-Guide Clearance - Service - Exhaust	0.093 mm	0.0037 in
• Valves - Valve Stem-to-Guide Clearance - Production - Intake	0.025-0.066 mm	0.001-0.0026 in
• Valves - Valve Stem-to-Guide Clearance - Service - Intake	0.093 mm	0.0037 in
• Rocker Arms - Valve Rocker Arm Ratio	1.70:1	
• Valve Springs - Valve Spring Free Length	52.9 mm	2.08 in
• Valve Springs - Valve Spring Installed Height	45.75 mm	1.8 in
• Valve Springs - Valve Spring Load - Closed	340 N at 45.75 mm	76 lb at 1.8 in
• Valve Springs - Valve Spring Load - Open	980 N at 33.55 mm	220 lb at 1.32 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

ENGINE MECHANICAL SPECIFICATIONS (RPO L76 VIN Y)

Application	Specification	
	Metric	English
General		
• Engine Type	V8	
• Displacement	6.0L	364 CID
• RPO	L76	
• VIN	Y	
• Bore	101.618-101.636 mm	4.0007-4.0017 in
• Stroke	92.0 mm	3.622 in
• Compression Ratio	9.67:1	
• Firing Order	1-8-7-2-6-5-4-3	
• Active Fuel Management Cylinders	1-4-6-7	
• Spark Plug Gap	1.02 mm	0.04 in
Block		
• Camshaft Bearing Bore 1 and 5 Diameter	59.58-59.63 mm	2.345-2.347 in
• Camshaft Bearing Bore 2 and 4 Diameter	59.08-59.13 mm	2.325-2.327 in
• Camshaft Bearing Bore 3 Diameter	58.58-58.63 mm	2.306-2.308 in
• Crankshaft Main Bearing Bore Diameter	69.871-69.889 mm	2.75-2.751 in
• Crankshaft Main Bearing Bore Out-of-Round	0.006 mm	0.0002 in
• Cylinder Bore Diameter	101.618-101.636 mm	4.0007-4.0017 in
• Cylinder Head Deck Height - Measuring from the Centerline of Crankshaft to the Deck Face	234.57-234.82 mm	9.235-9.245 in
• Cylinder Head Deck Surface Flatness - Measured Within a 152.4 mm (6.0 in) Area	0.11 mm	0.004 in
• Cylinder Head Deck Surface Flatness - Measuring the Overall Length of the Block Deck	0.22 mm	0.008 in
• Valve Lifter Bore Diameter	21.417-21.443 mm	0.843-0.844 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Camshaft

• Camshaft End Play	0.025-0.305 mm	0.001-0.012 in
• Camshaft Journal Diameter	54.99-55.04 mm	2.164-2.166 in
• Camshaft Journal Out-of-Round	0.025 mm	0.001 in
• Camshaft Lobe Lift - Exhaust - Non Active Fuel Management Cylinders	7.17 mm	0.282 in
• Camshaft Lobe Lift - Exhaust - Active Fuel Management Cylinders	7.3 mm	0.287 in
• Camshaft Lobe Lift - Intake - Non Active Fuel Management Cylinders	7.08 mm	0.279 in
• Camshaft Lobe Lift - Intake - Active Fuel Management Cylinders	7.2 mm	0.283 in
• Camshaft Runout - Measured at the Intermediate Journals	0.05 mm	0.002 in

Connecting Rod

• Connecting Rod Bearing Clearance - Production	0.023-0.065 mm	0.0009-0.0025 in
• Connecting Rod Bearing Clearance - Service	0.023-0.076 mm	0.0009-0.003 in
• Connecting Rod Bore Diameter - Bearing End	56.505-56.525 mm	2.224-2.225 in
• Connecting Rod Bore Out-of-Round - Bearing End - Production	0.004-0.008 mm	0.00015-0.0003 in
• Connecting Rod Bore Out-of-Round - Bearing End - Service	0.004-0.008 mm	0.00015-0.0003 in
• Connecting Rod Side Clearance	0.11-0.51 mm	0.00433-0.02 in

Crankshaft

• Connecting Rod Journal Diameter - Production	53.318-53.338 mm	2.0991-2.0999 in
• Connecting Rod Journal Diameter - Service	53.308 mm	2.0987 in
• Connecting Rod Journal Out-of-Round - Production	0.005 mm	0.0002 in
• Connecting Rod Journal Out-of-Round - Service	0.01 mm	0.0004 in
• Connecting Rod Journal Taper - Maximum for	0.005 mm	0.0002 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1/2 of Journal Length - Production		
• Connecting Rod Journal Taper - Maximum for 1/2 of Journal Length - Service	0.02 mm	0.00078 in
• Crankshaft End Play	0.04-0.2 mm	0.0015-0.0078 in
• Crankshaft Main Bearing Clearance - Production	0.02-0.052 mm	0.0008-0.0021 in
• Crankshaft Main Bearing Clearance - Service	0.02-0.065 mm	0.0008-0.0025 in
• Crankshaft Main Journal Diameter - Production	64.992-65.008 mm	2.558-2.559 in
• Crankshaft Main Journal Diameter - Service	64.992 mm	2.558 in
• Crankshaft Main Journal Out-of-Round - Production	0.003 mm	0.000118 in
• Crankshaft Main Journal Out-of-Round - Service	0.008 mm	0.0003 in
• Crankshaft Main Journal Taper - Production	0.01 mm	0.0004 in
• Crankshaft Main Journal Taper - Service	0.02 mm	0.00078 in
• Crankshaft Rear Flange Runout	0.05 mm	0.002 in
• Crankshaft Reluctor Ring Runout - Measured 1.0 mm (0.04 in) Below Tooth Diameter	0.7 mm	0.028 in
• Crankshaft Thrust Surface - Production	26.14-26.22 mm	1.029-1.0315 in
• Crankshaft Thrust Surface - Service	26.22 mm	1.0315 in
• Crankshaft Thrust Surface Runout	0.025 mm	0.001 in
Cylinder Head		
• Cylinder Head Height/Thickness - Measured from the Cylinder Head Deck to the Valve Rocker Arm Cover Seal Surface	120.2 mm	4.732 in
• Surface Flatness - Block Deck - Measured Within a 152.4 mm (6.0 in) Area	0.08 mm	0.003 in
• Surface Flatness - Block Deck - Measuring the Overall Length of the Cylinder Head	0.1 mm	0.004 in
• Surface Flatness - Exhaust Manifold Deck	0.13 mm	0.005 in
• Surface Flatness - Intake Manifold Deck	0.08 mm	0.0031 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

<ul style="list-style-type: none"> Valve Guide Installed Height - Measured from the Spring Seat Surface to the Top of the Guide 	17.32 mm	0.682 in
Intake Manifold		
<ul style="list-style-type: none"> Surface Flatness - Measured at Gasket Sealing Surfaces and Measured Within a 200 mm (7.87 in) Area that Includes 2 Runner Port Openings 	0.3 mm	0.118 in
Lubrication System		
<ul style="list-style-type: none"> Oil Capacity - with Filter 	5.68 liters	6.0 quarts
<ul style="list-style-type: none"> Oil Capacity - without Filter 	5.20 liters	5.5 quarts
<ul style="list-style-type: none"> Oil Pressure - Minimum - Hot 	41 kPa at 1,000 engine RPM 124 kPa at 2,000 engine RPM 165 kPa at 4,000 engine RPM	6 psig at 1,000 engine RPM 18 psig at 2,000 engine RPM 24 psig at 4,000 engine RPM
<ul style="list-style-type: none"> Active Fuel Management Relief Valve Oil Pressure - as Measured at Oil Pressure Sensor Location 	379-517 kPa Maximum	55-75 psig Maximum
Oil Pan		
<ul style="list-style-type: none"> Front Cover Alignment - at Oil Pan Surface 	0.0-0.5 mm	0.0-0.02 in
<ul style="list-style-type: none"> Crankshaft Rear Oil Seal Housing Alignment - at Oil Pan Surface 	0.0-0.5 mm	0.0-0.02 in
<ul style="list-style-type: none"> Oil Pan Alignment - to Rear of Engine Block at Transmission Bell Housing Mounting Surface 	0.0-0.1 mm	0.0-0.004 in
Piston Rings		
<ul style="list-style-type: none"> Piston Ring End Gap - First Compression Ring - Measured in Cylinder Bore - Production 	0.20-0.41 mm	0.008-0.016 in
<ul style="list-style-type: none"> Piston Ring End Gap - First Compression Ring - Measured in Cylinder Bore - Service 	0.20-0.41 mm	0.008-0.016 in
<ul style="list-style-type: none"> Piston Ring End Gap - Second Compression Ring - Measured in Cylinder Bore - Production 	0.37-0.69 mm	0.015-0.027 in
<ul style="list-style-type: none"> Piston Ring End Gap - Second Compression Ring - Measured in Cylinder Bore - Service 	0.37-0.69 mm	0.015-0.027 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Piston Ring End Gap - Oil Control Ring - Measured in Cylinder Bore - Production	0.22-0.79 mm	0.009-0.031 in
• Piston Ring End Gap - Oil Control Ring - Measured in Cylinder Bore - Service	0.22-0.79 mm	0.009-0.031 in
• Piston Ring-to-Groove Clearance - First Compression Ring - Production	0.030-0.10 mm	0.0012-0.0040 in
• Piston Ring-to-Groove Clearance - First Compression Ring - Service	0.030-0.10 mm	0.0012-0.0040 in
• Piston Ring-to-Groove Clearance - Second Compression Ring - Production	0.035-0.078 mm	0.0014-0.0031 in
• Piston Ring-to-Groove Clearance - Second Compression Ring - Service	0.035-0.078 mm	0.0014-0.0031 in
• Piston Ring-to-Groove Clearance - Oil Control Ring - Production	0.013-0.201 mm	0.0005-0.0079 in
• Piston Ring-to-Groove Clearance - Oil Control Ring - Service	0.013-0.201 mm	0.0005-0.0079 in
Pistons and Pins		
• Pin - Piston Pin Clearance- to-Piston Pin Bore - Production	0.002-0.01 mm	0.00008-0.0004 in
• Pin - Piston Pin Clearance-to-Piston Pin Bore - Service	0.002-0.015 mm	0.00008-0.0006 in
• Pin - Piston Pin Diameter	23.952-23.955 mm	0.9429-0.9431 in
• Pin - Piston Pin Fit in Connecting Rod Bore - Production	0.007-0.02 mm	0.00027-0.00078 in
• Pin - Piston Pin Fit in Connecting Rod Bore - Service	0.007-0.0022 mm	0.00027-0.000086 in
• Piston - Piston Diameter - Measured Over Skirt Coating	101.611-101.642 mm	4.0-4.001 in
• Piston - Piston to Bore Clearance - Production	-0.022 to +0.08 mm	-0.0009 to +0.0012 in
• Piston - Piston to Bore Clearance - Service Limit With Skirt Coating Worn Off	0.024-0.08 mm	0.00094-0.0031 in
Valve System		

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Valves - Valve Face Angle	45 degrees	
• Valves - Valve Face Width	1.25 mm	0.05 in
• Valves - Valve Lash	Net Lash - No Adjustment	
• Valve Lift - Exhaust - Non Active Fuel Management	12.19 mm	0.480 in
• Valve Lift - Exhaust - Active Fuel Management	12.41 mm	0.489 in
• Valve Lift - Intake - Non Active Fuel Management	12.04 mm	0.474 in
• Valve Lift - Intake - Active Fuel Management	12.24 mm	0.488 in
• Valves - Valve Seat Angle	46 degrees	
• Valves - Valve Seat Runout	0.05 mm	0.002 in
• Valves - Valve Seat Width - Exhaust	1.78 mm	0.07 in
• Valves - Valve Seat Width - Intake	1.02 mm	0.04 in
• Valves - Valve Stem Diameter - Production	7.955-7.976 mm	0.313-0.314 in
• Valves - Valve Stem Diameter - Service	7.95 mm	0.313 in
• Valves - Valve Stem-to-Guide Clearance - Production - Exhaust	0.025-0.066 mm	0.001-0.0026 in
• Valves - Valve Stem-to-Guide Clearance - Service - Exhaust	0.093 mm	0.0037 in
• Valves - Valve Stem-to-Guide Clearance - Production - Intake	0.025-0.066 mm	0.001-0.0026 in
• Valves - Valve Stem-to-Guide Clearance - Service - Intake	0.093 mm	0.0037 in
• Rocker Arms - Valve Rocker Arm Ratio	1.70:1	
• Valve Springs - Valve Spring Free Length	52.9 mm	2.08 in
• Valve Springs - Valve Spring Installed Height	45.75 mm	1.8 in
• Valve Springs - Valve Spring Load - Closed	340 N at 45.75 mm	76 lb at 1.8 in
• Valve Springs - Valve Spring Load - Open	980 N at 33.55 mm	220 lb at 1.32 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

ENGINE MECHANICAL SPECIFICATIONS (RPO L92 VIN 8)

Application	Specification	
	Metric	English
General		
• Engine Type	V8	
• Displacement	6.2L	376 CID
• RPO	L92	
• VIN	8	
• Bore	103.241-103.259 mm	4.065-4.065 in
• Stroke	92.0 mm	3.622 in
• Compression Ratio	10.5:1	
• Firing Order	1-8-7-2-6-5-4-3	
• Spark Plug Gap	1.02 mm	0.04 in
Block		
• Camshaft Bearing Bore 1 and 5 Diameter	59.58-59.63 mm	2.345-2.347 in
• Camshaft Bearing Bore 2 and 4 Diameter	59.08-59.13 mm	2.325-2.327 in
• Camshaft Bearing Bore 3 Diameter	58.58-58.63 mm	2.306-2.308 in
• Crankshaft Main Bearing Bore Diameter	69.871-69.889 mm	2.75-2.751 in
• Crankshaft Main Bearing Bore Out-of-Round	0.006 mm	0.0002 in
• Cylinder Bore Diameter	103.241-103.259 mm	4.065-4.065 in
• Cylinder Head Deck Height - Measuring from the Centerline of Crankshaft to the Deck Face	234.57-234.82 mm	9.235-9.245 in
• Cylinder Head Deck Surface Flatness - Measured Within a 152.4 mm (6.0 in) Area	0.11 mm	0.004 in
• Cylinder Head Deck Surface Flatness - Measuring the Overall Length of the Block Deck	0.22 mm	0.008 in
• Valve Lifter Bore Diameter	21.417-21.443 mm	0.843-0.844 in
Camshaft		

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Camshaft End Play	0.025-0.305 mm	0.001-0.012 in
• Camshaft Journal Diameter	54.99-55.04 mm	2.164-2.166 in
• Camshaft Journal Out-of-Round	0.025 mm	0.001 in
• Camshaft Lobe Lift - Exhaust	7.48 mm	0.294 in
• Camshaft Lobe Lift - Intake	7.48 mm	0.294 in
• Camshaft Runout - Measured at the Intermediate Journals	0.05 mm	0.002 in
Connecting Rod		
• Connecting Rod Bearing Clearance - Production	0.023-0.065 mm	0.0009-0.0025 in
• Connecting Rod Bearing Clearance - Service	0.023-0.076 mm	0.0009-0.003 in
• Connecting Rod Bore Diameter - Bearing End	56.505-56.525 mm	2.224-2.225 in
• Connecting Rod Bore Out-of-Round - Bearing End - Production	0.004-0.008 mm	0.00015-0.0003 in
• Connecting Rod Bore Out-of-Round - Bearing End - Service	0.004-0.008 mm	0.00015-0.0003 in
• Connecting Rod Side Clearance	0.11-0.51 mm	0.00433-0.02 in
Crankshaft		
• Connecting Rod Journal Diameter - Production	53.318-53.338 mm	2.0991-2.0999 in
• Connecting Rod Journal Diameter - Service	53.308 mm	2.0987 in
• Connecting Rod Journal Out-of-Round - Production	0.005 mm	0.0002 in
• Connecting Rod Journal Out-of-Round - Service	0.01 mm	0.0004 in
• Connecting Rod Journal Taper - Maximum for 1/2 of Journal Length - Production	0.005 mm	0.0002 in
• Connecting Rod Journal Taper - Maximum for 1/2 of Journal Length - Service	0.02 mm	0.00078 in
• Crankshaft End Play	0.04-0.2 mm	0.0015-0.0078 in
• Crankshaft Main Bearing Clearance - Production	0.02-0.052 mm	0.0008-0.0021 in
• Crankshaft Main Bearing Clearance - Service	0.02-0.065 mm	0.0008-0.0025 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Crankshaft Main Journal Diameter - Production	64.992-65.008 mm	2.558-2.559 in
• Crankshaft Main Journal Diameter - Service	64.992 mm	2.558 in
• Crankshaft Main Journal Out-of-Round - Production	0.003 mm	0.000118 in
• Crankshaft Main Journal Out-of-Round - Service	0.008 mm	0.0003 in
• Crankshaft Main Journal Taper - Production	0.01 mm	0.0004 in
• Crankshaft Main Journal Taper - Service	0.02 mm	0.00078 in
• Crankshaft Rear Flange Runout	0.05 mm	0.002 in
• Crankshaft Reluctor Ring Runout - Measured 1.0 mm (0.04 in) Below Tooth Diameter	0.7 mm	0.028 in
• Crankshaft Thrust Surface - Production	26.14-26.22 mm	1.029-1.0315 in
• Crankshaft Thrust Surface - Service	26.22 mm	1.0315 in
• Crankshaft Thrust Surface Runout	0.025 mm	0.001 in
Cylinder Head		
• Cylinder Head Height/Thickness - Measured from the Cylinder Head Deck to the Valve Rocker Arm Cover Seal Surface	120.2 mm	4.732 in
• Surface Flatness - Block Deck - Measured Within a 152.4 mm (6.0 in) Area	0.08 mm	0.003 in
• Surface Flatness - Block Deck - Measuring the Overall Length of the Cylinder Head	0.1 mm	0.004 in
• Surface Flatness - Exhaust Manifold Deck	0.13 mm	0.005 in
• Surface Flatness - Intake Manifold Deck	0.08 mm	0.0031 in
• Valve Guide Installed Height - Measured from the Spring Seat Surface to the Top of the Guide	17.32 mm	0.682 in
Intake Manifold		
• Surface Flatness - Measured at Gasket Sealing Surfaces and Measured Within a 200 mm (7.87 in) Area that Includes 2 Runner Port Openings	0.3 mm	0.118 in
Lubrication System		

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Oil Capacity - with Filter	5.68 liters	6.0 quarts
• Oil Capacity - without Filter	5.20 liters	5.5 quarts
• Oil Pressure - Minimum - Hot	41 kPa at 1,000 engine RPM 124 kPa at 2,000 engine RPM 165 kPa at 4,000 engine RPM	6 psig at 1,000 engine RPM 18 psig at 2,000 engine RPM 24 psig at 4,000 engine RPM
• Active Fuel Management Relief Valve Oil Pressure - as Measured at Oil Pressure Sensor Location	379-517 kPa Maximum	55-75 psig Maximum
Oil Pan		
• Front Cover Alignment - at Oil Pan Surface	0.0-0.5 mm	0.0-0.02 in
• Crankshaft Rear Oil Seal Housing Alignment - at Oil Pan Surface	0.0-0.5 mm	0.0-0.02 in
• Oil Pan Alignment - to Rear of Engine Block at Transmission Bell Housing Mounting Surface	0.0-0.1 mm	0.0-0.004 in
Piston Rings		
• Piston Ring End Gap - First Compression Ring - Measured in Cylinder Bore - Production	0.23-0.44 mm	0.009-0.017 in
• Piston Ring End Gap - First Compression Ring - Measured in Cylinder Bore - Service	0.23-0.5 mm	0.009-0.0196 in
• Piston Ring End Gap - Second Compression Ring - Measured in Cylinder Bore - Production	0.44-0.7 mm	0.017-0.027 in
• Piston Ring End Gap - Second Compression Ring - Measured in Cylinder Bore - Service	0.44-0.76 mm	0.0173-0.03 in
• Piston Ring End Gap - Oil Control Ring - Measured in Cylinder Bore - Production	0.18-0.75 mm	0.007-0.029 in
• Piston Ring End Gap - Oil Control Ring - Measured in Cylinder Bore - Service	0.18-0.81 mm	0.007-0.032 in
• Piston Ring-to-Groove Clearance - First Compression Ring - Production	0.04-0.085 mm	0.00157-0.00335 in
• Piston Ring-to-Groove Clearance - First	0.04-0.085 mm	0.00157-0.00335

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Compression Ring - Service	in	
<ul style="list-style-type: none"> ● Piston Ring-to-Groove Clearance - Second Compression Ring - Production 	0.04-0.078 mm	0.00157-0.0031 in
<ul style="list-style-type: none"> ● Piston Ring-to-Groove Clearance - Second Compression Ring - Service 	0.04-0.078 mm	0.00157-0.0031 in
<ul style="list-style-type: none"> ● Piston Ring-to-Groove Clearance - Oil Control Ring - Production 	0.012-0.2 mm	0.0005-0.0078 in
<ul style="list-style-type: none"> ● Piston Ring-to-Groove Clearance - Oil Control Ring - Service 	0.012-0.2 mm	0.0005-0.0078 in
Pistons and Pins		
<ul style="list-style-type: none"> ● Pin - Piston Pin Clearance-to-Piston Pin Bore - Production 	0.002-0.01 mm	0.00008-0.0004 in
<ul style="list-style-type: none"> ● Pin - Piston Pin Clearance-to-Piston Pin Bore - Service 	0.002-0.015 mm	0.00008-0.0006 in
<ul style="list-style-type: none"> ● Pin - Piston Pin Diameter 	23.952-23.955 mm	0.943-0.943 in
<ul style="list-style-type: none"> ● Pin - Piston Pin Fit in Connecting Rod Bore - Production 	0.007-0.02 mm	0.00027-0.00078 in
<ul style="list-style-type: none"> ● Pin - Piston Pin Fit in Connecting Rod Bore - Service 	0.007-0.022 mm	0.00027-0.00086 in
<ul style="list-style-type: none"> ● Piston - Piston Diameter - Measured Over Coating 	96.002-96.036 mm	3.779-3.78 in
<ul style="list-style-type: none"> ● Piston - Piston to Bore Clearance - Production 	-0.036 to +0.016 mm	-0.0014 to +0.0006 in
<ul style="list-style-type: none"> ● Piston - Piston to Bore Clearance - Service Limit With Skirt Coating Worn Off 	0.071 mm	0.0028 in
Valve System		
<ul style="list-style-type: none"> ● Valves - Valve Face Angle 	45 degrees	
<ul style="list-style-type: none"> ● Valves - Valve Face Width 	1.25 mm	0.05 in
<ul style="list-style-type: none"> ● Valves - Valve Lash 	Net Lash - No Adjustment	
<ul style="list-style-type: none"> ● Valve Lift - Exhaust 	12.72 mm	0.501 in
<ul style="list-style-type: none"> ● Valve Lift - Intake 	12.72 mm	0.501 in
<ul style="list-style-type: none"> ● Valves - Valve Seat Angle 	46 degrees	
	0.05 mm	0.002 in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• Valves - Valve Seat Runout		
• Valves - Valve Seat Width - Exhaust	1.78 mm	0.07 in
• Valves - Valve Seat Width - Intake	1.02 mm	0.04 in
• Valves - Valve Stem Diameter - Production	7.955-7.976 mm	0.313-0.314 in
• Valves - Valve Stem Diameter - Service	7.95 mm	0.313 in
• Valves - Valve Stem-to-Guide Clearance - Production - Exhaust	0.025-0.066 mm	0.001-0.0026 in
• Valves - Valve Stem-to-Guide Clearance - Service - Exhaust	0.093 mm	0.0037 in
• Valves - Valve Stem-to-Guide Clearance - Production - Intake	0.025-0.066 mm	0.001-0.0026 in
• Valves - Valve Stem-to-Guide Clearance - Service - Intake	0.093 mm	0.0037 in
• Rocker Arms - Valve Rocker Arm Ratio	1.70:1	
• Valve Springs - Valve Spring Free Length	52.9 mm	2.08 in
• Valve Springs - Valve Spring Installed Height	45.75 mm	1.8 in
• Valve Springs - Valve Spring Load - Closed	340 N at 45.75 mm	76 lb at 1.8 in
• Valve Springs - Valve Spring Load - Open	980 N at 33.55 mm	220 lb at 1.32 in

ENGINE CONTENT SPECIFICATIONS

RPO	VIN	Displacement	Camshaft Position (CMP) Actuator Control System	Active Fuel Management Control System	E85 Capable	Block Material
LY2	C	4.8L	No	No	No	Iron
LH6	M	5.3L	No	Yes	No	Aluminum
LMG	0	5.3L	No	Yes	Yes	Iron
LC9	3	5.3L	No	Yes	Yes	Aluminum
LY5	J	5.3L	No	Yes	No	Iron

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

LY6	K	6.0L	Yes	No	No	Iron
L76	Y	6.0L	Yes	Yes	No	Aluminum
L92	8	6.2L	Yes	No	No	Aluminum

SEALERS, ADHESIVES, AND LUBRICANTS

Application	Type of Material	GM Part Number	
		United States	Canada
Coolant Temperature Sensor Threads	Sealant	12346004	10953480
Cylinder Head Core Hole Plug	Threadlock	12345382	10953489
Cylinder Head Plug	Threadlock	12345382	10953489
Engine Block Coolant Drain Hole Plug Sealing Washer	Sealant	12346004	10953480
Engine Block Front Oil Gallery Plug	Threadlock	12345382	10953489
Engine Block Oil Gallery Plug Sealing Washers	Sealant	12346004	10953480
Engine Oil Pressure Sensor Threads	Sealant	12346004	10953480
Engine Oil Supplement	Fluorescent Dye	12345795	10953470
Exhaust Manifold Bolts	Threadlock	12345493	10953488
Flywheel/Flex Plate Bolts	Threadlock	12345382	10953489
Fuel Injection Fuel Rail Bolts	Threadlock	12345382	10953489
Ignition Coil Bracket-to-Valve Cover Studs	Threadlock	12345382	10953489
Ignition Coil-to-Bracket Bolts	Threadlock	12345382	10953489
Intake Manifold Bolts	Threadlock	12345382	10953489
Oil Pan Oil Gallery Plug Threads	Sealant	12346004	10953480
Oil Pan Surface at Front Cover and Rear Housing	Sealant	12378521	88901148
Thread Repair Component Cleaner	Cleaner	12346139	10953463
Thread Repair Component Cleaner	Cleaner	12377981	10953463
Thread Repair Cutting Oil	Lubricant	1052864	992881

THREAD REPAIR SPECIFICATIONS

Engine Block - Front/Rear Views

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

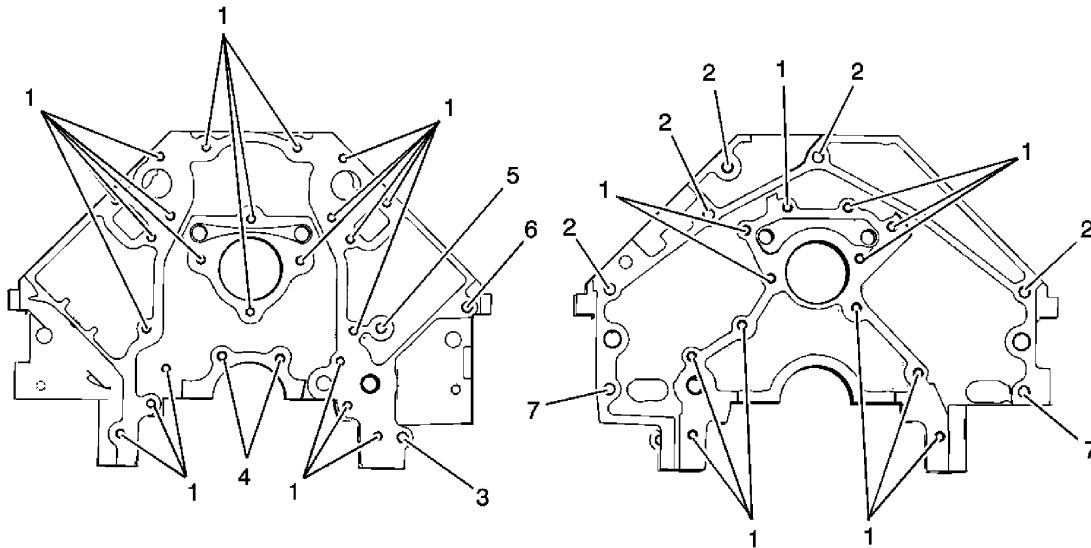


Fig. 1: Engine Block - Front/Rear Views
 Courtesy of GENERAL MOTORS CORP.

Engine Block - Front/Rear Views

Hole	Thread Size	Insert	Drill	Counterbore Tool	Tap	Driver	Drill Depth - Maximum mm (in)	Tap Depth - Maximum mm (in)
J 42385-								
1	M8 x 1.25	210	206	207	208	209	22.5 (0.885)	17.5 (0.688)
2	M10 x 1.5	215	211	212	213	214	27.5 (1.08)	22.0 (0.866)
3	M10 x 1.5	215	211	212	213	214	Thru	Thru
4	M8 x 1.25	210	206	207	208	209	Thru	Thru
5	M10 x 1.5	215	211	212	213	214	25.0 (0.984)	19.5 (0.767)
6	M10 x 1.5	215	211	212	213	214	32.5 (1.279)	25.0 (0.984)
7	M10 x 1.5	215	211	212	213	214	Thru	Thru

Bolt hole 6 is drilled and tapped for aluminum block applications only.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Engine Block - Left/Right Side Views

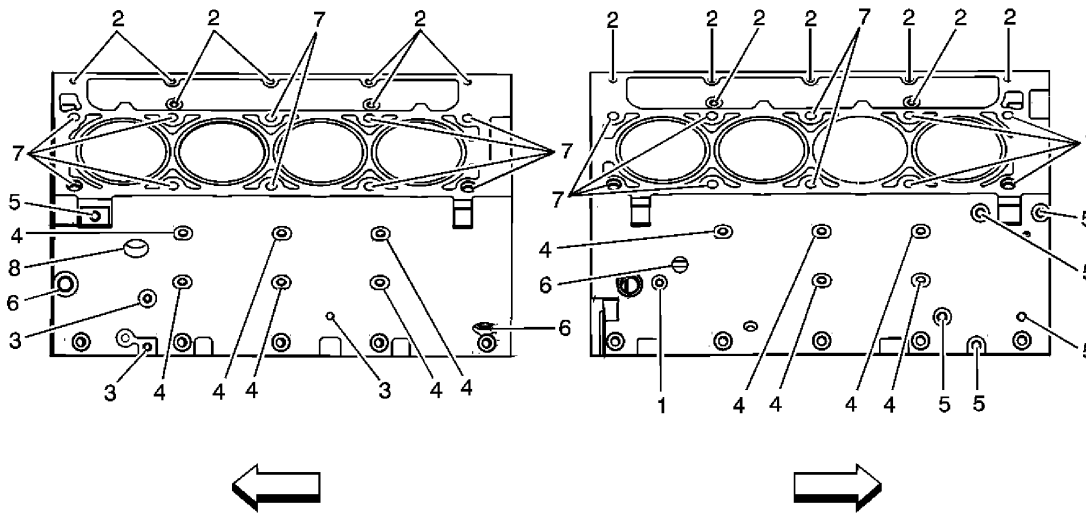


Fig. 2: Engine Block - Left/Right Side Views
 Courtesy of GENERAL MOTORS CORP.

Engine Block - Left/Right Side Views

Hole	Thread Size	Insert	Drill	Counterbore Tool	Tap	Driver	Drill Depth - Maximum mm (in)	Tap Depth - Maximum mm (in)
J 42385-								
1	M8 x 1.25	210	206	207	208	209	22.5 (0.885)	17.5 (0.688)
2	M8 x 1.25	210	206	207	208	209	28.5 (1.122)	23.0 (0.905)
3	M8 x 1.25	210	206	207	208	209	21.5 (0.846)	16.0 (0.629)
4	M10 x 1.25	215	211	212	213	214	29.0 (1.141)	23.0 (0.905)
5	M10 x 1.5	215	211	212	213	214	27.0 (1.062)	21.5 (0.846)
6	M16 x 1.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	M11 x 2.0	108	105	N/A	106	107	69.0 (2.72)	60.0 (2.36)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

8	M28 x 1.25	N/A	N/A	N/A	N/A	N/A	N/A	N/A
---	---------------	-----	-----	-----	-----	-----	-----	-----

Bolt hole 7 has a 30 mm (1.18 in) counterbore included in the 69.0 mm (2.72 in) drill depth. Use sleeve J 42385-315 with the drill and tap.

Engine Block - Top/Bottom Views

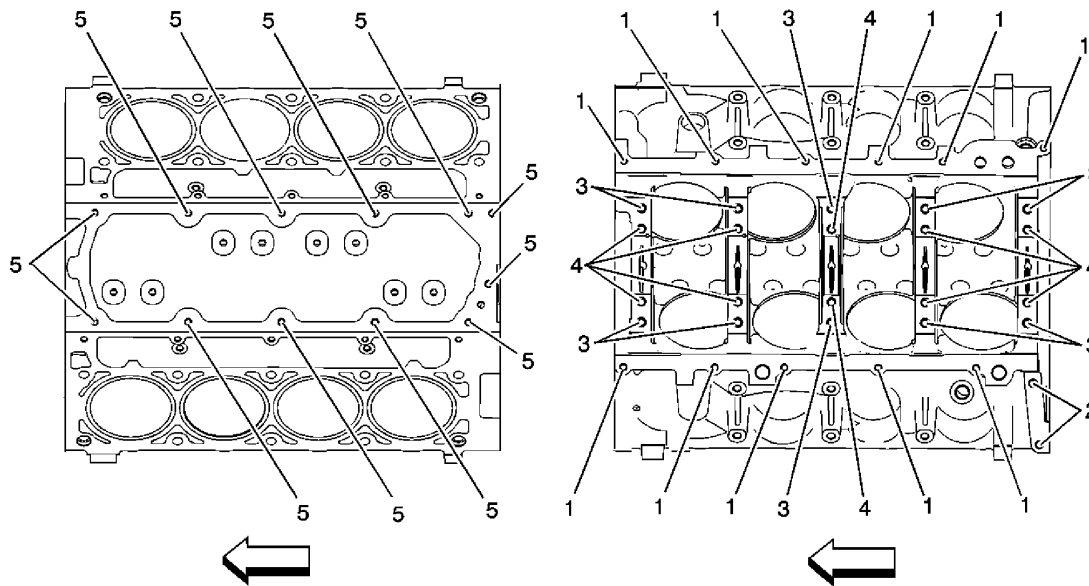


Fig. 3: Engine Block - Top/Bottom Views
Courtesy of GENERAL MOTORS CORP.

Engine Block - Top/Bottom Views

Hole	Thread Size	Insert	Drill	Counterbore Tool	Tap	Driver	Drill Depth - Maximum mm (in)	Tap Depth - Maximum mm (in)
J 42385-								
1	M8 x 1.25	210	206	207	208	209	22.5 (0.885)	17.5 (0.688)
2	M10 x 1.5	215	211	212	213	214	42.5 (1.67)	37.0 (1.45)
3	M10 x 2.0	104	101	N/A	102	103	31.0 (1.22)	25.5 (1.0)
4	M10 x	104	101	N/A	102	103	53.5 (2.10)	44.0 (1.73)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

	2.0							
5	M8 x 1.25	210	206	207	208	209	26.5 (1.043)	19.0 (0.748)
<ul style="list-style-type: none"> Bolt hole 2 has an 11.5 mm (0.452 in) counterbore included in the 42.5 mm (1.67 in) drill depth. Use sleeve J 42385-311 with the drill and tap. Bolt hole 3 has a 1.5 mm (0.059 in) counterbore included in the 31.0 mm (1.22 in) drill depth. Use sleeve J 42385-316 with the drill and tap. Bolt hole 4 has a 20.5 mm (0.807 in) counterbore included in the 53.5 mm (2.10 in) drill depth. 								

Cylinder Head - Top/End Views

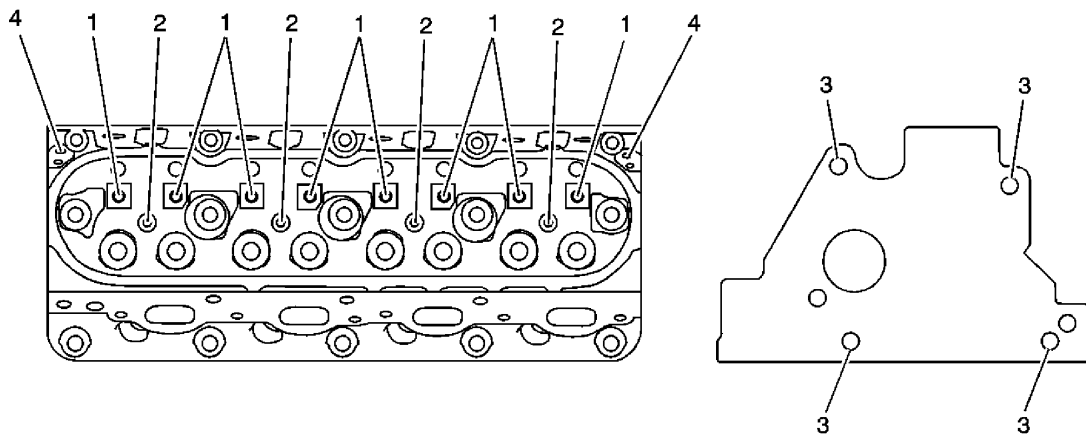


Fig. 4: Cylinder Head - Top/End Views
 Courtesy of GENERAL MOTORS CORP.

Cylinder Head - Top/End Views

Hole	Thread Size	Insert	Drill	Counterbore Tool	Tap	Driver	Drill Depth - Maximum mm (in)	Tap Depth - Maximum mm (in)
J 42385-								
1	M8 x 1.25	210	206	207	208	209	26.5 (1.04)	19.0 (0.784)
2	M6 x 1.0	205	201	202	203	204	20.05 (0.789)	16.05 (0.632)
3	M10 x	215	211	212	213	214	28.0 (1.10)	20.0

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

	1.5							(0.787)
4	M6 x 1.0	205	201	202	203	204	22.5 (0.885)	15.0 (0.688)

Cylinder Head - Intake/Exhaust Side Views

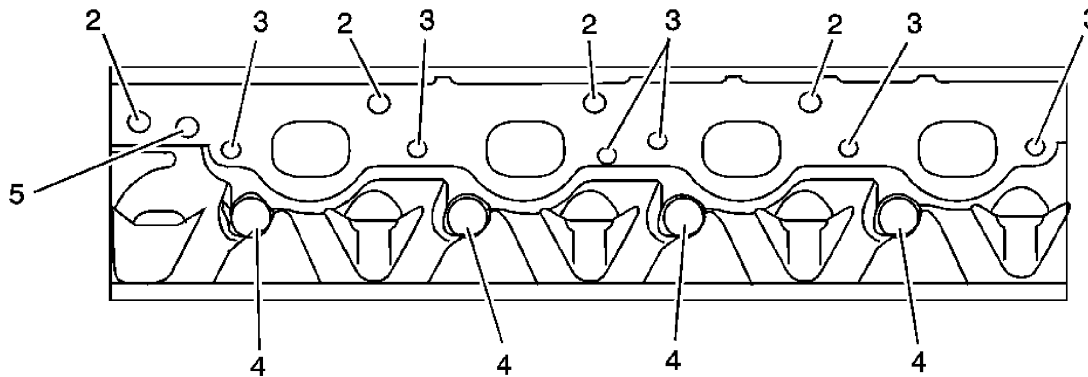
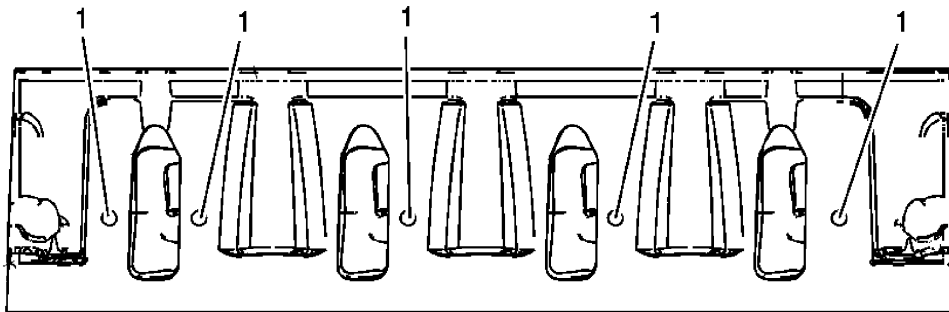


Fig. 5: Cylinder Head - Intake/Exhaust Side Views
 Courtesy of GENERAL MOTORS CORP.

Cylinder Head - Intake/Exhaust Side Views

Hole	Thread Size	Insert	Drill	Counterbore Tool	Tap	Driver	Drill Depth - Maximum mm (in)	Tap Depth - Maximum mm (in)
J 42385-								
1	M6 x 1.0	205	201	202	203	204	Thru	Thru
2	M10 x 1.5	215	211	212	213	214	28.0 (1.10)	20.0 (0.787)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

3	M8 x 1.25	210	206	207	208	209	21.0 (0.826)	16.0 (0.629)
4	M14 x 1.25	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5	M12 x 1.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A

SCHEMATIC AND ROUTING DIAGRAMS

ENGINE MECHANICAL SCHEMATICS

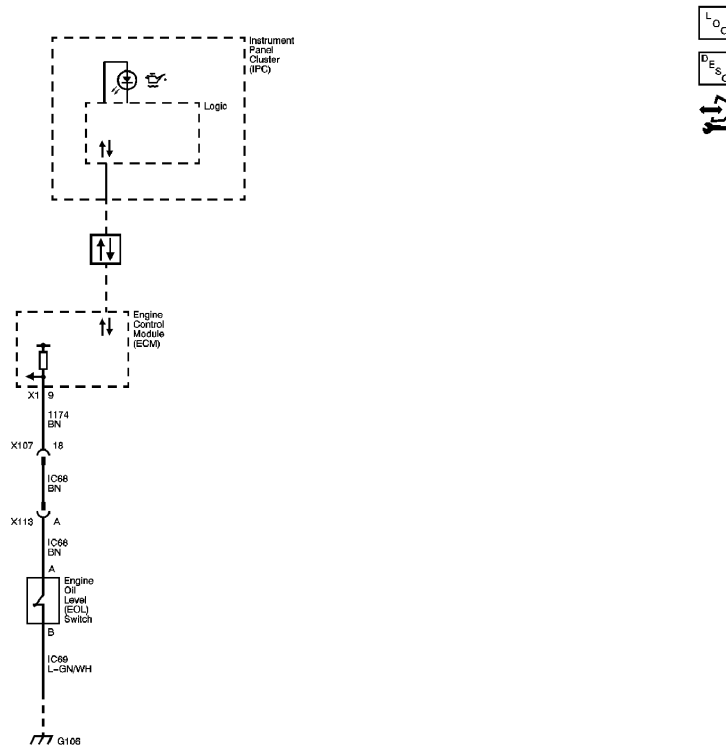


Fig. 6: Engine Mechanical Schematic
 Courtesy of GENERAL MOTORS CORP.

COMPONENT LOCATOR

DISASSEMBLED VIEWS

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

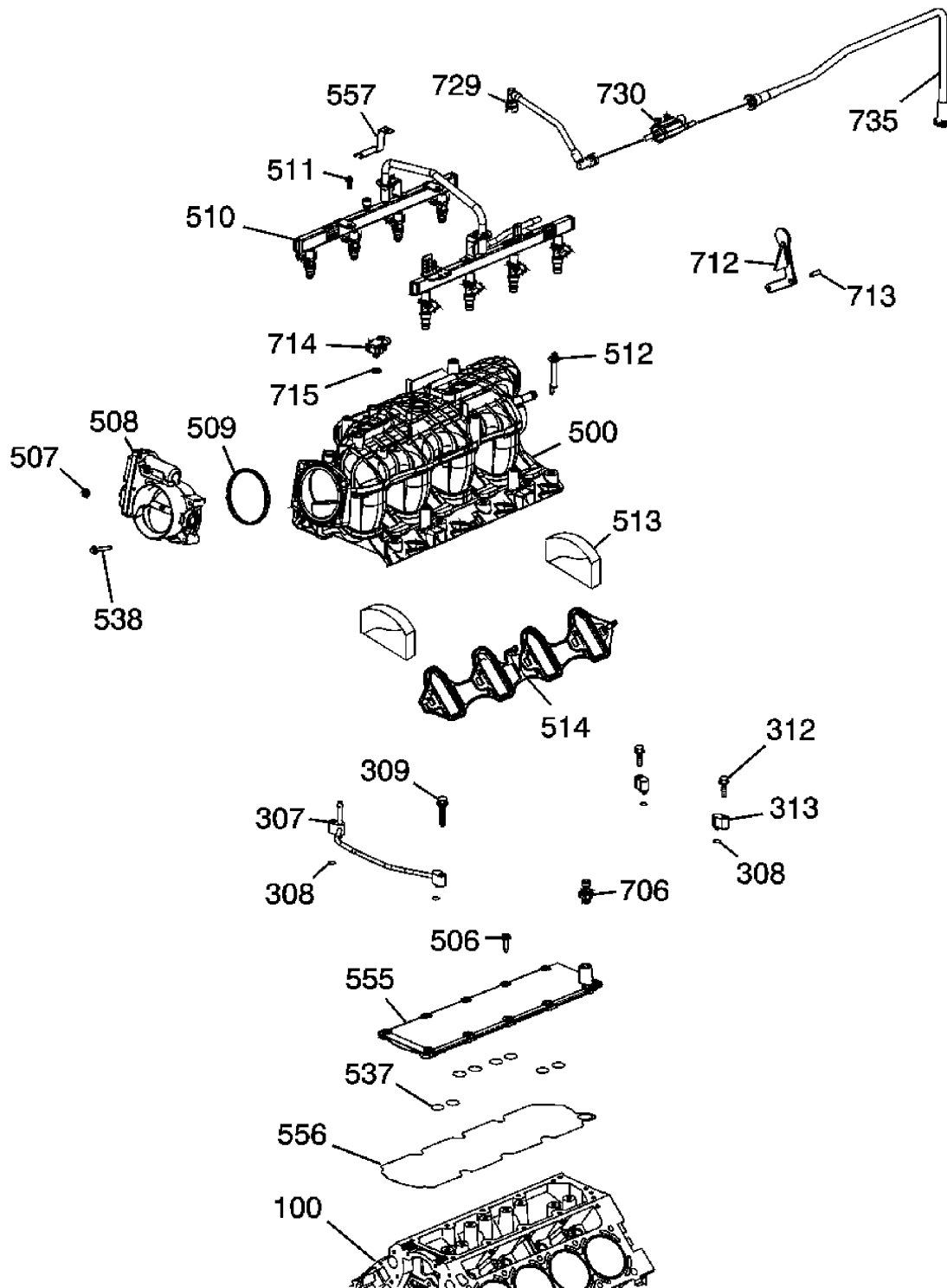


Fig. 7: Intake Manifold/Upper Engine - RPO LY2/LY6/L92
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Callout	Component Name
100	Engine Block
307	Engine Coolant Air Bleed Pipe
308	Engine Coolant Air Bleed Pipe O-Ring Seal
308	Engine Coolant Air Bleed Pipe O-Ring Seal
309	Bolt
312	Bolt
313	Engine Coolant Air Bleed Pipe Hole Cover
500	Intake Manifold
506	Bolt
507	Nut
508	Throttle Body
509	Throttle Body Seal
510	Sequential Multi-Port Fuel Injector Assembly with Fuel Rail
511	Bolt
512	Bolt
513	Intake Manifold Seal
514	Intake Manifold Gasket
537	O-Ring Seal
538	Bolt
555	Engine Valley Cover
556	Gasket
557	Fuel Injection Fuel Rail Bracket
706	Engine Oil Pressure Sensor
712	Fuel Injection Fuel Rail Stop
713	Bolt
714	Manifold Absolute Pressure (MAP) Sensor
715	MAP Sensor O-Ring Seal
729	Evaporative (EVAP) Emission Canister Purge Tube
730	EVAP Emission Canister Purge Solenoid Valve
731	EVAP Emission Canister Port Cap
734	EVAP Emission Service Valve
735	EVAP Emission Canister Purge Tube

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

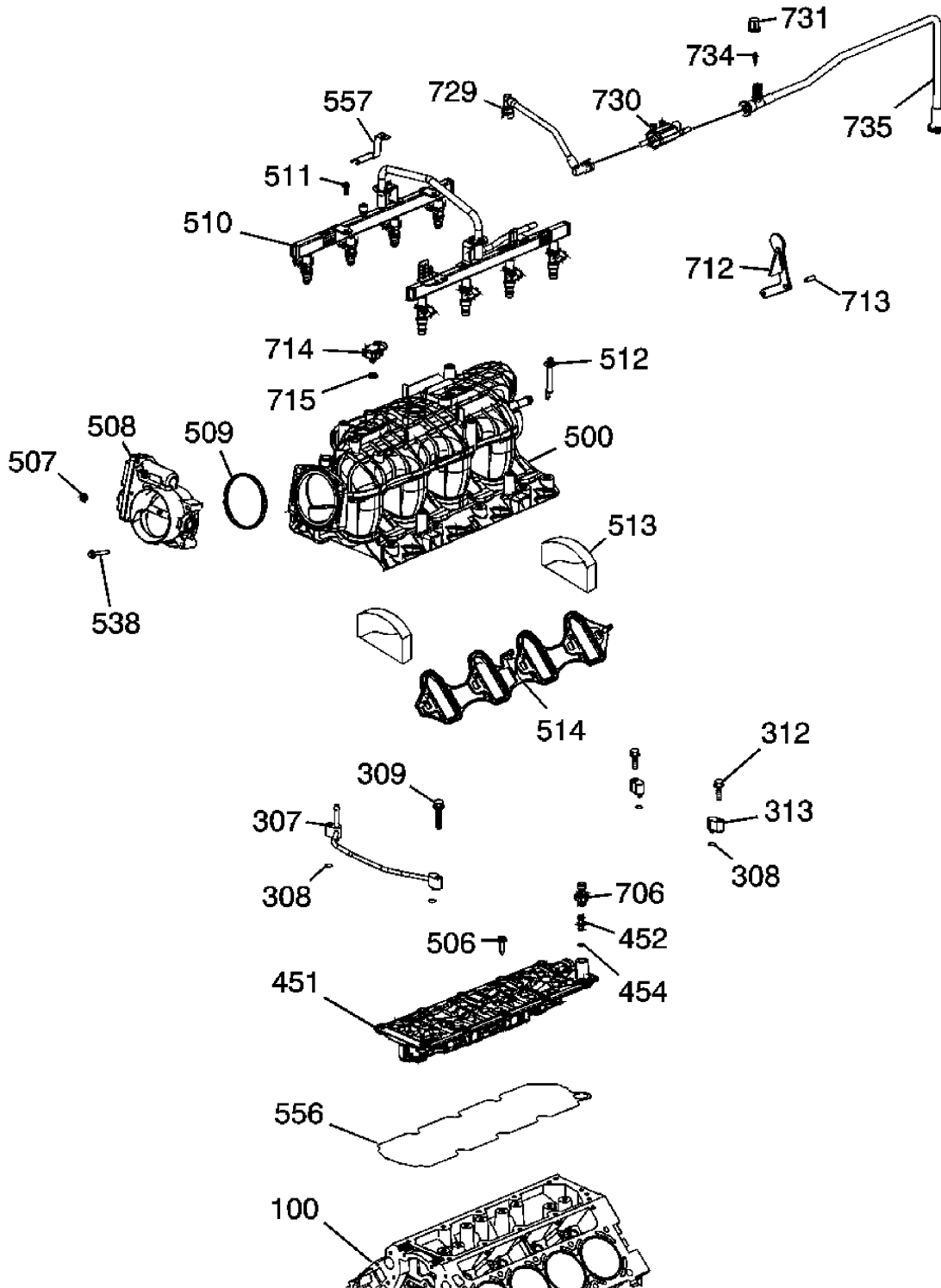


Fig. 8: Intake Manifold/Upper Engine - RPO LH6/LMG/LY5/LC9/L76
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Callout	Component Name
100	Engine Block
307	Engine Coolant Air Bleed Pipe
308	Engine Coolant Air Bleed Pipe O-Ring Seal
308	Engine Coolant Air Bleed Pipe O-Ring Seal
309	Bolt
312	Bolt
313	Engine Coolant Air Bleed Pipe Hole Cover
451	Valve Lifter Oil Manifold
452	Valve Lifter Oil Filter
454	Valve Lifter Oil Filter Seal
500	Intake Manifold
506	Valve Lifter Oil Manifold Bolt
507	Throttle Body Nut
508	Throttle Body
509	Throttle Body Seal
510	Sequential Multi-Port Fuel Injector Assembly with Fuel Rail
511	Fuel Injection Fuel Rail Bracket Bolt
512	Intake Manifold Bolt
513	Intake Manifold Seal
514	Intake Manifold Gasket
538	Throttle Body Bolt
556	Valve Lifter Oil Manifold Gasket
557	Fuel Injection Fuel Rail Bracket
706	Engine Oil Pressure Sensor
712	Fuel Injection Fuel Rail Stop
713	Bolt
714	Manifold Absolute Pressure (MAP) Sensor
715	MAP Sensor O-Ring Seal
729	Evaporative (EVAP) Emission Canister Purge Tube
730	EVAP Emission Canister Purge Solenoid Valve
731	EVAP Emission Canister Port Cap
734	EVAP Emission Service Valve
735	EVAP Emission Canister Purge Tube

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

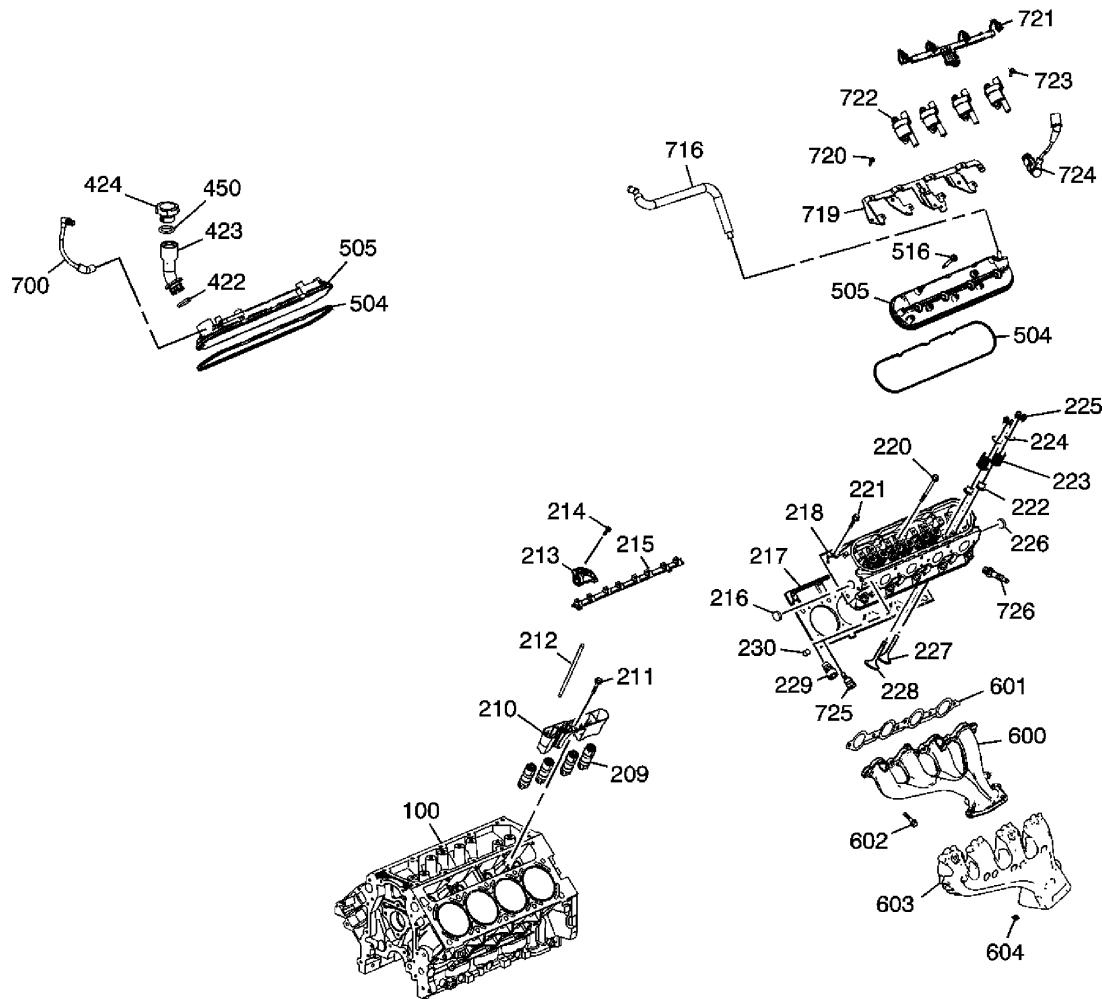


Fig. 9: Cylinder Head/Upper Engine - RPO LY2/LY6/L92
 Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
100	Engine Block
209	Valve Lifter
210	Valve Lifter Guide
211	Valve Lifter Guide Bolt
212	Valve Push Rod
213	Valve Rocker Arm
214	Valve Rocker Arm Pivot Support Bolt
215	Valve Rocker Arm Pivot Support
216	Cylinder Head Core Hole Plug

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

217	Cylinder Head Gasket
218	Cylinder Head
220	Cylinder Head Bolt - M10
221	Cylinder Head Bolt - M8
222	Valve Stem Oil Seal
223	Valve Spring
224	Valve Spring Cap
225	Valve Stem Key
226	Cylinder Head Core Hole Plug
227	Intake Valve
228	Exhaust Valve
229	Cylinder Head Plug
230	Cylinder Head Locating Pin
422	Oil Fill Tube O-Ring Seal
423	Oil Fill Tube
424	Oil Fill Cap
450	Oil Fill Cap O-Ring Seal
504	Valve Rocker Arm Cover Gasket
504	Valve Rocker Arm Cover Gasket
505	Valve Rocker Arm Cover
505	Valve Rocker Arm Cover
516	Valve Rocker Arm Cover Bolt
600	Exhaust Manifold
601	Exhaust Manifold Gasket
602	Exhaust Manifold Flange Bolt
603	Exhaust Manifold Heat Shield
604	Exhaust Manifold Heat Shield Bolt
700	Positive Crankcase Ventilation (PCV) Hose - Fresh Air
716	PCV Hose - Dirty Air
719	Ignition Coil Bracket
720	Ignition Coil Bracket Stud
721	Ignition Coil Wire Harness Assembly
722	Ignition Coil
723	Ignition Coil Bolt
724	Spark Plug Wire

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

	Engine Coolant Temperature Sensor
726	Spark Plug

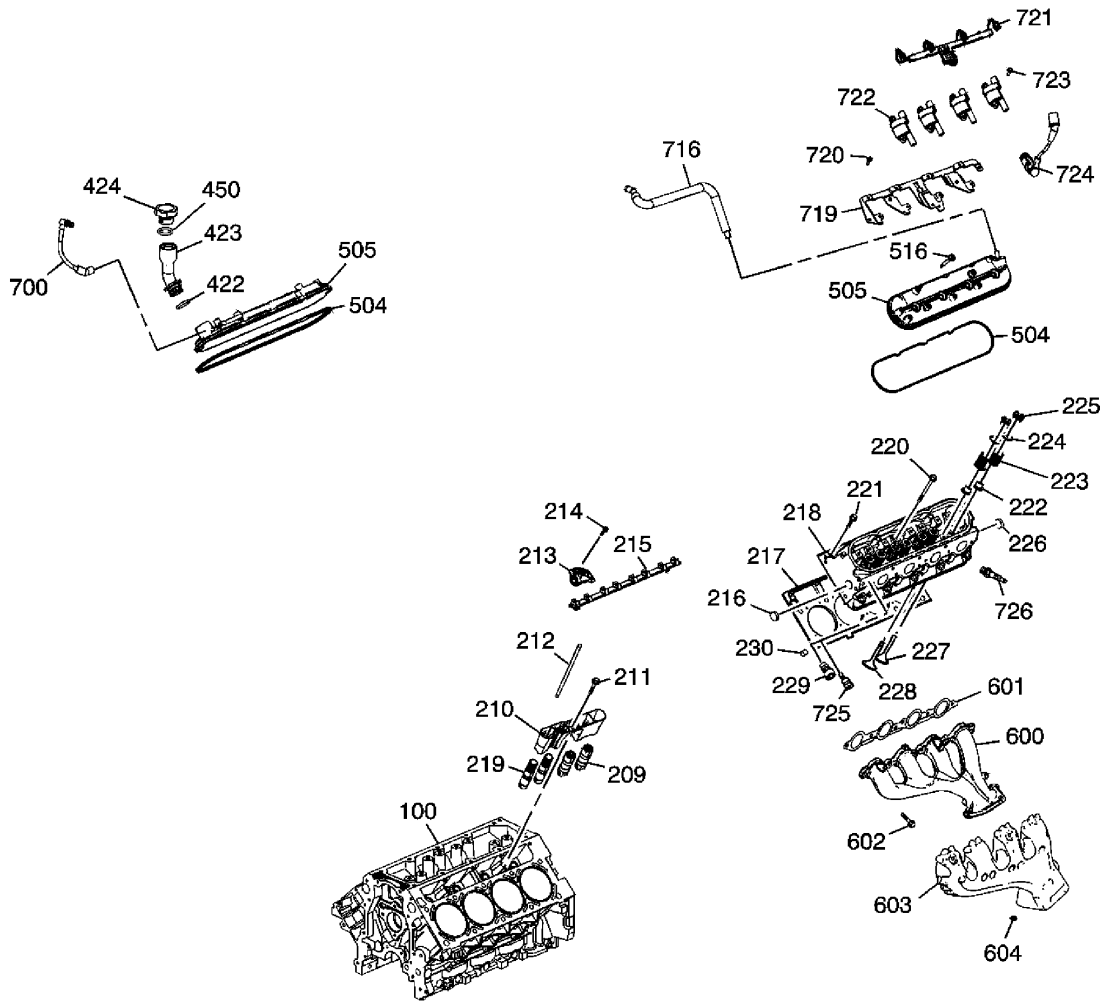


Fig. 10: Cylinder Head/Upper Engine - RPO LH6/LMG/LY5/LC9/L76
 Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
100	Engine Block
209	Valve Lifter - Non-Active Fuel Management
210	Valve Lifter Guide
211	Valve Lifter Guide Bolt
212	Valve Push Rod
213	Valve Rocker Arm

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

214	Valve Rocker Arm Pivot Support Bolt
215	Valve Rocker Arm Pivot Support
216	Cylinder Head Core Hole Plug
217	Cylinder Head Gasket
218	Cylinder Head
219	Valve Lifter - Active Fuel Management
220	Cylinder Head Bolt - M10
221	Cylinder Head Bolt - M8
222	Valve Stem Oil Seal
223	Valve Spring
224	Valve Spring Cap
225	Valve Stem Key
226	Cylinder Head Core Hole Plug
227	Intake Valve
228	Exhaust Valve
229	Cylinder Head Plug
230	Cylinder Head Locating Pin
422	Oil Fill Tube O-Ring Seal
423	Oil Fill Tube
424	Oil Fill Cap
450	Oil Fill Cap O-Ring Seal
504	Valve Rocker Arm Cover Gasket
504	Valve Rocker Arm Cover Gasket
505	Valve Rocker Arm Cover
505	Valve Rocker Arm Cover
516	Valve Rocker Arm Cover Bolt
600	Exhaust Manifold
601	Exhaust Manifold Gasket
602	Exhaust Manifold Flange Bolt
603	Exhaust Manifold Heat Shield
604	Exhaust Manifold Heat Shield Bolt
700	Positive Crankcase Ventilation (PCV) Hose - Fresh Air
716	PCV Hose - Dirty Air
719	Ignition Coil Bracket
720	Ignition Coil Bracket Bolt

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

	Ignition Coil Wire Harness Assembly
722	Ignition Coil
723	Ignition Coil Bolt
724	Spark Plug Wire
725	Engine Coolant Temperature Sensor
726	Spark Plug

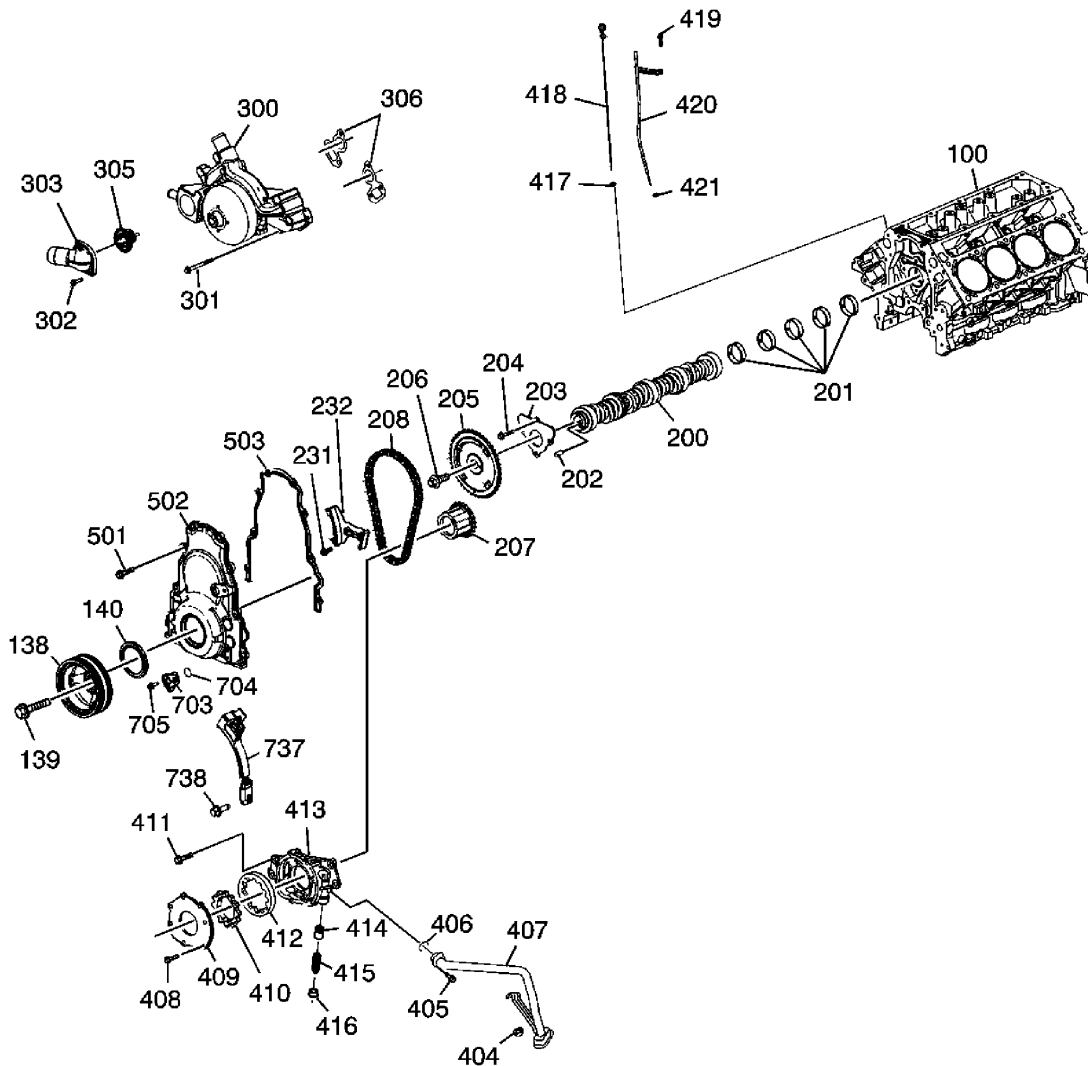


Fig. 11: Front of Engine - RPO LY2/LH6/LMG/LY5/LC9
 Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
100	Engine Block

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

138	Crankshaft Balancer
139	Crankshaft Balancer Bolt
140	Crankshaft Front Oil Seal
200	Camshaft
201	Camshaft Bearing
202	Camshaft Sprocket Locating Pin
203	Camshaft Retainer
204	Camshaft Retainer Bolt
205	Camshaft Sprocket
206	Camshaft Sprocket Bolt
207	Crankshaft Sprocket
208	Timing Chain
231	Timing Chain Tensioner Bolt
232	Timing Chain Tensioner
300	Water Pump
301	Water Pump Bolt
302	Water Pump Inlet Bolt
303	Water Pump Inlet
305	Engine Coolant Thermostat
306	Water Pump Gasket
404	Oil Pump Suction Pipe Nut
405	Oil Pump Suction Pipe Bolt
406	Oil Pump O-Ring Seal
407	Oil Pump Suction Pipe
408	Oil Pump Cover Bolt
409	Oil Pump Cover
410	Oil Pump Drive Gear
411	Oil Pump Bolt
412	Oil Pump Driven Gear
413	Oil Pump
414	Oil Pressure Relief Valve
415	Oil Pressure Relief Valve Spring
416	Oil Pressure Relief Valve Bore Plug
417	Oil Level Indicator O-Ring Seal
418	Oil Level Indicator

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

	Oil Level Indicator Tube Bolt
420	Oil Level Indicator Tube
421	O-Ring
501	Engine Front Cover Bolt
502	Engine Front Cover
503	Engine Front Cover Gasket
703	Camshaft Position (CMP) Sensor
704	CMP Sensor O-Ring Seal
705	CMP Sensor Bolt
737	CMP Sensor Wire Harness Assembly
738	CMP Sensor Wire Harness Assembly Bolt

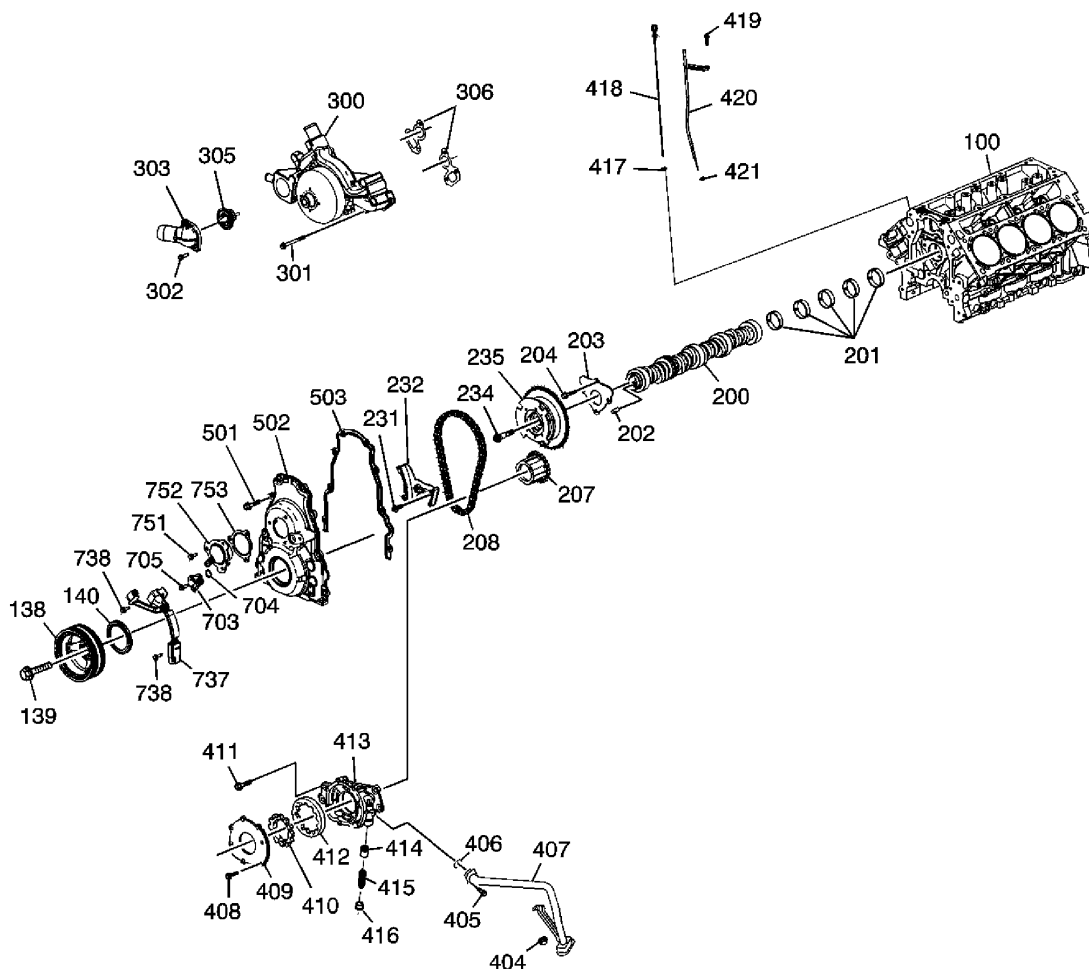


Fig. 12: Front of Engine - RPO LY6/L76/L92

Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Callout	Component Name
100	Engine Block
138	Crankshaft Balancer
139	Crankshaft Balancer Bolt
140	Crankshaft Front Oil Seal
200	Camshaft
201	Camshaft Bearing
202	Camshaft Sprocket Locating Pin
203	Camshaft Retainer
204	Camshaft Retainer Bolt
207	Crankshaft Sprocket
208	Timing Chain
231	Timing Chain Tensioner Bolt
232	Timing Chain Tensioner
234	Camshaft Position (CMP) Actuator Solenoid Valve
235	CMP Actuator
300	Water Pump
301	Water Pump Bolt
302	Water Pump Inlet Bolt
303	Water Pump Inlet
305	Engine Coolant Thermostat
306	Water Pump Gasket
404	Oil Pump Suction Pipe Nut
405	Oil Pump Suction Pipe Bolt
406	Oil Pump O-Ring Seal
407	Oil Pump Suction Pipe
408	Oil Pump Cover Bolt
409	Oil Pump Cover
410	Oil Pump Drive Gear
411	Oil Pump Bolt
412	Oil Pump Driven Gear
413	Oil Pump
414	Oil Pressure Relief Valve
415	Oil Pressure Relief Valve Spring
416	Oil Pressure Relief Valve Bore Plug

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado,
Sierra & Silverado

	Oil Level Indicator O-Ring Seal
418	Oil Level Indicator
419	Oil Level Indicator Tube Bolt
420	Oil Level Indicator Tube
421	O-Ring
501	Engine Front Cover Bolt
502	Engine Front Cover
503	Engine Front Cover Gasket
703	CMP Sensor
704	CMP Sensor O-Ring Seal
705	CMP Sensor Bolt
737	CMP Sensor Wire Harness Assembly
738	CMP Sensor Wire Harness Assembly Bolt
738	CMP Sensor Wire Harness Assembly Bolt
751	CMP Actuator Hub Cover Bolt
752	CMP Actuator Magnet
753	CMP Actuator Magnet Gasket

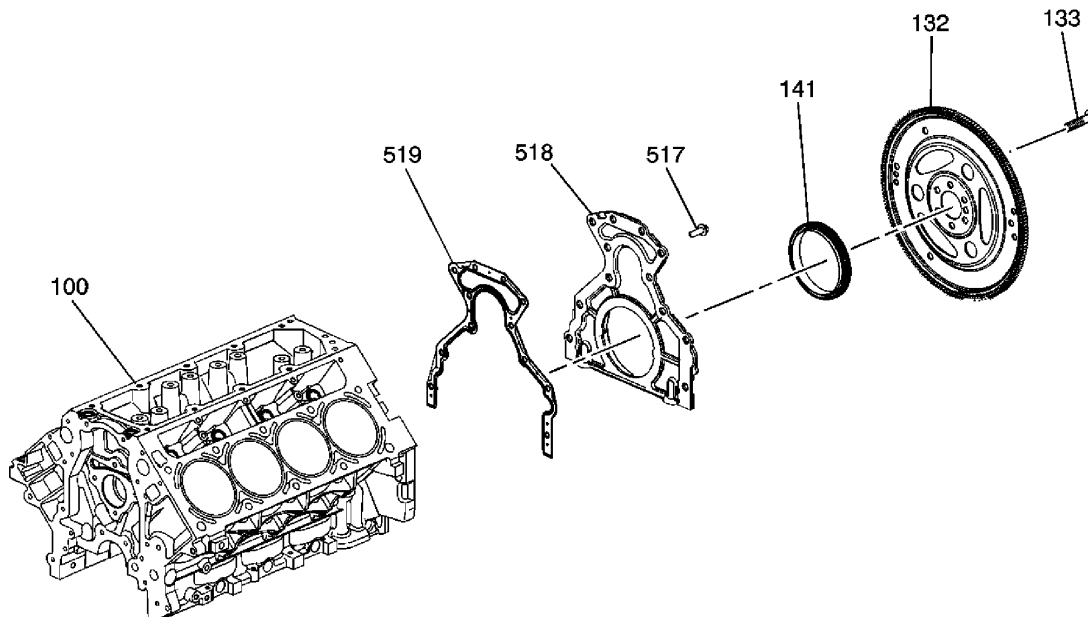


Fig. 13: Rear of Engine
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Callout	Component Name
100	Engine Block
132	Flex Plate - Automatic Transmission
133	Flywheel Bolt
141	Crankshaft Rear Oil Seal
517	Crankshaft Rear Oil Seal Housing Bolt
518	Crankshaft Rear Oil Seal Housing
519	Crankshaft Rear Oil Seal Housing Gasket

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

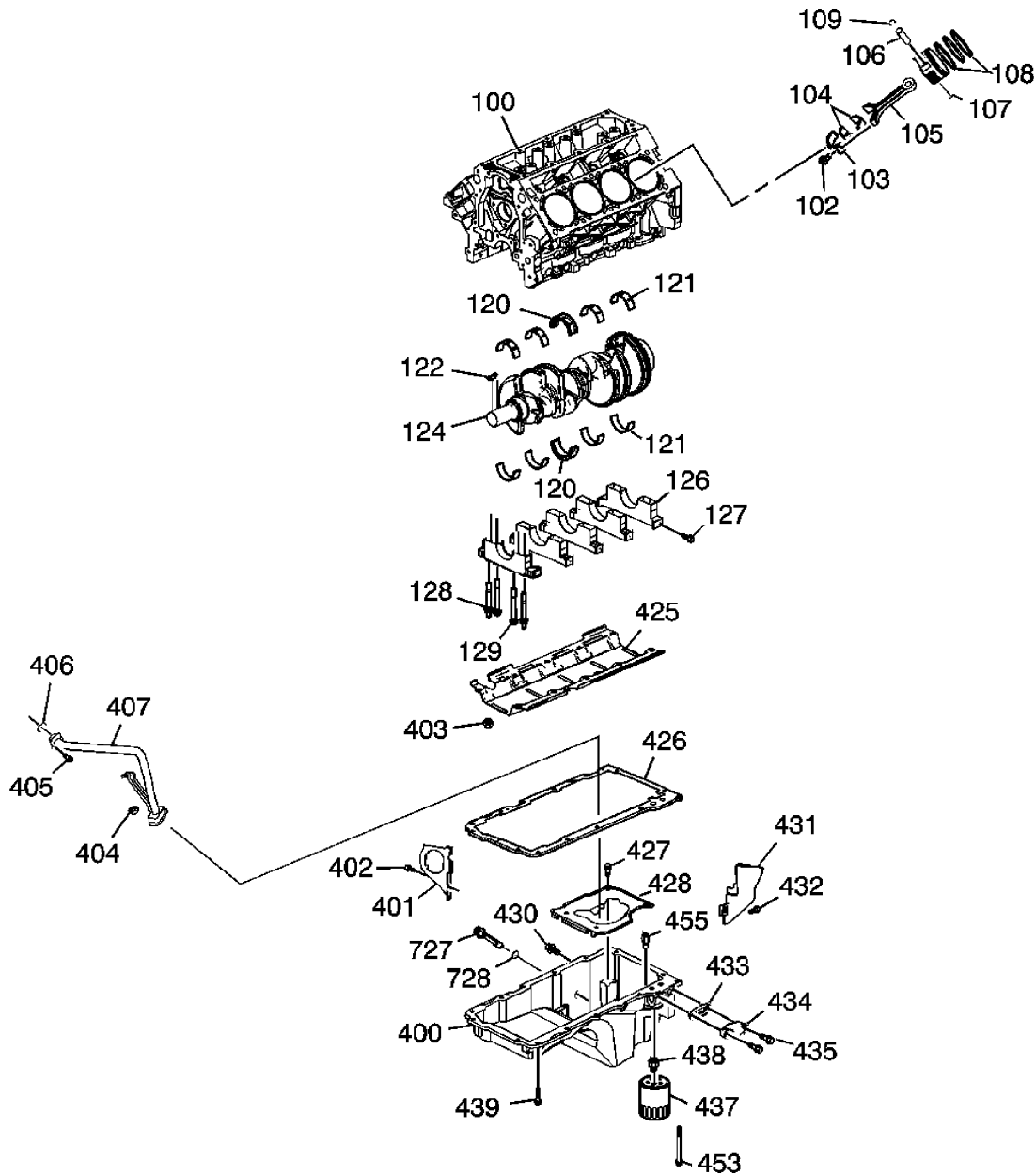


Fig. 14: Lower Engine Assembly
 Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
100	Engine Block
102	Connecting Rod Bolt
103	Connecting Rod Cap
104	Connecting Rod Bearing

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

105	Connecting Rod
106	Piston Pin
107	Piston
108	Piston Ring Set
109	Piston Pin Retainer
120	Crankshaft Thrust Bearing
120	Crankshaft Thrust Bearing
121	Crankshaft Bearing
121	Crankshaft Bearing
122	Crankshaft Balancer Key
124	Crankshaft
126	Crankshaft Bearing Cap
127	Crankshaft Bearing Cap Bolt - M8
128	Crankshaft Bearing Cap Stud - M10
129	Crankshaft Bearing Cap Bolt - M10
400	Oil Pan
401	Oil Pan Closeout Cover
402	Oil Pan Closeout Cover Bolt
403	Crankshaft Oil Deflector Nut
404	Oil Pump Suction Pipe Nut
405	Oil Pump Suction Pipe Bolt
406	Oil Pump O-Ring Seal
407	Oil Pump Suction Pipe
425	Crankshaft Oil Deflector
426	Oil Pan Gasket
427	Oil Pan Baffle Bolt
428	Oil Pan Baffle
430	Oil Pan Drain Plug
431	Oil Pan Closeout Cover
432	Oil Pan Closeout Cover Bolt
433	Oil Pan Cover Gasket
434	Oil Pan Cover
435	Oil Pan Cover Bolt
437	Oil Filter
438	Oil Filter Fitting

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

	Oil Pan Bolt
453	Oil Pan Bolt
455	Active Fuel Management Oil Pressure Relief Valve
727	Engine Oil Level Indicator Switch
728	O-Ring

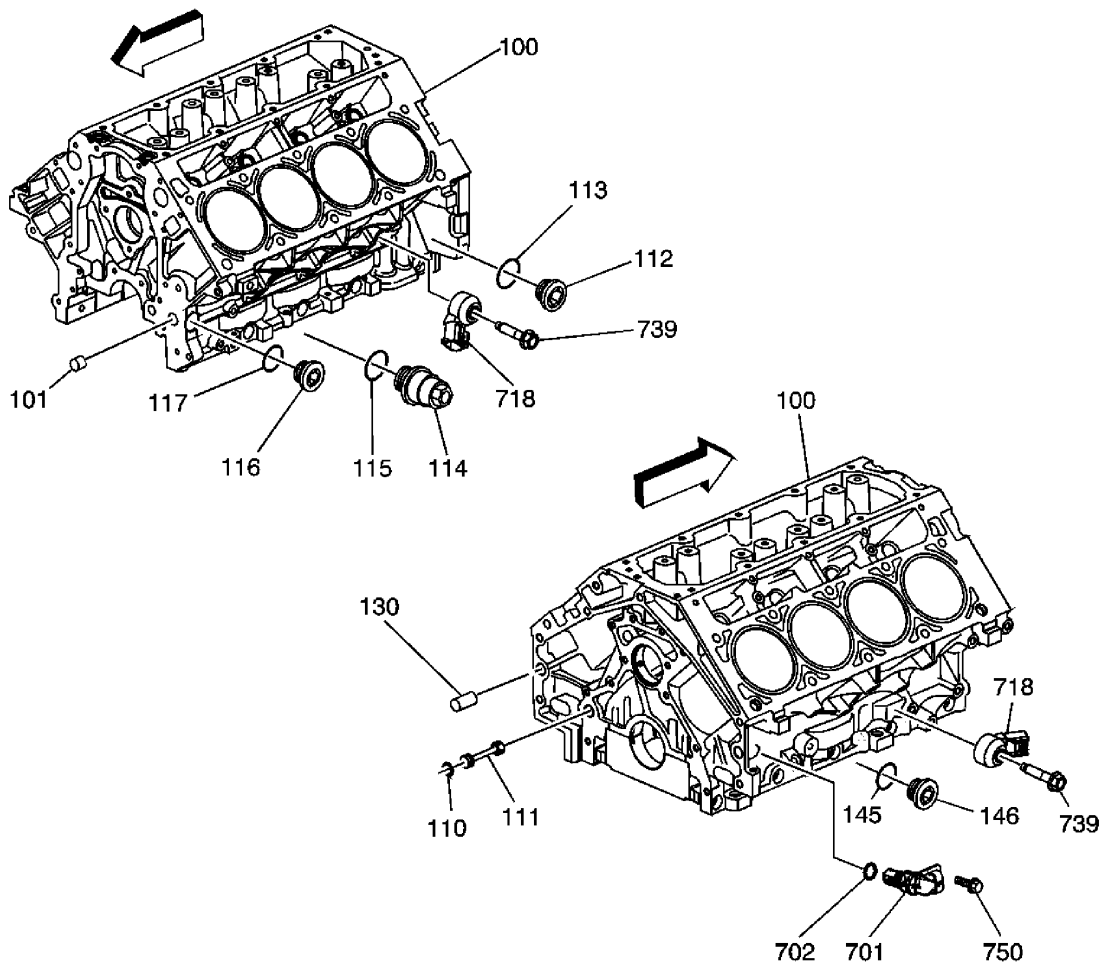


Fig. 15: Exploded View Of Engine Block Plugs/Sensors Components
 Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
100	Engine Block
100	Engine Block
101	Oil Gallery Plug - Front
110	O-Ring

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

111	Oil Gallery Plug - Rear
112	Oil Gallery Plug - Side
113	Washer
114	Engine Coolant Heater
115	Washer
116	Oil Gallery Plug - Side
117	Washer
130	Transmission Housing Locating Pin
145	Washer
146	Engine Block Coolant Drain Hole Plug
701	Crankshaft Position (CKP) Sensor
702	O-Ring
718	Knock Sensor
718	Knock Sensor
739	Bolt
739	Bolt
750	CKP Sensor Bolt

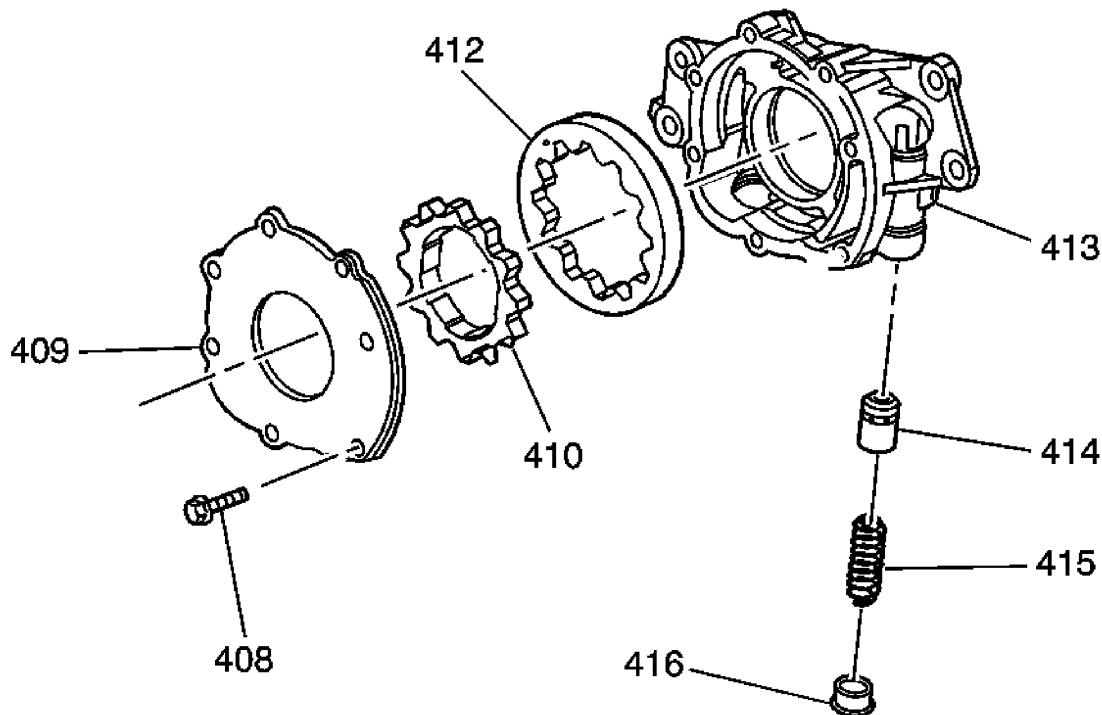


Fig. 16: Exploded View Of Oil Pump Assembly

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
408	Bolt
409	Oil Pump Housing Cover
410	Oil Pump Drive Gear
412	Oil Pump Driven Gear
413	Oil Pump
414	Oil Pump Pressure Relief Valve
415	Oil Pump Pressure Relief Valve Spring
416	Oil Pump Housing Plug

ENGINE IDENTIFICATION

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

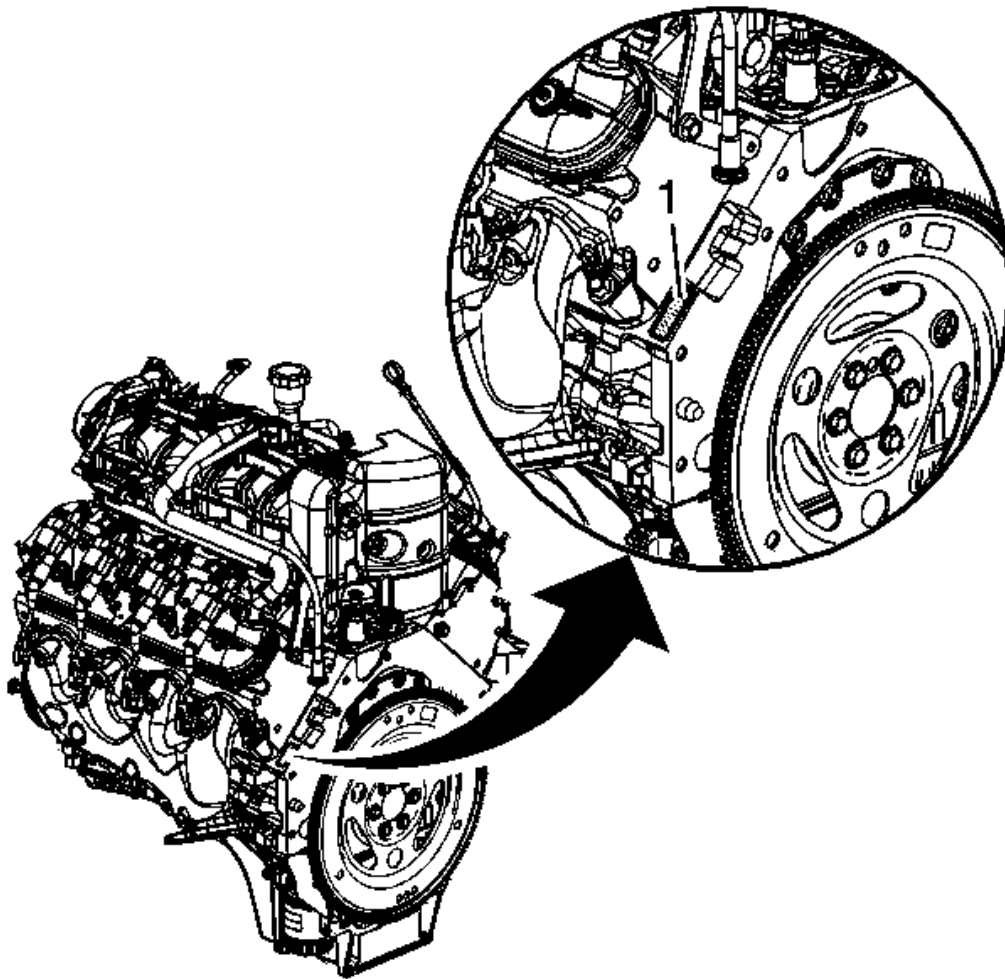


Fig. 17: Vehicle Identification Number (VIN)

Courtesy of GENERAL MOTORS CORP.

The vehicle identification number (VIN) is located on the left side rear of the engine block (1) and is typically a 9 digit number stamped or laser-etched onto the engine at the vehicle assembly plant.

- The first digit identifies the division.
- The second digit identifies the model year.
- The third digit identifies the assembly plant.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- The fourth through ninth digits are the last 6 digits of the VIN.

DIAGNOSTIC INFORMATION AND PROCEDURES

DIAGNOSTIC STARTING POINT - ENGINE MECHANICAL

Begin the system diagnosis by reviewing the Disassembled Views, Engine Content Specifications, Engine Component Description, Lubrication Description (RPO LY2) or Lubrication Description (RPO LH6/LMG/LY5/LC9) or Lubrication Description (RPO LY6/L92) or Lubrication Description (RPO L76), Camshaft Position Actuator and Solenoid Valve Description, and Cylinder Deactivation (Active Fuel Management) System Description. Reviewing the description and operation information helps you determine the correct symptom diagnostic procedure when a malfunction exists. Reviewing the description and operation information also helps you determine if the condition described by the customer is normal operation. Refer to Symptoms - Engine Mechanical in order to identify the correct procedure for diagnosing the system and where the procedure is located.

SYMPTOMS - ENGINE MECHANICAL

Strategy Based Diagnostics

1. Perform the Diagnostic System Check - Vehicle before using the symptom tables.
2. Review the system operations in order to familiarize yourself with the system functions. Refer to Disassembled Views, Engine Content Specifications, Engine Component Description, Lubrication Description (RPO LY2) or Lubrication Description (RPO LH6/LMG/LY5/LC9) or Lubrication Description (RPO LY6/L92) or Lubrication Description (RPO L76), Camshaft Position Actuator and Solenoid Valve Description, and Cylinder Deactivation (Active Fuel Management) System Description.

All diagnosis on a vehicle should follow a logical process. Strategy based diagnostics is a uniform approach for repairing all systems. The diagnostic flow may always be used in order to resolve a system condition. The diagnostic flow is the place to start when repairs are necessary. For a detailed explanation, refer to Strategy Based Diagnosis.

Visual/Physical Inspection

- Inspect for aftermarket devices which could affect the operation of the engine. Refer to Checking Aftermarket Accessories.
- Inspect the easily accessible or visible system components for obvious damage or conditions

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

which could cause the symptom.

- Inspect for the correct oil level, proper oil viscosity, and correct filter application.
- Verify the exact operating conditions under which the concern exists. Note factors such as engine RPM, ambient temperature, engine temperature, amount of engine warm-up time, and other specifics.
- Compare the engine sounds, if applicable, to a known good engine and make sure you are not trying to correct a normal condition.

Intermittent

Test the vehicle under the same conditions that the customer reported in order to verify the system is operating properly.

Symptom List

Refer to a symptom diagnostic procedure from the following list in order to diagnose the symptom:

- **Base Engine Misfire without Internal Engine Noises**
- **Base Engine Misfire with Abnormal Internal Lower Engine Noises**
- **Base Engine Misfire with Abnormal Valve Train Noise**
- **Base Engine Misfire with Coolant Consumption**
- **Base Engine Misfire with Excessive Oil Consumption**
- **Engine Noise on Start-Up, but Only Lasting a Few Seconds**
- **Upper Engine Noise, Regardless of Engine Speed**
- **Lower Engine Noise, Regardless of Engine Speed**
- **Engine Noise Under Load**
- **Engine Will Not Crank - Crankshaft Will Not Rotate**
- **Coolant in Combustion Chamber**
- **Coolant in Engine Oil**
- **Cylinder Deactivation (Active Fuel Management) System Diagnosis**
- **Engine Compression Test**
- **Cylinder Deactivation (Active Fuel Management) System Compression Test**
- **Cylinder Leakage Test**
- **Oil Consumption Diagnosis**
- **Oil Pressure Diagnosis and Testing**

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- **Cylinder Deactivation (Active Fuel Management) Oil Pressure Relief Valve Diagnosis and Testing**
- **Cylinder Deactivation (Active Fuel Management) Valve Lifter Oil Manifold Diagnosis and Testing**
- **Camshaft Position Actuator and Solenoid Valve Diagnosis and Testing**
- **Oil Leak Diagnosis**
- **Crankcase Ventilation System Inspection/Diagnosis**
-
-
- **Drive Belt Falls Off and Excessive Wear Diagnosis**
- **Drive Belt Tensioner Diagnosis**

BASE ENGINE MISFIRE WITHOUT INTERNAL ENGINE NOISES

Cause	Correction
Fuel injector harness connectors are connected to the incorrect fuel injectors/cylinders	Relocate the fuel injector harness connectors, as necessary.
Abnormalities, such as severe cracking, bumps, or missing areas in the accessory drive belt Abnormalities in the accessory drive system and/or components may cause engine RPM variations and lead to a misfire diagnostic trouble code (DTC). A misfire code may be present without an actual misfire condition.	Replace the drive belt. Refer to <u>Drive Belt Replacement - Accessory</u> .
Worn, damaged, or mis-aligned accessory drive components or excessive pulley runout May lead to a misfire DTC. A misfire code may be present without an actual misfire condition.	Inspect the components and repair or replace, as required.
Loose or improperly installed engine flex plate or crankshaft balancer A misfire code may be present without an actual misfire condition.	Repair or replace the flex plate and/or balancer, as required. Refer to <u>Automatic Transmission Flex Plate Replacement</u> , or <u>Crankshaft Balancer Replacement</u> .
Restricted exhaust system A severe restriction in the exhaust flow can	Repair or replace, as required.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

cause significant loss of engine performance and may set a DTC. Possible causes of restrictions include collapsed or dented pipes or plugged mufflers and/or catalytic converters.	
Improperly installed or damaged vacuum hoses	Repair or replace, as required.
Improper sealing between the intake manifold and cylinder heads or throttle body	Replace the intake manifold, gaskets, cylinder heads, and/or throttle body, as required.
Improperly installed or damaged manifold absolute pressure (MAP) sensor The sealing grommet of the MAP sensor should not be torn or damaged.	Repair or replace the MAP sensor, as required.
Worn or loose rocker arms The rocker arm bearing end caps and/or needle bearings should be intact and in the proper position.	Replace the valve rocker arms, as required.
Worn or bent pushrods	<ul style="list-style-type: none"> • Replace the pushrods. • Inspect the top of the pistons for valve contact. If the top of the piston shows valve contact, replace the piston and pin assembly.
Stuck valves Carbon buildup on the valve stem can cause the valve to not close properly.	Repair or replace, as required.
Excessively worn or mis-aligned timing chain	Replace the timing chain and sprockets, as required.
Worn camshaft lobes	Replace the camshaft and valve lifters.
Excessive oil pressure A lubrication system with excessive oil pressure may lead to excessive valve lifter pump-up and loss of compression.	<ol style="list-style-type: none"> 1. Perform an oil pressure test. Refer to <u>Oil Pressure Diagnosis and Testing</u>. 2. Repair or replace the oil pump, as required.
Faulty cylinder head gaskets and/or cracking or other damage to the cylinder heads and engine block cooling system passages Coolant consumption may or may not cause	<ol style="list-style-type: none"> 1. Inspect for spark plugs saturated by coolant. Refer to <u>Spark Plug Inspection</u> . 2. Inspect the cylinder heads, engine

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

the engine to overheat.	block, and/or head gaskets. Refer to <u>Coolant in Combustion Chamber</u> . 3. Repair or replace, as required.
Worn piston rings Oil consumption may or may not cause the engine to misfire.	1. Inspect the spark plugs for oil deposits. Refer to <u>Spark Plug Inspection</u> . 2. Inspect the cylinders for a loss of compression. Refer to <u>Engine Compression Test</u> . 3. Perform cylinder leak down and compression testing to identify the cause. Refer to <u>Cylinder Leakage Test</u> . 4. Repair or replace, as required.
A damaged crankshaft reluctor wheel A damaged crankshaft reluctor wheel can result in different symptoms depending on the severity and location of the damage. <ul style="list-style-type: none">• Systems with electronic communications, DIS or coil per cylinder, and severe reluctor ring damage may exhibit periodic loss of crankshaft position, stop delivering a signal, and then sync the crankshaft position.• Systems with electronic communication, DIS or coil per cylinder, and slight reluctor ring damage may exhibit no loss of crankshaft position and no misfire may occur. However, a P0300 DTC may be set.• Systems with mechanical communications, high voltage switch, and severe reluctor ring damage may cause additional pulses and effect fuel and spark delivery to the point of generating a P0300 DTC or P0336.	Replace the sensor and/or crankshaft, as required.
Improper operation of the active fuel	Repair, as required. Refer to <u>Cylinder</u>

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

management system	<u>Deactivation (Active Fuel Management) System Diagnosis.</u>
Improper operation of the camshaft position (CMP) actuator and/or control system	Repair, as required. Refer to <u>Camshaft Position Actuator and Solenoid Valve Diagnosis and Testing.</u>

BASE ENGINE MISFIRE WITH ABNORMAL INTERNAL LOWER ENGINE NOISES

Cause	Correction
Abnormalities, such as severe cracking, bumps or missing areas in the accessory drive belt Abnormalities in the accessory drive system and/or components may cause engine RPM variations, noises similar to a faulty lower engine and also lead to a misfire condition. A misfire code may be present without an actual misfire condition.	Replace the drive belt. Refer to <u>Drive Belt Replacement - Accessory .</u>
Worn, damaged, or mis-aligned accessory drive components or excessive pulley runout A misfire code may be present without an actual misfire condition.	Inspect the components and repair or replace, as required.
Loose or improperly installed engine flex plate or crankshaft balancer A misfire code may be present without an actual misfire condition.	Repair or replace the flex plate and/or balancer, as required. Refer to <u>Automatic Transmission Flex Plate Replacement</u> , or <u>Crankshaft Balancer Replacement</u> .
Worn piston rings Oil consumption may or may not cause the engine to misfire.	<ol style="list-style-type: none"> 1. Inspect the spark plugs for oil deposits. Refer to <u>Spark Plug Inspection</u> . 2. Inspect the cylinders for a loss of compression. Refer to <u>Engine Compression Test.</u> 3. Perform cylinder leak down and compression testing to determine the cause. Refer to <u>Cylinder Leakage Test.</u> 4. Repair or replace, as required.
Worn crankshaft thrust bearings	Replace the crankshaft and bearings, as

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Severely worn thrust surfaces on the crankshaft and/or thrust bearing may permit fore and aft movement of the crankshaft and create a DTC without an actual misfire condition.

required.

BASE ENGINE MISFIRE WITH ABNORMAL VALVE TRAIN NOISE

Cause	Correction
Worn or loose rocker arms The rocker arm bearing end caps and/or needle bearings should be intact within the rocker arm assembly.	Replace the valve rocker arms, as required.
Worn or bent pushrods	<ul style="list-style-type: none">• Replace the pushrods.• Inspect the top of the pistons for valve contact. If the top of the piston shows valve contact, replace the piston and pin assembly.
Stuck valves Carbon buildup on the valve stem can cause the valve to not close properly.	Repair or replace, as required.
Excessively worn or mis-aligned timing chain	Replace the timing chain and sprockets, as required.
Worn camshaft lobes	Replace the camshaft and valve lifters.
Sticking lifters	Replace, as required.
Cut or damaged oil pump screen O-ring seal which may cause aeration of the engine oil	Repair, as required. Refer to <u>Oil Pressure Diagnosis and Testing</u> .
Improper operation of the active fuel management oil pressure relief valve	Repair, as required. Refer to <u>Cylinder Deactivation (Active Fuel Management) Oil Pressure Relief Valve Diagnosis and Testing</u> .
Improper operation of the active fuel management system	Repair, as required. Refer to <u>Cylinder Deactivation (Active Fuel Management) System Diagnosis</u> .
Improper operation of the camshaft position (CMP) actuator and/or control system	Repair, as required. Refer to <u>Camshaft Position Actuator and Solenoid Valve Diagnosis and Testing</u> .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

BASE ENGINE MISFIRE WITH COOLANT CONSUMPTION

Cause	Correction
Faulty cylinder head gaskets and/or cracking or other damage to the cylinder heads and engine block cooling system passages Coolant consumption may or may not cause the engine to overheat.	<ol style="list-style-type: none">1. Inspect for spark plugs saturated by coolant. Refer to <u>Spark Plug Inspection</u> .2. Perform a cylinder leak down test. Refer to <u>Cylinder Leakage Test</u>.3. Inspect the cylinder heads and engine block for damage to the coolant passages and/or a faulty head gasket. Refer to <u>Coolant in Combustion Chamber</u>.4. Repair or replace, as required.

BASE ENGINE MISFIRE WITH EXCESSIVE OIL CONSUMPTION

Cause	Correction
Worn valves, valve guides and/or valve stem oil seals	<ol style="list-style-type: none">1. Inspect the spark plugs for oil deposits. Refer to <u>Spark Plug Inspection</u> .2. Repair or replace, as required.
Worn piston rings Oil consumption may or may not cause the engine to misfire.	<ol style="list-style-type: none">1. Inspect the spark plugs for oil deposits. Refer to <u>Spark Plug Inspection</u> .2. Inspect the cylinders for a loss of compression. Refer to <u>Engine Compression Test</u>.3. Perform cylinder leak down and compression testing to determine the cause. Refer to <u>Cylinder Leakage Test</u>.4. Repair or replace, as required.

ENGINE NOISE ON START-UP, BUT ONLY LASTING A FEW SECONDS

Cause	Correction
Incorrect oil filter without anti-drainback feature	Install the correct oil filter.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Incorrect oil viscosity	<ol style="list-style-type: none"> 1. Drain the oil. 2. Install the correct viscosity oil.
High valve lifter leak down rate	Replace the lifters, as required.
Worn crankshaft thrust bearing	<ol style="list-style-type: none"> 1. Inspect the crankshaft end play. 2. Inspect the thrust bearing and crankshaft. 3. Repair or replace, as required.
Damaged or faulty oil filter bypass valve The bypass valve is now internal to the oil filter.	<ol style="list-style-type: none"> 1. Inspect the oil filter bypass valve for proper operation. 2. Repair or replace, as required.

UPPER ENGINE NOISE, REGARDLESS OF ENGINE SPEED

Cause	Correction
Low oil pressure	<ol style="list-style-type: none"> 1. Perform an oil pressure test. Refer to <u>Oil Pressure Diagnosis and Testing</u>. 2. Repair or replace, as required.
Loose and/or worn valve rocker arm attachments	<ol style="list-style-type: none"> 1. Inspect the valve rocker arm, bolt, and pedestal. 2. Repair or replace, as required.
Worn or damaged valve rocker arm	<ol style="list-style-type: none"> 1. Inspect the rocker arm for wear or missing needle bearings 2. Replace the valve rocker arms, as required.
Bent or damaged push rod	<p>Inspect the following components and replace, as required:</p> <ul style="list-style-type: none"> • The valve rocker arm • The valve push rod • The valve lifter • The valve lifter guide • The piston <p>Inspect the top of the pistons for valve</p>

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

	contact. If the top of the piston shows valve contact, replace the piston and pin assembly.
Improper lubrication to the valve rocker arms	<p>Inspect the following components and repair or replace, as required:</p> <ul style="list-style-type: none"> • The valve rocker arm • The valve push rod • The valve lifter • The oil filter bypass valve • The oil pump and pump screen • Improper operation of the active fuel management oil pressure relief valve • The engine block oil galleries
Broken valve spring	Replace the valve spring and spring shim.
Worn or dirty valve lifters	Replace the valve lifters, as required.
Active fuel management valve lifter with a broken spring	Replace the valve lifters, as required.
Improper operation of the active fuel management oil pressure relief valve	Repair, as required. Refer to <u>Cylinder Deactivation (Active Fuel Management) Oil Pressure Relief Valve Diagnosis and Testing.</u>
Improper operation of the camshaft position (CMP) actuator and/or control system	Repair, as required. Refer to <u>Camshaft Position Actuator and Solenoid Valve Diagnosis and Testing.</u>
Stretched or broken timing chain and/or damaged sprocket teeth	Replace the timing chain and sprockets.
Worn engine camshaft lobes	<ol style="list-style-type: none"> 1. Inspect the engine camshaft lobes. 2. Replace the camshaft and valve lifters, as required.
Worn valve guides or valve stems	<p>Inspect the following components and repair, as required:</p> <ul style="list-style-type: none"> • The valves • The valve guides
Stuck valves	Inspect the following components and repair, as required:

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Carbon on the valve stem or valve seat may cause the valve to stay open.	<ul style="list-style-type: none"> • The valves • The valve guides
Cut or damaged oil pump screen O-ring seal which may cause aeration of the engine oil	Repair, as required. Refer to <u>Oil Pressure Diagnosis and Testing</u> .

LOWER ENGINE NOISE, REGARDLESS OF ENGINE SPEED

Cause	Correction
Low oil pressure	<ol style="list-style-type: none"> 1. Perform an oil pressure test. Refer to <u>Oil Pressure Diagnosis and Testing</u>. 2. Repair or replace damaged components, as required.
Worn accessory drive components Abnormalities such as severe cracking, bumps or missing areas in the accessory drive belt and/or misalignment of system components.	<ol style="list-style-type: none"> 1. Inspect the accessory drive system. 2. Repair or replace, as required.
Loose or damaged crankshaft balancer	<ol style="list-style-type: none"> 1. Inspect the crankshaft balancer. 2. Repair or replace, as required.
Detonation or spark knock	Verify the correct operation of the ignition controls system. Refer to <u>Symptoms - Engine Controls</u> .
Loose torque converter bolts	<ol style="list-style-type: none"> 1. Inspect the torque converter bolts and flex plate. 2. Repair or replace, as required.
Loose or damaged flywheel or flex plate	Repair or replace the flywheel or flex plate.
Oil pump screen loose, damaged, or restricted	<ol style="list-style-type: none"> 1. Inspect the oil pump screen. 2. Repair or replace, as required.
Excessive piston-to-cylinder bore clearance	<ol style="list-style-type: none"> 1. Inspect the piston and cylinder bore. 2. Repair, as required.
Excessive piston pin-to-bore clearance	<ol style="list-style-type: none"> 1. Inspect the piston, pin, and connecting rod. 2. Replace the piston and pin as an assembly, as required.
Excessive connecting rod bearing clearance	Inspect the following components and repair, as required:

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

	<ul style="list-style-type: none"> • The connecting rod bearings • The connecting rods • The crankshaft • The crankshaft journals
Excessive crankshaft bearing clearance	<p>Inspect the following components and repair, as required:</p> <ul style="list-style-type: none"> • The crankshaft bearings • The crankshaft journals
<p>Incorrect piston, piston pin, and connecting rod installation</p> <p>Pistons must be installed with the mark or dimple on the top of the piston facing the front of the engine. Piston pins must be centered in the connecting rod pin bore.</p>	<ol style="list-style-type: none"> 1. Verify the pistons, piston pins and connecting rods are installed correctly. Refer to <u>Piston, Connecting Rod, and Bearing Installation</u> . 2. Repair, as required.

ENGINE NOISE UNDER LOAD

Cause	Correction
Low oil pressure	<ol style="list-style-type: none"> 1. Perform an oil pressure test. Refer to <u>Oil Pressure Diagnosis and Testing</u>. 2. Repair or replace, as required.
Detonation or spark knock	Verify the correct operation of the ignition controls. Refer to <u>Symptoms - Engine Controls</u> .
Loose torque converter bolts	<ol style="list-style-type: none"> 1. Inspect the torque converter bolts and flex plate. 2. Repair, as required.
Cracked flex plate - automatic transmission	<ol style="list-style-type: none"> 1. Inspect the flex plate bolts and flex plate. 2. Repair, as required.
Excessive connecting rod bearing clearance	<p>Inspect the following components and repair, as required:</p> <ul style="list-style-type: none"> • The connecting rod bearings • The connecting rods

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

	<ul style="list-style-type: none">• The crankshaft
Excessive crankshaft bearing clearance	Inspect the following components and repair, as required: <ul style="list-style-type: none">• The crankshaft bearings• The crankshaft journals• The cylinder block crankshaft bearing bore

ENGINE WILL NOT CRANK - CRANKSHAFT WILL NOT ROTATE

Cause	Correction
Seized accessory drive system component	<ol style="list-style-type: none">1. Remove the accessory drive belts.2. Confirm that the engine will rotate. Rotate the crankshaft by hand at the crankshaft balancer or flex plate location.3. Repair or replace the components, as required.
Seized automatic transmission torque converter	<ol style="list-style-type: none">1. Remove the torque converter-to-flex plate bolts.2. Confirm that the engine will rotate. Rotate the crankshaft by hand at the crankshaft balancer or flex plate location.3. Repair or replace the components, as required.
Broken timing chain	<ol style="list-style-type: none">1. Inspect the timing chain and sprockets.2. Repair or replace the components, as required.
Seized timing chain or timing sprockets	<ol style="list-style-type: none">1. Inspect the timing chain and sprockets for foreign material or a seized chain.2. Repair or replace the components, as required.
Seized or broken camshaft	<ol style="list-style-type: none">1. Inspect the camshaft and the camshaft bearings.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

	<ol style="list-style-type: none">2. Repair or replace the components, as required.
Bent valve in the cylinder head	<ol style="list-style-type: none">1. Inspect the valves and the cylinder heads.2. Repair or replace the components, as required.
Seized oil pump	<ol style="list-style-type: none">1. Inspect the oil pump assembly.2. Repair or replace, as required.
Hydraulically locked cylinder <ul style="list-style-type: none">• Coolant/antifreeze in the cylinder• Oil in the cylinder• Fuel in the cylinder	<ol style="list-style-type: none">1. Remove the spark plugs and inspect for fluid in the cylinder. When rotating the engine with the spark plugs removed, the piston, on compression stroke, will push fluid from the combustion chamber. Refer to <u>Coolant in Combustion Chamber</u>.2. Inspect for failed/broken head gaskets.3. Inspect for a cracked engine block or cylinder head.4. Inspect for a sticking fuel injector.5. Repair or replace the components, as required.
Material in the cylinder <ul style="list-style-type: none">• Broken valve• Broken piston rings• Piston material• Foreign material	<ol style="list-style-type: none">1. Inspect the cylinder for damaged components and/or foreign materials.2. Repair or replace the components, as required.
Seized crankshaft or connecting rod bearings	<ol style="list-style-type: none">1. Inspect crankshaft and connecting rod bearings.2. Repair or replace the components, as required.
Bent or broken connecting rod	<ol style="list-style-type: none">1. Inspect the connecting rods.2. Replace the piston and pin as an assembly, as required.
Broken crankshaft	<ol style="list-style-type: none">1. Inspect the crankshaft.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Repair or replace the components, as required.

COOLANT IN COMBUSTION CHAMBER

Cause	Correction
<p>DEFINITION: Excessive white smoke and/or coolant type odor coming from the exhaust pipe may indicate coolant in the combustion chamber. Low coolant levels, an inoperative cooling fan, or a faulty thermostat may lead to an overtemperature condition, which may cause engine component damage.</p> <ol style="list-style-type: none">1. A slower than normal cranking speed may indicate coolant entering the combustion chamber. Refer to <u>Engine Will Not Crank - Crankshaft Will Not Rotate</u>.2. Remove the spark plugs and inspect for spark plugs saturated by coolant or coolant in the cylinder bore.3. Inspect by performing a cylinder leak-down test. During this test, excessive air bubbles within the coolant may indicate a faulty gasket or damaged component.4. Inspect by performing a cylinder compression test. Two cylinders side-by-side on the engine block, with low compression, may indicate a failed cylinder head gasket. Refer to <u>Engine Compression Test</u>.	
Faulty cylinder head gasket	Replace the head gasket and components, as required. Refer to <u>Cylinder Head Cleaning and Inspection</u> and <u>Cylinder Head Replacement - Left Side</u> or <u>Cylinder Head Replacement - Right Side</u> .
Warped cylinder head	Machine the cylinder head to the proper flatness, if applicable and replace the cylinder head gasket. Refer to <u>Cylinder Head Cleaning and Inspection</u> .
Cracked cylinder head	Replace the cylinder head and gasket.
Cracked cylinder liner or engine block	Replace the components, as required.
Cylinder head or engine block porosity	Replace the components, as required.

COOLANT IN ENGINE OIL

Cause	Correction
<p>DEFINITION: Foamy or discolored oil or an engine oil overfill condition may indicate coolant entering the engine crankcase. Low coolant levels, an inoperative cooling fan, or a</p>	

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

faulty thermostat may lead to an overtemperature condition which may cause engine component damage. Contaminated engine oil and oil filter should be changed.

1. Inspect the oil for excessive foaming or an overfill condition. Oil diluted by coolant may not properly lubricate the crankshaft bearings and may lead to component damage. Refer to **Lower Engine Noise, Regardless of Engine Speed**.
2. Inspect by performing a cylinder leak-down test. During this test, excessive air bubbles within the cooling system may indicate a faulty gasket or damaged component.
3. Inspect by performing a cylinder compression test. 2 cylinders side-by-side on the engine block with low compression may indicate a failed cylinder head gasket. Refer to **Engine Compression Test**.

Faulty external engine oil cooler	Replace the components, as required.
Faulty cylinder head gasket	Replace the head gasket and components, as required. Refer to <u>Cylinder Head Cleaning and Inspection</u> and <u>Cylinder Head Replacement - Left Side</u> or <u>Cylinder Head Replacement - Right Side</u> .
Warped cylinder head	Machine the cylinder head to proper flatness, if applicable, and replace the cylinder head gasket. Refer to <u>Cylinder Head Cleaning and Inspection</u> .
Cracked cylinder head	Replace the cylinder head and gasket.
Cracked cylinder liner or engine block	Replace the components, as required.
Cylinder head, block, or manifold porosity	Replace the components, as required.

CYLINDER DEACTIVATION (ACTIVE FUEL MANAGEMENT) SYSTEM DIAGNOSIS

IMPORTANT: Cylinder Deactivation (Active Fuel Management) System Diagnosis is applicable for RPO LH6/LMG/LY5/LC9/L76.

1. Measure the engine oil level. Fill, as required.
2. Using the scan tool, inspect for diagnostic codes within the engine control module (ECM). Refer to **Diagnostic System Check - Vehicle**. Repair, as required.
3. Verify proper engine oil pressure and operation of the active fuel management oil pressure relief valve. Refer to **Oil Pressure Diagnosis and Testing**.
4. Verify proper operation of the active fuel management system components. Refer to **Cylinder Deactivation (Active Fuel Management) System Compression Test**.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

5. Remove the valve lifter oil manifold. Refer to **Valve Lifter Oil Manifold Replacement** .
6. Verify proper operation of the valve lifter oil manifold. Refer to **Cylinder Deactivation (Active Fuel Management) Valve Lifter Oil Manifold Diagnosis and Testing**.
7. Replace the active fuel management valve lifters, as required. Both intake and exhaust lifters should be replaced in pairs. Refer to **Valve Lifter Replacement (L92 - First Design)** or **Valve Lifter Replacement (L92 - Second Design)** or **Valve Lifter Replacement (LY2 and LY6)** or **Valve Lifter Replacement (LH6, LMG, LY5 and L76)** .

ENGINE COMPRESSION TEST

1. Charge the battery if the battery is not fully charged.
2. Disable the ignition system.
3. Disable the fuel injection system.
4. Remove all spark plugs.
5. Turn the ignition to the ON position.
6. Depress the accelerator pedal to position the throttle plate wide open.
7. Start with the compression gage at zero and crank the engine through 4 compression strokes, 4 puffs.
8. Measure the compression for each cylinder. Record the readings.
9. If a cylinder has low compression, inject approximately 15 ml (1 tablespoon) of engine oil into the combustion chamber through the spark plug hole. Measure the compression again and record the reading.
10. The minimum compression in any 1 cylinder should not be less than 70 percent of the highest cylinder. No cylinder should read less than 690 kPa (100 psi). For example, if the highest pressure in any 1 cylinder is 1 035 kPa (150 psi), the lowest allowable pressure for any other cylinder would be 725 kPa (105 psi). ($1\ 035 \times 70\% = 725$) ($150 \times 70\% = 105$).
 - Normal - Compression builds up quickly and evenly to the specified compression for each cylinder.
 - Piston Rings Leaking - Compression is low on the first stroke. Compression builds up with the following strokes, but does not reach normal. Compression improves considerably when you add oil.
 - Valves Leaking - Compression is low on the first stroke. Compression usually does not build up on the following strokes. Compression does not improve much when you add oil.
 - If 2 adjacent cylinders have lower than normal compression, and injecting oil into the cylinders does not increase the compression, the cause may be a head gasket leaking

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

between the cylinders.

CYLINDER DEACTIVATION (ACTIVE FUEL MANAGEMENT) SYSTEM COMPRESSION TEST TEST

IMPORTANT: Cylinder Deactivation (Active Fuel Management) System Compression Test is applicable for RPO LH6/LMG/LY5/LC9/L76.

The Cylinder Deactivation (Active Fuel Management) System Compression Test is a functional test of the valve lifter oil manifold and valve lifters. Using a compression gage, the technician can monitor the specific cylinders ability to go into and out of active fuel management as commanded by the scan tool. The actual pressure values on the compression gage are not as critical as is observing the on-off switching action of the solenoid and valve lifters.

1. Measure the engine oil level. Fill, as required.
2. Perform the Diagnostic System Check - Vehicle. Refer to **Diagnostic System Check - Vehicle** .
3. Disable the ignition system for the cylinder to be tested, by disconnecting the electrical wire harness to the ignition coil.
4. Disable the fuel injection system for the cylinder to be tested, by disconnecting the electrical wire harness to the fuel injector.
5. Remove the spark plug and wire for the cylinder to be tested.
6. Install a 0-1 378 kPa (0-200 psi) compression gage.
7. Start the engine.
8. Using the scan tool output controls, command the solenoid ON, for the cylinder to be deactivated.
9. Depress the Schrader valve on the compression gage, in order to release the pressure and zero the gage. With the engine running and the cylinder in active fuel management mode, the compression reading should be less than 172 kPa (25 psi).
10. Using the scan tool, de-energize the solenoid while observing the reading on the compression gage. With the engine running and the cylinder NOT in active fuel management mode, the compression gage reading should increase quickly to greater than 345 kPa (50 psi).

IMPORTANT: Only 1 cylinder can be tested at a time. When testing has been completed on a specific cylinder, the wire harness electrical connectors, spark plug, and spark plug wire must be installed prior to testing of each additional cylinder.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

11. Test each of the 4 active fuel management cylinders, 1 at a time. If the readings are not within specifications, remove, and test the valve lifter oil manifold, as required. Refer to **Valve Lifter Oil Manifold Replacement** and **Cylinder Deactivation (Active Fuel Management) Valve Lifter Oil Manifold Diagnosis and Testing**.
12. If the compression test has been performed and all active fuel management cylinders are operating within specifications, the active fuel management system is performing as designed and no repairs are required.
13. Clear the diagnostic trouble codes (DTCs) with a scan tool.

CYLINDER LEAKAGE TEST

Tools Required

J 35667-A Cylinder Head Leakdown Tester, or equivalent

Test

IMPORTANT: A leakage test may be performed in order to measure cylinder/combustion chamber leakage. High cylinder leakage may indicate one or more of the following conditions:

- Worn or burnt valves
- Broken valve springs
- Stuck valve lifters
- Incorrect valve lash
- Damaged piston
- Worn piston rings
- Worn or scored cylinder bore
- Damaged cylinder head gasket
- Cracked or damaged cylinder head
- Cracked or damaged engine block

CAUTION: Refer to Battery Disconnect Caution .

1. Disconnect the battery ground negative cable.
2. Remove the spark plugs. Refer to **Spark Plug Replacement** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

3. Rotate the crankshaft to place the piston in the cylinder being tested at top dead center (TDC) of the compression stroke.
4. Install the **J 35667-A** , or equivalent.

IMPORTANT: It may be necessary to hold the crankshaft balancer bolt to prevent the crankshaft from rotating.

5. Apply shop air pressure to the **J 35667-A** and adjust according to the manufacturers instructions.
6. Record the cylinder leakage value. Cylinder leakage that exceeds 25 percent is considered excessive and may require component service. In excessive leakage situations, inspect for the following conditions:
 - Air leakage noise at the throttle body or air inlet hose that may indicate a worn or burnt intake valve or a broken valve spring.
 - Air leakage noise at the exhaust system tailpipe that may indicate a worn or burnt exhaust valve or a broken valve spring.
 - Air leakage noise from the crankcase, oil level indicator tube, or oil fill tube that may indicate worn piston rings, a damaged piston, a worn or scored cylinder bore, a damaged engine block or a damaged cylinder head.
 - Air bubbles in the cooling system may indicate a damaged cylinder head or a damaged cylinder head gasket.
7. Perform the leakage test on the remaining cylinders and record the values.

OIL CONSUMPTION DIAGNOSIS

Checks	Causes
Excessive oil consumption, not due to leaks, is the use of 1 L (1 qt) or more of engine oil within 3 200 kilometers (2,000 miles).	
Preliminary	<p>The causes of excessive oil consumption may include the following conditions:</p> <ul style="list-style-type: none">• External oil leaks <p>Refer to <u>Oil Leak Diagnosis</u>.</p> <ul style="list-style-type: none">• Incorrect oil level or improper reading of the oil level indicator

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

With the vehicle on a level surface, run the engine for a few minutes, allow adequate drain down time, 2-3 minutes, and measure for the correct engine oil level.

- Improper oil viscosity

Refer to the vehicle owners manual and use the recommended SAE grade and viscosity for the prevailing temperatures.

- Continuous high speed driving and/or severe usage
- Crankcase ventilation system restrictions or malfunctioning components
- Worn valve guides and/or valve stems
- Worn or improperly installed valve stem oil seals
- Piston rings broken, worn, or not seated properly

Allow adequate time for the rings to seat.

Replace worn piston rings, as necessary.

- Piston and rings improperly installed or not fitted to the cylinder bore

OIL PRESSURE DIAGNOSIS AND TESTING

Tools Required

- **EN-47971** Oil Pressure Gage Adapter. See **Special Tools**.
- **J 21867** Pressure Gage. See **Special Tools**.

Diagnosis and Testing

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

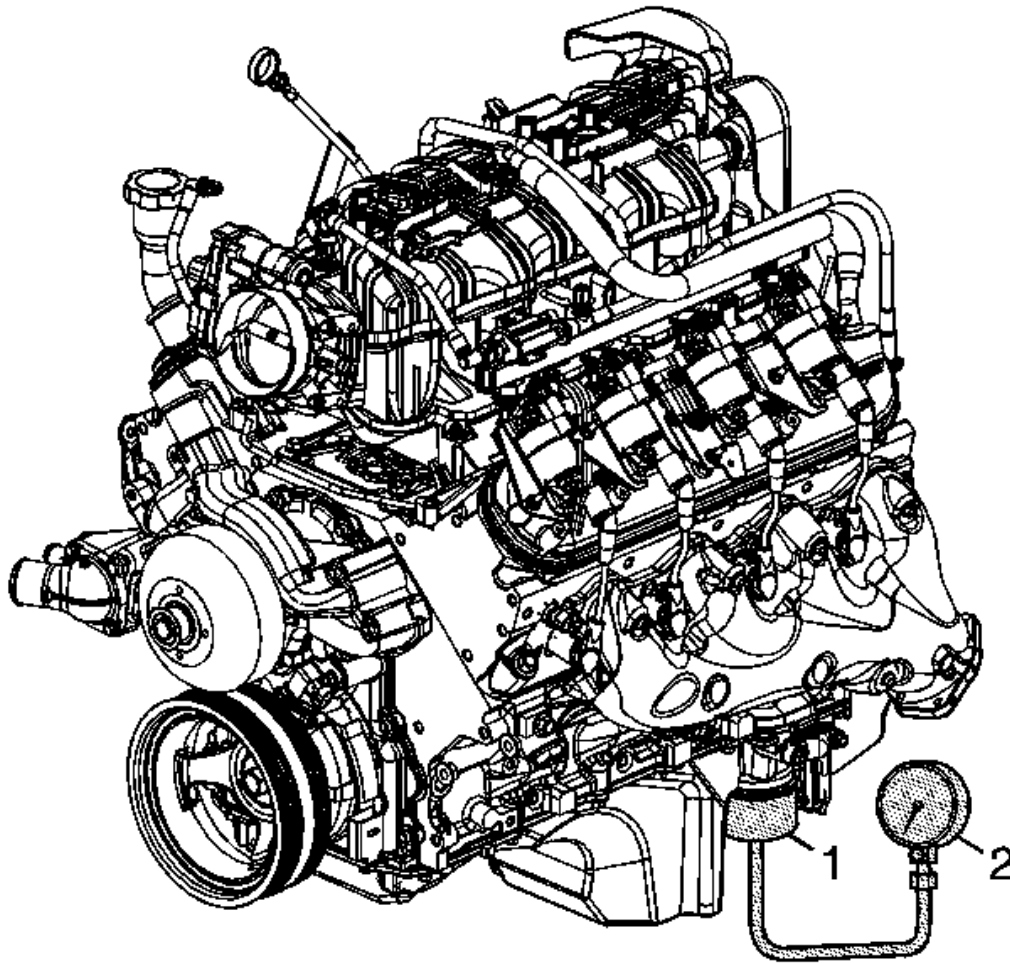


Fig. 18: View Of Special Tools: Oil Pressure Gage & Adapter
Courtesy of GENERAL MOTORS CORP.

1. With the vehicle on a level surface, run the vehicle for a few minutes. Allow adequate drain down time, 2-3 minutes, and measure the oil level.
2. If required, add the recommended grade engine oil and fill the crankcase until the oil level measures full on the oil level indicator.
3. Run the engine briefly, 10-15 seconds, and verify low or no oil pressure on the vehicle gage or light.
4. Listen for a noisy valve train or a knocking noise.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

5. Inspect for the following conditions:

- Oil diluted by water or glycol antifreeze

Refer to **Coolant in Engine Oil** .

- Foamy oil, which may be caused by a cut or damaged oil pump screen O-ring seal

6. Remove the oil filter and install the **EN-47971** (1). See **Special Tools**.

7. Install the **J 21867** (2), or equivalent to the **EN-47971** (1). See **Special Tools**.

8. Run the engine and measure the engine oil pressure.

9. Compare the readings to **Engine Mechanical Specifications (RPO LY5 VIN J)** or **Engine Mechanical Specifications (RPO LC9 VIN 3)** or **Engine Mechanical Specifications (RPO LY2 VIN C)** or **Engine Mechanical Specifications (RPO LH6 VIN M)** or **Engine Mechanical Specifications (RPO LMG VIN 0)** or **Engine Mechanical Specifications (RPO LY6 VIN K)** or **Engine Mechanical Specifications (RPO L76 VIN Y)** or **Engine Mechanical Specifications (RPO L92 VIN 8)**.

10. If the engine oil pressure is below specifications, inspect the engine for 1 or more of the following conditions:

- Oil pump worn or dirty

Refer to **Oil Pump Cleaning and Inspection** .

- Oil pump-to-engine block bolts loose

Refer to **Oil Pump, Screen and Crankshaft Oil Deflector Installation (RPO LY2/LH6/LMG/LY5/LC9)** **Oil Pump, Screen and Crankshaft Oil Deflector Installation (RPO LY6/L76/L92)** .

- Oil pump screen loose, plugged, or damaged
- Oil pump screen O-ring seal missing or damaged
- Malfunctioning oil pump pressure relief valve
- Excessive bearing clearance
- Cracked, porous, or restricted oil galleries
- Oil gallery plugs missing or incorrectly installed

Refer to **Engine Block Plug Installation** .

- Improper operation of the active fuel management oil pressure relief valve

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Refer to Cylinder Deactivation (Active Fuel Management) Oil Pressure Relief Valve Diagnosis and Testing .

CYLINDER DEACTIVATION (ACTIVE FUEL MANAGEMENT) OIL PRESSURE RELIEF VALVE VALVE DIAGNOSIS AND TESTING

Tools Required

- **EN-47971** Oil Pressure Gage Adapter. See Special Tools.
- **J 21867** Pressure Gage. See Special Tools.
- **J-21867-16** Oil Pressure Adapter. See Special Tools.

Diagnosis and Testing

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

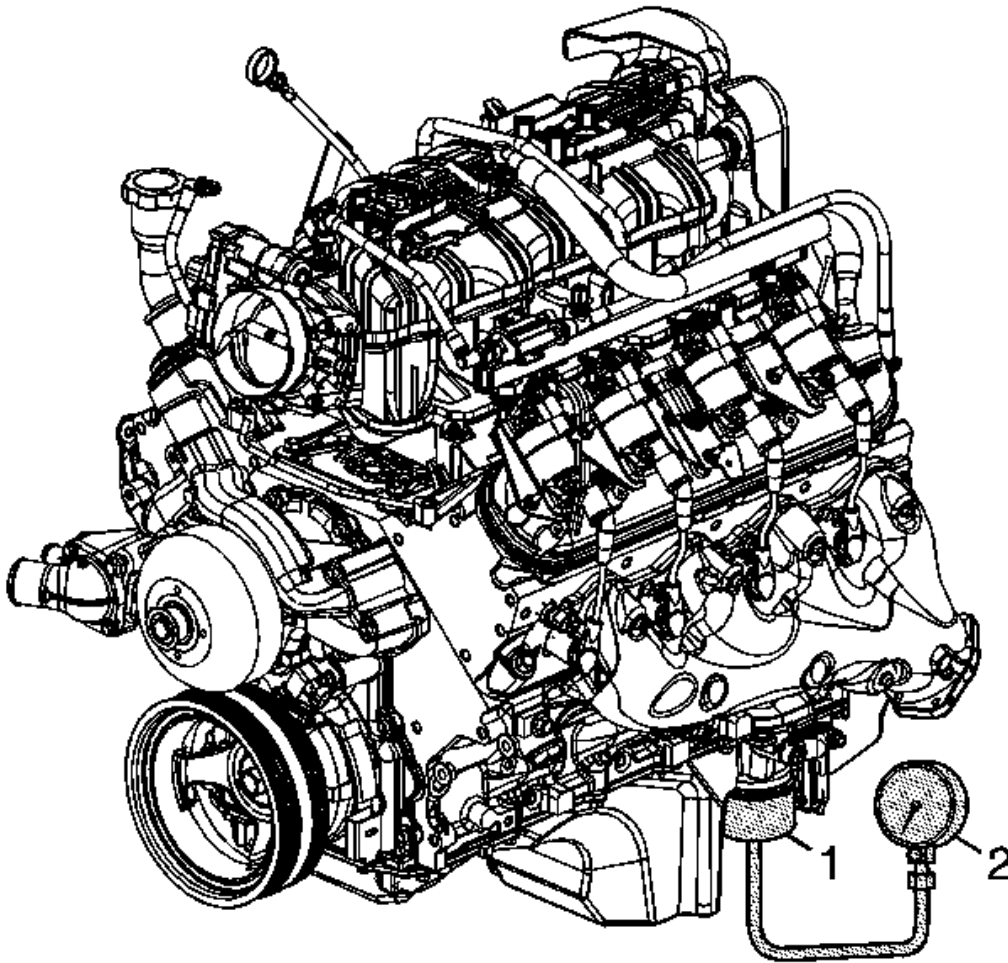


Fig. 19: View Of Special Tools: Oil Pressure Gage & Adapter
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- **Cylinder Deactivation (Active Fuel Management) Oil Pressure Relief Valve Diagnosis and Testing is applicable for RPO LH6/LMG/LY5/LC9/L76.**
- **This test is performed to verify the operation of the active fuel management oil pressure relief valve located in the oil pan. Refer to Cylinder Deactivation (Active Fuel Management) System Description and Lubrication**

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Description (RPO LY2) or Lubrication Description (RPO LH6/LMG/LY5/LC9) or Lubrication Description (RPO LY6/L92) or Lubrication Description (RPO L76).

1. Remove the oil filter and install the **EN-47971** (1). See Special Tools.
2. Install the **J 21867** (2), or equivalent, to the **EN-47971** (1). See Special Tools.

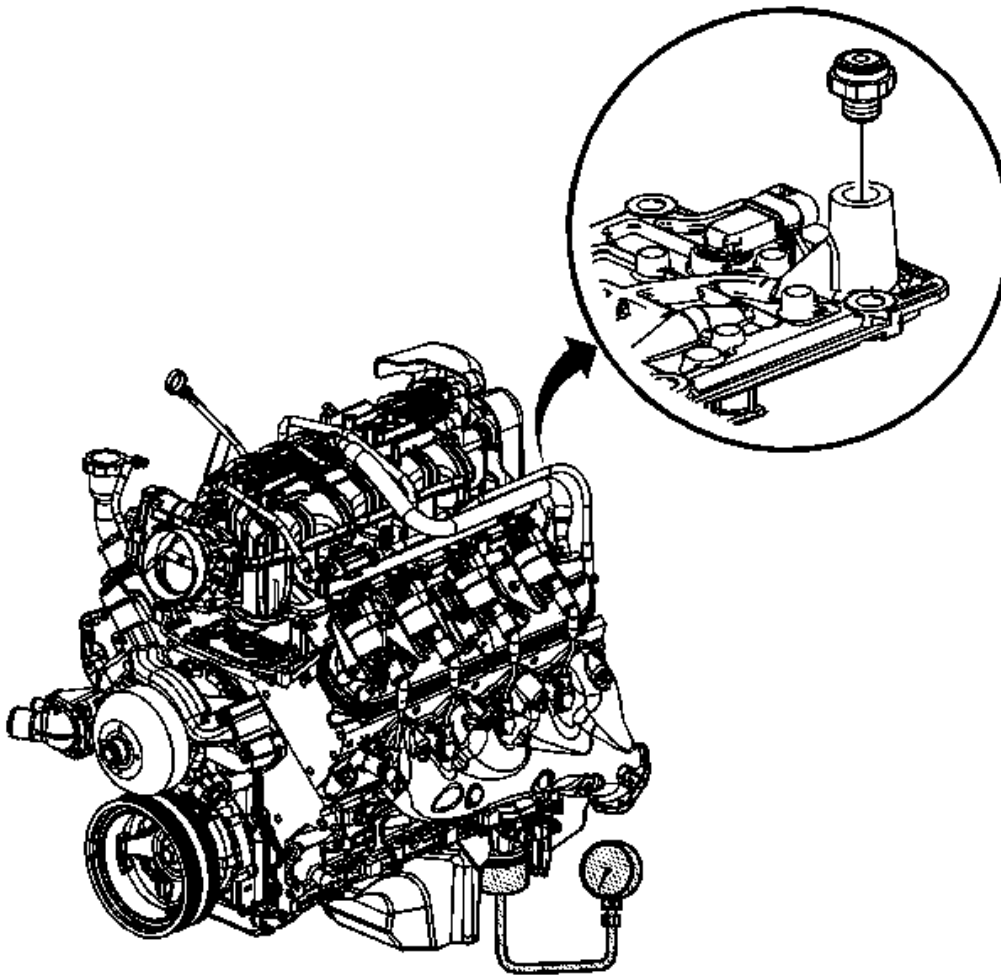


Fig. 20: View Of Oil Pressure Sensor
Courtesy of GENERAL MOTORS CORP.

3. Remove the oil pressure sensor and install the **J-21867-16** . See Special Tools.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

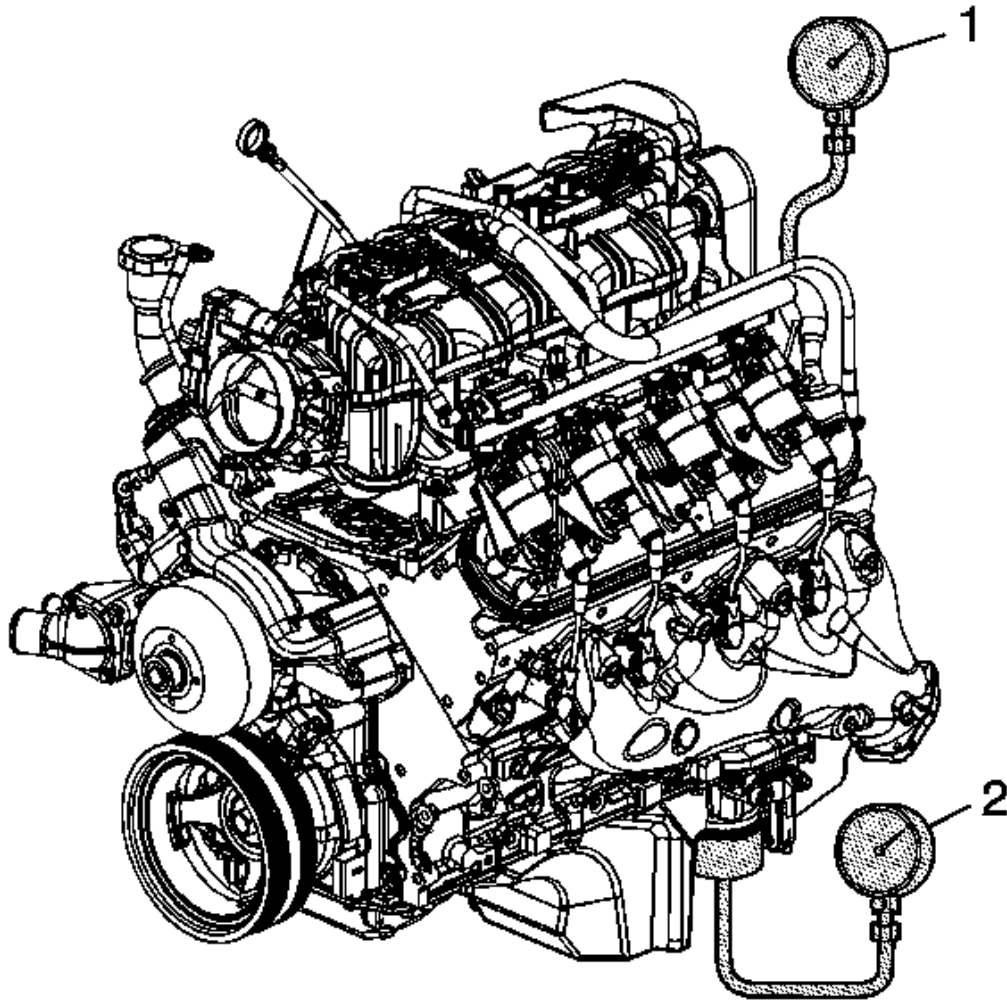


Fig. 21: Measure Engine Oil Pressure
Courtesy of GENERAL MOTORS CORP.

4. Install the **J 21867** (1), or equivalent, to the **J-21867-16** (2). See **Special Tools**.
5. Run the engine and measure the engine oil pressure while observing both gages.

Operate the throttle, as required, to increase and decrease the engine oil pressure.

- With the engine running and the lower pressure gage (2) measuring below 379 kPa (55 psi), both gages should display the same pressure reading. If the readings are not the

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

same and the lower gage (2) has a higher reading, the active fuel management oil pressure relief valve is stuck in the open position or the valve lifter oil manifold filter is plugged.

- With the engine running and the lower pressure gage (2) measuring above 379 kPa (55 psi), the upper gage (1) should display no greater than 379-517 kPa (55-75 psi). If the reading on the upper gage (1) is greater than 517 kPa (75 psi), the active fuel management oil pressure relief valve is stuck in the closed position.

6. Repair, as required.

CYLINDER DEACTIVATION (ACTIVE FUEL MANAGEMENT) VALVE LIFTER OIL MANIFOLD DIAGNOSIS AND TESTING

Tools Required

- **EN-46999** Active Fuel Management Tester. See **Special Tools**.
- **EN-46999-1** Active Fuel Management Tester Air Adapter. See **Special Tools**.
- **EN-46999-5** Active Fuel Management Tester Harness - Small Block V8. See **Special Tools**.

Diagnosis and Testing

- IMPORTANT:**
- **Cylinder Deactivation (Active Fuel Management) Valve Lifter Oil Manifold Diagnosis and Testing is applicable for RPO LH6/LMG/LY5/LC9/L76.**
 - **A minimum shop air source of 206 kPa (30 psi) is required for manifold testing.**
 - **A water bleed is located on the side of the EN-46999 . See Special Tools. Occasionally, depress the valve in order to remove excess water from the tool.**

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

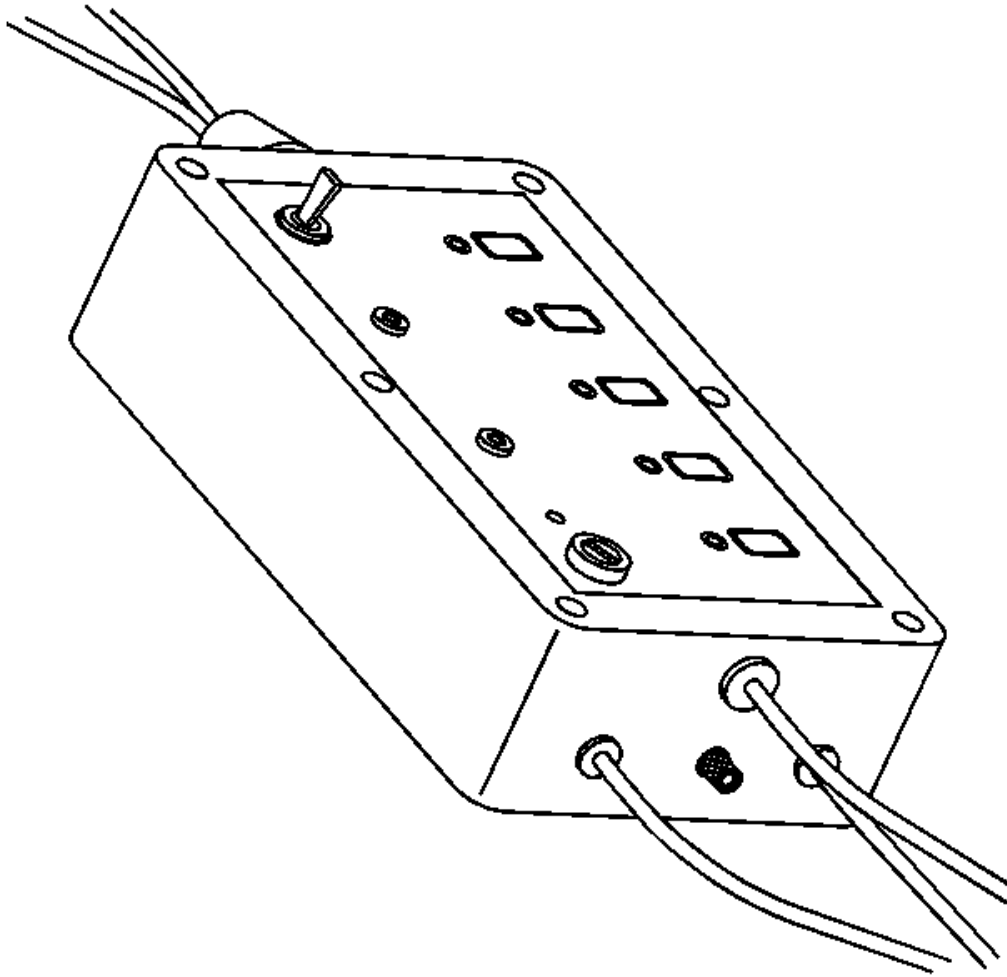


Fig. 22: Identifying Displacement On-Demand Tester
Courtesy of GENERAL MOTORS CORP.

The manifold bench test provides a maximum 206 kPa (30 psi) of filtered shop air to the manifold and will test each solenoid/valve for the following conditions:

- Proper operation
- A stuck open condition - constant air flow
- A stuck closed condition - no air flow
- A flow restriction within the manifold

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Individually depress each of the buttons 1-4 on the **EN-46999** in order to activate each of the solenoid/valves. See **Special Tools**. When activating each solenoid/valve, a loud click should be heard from the solenoid and an increased amount of air will exit the outlet ports.
 - Button 1 will energize the solenoid/valve 1 for engine cylinder number 1.
 - Button 2 will energize the solenoid/valve 2 for engine cylinder number 4.
 - Button 3 will energize the solenoid/valve 3 for engine cylinder number 6.
 - Button 4 will energize the solenoid/valve 4 for engine cylinder number 7.

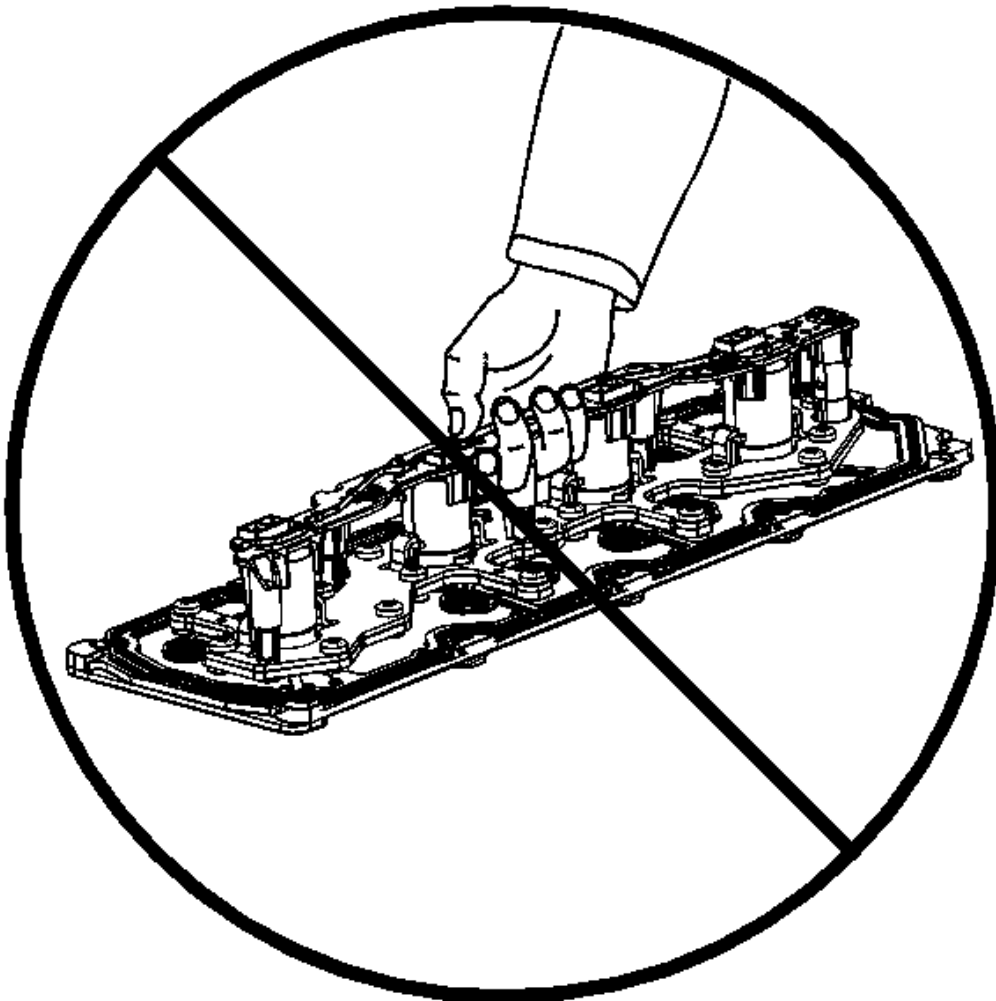


Fig. 23: Valve Lifter Oil Manifold

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Courtesy of GENERAL MOTORS CORP.

2. Do not lift the manifold assembly by the electrical lead frame.

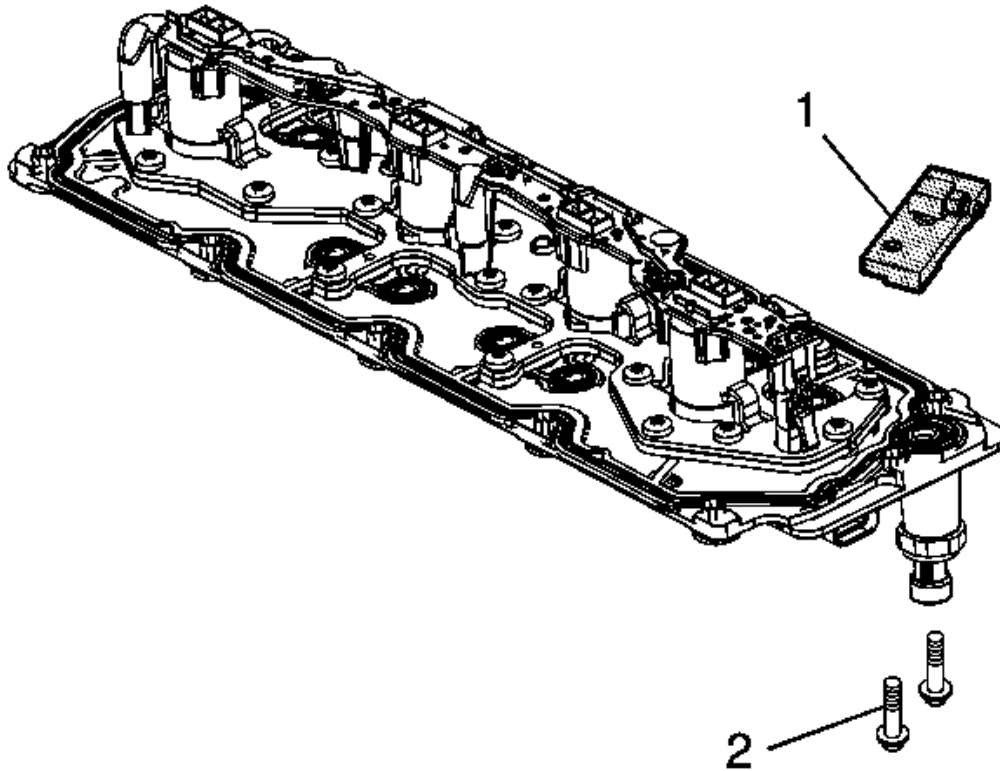


Fig. 24: Displacement-on-Demand Tester Air Adapter
Courtesy of GENERAL MOTORS CORP.

3. Install the **EN-46999-1** (1) to the manifold. See **Special Tools**.

NOTE: Refer to **Fastener Notice** .

4. Install 2 of the manifold bolts (2) to the **EN-46999-1** . See **Special Tools**.

Tighten: Tighten the bolts to 25 N.m (18 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

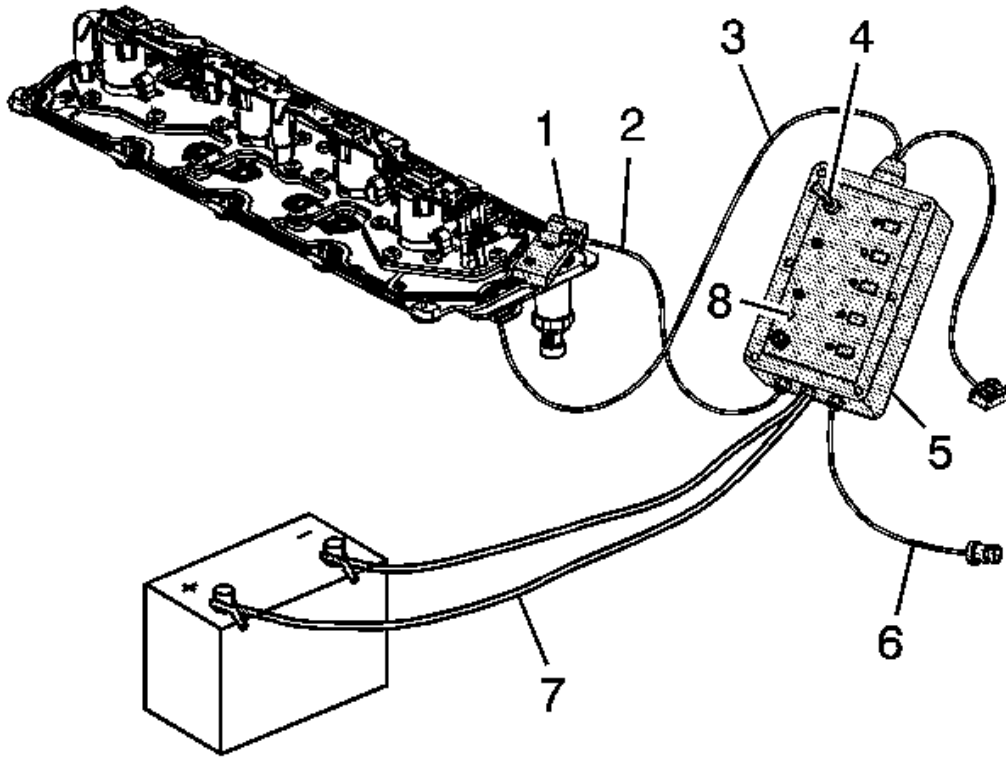


Fig. 25: Connecting Air Out Hose
Courtesy of GENERAL MOTORS CORP.

5. Connect the air out hose (2) of the **EN-46999** (5) to the **EN-46999-1** (1). See **Special Tools**. Verify the air supply switch (4) is in the off position.
6. Connect the air in hose (6) of the **EN-46999** (5) to a shop air source. See **Special Tools**.
7. Connect the 12-volt power supply connectors (7) of the **EN-46999** (5) to a 12-volt power supply. See **Special Tools**. Verify the Power light (8) on the tool is illuminated. If the light on the tool is not illuminated when connected to a 12-volt power supply, test and/or replace the 3 amp fuse.
8. Connect the **EN-46999-5** power cable (3) to the electrical connector of the manifold. See **Special Tools**.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

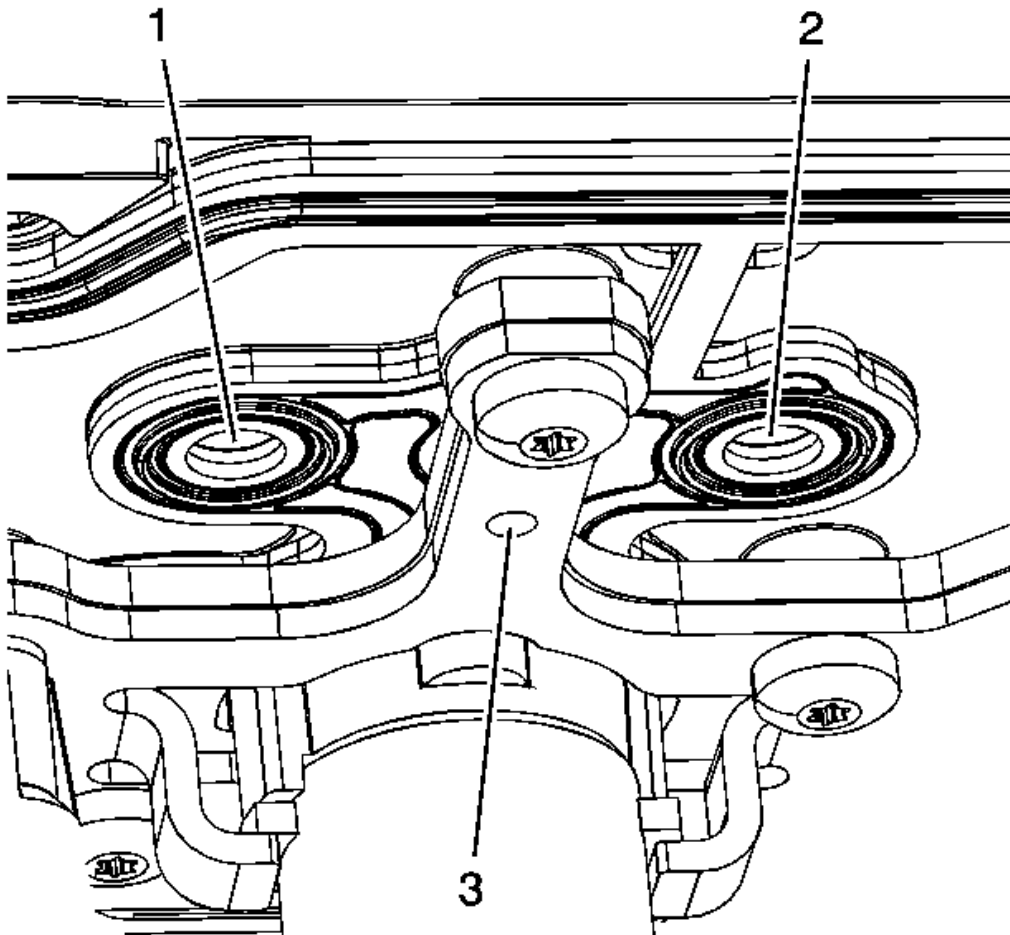


Fig. 26: Bleed Holes & Outlet Ports
Courtesy of GENERAL MOTORS CORP.

9. Turn the air supply switch of the **EN-46999** to the ON position. See **Special Tools**. With the air supply connected to the manifold assembly and the solenoid/valves in the closed position, a limited amount of air will exit each of the bleed holes (3) and outlet ports (1, 2) of the manifold.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

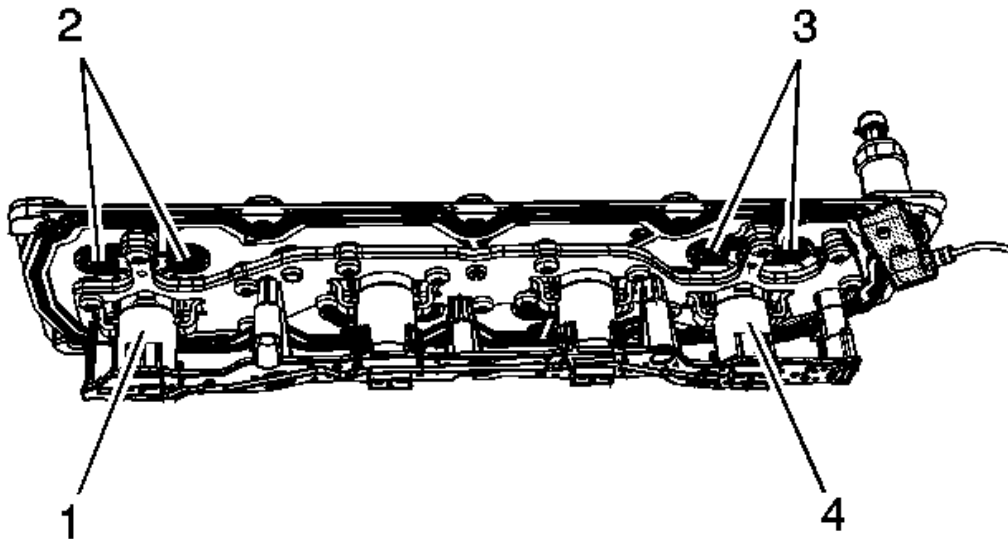


Fig. 27: Testing Solenoid/Valves
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The manifold must be tested in the proper position to ensure the solenoid/valves operate as designed.

10. Position the manifold assembly onto a bench at a 45 degree angle in order to test solenoid/valves 1 and 4.
11. Depress button number 1 on the tool to activate solenoid/valve 1. With button 1 depressed, the solenoid/valve (1) should open, allowing an increased amount of air to exit the outlet ports (2) of the manifold.
12. Depress button number 4 on the tool to activate solenoid/valve 4. With button 4 depressed, the solenoid/valve (4) should open, allowing an increased amount of air to exit the outlet ports (3) of the manifold.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

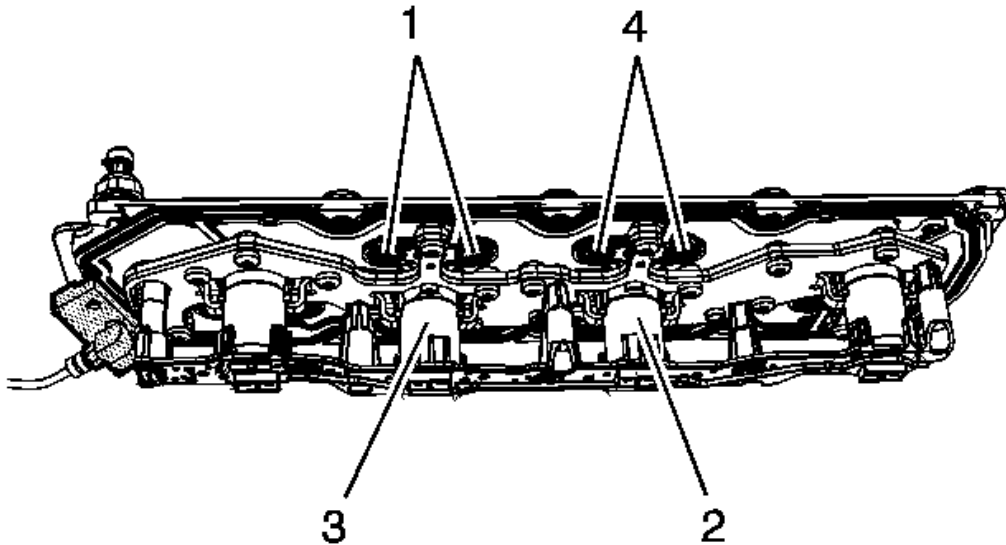


Fig. 28: View Of Solenoid/Valves
Courtesy of GENERAL MOTORS CORP.

13. Reposition the manifold assembly onto a bench at a 45 degree angle in order to test solenoid/valves 2 and 3.
14. Depress button number 2 on the tool to activate solenoid/valve 2. With button 2 depressed, the solenoid/valve (2) should open, allowing an increased amount of air to exit the outlet ports (4) of the manifold.
15. Depress button number 3 on the tool to activate solenoid/valve 3. With button 3 depressed, the solenoid/valve (3) should open, allowing an increased amount of air to exit the outlet ports (1) of the manifold.
16. When the test is completed, turn the air source switch on the **EN-46999** to the off position and disconnect the tool from the 12-volt power supply, shop air source and manifold assembly. See **Special Tools**.
17. If after testing, it has been determined that one or more of the solenoid/valves is not functioning properly, replace the manifold as an assembly.
18. If after testing, it has been determined that the solenoid/valves are functioning properly, replace the valve lifters as required. Both intake and exhaust lifters should be replaced in pairs.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

CAMSHAFT POSITION ACTUATOR AND SOLENOID VALVE DIAGNOSIS AND TESTING

IMPORTANT: Camshaft Position (CMP) Actuator and Solenoid Valve Diagnosis and Testing is applicable for RPO LY6/L76/L92.

1. Measure the engine oil level. Fill, as required.
2. Using the scan tool, inspect for diagnostic codes within the engine control module (ECM). Refer to **Diagnostic System Check - Vehicle** . Repair, as required.
3. Verify proper engine oil pressure and operation of the active fuel management oil pressure relief valve. Refer to **Oil Pressure Diagnosis and Testing**.
4. Inspect the CMP actuator solenoid valve for proper operation. Refer to **Camshaft Position Actuator Solenoid Valve Inspection (On-Vehicle)** or **Camshaft Position Actuator Solenoid Valve Inspection (Off-Vehicle)** .
 - If valve inspection confirms proper movement of the spool, replace the CMP actuator and CMP valve.
 - If valve inspection confirms improper movement of the spool, replace only the CMP valve.
5. Verify proper operation of the CMP actuator control system. Refer to **Diagnostic Starting Point - Engine Controls** .

OIL LEAK DIAGNOSIS

Step	Action	Yes	No
IMPORTANT: You can repair most fluid leaks by first visually locating the leak, repairing or replacing the component, or by resealing the gasket surface. Once the leak is identified, determine the cause of the leak. Repair the cause of the leak as well as the leak itself.			
1	1. Operate the vehicle until it reaches normal operating temperature. 2. Park the vehicle on a level surface, over a large sheet of paper or other clean surface. 3. Wait 15 minutes. 4. Inspect for drippings. Are drippings present?	Go to Step 2	System OK
2	Can you identify the type of fluid and the approximate location of the leak?	Go to Step 10	Go to Step 3

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado,
Sierra & Silverado

3	<ol style="list-style-type: none"> 1. Visually inspect the suspected area. Use a small mirror to assist in looking at hard to see areas. 2. Inspect for leaks at the following locations: <ul style="list-style-type: none"> • Sealing surfaces • Fittings • Cracked or damaged components <p>Can you identify the type of fluid and the approximate location of the leak?</p>	Go to Step 10	Go to Step 4
4	<ol style="list-style-type: none"> 1. Completely clean the entire engine and surrounding components. 2. Operate the vehicle for several kilometers, miles, at normal operating temperature and at varying speeds. 3. Park the vehicle on a level surface, over a large sheet of paper or other clean surface. 4. Wait 15 minutes. 5. Identify the type of fluid, and the approximate location of the leak. <p>Can you identify the type of fluid and the approximate location of the leak?</p>	Go to Step 10	Go to Step 5
5	<ol style="list-style-type: none"> 1. Visually inspect the suspected area. Use a small mirror to assist in looking at hard to see areas. 2. Inspect for leaks at the following locations: <ul style="list-style-type: none"> • Sealing surfaces • Fittings • Cracked or damaged components <p>Can you identify the type of fluid and the approximate location of the leak?</p>	Go to Step 10	Go to Step 6
	<ol style="list-style-type: none"> 1. Completely clean the entire engine and surrounding components. 2. Apply an aerosol-type powder, baby 		

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

6	<p>powder, foot powder, etc., to the suspected area.</p> <ol style="list-style-type: none"> 3. Operate the vehicle for several kilometers, miles, at normal operating temperature and at varying speeds. 4. Identify the type of fluid, and the approximate location of the leak, from the discolorations in the powder surface. <p>Can you identify the type of fluid and the approximate location of the leak?</p>	Go to Step 10	Go to Step 7
7	<ol style="list-style-type: none"> 1. Visually inspect the suspected area. Use a small mirror to assist in looking at hard to see areas. 2. Inspect for leaks at the following locations: <ul style="list-style-type: none"> • Sealing surfaces • Fittings • Cracked or damaged components <p>Can you identify the type of fluid and the approximate location of the leak?</p>	Go to Step 10	Go to Step 8
8	<p>Use the J 28428-E high-intensity black light kit in order to identify the type of fluid, and the approximate location of the leak. Refer to the manufacturer's instructions when using the tool.</p> <p>Can you identify the type of fluid and the approximate location of the leak?</p>	Go to Step 10	Go to Step 9
9	<ol style="list-style-type: none"> 1. Visually inspect the suspected area. Use a small mirror to assist in looking at hard to see areas. 2. Inspect for leaks at the following locations: <ul style="list-style-type: none"> • Sealing surfaces • Fittings • Cracked or damaged components <p>Can you identify the type of fluid and the approximate location of the leak?</p>	Go to Step 10	System OK

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

10	<p>1. Inspect the engine for mechanical damage. Special attention should be shown to the following areas:</p> <ul style="list-style-type: none"> • Higher than recommended fluid levels • Higher than recommended fluid pressures • Plugged or malfunctioning fluid filters or pressure bypass valves • Plugged or malfunctioning engine ventilation system • Improperly tightened or damaged fasteners • Cracked or porous components • Improper sealants or gaskets, where required • Improper sealant or gasket installation • Damaged or worn gaskets or seals • Damaged or worn sealing surfaces <p>2. Inspect the engine for customer modifications.</p> <p>Is there mechanical damage, or customer modifications to the engine?</p>	Go to Step 11	System OK
11	<p>Repair or replace all damaged or modified components.</p> <p>Does the engine still leak oil?</p>	Go to Step 1	System OK

CRANKCASE VENTILATION SYSTEM INSPECTION/DIAGNOSIS

Symptom	Correction
External oil leak	<p>Inspect for any of the following conditions:</p> <ul style="list-style-type: none"> • Restricted or kinked PCV hose or engine vent hose • Damaged, incorrect, or incorrectly installed PCV hose • Excessive crankcase pressure
Rough Idle	Inspect for any of the following conditions:

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

	<ul style="list-style-type: none">• Restricted or kinked PCV hose or engine vent hose• Leaking (damaged) PCV hose• Vacuum hoses worn or not properly installed
Stalling or slow idle speed	Inspect for any of the following conditions: <ul style="list-style-type: none">• Restricted or kinked engine vent hose• Leaking (damaged) PCV hose
High idle speed	Inspect for a leaking (damaged) PCV hose
Sludge in the engine	Inspect for restricted or kinked PCV hose or engine vent hose

DRIVE BELT CHIRPING, SQUEAL, AND WHINE DIAGNOSIS

Diagnostic Aids

- A chirping or squeal noise may be intermittent due to moisture on the drive belts or the pulleys. It may be necessary to spray a small amount of water on the drive belts in order to duplicate the customer's concern. If spraying water on the drive belt duplicates the symptom, cleaning the belt pulleys may be the probable solution.
- If the noise is intermittent, verify the accessory drive components by varying their loads making sure they are operated to their maximum capacity. An overcharged A/C system, power steering system with a pinched hose or wrong fluid, or a generator failing are suggested items to inspect.
- A chirping, squeal or whine noise may be caused by a loose or improper installation of a body or suspension component. Other items of the vehicle may also cause the noise.
- The drive belts will not cause a whine noise.

Test Description

The numbers below refer to the step numbers on the diagnostic table.

2: The noise may not be engine related. This step is to verify that the engine is making the noise. If the engine is not making the noise do not proceed further with this table.

3: The noise may be an internal engine noise. Removing the drive belts one at a time and operating the engine for a brief period will verify the noise is related to the drive belt. When removing the drive belt the water pump may not be operating and the engine may overheat. Also DTCs may set when the engine is operating with the drive belts removed.

4: Inspect all drive belt pulleys for pilling. Pilling is the small balls or pills or it can be strings in the drive belt grooves from the accumulation of rubber dust.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

6: Misalignment of the pulleys may be caused from improper mounting of the accessory drive component, incorrect installation of the accessory drive component pulley, or the pulley bent inward or outward from a previous repair. Test for a misaligned pulley using a straight edge in the pulley grooves across two or three pulleys. If a misaligned pulley is found refer to that accessory drive component for the proper installation procedure for that pulley.

10: Inspecting of the fasteners can eliminate the possibility that a wrong bolt, nut, spacer, or washer was installed.

12: Inspecting the pulleys for being bent should include inspecting for a dent or other damage to the pulleys that would prevent the drive belt from not seating properly in all of the pulley grooves or on the smooth surface of a pulley when the back side of the belt is used to drive the pulley.

14: This test is to verify that the drive belt tensioner operates properly. If the drive belt tensioner is not operating properly, proper belt tension may not be achieved to keep the drive belt from slipping which could cause a squeal noise.

15: This test is to verify that the drive belt is not too long, which would prevent the drive belt tensioner from working properly. Also if an incorrect length drive belt was installed, it may not be routed properly and may be turning an accessory drive component in the wrong direction.

16: Misalignment of the pulleys may be caused from improper mounting of the accessory drive component, incorrect installation of the accessory drive component pulley, or the pulley bent inward or outward from a previous repair. Test for a misaligned pulley using a straight edge in the pulley grooves across two or three pulleys. If a misaligned pulley is found refer to that accessory drive component for the proper installation procedure for that pulley.

17: This test is to verify that the pulleys are the correct diameter or width. Using a known good vehicle compare the pulley sizes.

19: Replacing the drive belt when it is not damaged or there is not excessive pilling will only be a temporary repair.

Step	Action	Yes	No
NOTE: Refer to <u>Belt Dressing Notice</u> .			
DEFINITION: The following items are indications of chirping: <ul style="list-style-type: none">• A high pitched noise that is heard once per revolution of the drive belt or a pulley.			

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- Chirping may occur on cold damp start-ups and will subside once the vehicle reaches normal operating temp.

DEFINITION: The following items are indications of drive belt squeal:

- A loud screeching noise that is caused by a slipping drive belt. This is unusual for a drive belt with multiple ribs.
- The noise occurs when a heavy load is applied to the drive belt, such as an air conditioning compressor engagement snapping the throttle, or slipping on a seized pulley or a faulty accessory drive component.

DEFINITION: The following items are indications of drive belt whine:

- A high pitched continuous noise.
- The noise may be caused by an accessory drive component failed bearing.

1	Did you review the Drive Belt Symptom operation and perform the necessary inspections?	Go to Step 2	Go to Symptoms - Engine Mechanical
2	Verify that there is a chirping, squeal or whine noise. Does the engine make the chirping squeal or whine noise?	Go to Step 3	Go to Diagnostic Aids
3	<ol style="list-style-type: none"> 1. Remove the drive belt. If the engine has multiple drive belts, remove the belts one at a time and perform the test below each time a belt is removed. 2. Operate the engine for no longer than 30-40 seconds. 3. Repeat this test if necessary by removing the remaining belt(s). <p>Does the chirping, squeal or whine noise still exist?</p>	Go to Symptoms - Engine Mechanical	Go to Step 4
	<ul style="list-style-type: none"> • If diagnosing a chirping noise, inspect for severe pilling exceeding 1/3 of the belt groove depth. 		

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

4	<ul style="list-style-type: none"> • If diagnosing a squeal or whine noise, proceed to step 13. <p>Do the belt grooves have pilling?</p>	Go to Step 5	Go to Step 6
5	<p>Clean the drive belt pulleys with a suitable wire brush.</p> <p>Did you complete the repair?</p>	Go to Step 20	Go to Step 6
6	<p>Inspect for misalignment of the pulleys.</p> <p>Are any of the pulleys misaligned?</p>	Go to Step 7	Go to Step 8
7	<p>Replace or repair any misaligned pulleys.</p> <p>Did you complete the repair?</p>	Go to Step 20	Go to Step 8
8	<p>Inspect for bent or cracked brackets.</p> <p>Did you find any bent or cracked brackets?</p>	Go to Step 9	Go to Step 10
9	<p>Replace any bent or cracked brackets.</p> <p>Did you complete the repair?</p>	Go to Step 20	Go to Step 10
10	<p>Inspect for improper, loose or missing fasteners.</p> <p>Did you find the condition?</p>	Go to Step 11	Go to Step 12
11	<p>NOTE: Refer to <u>Fastener Notice</u> .</p> <ol style="list-style-type: none"> 1. Tighten any loose fasteners. Refer to <u>Fastener Tightening Specifications</u>. 2. Replace any improper or missing fasteners. <p>Did you complete the repair?</p>	Go to Step 20	Go to Step 12
12	<p>Inspect for a bent pulley.</p> <p>Did you find the condition?</p>	Go to Step 18	Go to Step 13
13	<p>Inspect for an accessory drive component seized bearing or a faulty accessory drive component.</p> <p>If diagnosing a whine noise and the condition still exist, proceed to Diagnostic Aids.</p> <p>Did you find and correct the condition?</p>	Go to Step 20	Go to Step 14
14	<p>Test the drive belt tensioner for proper operation. Refer to <u>Drive Belt Tensioner Diagnosis</u>.</p> <p>Did you find and correct the condition?</p>	Go to Step 20	Go to Step 15

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

15	Inspect for the correct drive belt length. Did you find and correct the condition?	Go to Step 20	Go to Step 16
16	Inspect for misalignment of a pulley. Did you find and correct the condition?	Go to Step 20	Go to Step 17
17	Inspect for the correct pulley size. Did you find and correct the condition?	Go to Step 20	Go to Diagnostic Aids
18	Replace the bent pulley. Did you complete the repair?	Go to Step 20	Go to Step 19
19	Replace the drive belt. Refer to <u>Drive Belt Replacement - Accessory</u> or <u>Air Conditioning Compressor Belt Replacement</u> . Did you complete the repair?	Go to Step 20	Go to Diagnostic Aids
20	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 3

DRIVE BELT RUMBLING AND VIBRATION DIAGNOSIS

Diagnostic Aids

The accessory drive components can have an affect on engine vibration. Vibration from the engine operating may cause a body component or another part of the vehicle to make rumbling noise. Vibration can be caused by, but not limited to the air conditioning (A/C) system over charged, the power steering system restricted or the incorrect fluid, or an extra load on the generator. To help identify an intermittent or an improper condition, vary the loads on the accessory drive components.

The drive belt may have a rumbling condition that can not be seen or felt. Sometimes replacing the drive belt may be the only repair for the symptom.

If replacing the drive belt, completing the diagnostic table, and the noise is only heard when the drive belts are installed, there might be an accessory drive component with a failure. Varying the load on the different accessory drive components may aid in identifying which component is causing the rumbling noise.

Test Description

The numbers below refer to the step numbers on the diagnostic table.

2: This test is to verify that the symptom is present during diagnosing. Other vehicle

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

components may cause a similar symptom.

3: This test is to verify that one of the drive belts is causing the rumbling noise or vibration. Rumbling noise may be confused with an internal engine noise due to the similarity in the description. Remove only one drive belt at a time if the vehicle has multiple drive belts. When removing the drive belts the water pump may not be operating and the engine may overheat. Also DTCs may set when the engine is operating with the drive belts removed.

4: Inspecting the drive belts is to ensure that they are not causing the noise. Small cracks across the ribs of the drive belt will not cause the noise. Belt separation is identified by the plies of the belt separating and may be seen at the edge of the belt or felt as a lump in the belt.

5: Small amounts of pilling is normal condition and acceptable. When the pilling is severe the drive belt does not have a smooth surface for proper operation.

9: Inspecting of the fasteners can eliminate the possibility that the wrong bolt, nut, spacer, or washer was installed.

11: This step should only be performed if the water pump is driven by the drive belt. Inspect the water pump shaft for being bent. Also inspect the water pump bearings for smooth operation and excessive play. Compare the water pump with a known good water pump.

12: Accessory drive component brackets that are bent, cracked, or loose may put extra strain on that accessory component causing it to vibrate.

Step	Action	Yes	No
NOTE: Refer to <u>Belt Dressing Notice</u> .			
DEFINITION: The following items are indications of drive belt rumbling:			
<ul style="list-style-type: none">● A low pitch tapping, knocking, or thumping noise heard at or just above idle.● Heard once per revolution of the drive belt or a pulley.● Rumbling may be caused from:<ul style="list-style-type: none">○ Pilling, the accumulation of rubber dust that forms small balls (pills) or strings in the drive belt pulley groove○ The separation of the drive belt○ A damaged drive belt			
DEFINITION: The following items are indications of drive belt vibration:			
<ul style="list-style-type: none">● The vibration is engine-speed related.			

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- The vibration may be sensitive to accessory load.

1	Did you review the Drive Belt Symptom operation and perform the necessary inspections?	Go to Step 2	Go to Symptoms - Engine Mechanical
2	Verify that there is a rumbling noise or that the vibration is engine related. Does the engine make the rumbling noise or vibration?	Go to Step 3	Go to Diagnostic Aids
3	<p>IMPORTANT: If the engine has multiple drive belts, remove the belts one at a time and perform the test below each time a belt is removed.</p> <ol style="list-style-type: none"> 1. Remove the drive belt. 2. Operate the engine for no longer than 30-40 seconds. 3. Repeat this test if necessary by removing the remaining belt(s). <p>Does the rumbling or vibration still exist?</p>	Go to Symptoms - Engine Mechanical or Vibration Analysis - Engine	Go to Step 4
4	Inspect the drive belts for wear, damage, separation, sections of missing ribs, and debris build-up. Did you find any of these conditions?	Go to Step 7	Go to Step 5
5	Inspect for severe pilling of more than 1/3 of the drive belt pulley grooves. Did you find severe pilling?	Go to Step 6	Go to Step 7
6	<ol style="list-style-type: none"> 1. Clean the drive belt pulleys using a suitable wire brush. 2. Reinstall the drive belts. Refer to Drive Belt Replacement - Accessory or Air Conditioning Compressor Belt Replacement. <p>Did you correct the condition?</p>	Go to Step 8	Go to Step 7
7	Install a new drive belt. Refer to Drive Belt Replacement - Accessory or Air Conditioning Compressor Belt		

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

	Replacement . Did you complete the replacement?	Go to Step 8	Go to Step 9
8	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 9
9	Inspect for improper, loose or missing fasteners. Did you find any of these conditions?	Go to Step 10	Go to Step 11
10	<p>NOTE: Refer to <u>Fastener Notice</u> .</p> <ol style="list-style-type: none"> 1. Tighten any loose fasteners. Refer to <u>Fastener Tightening Specifications</u>. 2. Replace improper or missing fasteners. Did you complete the repair?	Go to Step 13	Go to Step 11
11	Inspect for a bent water pump shaft. Refer to <u>Water Pump Replacement (LY6, L76 and L92)</u> or <u>Water Pump Replacement (LH6, LY2, LY5, and LMG)</u> . Did you find and correct the condition?	Go to Step 13	Go to Step 12
12	Inspect for bent or cracked brackets. Did you find and correct the condition?	Go to Step 13	Go to Diagnostic Aids
13	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 3

DRIVE BELT FALLS OFF AND EXCESSIVE WEAR DIAGNOSIS

Diagnostic Aids

If the drive belt repeatedly falls off the drive belt pulleys, this is because of pulley misalignment.

An extra load that is quickly applied on released by an accessory drive component may cause the drive belt to fall off the pulleys. Verify the accessory drive components operate properly.

If the drive belt is the incorrect length, the drive belt tensioner may not keep the proper tension on the drive belt.

Excessive wear on a drive belt is usually caused by an incorrect installation or the wrong drive belt for the application.

Minor misalignment of the drive belt pulleys will not cause excessive wear, but will probably

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

cause the drive belt to make a noise or to fall off.

Excessive misalignment of the drive belt pulleys will cause excessive wear but may also make the drive belt fall off.

Test Description

The numbers below refer to the step numbers on the diagnostic table.

2: This inspection is to verify the condition of the drive belt. Damage may of occurred to the drive belt when the drive belt fell off. The drive belt may of been damaged, which caused the drive belt to fall off. Inspect the belt for cuts, tears, sections of ribs missing, or damaged belt plys.

4: Misalignment of the pulleys may be caused from improper mounting of the accessory drive component, incorrect installation of the accessory drive component pulley, or the pulley bent inward or outward from a previous repair. Test for a misaligned pulley using a straight edge in the pulley grooves across two or three pulleys. If a misaligned pulley is found refer to that accessory drive component for the proper installation procedure of that pulley.

5: Inspecting the pulleys for being bent should include inspecting for a dent or other damage to the pulleys that would prevent the drive belt from not seating properly in all of the pulley grooves or on the smooth surface of a pulley when the back side of the belt is used to drive the pulley.

6: Accessory drive component brackets that are bent or cracked will let the drive belt fall off.

7: Inspection of the fasteners can eliminate the possibility that a wrong bolt, nut, spacer, or washer was installed. Missing, loose, or the wrong fasteners may cause pulley misalignment from the bracket moving under load. Over tightening of the fasteners may cause misalignment of the accessory component bracket.

13: The inspection is to verify the drive belt is correctly installed on all of the drive belt pulleys. Wear on the drive belt may be caused by mis-positioning the drive belt by one groove on a pulley.

14: The installation of a drive belt that is too wide or too narrow will cause wear on the drive belt. The drive belt ribs should match all of the grooves on all of the pulleys.

15: This inspection is to verify the drive belt is not contacting any parts of the engine or body while the engine is operating. There should be sufficient clearance when the drive belt accessory drive components load varies. The drive belt should not come in contact with an engine or a body component when snapping the throttle.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Step	Action	Yes	No
<p>NOTE: Refer to <u>Belt Dressing Notice</u> .</p> <p>DEFINITION: The drive belt falls off the pulleys or may not ride correctly on the pulleys. DEFINITION: Wear at the outside ribs of the drive belt due to an incorrectly installed drive belt.</p>			
1	Did you review the drive belt symptom operation and perform the necessary inspections?	Go to Step 2	Go to <u>Symptoms - Engine Mechanical</u>
2	<ul style="list-style-type: none"> • If diagnosing excessive wear, proceed to step 13. • If diagnosing a drive belt that falls off, inspect for a damaged drive belt. <p>Did you find the condition?</p>	Go to Step 3	Go to Step 4
3	Install a new drive belt. Refer to <u>Drive Belt Replacement</u> . Does the drive belt continue to fall off?	Go to Step 4	System OK
4	Inspect for misalignment of the pulleys. Did you find and repair the condition?	Go to Step 12	Go to Step 5
5	Inspect for a bent or dented pulley. Did you find and repair the condition?	Go to Step 12	Go to Step 6
6	Inspect for a bent or a cracked bracket. Did you find and repair the condition?	Go to Step 12	Go to Step 7
7	Inspect for improper, loose or missing fasteners. Did you find loose or missing fasteners?	Go to Step 8	Go to Step 9
8	<p>NOTE: Refer to <u>Fastener Notice</u> .</p> <ol style="list-style-type: none"> 1. Tighten any loose fasteners. Refer to <u>Fastener Tightening Specifications</u> . 2. Replace improper or missing fasteners. <p>Does the drive belt continue to fall off?</p>	Go to Step 9	System OK
9	Test the drive belt tensioner for operating correctly. Refer to <u>Drive Belt Tensioner Diagnosis</u> .		

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado,
Sierra & Silverado

	Does the drive belt tensioner operate correctly?	Go to Step 11	Go to Step 10
10	Replace the drive belt tensioner. Refer to <u>Drive Belt Tensioner Replacement</u> . Does the drive belt continue to fall off?	Go to Step 11	System OK
11	Inspect for failed drive belt idler and drive belt tensioner pulley bearings. Did you find and repair the condition?	Go to Step 12	Go to Diagnostic Aids
12	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 2
13	Inspect the drive belt for the proper installation. Refer to <u>Drive Belt Replacement</u> . Did you find this condition?	Go to Step 16	Go to Step 14
14	Inspect for the proper drive belt. Did you find this condition?	Go to Step 16	Go to Step 15
15	Inspect for the drive belt rubbing against a bracket, hose, or wiring harness. Did you find and repair the condition?	Go to Step 17	Go to Diagnostic Aids
16	Replace the drive belt. Refer to <u>Drive Belt Replacement</u> . Did you complete the replacement?	Go to Step 17	-
17	Operate the system in order to verify the repair. Did you correct the condition?	System OK	-

DRIVE BELT TENSIONER DIAGNOSIS

Inspection Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

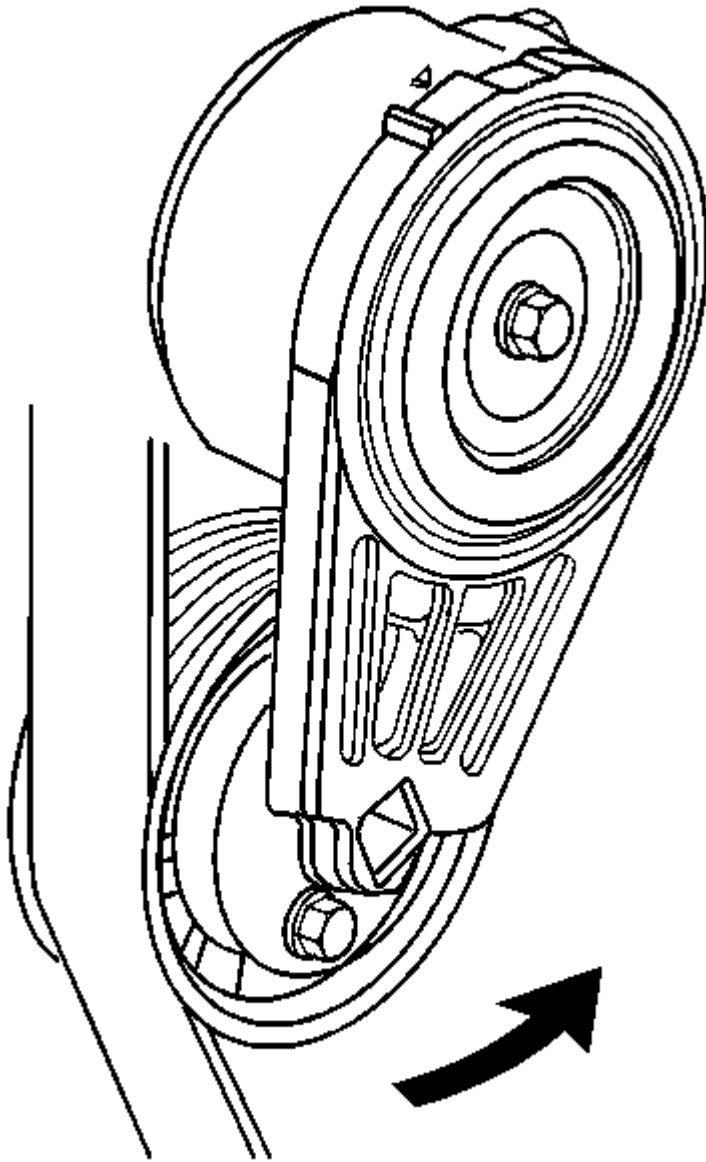


Fig. 29: Releasing Drive Belt Tension

Courtesy of GENERAL MOTORS CORP.

NOTE: Allowing the drive belt tensioner to snap into the free position may result in damage to the tensioner.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

IMPORTANT: When the engine is operating the drive belt tensioner arm will move. Do not replace the drive belt tensioner because of movement in the drive belt tensioner arm.

1. Remove the drive belt. Refer to [Drive Belt Replacement - Accessory](#) or [Air Conditioning Compressor Belt Replacement](#) .
2. Move the drive belt tensioner through its full travel.
 - The movement should feel smooth.
 - There should be no binding.
 - The tensioner should return freely.
3. If any binding is observed, replace the drive belt tensioner. Refer to [Drive Belt Tensioner Replacement - Accessory](#) or [Drive Belt Tensioner Replacement - Air Conditioning](#) .
4. Install the drive belt. Refer to of [Air Conditioning Compressor Belt Replacement](#) or [Drive Belt Replacement - Accessory](#) .

DESCRIPTION AND OPERATION

CRANKCASE VENTILATION SYSTEM DESCRIPTION

A closed crankcase ventilation system is used in order to provide a more complete scavenging of the crankcase vapors. Fresh air from the throttle body is supplied to the crankcase, mixed with blow-by gases, and then passed through a crankcase ventilation valve into the intake manifold.

The primary control is through the crankcase ventilation valve which meters the flow at a rate depending on manifold vacuum. To maintain idle quality, the crankcase ventilation valve restricts the flow when intake manifold vacuum is high. If abnormal operating conditions arise, the system is designed to allow excessive amounts of blow-by gases to back flow through the crankcase vent tube into the engine air inlet to be consumed by normal combustion.

Filtered fresh air is routed from up-stream of the throttle blade to the front of the right rocker arm cover via a formed rubber hose. To reduce the potential of oil pullover into the throttle bore area due to back flow of the ventilation system, the fitting in the right rocker arm cover is shielded from the rocker arms. From there fresh air and gases are routed through the crankcase and up to the opposite rocker arm cover where the positive crankcase ventilation (PCV) valve is located. Gases are then routed through a hose to the intake manifold.

DRIVE BELT SYSTEM DESCRIPTION

The drive belt system consists of the following components:

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- The drive belt
- The drive belt tensioner
- The drive belt idler pulley
- The crankshaft balancer pulley
- The accessory drive component mounting brackets
- The accessory drive components
 - The power steering pump, if belt driven
 - The generator
 - The A/C compressor, if equipped
 - The engine cooling fan, if belt driven
 - The water pump, if belt driven
 - The vacuum pump, if equipped
 - The air compressor, if equipped

The drive belt system may use 1 belt or 2 belts. The drive belt is thin so that it can bend backwards and has several ribs to match the grooves in the pulleys. The drive belts are made of different types of rubbers, chloroprene or EPDM, and have different layers or plies containing either fiber cloth or cords for reinforcement.

Both sides of the drive belt may be used to drive the different accessory drive components. When the back side of the drive belt is used to drive a pulley, the pulley is smooth.

The drive belt is pulled by the crankshaft balancer pulley across the accessory drive component pulleys. The spring loaded drive belt tensioner keeps constant tension on the drive belt to prevent the drive belt from slipping. The drive belt tensioner arm will move when loads are applied to the drive belt by the accessory drive components and the crankshaft.

The drive belt system may have an idler pulley, which is used to add wrap to the adjacent pulleys. Some systems use an idler pulley in place of an accessory drive component when the vehicle is not equipped with the accessory.

ENGINE COMPONENT DESCRIPTION

The 4.8, 5.3, 6.0, and 6.2 Liter V8 Engines

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

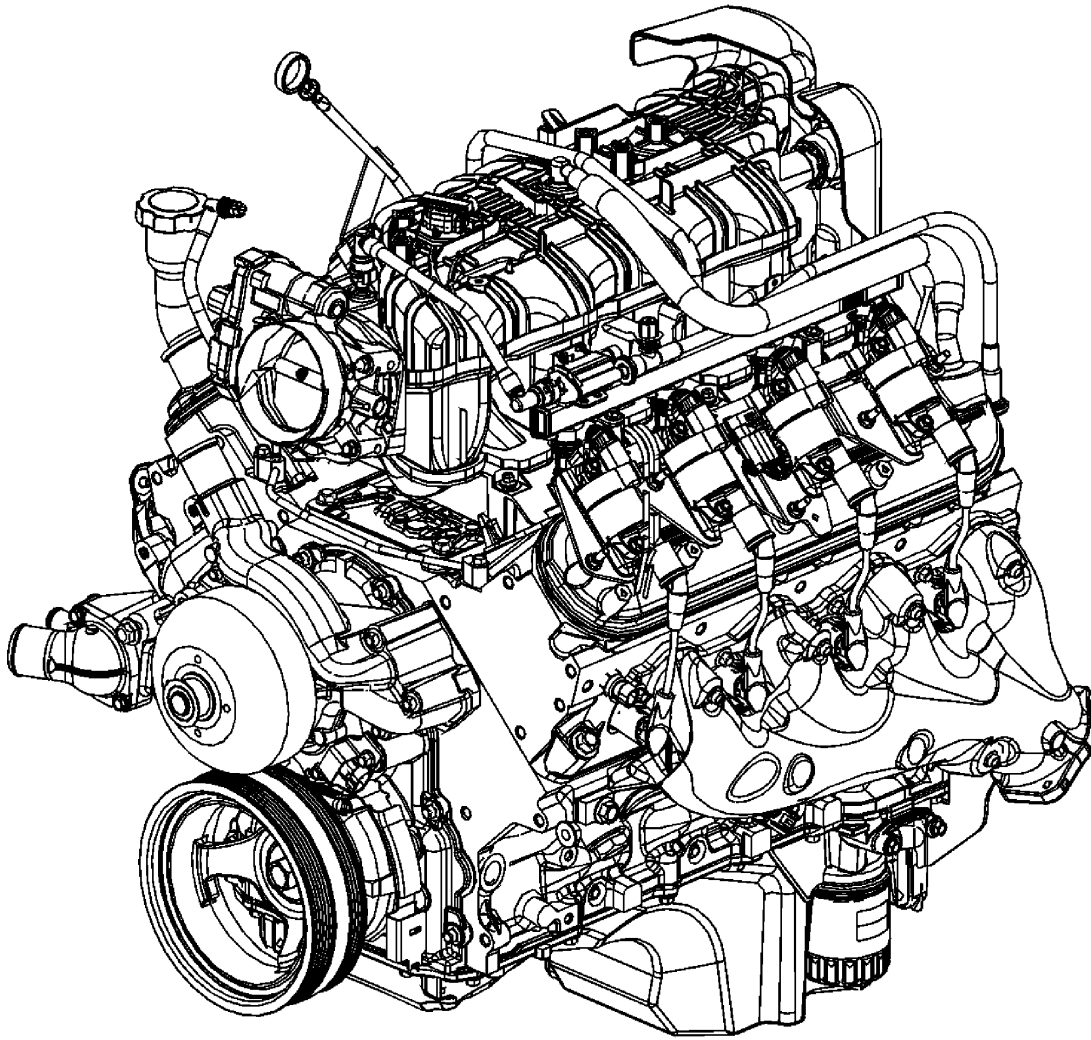


Fig. 30: View Of Engine
Courtesy of GENERAL MOTORS CORP.

To assist in determining the applicable hardware and control system for each engine RPO, refer to **Engine Content Specifications**.

Camshaft and Drive System - RPO LY2/LH6/LMG/LY5/LC9

A billet steel 1-piece camshaft is supported by 5 bearings pressed into the engine block. The camshaft timing sprocket is mounted to the front of the camshaft and is driven by the crankshaft sprocket through the camshaft timing chain. The camshaft position (CMP) sensor lobes are incorporated into the front face of the camshaft sprocket with the CMP sensor mounted in the engine front cover. A timing chain tensioner is mounted to the front of the engine block above the crankshaft sprocket. The externally splined crankshaft sprocket is positioned to the crankshaft by

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

a key and keyway. The crankshaft sprocket external splines drive the oil pump drive gear. A retaining plate mounted to the front of the engine block maintains camshaft location.

Camshaft and Drive System - RPO LY6/L76/L92

A billet steel 1-piece camshaft is supported by 5 bearings pressed into the engine block. The CMP actuator is mounted to the front of the camshaft and retained by the CMP solenoid valve. The CMP actuator is driven by the crankshaft sprocket through the camshaft timing chain. The CMP sensor wheel is incorporated into the front face of the CMP actuator with the CMP sensor and CMP actuator magnet mounted in the engine front cover. A timing chain tensioner is mounted to the front of the engine block above the crankshaft sprocket. The externally splined crankshaft sprocket is positioned to the crankshaft by a key and keyway. The crankshaft sprocket external splines drive the oil pump drive gear. A retaining plate mounted to the front of the engine block maintains camshaft location. Refer to **Camshaft Position Actuator and Solenoid Valve Description**.

Crankshaft

The crankshaft is cast nodular iron. The crankshaft is supported by 5 crankshaft bearings. The bearings are retained by crankshaft bearing caps which are machined with the engine block for proper alignment and clearance. The crankshaft journals are undercut and rolled. The center main journal is the thrust journal. A CKP reluctor ring is press-fit mounted at the rear of the crankshaft. The reluctor ring is not serviceable separately.

Cylinder Heads

The cylinder heads are cast aluminum and have pressed in place powdered metal valve guides and valve seats. Passages for the engine coolant air bleed system are at the front of each cylinder head. The valve rocker arm covers are retained to the cylinder head by 4 center mounted rocker arm cover bolts. RPO LY6, L76, and L92 use a high-flow cylinder head with an offset intake valve rocker arm design.

Engine Block - RPO LH6/LC9/L76/L92

The engine block is a cam-in-block deep skirt 90 degree V-configuration with 5 crankshaft bearing caps. The engine block is cast aluminum. The 5 crankshaft bearing caps each have 4 vertical M10 and 2 horizontal M8 mounting bolts. The camshaft is supported by 5 camshaft bearings pressed into the block.

Engine Block - RPO LY2/LMG/LY5/LY6

The engine block is a cam-in-block deep skirt 90 degree V-configuration with 5 crankshaft

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

bearing caps. The engine block is cast iron. The 5 crankshaft bearing caps each have 4 vertical M10 and 2 horizontal M8 mounting bolts. The camshaft is supported by 5 camshaft bearings pressed into the block.

Exhaust Manifolds

The exhaust manifolds are a 1-piece cast iron design. The exhaust manifolds direct exhaust gasses from the combustion chambers to the exhaust system. Each manifold also has an externally mounted heat shield that is retained by bolts.

Intake Manifold

The intake manifold is a 1-piece composite design that incorporates brass threaded inserts for mounting the fuel rail, throttle body, and wire harness studs. Each side of the intake manifold is sealed to the cylinder head by a non-reusable silicone sealing gasket/nylon carrier assembly. The electronically actuated throttle body bolts to the front of the intake manifold. The throttle body is sealed by a 1-piece push in place silicone gasket. The fuel rail assembly, with 8 separate fuel injectors, is retained to the intake by 4 bolts. The injectors are seated into their individual manifold bores with O-ring seals to provide sealing. A fuel rail stop bracket is retained to the rear of the left cylinder head by a mounting bolt. The manifold absolute pressure (MAP) sensor is installed and retained to the top front of the intake manifold and sealed by an O-ring seal. The evaporative (EVAP) emission canister purge solenoid valve is mounted to the fuel rail at the left front of the intake manifold. There are no coolant passages within the intake manifold.

Oil Pan

The structural rear-sump oil pan is cast aluminum. Incorporated into the design is the oil filter mounting boss, drain plug opening, baffle, and oil level sensor. The oil filter bypass valve is now incorporated into the new design oil filter assembly. The oil filter bypass valve is no longer part of the oil pan assembly as in earlier design applications. The active fuel management oil pressure relief valve is also internal to the oil pan. Alignment of the structural oil pan to the rear of the engine block and transmission housing is critical.

Piston and Connecting Rod Assembly

The pistons are cast aluminum. The pistons use 2 compression rings and 1 oil control ring assembly. The piston is a low friction, lightweight design with a flat or recessed top and barrel shaped skirt. The piston pins are chromium steel and are a full-floating design. The connecting rods are powdered metal. The connecting rods are fractured at the connecting rod journal and then machined for the proper clearance. All applications use a piston with a graphite coated skirt. The piston and pin are to be serviced as an assembly.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Valve Rocker Arm Cover Assemblies

The valve rocker arm covers are cast aluminum and use a pre-molded silicon gasket for sealing. Mounted to each rocker cover are the coil and bracket assemblies. Incorporated into the left cover is the positive crankcase ventilation (PCV) system dirty air passage. Incorporated into the right cover is the oil fill tube and the PCV fresh air passage.

Valve Train - RPO LY2/LY6/L92

Motion is transmitted from the camshaft through the hydraulic roller valve lifters and tubular pushrods to the roller type rocker arms. The nylon valve lifter guides position and retain the valve lifters. The valve rocker arms for each bank of cylinders are mounted on pedestals or pivot supports. Each rocker arm is retained on the pivot support and cylinder head by a bolt. Valve lash is net build.

Valve Train - RPO LH6/LMG/LY5/LC9/L76

Motion is transmitted from the camshaft through the hydraulic roller valve lifters and tubular pushrods to the roller type rocker arms. The nylon valve lifter guides position and retain the valve lifters. The valve rocker arms for each bank of cylinders are mounted on pedestals or pivot supports. Each rocker arm is retained on the pivot support and cylinder head by a bolt. Valve lash is net build. Cylinders 1, 4, 6, and 7 are active fuel management. Refer to **Cylinder Deactivation (Active Fuel Management) System Description**.

CYLINDER DEACTIVATION (ACTIVE FUEL MANAGEMENT) SYSTEM DESCRIPTION

System Operation

General Motors Active Fuel Management engine control system has the ability, under certain light load driving conditions, to provide maximum fuel economy by deactivating 4 of the engines 8 cylinders. The engine will normally operate on 8 cylinders in V8 mode during starting, idling, and medium or heavy throttle conditions. When commanded ON, the engine control module (ECM) will direct the active fuel management system and deactivate cylinders 1 and 7 on the left bank and cylinders 4 and 6 on the right bank, forcing V4 mode. Refer to **Lubrication Description (RPO LY2)** or **Lubrication Description (RPO LH6/LMG/LY5/LC9)** or **Lubrication Description (RPO LY6/L92)** or **Lubrication Description (RPO L76)** and **Cylinder Deactivation (Active Fuel Management) System Description** .

Valve Lifter Oil Manifold Assembly

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Fig. 31: View Of Engine Oil Flow **Courtesy of GENERAL MOTORS CORP.**

The valve lifter oil manifold assembly (1) is bolted to the top of the engine block beneath the intake manifold assembly. The oil manifold consists of 4 electrically operated and normally-closed solenoids (2). Each solenoid directs the flow of pressurized engine oil to the active fuel management intake and exhaust valve lifters (5). The active fuel management oil pressure relief

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

valve (6), located in the oil pan, regulates engine oil pressure to the lubrication system and the oil manifold.

When enabling conditions are met for active fuel management operation, the ECM will ground each solenoid control circuit in firing order sequence, allowing current to flow through the solenoid windings. With the windings energized, the solenoid valves open and direct pressurized engine oil through the valve lifter oil manifold into 8 vertical passages in the engine block lifter valley. The 8 vertical passages, 2 per cylinder, direct pressurized oil to the valve lifter bores of the cylinders to be deactivated. When vehicle operating conditions require a return to V8 mode, the ECM will turn OFF the ground circuit for the solenoids, allowing the solenoid valves to close. When the solenoid valves are closed, remaining oil pressure is exhausted through the bleed passages of the valve lifter oil manifold into the engine block lifter valley. The housing of the oil manifold incorporates several oil bleed passages that continually purge trapped air from the manifold and engine block.

To help control contamination within the active fuel management hydraulic system, a small replaceable oil filter (4) is located in the valve lifter oil manifold oil inlet passage. The oil pressure sensor (3) monitors engine oil pressure and provides information to the ECM.

Active Fuel Management Valve Lifters

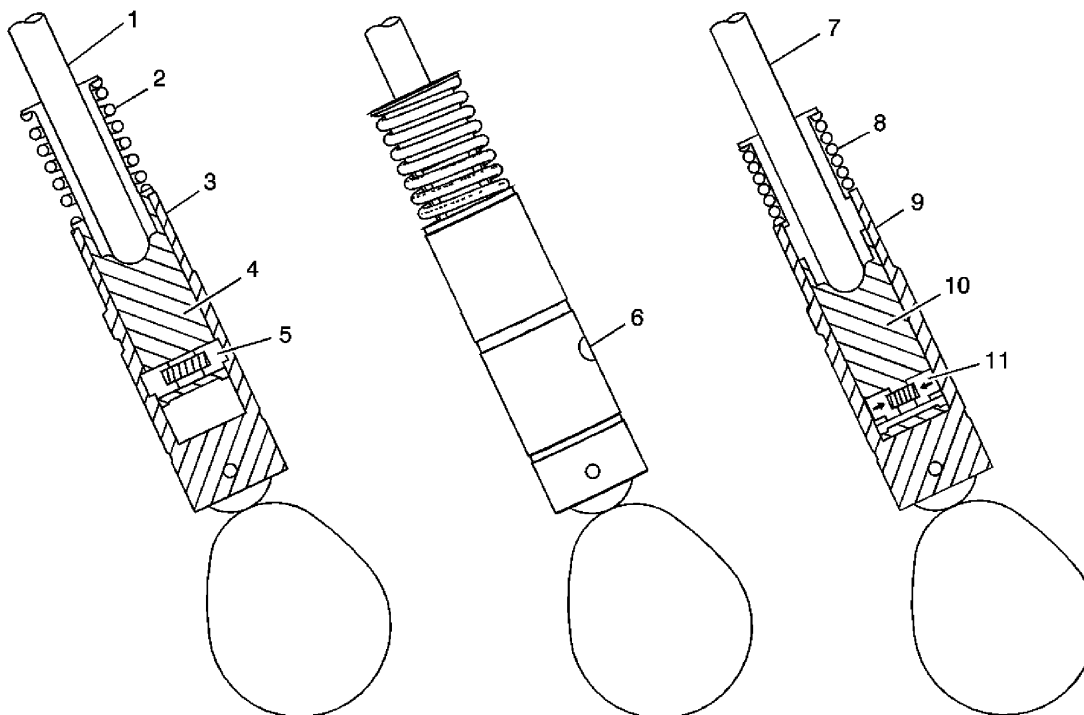


Fig. 32: Displacement On Demand Valve Lifters

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Courtesy of GENERAL MOTORS CORP.

When operating in V8 mode, the active fuel management valve lifters function similar to the non-active fuel management valve lifters. The active fuel management oil manifold solenoids are in the closed position, with no pressurized oil directed to the valve lifters. The pushrod (1) travels upward and downward to actuate the rocker arm and valve. The spring loaded locking pins (5) of the lifter are extended outward and mechanically lock the pin housing (4) to the outer body of the valve lifter (3).

When the active fuel management system is commanded ON, the ECM will direct the solenoids of the oil manifold to open and direct pressurized oil to the valve lifters. Oil travels through the valve lifter oil manifold and engine block oil galleries and enters the inlet port (6) of the valve lifter.

When operating in V4 mode, pressurized oil forces the locking pins (11) inward. The pushrod (7) remains in a constant position and does not travel upward and downward. The outer body of the lifter (9) moves upward and downward independently from the pin housing (10). The valve lifter spring (8) retains tension on the valve train components to eliminate valve train noise.

When the active fuel management system is commanded OFF, the ECM directs the solenoids of the oil manifold to close, stopping the flow of pressurized oil to the valve lifters. The oil pressure within the lifter will decrease and the locking pins will move outward to mechanically lock the pin housing and outer body.

Engine Block

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

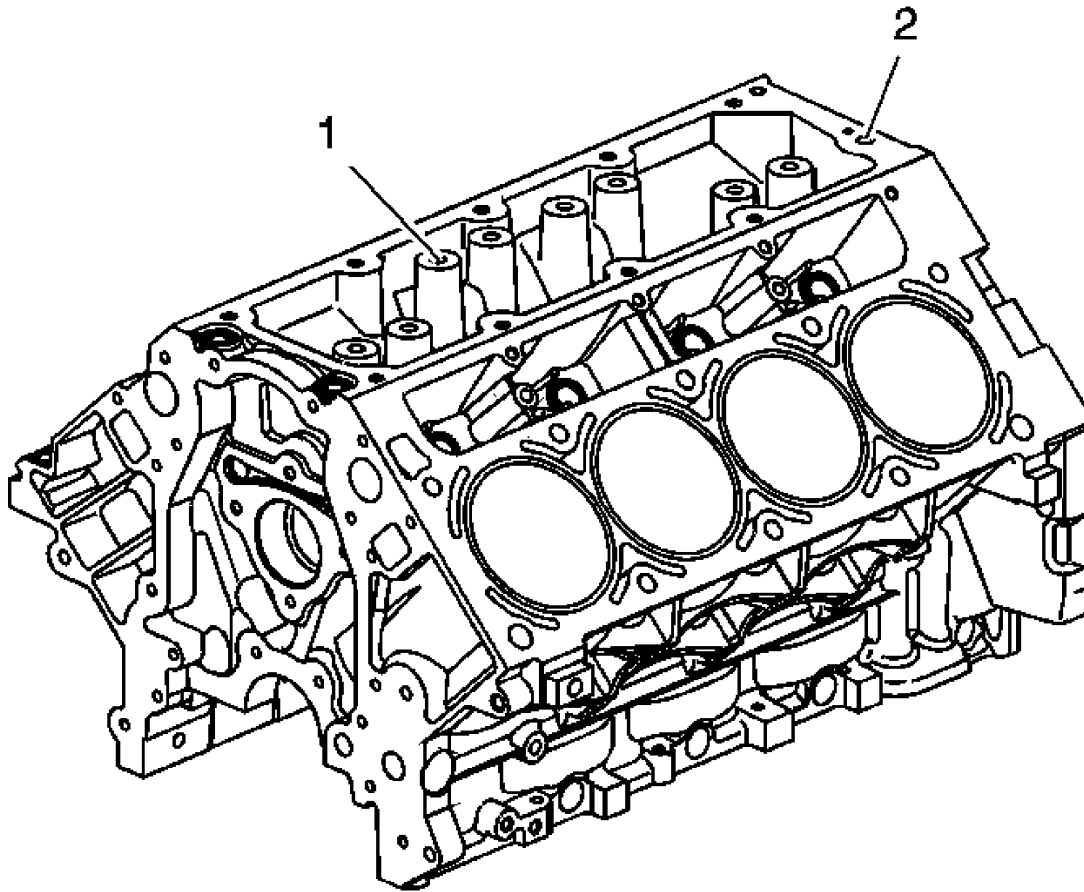


Fig. 33: DOD Engine Block
Courtesy of GENERAL MOTORS CORP.

The active fuel management engine block incorporates additional features to support active fuel management system operation. Engine oil pressure is routed to the valve lifter oil manifold assembly from an oil gallery (2) in the rear of the cylinder block. Cylinders 1, 4, 6, and 7 each have 2 vertical, cast-in-block oil passages (1). The vertical oil passages permit oil flow from the manifold assembly to the valve lifter bores.

Engine Control Module (ECM)

Refer to [Cylinder Deactivation \(Active Fuel Management\) System Description](#) .

CAMSHAFT POSITION ACTUATOR AND SOLENOID VALVE DESCRIPTION

Camshaft

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

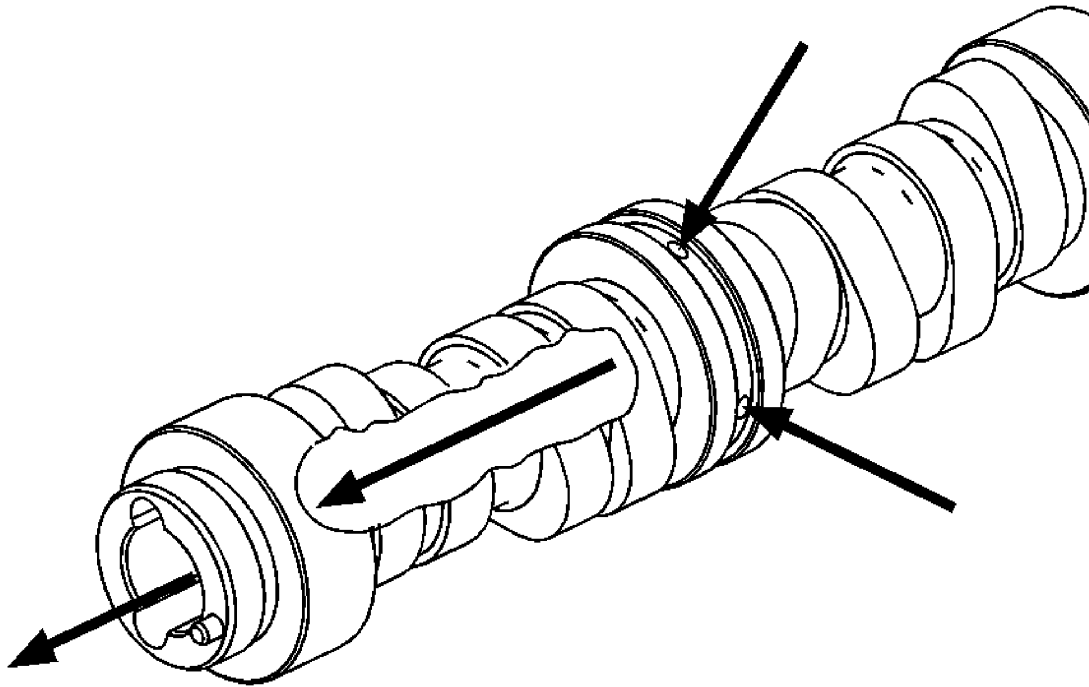


Fig. 34: Camshaft Lubrication Path

Courtesy of GENERAL MOTORS CORP.

The camshaft is designed to provide a lubrication path for pressurized engine oil to flow to the camshaft position (CMP) actuator. Pressurized engine oil enters the camshaft at bearing journal location number 2. Oil travels through the camshaft, out the front, and into the CMP actuator solenoid valve.

CMP Actuator Solenoid Valve

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

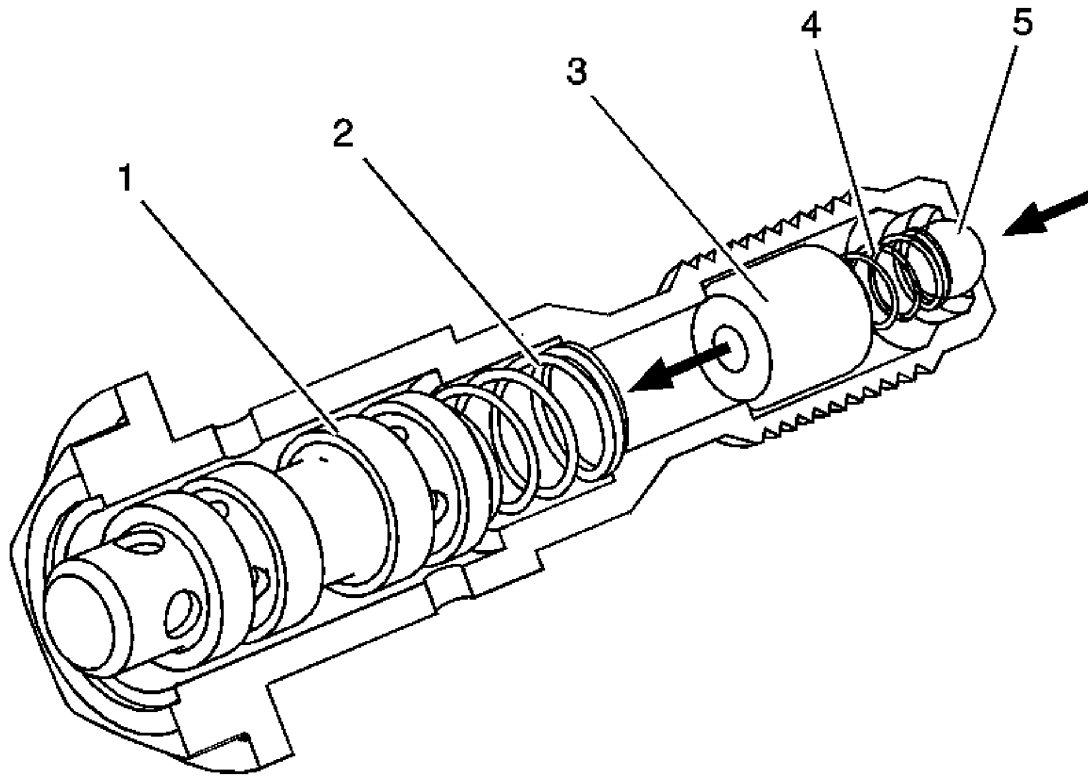


Fig. 35: CMP Actuator Solenoid Valve Components
Courtesy of GENERAL MOTORS CORP.

The CMP actuator solenoid valve consists of a housing, spool valve (1), spool return spring (2), oil filter (3), inlet check ball return spring (4), and inlet check ball (5). Pressurized engine oil enters the valve and travels through the filter to the spool. Spool position is controlled by the CMP magnet and engine control module (ECM). When the spool is moved to the proper position, oil flow is directed through the valve and into the CMP actuator assembly. The CMP solenoid valve is a torque-to-yield design and should be replaced each time it is removed.

CMP Actuator Magnet

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

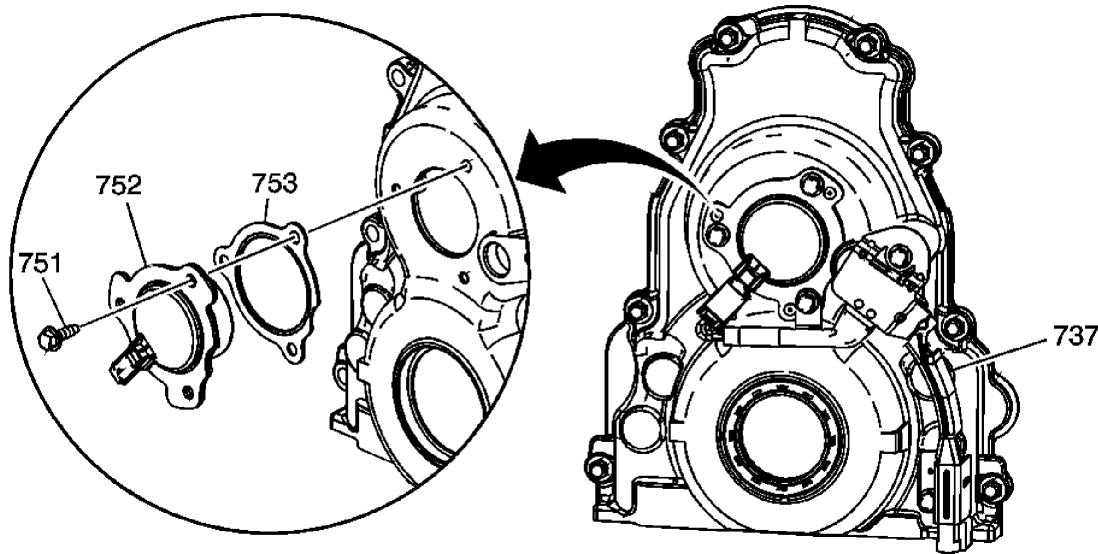


Fig. 36: View Of CMP Actuator Magnet & Components
Courtesy of GENERAL MOTORS CORP.

The CMP actuator magnet (752) is located in the engine front cover and is sealed by a gasket (753). The CMP actuator magnet is controlled by a 12-volt 150 Hz pulse width 0-100 percent duty cycle signal from the ECM. When energized, the solenoid uses electromagnetic force on the magnet pintle to position the spool valve of the CMP solenoid valve.

CMP Actuator

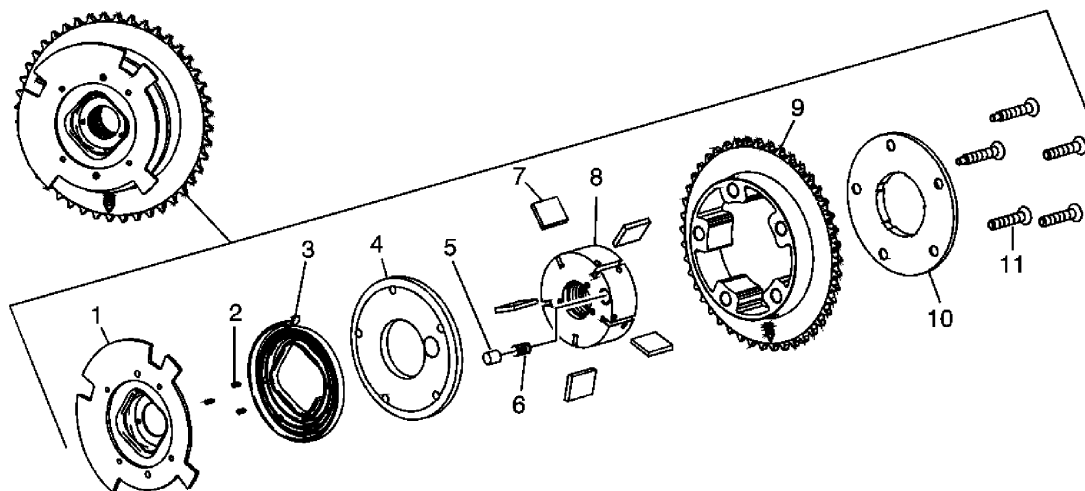


Fig. 37: View Of CMP Actuator Components
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

The CMP actuator is a vane type design that hydraulically changes angle or timing of the camshaft relative to crankshaft position. The CMP actuator allows earlier or later intake and exhaust valve opening during the 4-stroke engine cycle. The CMP actuator cannot vary the duration of valve opening or valve lift. The CMP actuator is to be serviced as an assembly. For system operation, refer to **Camshaft Actuator System Description** .

The CMP actuator consists of the CMP reluctor wheel (1), wheel retaining pins (2), return spring (3), front cover (4), park position pin (5), park position pin spring (6), vanes and vane springs (7), rotor (8), housing with chain sprocket (9), sealing cover/thrust plate (10), and bolts (11).

CMP System Operation

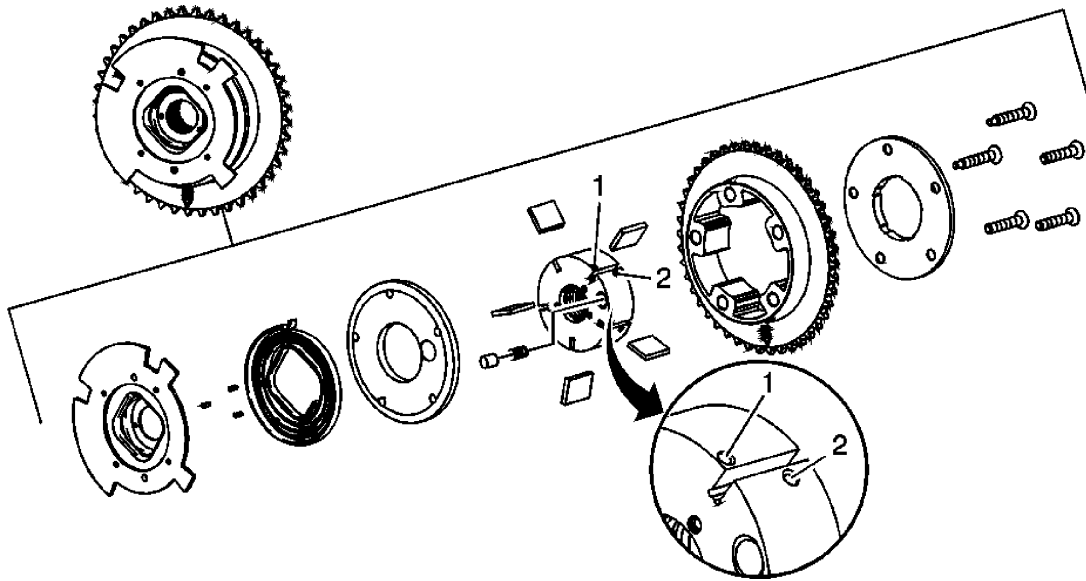


Fig. 38: CMP Actuator

Courtesy of GENERAL MOTORS CORP.

A CMP actuator dynamically changes valve timing events relative to piston timing by controlling camshaft position. This is sometimes referred to as variable valve timing or camshaft phasing. Variable valve timing or camshaft phasing does not change duration or lift.

- By advancing camshaft timing, an improvement in low end torque can be achieved.
- By retarding camshaft timing slightly, an improvement in high end power can be achieved.
- By retarding camshaft timing significantly, an improvement in light load fuel economy can be achieved.

There are 5 cavities divided by vanes within the CMP actuator.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- When oil is directed to the advance cavities (1), the camshaft timing is advanced.
- When oil is directed to the retard cavities (2), the camshaft timing is retarded.
- When oil is directed to both cavities, the camshaft is held stationary.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

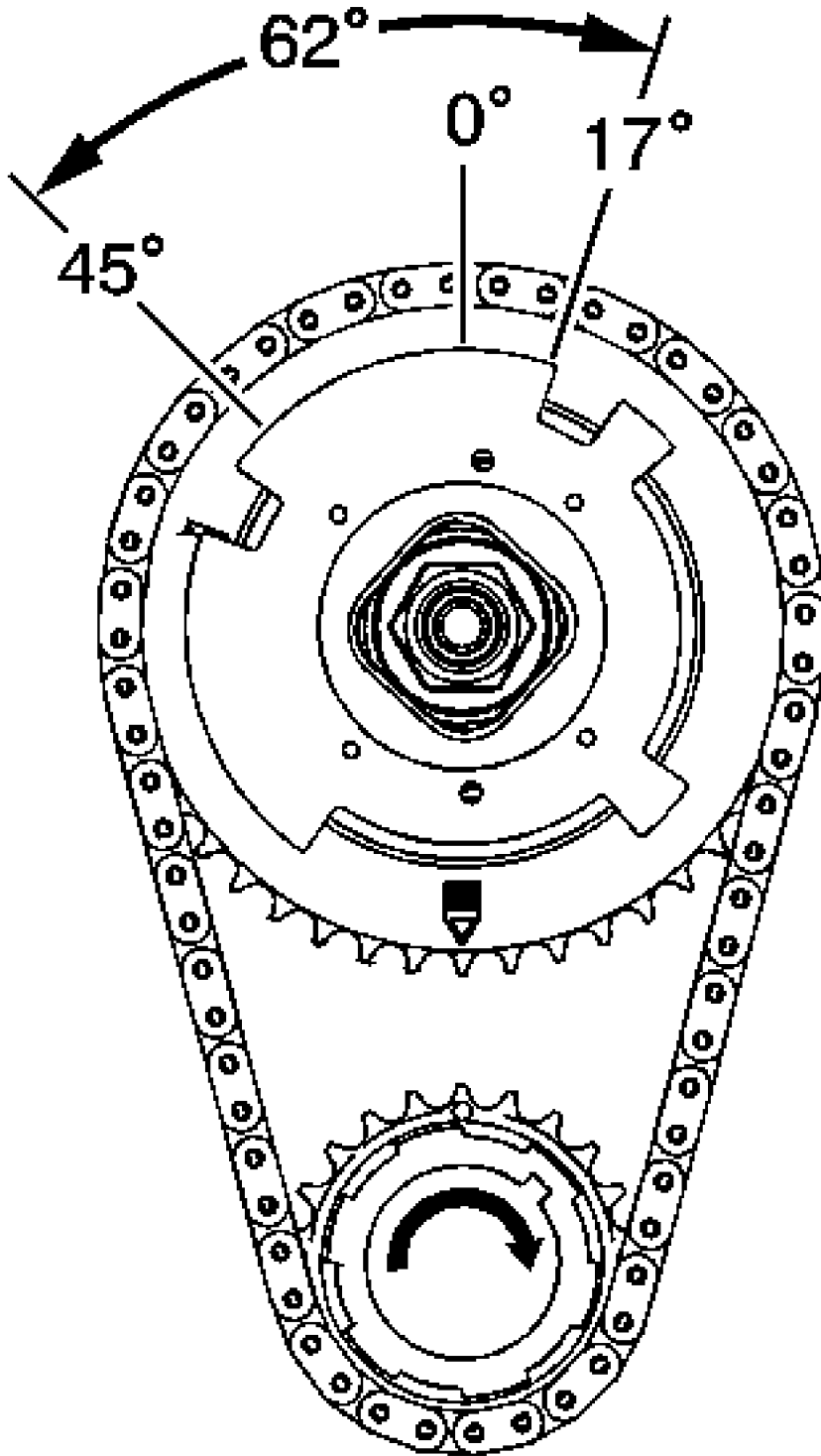


Fig. 39: Timing Camshaft - 62 Degree Range Of Authority
Courtesy of GENERAL MOTORS CORP.

The 6.0L L76 and 6.2L L92 CMP actuator has a 62 degree range of authority. With the engine

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

not running and no engine oil pressure to the CMP actuator, the high tension spring positions camshaft timing at the 17 degree advanced park position. During normal engine operation and based on performance requirements, the ECM may adjust camshaft timing, as required, within a range from 17 degrees advanced to 45 degrees retard.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Fig. 40: Timing Camschaft - 52 Degree Range Of Authority
Courtesy of GENERAL MOTORS CORP.

The 6.0L LY6 CMP actuator has a 52 degree range of authority. With the engine not running and

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

no engine oil pressure to the CMP actuator, the high tension spring positions camshaft timing at the 7 degree advanced park position. During normal engine operation, and based on performance requirements, the ECM may adjust camshaft timing, as required, within a range from 7 degrees advanced to 45 degrees retard.

CMP System Lubrication Flow and Actuator Operation

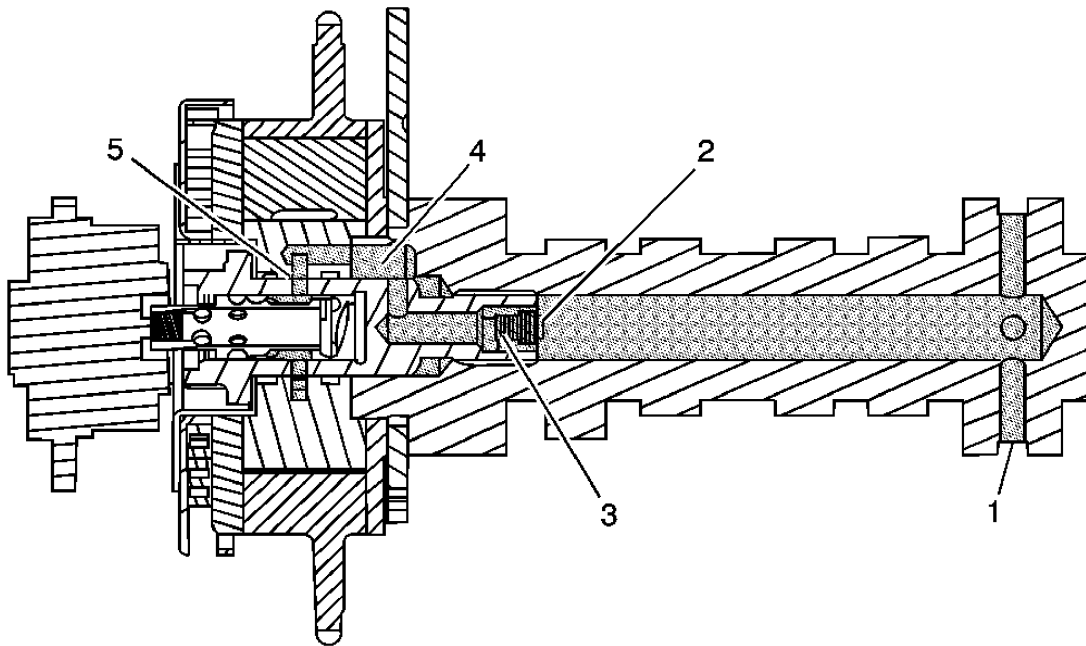


Fig. 41: Cutaway View Of Actuator
Courtesy of GENERAL MOTORS CORP.

1. Oil enters the camshaft at the second main bearing journal (1).
2. Oil travels through the camshaft into the CMP actuator valve check ball (2) and filter (3).
3. Oil exits the valve and travels through the internal passages of the camshaft (4).
4. Oil exits the camshaft and enters the actuator oil entry ports.
5. Oil travels through the actuator and is directed back into the valve (5).
6. Valve spool position directs oil to the advance or retard passages of the actuator.

The valve may also, under certain conditions, be positioned in a neutral position with no flow to either the advance or retard passages of the actuator.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

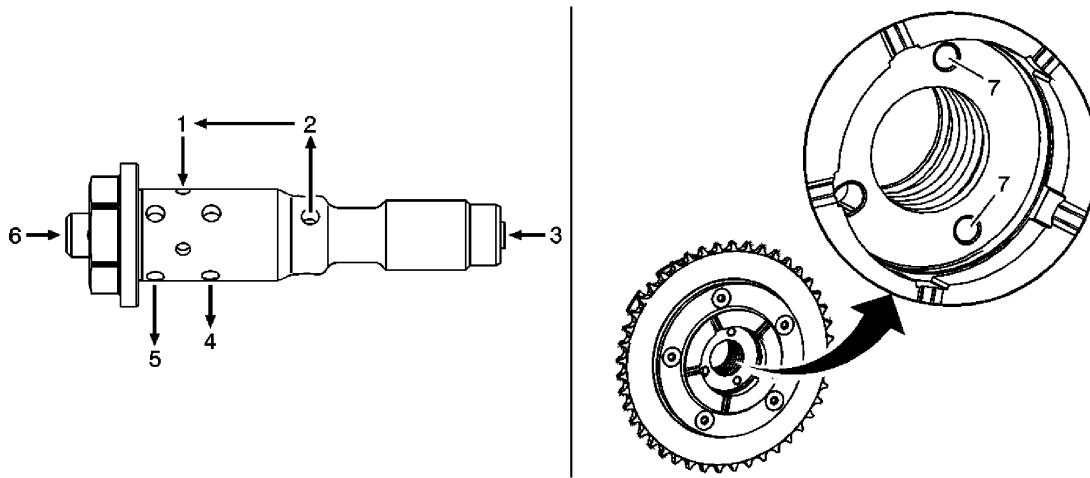


Fig. 42: Identifying Actuator Passages

Courtesy of GENERAL MOTORS CORP.

1. Oil flows from the camshaft into the valve inlet (3) through the internal check ball and filter.
2. Oil exits the valve (2) and travels within the internal passages of the camshaft into the entry ports (7) of the actuator.
3. The center oil groove of the actuator is pressurized and oil reenters the valve (1).
4. Valve spool position directs oil out of the valve advance (5) or retard (4) ports to the actuator.

The valve may also, under certain conditions, be positioned in a neutral position with no flow to either the advance or retard passages of the actuator.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

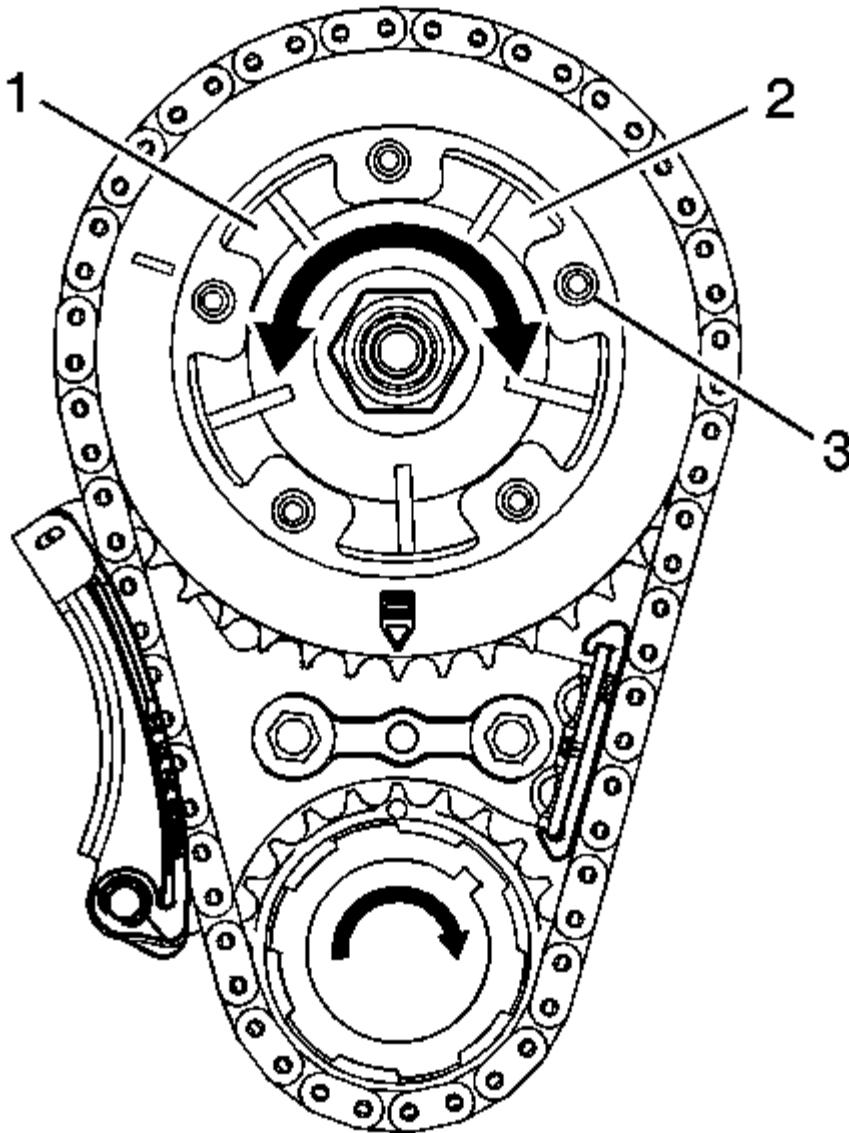


Fig. 43: View Of Advance And Retard Cavities
Courtesy of GENERAL MOTORS CORP.

1. Pressurized oil enters the retard cavities (2) of the actuator and moves the park pin (3) from the locked position.
2. As pressure increases within the retard cavities (2), the rotor and camshaft rotate counter

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

clockwise retarding valve timing.

3. As the duty cycle decreases, the spool is repositioned and oil is sent to the advance cavities (1), rotating the rotor and camshaft clockwise, advancing valve timing.
 - With a 0 percent duty cycle signal to the magnet, the spool is positioned in the fully extended position and there is full flow to the advance cavities of the actuator. As duty cycle increases to near 50 percent, flow to the advance cavities is decreased.
 - With a 50 percent duty cycle, the spool is positioned neutral, with no flow to either the advance and retard cavities.
 - With a 51-100 percent duty cycle, the spool is positioned to provide oil flow to retard cavities. As the duty cycle increases, the flow to retard cavities increases.
 - With a 100 percent duty cycle, there is full flow to the retard cavities of the actuator.
 - The above duty cycle percentage values are only a guideline, as the actual duty cycle values may vary based on engine oil temperature, solenoid magnet coil temperature, magnet coil resistance, and other specifics.

CMP Actuator Park Position Verification

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

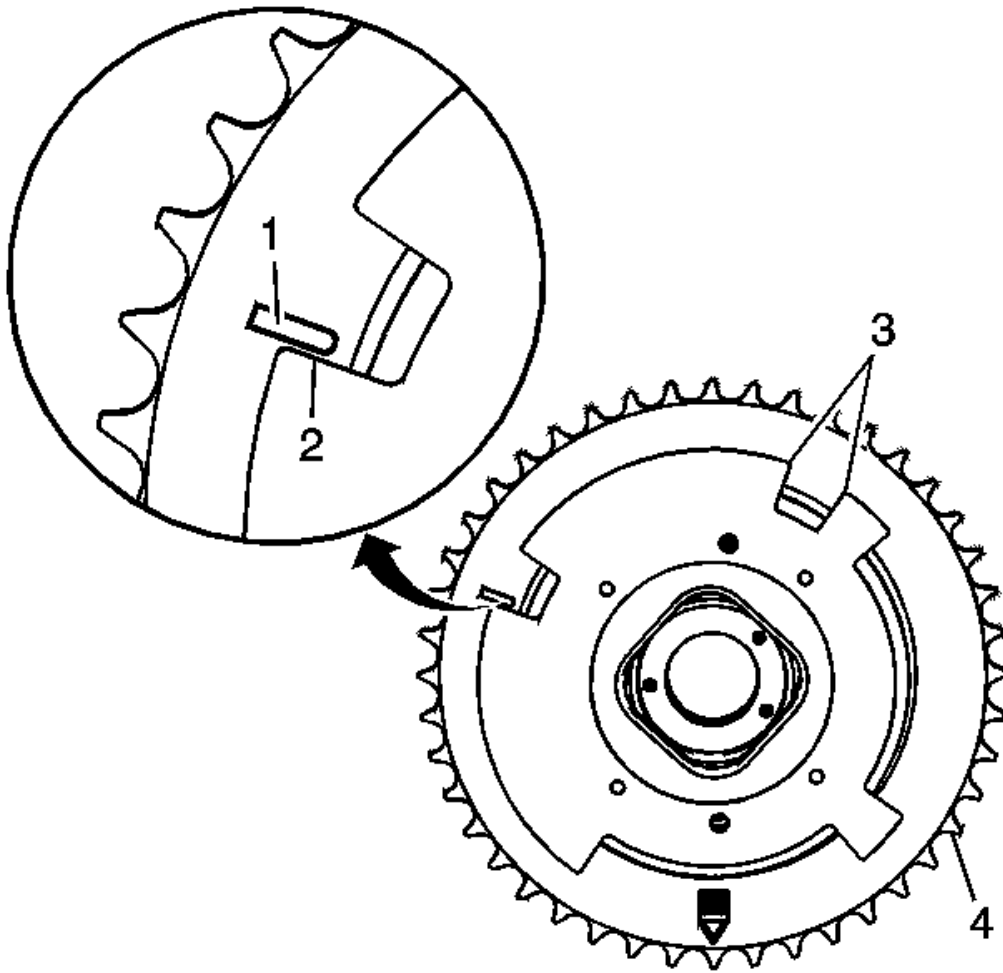


Fig. 44: CMP Actuator Park Position Verification
Courtesy of GENERAL MOTORS CORP.

The CMP actuator can be visually inspected to determine if the tension spring has returned the reluctor wheel and rotor to the park position.

With the reluctor wheel returned to the proper parked position, the edge of the notched area of the wheel (2) aligns with the marking (1) on the camshaft sprocket.

CMP Actuator Handling Safety

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

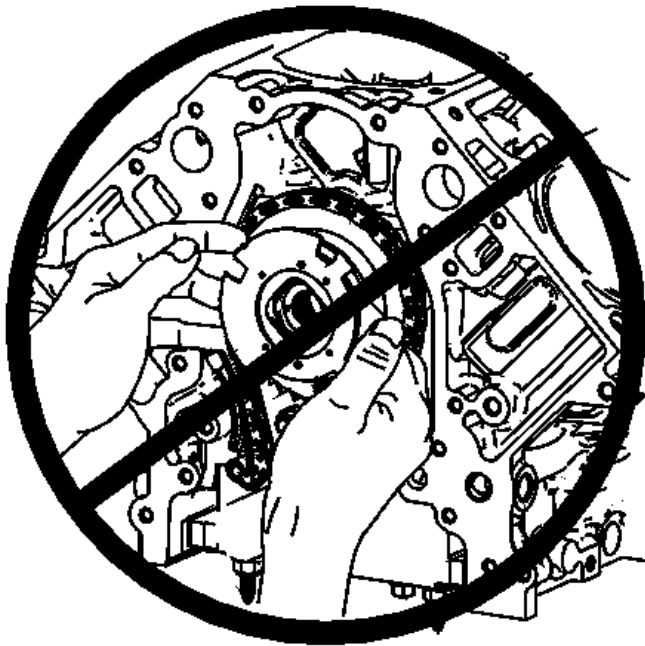
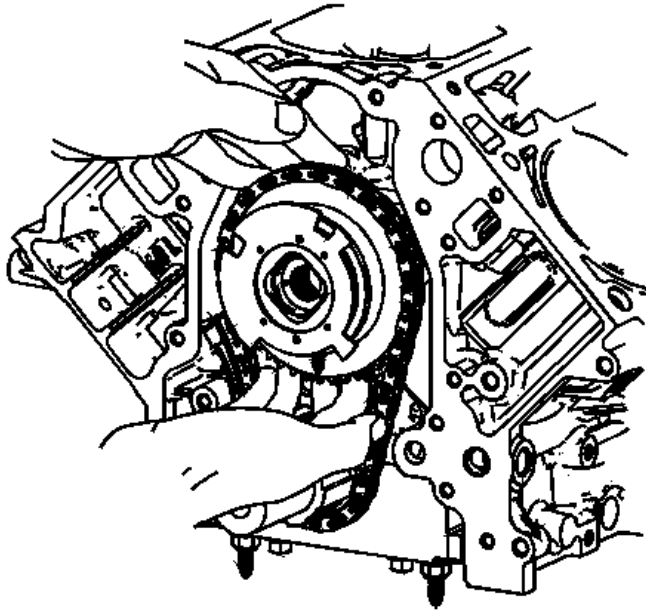


Fig. 45: View Of Proper CMP Actuator Removal
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

CAUTION: Refer to Camshaft Position Actuator Removal and Installation Caution .

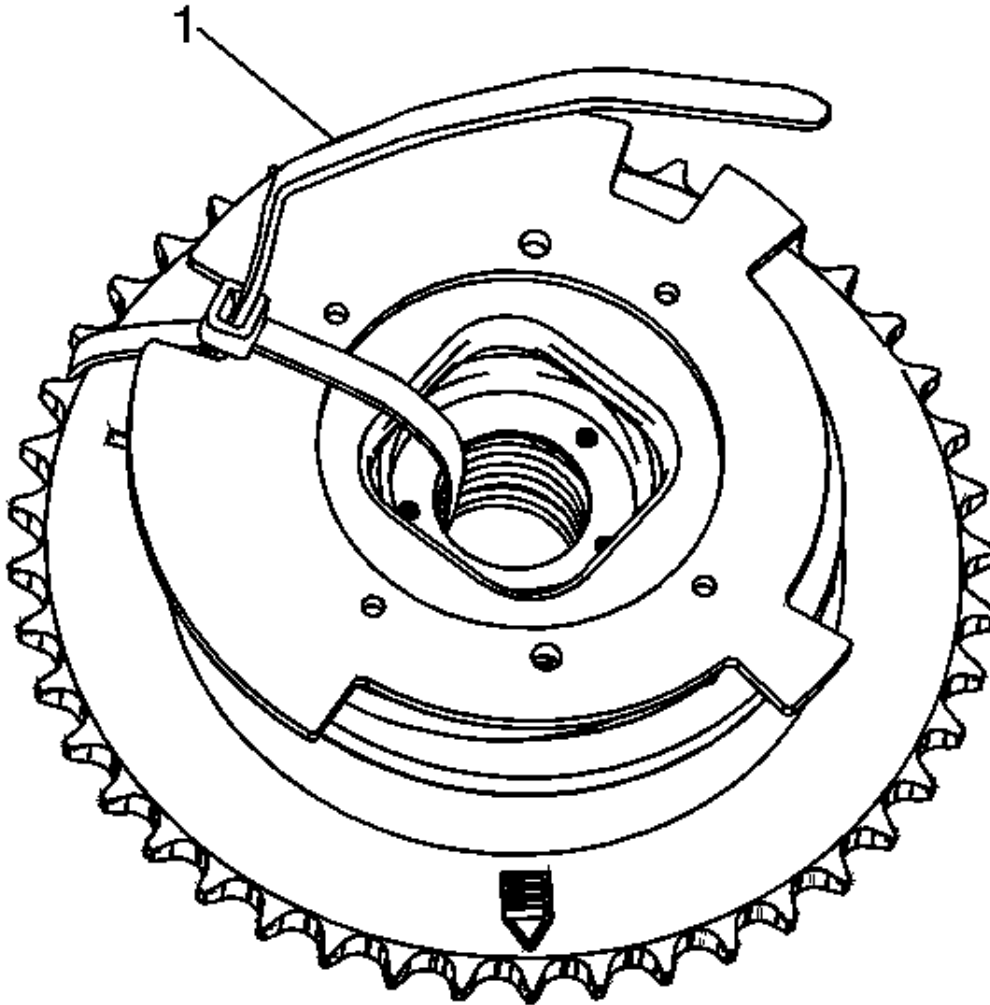


Fig. 46: View Of Tie Strap Through Center Of Actuator
Courtesy of GENERAL MOTORS CORP.

Install tie wrap (1) to retain the reluctor wheel to the sprocket. The reluctor wheel is mounted to the actuator body with 3 roll pins.

NEW PRODUCT INFORMATION

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

The purpose of New Product Information is to highlight, or indicate, important product changes from the previous model year.

Changes may include 1 or more of the following items:

- Torque values and/or fastener tightening strategies
- Changed engine specifications
- New sealants and/or adhesives
- Disassembly and assembly procedure revisions
- Engine mechanical diagnostic procedure revisions
- New special tools required
- A component comparison from the previous year

Changed Engine Specifications

No revisions to the engine specifications.

Torque Values and/or Fastener Tightening Strategies

Connecting rod bolt torques have been increased. Refer to **Fastener Tightening Specifications**.

New Sealants and/or Adhesives

Sealers and adhesives, as required, are identified within the specific service procedures. Refer to **Sealers, Adhesives, and Lubricants**.

Disassembly and Assembly Procedure Revisions

No disassembly or assembly procedure revisions.

Engine Mechanical Diagnostic Procedure Revisions

Diagnosis on a vehicle should follow a logical process. Strategy based diagnostics is a uniform approach for repairing all systems. The diagnostic flow may always be used in order to resolve a system condition. The diagnostic flow is the place to start when repairs are necessary. For a detailed explanation, refer to **Diagnostic Starting Point - Engine Mechanical**.

New Special Tools Required

No new special tools are required.

A Component Comparison from the Previous Year

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

No new engines/RPOs have been added.

LUBRICATION DESCRIPTION (RPO LY2)

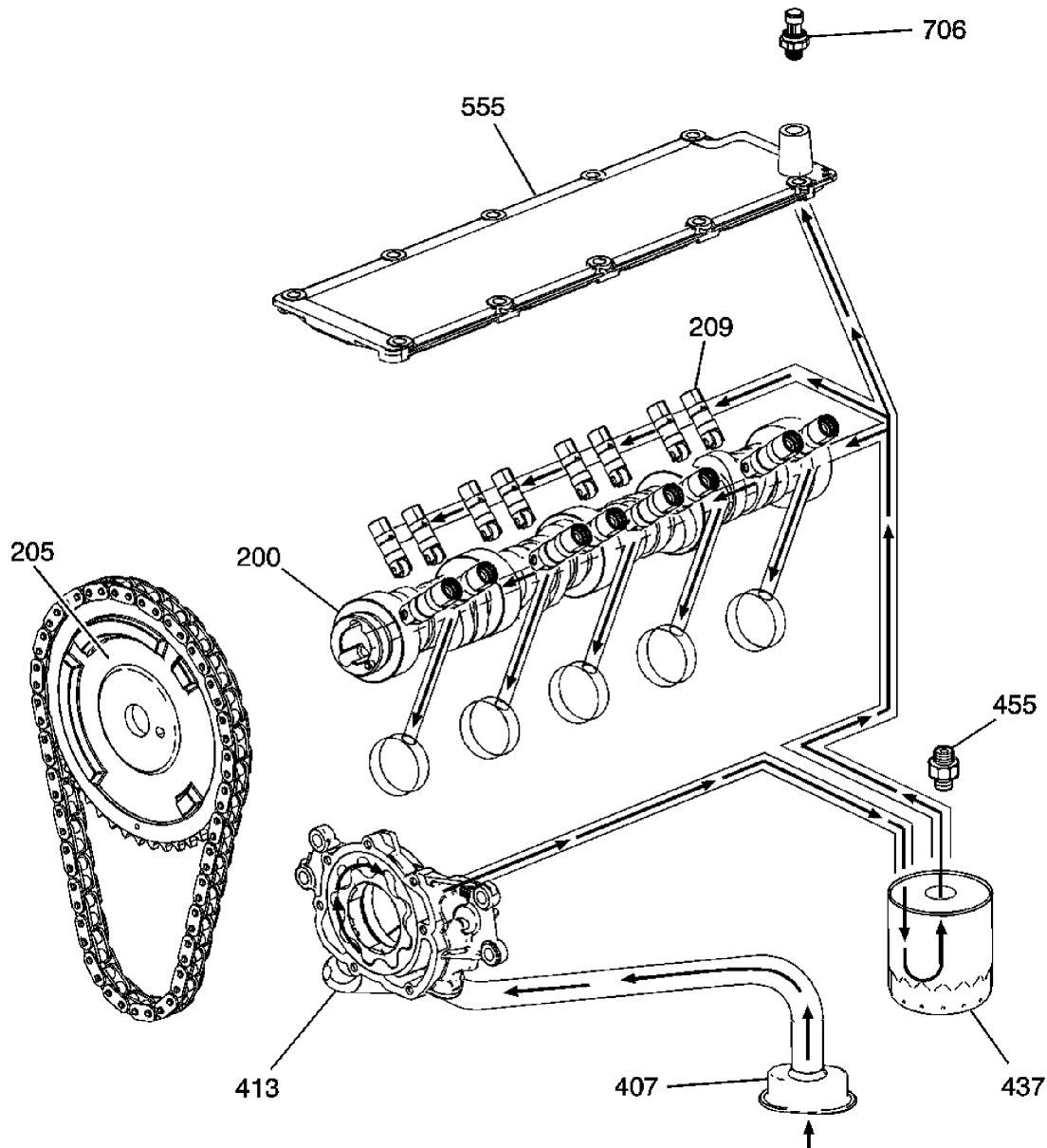


Fig. 47: Lubrication Description (RPO LY2)
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
200	Camshaft

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

205	Camshaft Sprocket
209	Valve Lifter - Non-Active Fuel Management
407	Oil Pump Screen
413	Oil Pump
437	Oil Filter
455	Oil Pressure Relief Valve
555	Valley Cover
706	Oil Pressure Sensor

Engine lubrication is supplied by a gerotor type oil pump assembly. The oil pump is mounted on the front of the engine block and driven directly by the crankshaft sprocket. The pump gears rotate and draw oil from the oil pan sump through a pick-up screen and pipe. The oil is pressurized as it passes through the pump and is sent through the engine block lower oil gallery. Contained within the oil pump assembly is a pressure relief valve that maintains oil pressure within a specified range.

Pressurized oil is directed through the engine block lower oil gallery to the full flow oil filter where harmful contaminants are removed. A bypass valve is incorporated into the oil filter, which permits oil flow in the event the filter becomes restricted. A second valve, the oil pressure relief valve is incorporated into the oil pan. The oil pressure relief valve limits oil pressure directed to the upper oil galleries and oil manifold assembly to 379-517 kPa (55-75 psi) maximum. When main oil pressure exceeds 379 kPa (55 psi), the oil pressure relief valve exhausts excess oil to the sump.

Oil is then directed from the filter to the upper main oil galleries. Oil from the left upper oil gallery is directed to the crankshaft and camshaft bearings. Oil that has entered both the upper main oil galleries also pressurizes the valve lifter assemblies and is then pumped through the pushrods to lubricate the valve rocker arms and valve stems. Oil returning to the pan is directed by the crankshaft oil deflector. The oil pressure sensor is located at the top rear of the engine.

LUBRICATION DESCRIPTION (RPO LH6/LMG/LY5/LC9)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

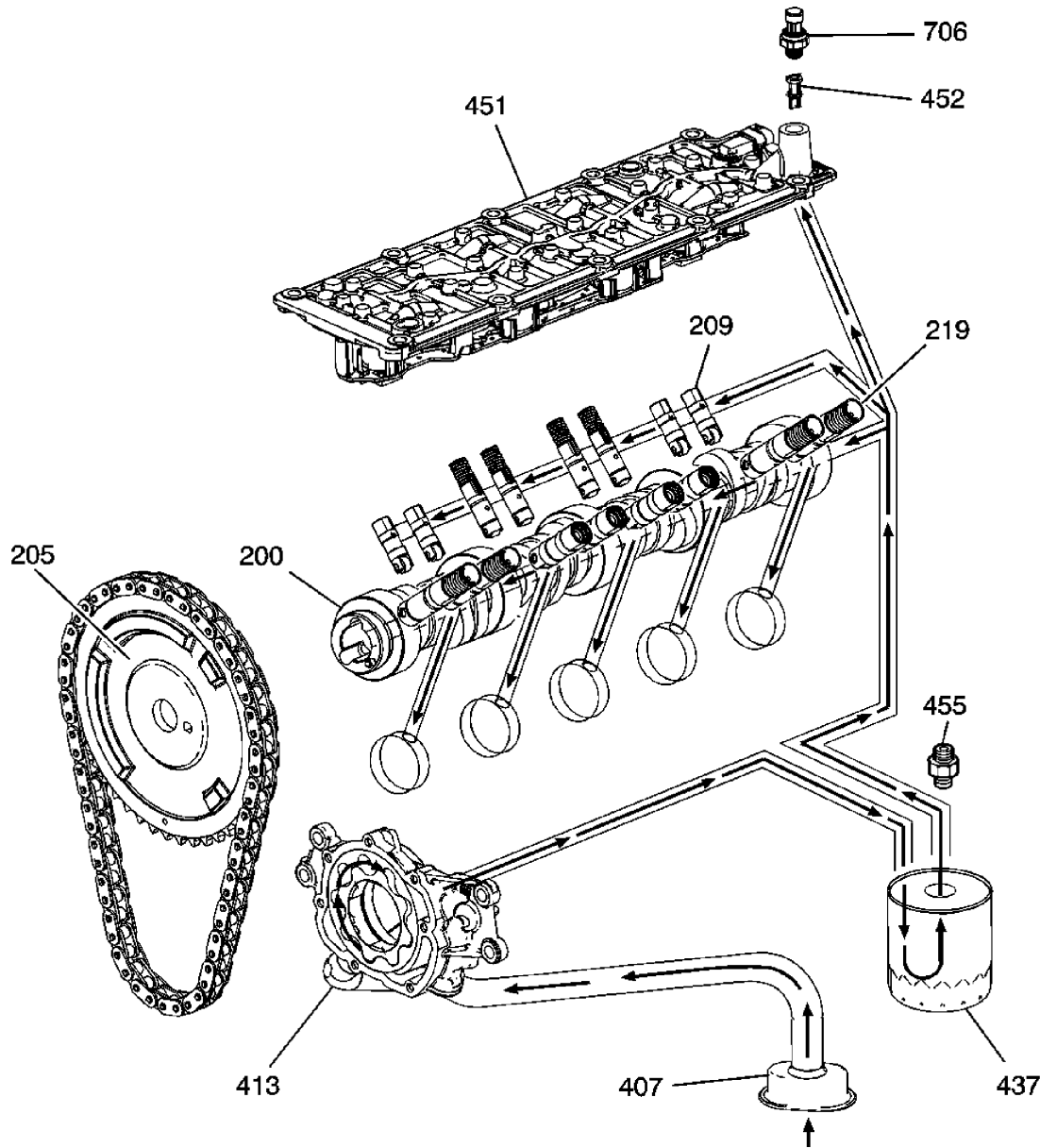


Fig. 48: Lubrication Description (RPO LH6/LMG/LY5/LC9)
 Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
200	Camshaft
205	Camshaft Sprocket
209	Valve Lifter - Non-Active Fuel Management
219	Valve Lifter - Active Fuel Management

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

407	Oil Pump Screen
413	Oil Pump
437	Oil Filter
451	Valve Lifter Oil Manifold
452	Valve Lifter Oil Filter
455	Active Fuel Management Oil Pressure Relief Valve
706	Oil Pressure Sensor

Engine lubrication is supplied by a gerotor type oil pump assembly. The oil pump is mounted on the front of the engine block and driven directly by the crankshaft sprocket. The pump gears rotate and draw oil from the oil pan sump through a pick-up screen and pipe. The oil is pressurized as it passes through the pump and is sent through the engine block lower oil gallery. Contained within the oil pump assembly is a pressure relief valve that maintains oil pressure within a specified range.

Pressurized oil is directed through the engine block lower oil gallery to the full flow oil filter where harmful contaminants are removed. A bypass valve is incorporated into the oil filter, which permits oil flow in the event the filter becomes restricted. A second valve, the active fuel management oil pressure relief valve is incorporated into the oil pan. The active fuel management oil pressure relief valve limits oil pressure directed to the upper oil galleries and valve lifter oil manifold assembly to 379-517 kPa (55-75 psi) maximum. When main oil pressure exceeds 379 kPa (55 psi), the oil pressure relief valve exhausts excess oil to the sump.

Oil is then directed from the filter to the upper main oil galleries and the valve lifter oil manifold assembly. Oil from the left upper oil gallery is directed to the crankshaft and camshaft bearings. Oil that has entered both the upper main oil galleries also pressurizes the valve lifter assemblies and is then pumped through the pushrods to lubricate the valve rocker arms and valve stems. Oil returning to the pan is directed by the crankshaft oil deflector. The oil pressure sensor is located at the top rear of the engine.

With active fuel management activated, the engine control module (ECM) commands the 4 solenoids to open, directing oil through the engine block oil galleries to the intake and exhaust valve lifters for cylinders 1, 4, 6, and 7. Refer to **Cylinder Deactivation (Active Fuel Management) System Description**.

LUBRICATION DESCRIPTION (REPO LY6/L92)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

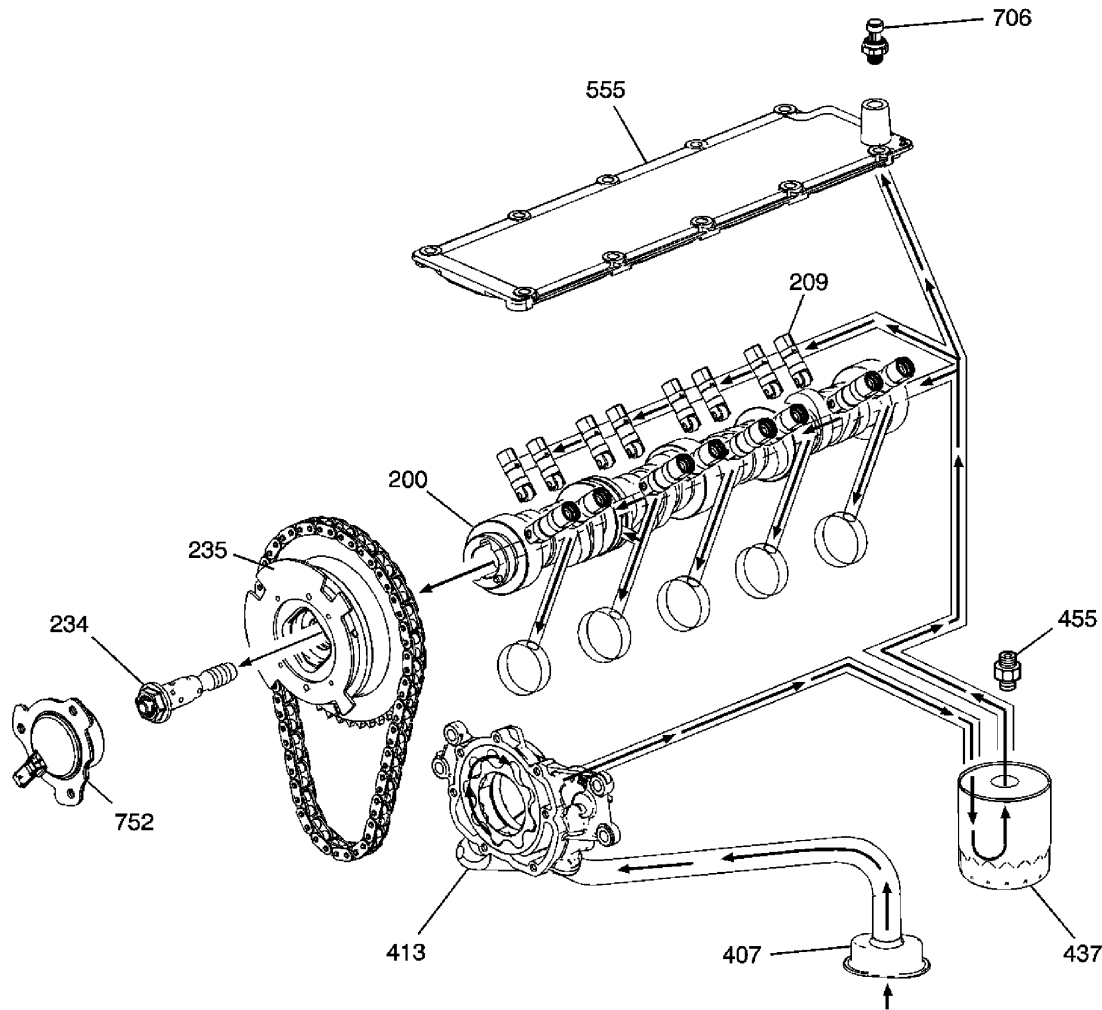


Fig. 49: Lubrication Description (REPO LY6/L92)
 Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
200	Camshaft
209	Valve Lifter - Non-Active Fuel Management
234	Camshaft Position (CMP) Actuator Solenoid Valve
235	CMP Actuator
407	Oil Pump Screen
413	Oil Pump
437	Oil Filter
455	Oil Pressure Relief Valve
555	Valley Cover

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

706	Oil Pressure Sensor
752	CMP Magnet

Engine lubrication is supplied by a gerotor type oil pump assembly. The oil pump is mounted on the front of the engine block and driven directly by the crankshaft sprocket. The pump gears rotate and draw oil from the oil pan sump through a pick-up screen and pipe. The oil is pressurized as it passes through the pump and is sent through the engine block lower oil gallery. Contained within the oil pump assembly is a pressure relief valve that maintains oil pressure within a specified range.

Pressurized oil is directed through the engine block lower oil gallery to the full flow oil filter where harmful contaminants are removed. A bypass valve is incorporated into the oil filter, which permits oil flow in the event the filter becomes restricted. A second valve, the oil pressure relief valve is incorporated into the oil pan. The oil pressure relief valve limits oil pressure directed to the upper oil galleries to 379-517 kPa (55-75 psi) maximum. When main oil pressure exceeds 379 kPa (55 psi), the oil pressure relief valve exhausts excess oil to the sump.

Oil is then directed from the filter to the upper main oil galleries. Oil from the left upper oil gallery is directed to the crankshaft and camshaft bearings. Oil that has entered both the upper main oil galleries also pressurizes the valve lifter assemblies and is then pumped through the pushrods to lubricate the valve rocker arms and valve stems.

An oil passage at camshaft bearing location 2 permits oil flow into the center of the camshaft. Oil enters the camshaft exiting at the front and into the camshaft position (CMP) actuator solenoid valve. The CMP valve spool position is controlled by the engine control module (ECM) and CMP magnet (752). When commanded by the ECM, the CMP magnet repositions the CMP actuator solenoid valve spool directing pressurized oil into the CMP actuator to control valve timing. Refer to **Camshaft Actuator System Description** .

Oil returning to the pan is directed by the crankshaft oil deflector. The oil pressure sensor is located at the top rear of the engine.

LUBRICATION DESCRIPTION (RPO L76)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

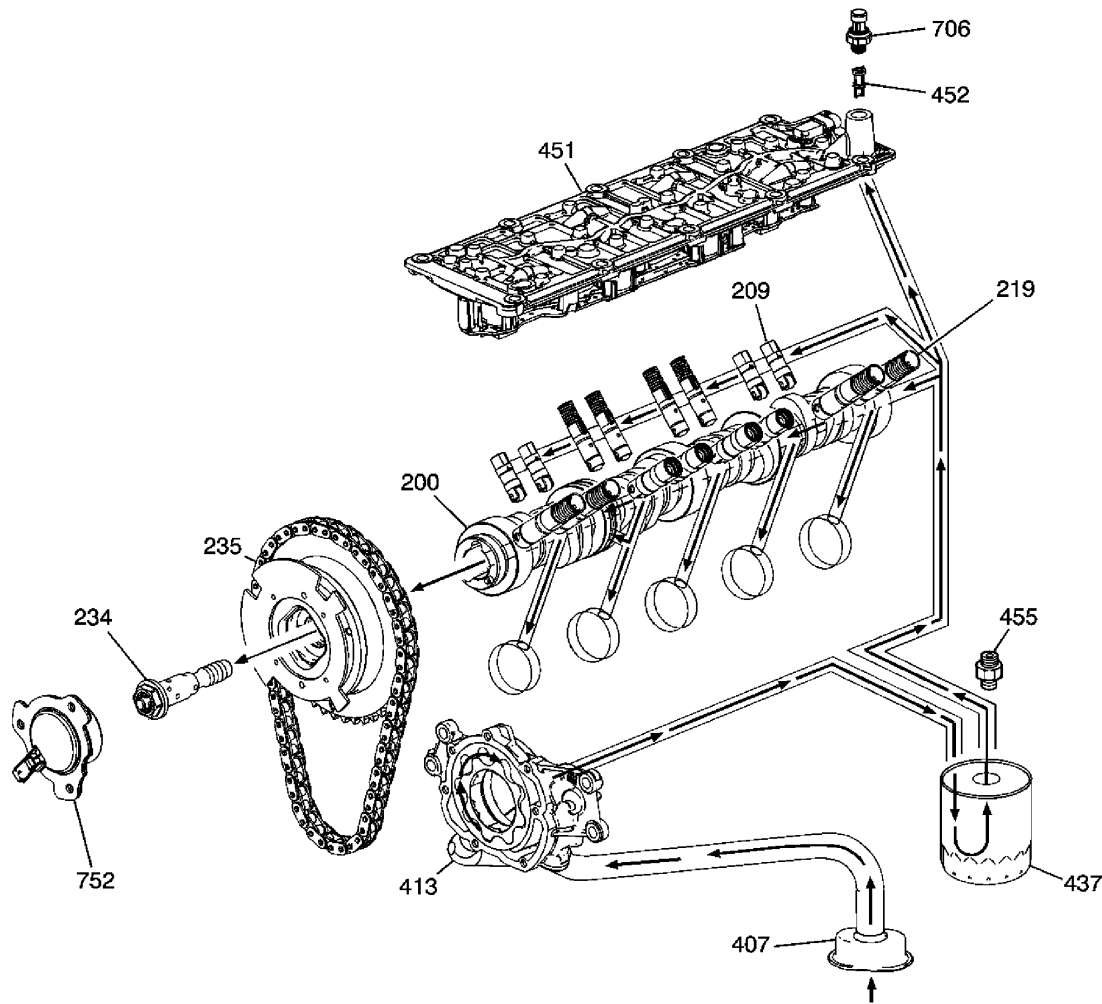


Fig. 50: Lubrication Description (RPO L76)
 Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
200	Camshaft
209	Valve Lifter - Non-Active Fuel Management
219	Valve Lifter - Active Fuel Management
234	Camshaft Position (CMP) Actuator Solenoid Valve
235	CMP Actuator
407	Oil Pump Screen
413	Oil Pump
437	Oil Filter
451	Valve Lifter Oil Manifold

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

452	Valve Lifter Oil Filter
455	Active Fuel Management Oil Pressure Relief Valve
706	Oil Pressure Sensor
752	CMP Magnet

Engine lubrication is supplied by a gerotor type oil pump assembly. The oil pump is mounted on the front of the engine block and driven directly by the crankshaft sprocket. The pump gears rotate and draw oil from the oil pan sump through a pick-up screen and pipe. The oil is pressurized as it passes through the pump and is sent through the engine block lower oil gallery. Contained within the oil pump assembly is a pressure relief valve that maintains oil pressure within a specified range.

Pressurized oil is directed through the engine block lower oil gallery to the full flow oil filter where harmful contaminants are removed. A bypass valve is incorporated into the oil filter, which permits oil flow in the event the filter becomes restricted. A second valve, the active fuel management oil pressure relief valve is incorporated into the oil pan. The active fuel management oil pressure relief valve limits oil pressure directed to the upper oil galleries and valve lifter oil manifold assembly to 379-517 kPa (55-75 psi) maximum. When main oil pressure exceeds 379 kPa (55 psi), the oil pressure relief valve exhausts excess oil to the sump.

Oil is then directed from the filter to the upper main oil galleries and the valve lifter oil manifold assembly. Oil from the left upper oil gallery is directed to the crankshaft and camshaft bearings. Oil that has entered both the upper main oil galleries also pressurizes the valve lifter assemblies and is then pumped through the pushrods to lubricate the valve rocker arms and valve stems. Oil returning to the pan is directed by the crankshaft oil deflector. The oil pressure sensor is located at the top rear of the engine.

An oil passage at camshaft bearing location 2 permits oil flow into the center of the camshaft. Oil enters the camshaft exiting at the front and into the camshaft position (CMP) actuator solenoid valve. The CMP valve spool position is controlled by the engine control module (ECM) and CMP magnet. When commanded by the ECM, the CMP magnet repositions the CMP actuator solenoid valve spool directing pressurized oil into the CMP actuator to control valve timing. Refer to **Camshaft Actuator System Description** .

With active fuel management activated, the ECM commands the 4 solenoids to open, directing oil through the engine block oil galleries to the intake and exhaust valve lifters for cylinders 1, 4, 6, and 7.

LUBRICATION DESCRIPTION - MAIN PRESSURE BELOW 55 PSI WITH CYLINDER DEACTIVATION (ACTIVE FUEL MANAGEMENT) OFF (RPO LH6/LMG/LY5/LC9)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

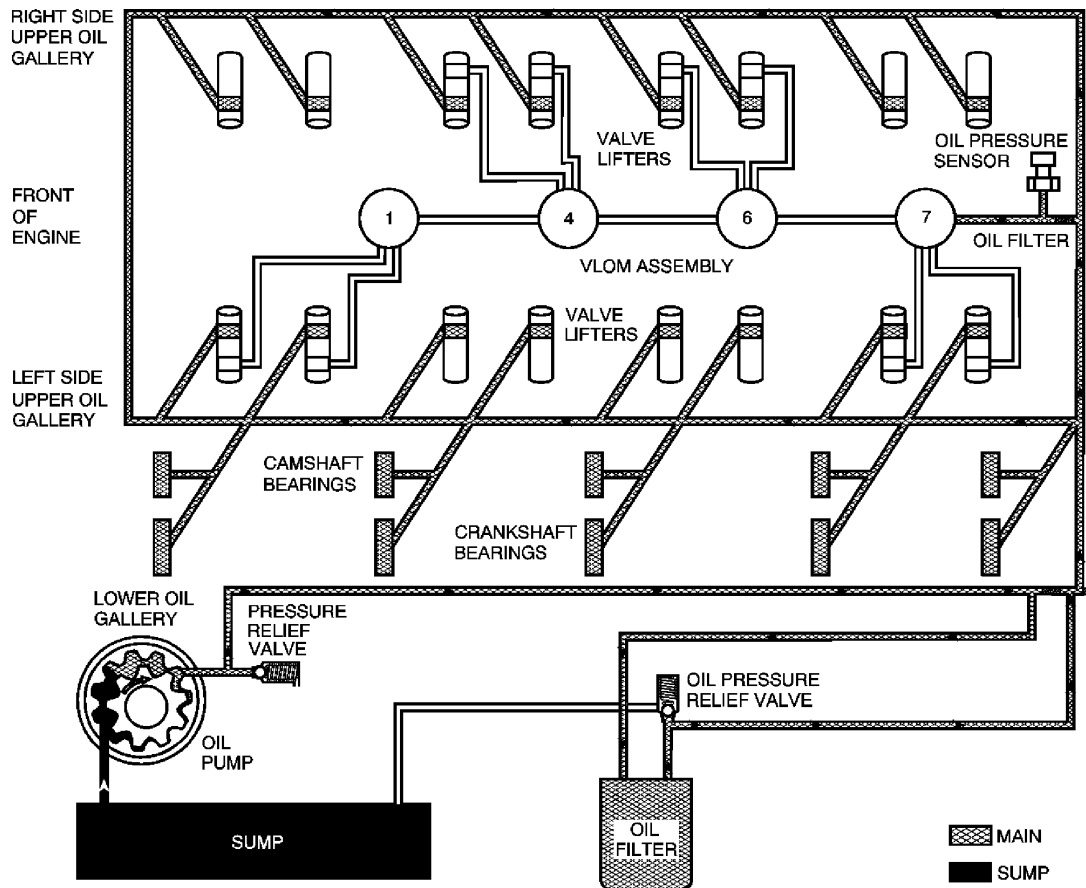


Fig. 51: Lubrication Schematic Below 55 psi (RPO LH6/LMG/LY5/LC9)
Courtesy of GENERAL MOTORS CORP.

Engine lubrication is supplied by a gerotor type oil pump assembly. The oil pump is mounted on the front of the engine block and driven directly by the crankshaft sprocket. The pump gears rotate and draw oil from the oil pan sump through a pick-up screen and pipe. The oil is pressurized as it passes through the pump and is sent through the engine block lower oil gallery. Contained within the oil pump assembly is a pressure relief valve that maintains oil pressure within a specified range.

Pressurized oil is directed through the engine block lower oil gallery to the full flow oil filter where harmful contaminants are removed. A bypass valve is incorporated into the oil filter, which permits oil flow in the event the filter becomes restricted. A second valve, the active fuel management oil pressure relief valve is incorporated into the oil pan. The active fuel management oil pressure relief valve limits oil pressure directed to the upper oil galleries and oil manifold assembly to 379-517 kPa (55-75 psi) maximum.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Oil is then directed from the filter to the upper main oil galleries and the valve lifter oil manifold assembly. Oil from the left upper oil gallery is directed to the crankshaft and camshaft bearings. Oil that has entered both the upper main oil galleries also pressurizes the valve lifter assemblies and is then pumped through the pushrods to lubricate the valve rocker arms and valve stems. Oil returning to the pan is directed by the crankshaft oil deflector. The oil pressure sensor is located at the top rear of the engine. Refer to **Cylinder Deactivation (Active Fuel Management) System Description**.

LUBRICATION DESCRIPTION - MAIN PRESSURE BELOW 55 PSI WITH CYLINDER DEACTIVATION (ACTIVE FUEL MANAGEMENT) OFF (RPO L76)

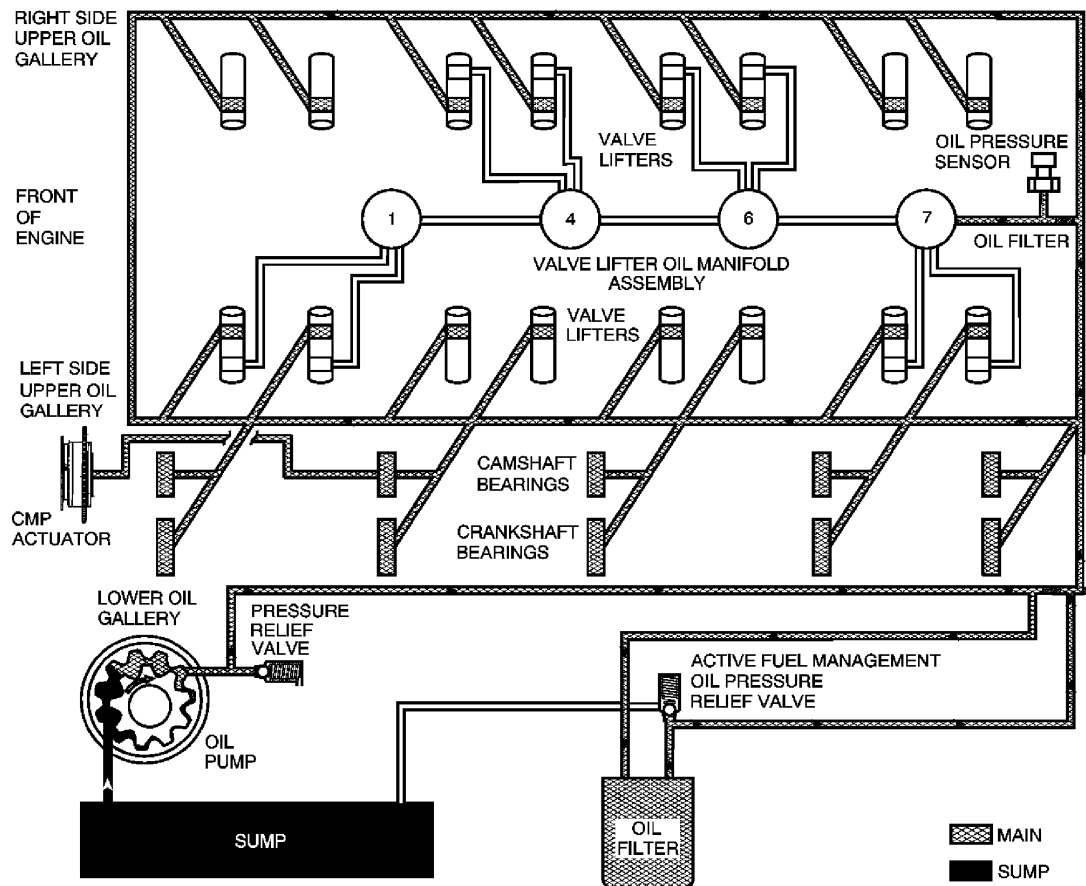


Fig. 52: Lubrication Schematic Below 55 psi (RPO L76)
Courtesy of GENERAL MOTORS CORP.

Engine lubrication is supplied by a gerotor type oil pump assembly. The oil pump is mounted on the front of the engine block and driven directly by the crankshaft sprocket. The pump gears rotate and draw oil from the oil pan sump through a pick-up screen and pipe. The oil is pressurized as it passes through the pump and is sent through the engine block lower oil gallery.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Contained within the oil pump assembly is a pressure relief valve that maintains oil pressure within a specified range.

Pressurized oil is directed through the engine block lower oil gallery to the full flow oil filter where harmful contaminants are removed. A bypass valve is incorporated into the oil filter, which permits oil flow in the event the filter becomes restricted. A second valve, the active fuel management oil pressure relief valve is incorporated into the oil pan. The active fuel management oil pressure relief valve limits oil pressure directed to the upper oil galleries and oil manifold assembly to 379-517 kPa (55-75 psi) maximum.

Oil is then directed from the filter to the upper main oil galleries and the valve lifter oil manifold assembly. Oil from the left upper oil gallery is directed to the crankshaft and camshaft bearings. Oil that has entered both the upper main oil galleries also pressurizes the valve lifter assemblies and is then pumped through the pushrods to lubricate the valve rocker arms and valve stems.

An oil passage at camshaft bearing location 2 permits oil flow into the center of the camshaft. Oil enters the camshaft exiting at the front and into the camshaft position (CMP) actuator solenoid valve. The CMP valve spool position is controlled by the engine control module (ECM) and CMP magnet. When commanded by the ECM, the CMP magnet repositions the CMP actuator solenoid valve spool directing pressurized oil into the CMP actuator to control valve timing. Refer to **Camshaft Actuator System Description** .

Oil returning to the pan is directed by the crankshaft oil deflector. The oil pressure sensor is located at the top rear of the engine. For RPO L99, active fuel management hardware is present in first design engines. The system is inactive for the 2007 model year. Refer to **Cylinder Deactivation (Active Fuel Management) System Description** and **Camshaft Position Actuator and Solenoid Valve Description**.

LUBRICATION DESCRIPTION - MAIN PRESSURE ABOVE 55 PSI WITH CYLINDER DEACTIVATION (ACTIVE FUEL MANAGEMENT) OFF (RPO LH6/LMG/LY5/LC9)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

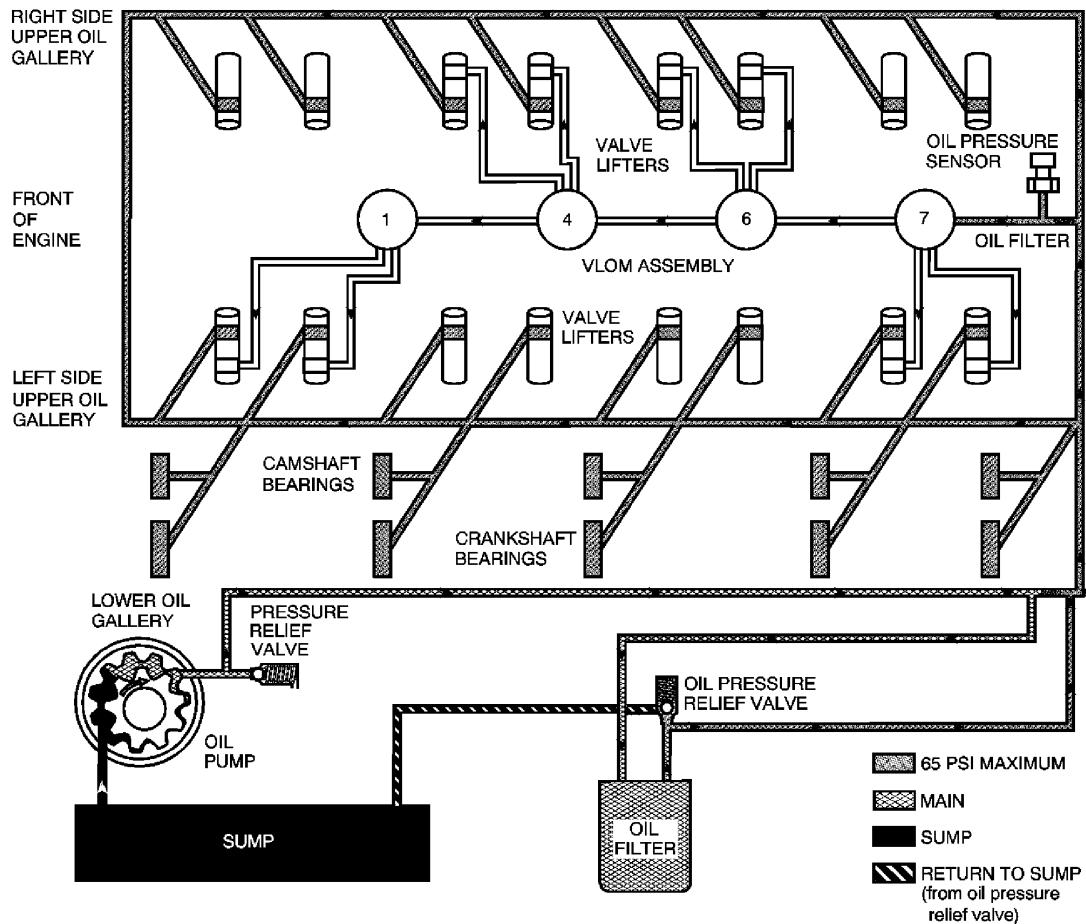


Fig. 53: Lubrication Schematic Above 55 psi (RPO LH6/LMG/LY5/LC9)
Courtesy of GENERAL MOTORS CORP.

Engine lubrication is supplied by a gerotor type oil pump assembly. The oil pump is mounted on the front of the engine block and driven directly by the crankshaft sprocket. The pump gears rotate and draw oil from the oil pan sump through a pick-up screen and pipe. The oil is pressurized as it passes through the pump and is sent through the engine block lower oil gallery. Contained within the oil pump assembly is a pressure relief valve that maintains oil pressure within a specified range.

Pressurized oil is directed through the engine block lower oil gallery to the full flow oil filter where harmful contaminants are removed. A bypass valve is incorporated into the oil filter, which permits oil flow in the event the filter becomes restricted. A second valve, the active fuel management oil pressure relief valve is incorporated into the oil pan. The active fuel management oil pressure relief valve limits oil pressure directed to the upper oil galleries and valve lifter oil manifold assembly to 379-517 kPa (55-75 psi) maximum. When main oil pressure exceeds 379

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

kPa (55 psi), the oil pressure relief valve exhausts excess oil to the sump.

Oil is then directed from the filter to the upper main oil galleries and the valve lifter oil manifold assembly. Oil from the left upper oil gallery is directed to the crankshaft and camshaft bearings. Oil that has entered both the upper main oil galleries also pressurizes the valve lifter assemblies and is then pumped through the pushrods to lubricate the valve rocker arms and valve stems. Oil returning to the pan is directed by the crankshaft oil deflector. The oil pressure sensor is located at the top rear of the engine. Refer to **Cylinder Deactivation (Active Fuel Management) System Description**.

LUBRICATION DESCRIPTION - MAIN PRESSURE ABOVE 55 PSI WITH CYLINDER DEACTIVATION (ACTIVE FUEL MANAGEMENT) OFF (RPO L76)

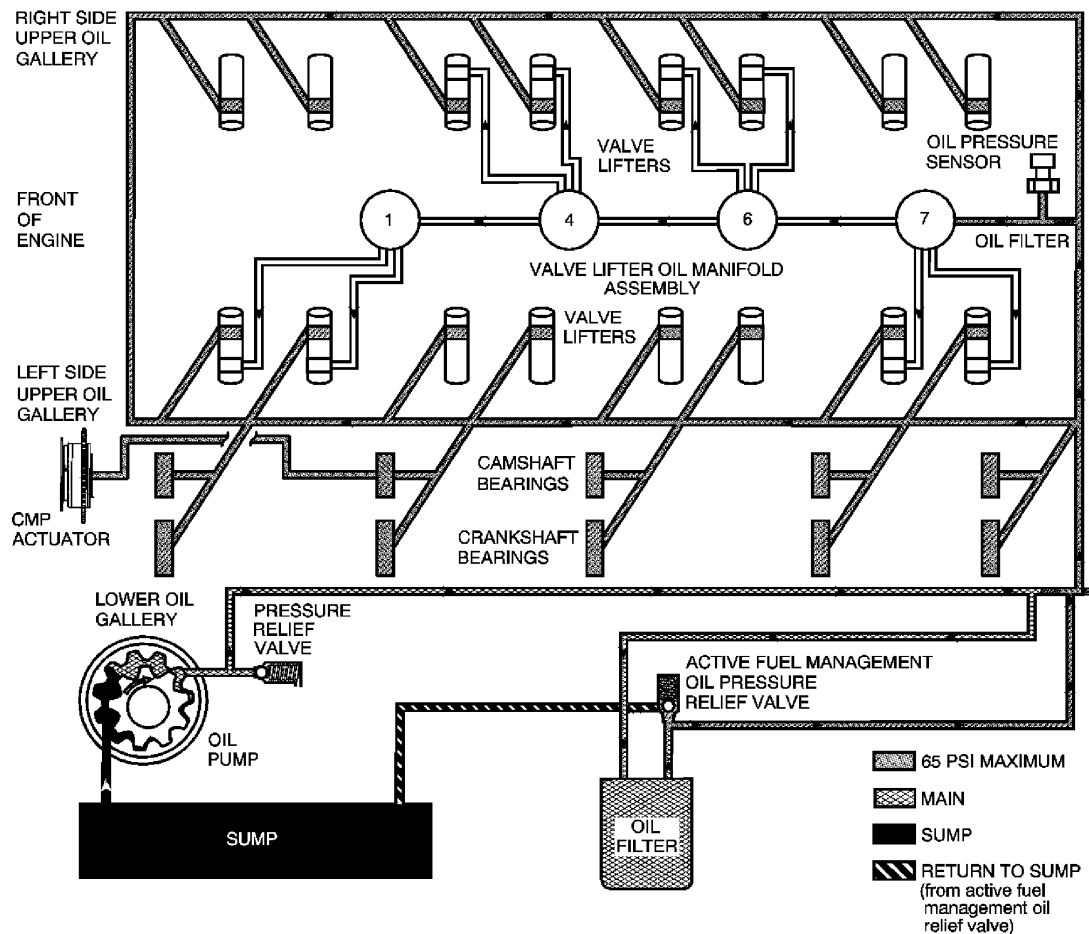


Fig. 54: Lubrication Schematic Above 55 psi (RPO L76)
Courtesy of GENERAL MOTORS CORP.

Engine lubrication is supplied by a gerotor type oil pump assembly. The oil pump is mounted on

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

the front of the engine block and driven directly by the crankshaft sprocket. The pump gears rotate and draw oil from the oil pan sump through a pick-up screen and pipe. The oil is pressurized as it passes through the pump and is sent through the engine block lower oil gallery. Contained within the oil pump assembly is a pressure relief valve that maintains oil pressure within a specified range.

Pressurized oil is directed through the engine block lower oil gallery to the full flow oil filter where harmful contaminants are removed. A bypass valve is incorporated into the oil filter, which permits oil flow in the event the filter becomes restricted. A second valve, the active fuel management oil pressure relief valve is incorporated into the oil pan. The active fuel management oil pressure relief valve limits oil pressure directed to the upper oil galleries and valve lifter oil manifold assembly to 379-517 kPa (55-75 psi) maximum. When main oil pressure exceeds 379 kPa (55 psi), the oil pressure relief valve exhausts excess oil to the sump.

Oil is then directed from the filter to the upper main oil galleries and the valve lifter oil manifold assembly. Oil from the left upper oil gallery is directed to the crankshaft and camshaft bearings. Oil that has entered both the upper main oil galleries also pressurizes the valve lifter assemblies and is then pumped through the pushrods to lubricate the valve rocker arms and valve stems.

An oil passage at camshaft bearing location 2 permits oil flow into the center of the camshaft. Oil enters the camshaft exiting at the front and into the camshaft position (CMP) actuator solenoid valve. The CMP valve spool position is controlled by the engine control module (ECM) and CMP magnet. When commanded by the ECM, the CMP magnet repositions the CMP actuator solenoid valve spool directing pressurized oil into the CMP actuator to control valve timing. Refer to **Camshaft Actuator System Description** .

Oil returning to the pan is directed by the crankshaft oil deflector. The oil pressure sensor is located at the top rear of the engine. For RPO L99, active fuel management hardware is present in first design engines. The system is inactive for the 2007 model year. Refer to **Cylinder Deactivation (Active Fuel Management) System Description** and **Camshaft Position Actuator and Solenoid Valve Description**.

LUBRICATION DESCRIPTION - MAIN PRESSURE BELOW 55 PSI WITH CYLINDER DEACTIVATION (ACTIVE FUEL MANAGEMENT) ON (RPO LH6/LMG/LY5/LC9)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Oil is then directed from the filter to the upper main oil galleries and the valve lifter oil manifold assembly. Oil from the left upper oil gallery is directed to the crankshaft and camshaft bearings. Oil that has entered both the upper main oil galleries also pressurizes the valve lifter assemblies and is then pumped through the pushrods to lubricate the valve rocker arms and valve stems. Oil returning to the pan is directed by the crankshaft oil deflector. The oil pressure sensor is located at the top rear of the engine.

With active fuel management activated, the engine control module (ECM) commands the 4 solenoids to open, directing oil through the engine block oil galleries to the intake and exhaust valve lifters for cylinders 1, 4, 6, and 7. Refer to **Cylinder Deactivation (Active Fuel Management) System Description**.

LUBRICATION DESCRIPTION - MAIN PRESSURE BELOW 55 PSI WITH CYLINDER DEACTIVATION (ACTIVE FUEL MANAGEMENT) ON (RPO L76)

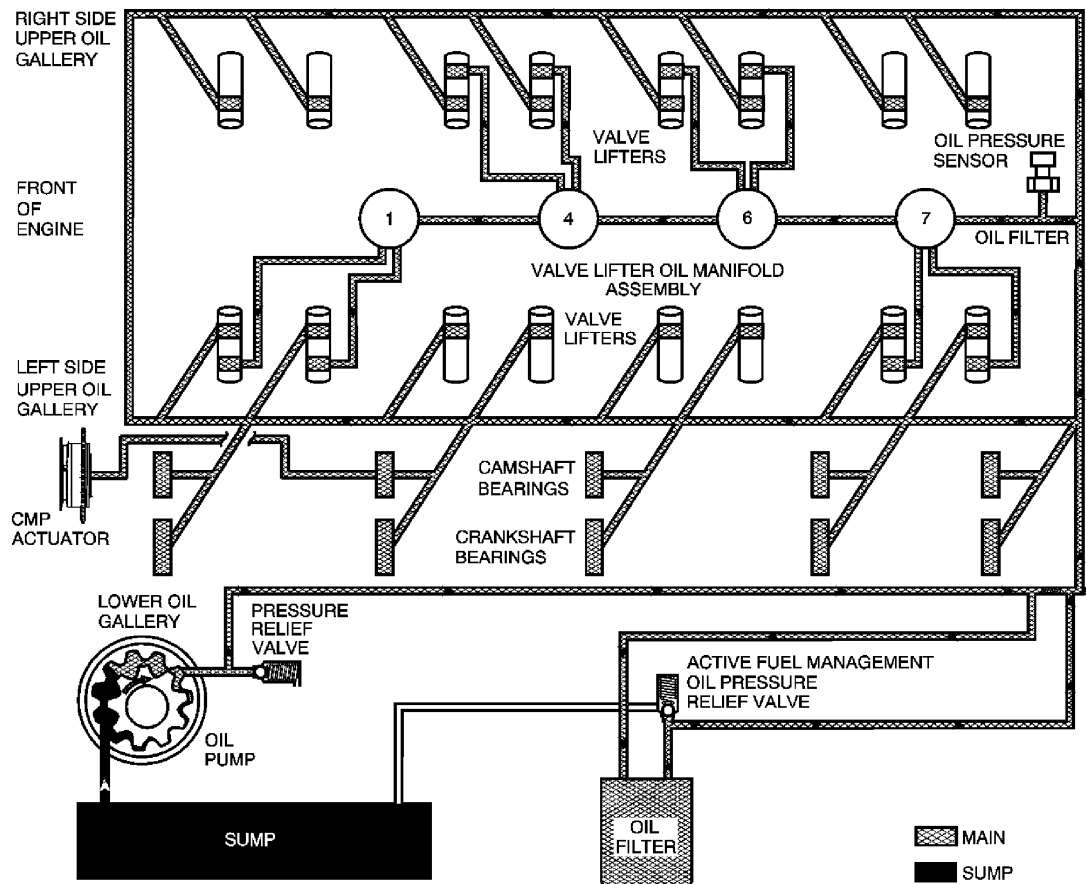


Fig. 56: Lubrication Schematic Below 55 psi (RPO L76)
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Engine lubrication is supplied by a gerotor type oil pump assembly. The oil pump is mounted on the front of the engine block and driven directly by the crankshaft sprocket. The pump gears rotate and draw oil from the oil pan sump through a pick-up screen and pipe. The oil is pressurized as it passes through the pump and is sent through the engine block lower oil gallery. Contained within the oil pump assembly is a pressure relief valve that maintains oil pressure within a specified range.

Pressurized oil is directed through the engine block lower oil gallery to the full flow oil filter where harmful contaminants are removed. A bypass valve is incorporated into the oil filter, which permits oil flow in the event the filter becomes restricted. A second valve, the active fuel management oil pressure relief valve is incorporated into the oil pan. The active fuel management oil pressure relief valve limits oil pressure directed to the upper oil galleries and oil manifold assembly to 379-517 kPa (55-75 psi) maximum.

Oil is then directed from the filter to the upper main oil galleries and the valve lifter oil manifold assembly. Oil from the left upper oil gallery is directed to the crankshaft and camshaft bearings. Oil that has entered both the upper main oil galleries also pressurizes the valve lifter assemblies and is then pumped through the pushrods to lubricate the valve rocker arms and valve stems.

An oil passage at camshaft bearing location 2 permits oil flow into the center of the camshaft. Oil enters the camshaft exiting at the front and into the camshaft position (CMP) actuator solenoid valve. The CMP valve spool position is controlled by the engine control module (ECM) and CMP magnet. When commanded by the ECM, the CMP magnet repositions the CMP actuator solenoid valve spool directing pressurized oil into the CMP actuator to control valve timing. Refer to **Camshaft Actuator System Description** .

Oil returning to the pan is directed by the crankshaft oil deflector. The oil pressure sensor is located at the top rear of the engine.

With active fuel management activated, the ECM commands the 4 solenoids to open, directing oil through the engine block oil galleries to the intake and exhaust valve lifters for cylinders 1, 4, 6, and 7. For RPO L99, active fuel management hardware is present in first design engines. The system is inactive for the 2007 model year. Refer to **Cylinder Deactivation (Active Fuel Management) System Description** and **Camshaft Position Actuator and Solenoid Valve Description**.

LUBRICATION DESCRIPTION - MAIN PRESSURE ABOVE 55 PSI WITH CYLINDER DEACTIVATION (ACTIVE FUEL MANAGEMENT) ON (RPO LH6/LMG/LY5/LC9)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

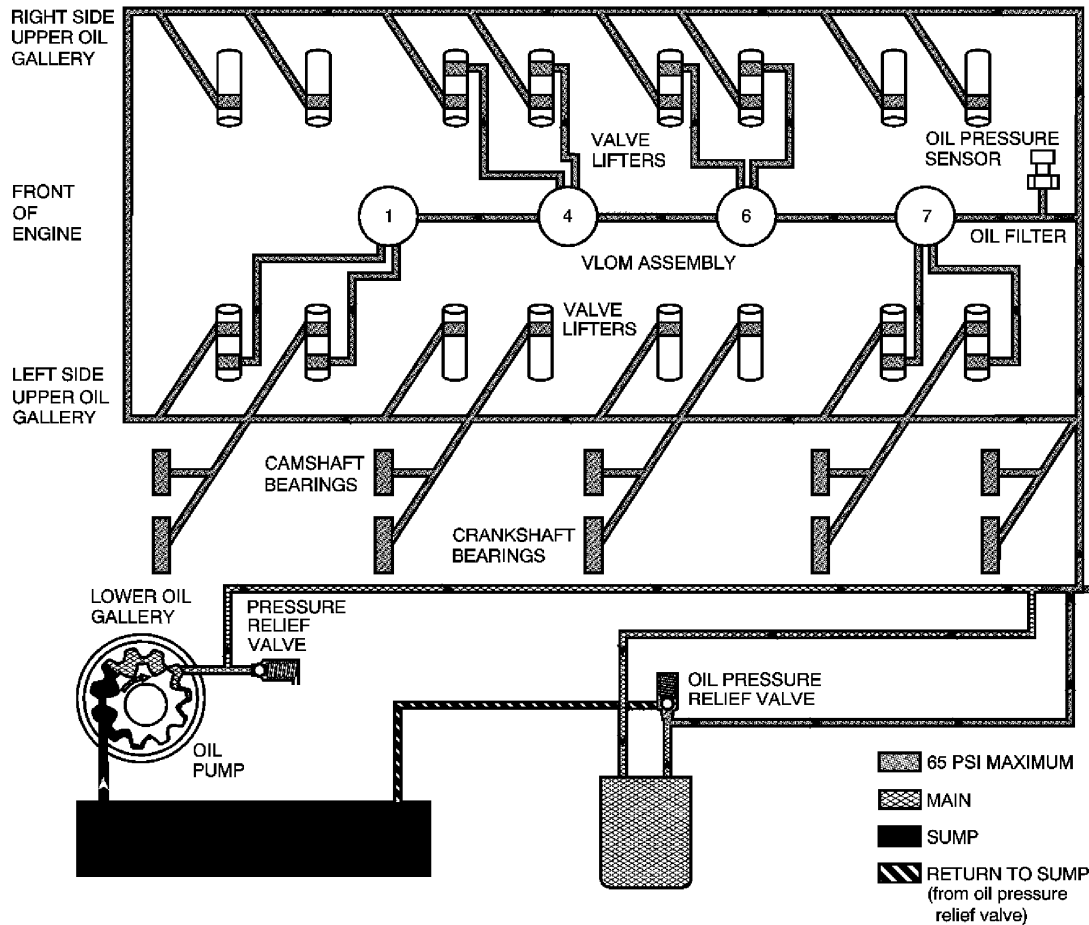


Fig. 57: Lubrication Schematic Above 55 psi (RPO LH6/LMG/LY5/LC9)
Courtesy of GENERAL MOTORS CORP.

Engine lubrication is supplied by a gerotor type oil pump assembly. The oil pump is mounted on the front of the engine block and driven directly by the crankshaft sprocket. The pump gears rotate and draw oil from the oil pan sump through a pick-up screen and pipe. The oil is pressurized as it passes through the pump and is sent through the engine block lower oil gallery. Contained within the oil pump assembly is a pressure relief valve that maintains oil pressure within a specified range.

Pressurized oil is directed through the engine block lower oil gallery and through the oil filter where harmful contaminants are removed. A bypass valve is incorporated into the oil filter, which permits oil flow in the event the filter becomes restricted. A second valve, the active fuel management oil pressure relief valve is incorporated into the oil pan. The active fuel management oil pressure relief valve limits oil pressure directed to the upper oil galleries and valve lifter oil manifold assembly to 379-517 kPa (55-75 psi) maximum. When main oil pressure exceeds 379

2008 Chevrolet Silverado 1500

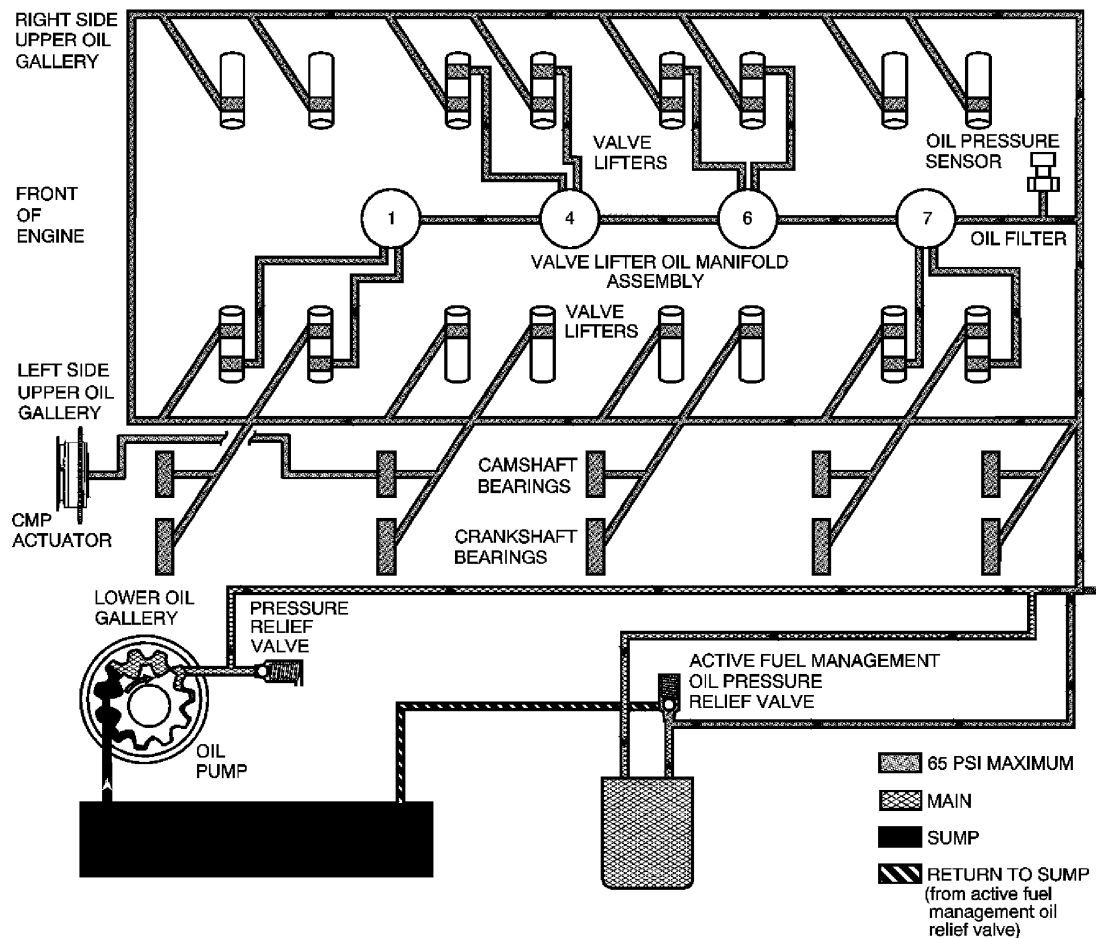
2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

kPa (55 psi), the oil pressure relief valve exhausts excess oil to the sump.

Oil is then directed from the filter to the upper main oil galleries and the valve lifter oil manifold assembly. Oil from the left upper oil gallery is directed to the crankshaft and camshaft bearings. Oil that has entered both the upper main oil galleries also pressurizes the valve lifter assemblies and is then pumped through the pushrods to lubricate the valve rocker arms and valve stems. Oil returning to the pan is directed by the crankshaft oil deflector. The oil pressure sensor is located at the top rear of the engine.

With active fuel management activated, the engine control module (ECM) commands the 4 solenoids to open, directing oil through the engine block oil galleries to the intake and exhaust valve lifters for cylinders 1, 4, 6, and 7. Refer to **Cylinder Deactivation (Active Fuel Management) System Description**.

LUBRICATION DESCRIPTION - MAIN PRESSURE ABOVE 55 PSI WITH CYLINDER DEACTIVATION (ACTIVE FUEL MANAGEMENT) ON (RPO L76)



2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Fig. 58: Lubrication Schematic Above 55 psi (RPO L76)

Courtesy of GENERAL MOTORS CORP.

Engine lubrication is supplied by a gerotor type oil pump assembly. The oil pump is mounted on the front of the engine block and driven directly by the crankshaft sprocket. The pump gears rotate and draw oil from the oil pan sump through a pick-up screen and pipe. The oil is pressurized as it passes through the pump and is sent through the engine block lower oil gallery. Contained within the oil pump assembly is a pressure relief valve that maintains oil pressure within a specified range.

Pressurized oil is directed through the engine block lower oil gallery to the full flow oil filter where harmful contaminants are removed. A bypass valve is incorporated into the oil filter, which permits oil flow in the event the filter becomes restricted. A second valve, the active fuel management oil pressure relief valve is incorporated into the oil pan. The active fuel management oil pressure relief valve limits oil pressure directed to the upper oil galleries and valve lifter oil manifold assembly to 379-517 kPa (55-75 psi) maximum. When main oil pressure exceeds 379 kPa (55 psi), the oil pressure relief valve exhausts excess oil to the sump.

Oil is then directed from the filter to the upper main oil galleries and the valve lifter oil manifold assembly. Oil from the left upper oil gallery is directed to the crankshaft and camshaft bearings. Oil that has entered both the upper main oil galleries also pressurizes the valve lifter assemblies and is then pumped through the pushrods to lubricate the valve rocker arms and valve stems.

An oil passage at camshaft bearing location 2 permits oil flow into the center of the camshaft. Oil enters the camshaft exiting at the front and into the camshaft position (CMP) actuator solenoid valve. The CMP valve spool position is controlled by the engine control module (ECM) and CMP magnet. When commanded by the ECM, the CMP magnet repositions the CMP actuator solenoid valve spool directing pressurized oil into the CMP actuator to control valve timing. Refer to **Camshaft Actuator System Description**.

Oil returning to the pan is directed by the crankshaft oil deflector. The oil pressure sensor is located at the top rear of the engine.

With active fuel management activated, the ECM commands the 4 solenoids to open, directing oil through the engine block oil galleries to the intake and exhaust valve lifters for cylinders 1, 4, 6, and 7. For RPO L99, active fuel management hardware is present in first design engines. The system is inactive for the 2007 model year. Refer to **Cylinder Deactivation (Active Fuel Management) System Description** and **Camshaft Position Actuator and Solenoid Valve Description**.

CLEANLINESS AND CARE

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- Throughout this section, it should be understood that proper cleaning and protection of machined surfaces and friction areas is part of the repair procedure. This is considered standard shop practice, even if not specifically stated.
- When any internal engine parts are serviced, care and cleanliness is important.
- When components are removed for service, they should be marked, organized or retained in a specific order for assembly. Refer to **Separating Parts**.
- At the time of installation, components should be installed in the same location and with the same mating surface as when removed.
- An automobile engine is a combination of many machined, honed, polished and lapped surfaces with tolerances that are measured in millimeters or thousandths of an inch. These surfaces should be covered or protected to avoid component damage.
- A liberal coating of clean engine oil should be applied to friction areas during assembly.
- Proper lubrication will protect and lubricate friction surfaces during initial operation.

SEPARATING PARTS

- IMPORTANT:**
- **Many internal engine components will develop specific wear patterns on their friction surfaces.**
 - **When disassembling the engine, internal components MUST be separated, marked, or organized in a way to ensure installation to their original location and position.**

Separate, mark, or organize the following components:

- Piston and the piston pin
- Piston to the specific cylinder bore
- Piston rings to the piston
- Connecting rod location and orientation to the crankshaft journal
- Connecting rod to the bearing cap

A paint stick or etching/engraving type tool are recommended. Stamping the connecting rod or cap near the bearing bore may affect component geometry.

- Crankshaft main and connecting rod bearings
- Camshaft and valve lifters
- Valve lifters, lifter guides, pushrods and rocker arm assemblies
- Valve to the valve guide

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- Valve spring to the cylinder head location
- Engine block main bearing cap location and direction
- Oil pump drive and driven gears

REPLACING ENGINE GASKETS

Tools Required

J 28410 Gasket Remover

Gasket Use and Applying Sealants

- Do not use any gasket again unless specified.
- Gaskets that can be used again will be identified in the service procedure.
- Do not apply sealant to any gasket or sealing surface unless called out in the service information.

Separating Components

- Use a rubber mallet to separate components.
- Bump the part sideways to loosen the components.
- Bumping should be done at bends or reinforced areas to prevent distortion of parts.

Cleaning Gasket Surfaces

- Remove all gasket and sealing material from the part using the **J 28410** or equivalent.
- Care must be used to avoid gouging or scraping the sealing surfaces.
- Do not use any other method or technique to remove sealant or gasket material from a part.
- Do not use abrasive pads, sand paper, or power tools to clean the gasket surfaces.
 - These methods of cleaning can cause damage to the component sealing surfaces.
 - Abrasive pads also produce a fine grit that the oil filter cannot remove from the oil.
 - This grit is abrasive and has been known to cause internal engine damage.

Assembling Components

NOTE: Refer to **Sealant Notice** .

- When assembling components, use only the sealant specified or equivalent in the service procedure.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- Sealing surfaces should be clean and free of debris or oil.
- Specific components such as crankshaft oil seals or valve stem oil seals may require lubrication during assembly.
- Components requiring lubrication will be identified in the service procedure.
- When applying sealant to a component, apply the amount specified in the service procedure.
- Tighten bolts to specifications. Do not overtighten.

USE OF ROOM TEMPERATURE VULCANIZING (RTV) AND ANAEROBIC SEALANT

Pipe Joint Compound

IMPORTANT: 3 types of sealer are commonly used in engines. These are room temperature vulcanizing (RTV) sealer, anaerobic gasket eliminator sealer, and pipe joint compound. The correct sealer and amount must be used in the proper location to prevent oil leaks. DO NOT interchange the 3 types of sealers. Use only the specific sealer or the equivalent as recommended in the service procedure.

- Pipe joint compound is a pliable sealer that does not completely harden. This type of sealer is used where 2 non-rigid parts, such as the oil pan and the engine block, are assembled together.
- Do not use pipe joint compound in areas where extreme temperatures are expected. These areas include the exhaust manifold, head gasket, or other surfaces where gasket eliminator is specified.
- Follow all safety recommendations and directions that are on the container.

To remove the sealant or the gasket material, refer to **Replacing Engine Gaskets**.

NOTE: Refer to Sealant Notice .

- Apply the pipe joint compound to a clean surface. Use a bead size or quantity as specified in the procedure. Run the bead to the inside of any bolt holes.
- Apply a continuous bead of pipe joint compound to one sealing surface. Sealing surfaces to be resealed must be clean and dry.
- Tighten the bolts to specifications. Do not overtighten.

RTV Sealer

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- RTV sealant hardens when exposed to air. This type of sealer is used where 2 non-rigid parts, such as the intake manifold and the engine block, are assembled together.
- Do not use RTV sealant in areas where extreme temperatures are expected. These areas include the exhaust manifold, head gasket, or other surfaces where a gasket eliminator is specified.
- Follow all safety recommendations and directions that are on the container.

To remove the sealant or the gasket material, refer to **Replacing Engine Gaskets**.

NOTE: Refer to **Sealant Notice** .

- Apply RTV sealant to a clean surface. Use a bead size as specified in the procedure. Run the bead to the inside of any bolt holes.
- Assemble components while the RTV sealant is still wet, within 3 minutes. Do not wait for the RTV sealant to skin over.
- Tighten bolts to specifications. Do not overtighten.

Anaerobic Sealer

- Anaerobic gasket eliminator hardens in the absence of air. This type of sealer is used where 2 rigid parts, such as castings, are assembled together. When two rigid parts are disassembled and no sealer or gasket is readily noticeable, the parts were probably assembled using a gasket eliminator.
- Follow all safety recommendations and directions that are on the container.

To remove the sealant or the gasket material, refer to **Replacing Engine Gaskets**.

- Apply a continuous bead of gasket eliminator to 1 flange. Surfaces to be sealed must be clean and dry.

NOTE: Refer to **Sealant Notice** .

- Spread the sealer evenly with your finger to get a uniform coating on the sealing surface.

IMPORTANT: Anaerobic sealed joints that are partially torqued and allowed to cure more than 5 minutes may result in incorrect shimming and sealing of the joint.

- Tighten bolts to specifications. Do not overtighten.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- After properly tightening the fasteners, remove the excess sealer from the outside of the joint.

TOOLS AND EQUIPMENT

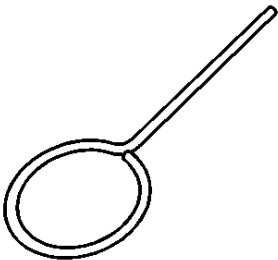
Special tools are listed and illustrated throughout this section, with a complete listing at the end of the section. These tools, or their equivalents, are specially designed to quickly and safely accomplish the operations for which they are intended. The use of these special tools also minimize possible damage to engine components. Some precision measuring tools are required for inspection of certain critical components. Torque wrenches and a torque angle meter are necessary for the proper tightening of various fasteners.

To properly service the engine assembly, the following items should be readily available:

- Approved eye protection and safety gloves
- A clean, well lit, work area
- A suitable parts cleaning tank
- A compressed air supply
- Trays or storage containers to keep parts and fasteners organized
- An adequate set of hand tools
- Approved engine repair stand
- An approved engine lifting device that will adequately support the weight of the components

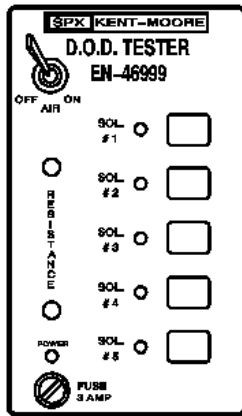
SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS

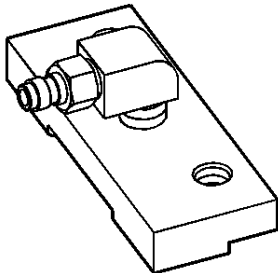
Illustration	Tool Number/Description
	EN-46330 Timing Belt Tensioner Retaining Pin

2008 Chevrolet Silverado 1500

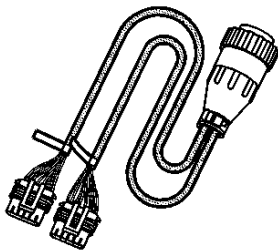
2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado



EN-46999
Active Fuel Management Tester



EN-46999-1
Active Fuel Management Tester Air Adapter

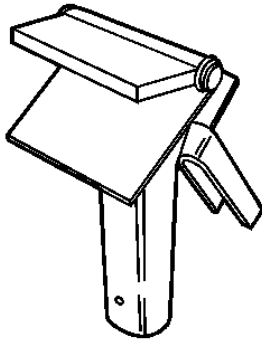
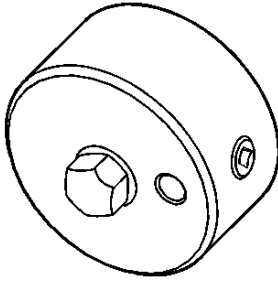


EN-46999-5
Active Fuel Management Tester Harness -
Small Block V8

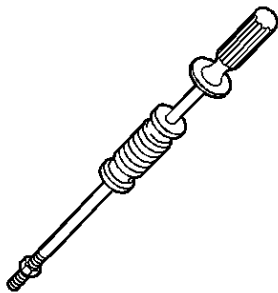
EN-47971
Oil Pressure Gage Adapter

2008 Chevrolet Silverado 1500

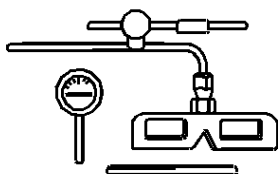
2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado,
Sierra & Silverado



GE-48326
Sealant Dispenser



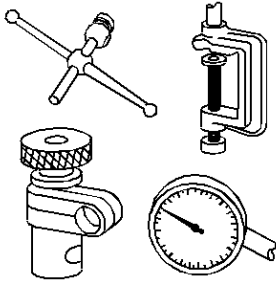
J 6125-1B
Slide Hammer with Adapter



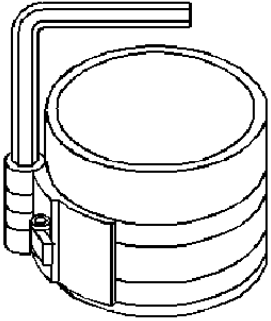
J 7872
Magnetic Base Dial Indicator Set

2008 Chevrolet Silverado 1500

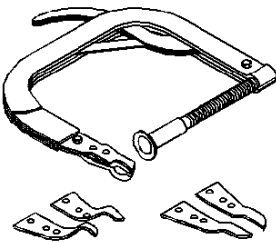
2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado



J 8001
Dial Indicator Set



J 8037
Ring Compressor

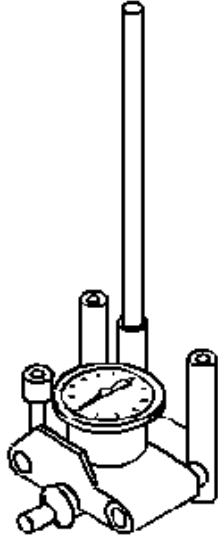


J 8062
Valve Spring Compressor - Head Off

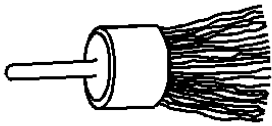
J 8087

2008 Chevrolet Silverado 1500

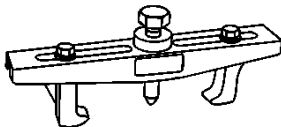
2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado



Cylinder Bore Gage



J 8089
Carbon Removal Brush

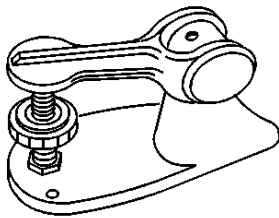
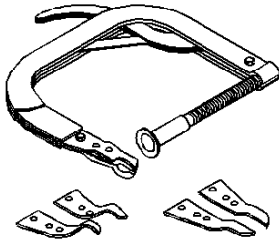


J 8433
Two Jaw Puller

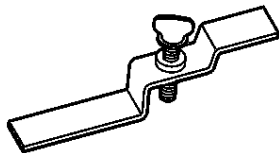
J 8520
Cam Lobe Lift Indicator

2008 Chevrolet Silverado 1500

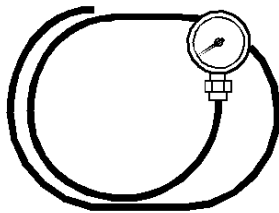
2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado



J 9666
Valve Spring Tester



J 21366
Converter Holding Strap

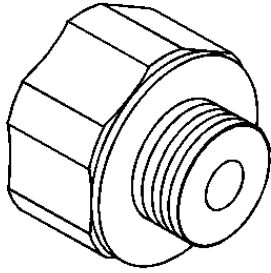


J 21867
Pressure Gage

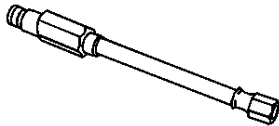
J-21867-16
Oil Pressure Adapter

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado



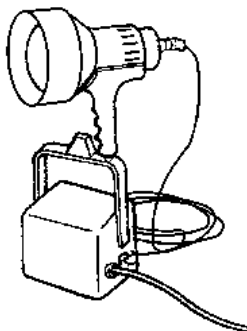
J 22794
Spark Plug Port Adapter



J 24270
Cylinder Bore Ridge Reamer



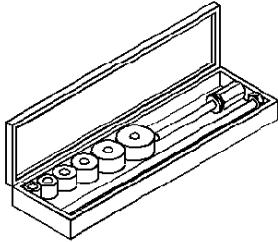
J 28410
Gasket Remover



J 28428-E
High-Intensity Black Light Kit

2008 Chevrolet Silverado 1500

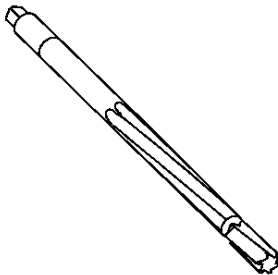
2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado



J 33049
Camshaft Bearing Service Set



J 35667-A
Cylinder Head Leakdown Tester

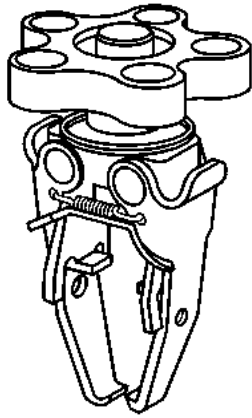


J 37378-1
Valve Guide Reamer

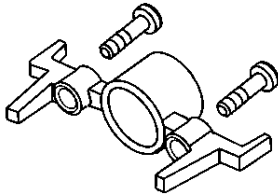
J 38606

2008 Chevrolet Silverado 1500

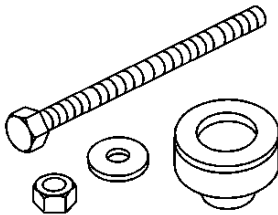
2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado



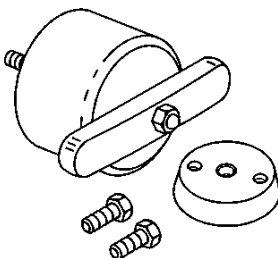
Valve Spring Compressor



J 41476
Front and Rear Cover Alignment Tool



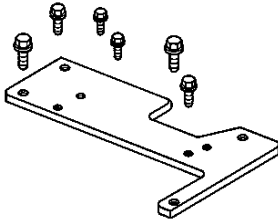
J 41478
Crankshaft Front Oil Seal Installer



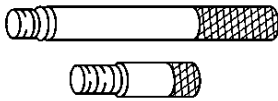
J 41479
Crankshaft Rear Oil Seal Installer

2008 Chevrolet Silverado 1500

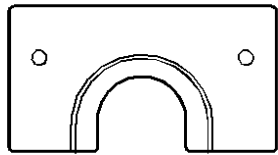
2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado



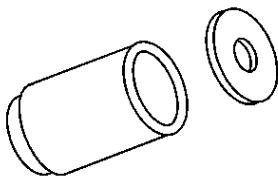
J 41480
Front and Rear Cover Alignment



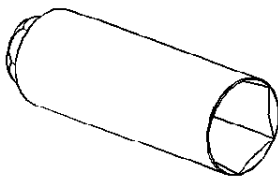
J 41556
Connecting Rod Guide



J 41558
Crankshaft Sprocket Remover



J 41665
Crankshaft Balancer and Sprocket Installer

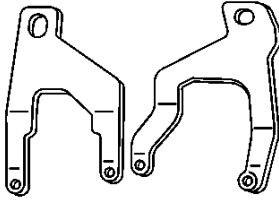


J 41712
Oil Pressure Switch Socket

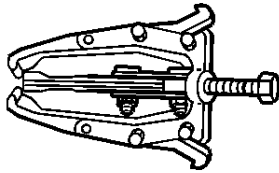
J 41798

2008 Chevrolet Silverado 1500

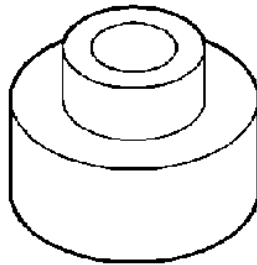
2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado



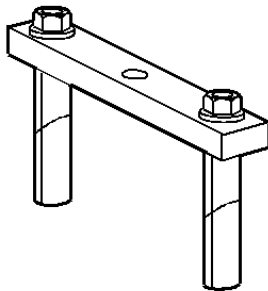
Engine Lift Bracket



J 41816-A
Crankshaft Balancer Remover



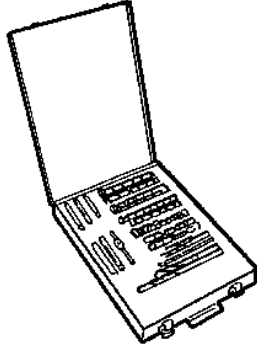
J 41816-2
Crankshaft End Protector



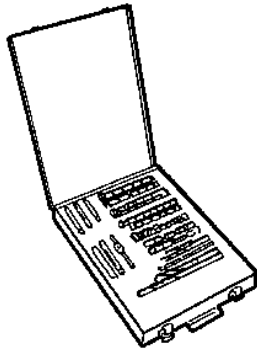
J 41818
Crankshaft Bearing Cap Remover

2008 Chevrolet Silverado 1500

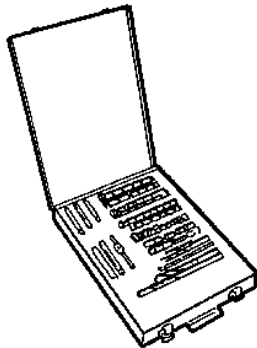
2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado



J 42385-100
Head/Main Bolt Thread Repair Kit



J 42385-200
Common Thread Repair Kit



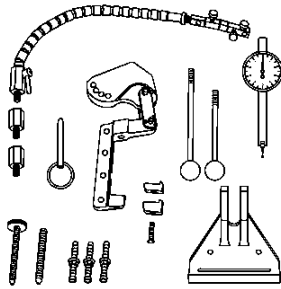
J 42385-300
Fixtures and Hardware Kit

2008 Chevrolet Silverado 1500

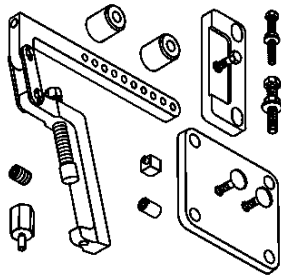
2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado



J 42386-A
Flywheel Holding Tool



J 43690
Rod Bearing Clearance Checking Tool

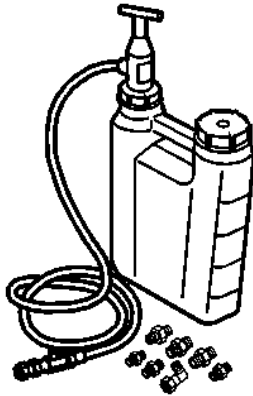
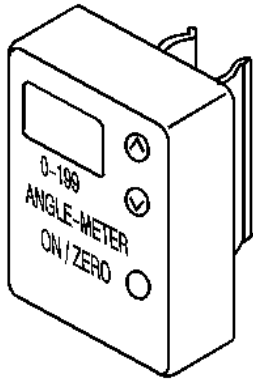


J 43690-100
Rod Bearing Clearance Checking Tool -
Adapter Kit

J 45059
Angle Meter

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado



J 45299
Engine Preluber

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2008 ENGINE

Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

ON-VEHICLE REPAIR INFORMATION

NOTE: Data in this article covers **ON-VEHICLE** repair information. Information carries over into the next article in this set. For off vehicle repair information see **OFF-VEHICLE REPAIR INFORMATION** .

DRIVE BELT REPLACEMENT - ACCESSORY

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

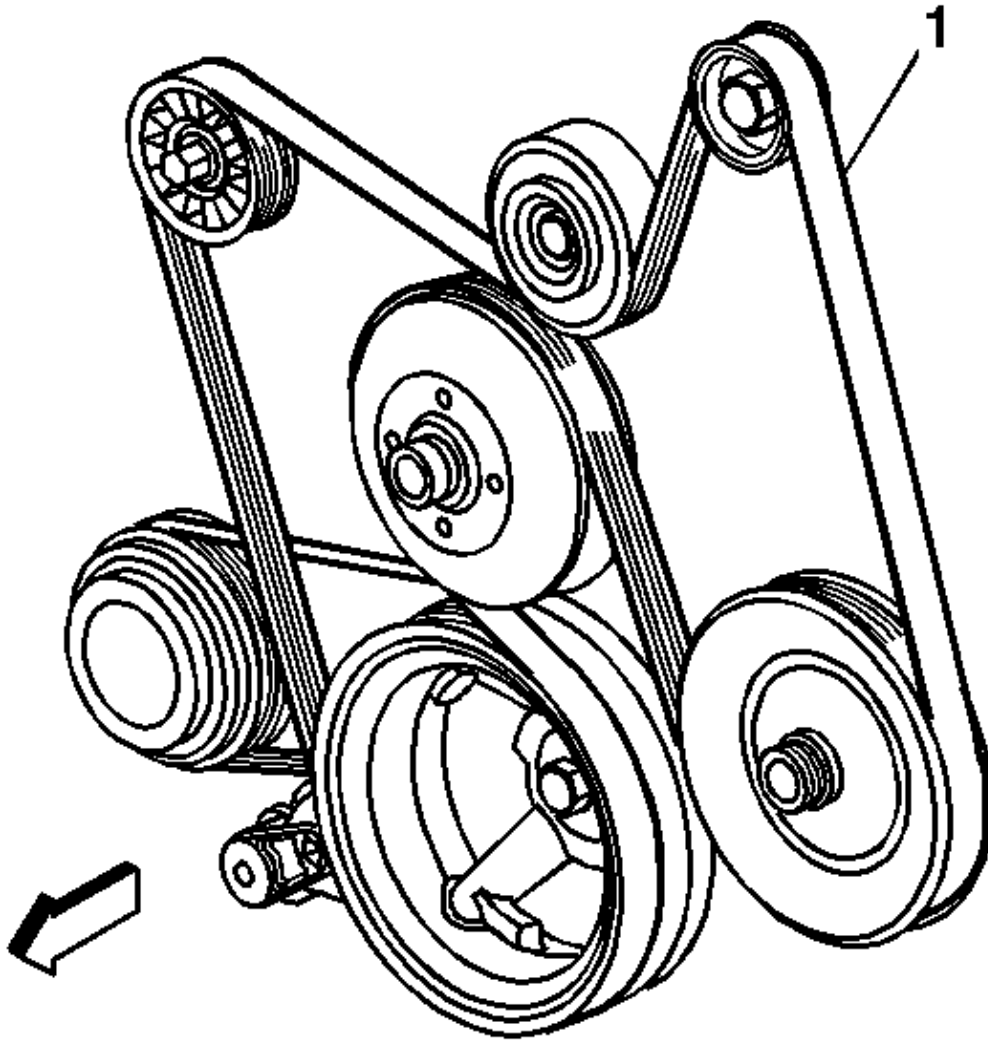


Fig. 1: View Of Accessory Drive Belt Routing
Courtesy of GENERAL MOTORS CORP.

1. Open the hood.
2. Remove the air cleaner outlet duct. Refer to **Air Cleaner Resonator Outlet Duct Replacement** .
3. Install a breaker bar with hex-head socket to the drive belt tensioner bolt.
4. Rotate the drive belt tensioner clockwise in order to relieve tension on the belt.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

5. Remove the drive belt (1) from the pulleys and the drive belt tensioner.
6. Slowly release the tension on the drive belt tensioner.
7. Remove the breaker bar and socket and from the drive belt tensioner bolt.
8. Clean and inspect the belt surfaces of all the pulleys.

Installation Procedure

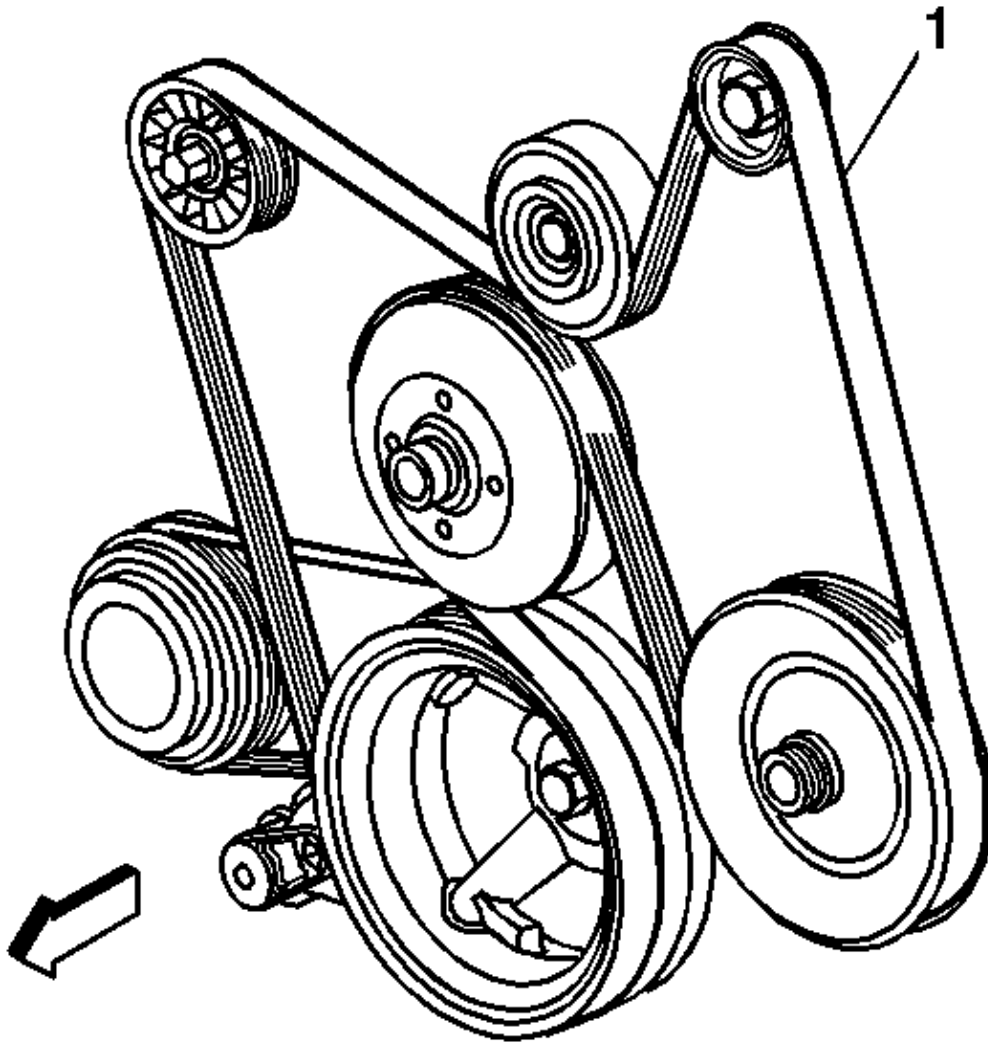


Fig. 2: View Of Accessory Drive Belt Routing

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Courtesy of GENERAL MOTORS CORP.

1. Route the drive belt (1) around all the pulleys except the idler pulley.
2. Install the breaker bar with hex-head socket to the belt tensioner bolt.
3. Rotate the belt tensioner clockwise in order to relieve the tension on the tensioner.
4. Install the drive belt under the idler pulley.
5. Slowly release the tension on the belt tensioner.
6. Remove the breaker bar and socket from the belt tensioner bolt.
7. Inspect the drive belt for proper installation and alignment.
8. Install the air cleaner outlet duct. Refer to **Air Cleaner Resonator Outlet Duct Replacement** .
9. Start the vehicle and inspect the drive belt for proper operation.
10. Close the hood.

AIR CONDITIONING COMPRESSOR BELT REPLACEMENT

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

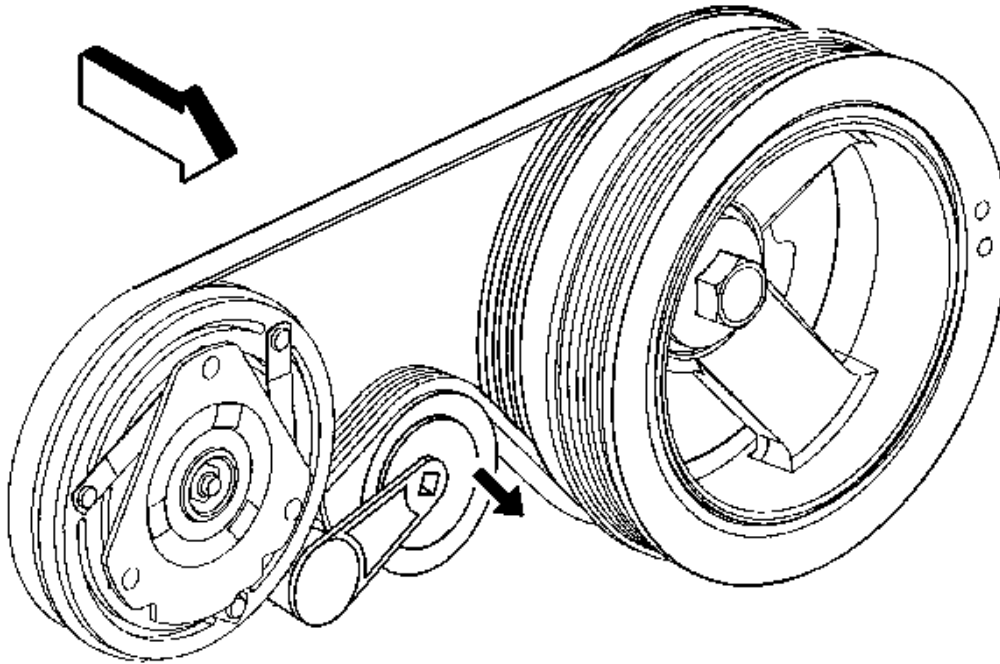


Fig. 3: A/C Belt Tensioner
Courtesy of GENERAL MOTORS CORP.

1. Remove the accessory drive belt. Refer to **Drive Belt Replacement - Accessory**.
2. Install a ratchet into the air conditioning (A/C) belt tensioner adapter opening.
3. Rotate the A/C belt tensioner clockwise in order to relieve tension on the A/C belt.
4. Remove the A/C belt from the pulleys.
5. Slowly release the tension on the A/C belt tensioner.
6. Remove the ratchet from the A/C belt tensioner.
7. Clean and inspect the belt surfaces of all the pulleys.

Installation Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

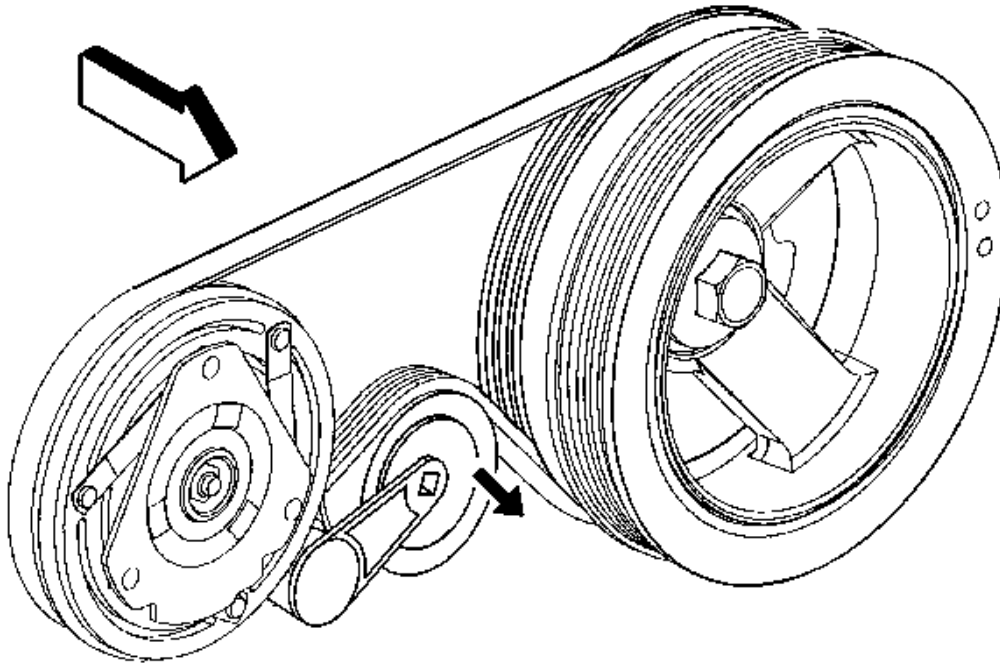


Fig. 4: A/C Belt Tensioner
Courtesy of GENERAL MOTORS CORP.

1. Install the A/C belt over the crankshaft balancer.
2. Install a ratchet into the A/C drive belt tensioner adapter opening
3. Rotate the A/C belt tensioner clockwise in order to relieve tension on the belt tensioner.
4. Install the A/C belt over the tensioner pulley.
5. Install the A/C belt around the A/C compressor pulley.
6. Slowly release the tension on the A/C belt tensioner.
7. Remove the ratchet from the A/C belt tensioner.
8. Inspect the A/C belt for proper installation and alignment.
9. Install the accessory drive belt. Refer to **Drive Belt Replacement - Accessory.**

DRIVE BELT IDLER PULLEY REPLACEMENT

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

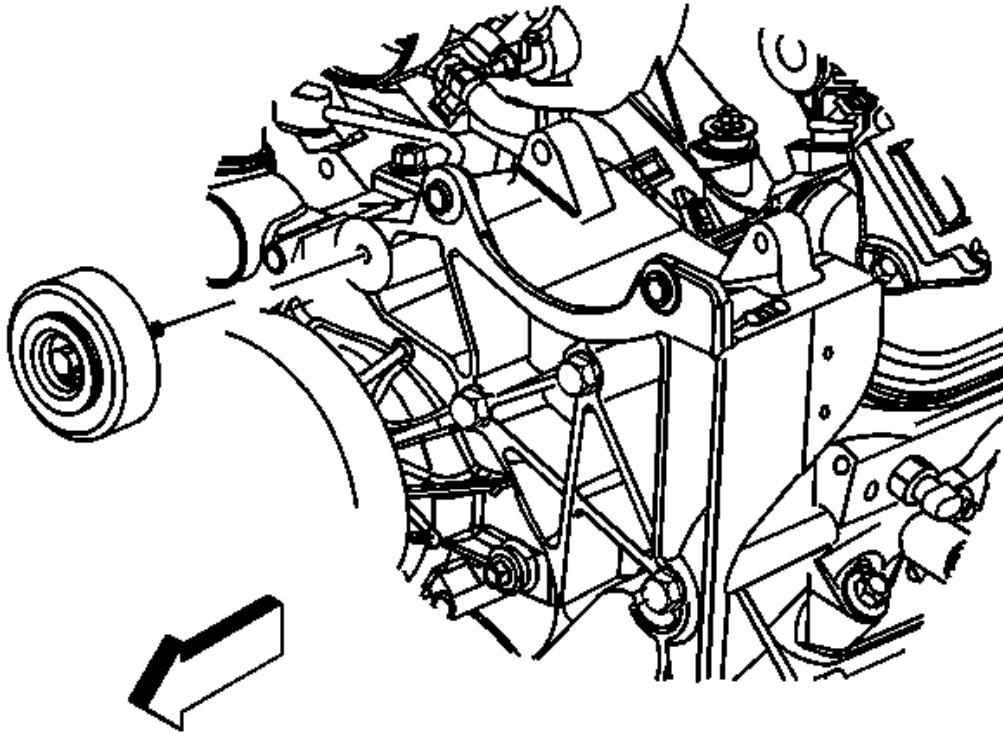


Fig. 5: View Of Drive Belt Idler Pulley
Courtesy of GENERAL MOTORS CORP.

1. Remove the accessory drive belt. Refer to **Drive Belt Replacement - Accessory**.
2. Loosen the drive belt idler pulley bolt and remove the idler pulley.

Installation Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

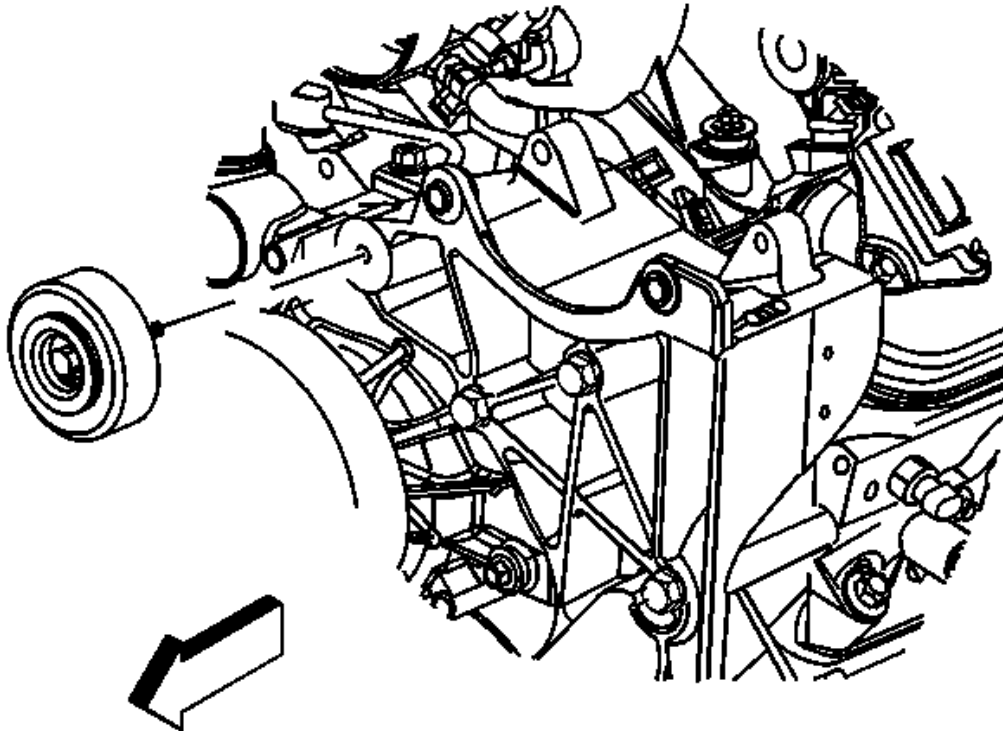


Fig. 6: View Of Drive Belt Idler Pulley
Courtesy of GENERAL MOTORS CORP.

1. Position the drive belt idler pulley to the generator bracket and tighten the idler pulley bolt finger tight.

NOTE: Refer to Fastener Notice .

2. Tighten the drive belt idler pulley bolt.

Tighten: Tighten the bolt to 50 N.m (37 lb ft).

3. Install the accessory drive belt. Refer to Drive Belt Replacement - Accessory.

DRIVE BELT TENSIONER REPLACEMENT - ACCESSORY

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

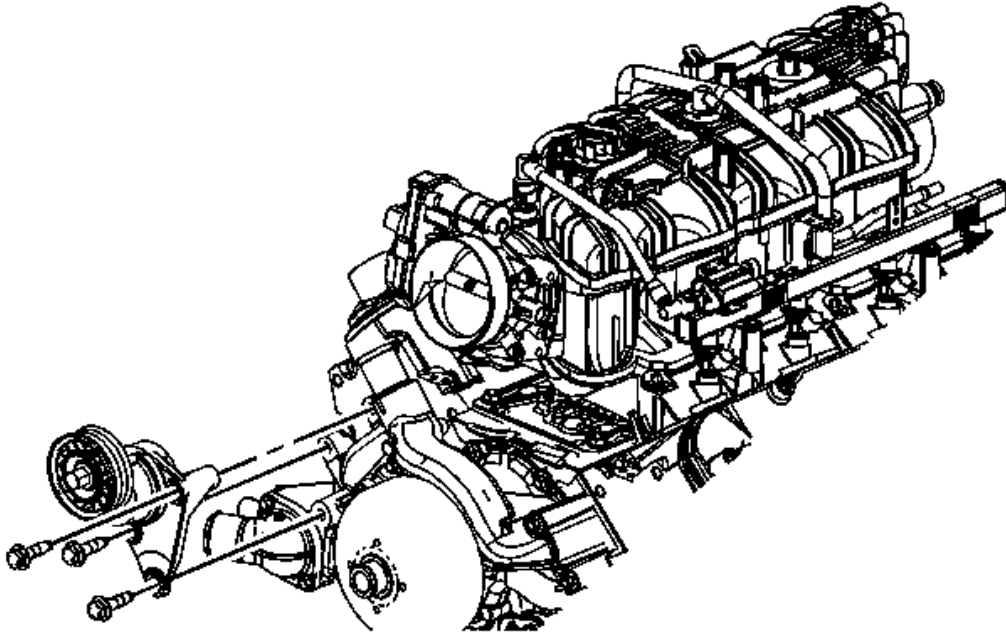


Fig. 7: View Of Drive Belt Tensioner & Bolts
Courtesy of GENERAL MOTORS CORP.

1. Remove the accessory drive belt. Refer to **Drive Belt Replacement - Accessory**.
2. Remove the drive belt tensioner bolts.
3. Remove the drive belt tensioner.

Installation Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

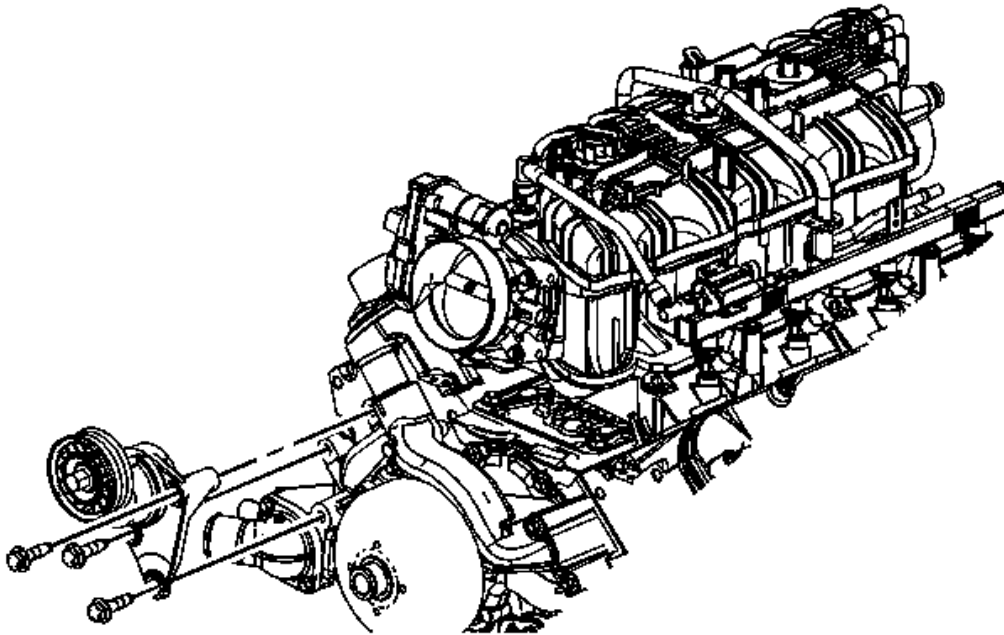


Fig. 8: View Of Drive Belt Tensioner & Bolts
Courtesy of GENERAL MOTORS CORP.

1. Position the drive belt tensioner to the water pump.

NOTE: Refer to Fastener Notice .

2. Install and tighten the drive belt tensioner bolts.

Tighten: Tighten the bolts to 50 N.m (37 lb ft).

3. Install the accessory drive belt. Refer to Drive Belt Replacement - Accessory.

DRIVE BELT TENSIONER REPLACEMENT - AIR CONDITIONING

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

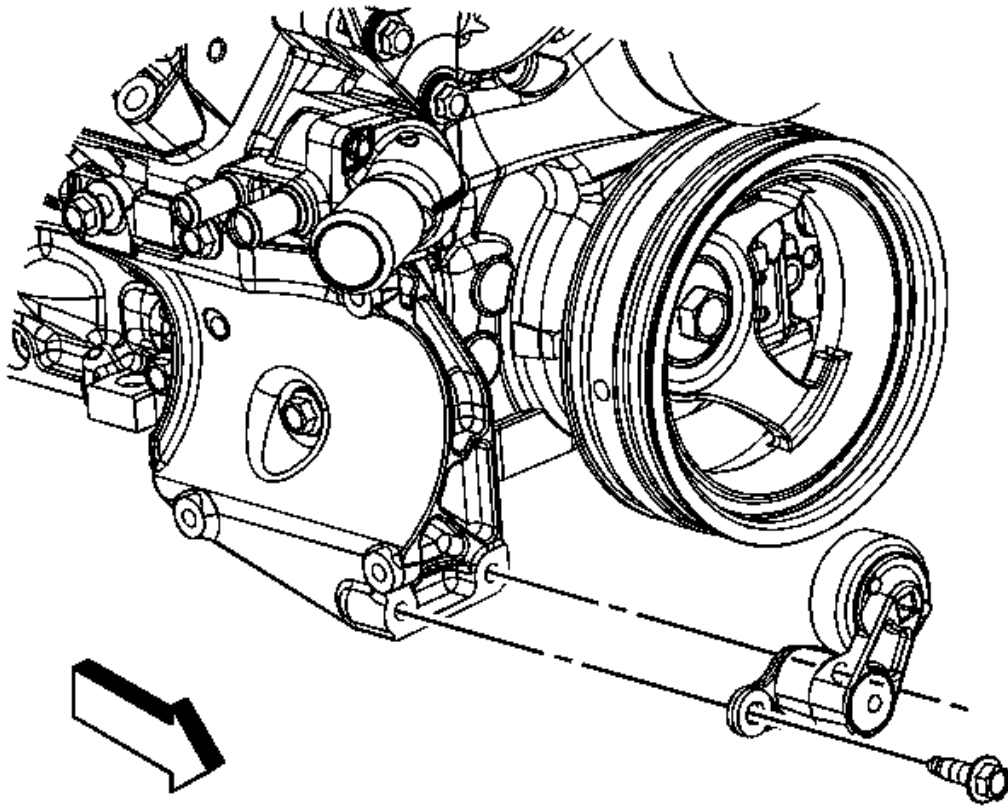


Fig. 9: View Of A/C Drive Belt Tensioner & Bolts
Courtesy of GENERAL MOTORS CORP.

1. Remove the air conditioning (A/C) drive belt. Refer to **Air Conditioning Compressor Belt Replacement**.
2. Remove the A/C drive belt tensioner bolts.
3. Remove the A/C drive belt tensioner.

Installation Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

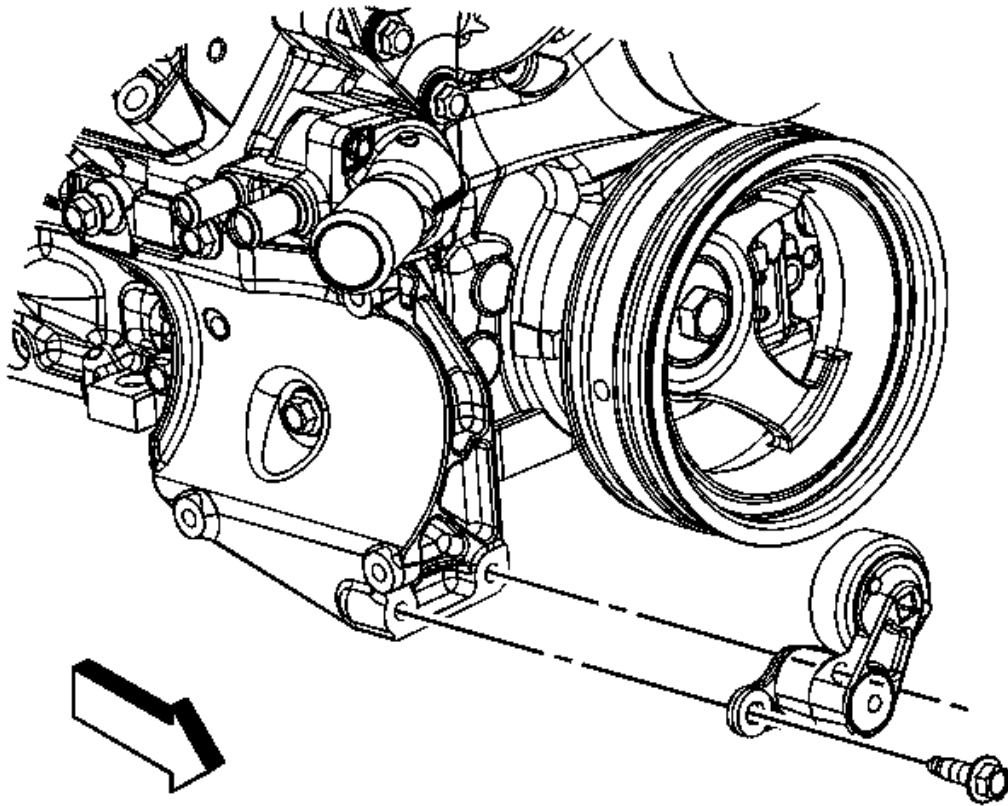


Fig. 10: View Of A/C Drive Belt Tensioner & Bolts
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

1. Position the A/C drive belt tensioner to the A/C compressor bracket.
2. Install and tighten the A/C drive belt tensioner bolts.

Tighten: Tighten the bolts to 50 N.m (37 lb ft).

3. Install the A/C drive belt. Refer to Air Conditioning Compressor Belt Replacement.

ENGINE MOUNT INSPECTION

NOTE: Broken or deteriorated mounts can cause misalignment and

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

destruction of certain drive train components. When a single mount breaks, the remaining mounts are subjected to abnormally high stresses.

NOTE: When raising or supporting the engine for any reason, do not use a jack under the oil pan, any sheet metal, or the crankshaft pulley. Due to the small clearance between the oil pan and the oil pump screen, jacking against the oil pan may cause the pan to be bent against the pump screen. This will result in a damaged oil pickup unit.

1. Measure the engine movement at the engine mount in order to check for damage to the rubber portions of the mount.
 1. Apply the park brake.
 2. Start the engine.
 3. Firmly apply and hold the primary brakes.
 4. Have an assistant stand to the side of the vehicle in order to observe for engine movement.
 5. Slightly load the engine shifting from drive to reverse a few times.
 6. If the engine moves more than 24 mm (0.945 in) from the at rest position, in either direction, check for loose engine mount bolts.
2. If the engine mount bolt torque is within specifications, check the condition of the engine mount.
3. Replace the engine mount if any of the following conditions exist:
 - Heat check cracks cover the rubber cushion surface.
 - The rubber cushion is separated from the metal plate of the mount.
 - There is a split through the rubber cushion.

ENGINE MOUNT REPLACEMENT - LEFT SIDE (1500 LY2)

Removal Procedure

NOTE: When raising or supporting the engine for any reason, do not use a jack under the oil pan, any sheet metal, or the crankshaft pulley. Due to the small clearance between the oil pan and the oil pump screen, jacking against the oil pan may cause the pan to be bent against the pump screen. This will result in a damaged oil pickup

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

unit.

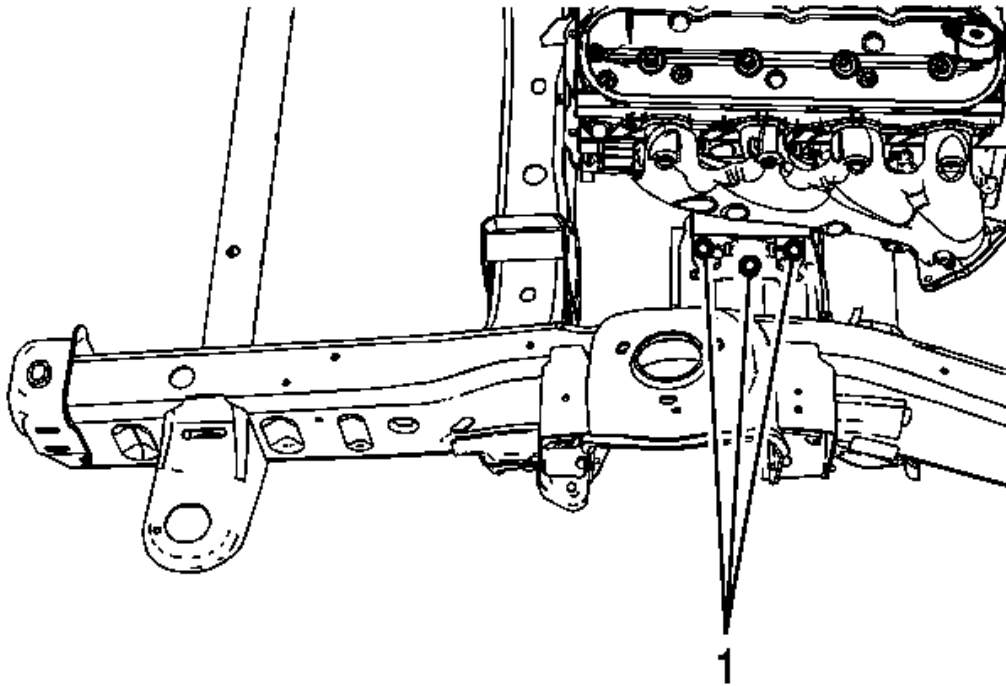


Fig. 11: View Of Engine Mount To Frame Bolts
Courtesy of GENERAL MOTORS CORP.

1. If the vehicle is equipped with four wheel drive (4WD), remove the front drive axle. Refer to **Differential Carrier Assembly Replacement (1500 FWD)** or **Differential Carrier Assembly Replacement (2500 4WD)** .
2. Lower the vehicle.
3. Remove the left wheelhouse liner. Refer to **Front Wheelhouse Liner Replacement - Left Side (Chevrolet)** or **Front Wheelhouse Liner Replacement - Left Side (GMC)** .
4. Remove the engine mount to frame bolts (1).
5. Raise and support the vehicle halfway. Refer to **Lifting and Jacking the Vehicle** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

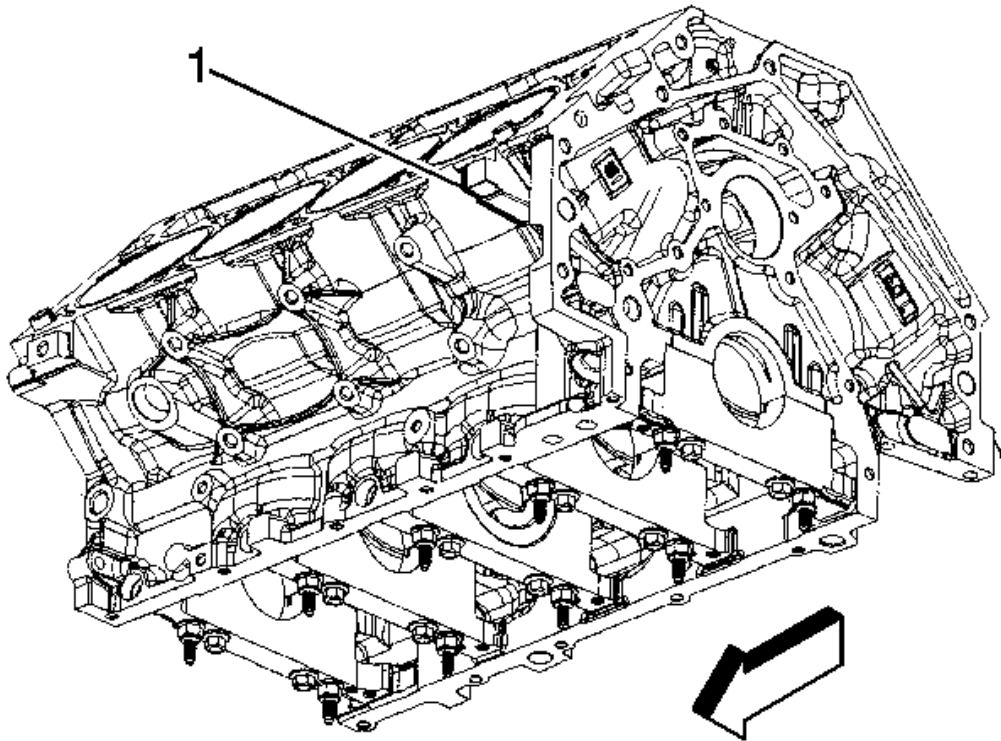


Fig. 12: Locating Tab On Engine Block
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: DO NOT raise and/or support the engine by the crankshaft balancer, or the oil pan.

6. Place an adjustable (screw type) jack to the tab (1) located on the engine block.
7. Remove the left side exhaust manifold heatshield. Refer to **Exhaust Manifold Heat Shield Replacement - Left Side (4.8L, 5.3L, 6.0L, and 6.2L)** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

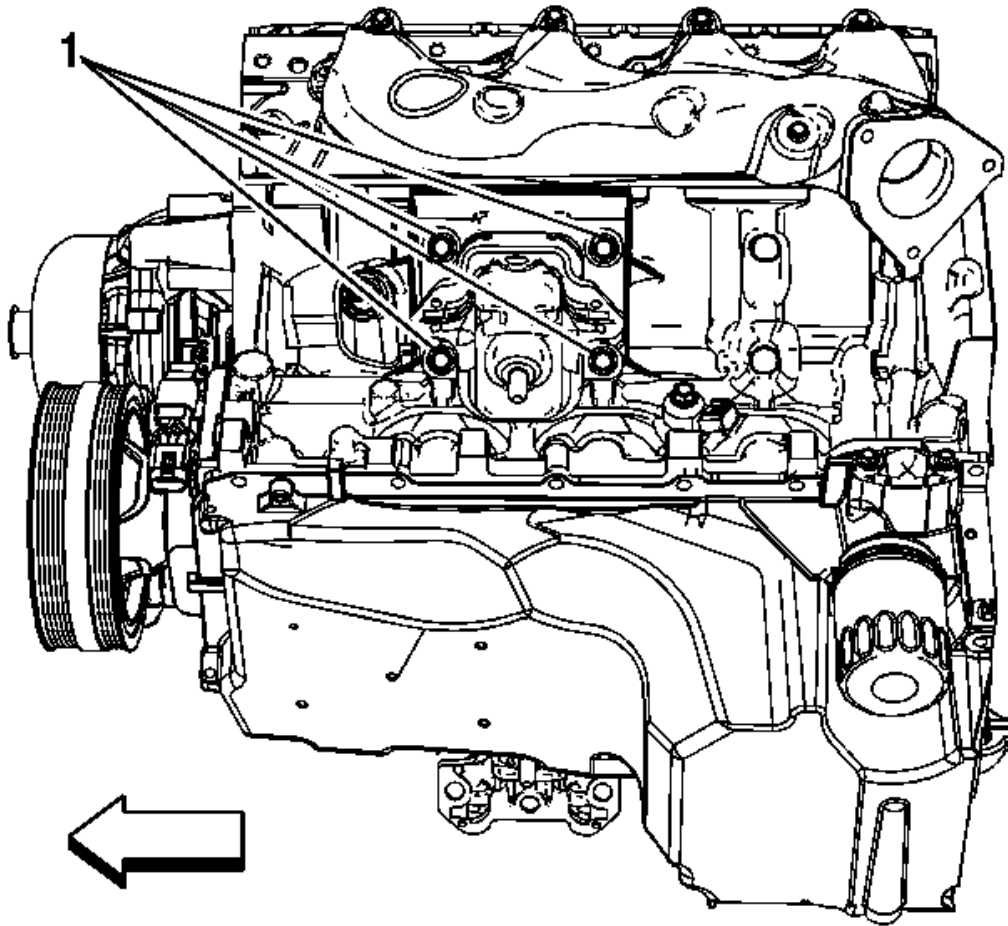


Fig. 13: View Of Engine Mount To Engine Bolts
Courtesy of GENERAL MOTORS CORP.

8. Remove the engine mount to engine bolts (1).
9. Using the adjustable jack, raise the engine slightly until there is enough clearance to remove the engine mount.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

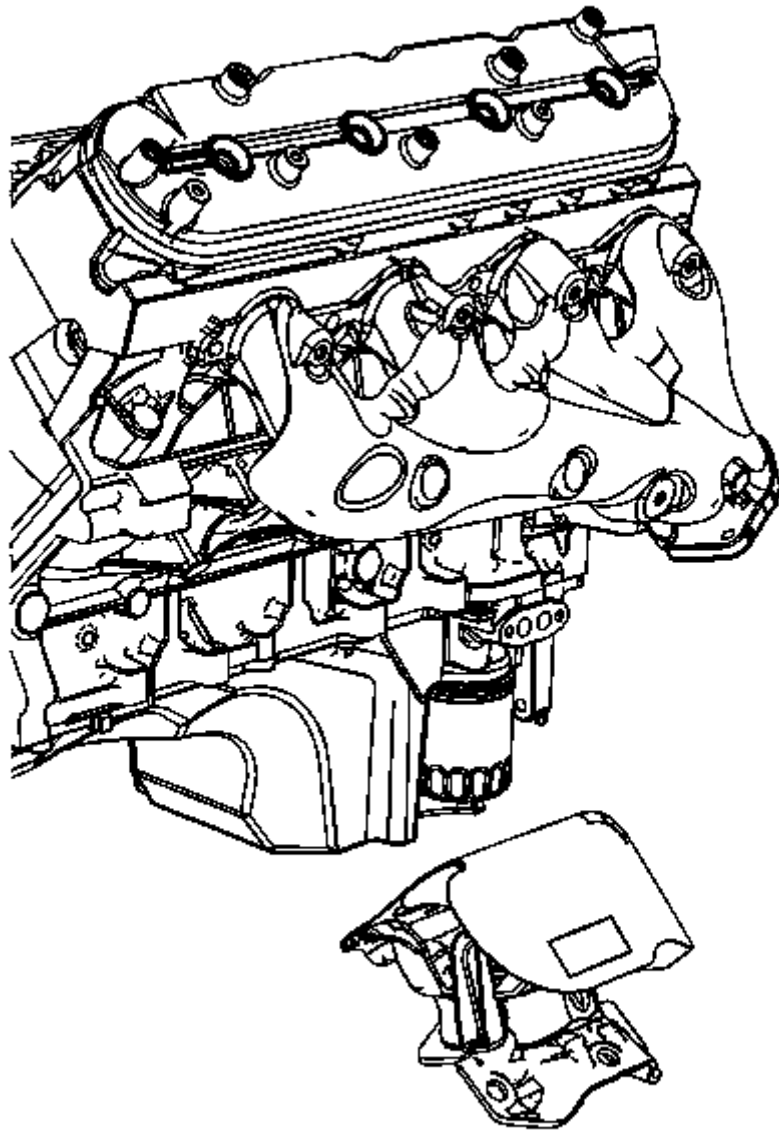


Fig. 14: View Of Engine Mount
Courtesy of GENERAL MOTORS CORP.

10. Remove the engine mount.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

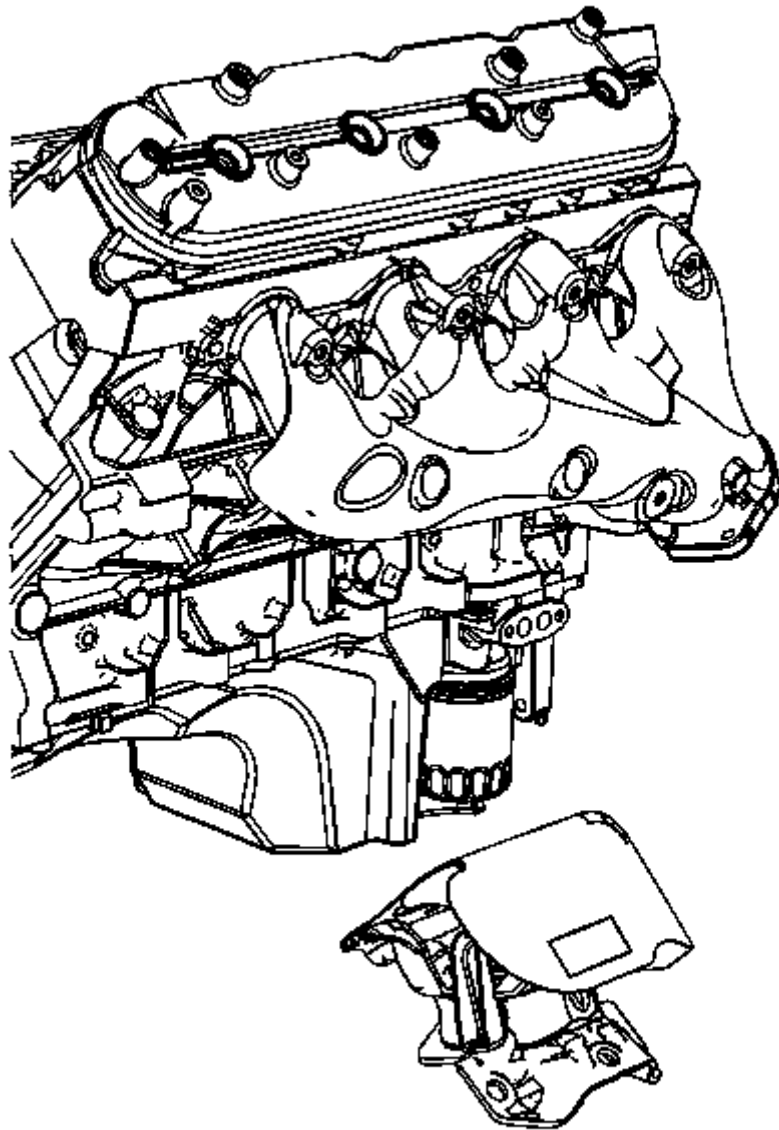


Fig. 15: View Of Engine Mount
Courtesy of GENERAL MOTORS CORP.

1. Position the engine mount to the engine.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

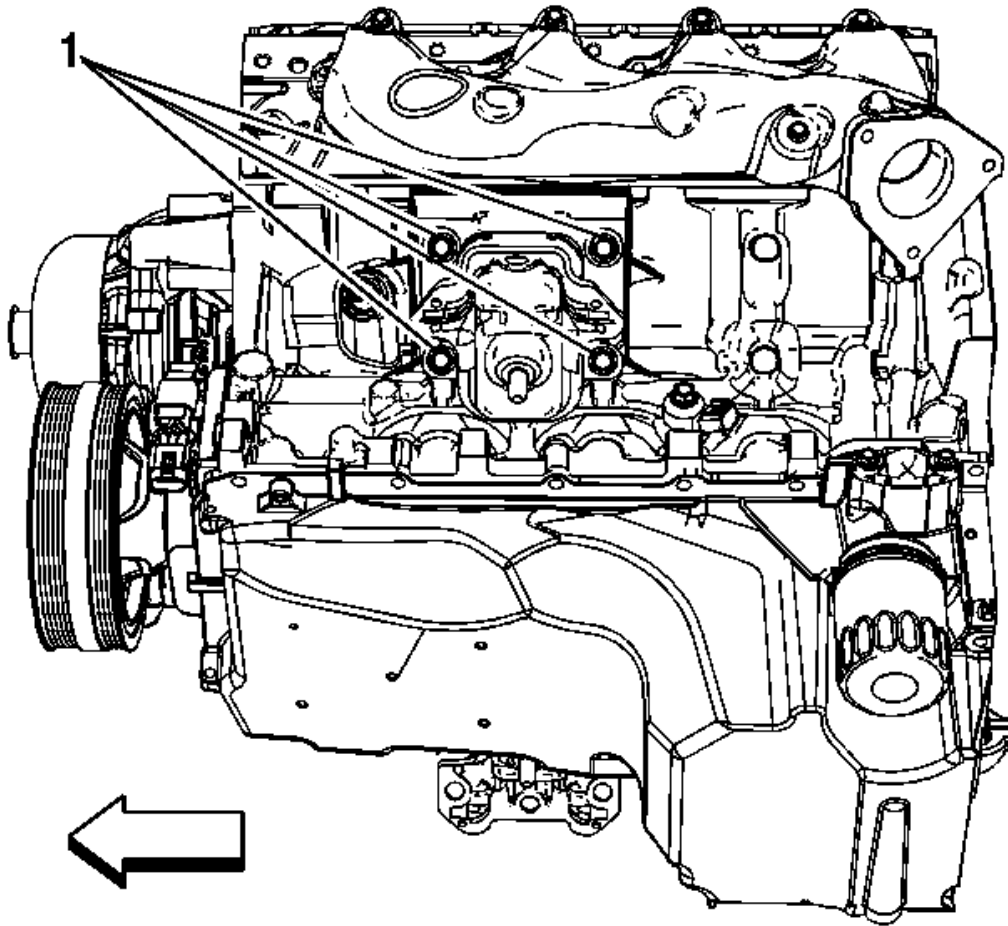


Fig. 16: View Of Engine Mount To Engine Bolts
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

2. Install the engine mount to engine bolts (1).

Tighten: Tighten the bolts to 50 N.m (37 lb ft).

3. Using the adjustable jack, lower the engine until the engine mount is sitting flush on the frame.
4. Remove the adjustable jack from the engine block.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

5. Install the left side exhaust manifold heatshield. Refer to **Exhaust Manifold Heat Shield Replacement - Left Side (4.8L, 5.3L, 6.0L, and 6.2L)** .

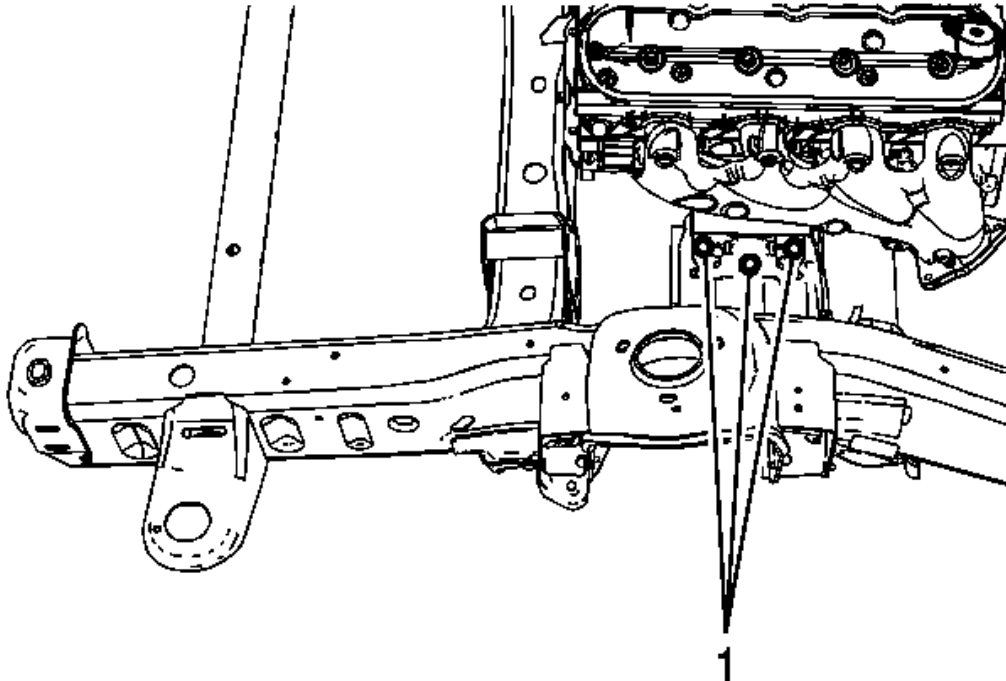


Fig. 17: View Of Engine Mount To Frame Bolts
Courtesy of GENERAL MOTORS CORP.

6. Lower the vehicle.
7. Install the engine mount to frame bolts (1).

Tighten: Tighten the bolts to 65 N.m (48 lb ft) starting with the middle bolt then either side bolt.

8. Install the left wheelhouse liner. Refer to **Front Wheelhouse Liner Replacement - Left Side (Chevrolet)** or **Front Wheelhouse Liner Replacement - Left Side (GMC)** .
9. If the vehicle is equipped with 4WD, install the front drive axle. Refer to **Differential Carrier Assembly Replacement (1500 FWD)** or **Differential Carrier Assembly Replacement (2500 4WD)** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

ENGINE MOUNT REPLACEMENT - LEFT SIDE (1500 LH6, LMG, LY5, L76 AND L92)

Removal Procedure

NOTE: When raising or supporting the engine for any reason, do not use a jack under the oil pan, any sheet metal, or the crankshaft pulley. Due to the small clearance between the oil pan and the oil pump screen, jacking against the oil pan may cause the pan to be bent against the pump screen. This will result in a damaged oil pickup unit.

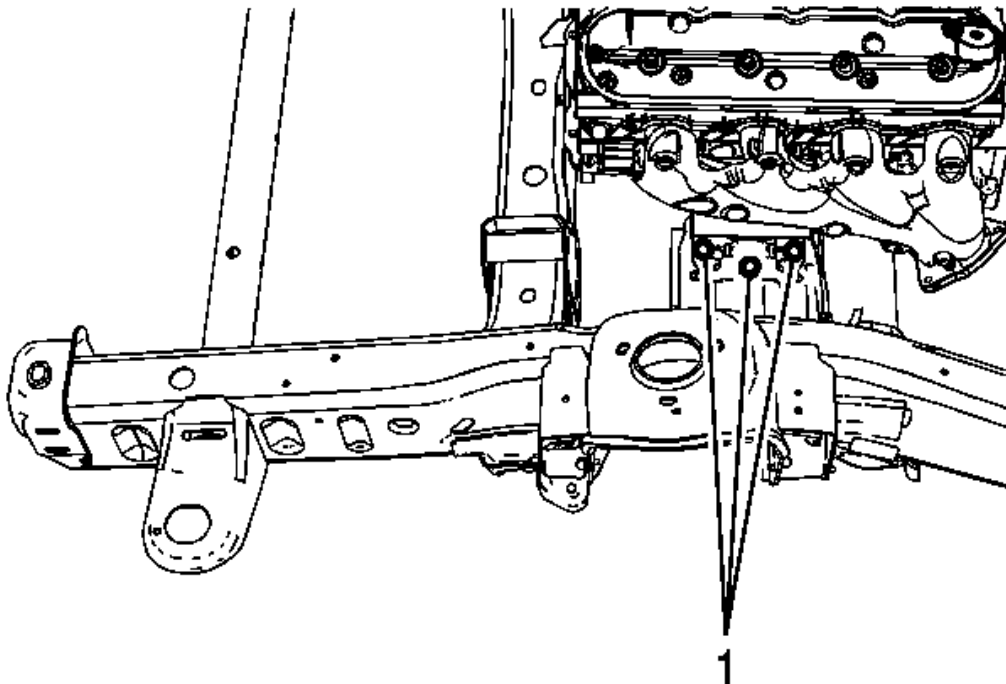


Fig. 18: View Of Engine Mount To Frame Bolts
Courtesy of GENERAL MOTORS CORP.

1. If the vehicle is equipped with four wheel drive (4WD), remove the front drive axle. Refer to **Differential Carrier Assembly Replacement (1500 FWD)** or **Differential Carrier Assembly Replacement (2500 4WD)** .
2. Lower the vehicle.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

3. Remove the left wheelhouse liner. Refer to **Front Wheelhouse Liner Replacement - Left Side (Chevrolet)** or **Front Wheelhouse Liner Replacement - Left Side (GMC)** .
4. Remove the engine mount to frame bolts (1).
5. Raise and support the vehicle halfway. Refer to **Lifting and Jacking the Vehicle** .

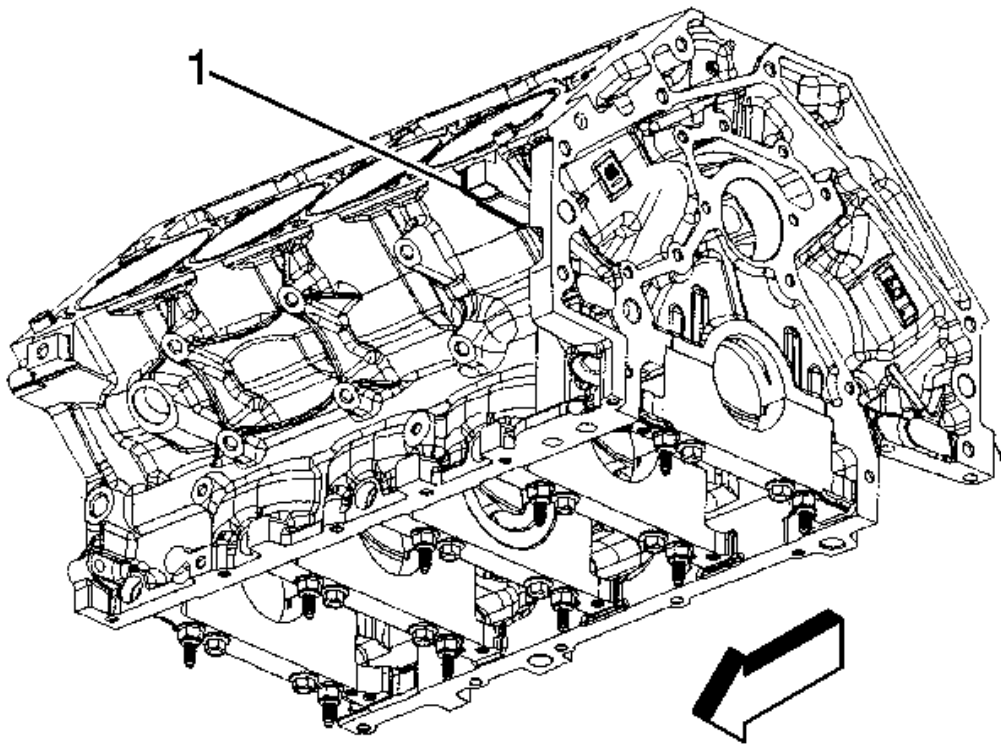


Fig. 19: Locating Tab On Engine Block
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: DO NOT raise and/or support the engine by the crankshaft balancer, or the oil pan.

6. Place an adjustable (screw type) jack to the tab (1) located on the engine block.
7. Remove the left side exhaust manifold heatshield. Refer to **Exhaust Manifold Heat Shield Replacement - Left Side (4.8L, 5.3L, 6.0L, and 6.2L)** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

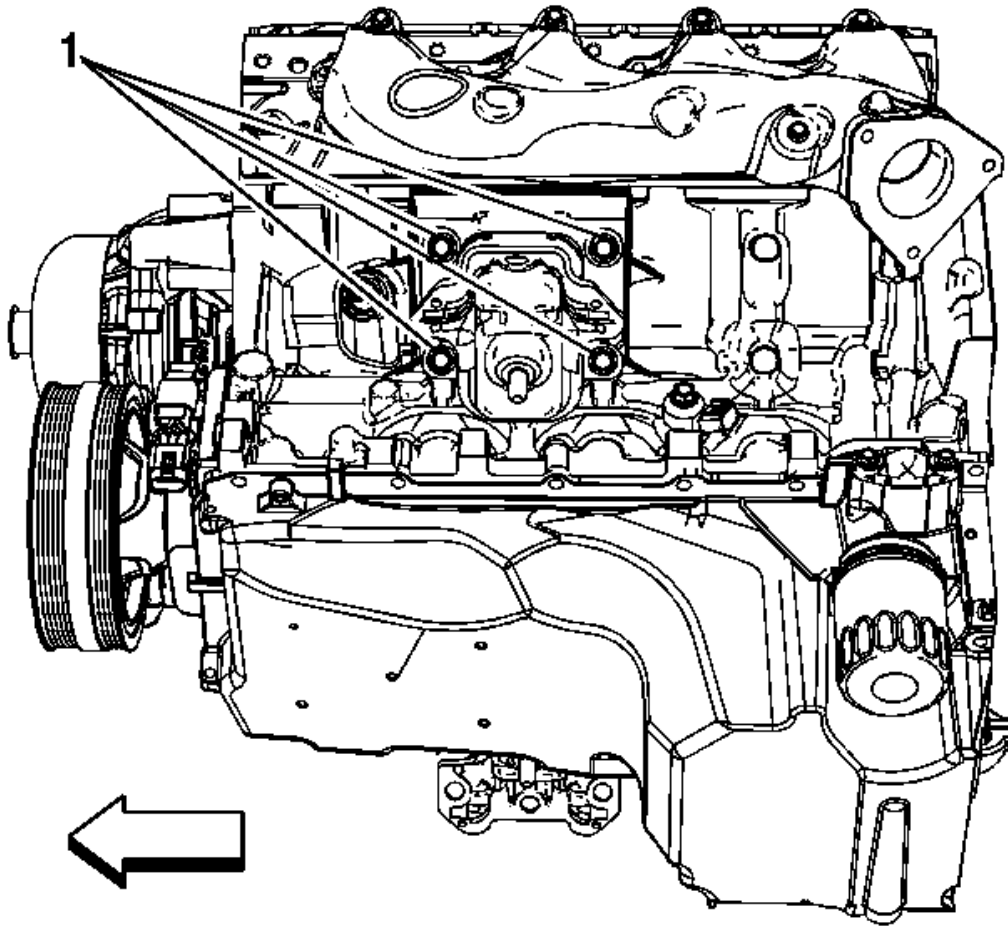


Fig. 20: View Of Engine Mount To Engine Bolts
Courtesy of GENERAL MOTORS CORP.

8. Remove the engine mount to engine bolts (1).
9. Using the adjustable jack, raise the engine slightly until there is enough clearance to remove the engine mount.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

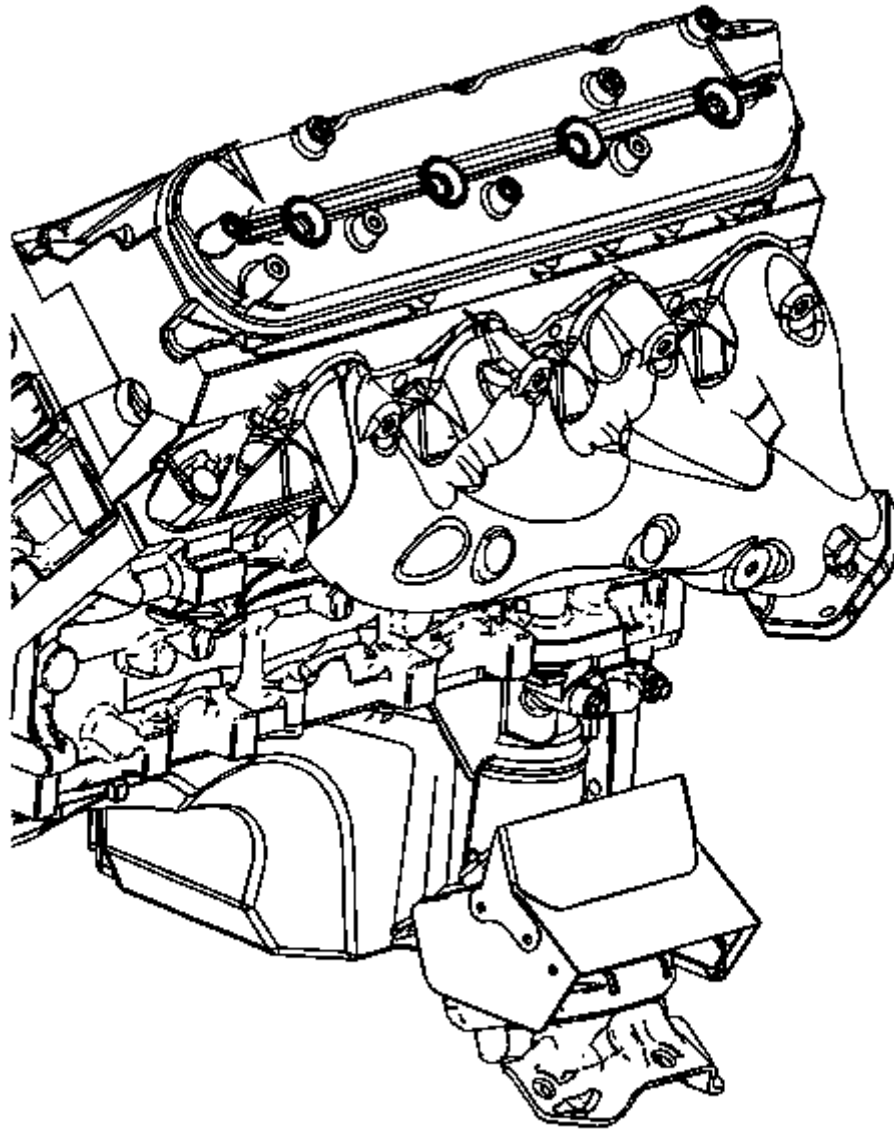


Fig. 21: View Of Engine Mount
Courtesy of GENERAL MOTORS CORP.

10. Remove the engine mount.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

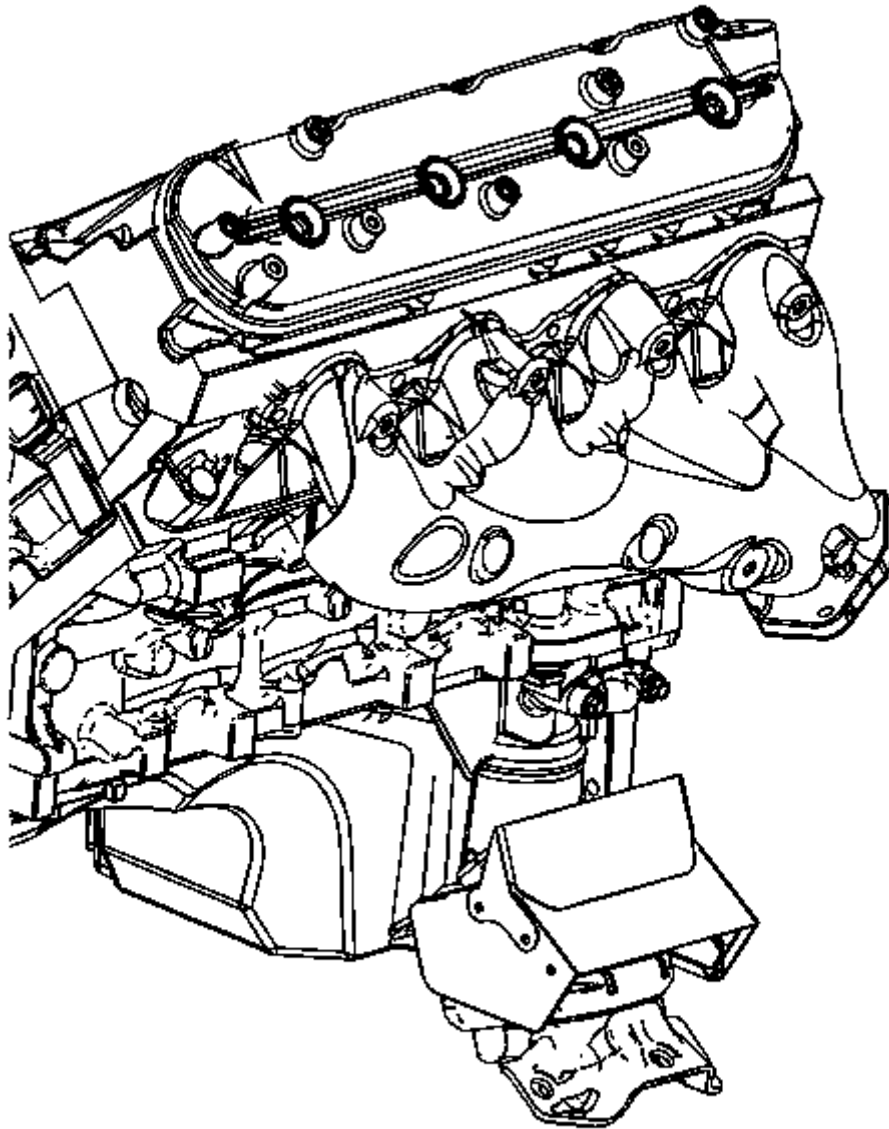


Fig. 22: View Of Engine Mount
Courtesy of GENERAL MOTORS CORP.

1. Position the engine mount to the engine.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

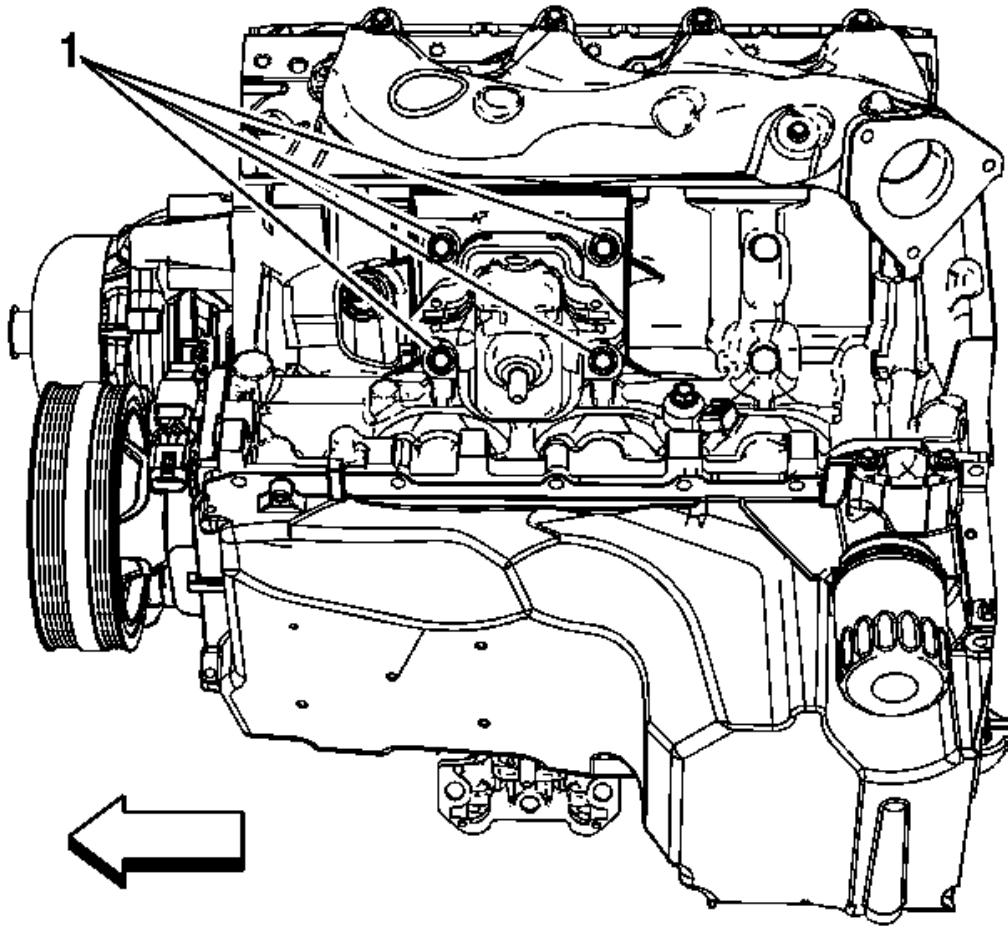


Fig. 23: View Of Engine Mount To Engine Bolts
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

2. Install the engine mount to engine bolts (1).

Tighten: Tighten the bolts to 50 N.m (37 lb ft).

3. Using the adjustable jack, lower the engine until the engine mount is sitting flush on the frame.
4. Remove the adjustable jack from the engine block.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

5. Install the left side exhaust manifold heatshield. Refer to **Exhaust Manifold Heat Shield Replacement - Left Side (4.3L)** or **Exhaust Manifold Heat Shield Replacement - Left Side (4.8L, 5.3L, 6.0L, and 6.2L)** .

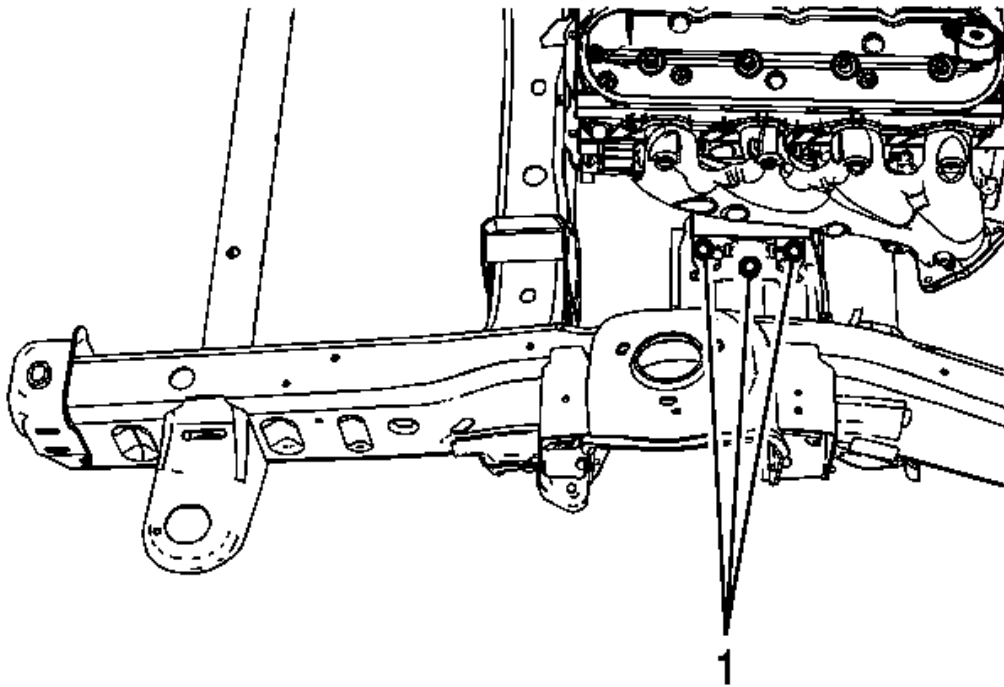


Fig. 24: View Of Engine Mount To Frame Bolts
Courtesy of GENERAL MOTORS CORP.

6. Lower the vehicle.
7. Install the engine mount to frame bolts (1).

Tighten: Tighten the bolts to 65 N.m (48 lb ft) starting with the middle bolt then either side bolt.

8. Install the left wheelhouse liner. Refer to **Front Wheelhouse Liner Replacement - Left Side (Chevrolet)** or **Front Wheelhouse Liner Replacement - Left Side (GMC)** .
9. If the vehicle is equipped with 4WD, install the front drive axle. Refer to **Differential Carrier Assembly Replacement (1500 FWD)** or **Differential Carrier Assembly**

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Replacement (2500 4WD) .

ENGINE MOUNT REPLACEMENT - LEFT SIDE (2500LY6)

Removal Procedure

NOTE: When raising or supporting the engine for any reason, do not use a jack under the oil pan, any sheet metal, or the crankshaft pulley. Due to the small clearance between the oil pan and the oil pump screen, jacking against the oil pan may cause the pan to be bent against the pump screen. This will result in a damaged oil pickup unit.

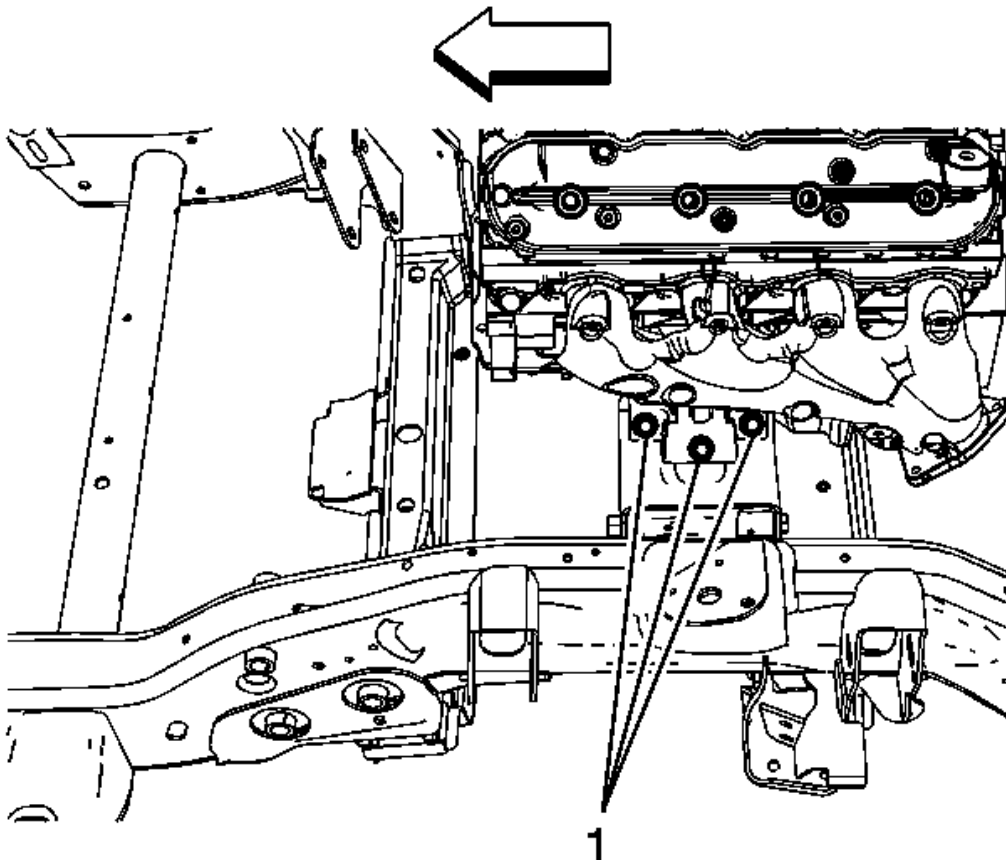


Fig. 25: View Of Engine Mount Bracket Bolts

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Courtesy of GENERAL MOTORS CORP.

1. If the vehicle is equipped with four wheel drive (4WD), remove the front drive axle. Refer to Differential Carrier Assembly Replacement (1500 FWD) or Differential Carrier Assembly Replacement (2500 4WD) .
2. Lower the vehicle.
3. Remove the left wheelhouse liner. Refer to Front Wheelhouse Liner Replacement - Left Side (Chevrolet) or Front Wheelhouse Liner Replacement - Left Side (GMC) .
4. Remove the engine mount to frame bolts (1).
5. Raise and support the vehicle halfway. Refer to Lifting and Jacking the Vehicle .

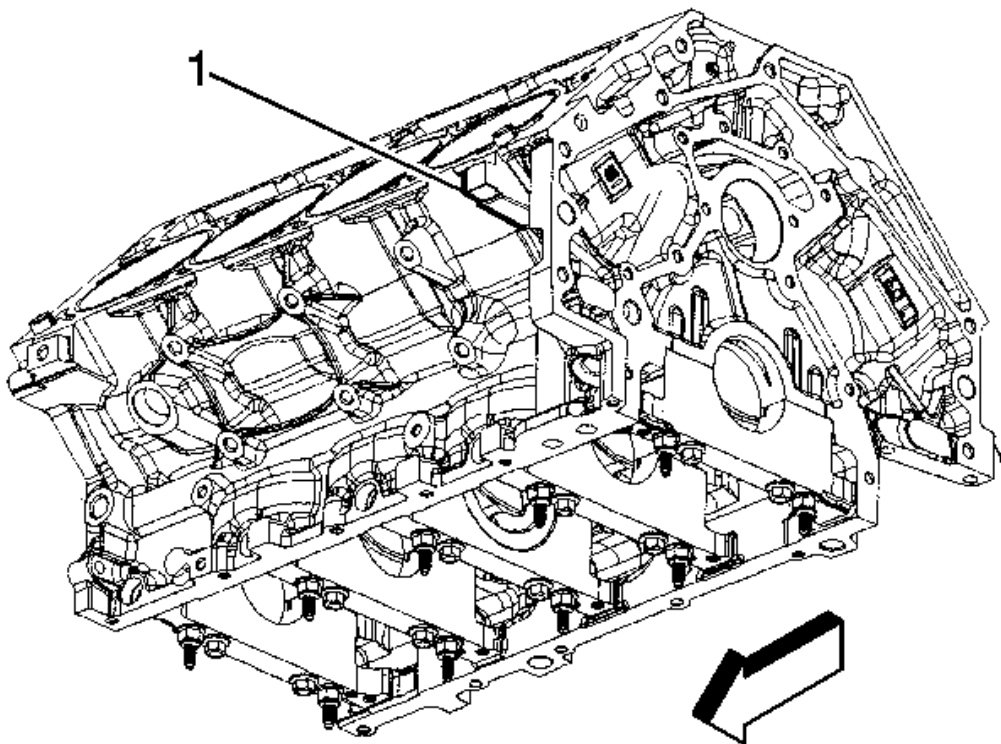


Fig. 26: Locating Tab On Engine Block
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: DO NOT raise and/or support the engine by the crankshaft

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

balancer, or the oil pan.

6. Place an adjustable (screw type) jack to the tab (1) located on the engine block.
7. Remove the left side exhaust manifold heatshield. Refer to **Exhaust Manifold Heat Shield Replacement - Left Side (4.8L, 5.3L, 6.0L, and 6.2L)** .

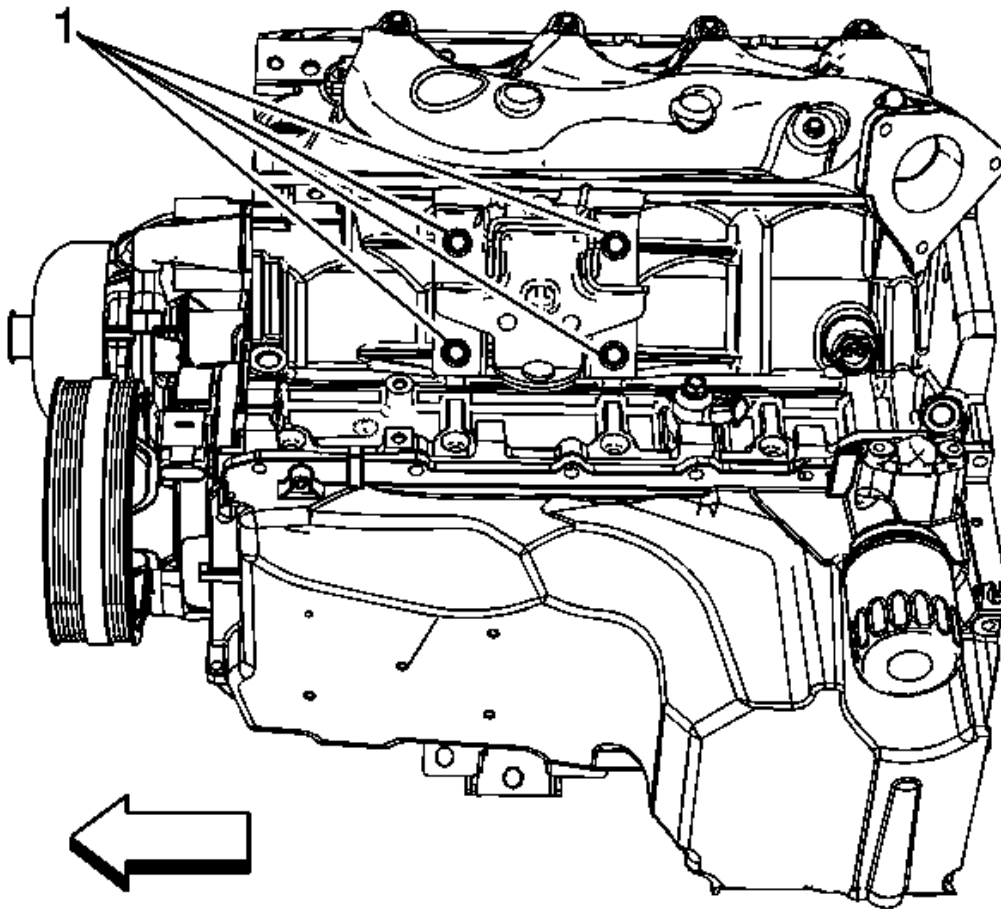


Fig. 27: View Of Engine Mount To Engine Bolts
Courtesy of GENERAL MOTORS CORP.

8. Remove the engine mount to engine bolts (1).
9. Using the adjustable jack, raise the engine slightly until there is enough clearance to remove the engine mount.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

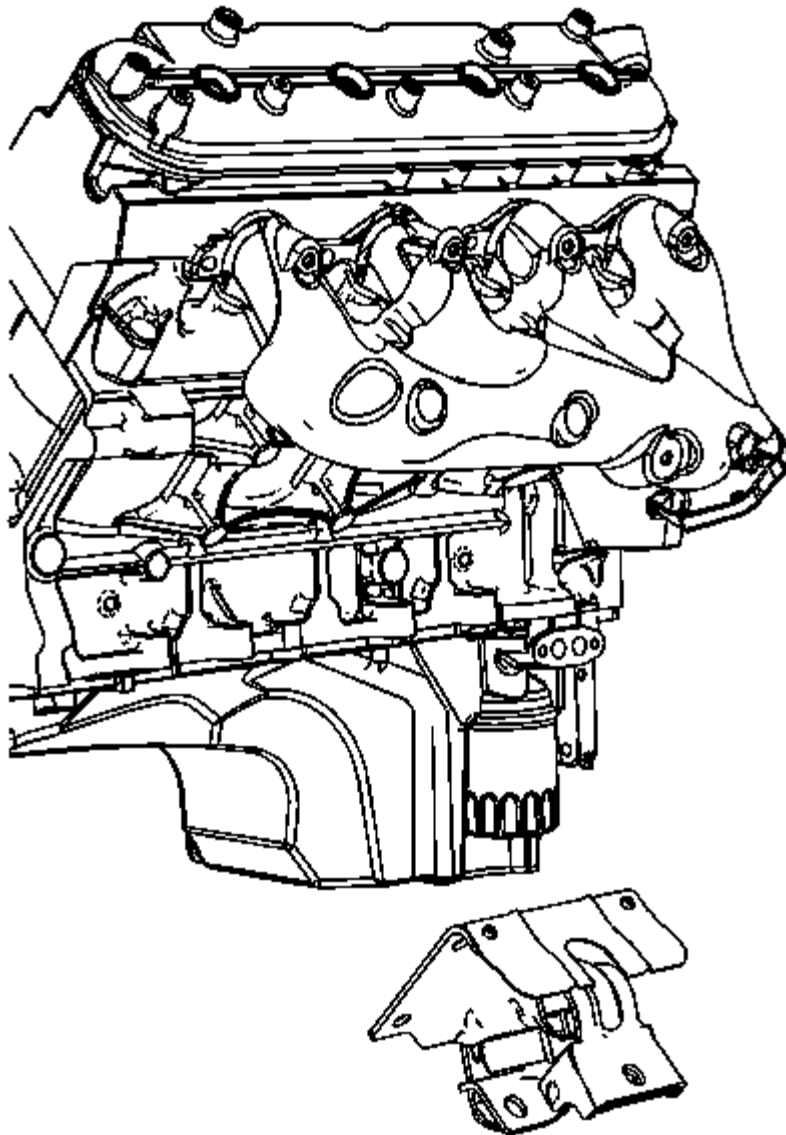


Fig. 28: View Of Engine Mount
Courtesy of GENERAL MOTORS CORP.

10. Remove the engine mount.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

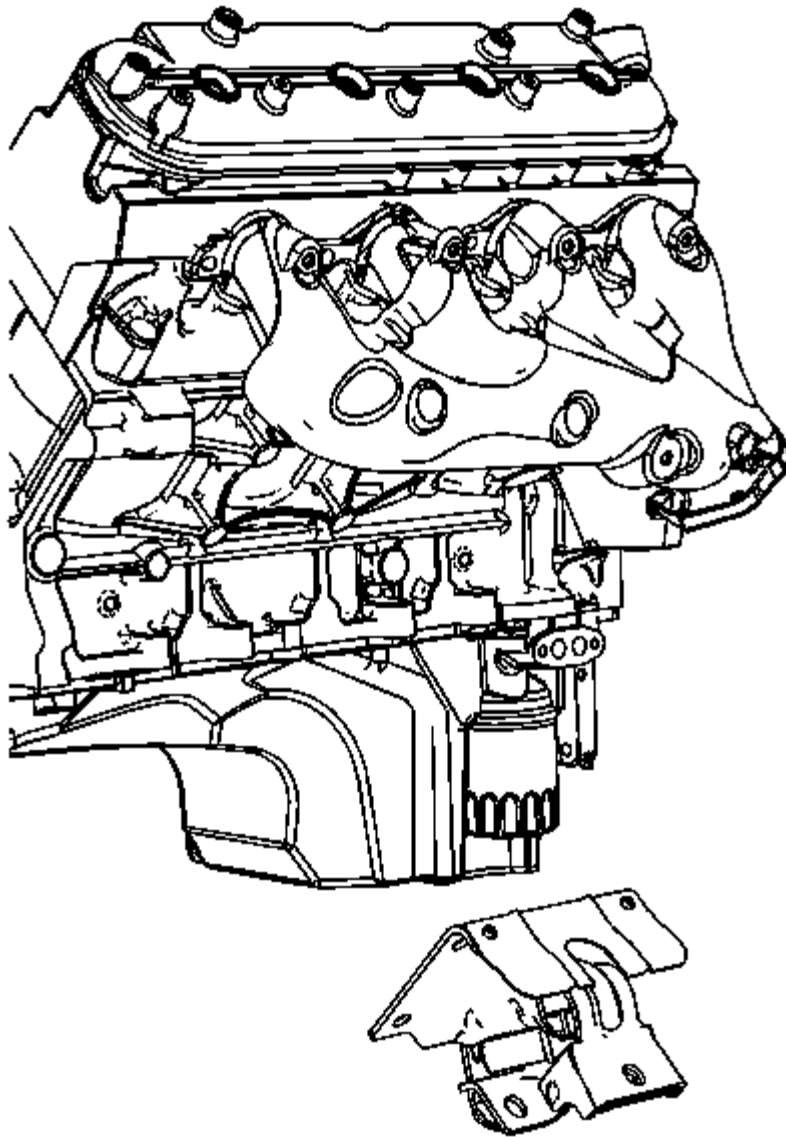


Fig. 29: View Of Engine Mount
Courtesy of GENERAL MOTORS CORP.

1. Position the engine mount to the engine.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

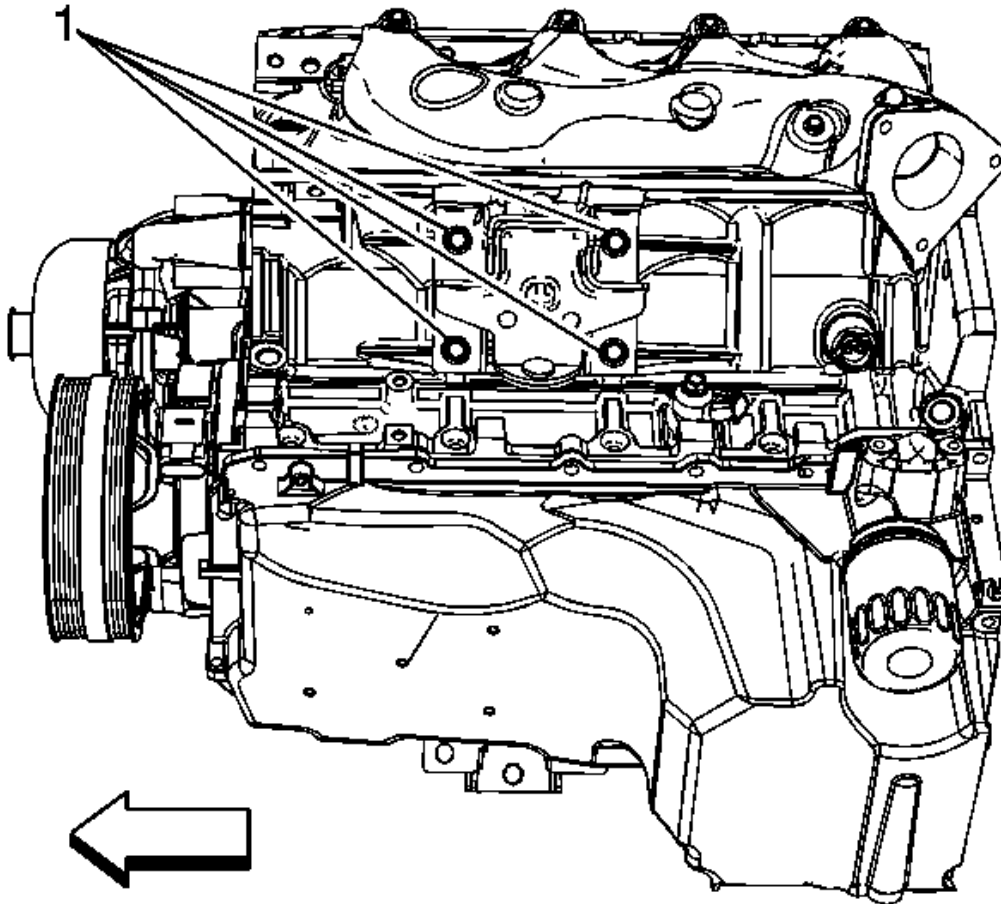


Fig. 30: View Of Engine Mount To Engine Bolts
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

2. Install the engine mount to engine bolts (1).

Tighten: Tighten the bolts to 50 N.m (37 lb ft).

3. Using the adjustable jack, lower the engine until the engine mount is sitting flush on the frame.
4. Remove the adjustable jack from the engine block.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

5. Install the left side exhaust manifold heatshield. Refer to **Exhaust Manifold Heat Shield Replacement - Left Side (4.3L)** or **Exhaust Manifold Heat Shield Replacement - Left Side (4.8L, 5.3L, 6.0L, and 6.2L)** .

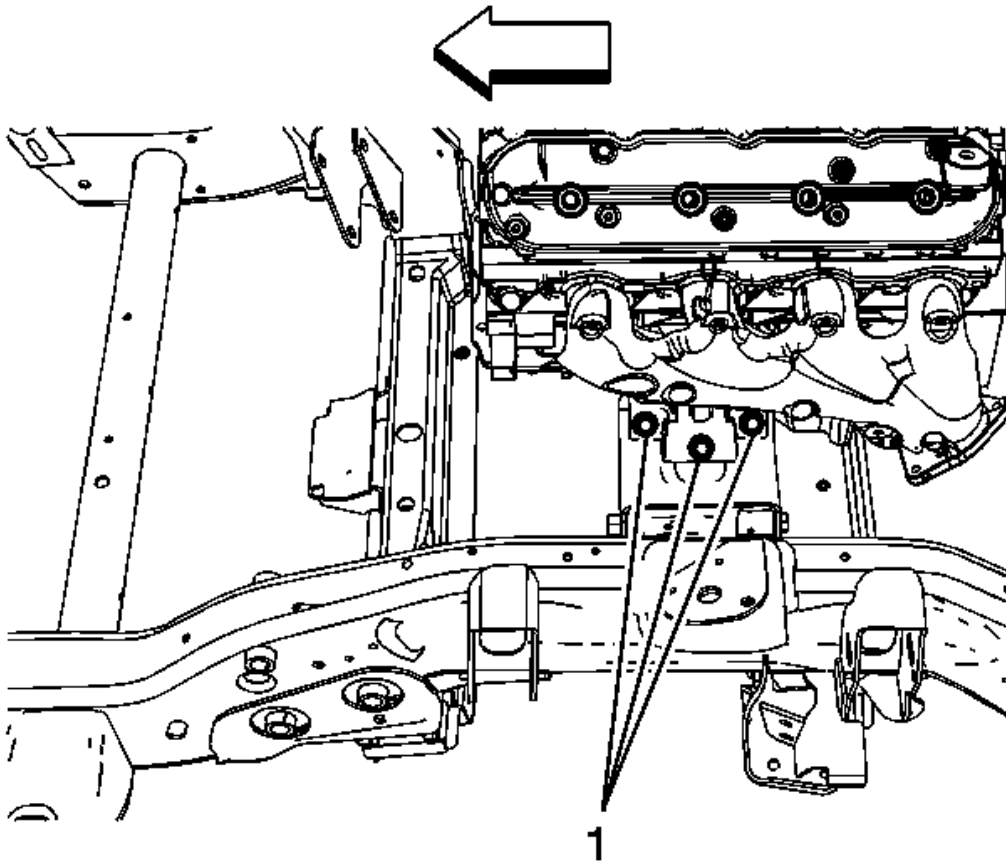


Fig. 31: View Of Engine Mount Bracket Bolts
Courtesy of GENERAL MOTORS CORP.

6. Lower the vehicle.
7. Install the engine mount to frame bolts (1).

Tighten: Tighten the bolts to 65 N.m (48 lb ft) starting with the middle bolt then either side bolt.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

8. Install the left wheelhouse liner. Refer to Front Wheelhouse Liner Replacement - Left Side (Chevrolet) or Front Wheelhouse Liner Replacement - Left Side (GMC) .
9. If the vehicle is equipped with 4WD, install the front drive axle. Refer to Differential Carrier Assembly Replacement (1500 FWD) or Differential Carrier Assembly Replacement (2500 4WD) .

ENGINE MOUNT BRACKET REPLACEMENT - LEFT SIDE (2500 LY6)

Removal Procedure

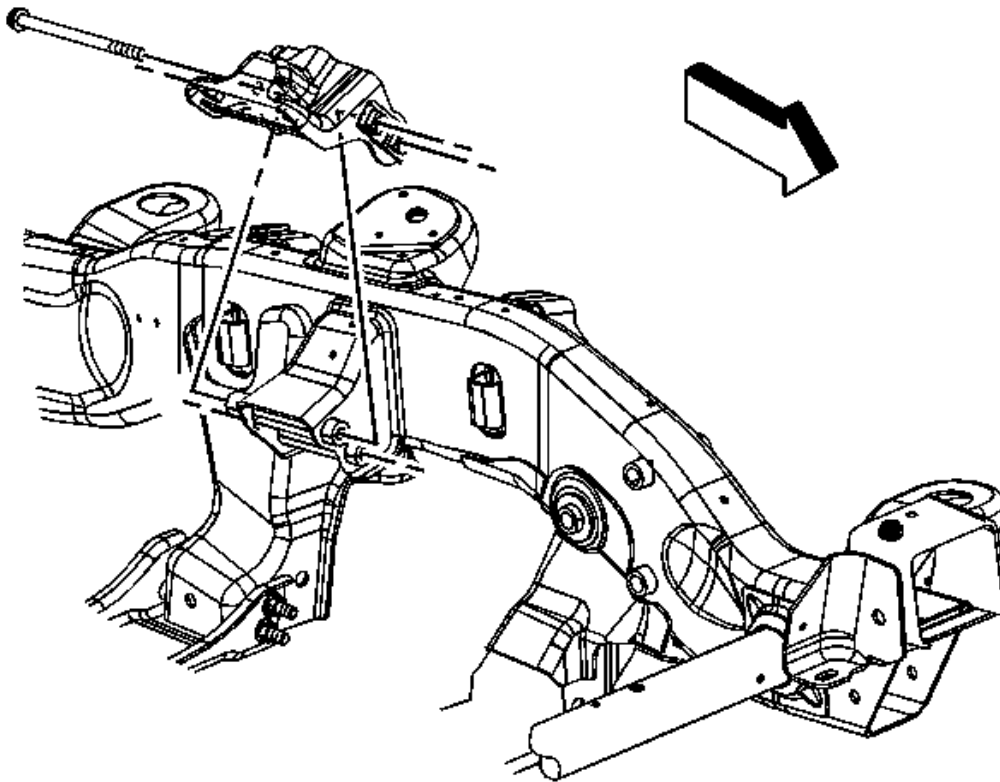


Fig. 32: View Of Engine Mount Bracket & Bolts
Courtesy of GENERAL MOTORS CORP.

1. Remove the engine mount. Refer to Engine Mount Replacement - Left Side (1500 LY2) or Engine Mount Replacement - Left Side (1500 LH6, LMG, LY5, L76 and L92) or Engine Mount Replacement - Left Side (2500LY6).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Remove the engine mount bracket bolts.
3. Remove the engine mount bracket.

Installation Procedure

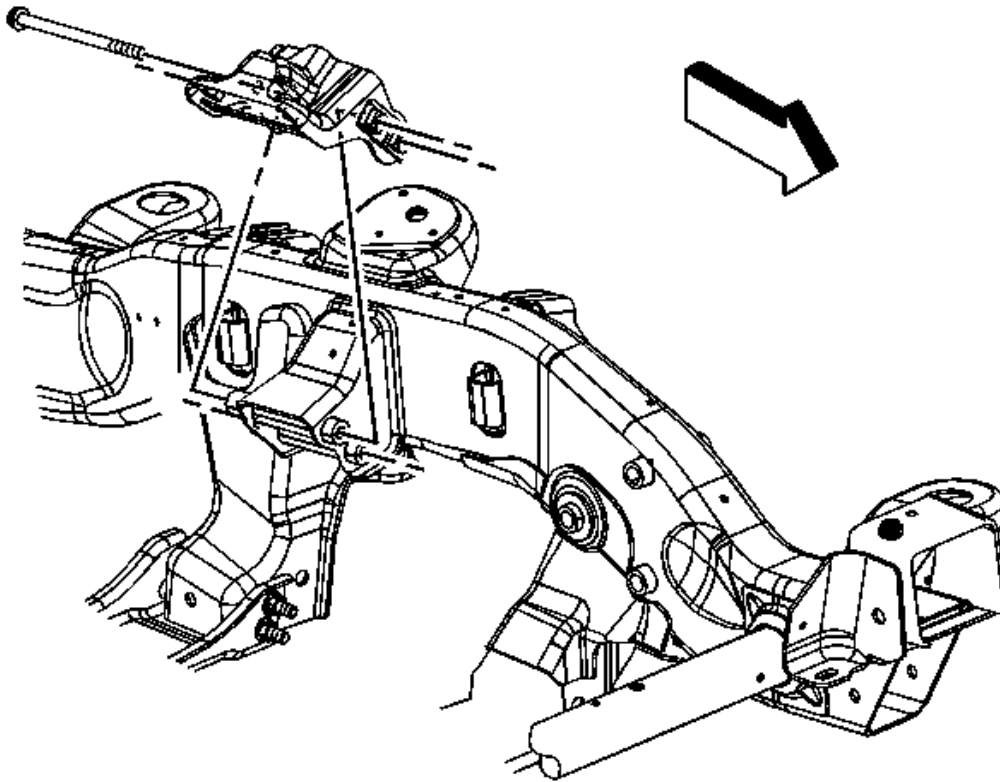


Fig. 33: View Of Engine Mount Bracket & Bolts
Courtesy of GENERAL MOTORS CORP.

1. Position the engine mount bracket onto the frame.
2. Perform the following steps prior to installing the engine mount bracket bolts.
 - Remove all traces of the original adhesive patch.
 - Clean the threads of the bolt with denatured alcohol or equivalent and allow to dry.
 - Apply threadlock GM P/N 12345382 (Canadian P/N 10953489) or equivalent to the bolts.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

NOTE: Refer to Fastener Notice .

3. Install the engine mount bracket bolts.

Tighten: Tighten the bolts to 65 N.m (48 lb ft).

4. Install the engine mount. Refer to Engine Mount Replacement - Left Side (1500 LY2) or Engine Mount Replacement - Left Side (1500 LH6, LMG, LY5, L76 and L92) or Engine Mount Replacement - Left Side (2500LY6).

ENGINE MOUNT REPLACEMENT - RIGHT SIDE (1500 LH6, LMG, LY5, L76 AND L92)

Removal Procedure

NOTE: When raising or supporting the engine for any reason, do not use a jack under the oil pan, any sheet metal, or the crankshaft pulley. Due to the small clearance between the oil pan and the oil pump screen, jacking against the oil pan may cause the pan to be bent against the pump screen. This will result in a damaged oil pickup unit.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

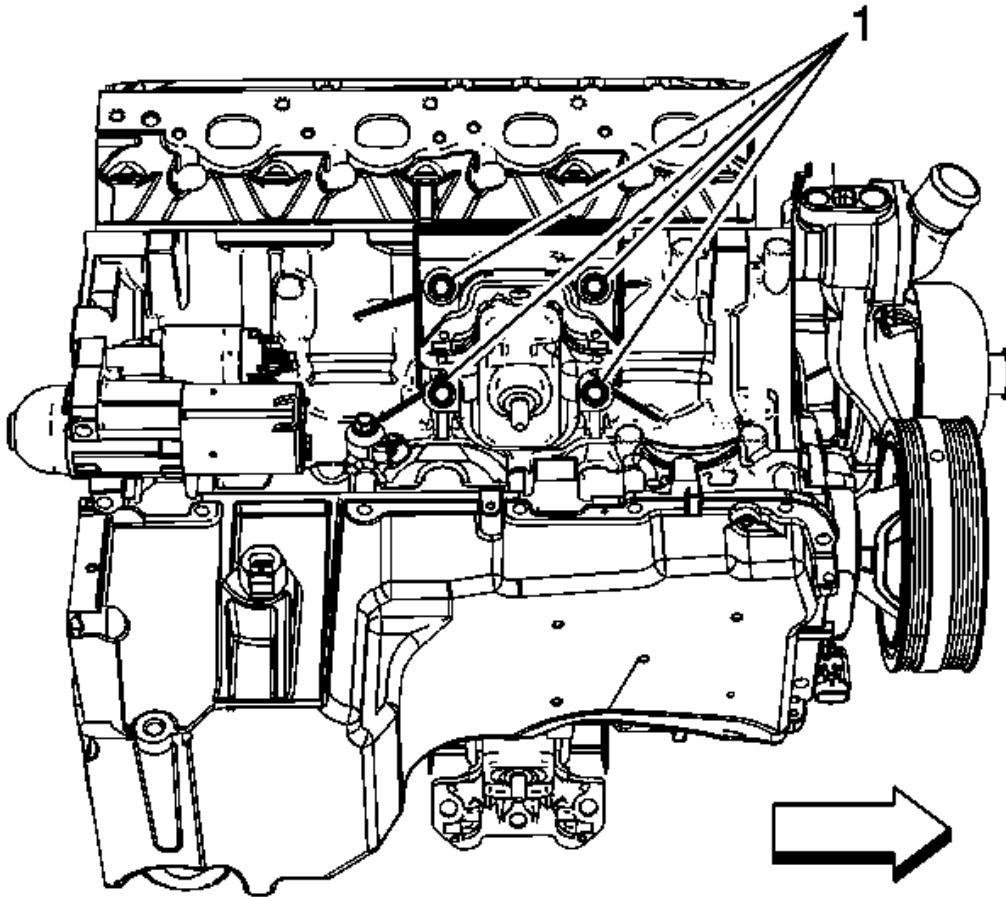


Fig. 34: View Of Engine Mount To Engine Bolts
Courtesy of GENERAL MOTORS CORP.

1. Remove the upper intake manifold sight shield. Refer to **Upper Intake Manifold Cover Replacement**.
2. If the vehicle is equipped with four wheel drive (4WD), remove the front drive axle. Refer to **Differential Carrier Assembly Replacement (1500 FWD)** or **Differential Carrier Assembly Replacement (2500 4WD)**.
3. Remove the two lower engine mount to engine bolts (1).
4. Remove the starter motor. Refer to **Starter Motor Replacement (4.3L)** or **Starter Motor Replacement (4.8L, 5.3L, 6.0L, and 6.2L)** or **Starter Motor Replacement (6.6L)**.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

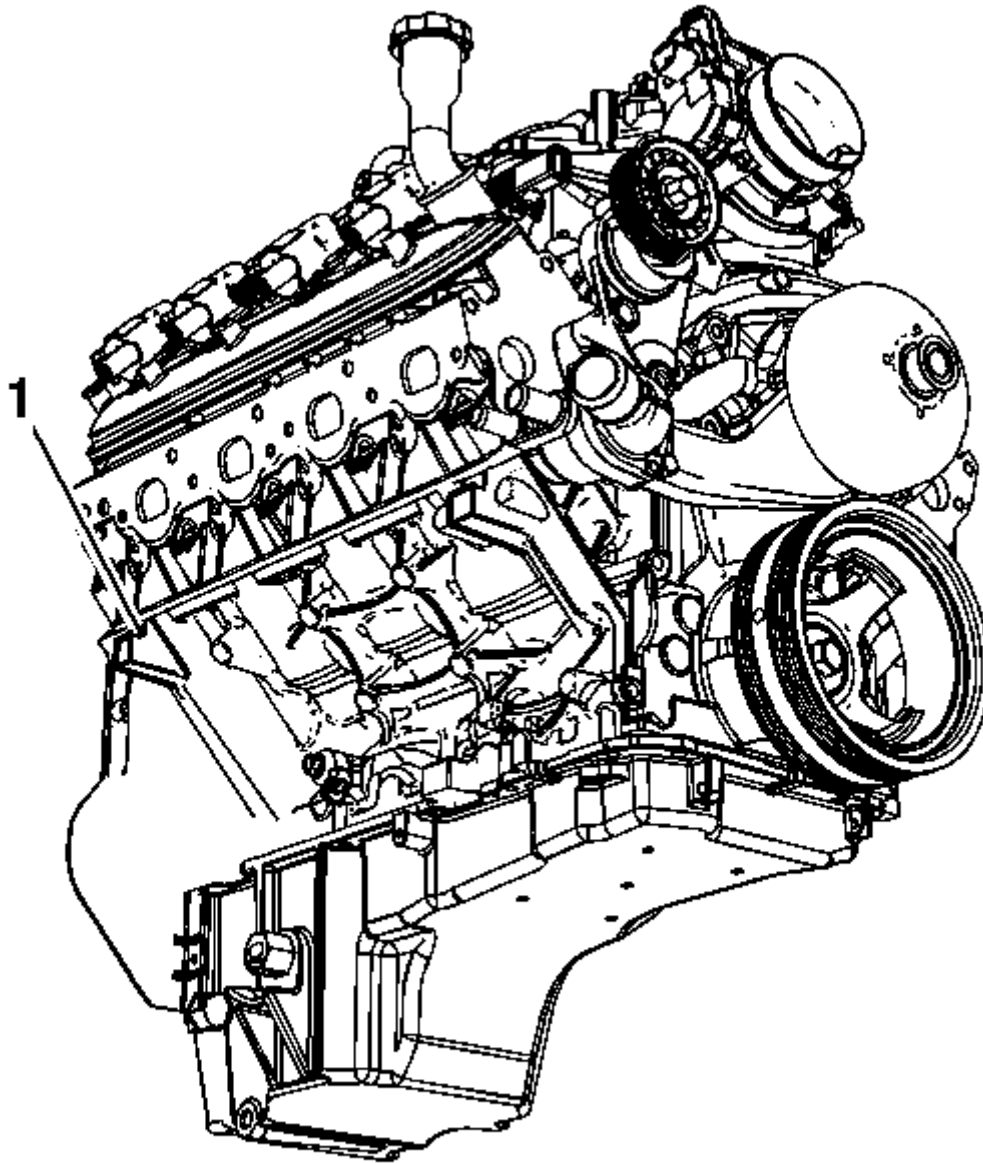


Fig. 35: Locating Tab On Engine Block
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: DO NOT raise and/or support the engine by the crankshaft balancer or oil pan.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

5. Place an adjustable (screw type) jack to the tab (1) located on the engine block.

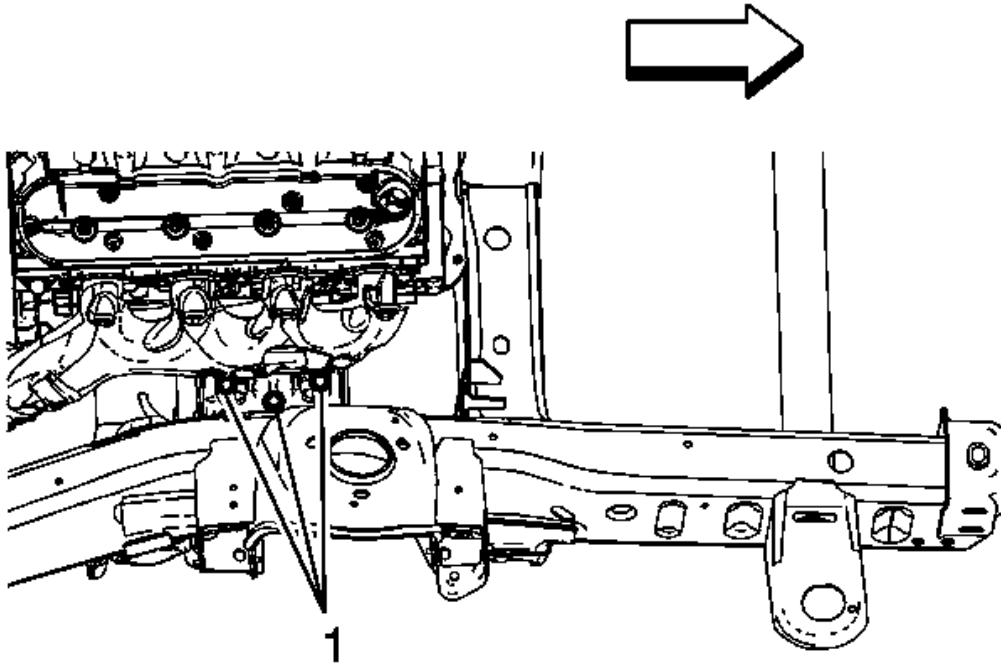


Fig. 36: View Of Engine Mount To Frame Bolts
Courtesy of GENERAL MOTORS CORP.

6. Remove the engine mount to frame bolts (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

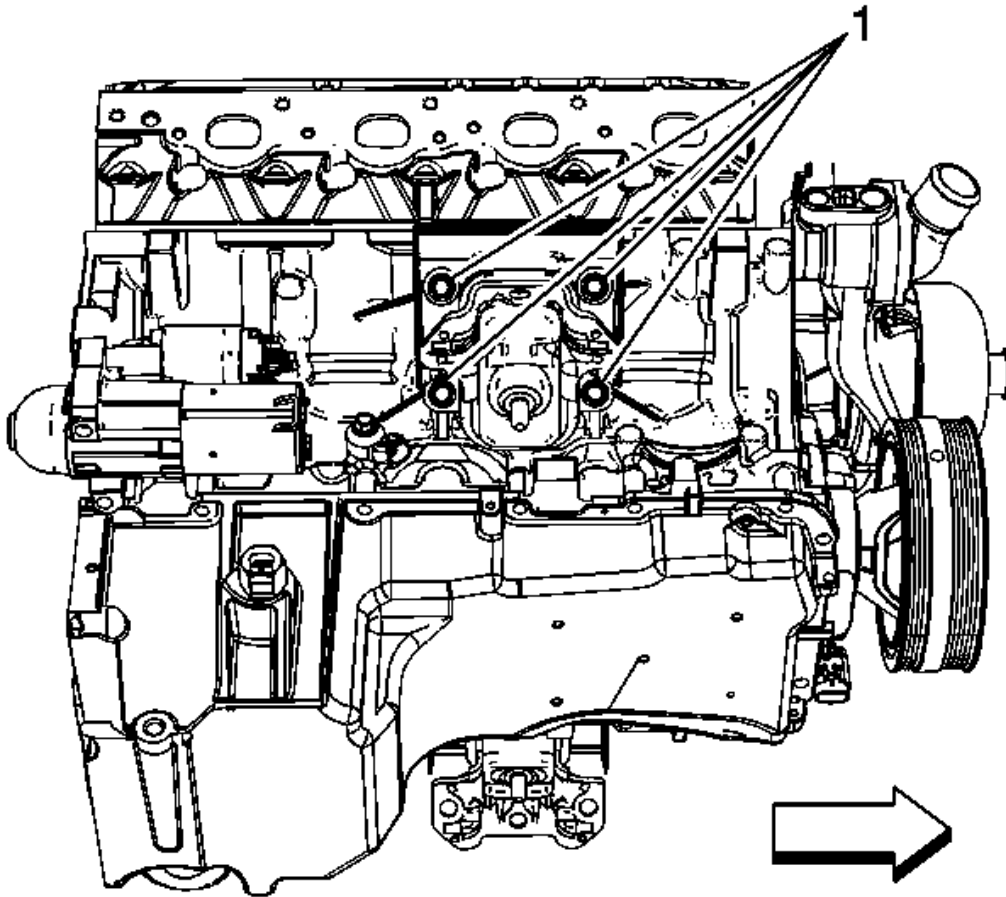


Fig. 37: View Of Engine Mount To Engine Bolts
Courtesy of GENERAL MOTORS CORP.

7. Remove the two top engine mount to engine bolts (1).
8. Using the adjustable jack, raise the engine slightly until there is enough clearance to remove the engine mount.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

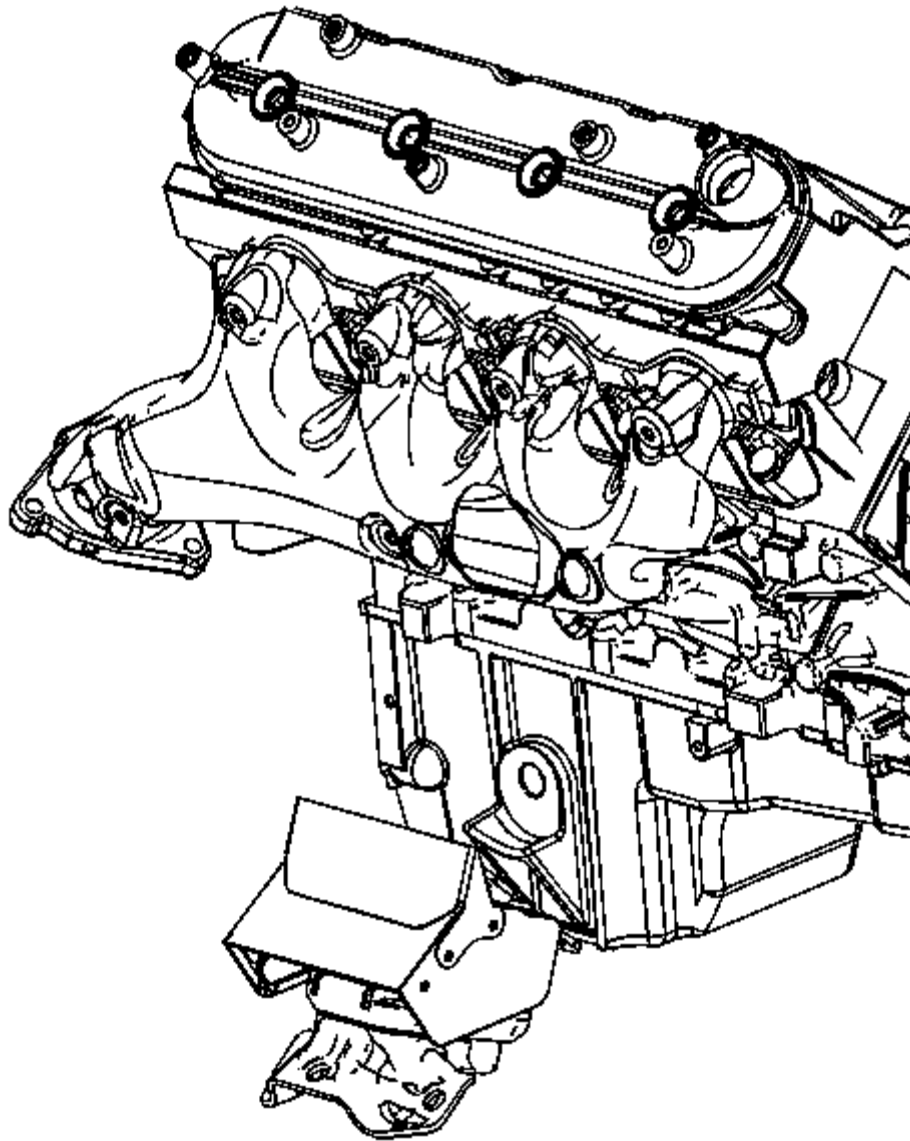


Fig. 38: View Of Engine Mount
Courtesy of GENERAL MOTORS CORP.

9. Remove the engine mount.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

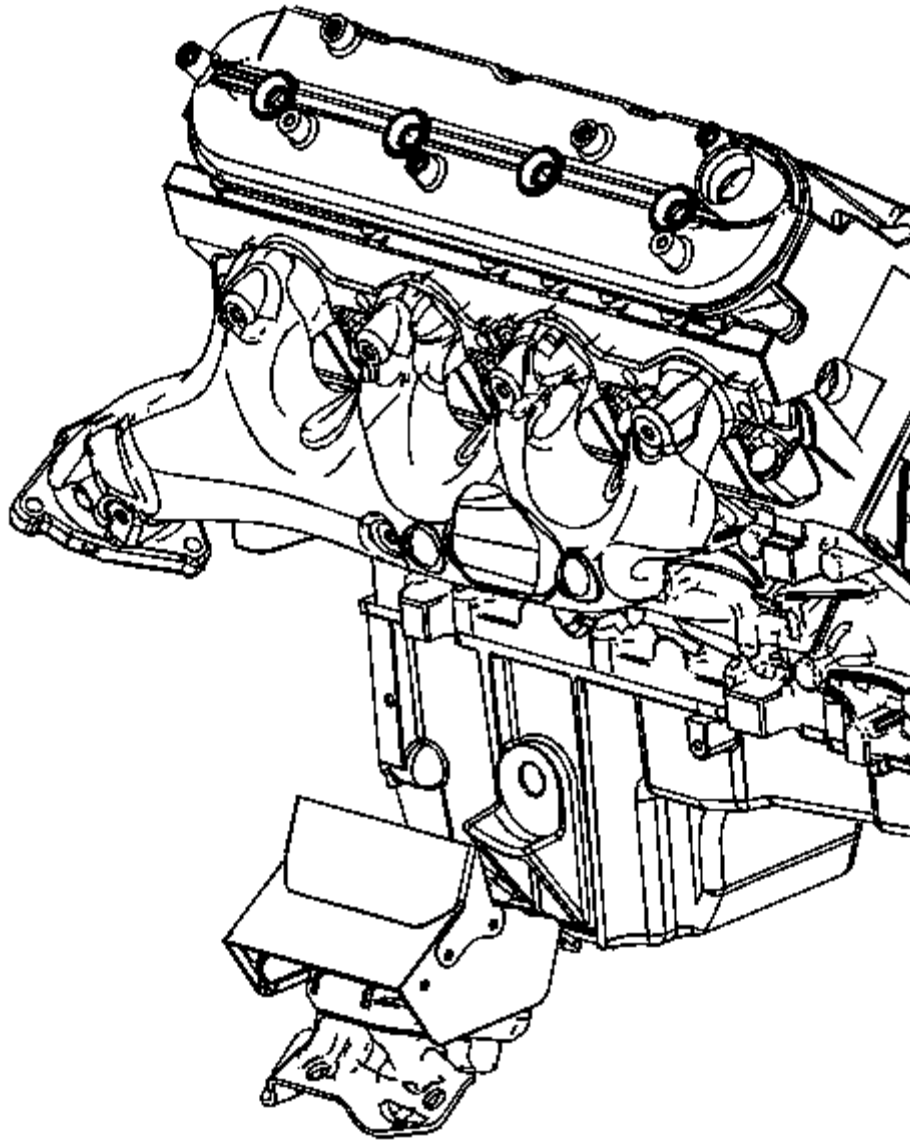


Fig. 39: View Of Engine Mount
Courtesy of GENERAL MOTORS CORP.

1. Position the engine mount to the engine.

NOTE: Refer to Fastener Notice .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

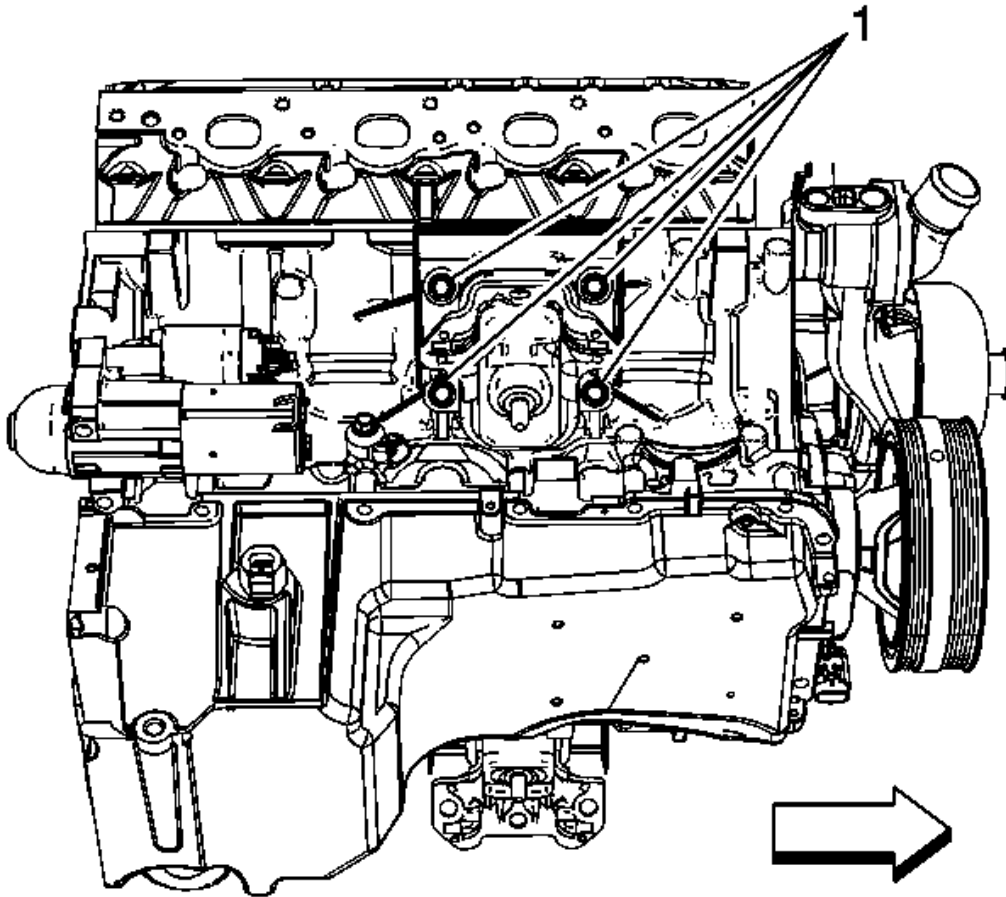


Fig. 40: View Of Engine Mount To Engine Bolts
Courtesy of GENERAL MOTORS CORP.

2. Install the two top engine mount to engine bolts (1).

Tighten: Tighten the bolts to 50 N.m (37 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

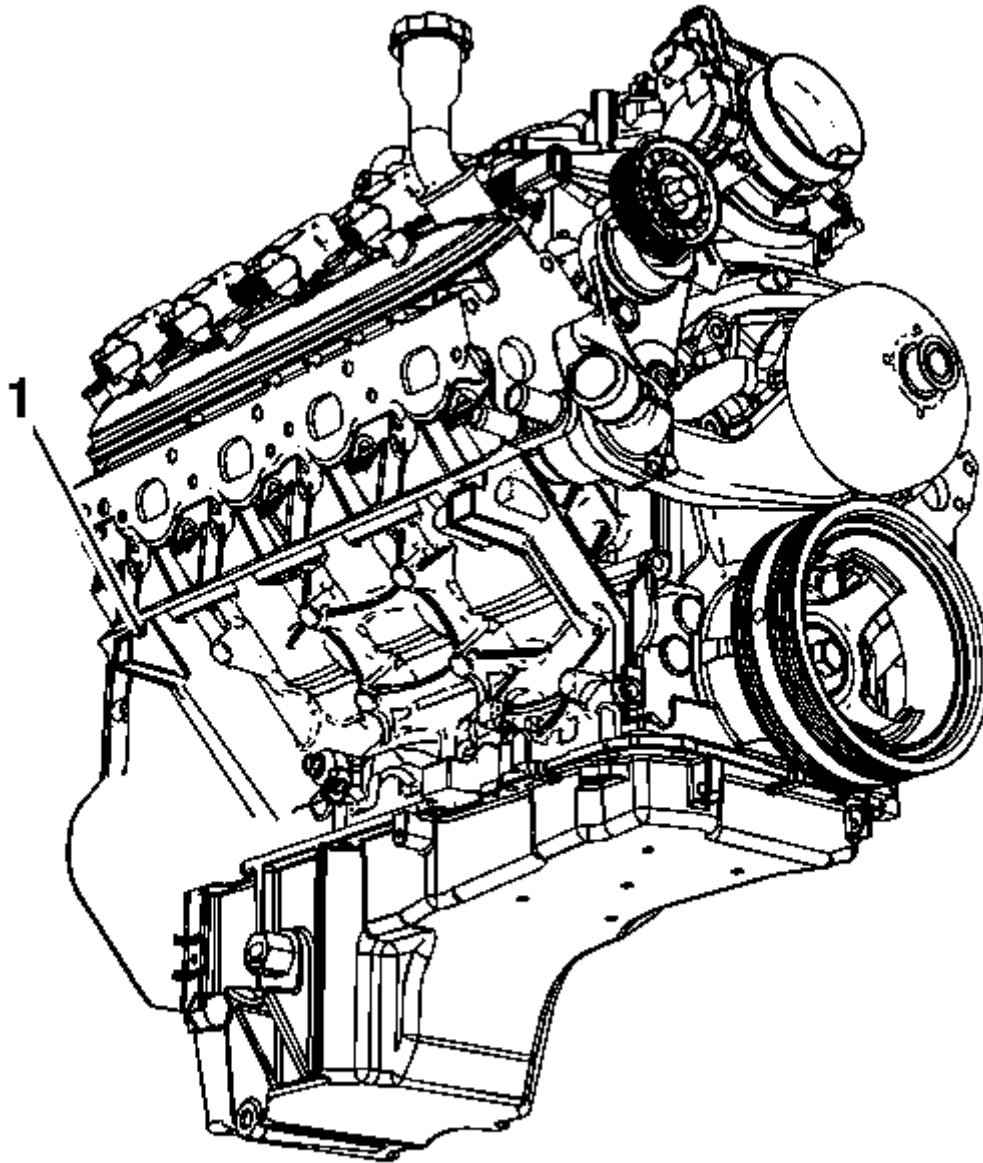


Fig. 41: Locating Tab On Engine Block
Courtesy of GENERAL MOTORS CORP.

3. Using the adjustable jack, lower the engine until the engine mount is sitting flush on the frame.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

4. Remove the adjustable jack from the engine block lifting tab (1).

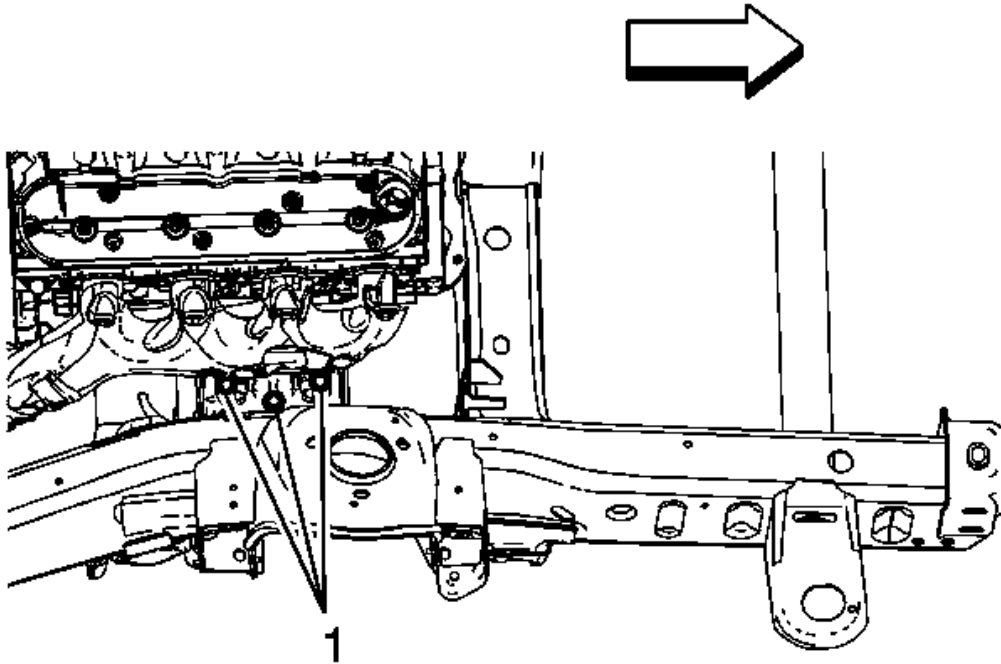


Fig. 42: View Of Engine Mount To Frame Bolts
Courtesy of GENERAL MOTORS CORP.

5. Install the engine mount to frame bolts (1).

Tighten: Tighten the bolts to 65 N.m (48 lb ft) starting with the middle bolt then either side bolt.

6. Install the starter motor. Refer to **Starter Motor Replacement (4.8L, 5.3L, 6.0L, and 6.2L)** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

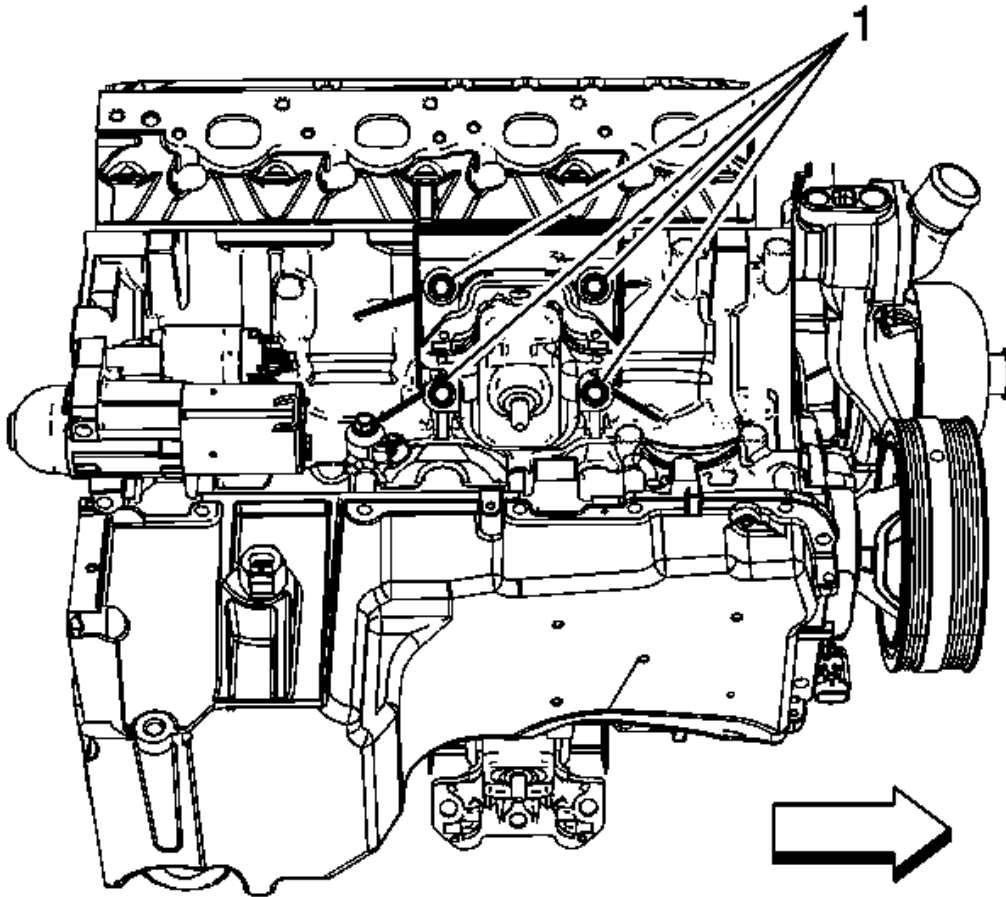


Fig. 43: View Of Engine Mount To Engine Bolts
Courtesy of GENERAL MOTORS CORP.

7. Install the two lower engine mount to engine bolts (1).

Tighten: Tighten the bolts to 50 N.m (37 lb ft).

8. If the vehicle is equipped with 4WD, Install the front drive axle. Refer to **Differential Carrier Assembly Replacement (1500 FWD)** or **Differential Carrier Assembly Replacement (2500 4WD)** .
9. Install the upper intake manifold sight shield. Refer to **Upper Intake Manifold Cover Replacement**.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

ENGINE MOUNT REPLACEMENT - RIGHT SIDE (1500 LY2)

Removal Procedure

NOTE: When raising or supporting the engine for any reason, do not use a jack under the oil pan, any sheet metal, or the crankshaft pulley. Due to the small clearance between the oil pan and the oil pump screen, jacking against the oil pan may cause the pan to be bent against the pump screen. This will result in a damaged oil pickup unit.

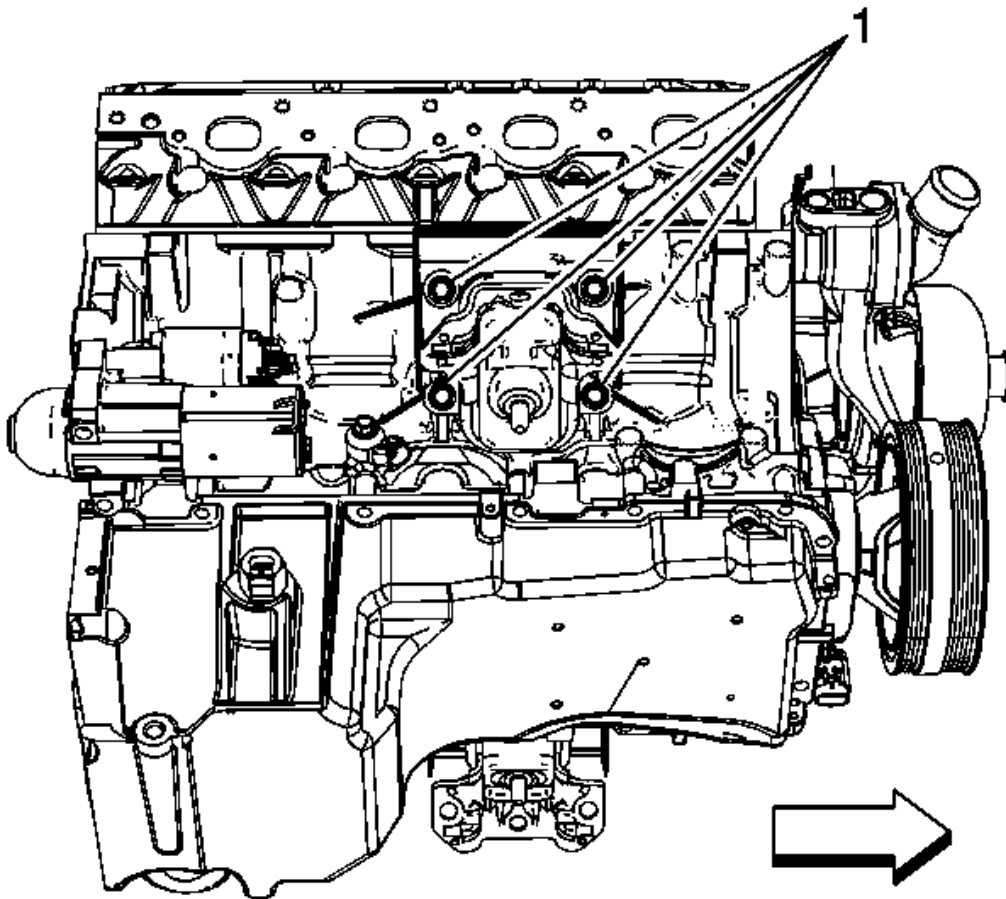


Fig. 44: View Of Engine Mount To Engine Bolts
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Remove the upper intake manifold sight shield. Refer to **Upper Intake Manifold Cover Replacement**.
2. If the vehicle is equipped with four wheel drive (4WD), remove the front drive axle. Refer to **Differential Carrier Assembly Replacement (1500 FWD)** or **Differential Carrier Assembly Replacement (2500 4WD)** .
3. Remove the two lower engine mount to engine bolts (1).
4. Remove the starter motor. Refer to **Starter Motor Replacement (4.8L, 5.3L, 6.0L, and 6.2L)** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

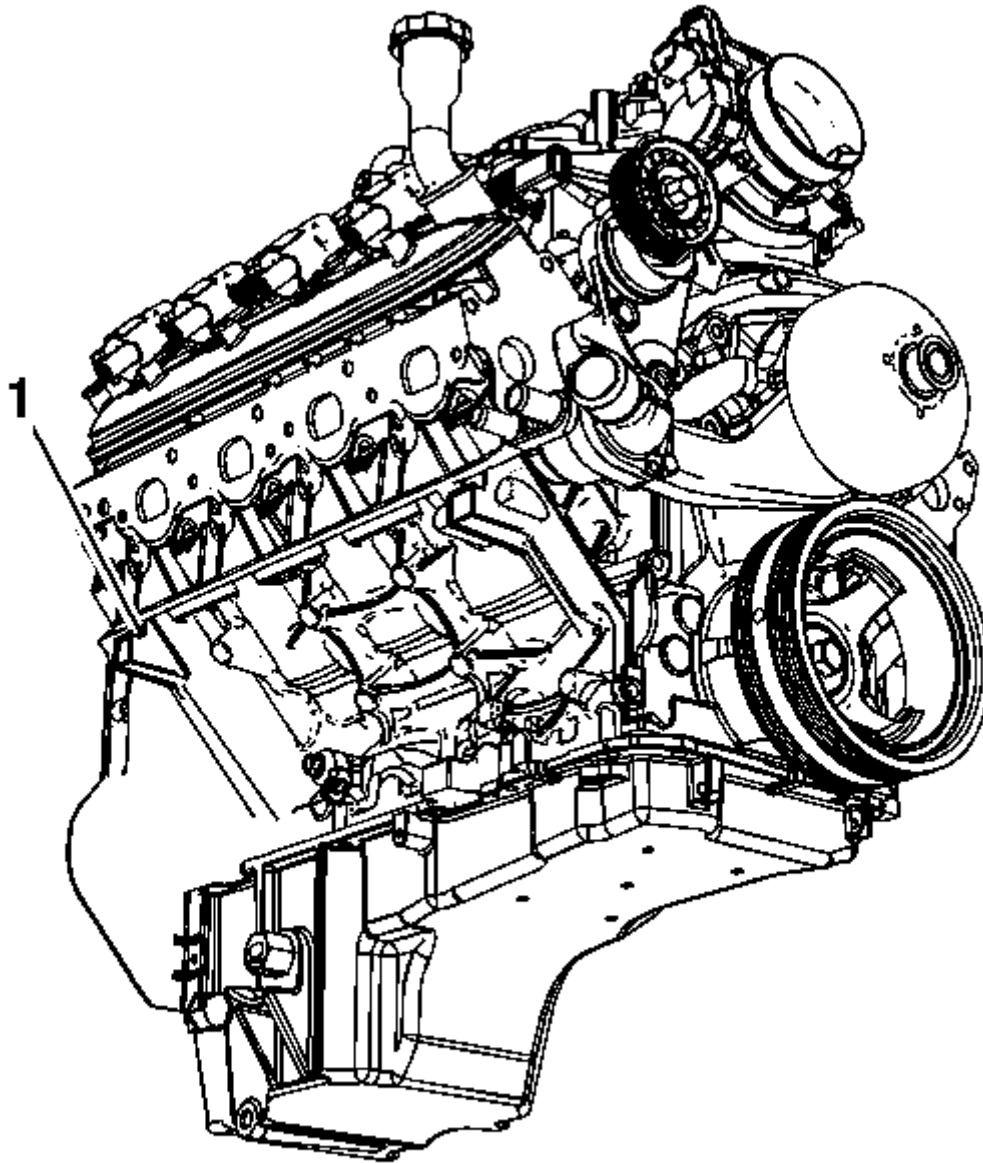


Fig. 45: Locating Tab On Engine Block
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: DO NOT raise and/or support the engine by the crankshaft balancer or oil pan.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

5. Place an adjustable (screw type) jack to the tab (1) located on the engine block.

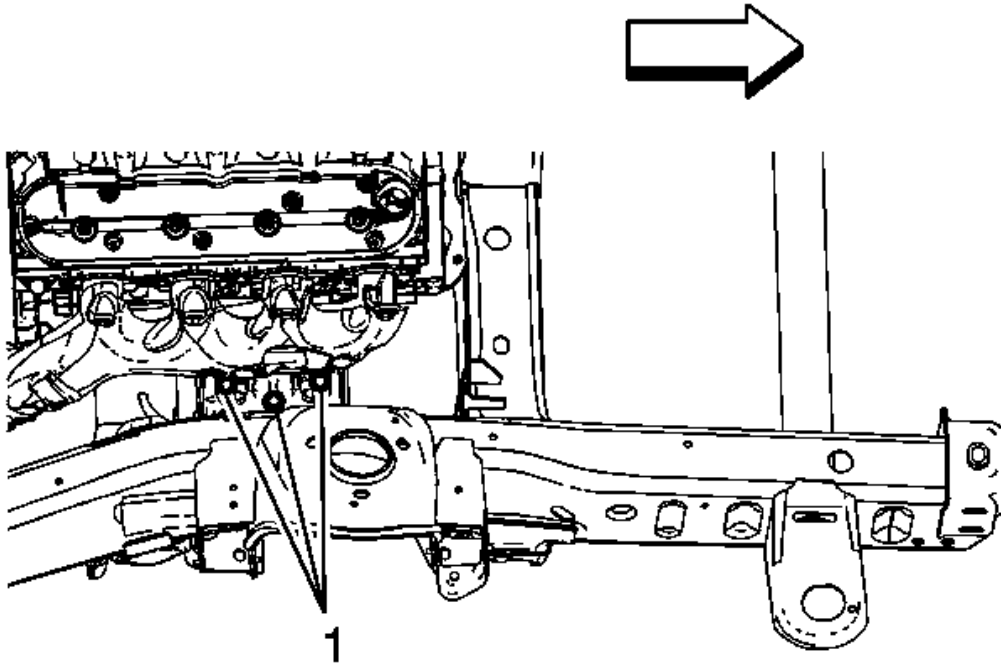


Fig. 46: View Of Engine Mount To Frame Bolts
Courtesy of GENERAL MOTORS CORP.

6. Remove the engine mount to frame bolts (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

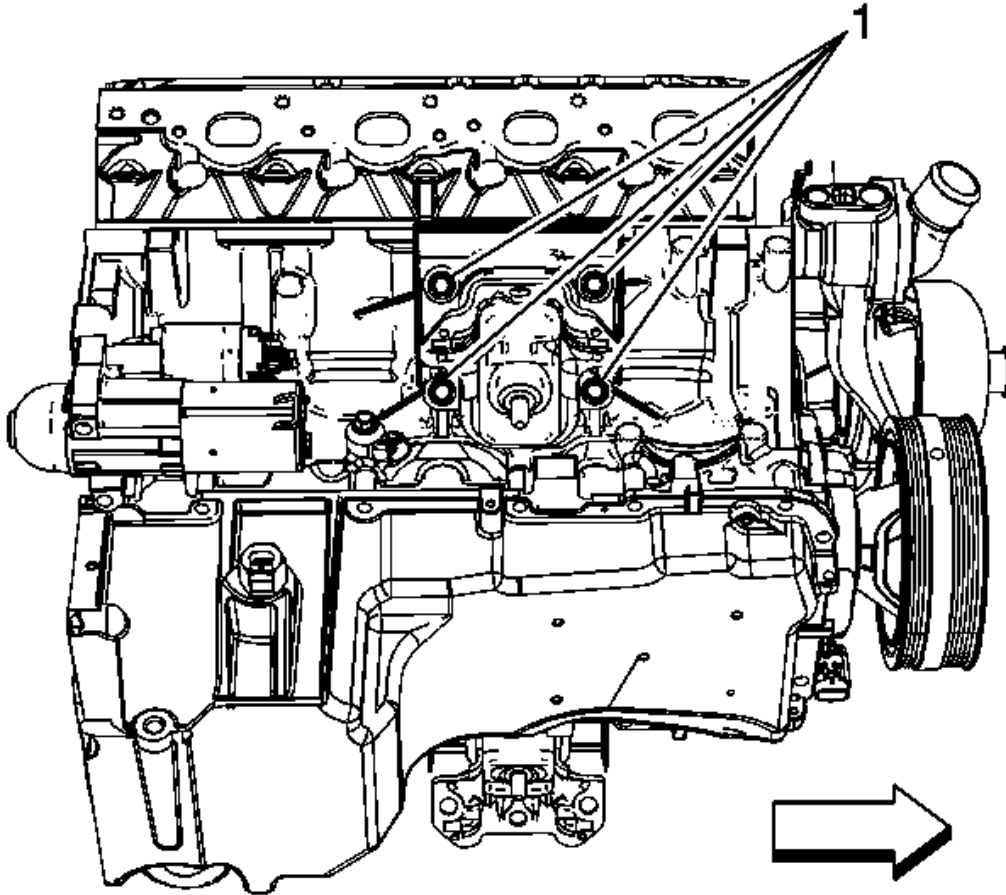


Fig. 47: View Of Engine Mount To Engine Bolts
Courtesy of GENERAL MOTORS CORP.

7. Remove the two top engine mount to engine bolts (1).
8. Using the adjustable jack, raise the engine slightly until there is enough clearance to remove the engine mount.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

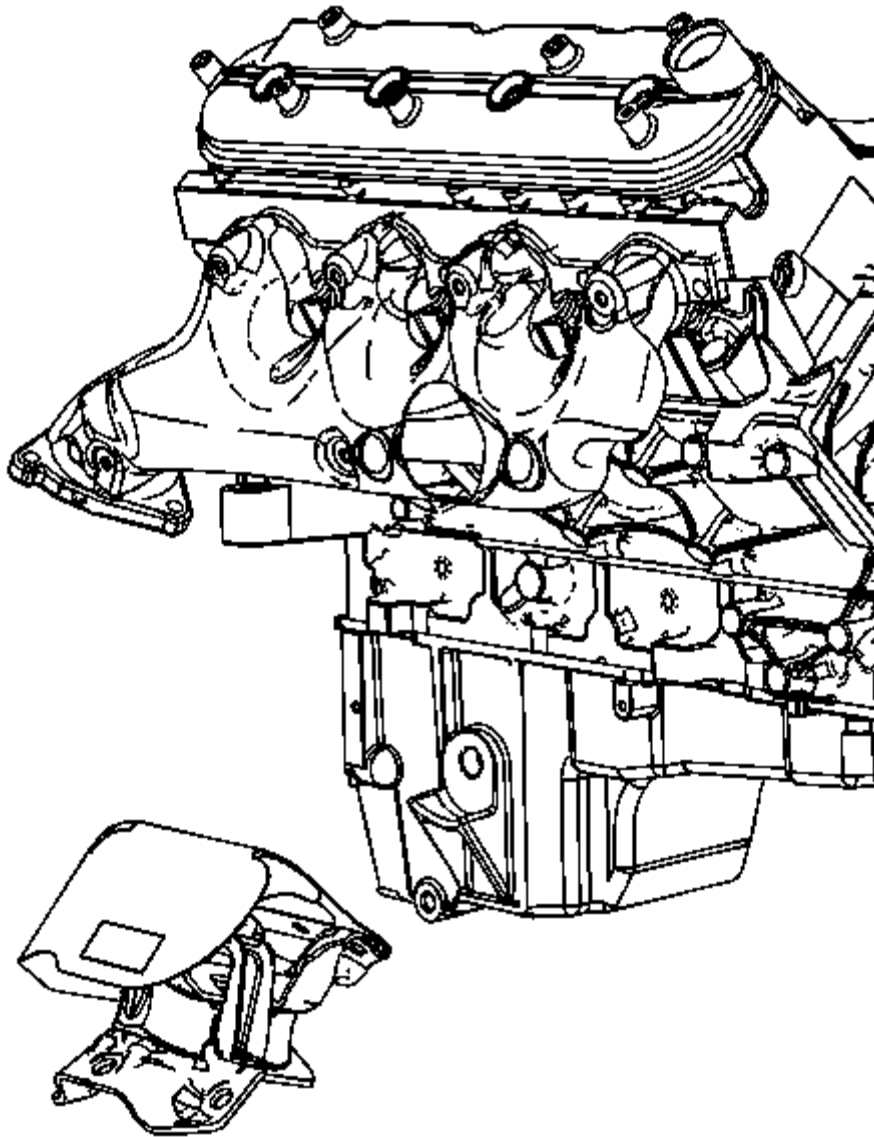


Fig. 48: View Of Engine Mount
Courtesy of GENERAL MOTORS CORP.

9. Remove the engine mount.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

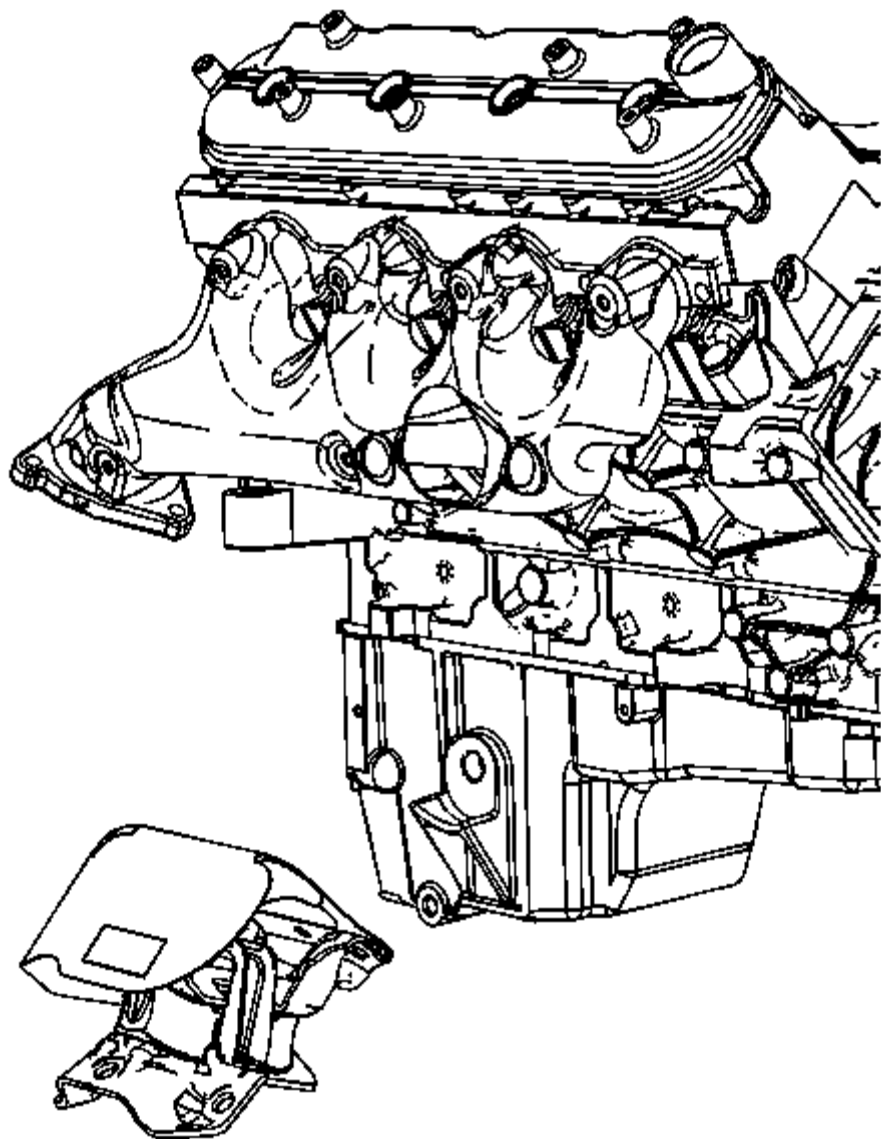


Fig. 49: View Of Engine Mount
Courtesy of GENERAL MOTORS CORP.

1. Position the engine mount to the engine.

NOTE: Refer to Fastener Notice .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

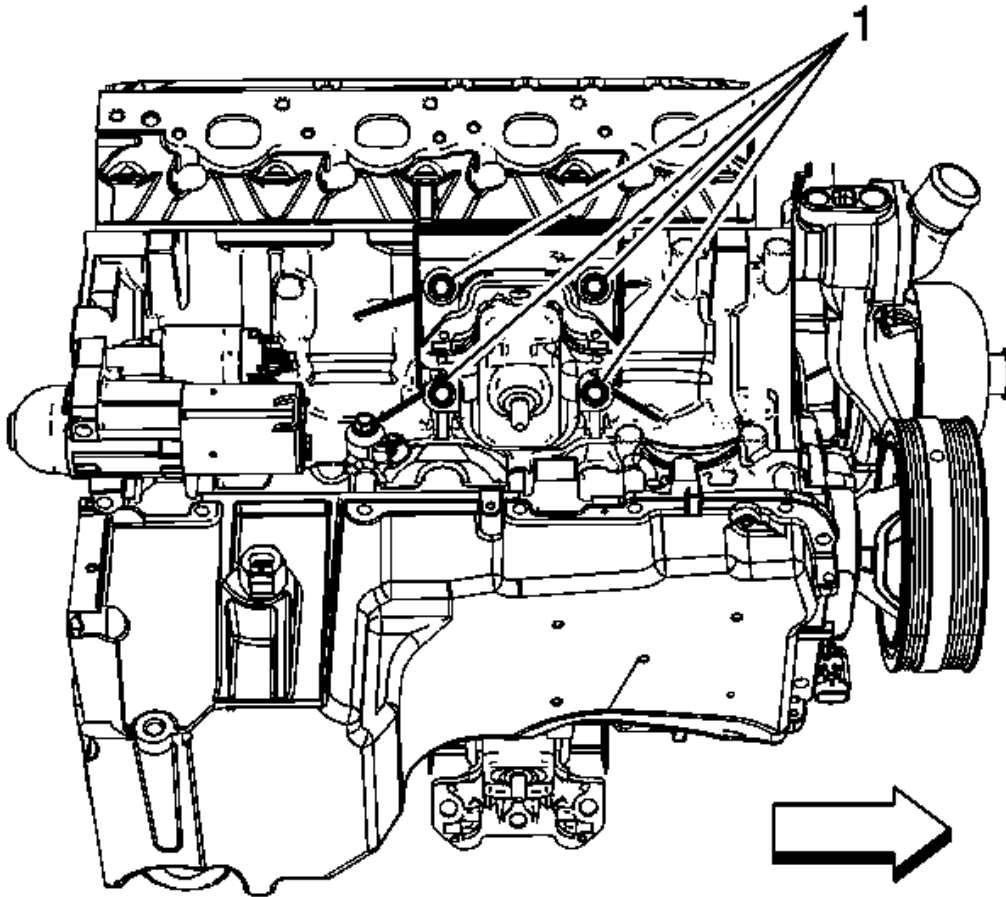


Fig. 50: View Of Engine Mount To Engine Bolts
Courtesy of GENERAL MOTORS CORP.

2. Install the two top engine mount to engine bolts (1).

Tighten: Tighten the bolts to 50 N.m (37 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

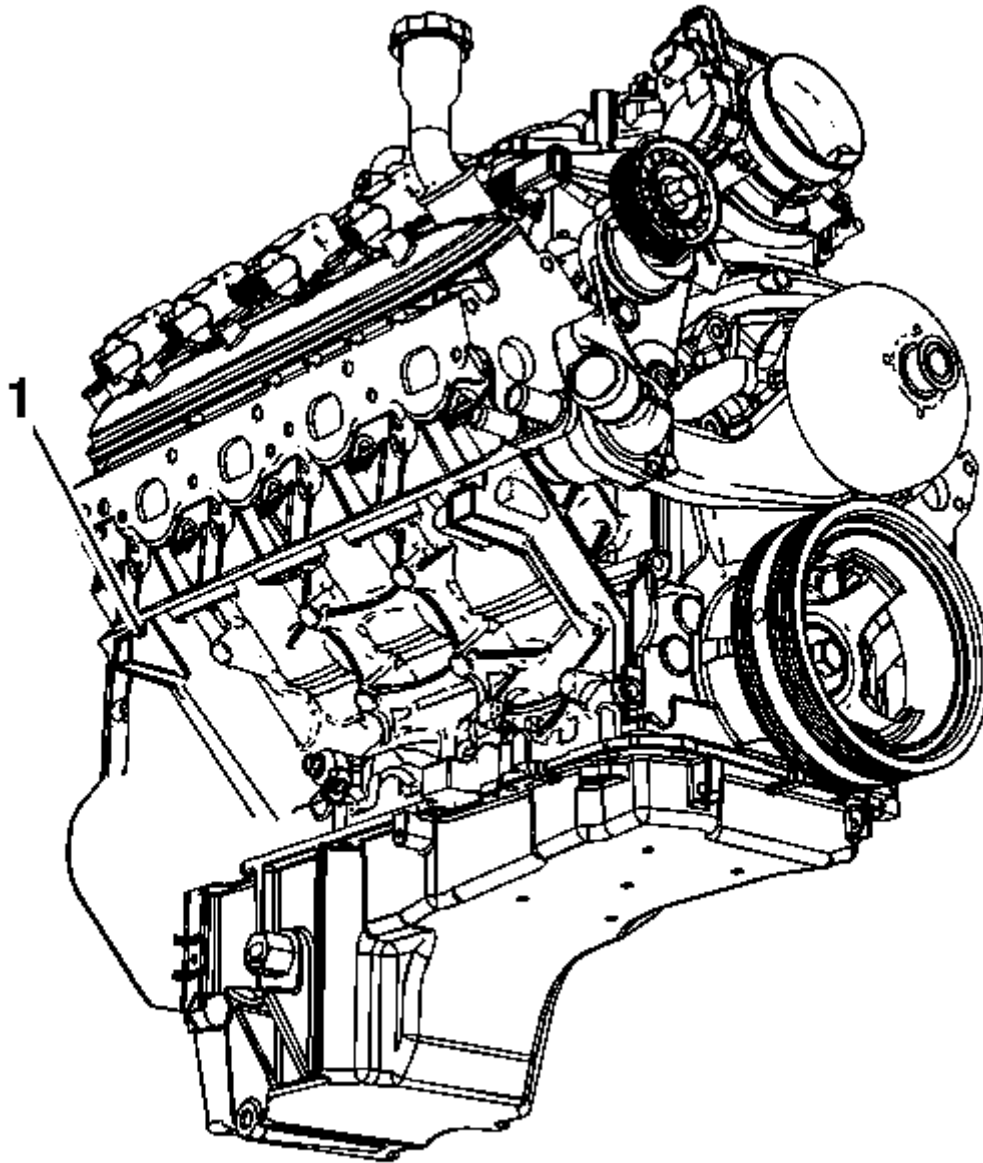


Fig. 51: Locating Tab On Engine Block
Courtesy of GENERAL MOTORS CORP.

3. Using the adjustable jack, lower the engine until the engine mount is sitting flush on the frame.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

4. Remove the adjustable jack from the engine block lifting tab (1).

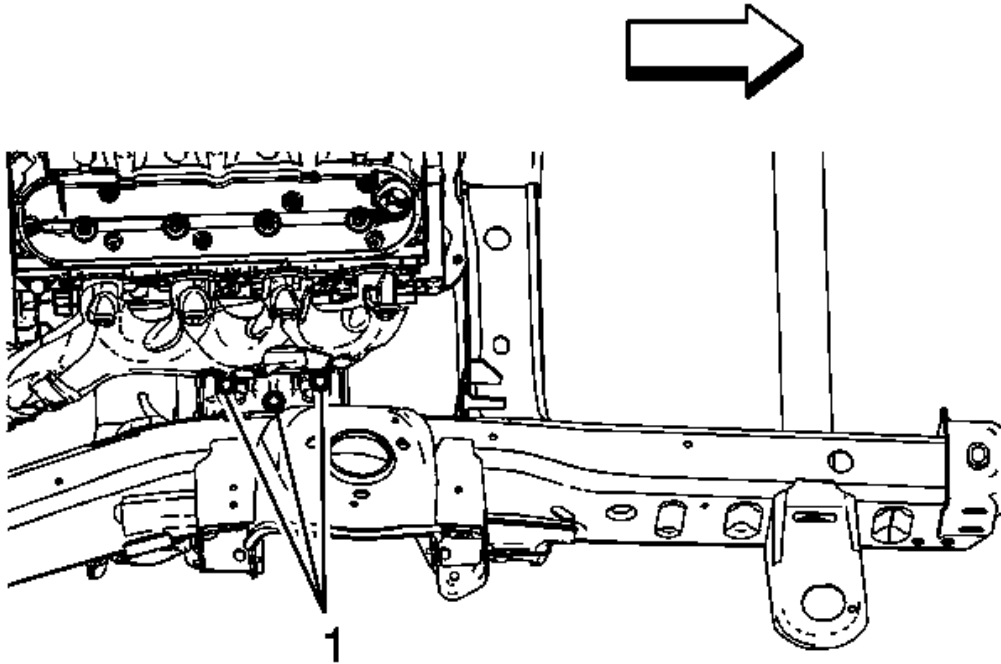


Fig. 52: View Of Engine Mount To Frame Bolts
Courtesy of GENERAL MOTORS CORP.

5. Install the engine mount to frame bolts (1).

Tighten: Tighten the bolts to 65 N.m (48 lb ft) starting with the middle bolt then either side bolt.

6. Install the starter motor. Refer to **Starter Motor Replacement (4.8L, 5.3L, 6.0L, and 6.2L)** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

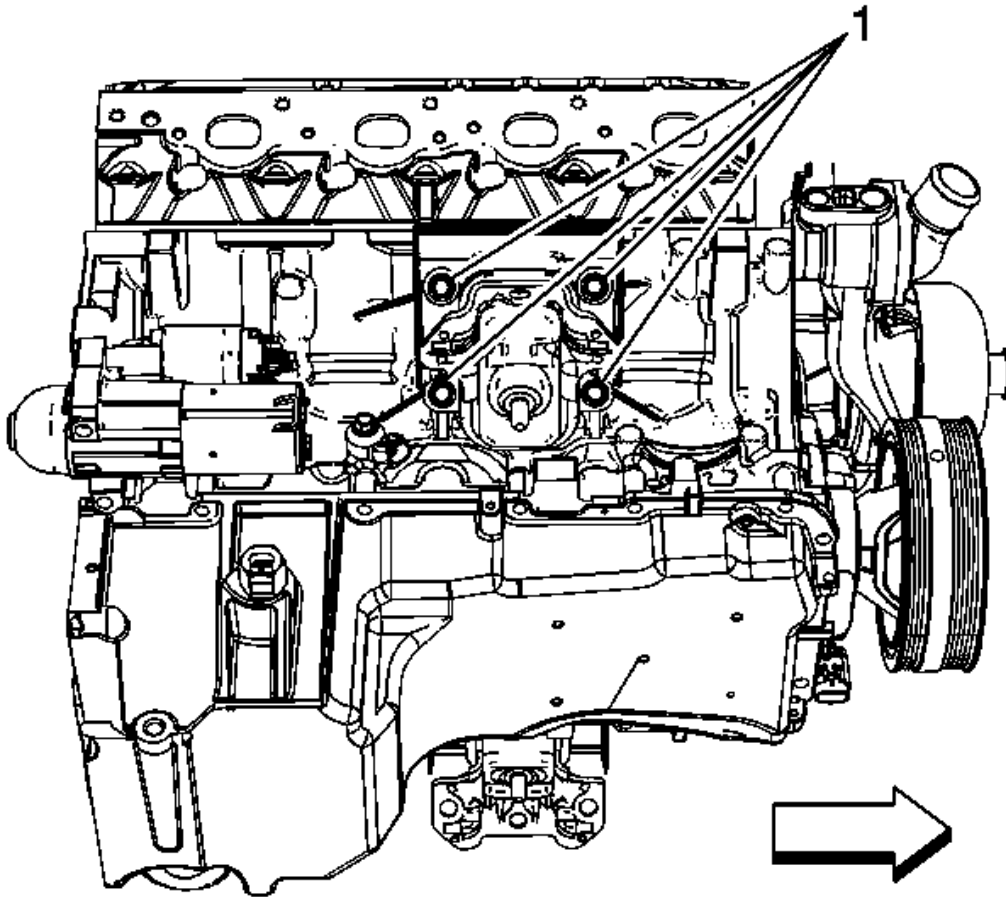


Fig. 53: View Of Engine Mount To Engine Bolts
Courtesy of GENERAL MOTORS CORP.

7. Install the two lower engine mount to engine bolts (1).

Tighten: Tighten the bolts to 50 N.m (37 lb ft).

8. If the vehicle is equipped with 4WD, Install the front drive axle. Refer to **Differential Carrier Assembly Replacement (1500 FWD)** or **Differential Carrier Assembly Replacement (2500 4WD)** .
9. Install the upper intake manifold sight shield. Refer to **Upper Intake Manifold Cover Replacement**.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

ENGINE MOUNT REPLACEMENT - RIGHT SIDE (2500 LY6)

Removal Procedure

NOTE: When raising or supporting the engine for any reason, do not use a jack under the oil pan, any sheet metal, or the crankshaft pulley. Due to the small clearance between the oil pan and the oil pump screen, jacking against the oil pan may cause the pan to be bent against the pump screen. This will result in a damaged oil pickup unit.

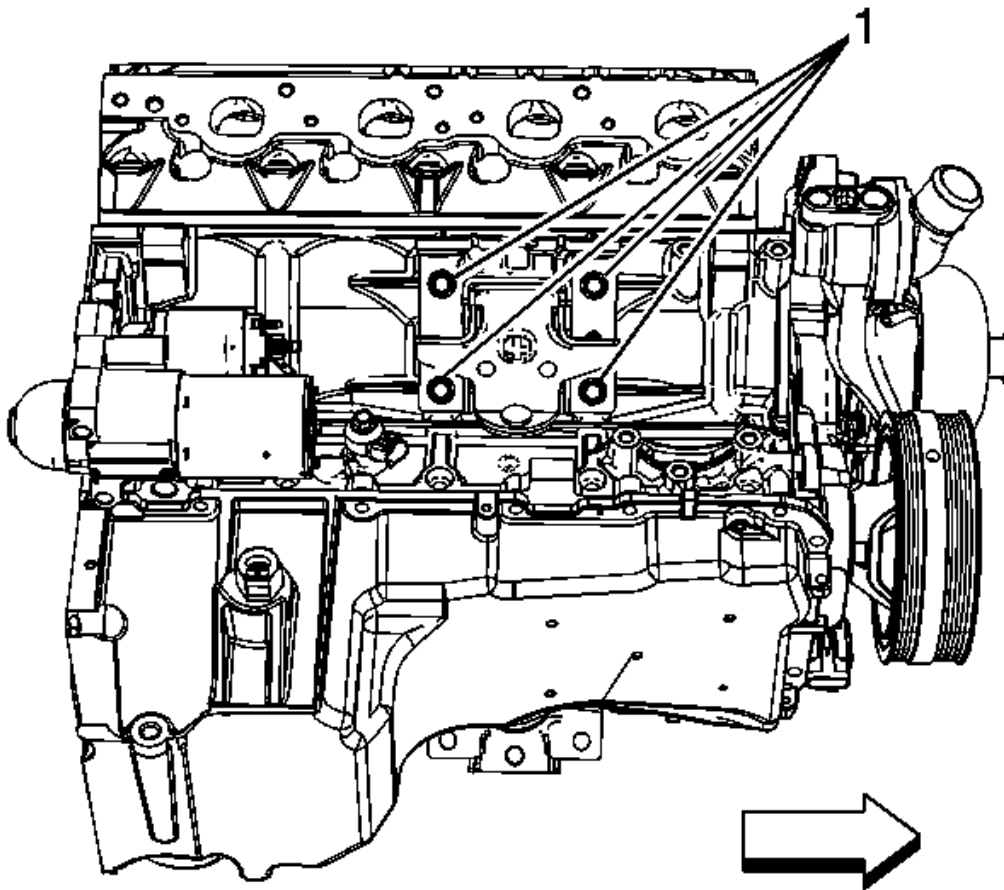


Fig. 54: View Of Engine Mount To Engine Bolts
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Remove the upper intake manifold sight shield. Refer to **Upper Intake Manifold Cover Replacement**.
2. If the vehicle is equipped with four wheel drive (4WD), remove the front drive axle. Refer to **Differential Carrier Assembly Replacement (1500 FWD)** or **Differential Carrier Assembly Replacement (2500 4WD)** .
3. Remove the two lower engine mount to engine bolts (1).
4. Remove the starter motor. Refer to **Starter Motor Replacement (4.8L, 5.3L, 6.0L, and 6.2L)** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

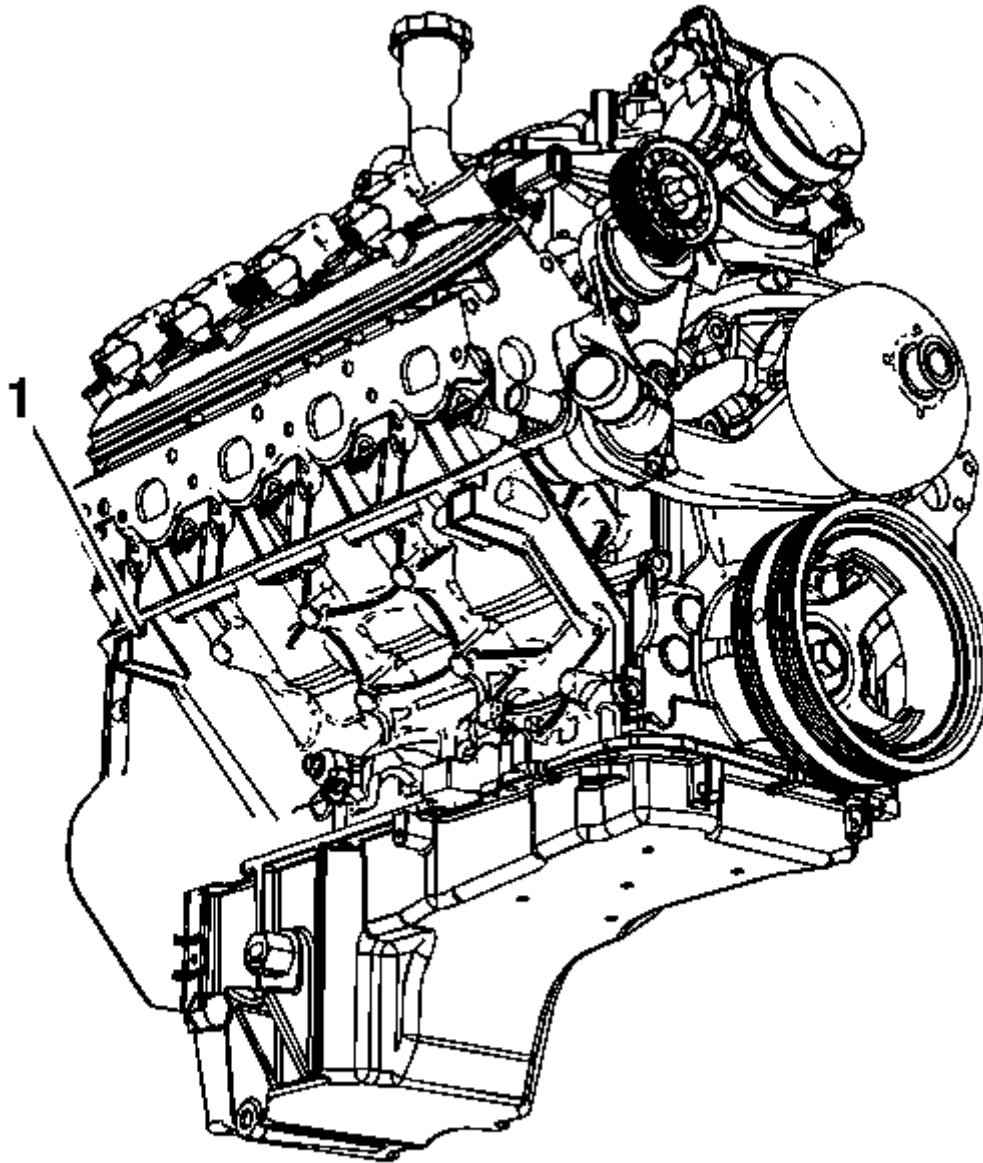


Fig. 55: Locating Tab On Engine Block
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: DO NOT raise and/or support the engine by the crankshaft balancer or oil pan.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

5. Place an adjustable (screw type) jack to the tab (1) located on the engine block.

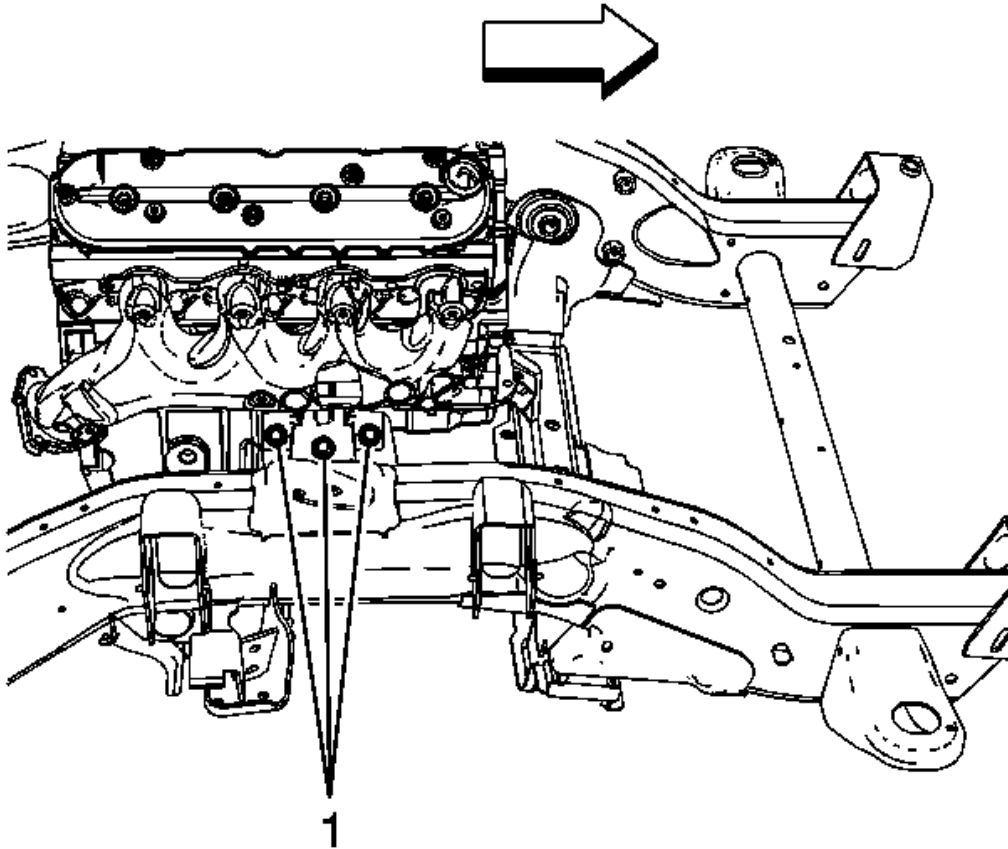


Fig. 56: View Of Engine Mount To Frame Bolts
Courtesy of GENERAL MOTORS CORP.

6. Remove the engine mount to frame bolts (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

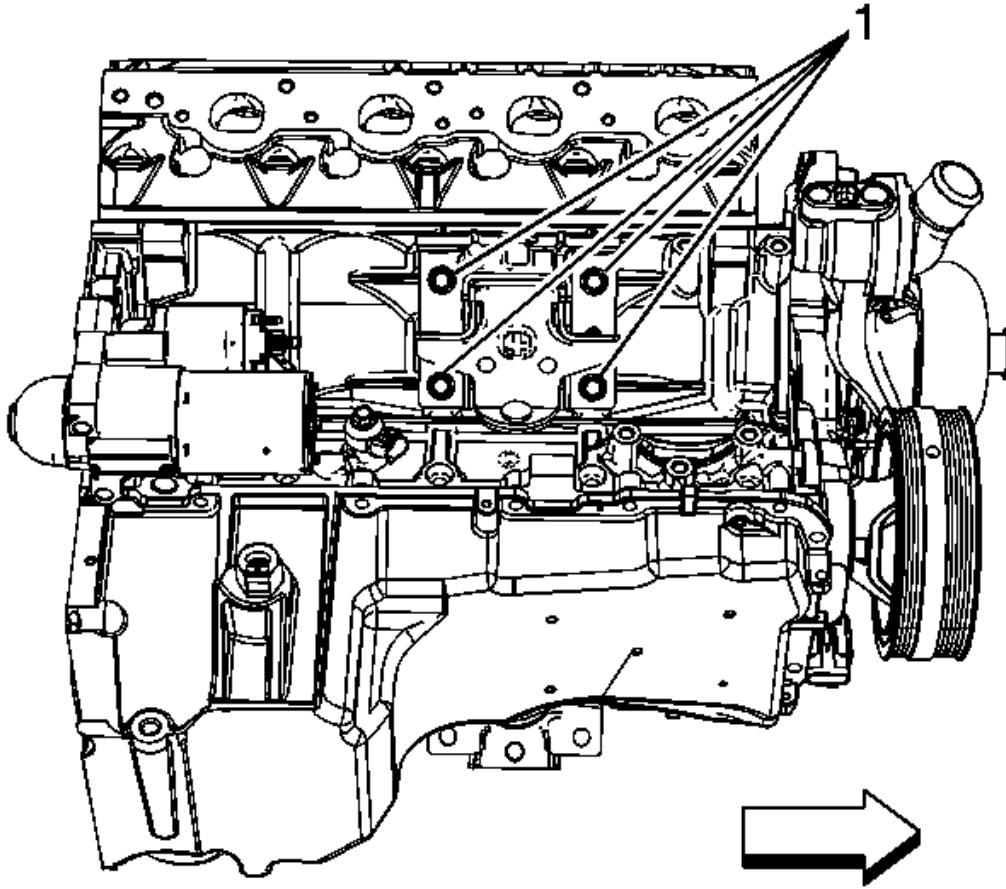


Fig. 57: View Of Engine Mount To Engine Bolts
Courtesy of GENERAL MOTORS CORP.

7. Remove the two top engine mount to engine bolts (1).
8. Using the adjustable jack, raise the engine slightly until there is enough clearance to remove the engine mount.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

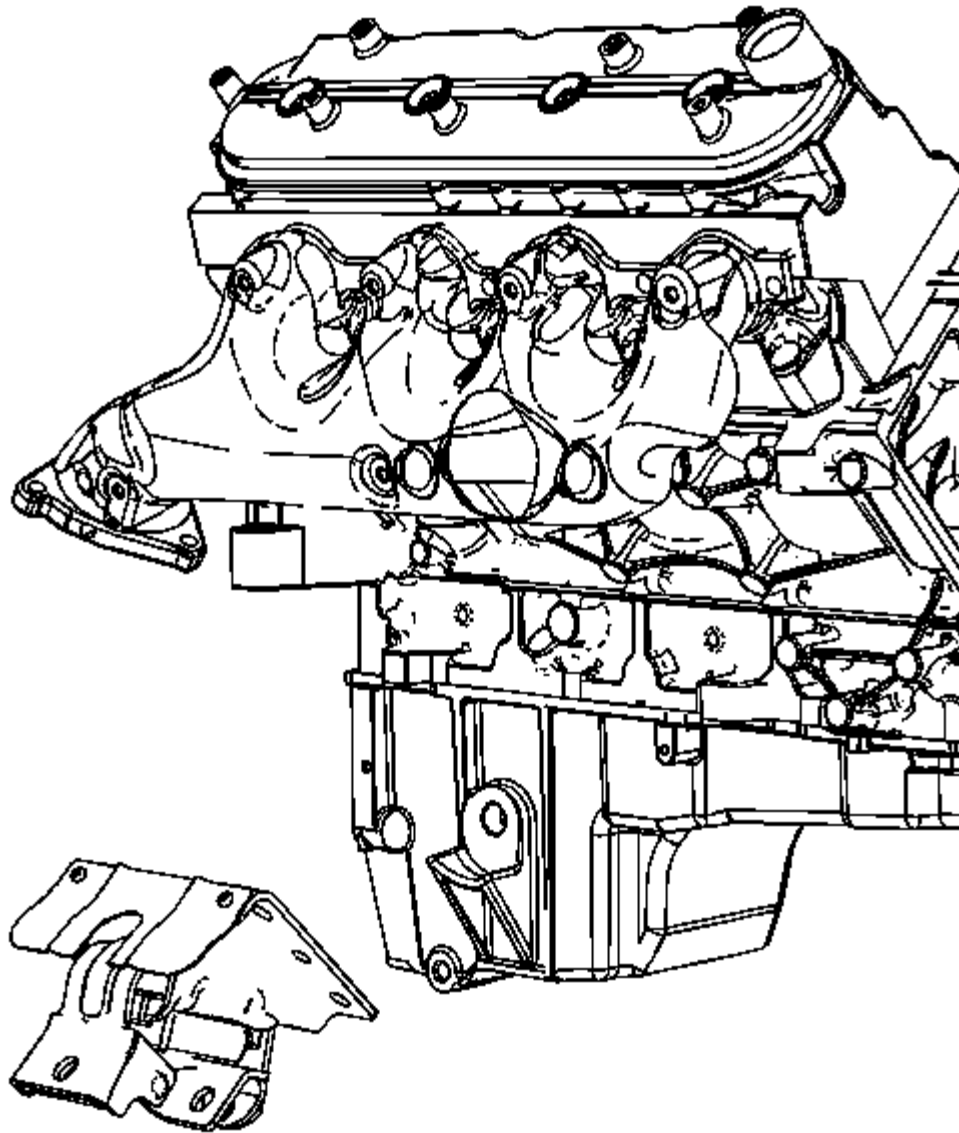


Fig. 58: View Of Engine Mount
Courtesy of GENERAL MOTORS CORP.

9. Remove the engine mount.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

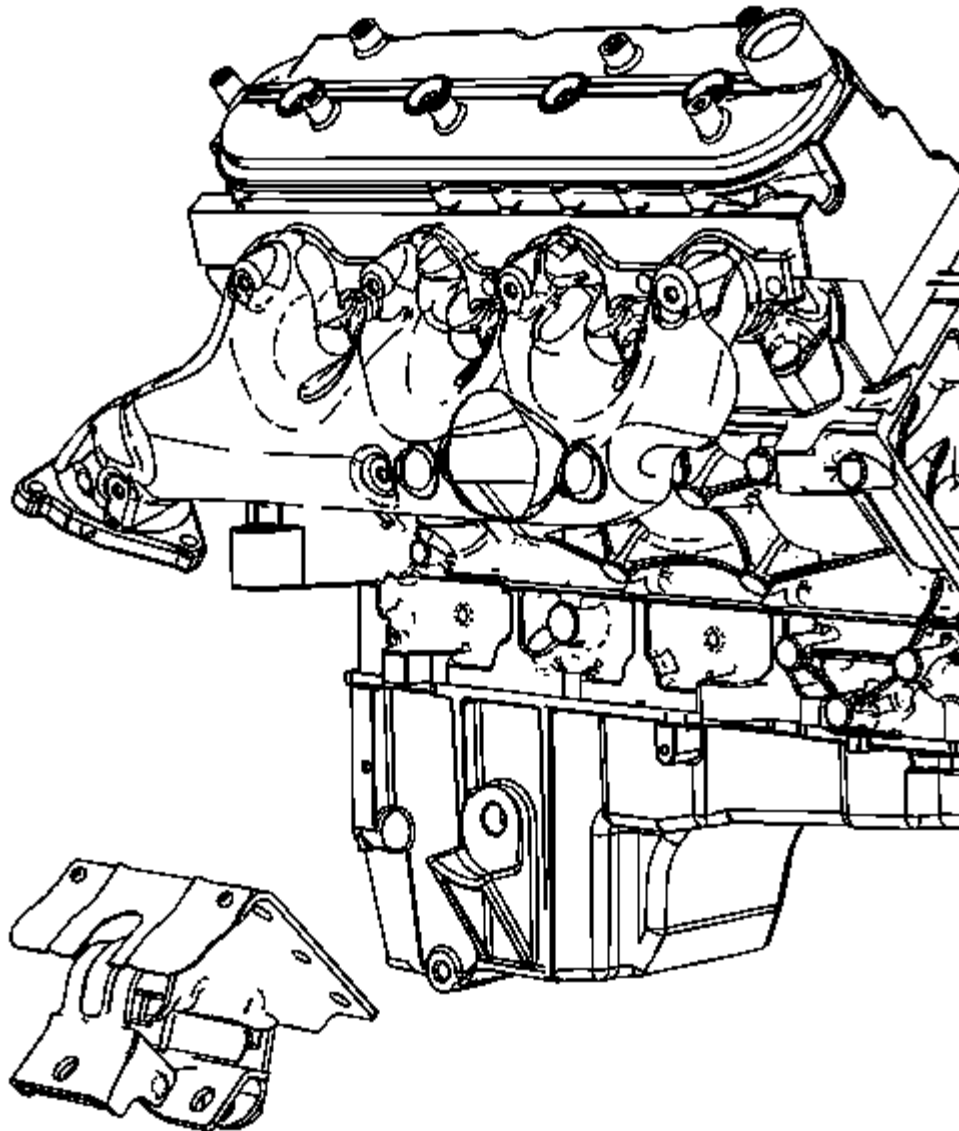


Fig. 59: View Of Engine Mount
Courtesy of GENERAL MOTORS CORP.

1. Position the engine mount to the engine.

NOTE: Refer to Fastener Notice .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

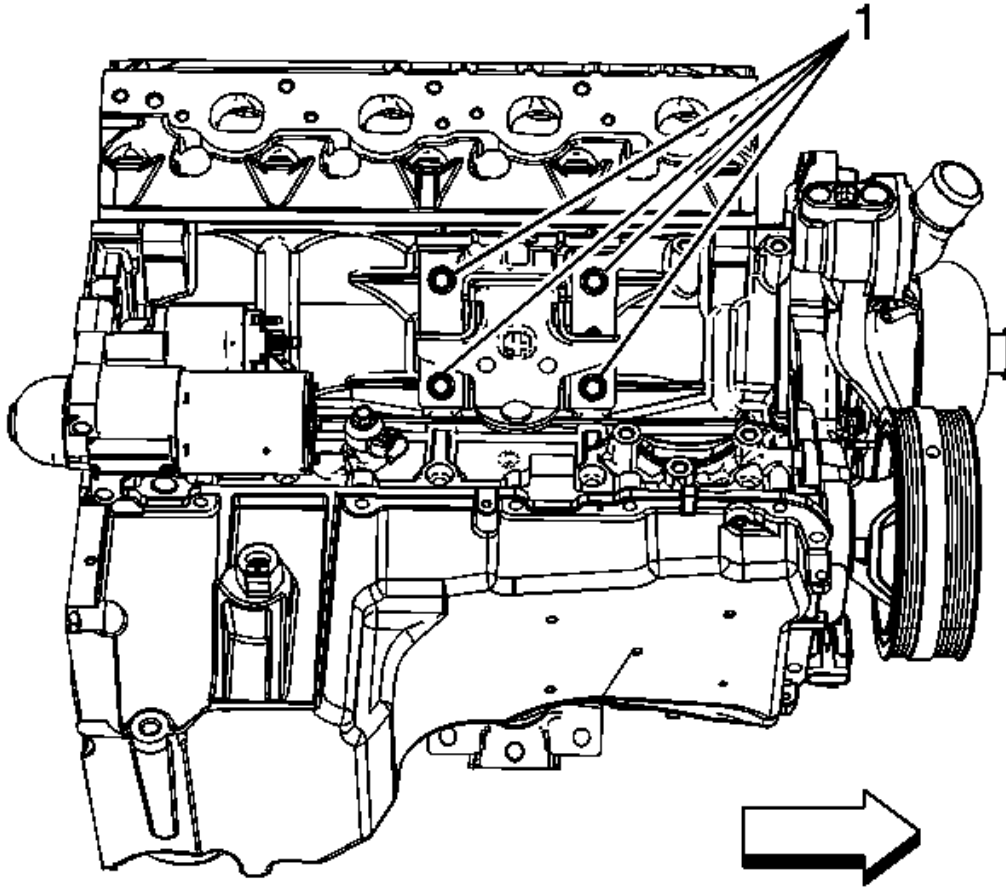


Fig. 60: View Of Engine Mount To Engine Bolts
Courtesy of GENERAL MOTORS CORP.

2. Install the two top engine mount to engine bolts (1).

Tighten: Tighten the bolts to 50 N.m (37 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

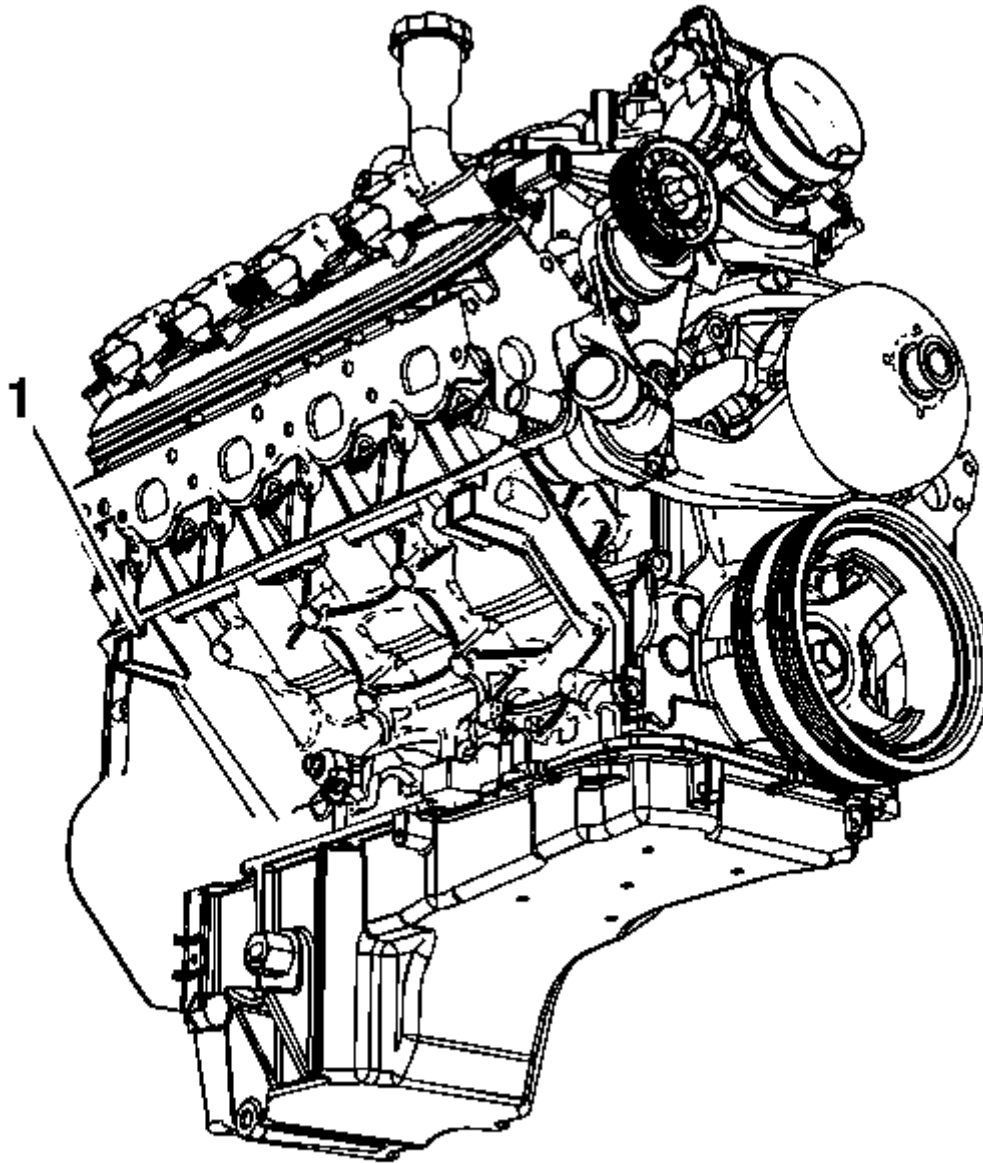


Fig. 61: Locating Tab On Engine Block
Courtesy of GENERAL MOTORS CORP.

3. Using the adjustable jack, lower the engine until the engine mount is sitting flush on the frame.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

4. Remove the adjustable jack from the engine block lifting tab (1).

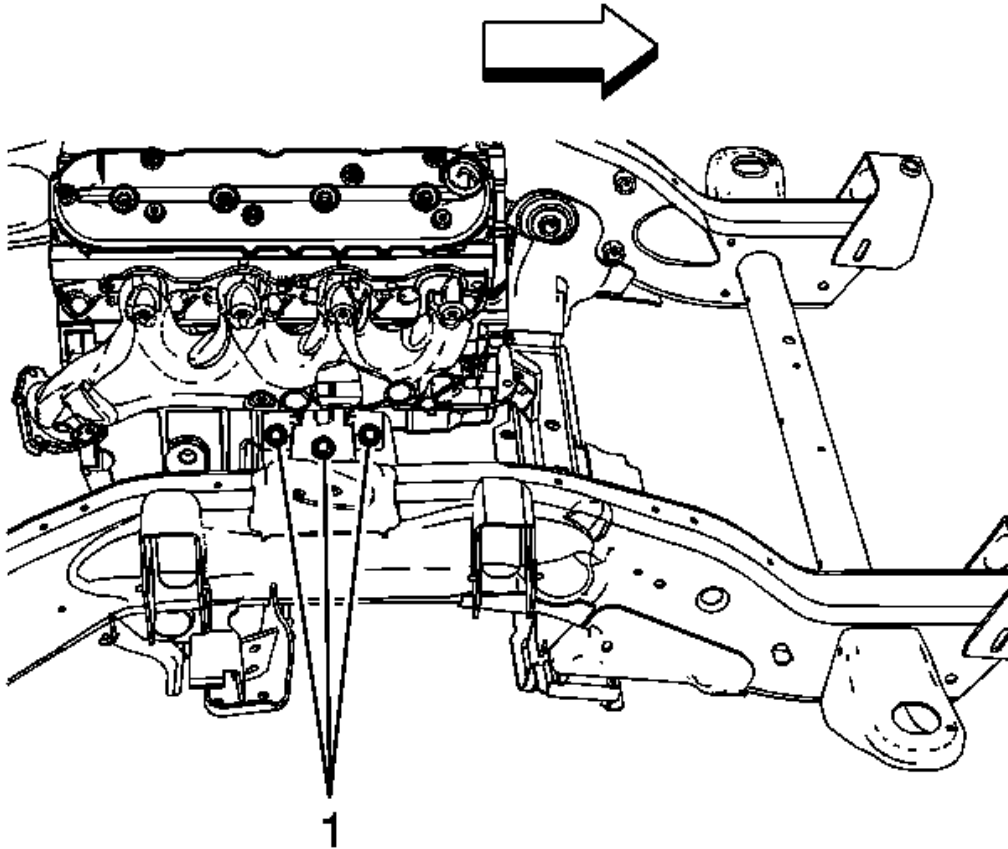


Fig. 62: View Of Engine Mount To Frame Bolts
Courtesy of GENERAL MOTORS CORP.

5. Install the engine mount to frame bolts (1).

Tighten: Tighten the bolts to 65 N.m (48 lb ft) starting with the middle bolt then either side bolt.

6. Install the starter motor. Refer to **Starter Motor Replacement (4.8L, 5.3L, 6.0L, and 6.2L)** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

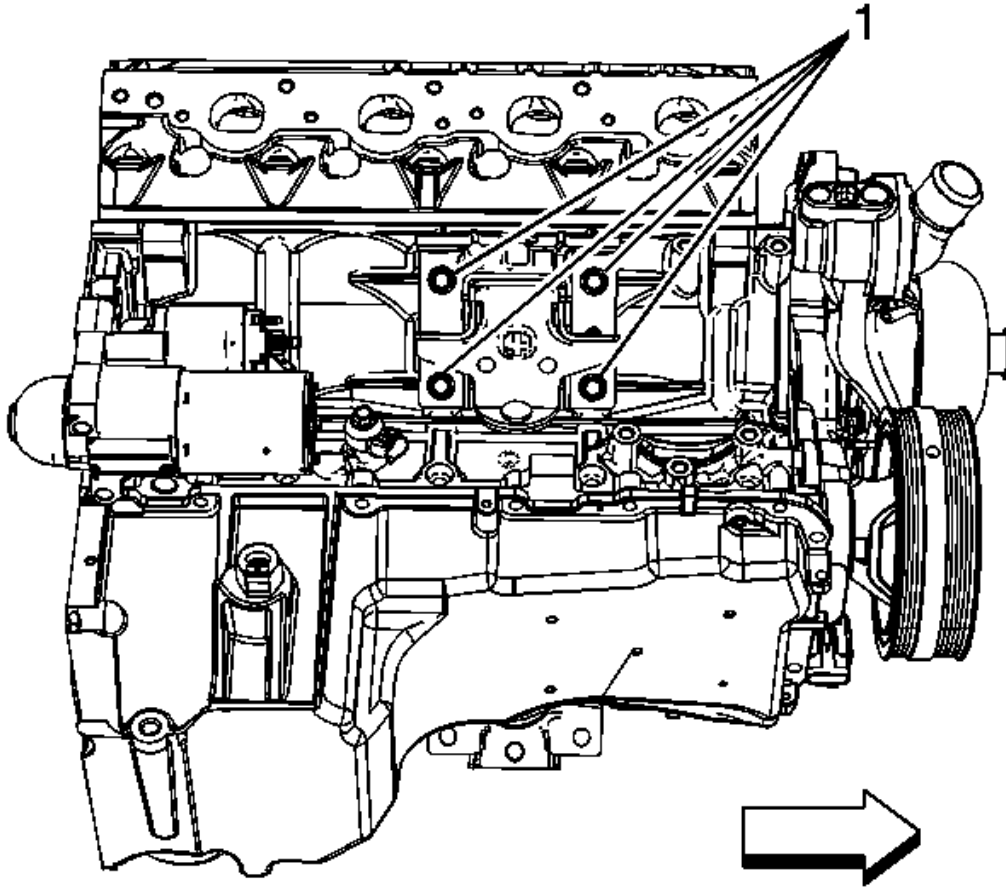


Fig. 63: View Of Engine Mount To Engine Bolts
Courtesy of GENERAL MOTORS CORP.

7. Install the two lower engine mount to engine bolts (1).

Tighten: Tighten the bolts to 50 N.m (37 lb ft).

8. If the vehicle is equipped with 4WD, Install the front drive axle. Refer to **Differential Carrier Assembly Replacement (1500 FWD)** or **Differential Carrier Assembly Replacement (2500 4WD)**.
9. Install the upper intake manifold sight shield. Refer to **Upper Intake Manifold Cover Replacement**.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

ENGINE MOUNT BRACKET REPLACEMENT - RIGHT SIDE (2500 LY6)

Removal Procedure

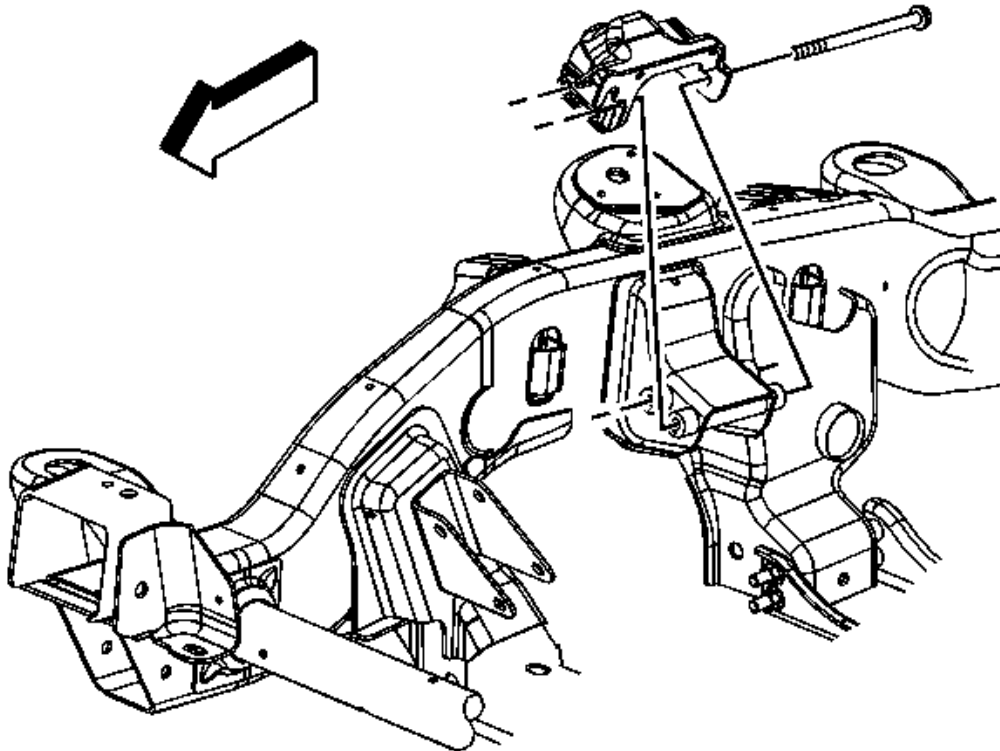


Fig. 64: View Of Engine Mount Bracket & Bolts
Courtesy of GENERAL MOTORS CORP.

1. Remove the engine mount. Refer to **Engine Mount Replacement - Right Side (1500 LH6, LMG, LY5, L76 and L92)** or **Engine Mount Replacement - Right Side (1500 LY2)** or **Engine Mount Replacement - Right Side (2500 LY6)**.
2. Remove the engine mount bracket bolts.
3. Remove the engine mount bracket.

Installation Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

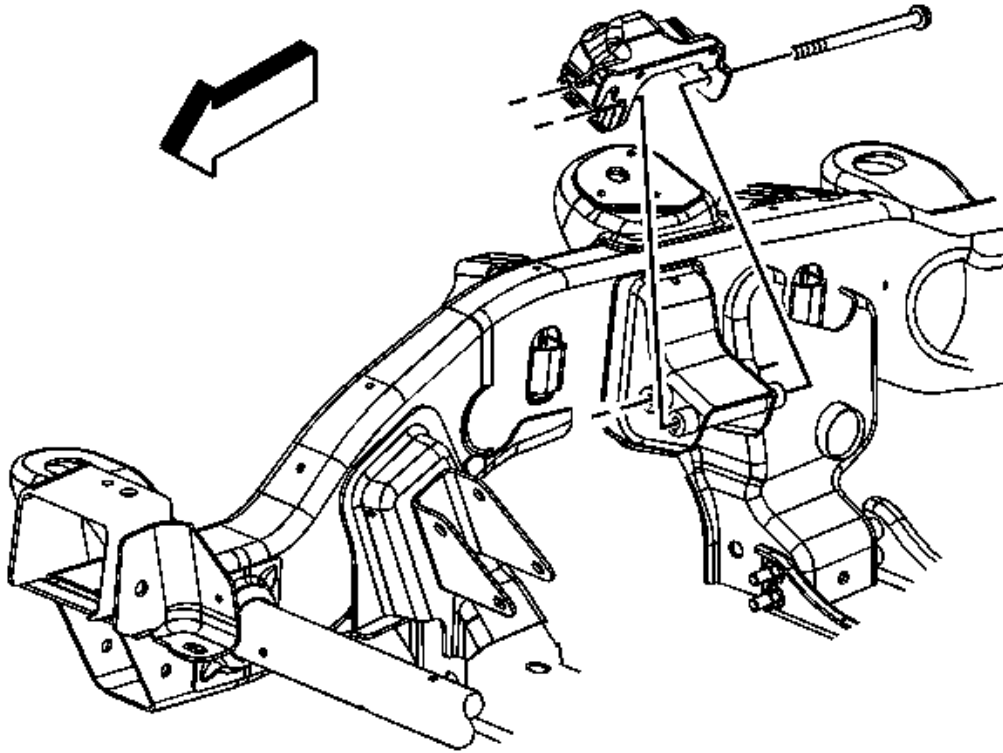


Fig. 65: View Of Engine Mount Bracket & Bolts
Courtesy of GENERAL MOTORS CORP.

1. Position the engine mount bracket to the frame.
2. Perform the following steps prior to installing the engine mount bracket bolts.
 - Remove all traces of the original adhesive patch.
 - Clean the threads of the bolt with denatured alcohol or equivalent and allow to dry.
 - Apply threadlock GM P/N 12345382 (Canadian P/N 10953489) or equivalent to the bolts.

NOTE: Refer to Fastener Notice .

3. Install the engine mount bracket bolts.

Tighten: Tighten the bolts to 65 N.m (48 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

4. Install the engine mount. Refer to **Engine Mount Replacement - Right Side (1500 LH6, LMG, LY5, L76 and L92)** or **Engine Mount Replacement - Right Side (1500 LY2)** or **Engine Mount Replacement - Right Side (2500 LY6)**.

UPPER INTAKE MANIFOLD SIGHT SHIELD REPLACEMENT

Removal Procedure

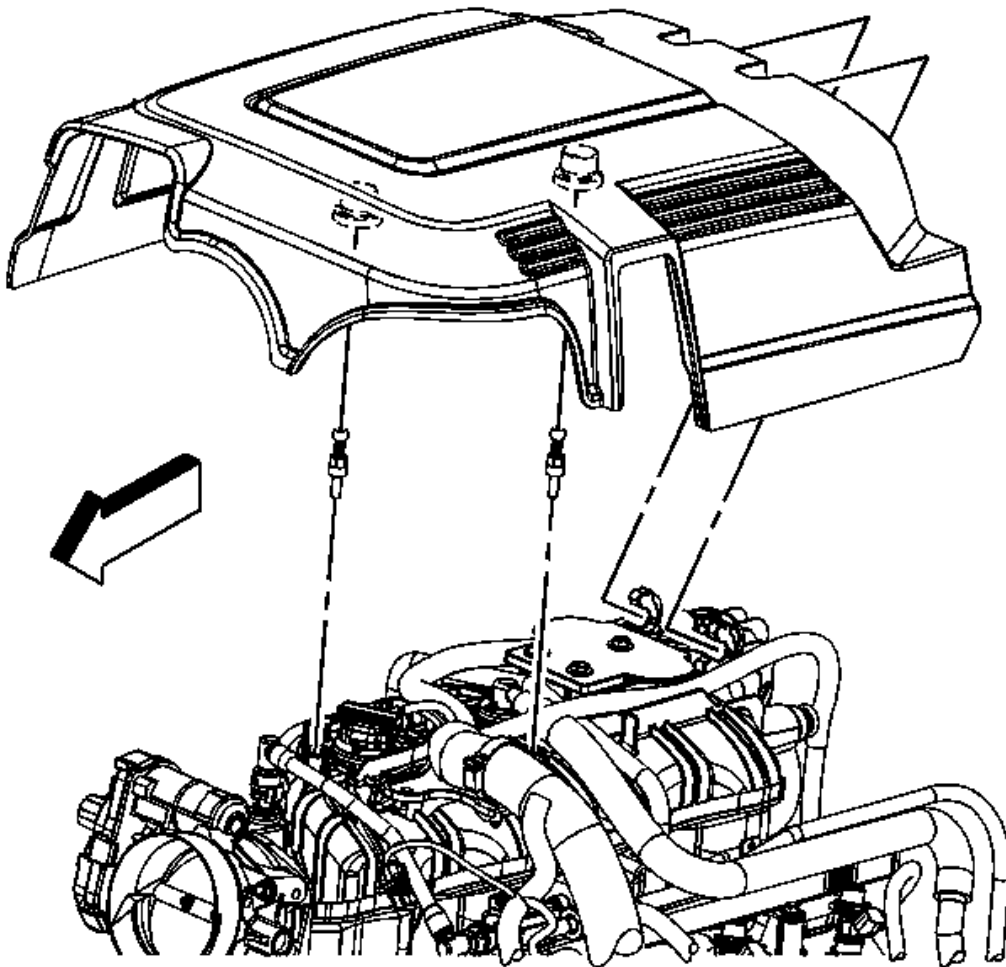


Fig. 66: View Of Upper Intake Manifold Sight Shield
Courtesy of GENERAL MOTORS CORP.

1. Open the hood.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Grasp the front of the intake manifold sight shield and lift up disengaging the grommets from the studs.
3. Remove the intake manifold sight shield from the retainer slots.

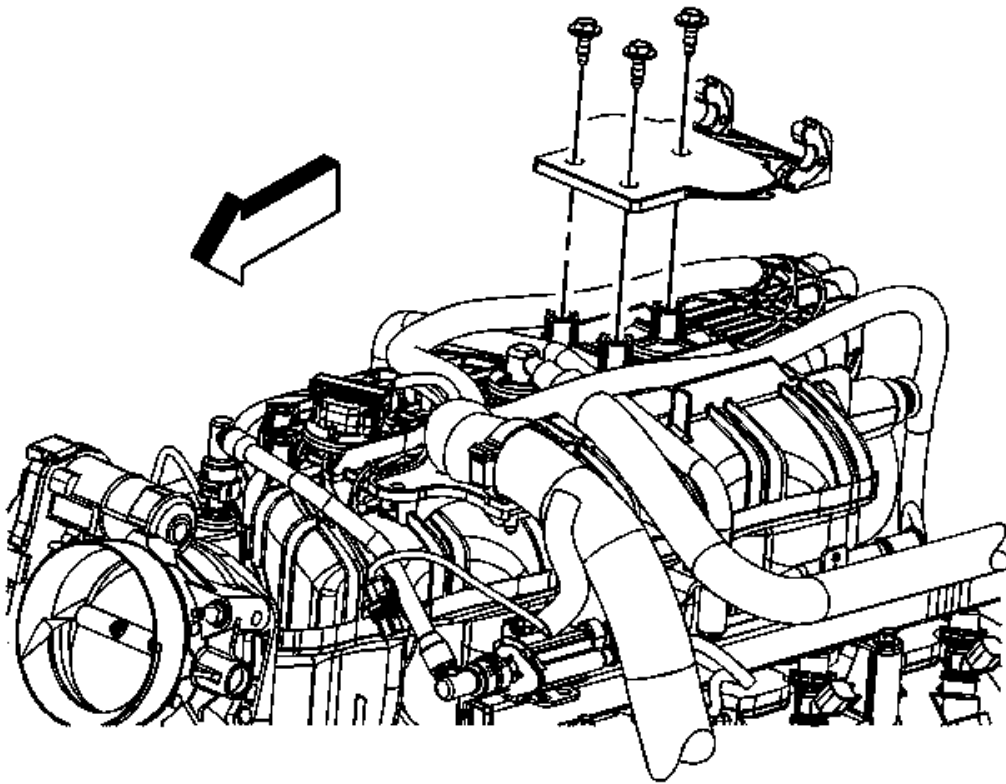


Fig. 67: View Of Intake Manifold Sight Shield Retainer & Bolts
Courtesy of GENERAL MOTORS CORP.

4. Remove the intake manifold sight shield retainer bolts and retainer, if required.

Installation Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

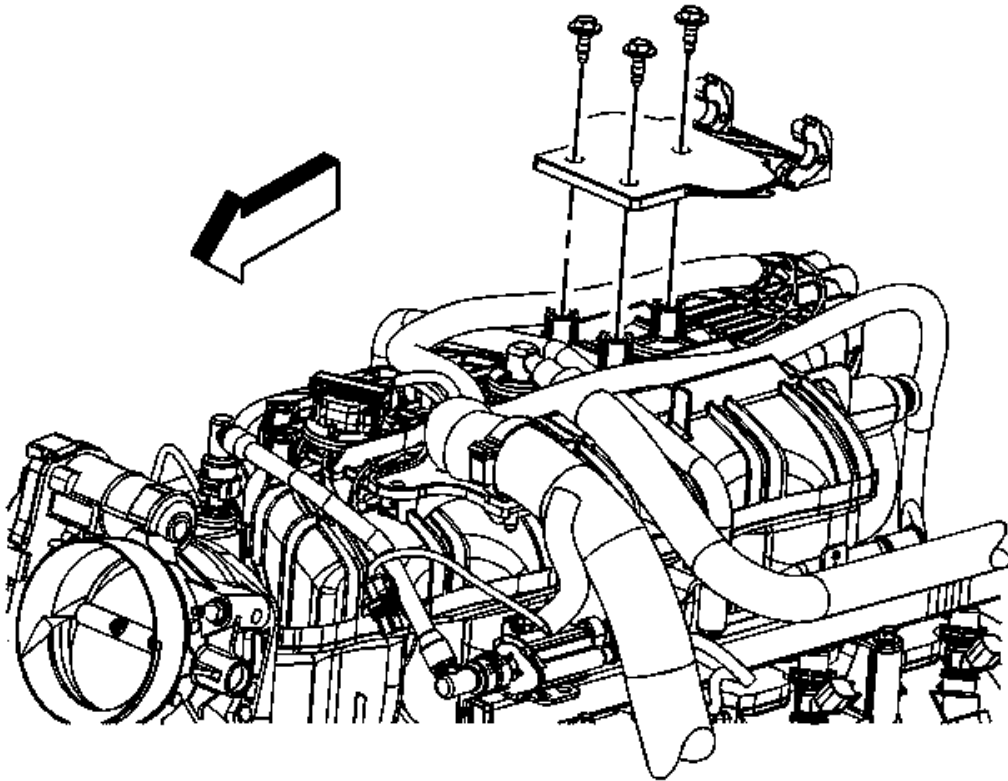


Fig. 68: View Of Intake Manifold Sight Shield Retainer & Bolts
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

1. Position the intake manifold sight shield on top of the intake manifold, aligning the holes, if required.
2. Install the intake manifold sight shield retainer bolts, if required.

Tighten: Tighten the bolts to 5 N.m (44 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

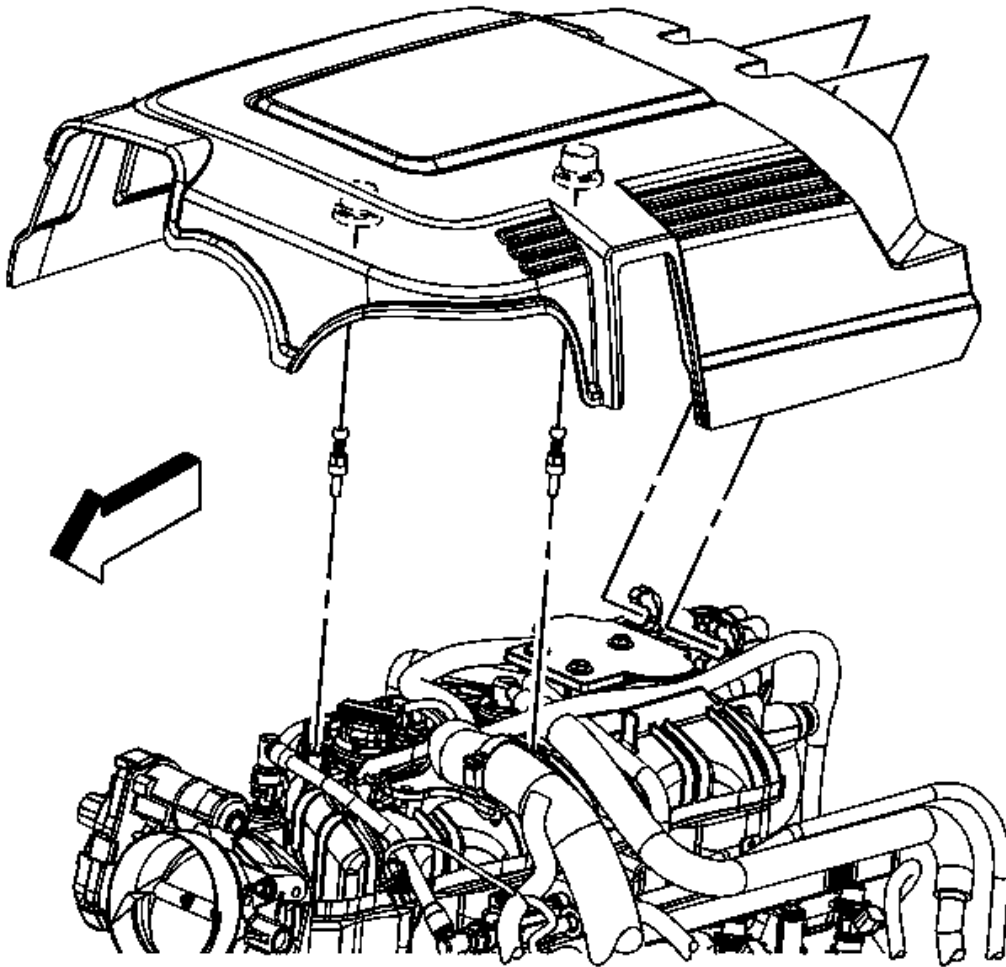


Fig. 69: View Of Upper Intake Manifold Sight Shield
Courtesy of GENERAL MOTORS CORP.

3. Install the intake manifold sight shield tabs into the slots in the retainer.
4. Align the intake manifold sight shield grommets with the studs.
5. Gently push down on the intake manifold sight shield over the grommets, seating the intake manifold sight shield.
6. Close the hood.

POSITIVE CRANKCASE VENTILATION HOSE/PIPE/TUBE REPLACEMENT

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Removal Procedure

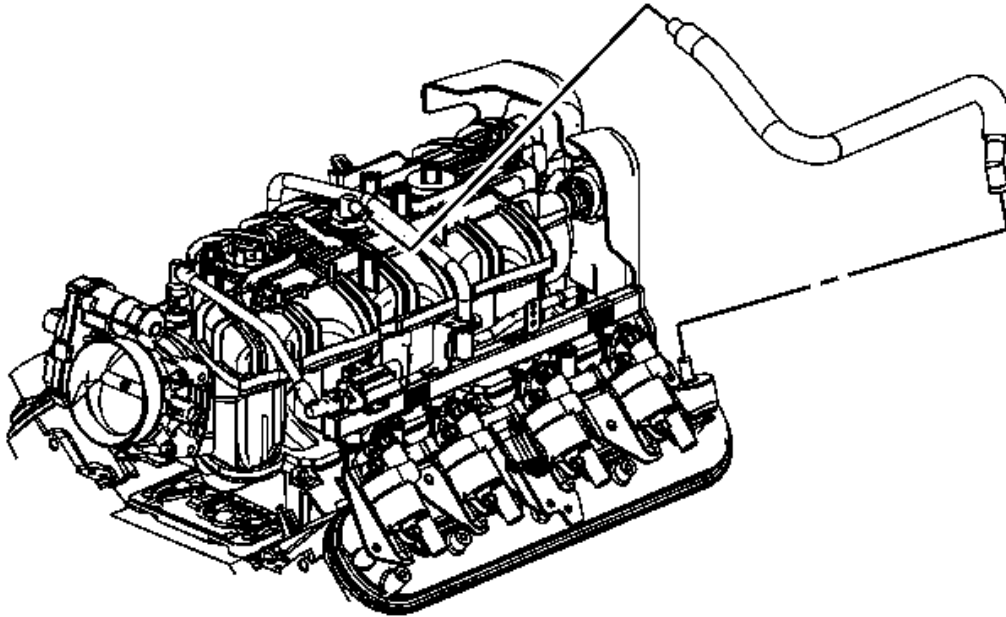


Fig. 70: View Of PCV Hose
Courtesy of GENERAL MOTORS CORP.

1. Remove the intake manifold sight shield. Refer to **Upper Intake Manifold Sight Shield Replacement**.
2. Remove the positive crankcase ventilation (PCV) hose from the intake manifold fitting and left valve rocker arm cover, if required.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

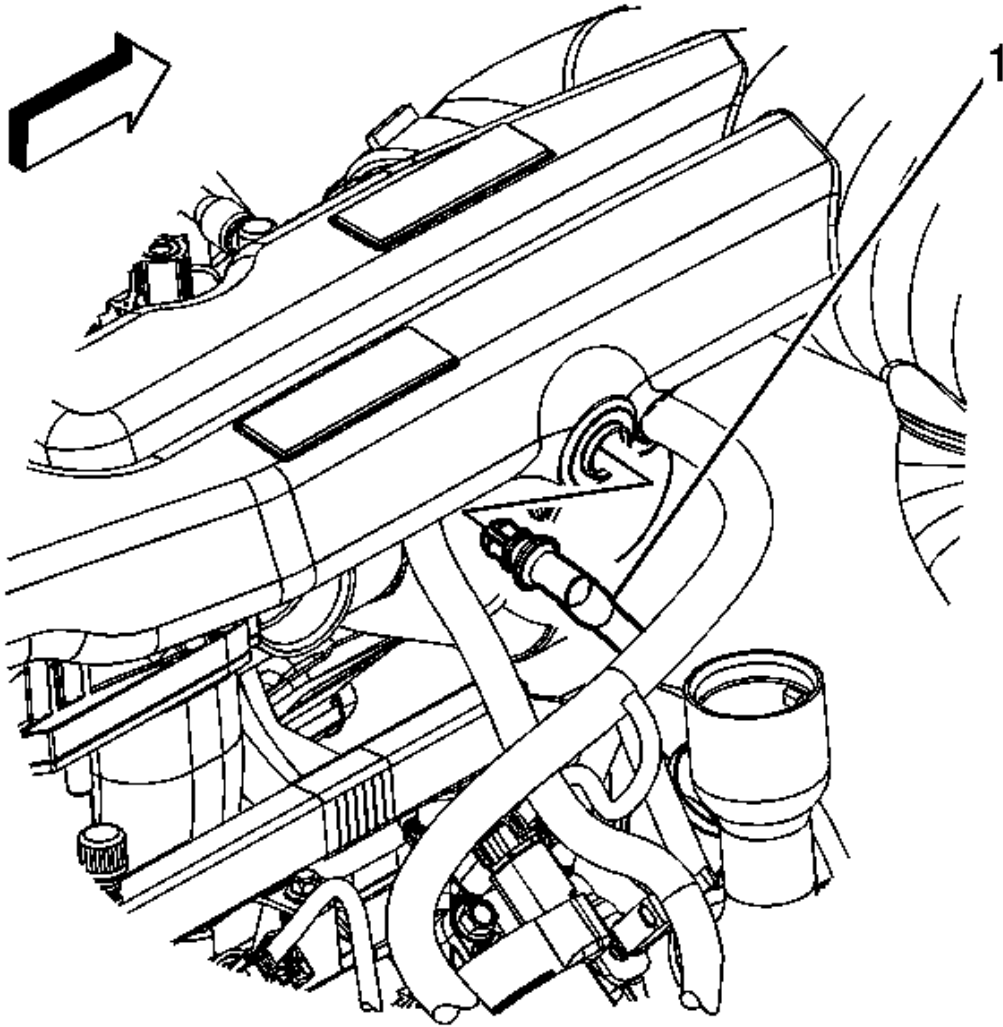


Fig. 71: View Of PCV Tube
Courtesy of GENERAL MOTORS CORP.

3. Remove the PCV tube (1) from the air cleaner outlet duct, if required.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

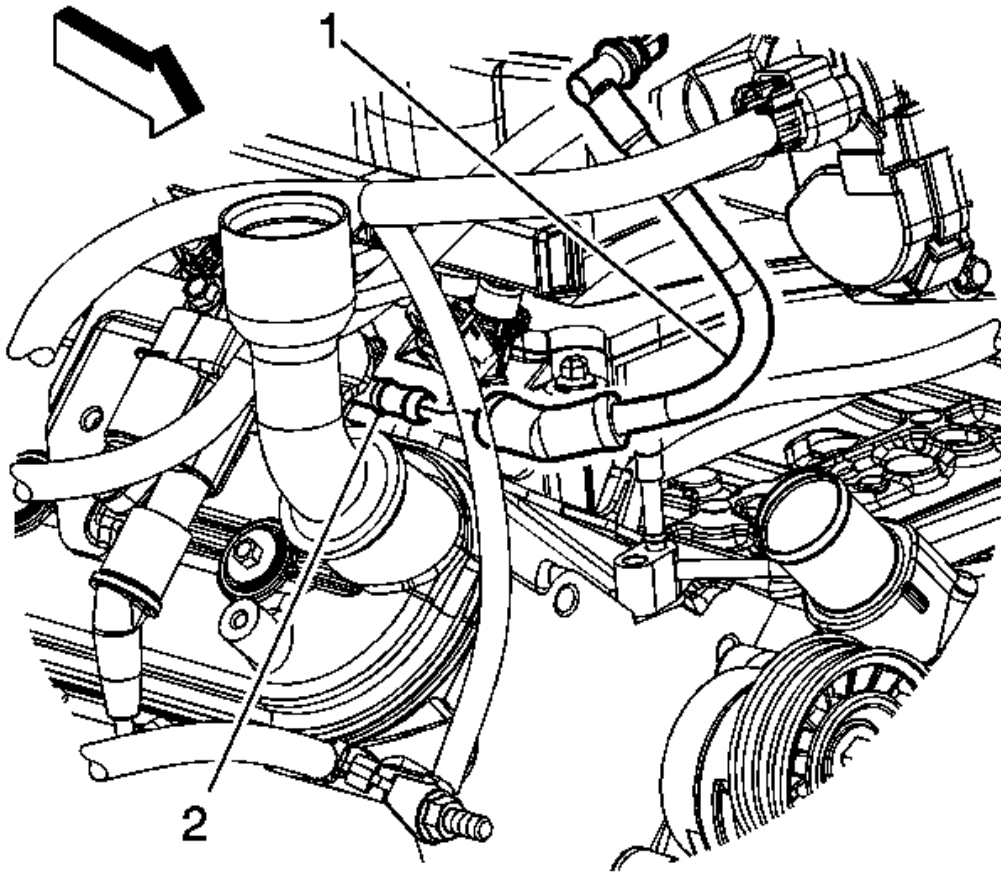


Fig. 72: View Of PCV Tube & Right Valve Rocker Arm Cover Fitting
Courtesy of GENERAL MOTORS CORP.

4. Remove the PCV tube (1) from the right valve rocker arm cover fitting (2), if required.
5. Remove the appropriate PCV hose/tube from the vehicle.

Installation Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

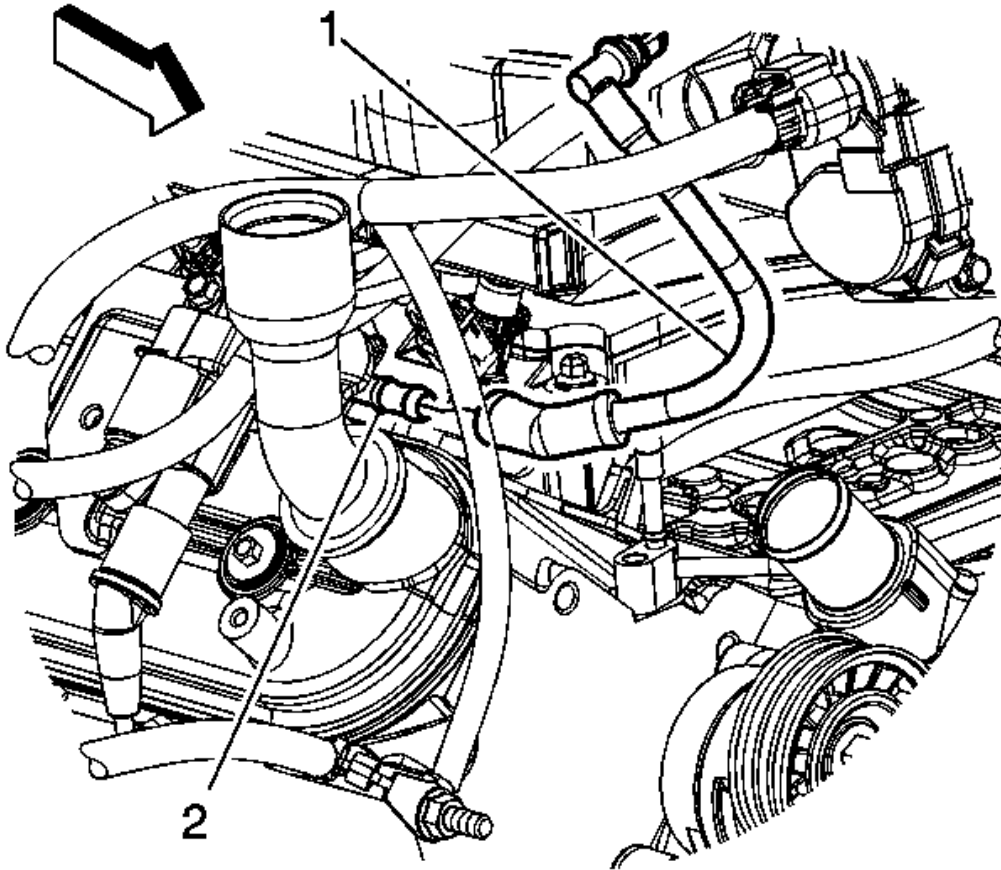


Fig. 73: View Of PCV Tube & Right Valve Rocker Arm Cover Fitting
Courtesy of GENERAL MOTORS CORP.

1. Install the appropriate PCV hose/tube to the vehicle.
2. Install the PCV tube (1) to the right valve rocker arm cover fitting (2), if required.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

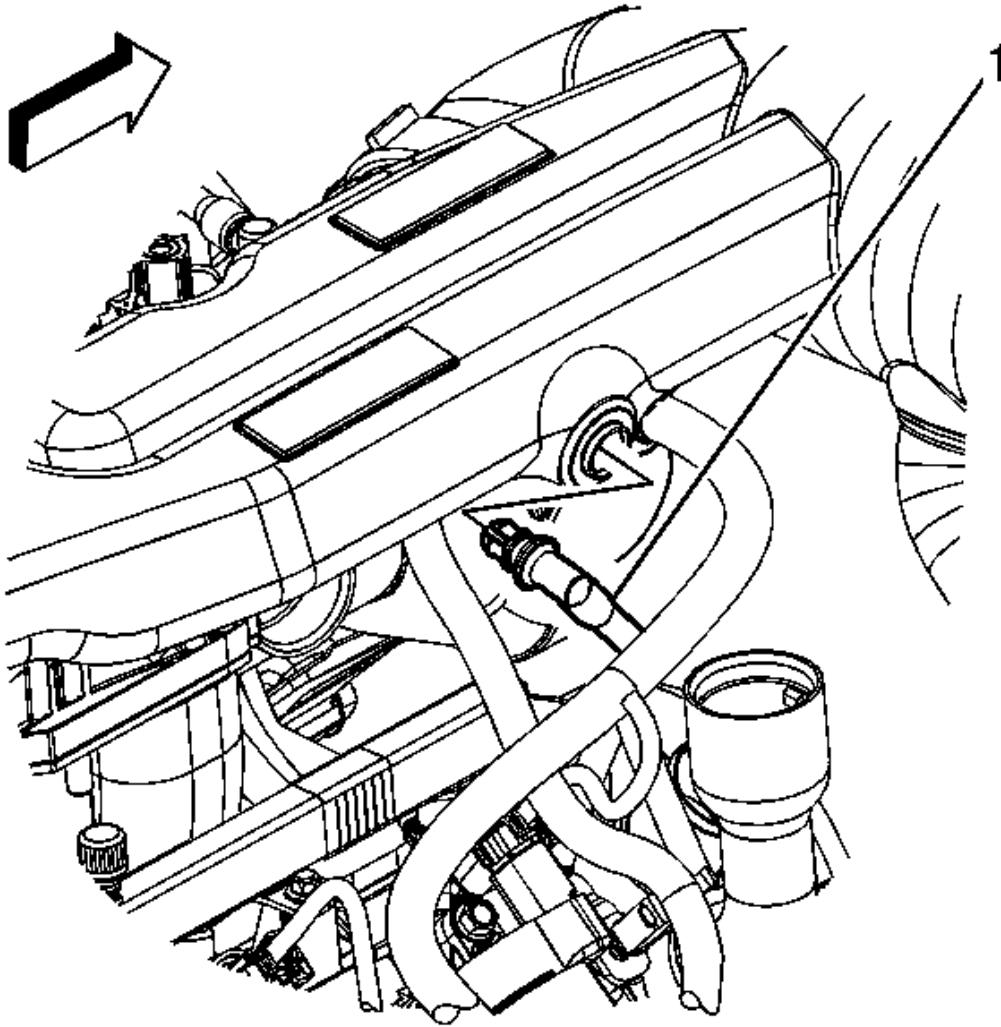


Fig. 74: View Of PCV Tube

Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Route the PCV tube between the engine harness and generator battery jumper cable.

3. Install the PCV tube (1) to the air cleaner outlet duct, if required.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

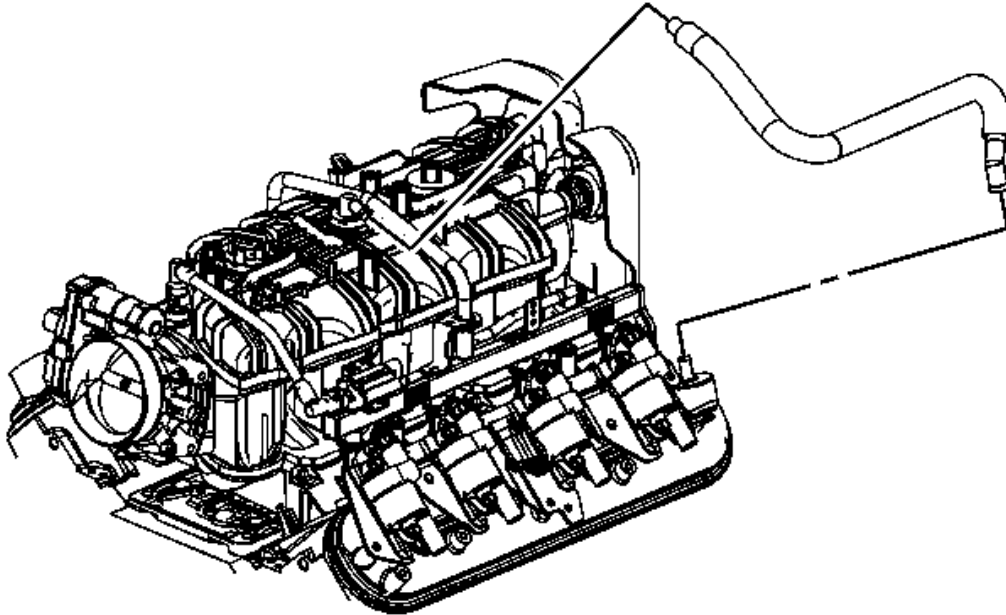


Fig. 75: View Of PCV Hose
Courtesy of GENERAL MOTORS CORP.

4. Install the PCV hose to the intake manifold fitting and left valve rocker arm cover, if required.
5. Install the intake manifold sight shield. Refer to **Upper Intake Manifold Sight Shield Replacement**.

INTAKE MANIFOLD REPLACEMENT (L92 - FIRST DESIGN)

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

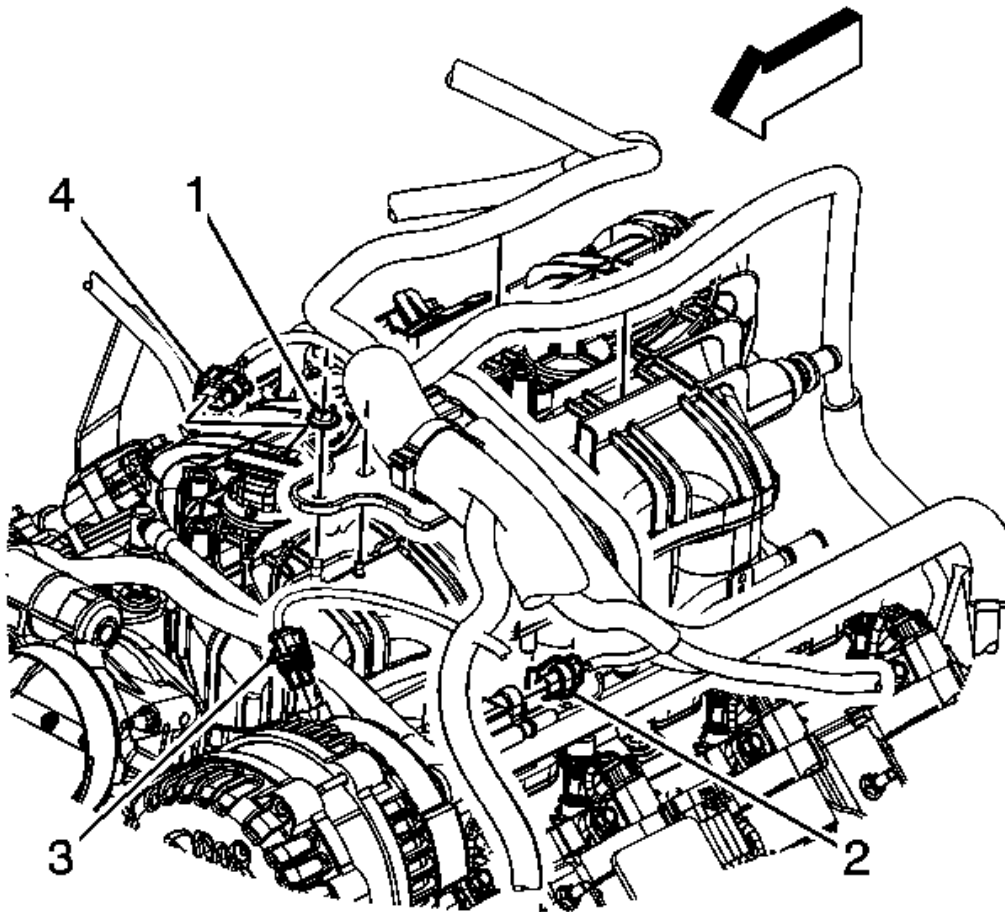


Fig. 76: View Of Engine Harness Retainer Nut & Electrical Connectors
Courtesy of GENERAL MOTORS CORP.

1. Remove the air cleaner outlet duct. Refer to **Air Cleaner Resonator Outlet Duct Replacement** .
2. Remove the generator. Refer to **Generator Replacement (4.8L, 5.3L, 6.0L, and 6.2L)** .
3. Remove the engine harness retainer nut (1).
4. Remove the engine harness retainer from the stud and locator.
5. Disconnect the engine harness electrical connector (2) from the evaporative emission (EVAP) canister purge solenoid.
6. Disconnect the engine wiring harness electrical connector (4) from the manifold absolute

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

pressure (MAP) sensor.

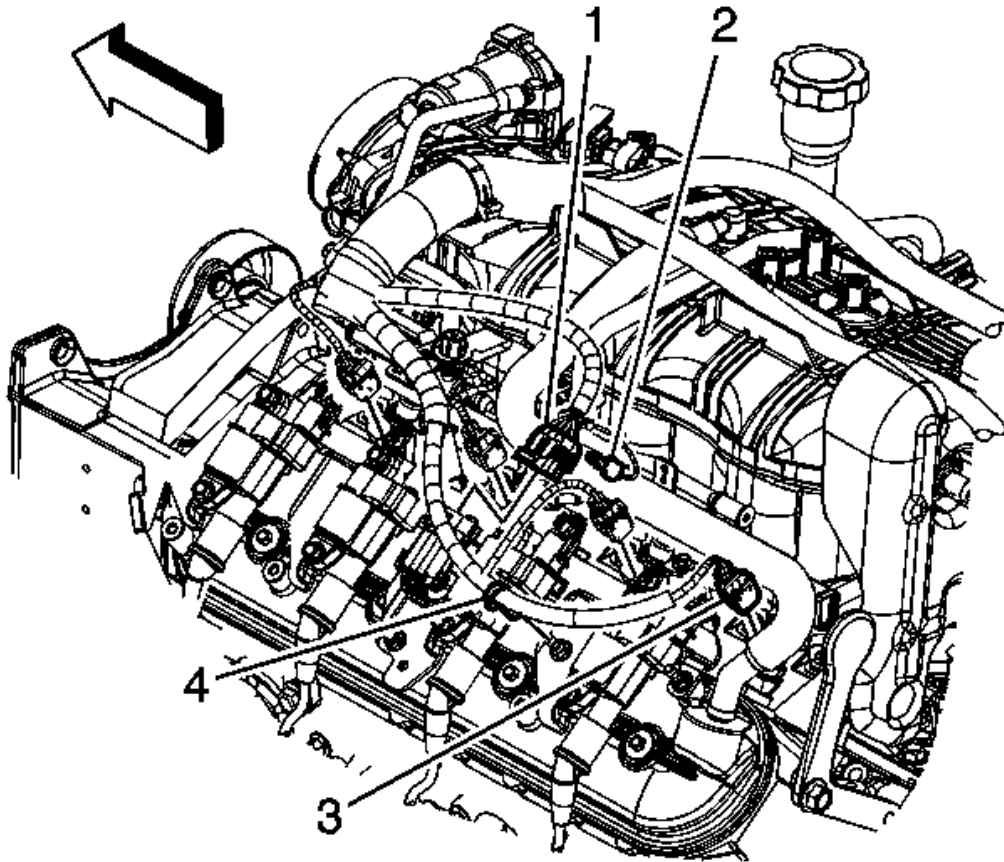


Fig. 77: View Of CPA Retainer, Electrical Connectors & Engine Harness Clips
Courtesy of GENERAL MOTORS CORP.

7. Remove the connector position assurance (CPA) retainer (1).
8. Disconnect the engine harness electrical connector (1) from the ignition coil harness electrical connector.
9. Disconnect the engine harness electrical connectors (3) from the left side fuel injectors.
10. Remove the engine harness clip (4) from the ignition coil bracket stud.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

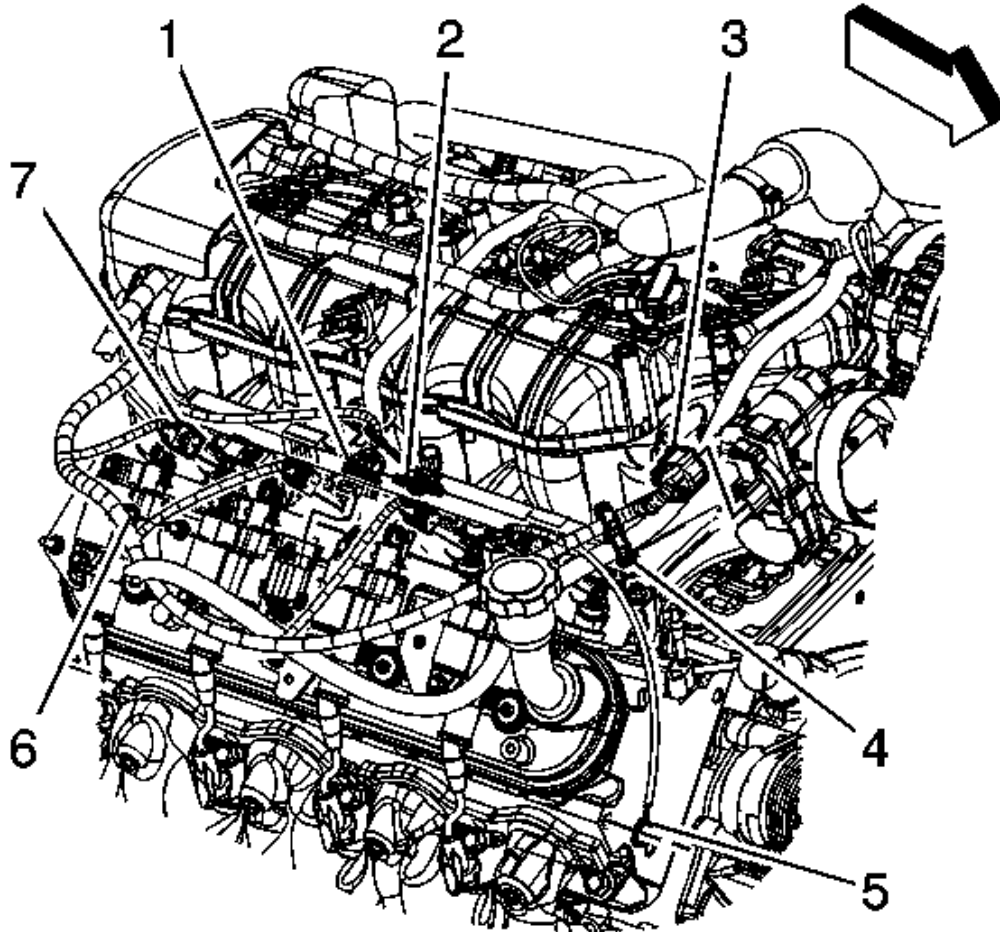


Fig. 78: View Of CPA Retainer, Engine Harness Electrical Connectors & Harness Clips

Courtesy of GENERAL MOTORS CORP.

11. Remove the CPA retainer (2).
12. Disconnect the engine harness electrical connector (1) from the ignition coil harness electrical connector.
13. Disconnect the engine harness electrical connector (3) from the throttle actuator.
14. Remove the engine harness clip (4) from the generator battery jumper cable.
15. Remove the engine harness clip (6) from the ignition coil bracket stud.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

16. Disconnect the engine harness electrical connectors (7) from the right side fuel injectors.

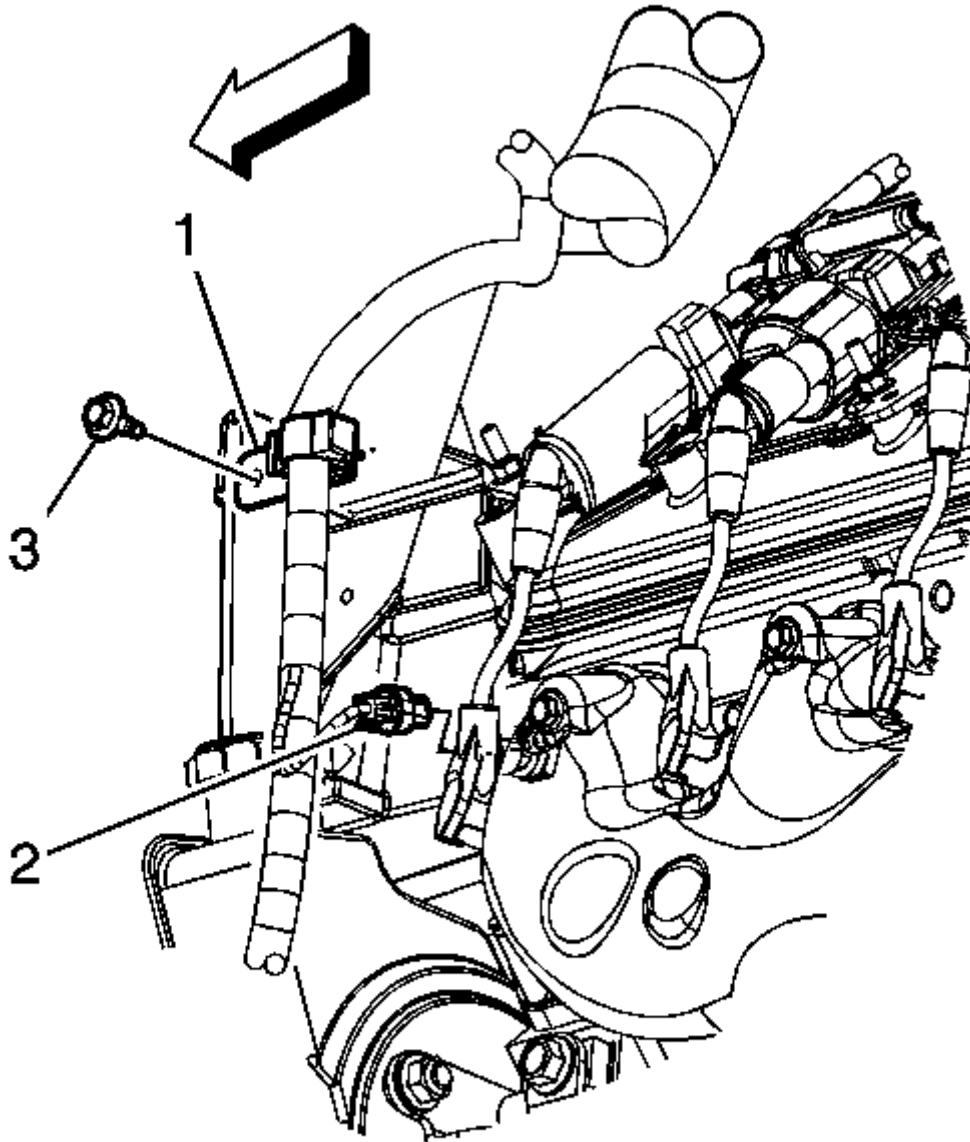


Fig. 79: View Of Engine Wiring Harness, Clip, Bolt & Connector
Courtesy of GENERAL MOTORS CORP.

17. Remove the engine harness clip (1) bolt (3).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

18. Disconnect the engine harness electrical connector (2) from the engine coolant temperature (ECT) sensor.
19. Gather the engine harness branches and tie the harness up out of the way to the cowl panel.

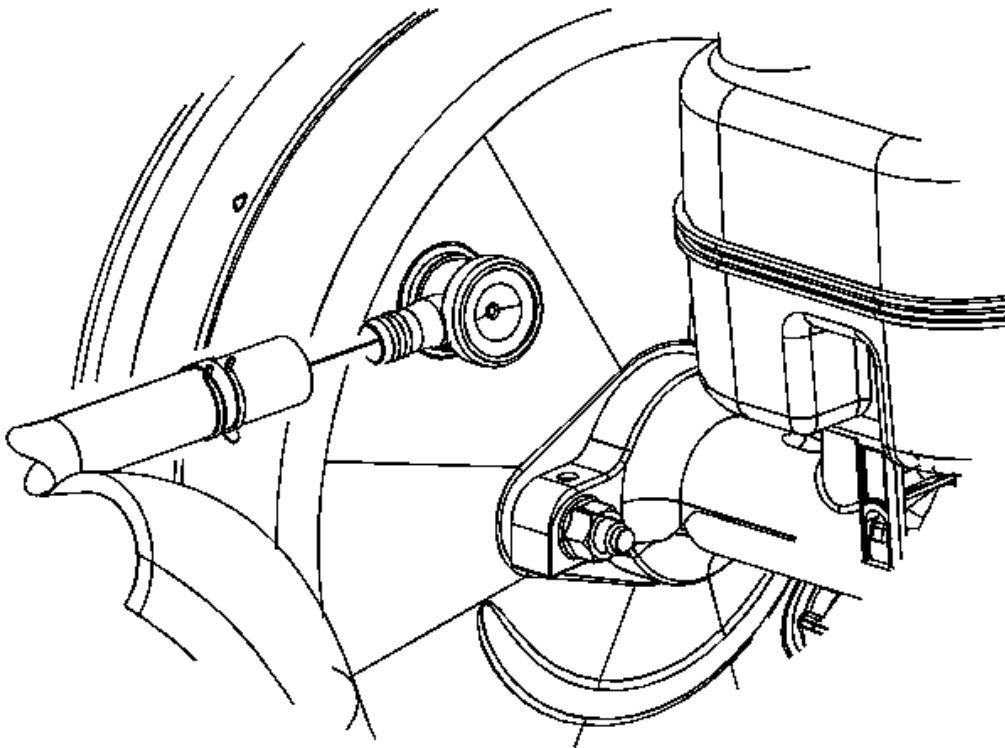


Fig. 80: View Of Brake Booster Vacuum Hose & Booster Fitting
Courtesy of GENERAL MOTORS CORP.

20. Reposition the brake booster vacuum hose clamp at the booster.
21. Remove the brake booster vacuum hose from the booster fitting.
22. Secure the brake booster vacuum hose to the intake manifold.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

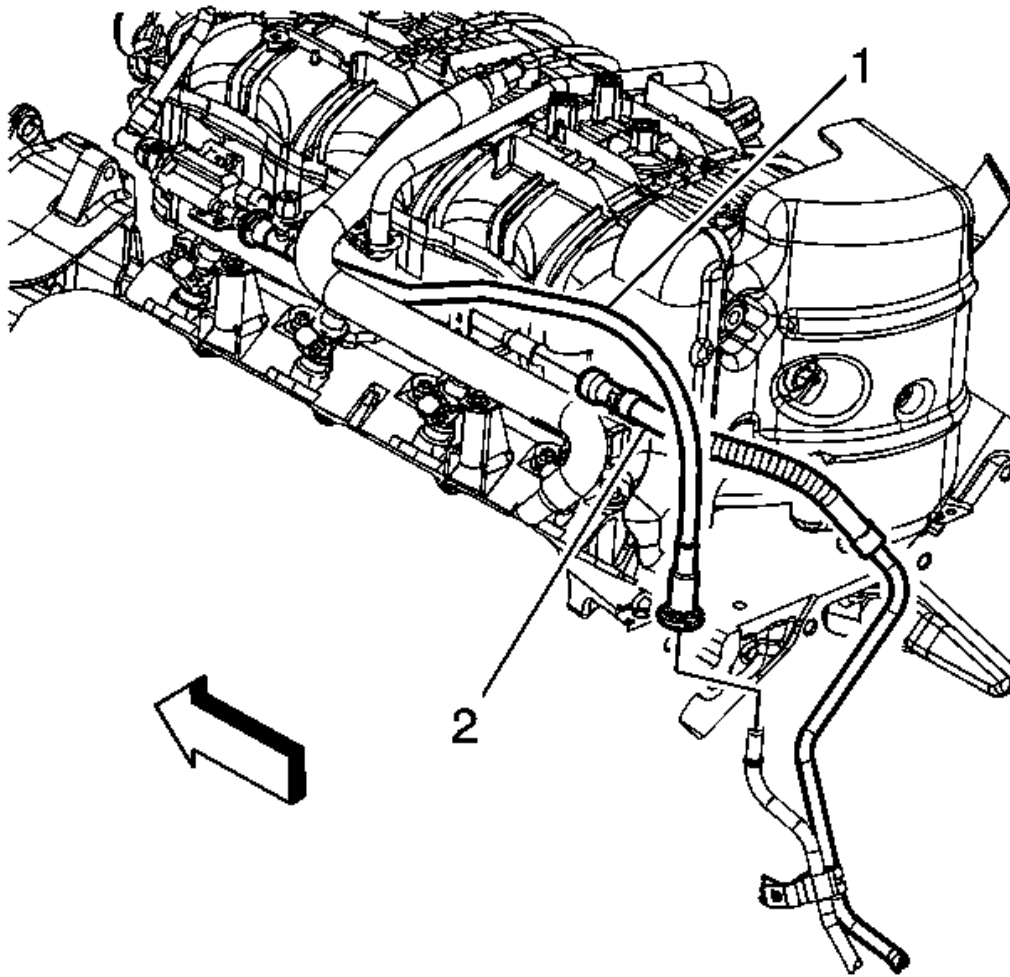


Fig. 81: View Of EVAP Canister Purge Tube & Quick Connect Fitting
Courtesy of GENERAL MOTORS CORP.

23. Disconnect the EVAP canister purge tube (1) quick connect fitting from the EVAP canister purge solenoid. Refer to **Plastic Collar Quick Connect Fitting Service** .
24. Disconnect the fuel feed line quick connect fitting (2) from the fuel rail. Refer to **Metal Collar Quick Connect Fitting Service** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

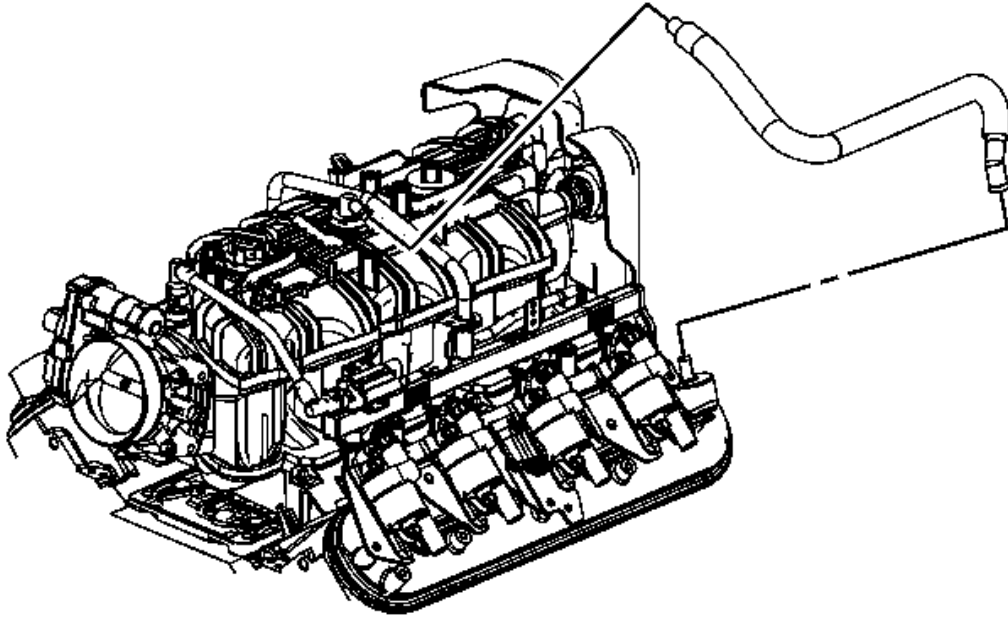


Fig. 82: View Of PCV Hose
Courtesy of GENERAL MOTORS CORP.

25. Remove the positive crankcase ventilation (PCV) hose from the intake manifold fitting.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

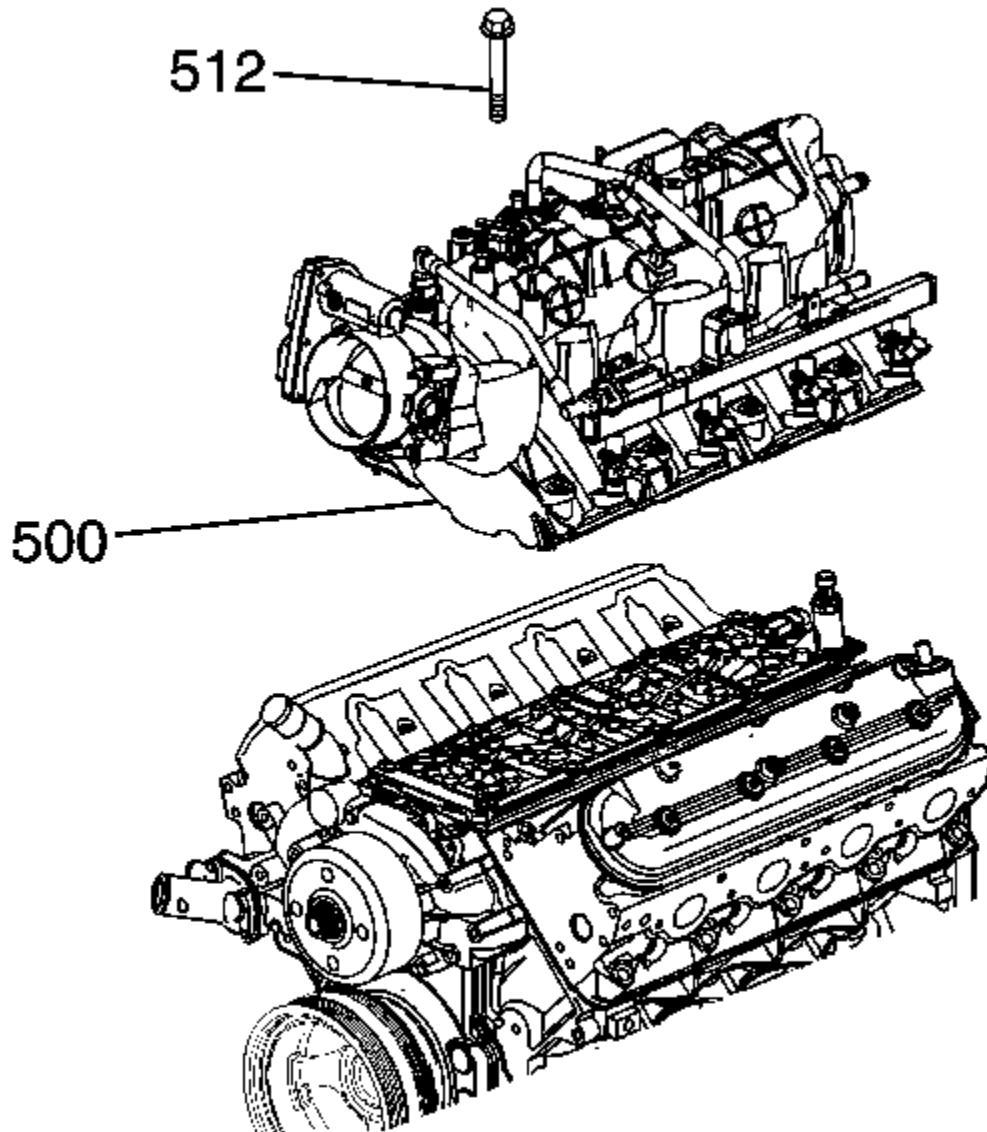


Fig. 83: Intake Manifold

Courtesy of GENERAL MOTORS CORP.

26. Loosen the intake manifold bolts.
27. Remove the intake manifold (500).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

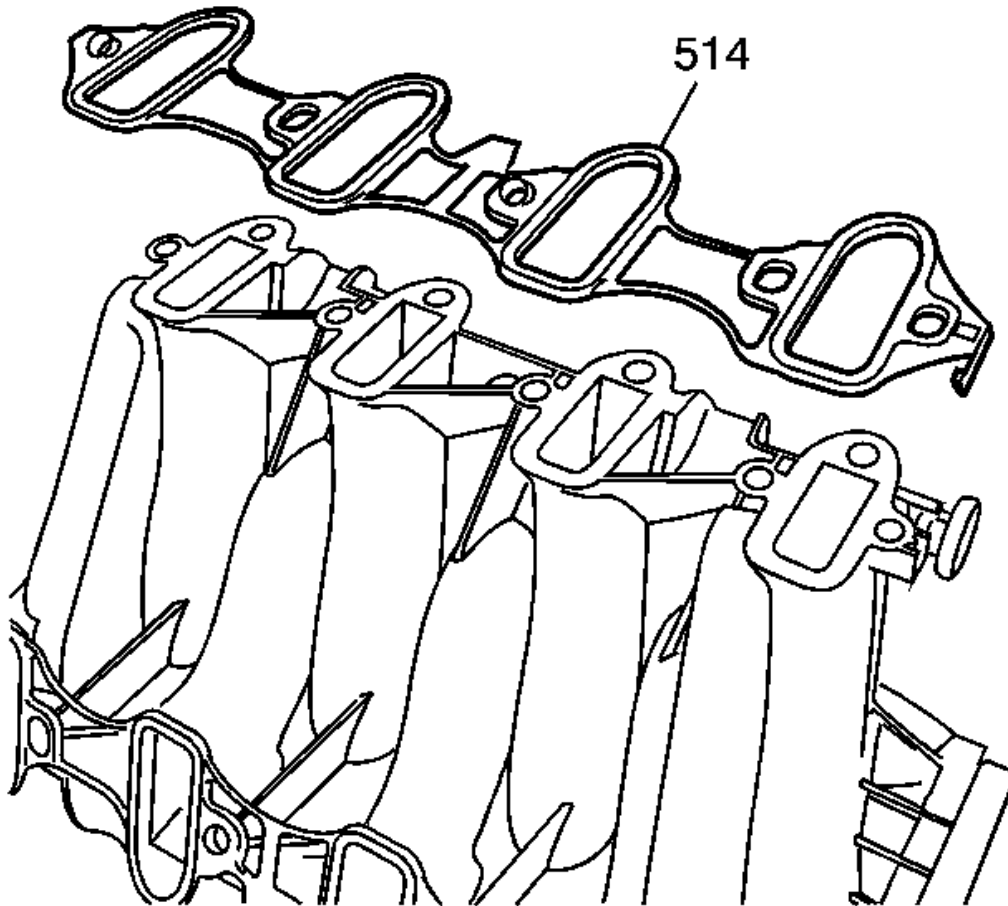


Fig. 84: View Of Intake Manifold-To-Cylinder Head Gasket
Courtesy of GENERAL MOTORS CORP.

28. Remove and discard the intake manifold gaskets (514).
29. Cover the cylinder head passages in order to prevent dirt or debris from entering the passages.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

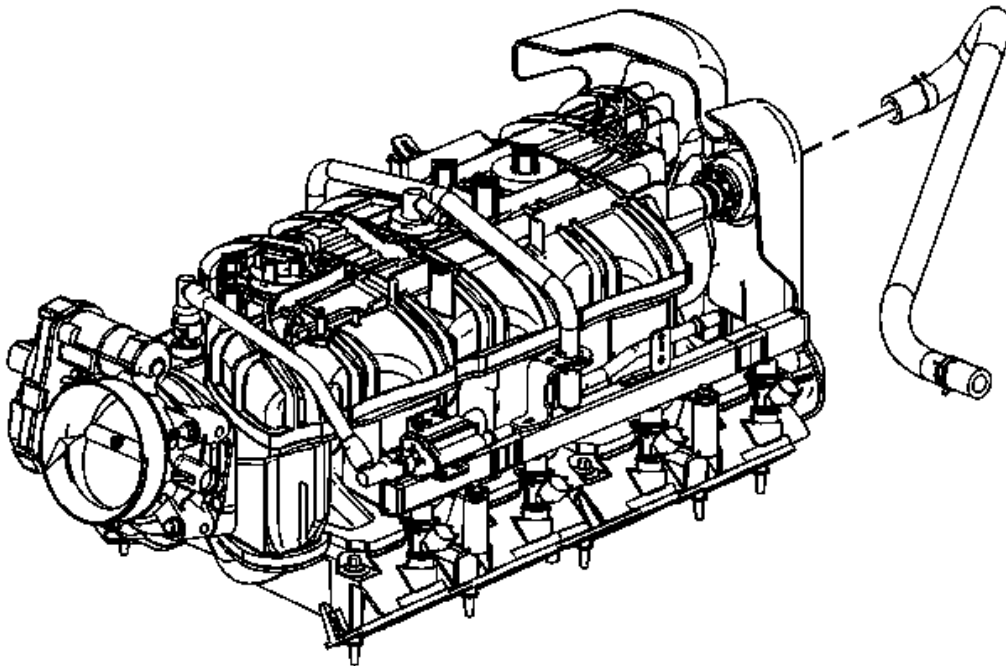


Fig. 85: View Of Vacuum Brake Booster Hose
Courtesy of GENERAL MOTORS CORP.

30. If replacing the intake manifold, perform the following steps, otherwise proceed to step 21 of the installation procedure.
31. Place the intake manifold on a clean work surface.
32. Reposition the brake booster vacuum hose clamp at the intake manifold.
33. Remove the brake booster vacuum hose from the intake manifold nipple.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

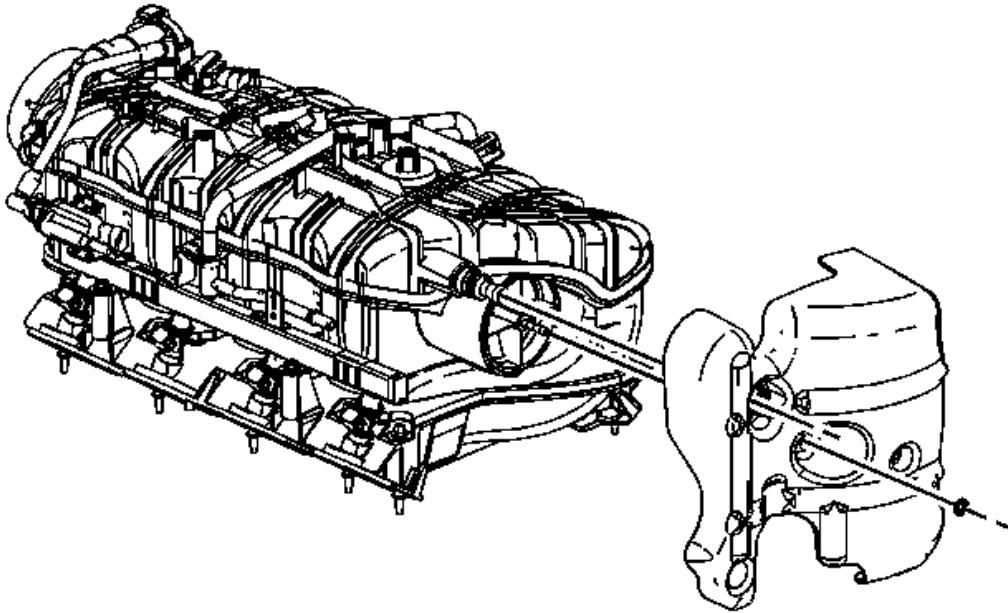


Fig. 86: View Of Upper Intake Manifold Cover & Nut
Courtesy of GENERAL MOTORS CORP.

34. Remove the upper intake manifold cover nut.
35. Remove the upper intake manifold cover.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

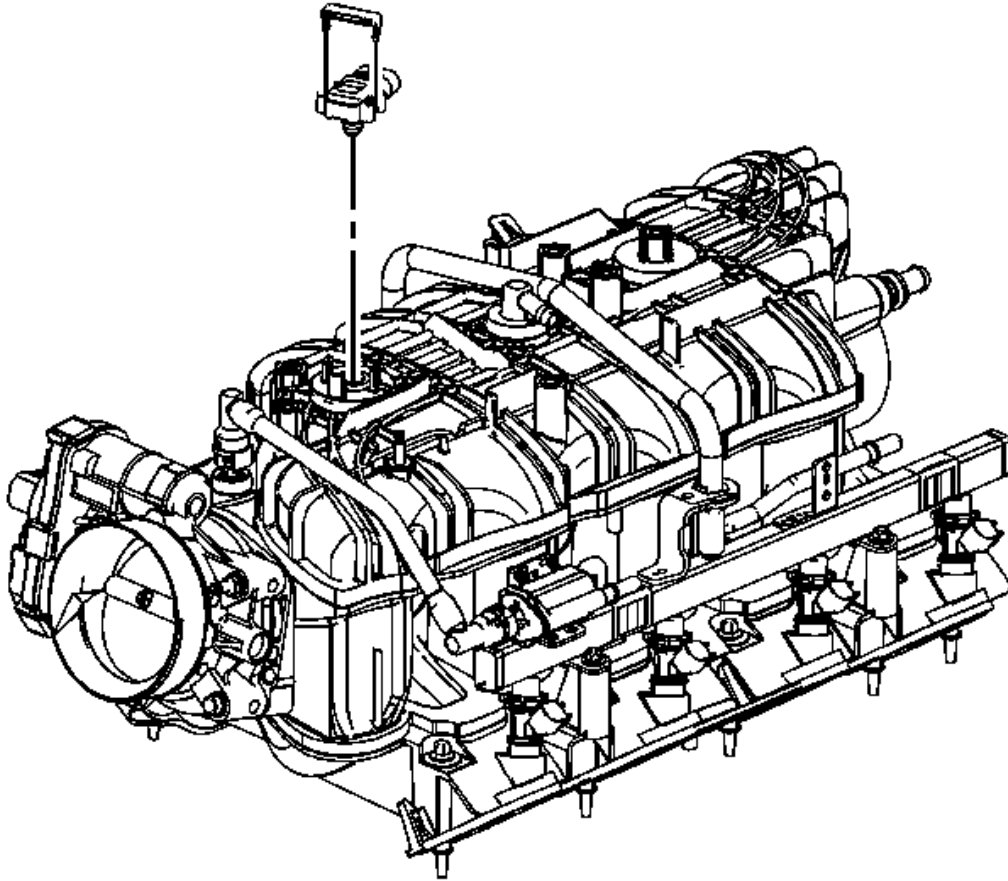


Fig. 87: View Of MAP Sensor & Retainer
Courtesy of GENERAL MOTORS CORP.

36. Remove the manifold absolute pressure (MAP) sensor retainer.
37. Remove the MAP sensor.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

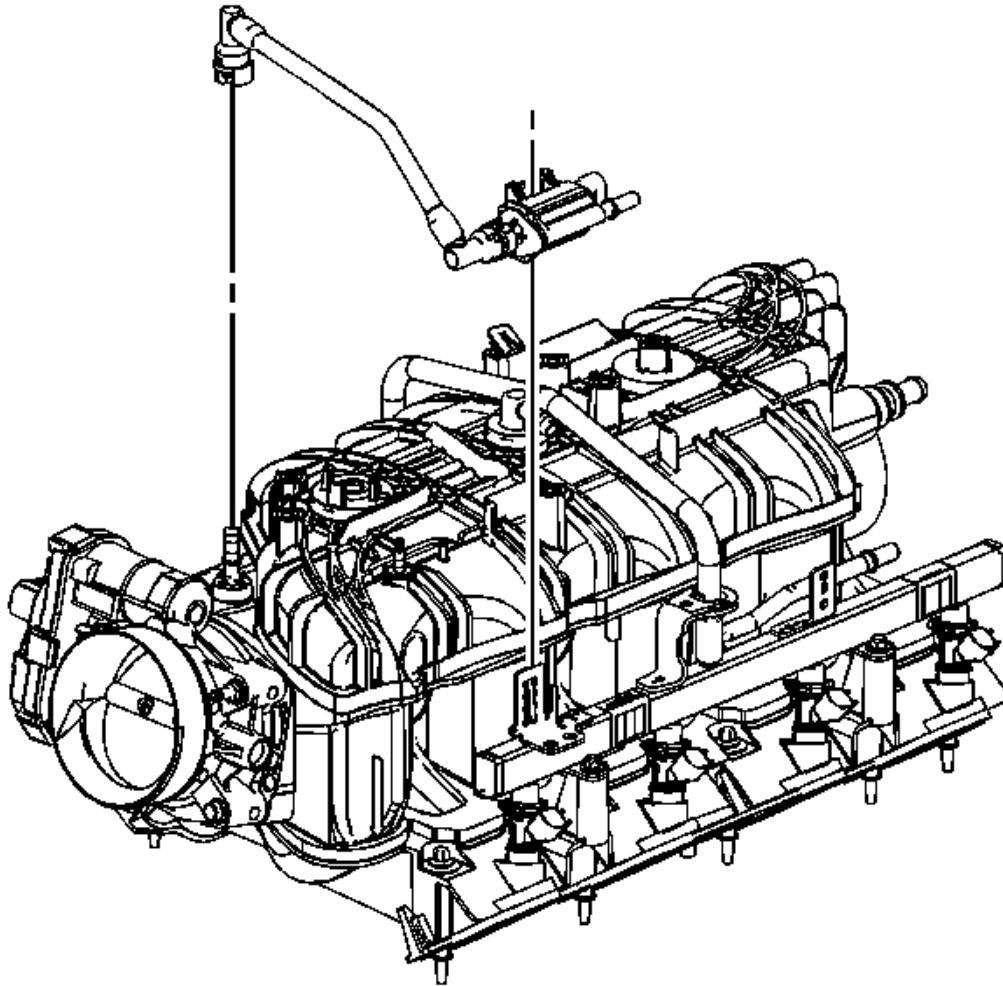


Fig. 88: View Of EVAP Tube & Purge Solenoid
Courtesy of GENERAL MOTORS CORP.

38. Disconnect the EVAP tube quick connect fitting at the intake manifold. Refer to **Plastic Collar Quick Connect Fitting Service** .
39. Disengage the retainer securing the EVAP canister purge solenoid to the fuel rail.
40. Remove the EVAP tube and purge solenoid.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

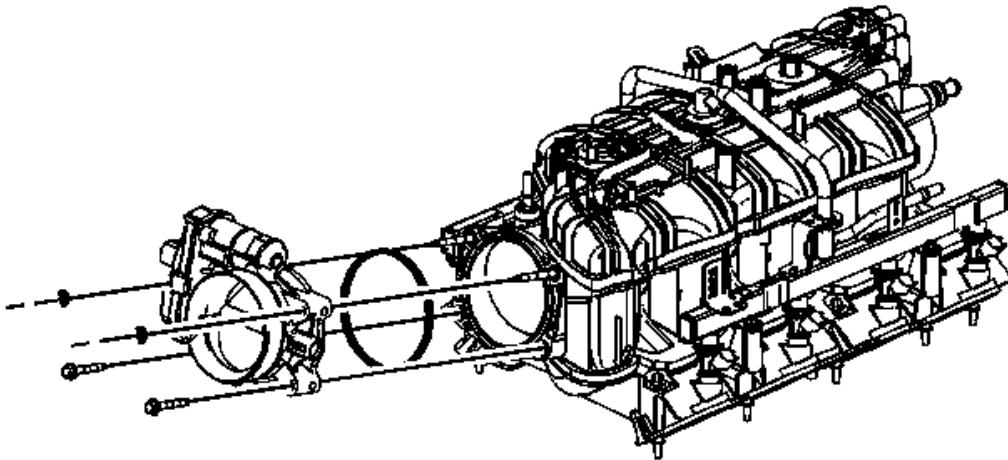


Fig. 89: View Of Throttle Body, Gasket & Bolts/Nuts
Courtesy of GENERAL MOTORS CORP.

41. Remove the throttle body bolts/nuts.
42. Remove the throttle body.
43. Remove and discard the throttle body gasket.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

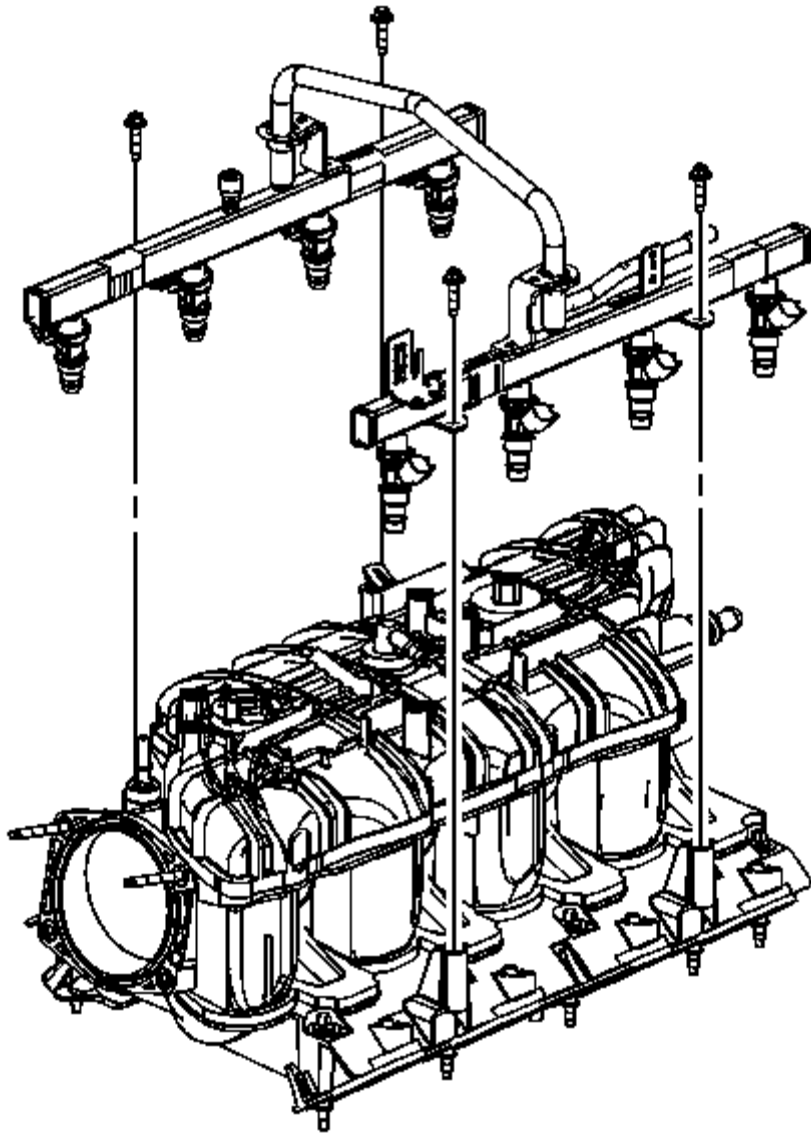


Fig. 90: View Of Fuel Rail & Bolts
Courtesy of GENERAL MOTORS CORP.

44. Remove the fuel rail bolts.

IMPORTANT: Lift evenly on both sides of the fuel rail until all injectors are

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

removed from their bores.

45. Remove the fuel rail.
46. Remove and discard the fuel injector lower O-ring seals.

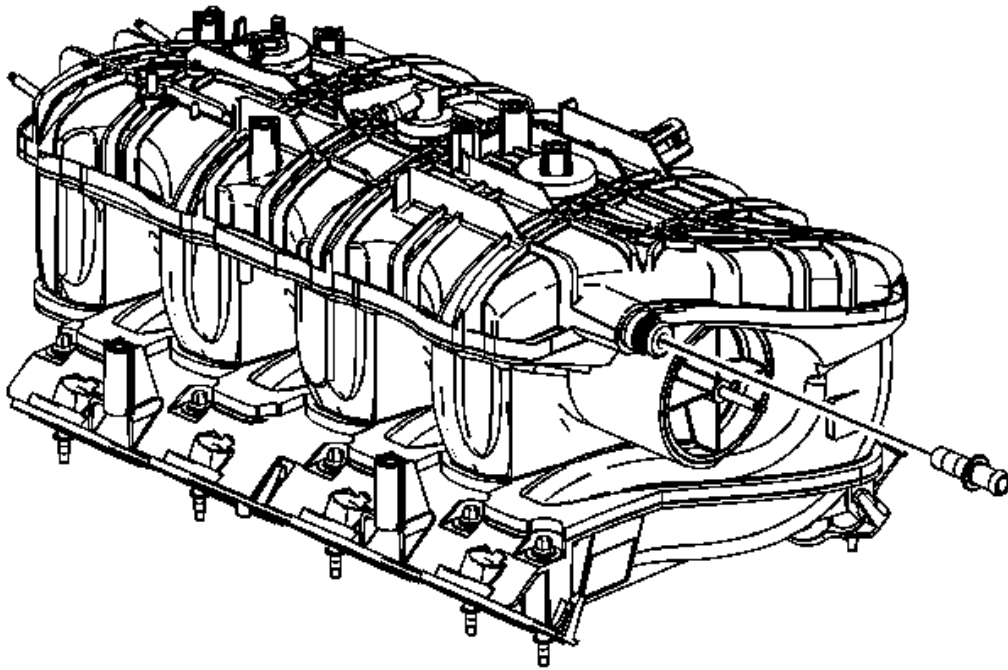


Fig. 91: View Of Brake Booster Vacuum Hose Nipple
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Evenly push in the RED collar in order to remove the nipple.

47. Remove the brake booster vacuum hose nipple.

Installation Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

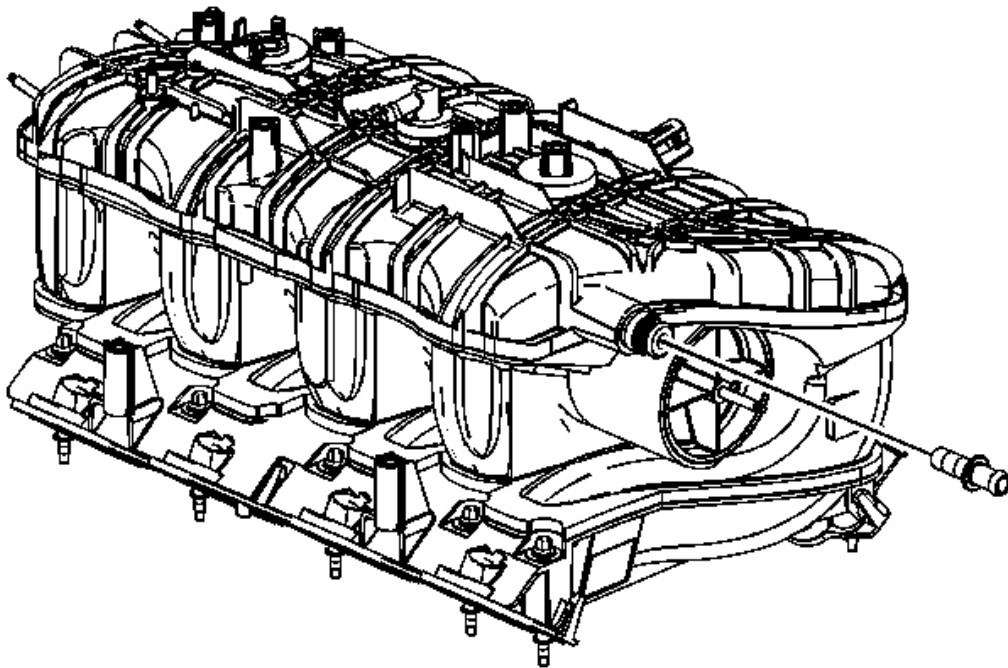


Fig. 92: View Of Brake Booster Vacuum Hose Nipple
Courtesy of GENERAL MOTORS CORP.

1. If the intake manifold was replaced perform the following steps, otherwise proceed to step 21.

IMPORTANT: Evenly push in the RED collar in order to install the nipple.

2. Install the brake booster vacuum hose nipple to the NEW intake manifold.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

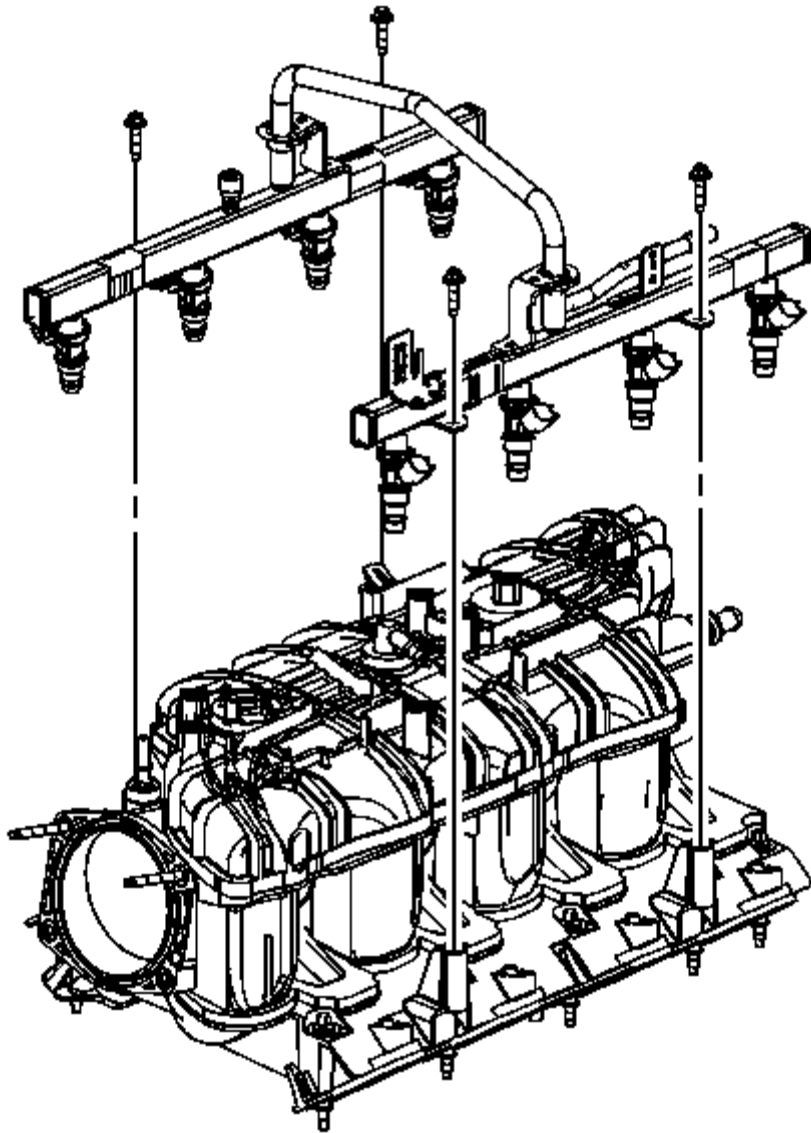


Fig. 93: View Of Fuel Rail & Bolts
Courtesy of GENERAL MOTORS CORP.

3. Install NEW fuel injector lower O-ring seals onto the injectors.
4. Lubricate the NEW O-ring seals with clean engine oil.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

IMPORTANT: Push down firmly on both sides of the rail until all the injectors have been seated into their bores.

5. Install the fuel rail.

NOTE: Refer to Fastener Notice .

6. Install the fuel rail bolts.

Tighten: Tighten the bolts to 10 N.m (89 lb in).

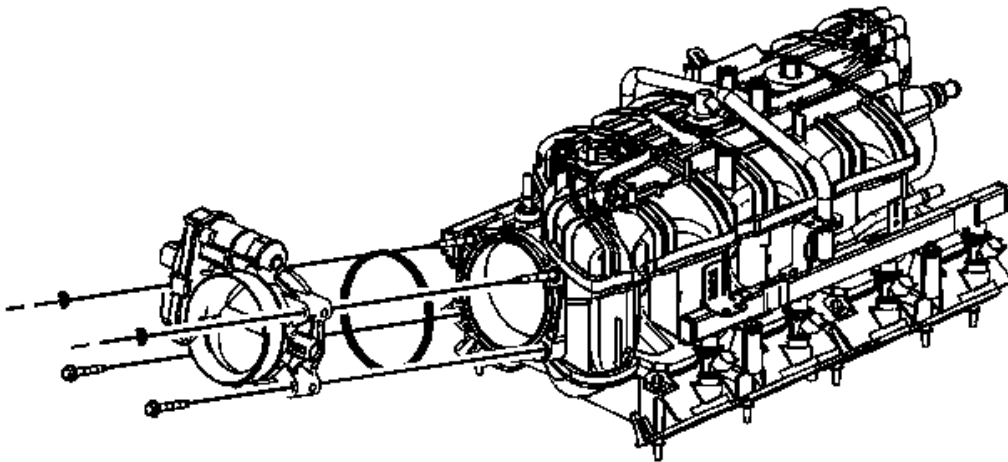


Fig. 94: View Of Throttle Body, Gasket & Bolts/Nuts
Courtesy of GENERAL MOTORS CORP.

7. Install a NEW throttle body gasket to the intake manifold.

8. Install the throttle body.

9. Install the throttle body bolts/nuts.

Tighten: Tighten the bolts/nuts to 10 N.m (89 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

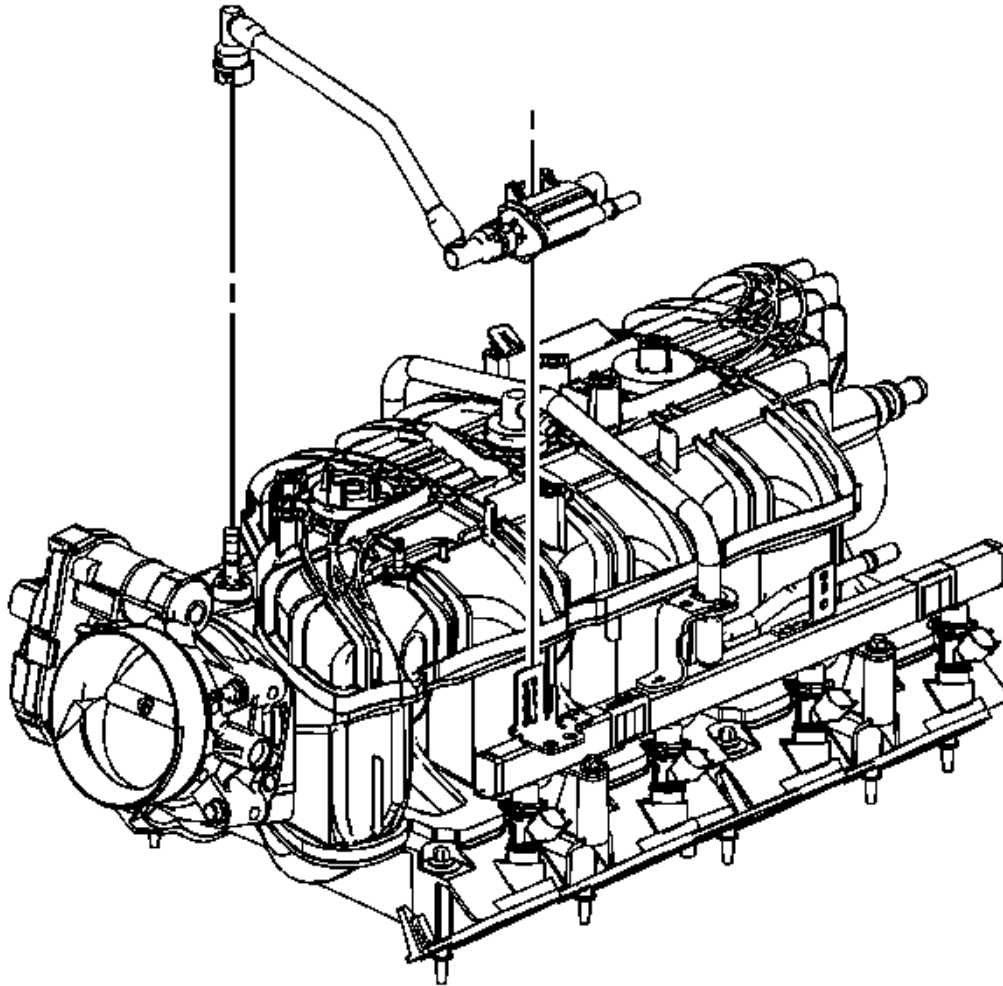


Fig. 95: View Of EVAP Tube & Purge Solenoid
Courtesy of GENERAL MOTORS CORP.

10. Install the EVAP tube and purge solenoid.
11. Install the EVAP canister purge solenoid to the fuel rail bracket and engage the retainer.
12. Connect the EVAP tube quick connect fitting at the intake manifold. Refer to **Plastic Collar Quick Connect Fitting Service** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

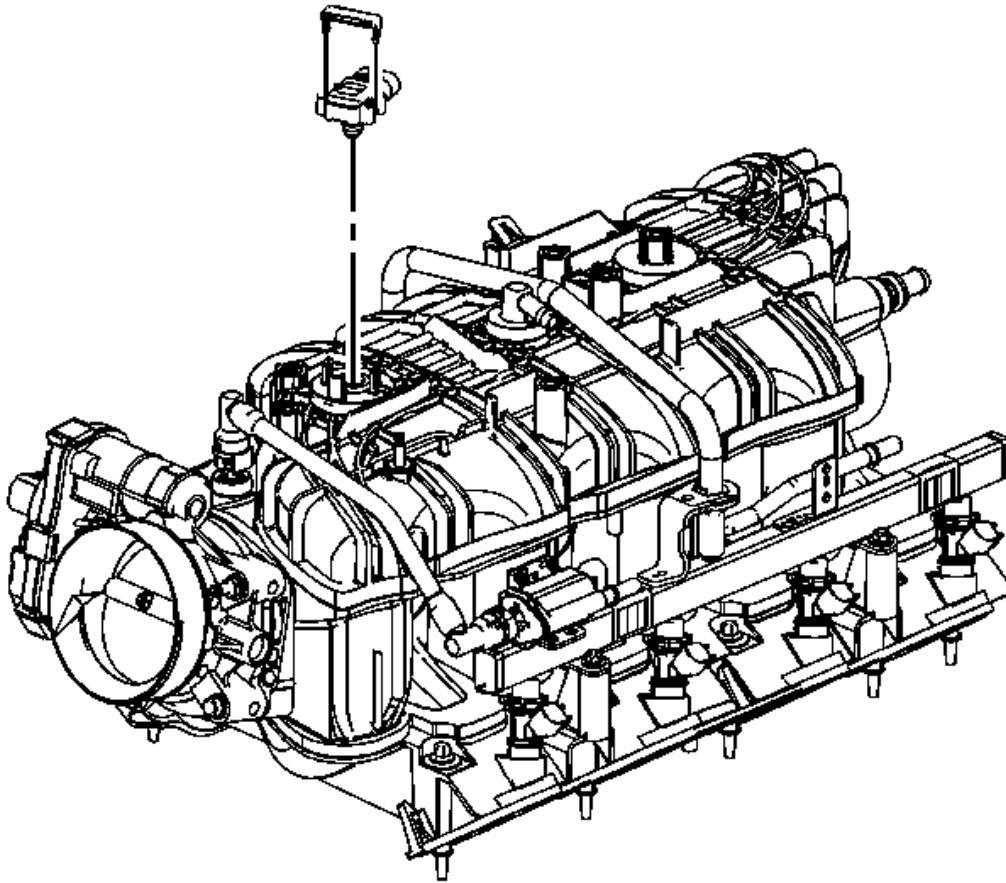


Fig. 96: View Of MAP Sensor & Retainer
Courtesy of GENERAL MOTORS CORP.

13. Lubricate the MAP sensor seal with clean engine oil.
14. Install the MAP sensor.
15. Install the MAP sensor retainer.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

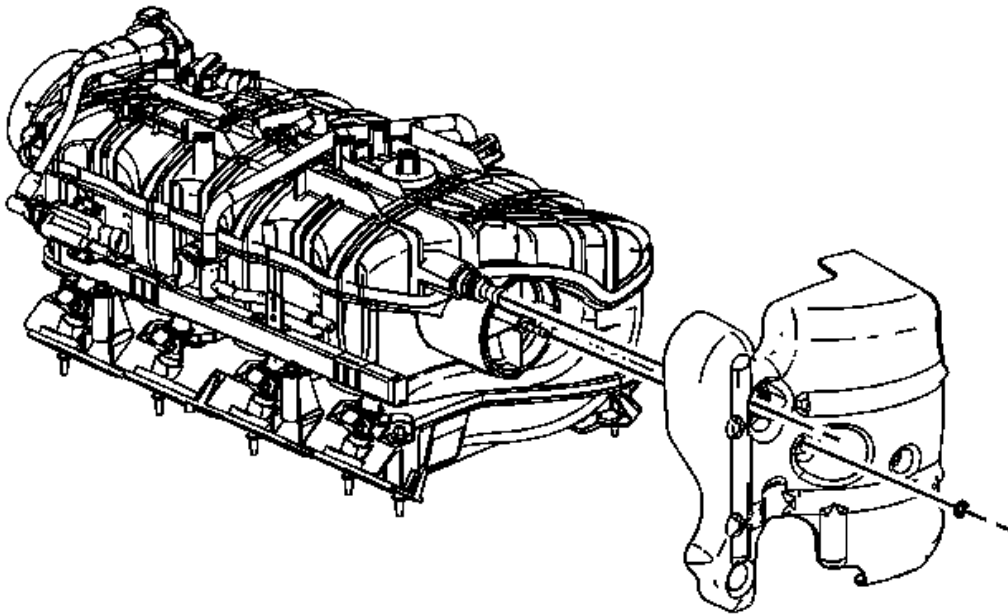


Fig. 97: View Of Upper Intake Manifold Cover & Nut
Courtesy of GENERAL MOTORS CORP.

16. Install the upper intake manifold cover.
17. Install the upper intake manifold cover nut until snug

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

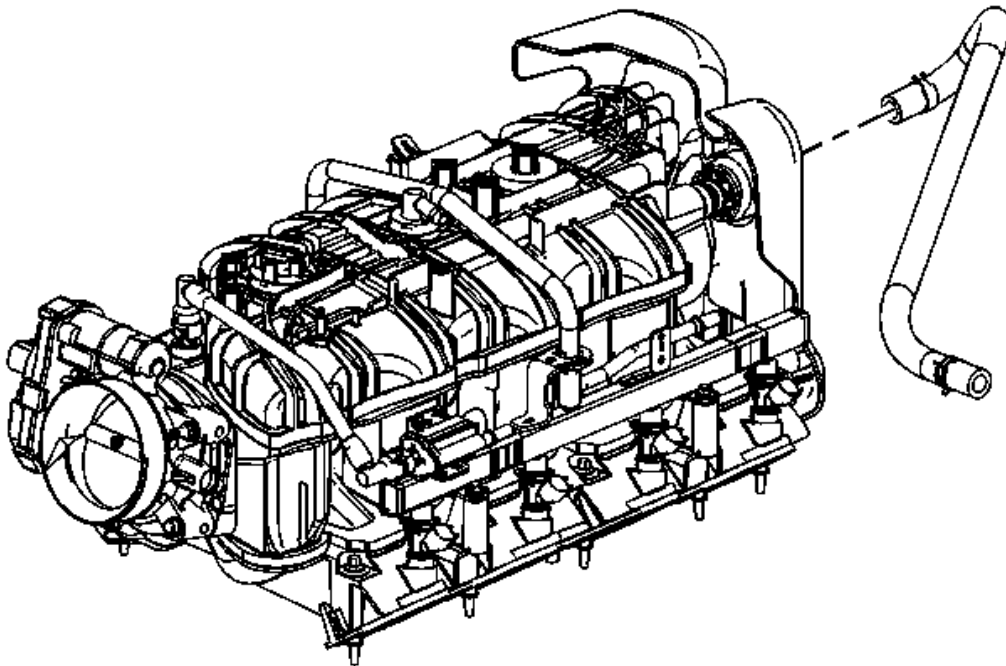


Fig. 98: View Of Vacuum Brake Booster Hose
Courtesy of GENERAL MOTORS CORP.

18. Install the brake booster vacuum hose to the intake manifold nipple.
19. Position the brake booster vacuum hose clamp at the intake manifold.
20. Secure the brake booster vacuum hose to the intake manifold.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

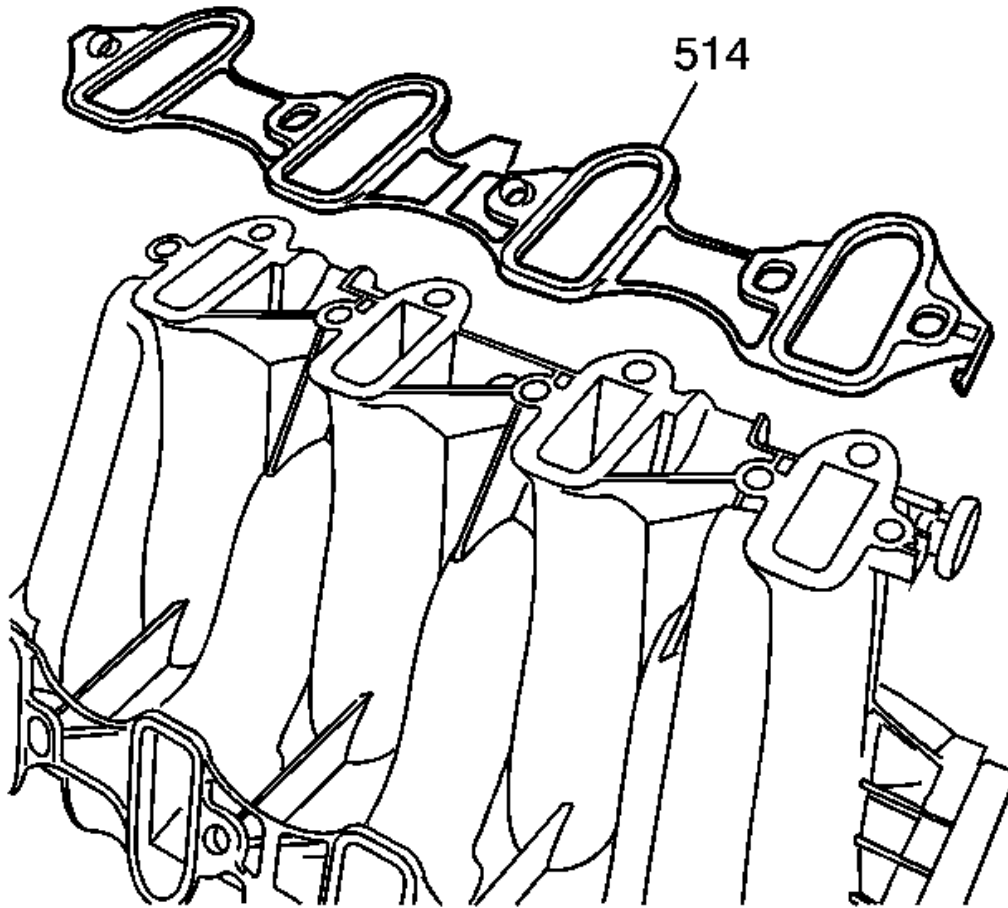


Fig. 99: View Of Intake Manifold-To-Cylinder Head Gasket
Courtesy of GENERAL MOTORS CORP.

21. Install NEW intake manifold gaskets (514) to the intake manifold.
22. Remove the covers from the cylinder head passages.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

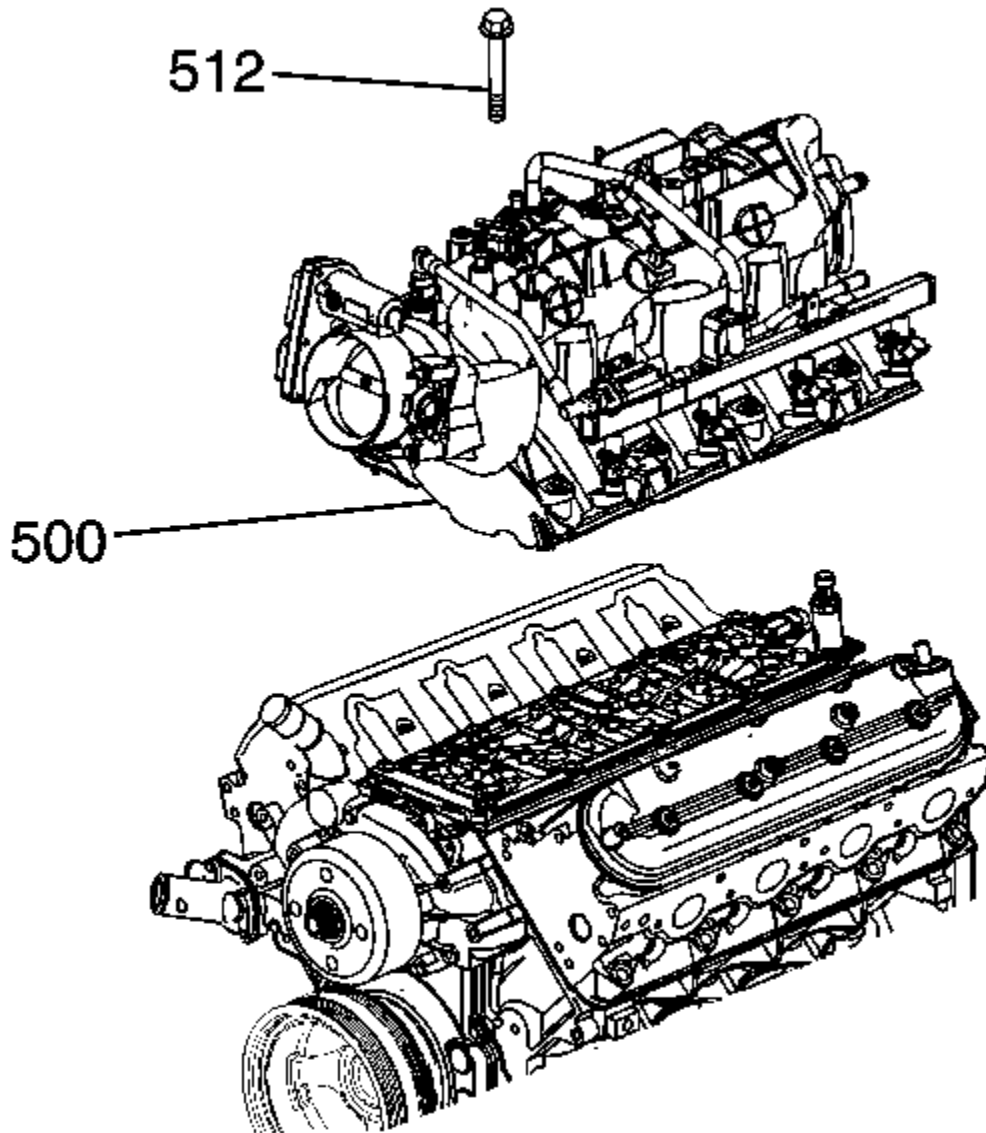


Fig. 100: Intake Manifold

Courtesy of GENERAL MOTORS CORP.

23. Install the intake manifold (500).

IMPORTANT: The aid of an assistant may be helpful in holding the engine

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

harness up out of the way so the upper intake manifold cover does not get caught against the engine harness.

24. Tighten the intake manifold bolts (512) until snug.

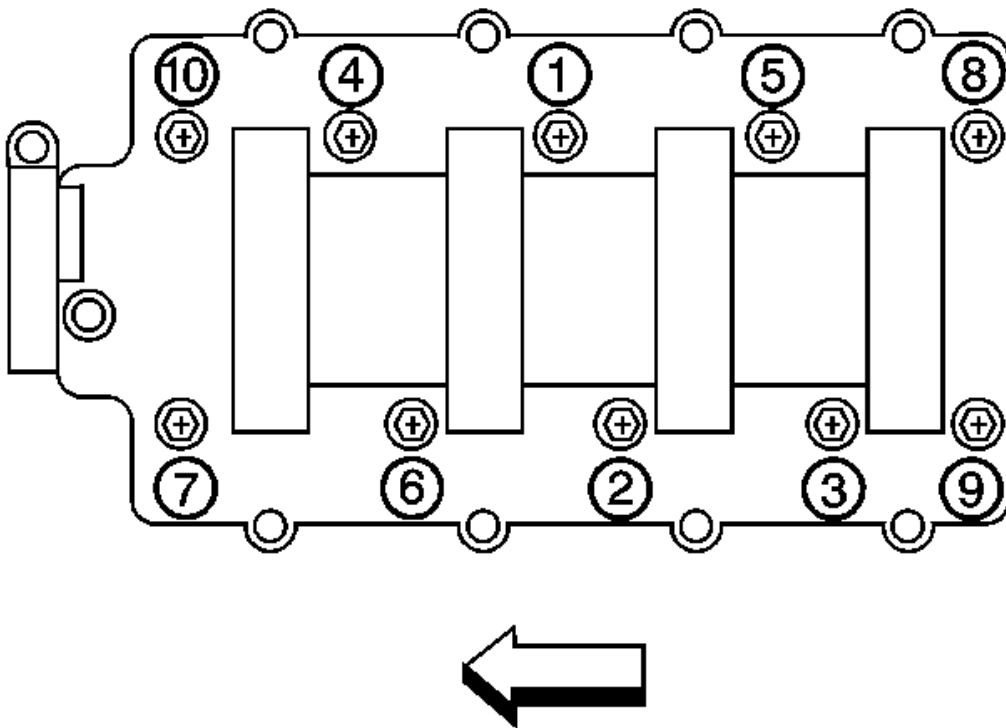


Fig. 101: Identifying Intake Manifold Bolt Tightening Sequence
Courtesy of GENERAL MOTORS CORP.

25. Tighten the intake manifold bolts to specifications.

Tighten:

- Tighten the bolts a first pass in the sequence shown to 5 N.m (44 lb in).
- Tighten the bolts a final pass in the sequence shown to 10 N.m (89 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

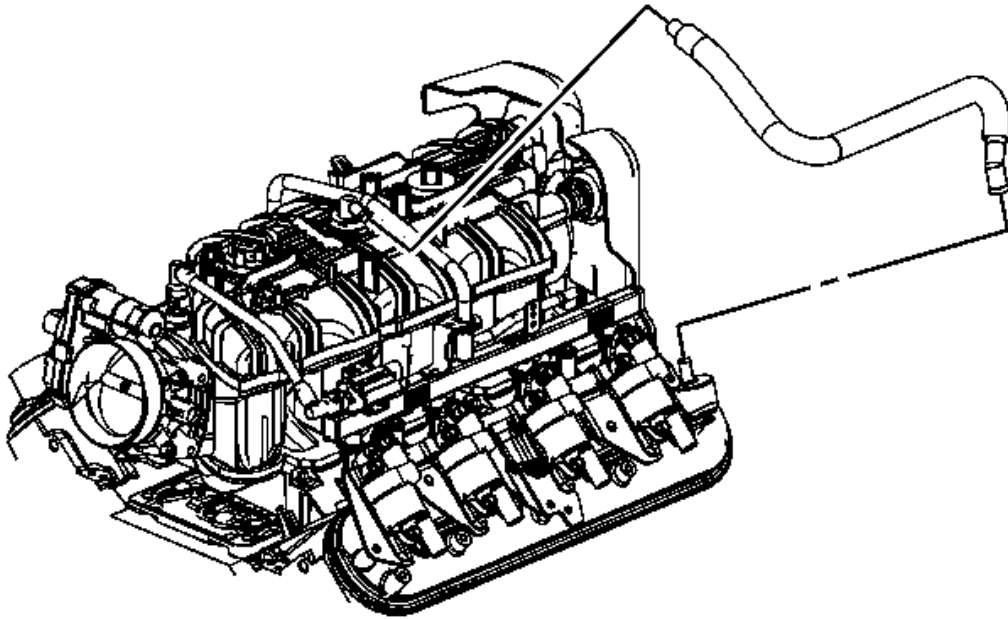


Fig. 102: View Of PCV Hose
Courtesy of GENERAL MOTORS CORP.

26. Position and install the PCV hose to the intake manifold fitting.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

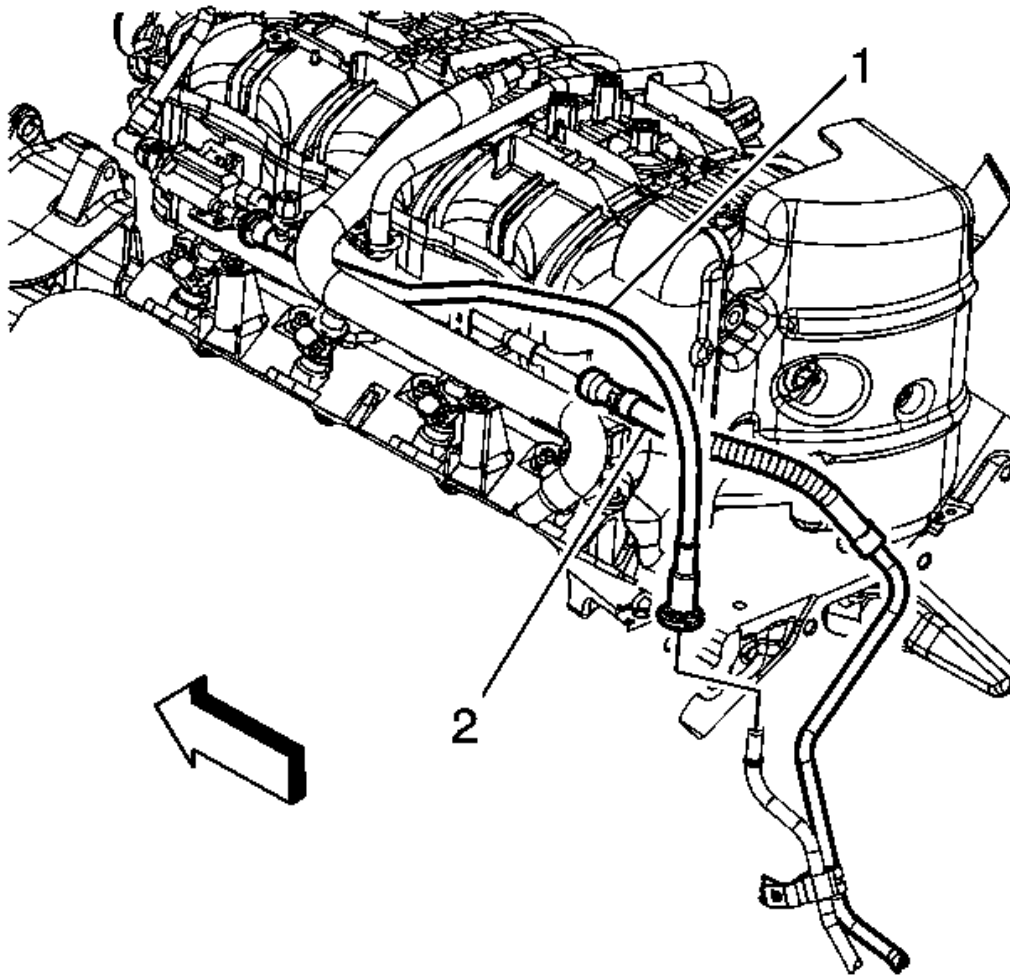


Fig. 103: View Of EVAP Canister Purge Tube & Quick Connect Fitting
Courtesy of GENERAL MOTORS CORP.

27. Connect the fuel feed line quick connect fitting (2) to the fuel rail. Refer to **Metal Collar Quick Connect Fitting Service** .
28. Connect the EVAP canister purge tube (1) quick connect fitting to the EVAP canister purge solenoid. Refer to **Plastic Collar Quick Connect Fitting Service** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

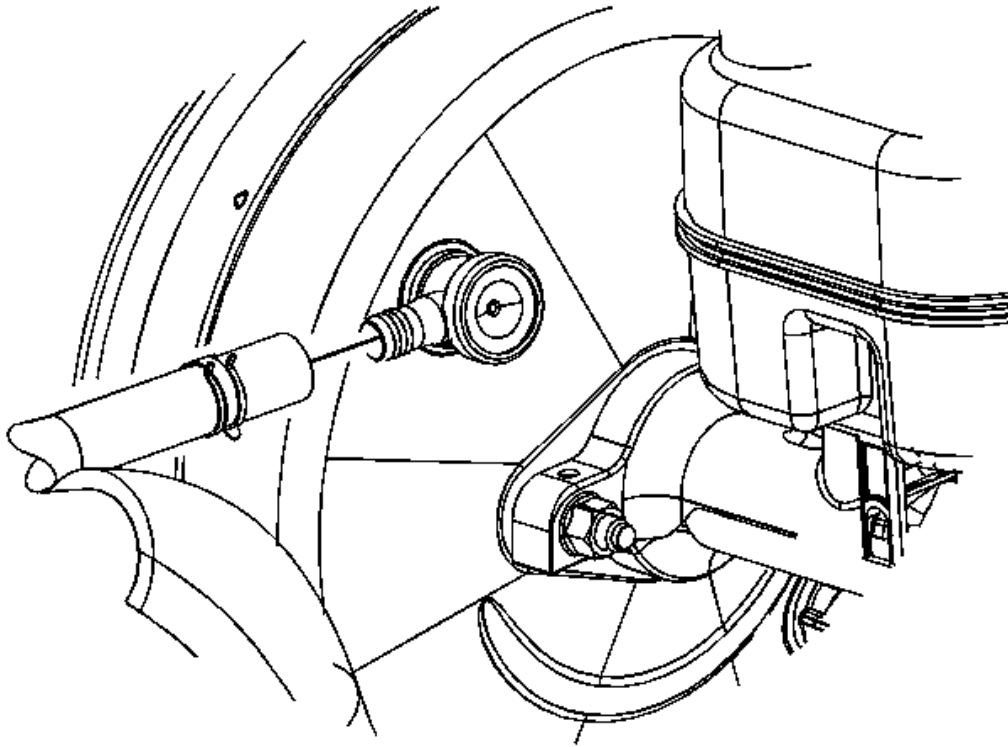


Fig. 104: View Of Brake Booster Vacuum Hose & Booster Fitting
Courtesy of GENERAL MOTORS CORP.

29. Unsecure the brake booster vacuum hose from the intake manifold.
30. Install the brake booster vacuum hose to the booster fitting.
31. Position the brake booster vacuum hose clamp at the booster.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

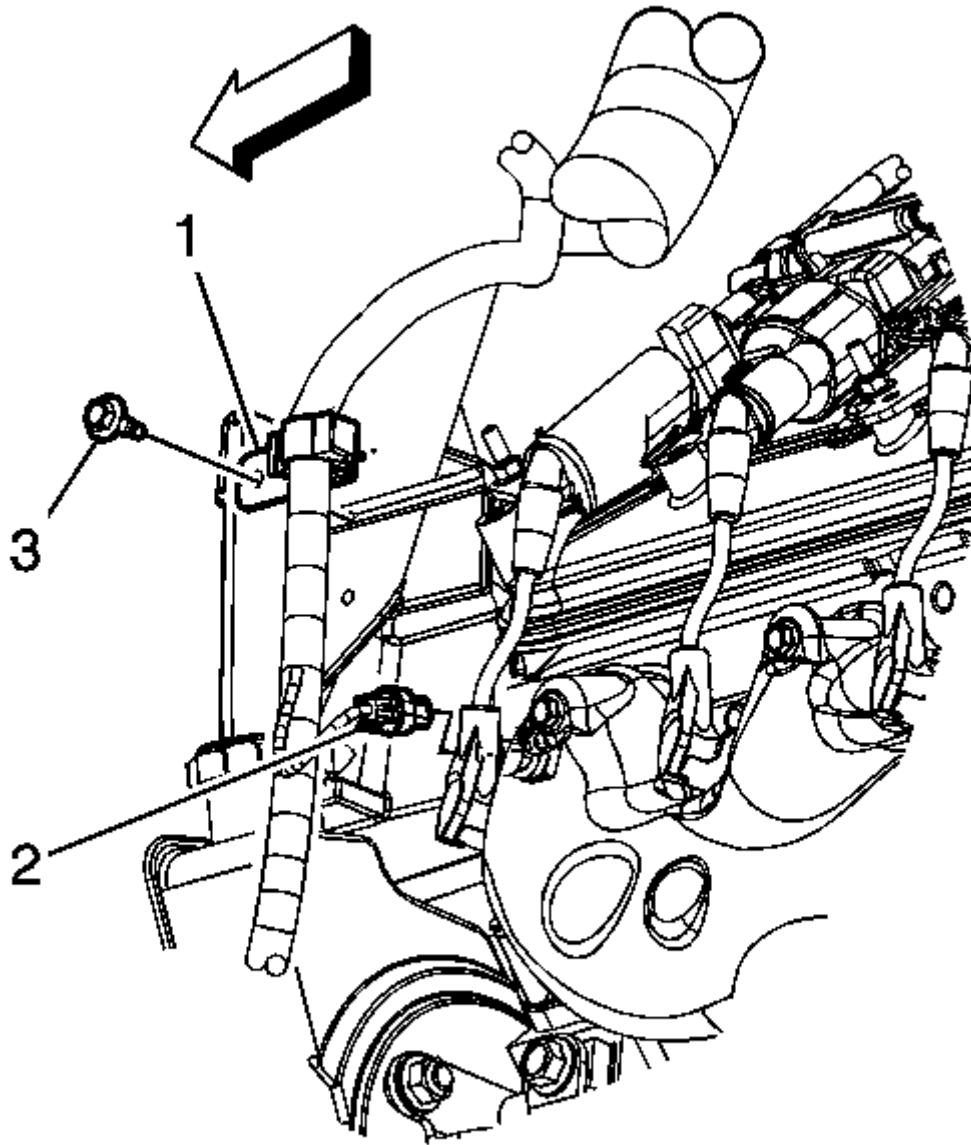


Fig. 105: View Of Engine Wiring Harness, Clip, Bolt & Connector
Courtesy of GENERAL MOTORS CORP.

32. Untie the engine harness branches from the cowl panel and position over the engine.
33. Connect the engine harness electrical connector (2) to the ECT sensor.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

34. Position the engine harness clip (1) to the generator bracket and install the bolt (3).

Tighten: Tighten the bolt to 9 N.m (80 lb in).

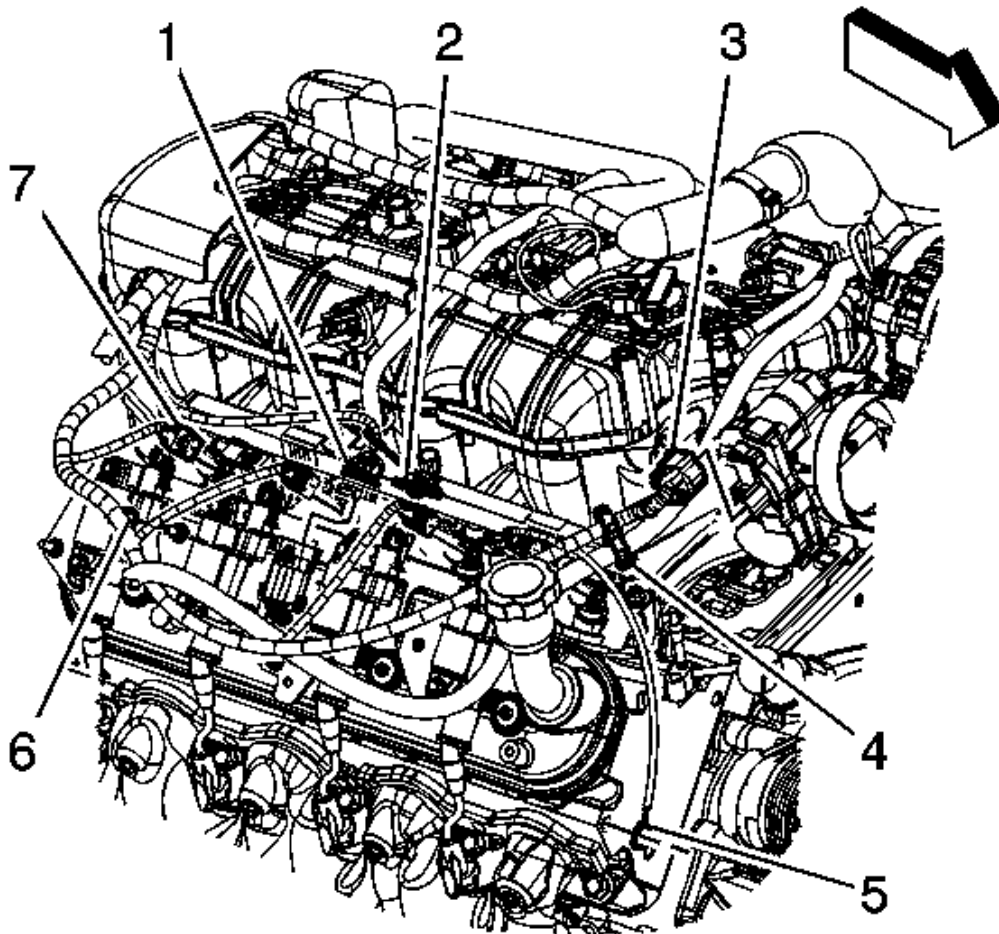


Fig. 106: View Of CPA Retainer, Engine Harness Electrical Connectors & Harness Clips

Courtesy of GENERAL MOTORS CORP.

35. Connect the engine harness electrical connectors (7) to the right side fuel injectors.

36. Install the engine harness clip (6) to the ignition coil bracket stud.

37. Install the engine harness clip (4) to the generator battery jumper cable.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

38. Connect the engine harness electrical connector (3) to the throttle actuator.
39. Connect the engine harness electrical connector (1) to the ignition coil harness electrical connector.
40. Install the CPA retainer (2).

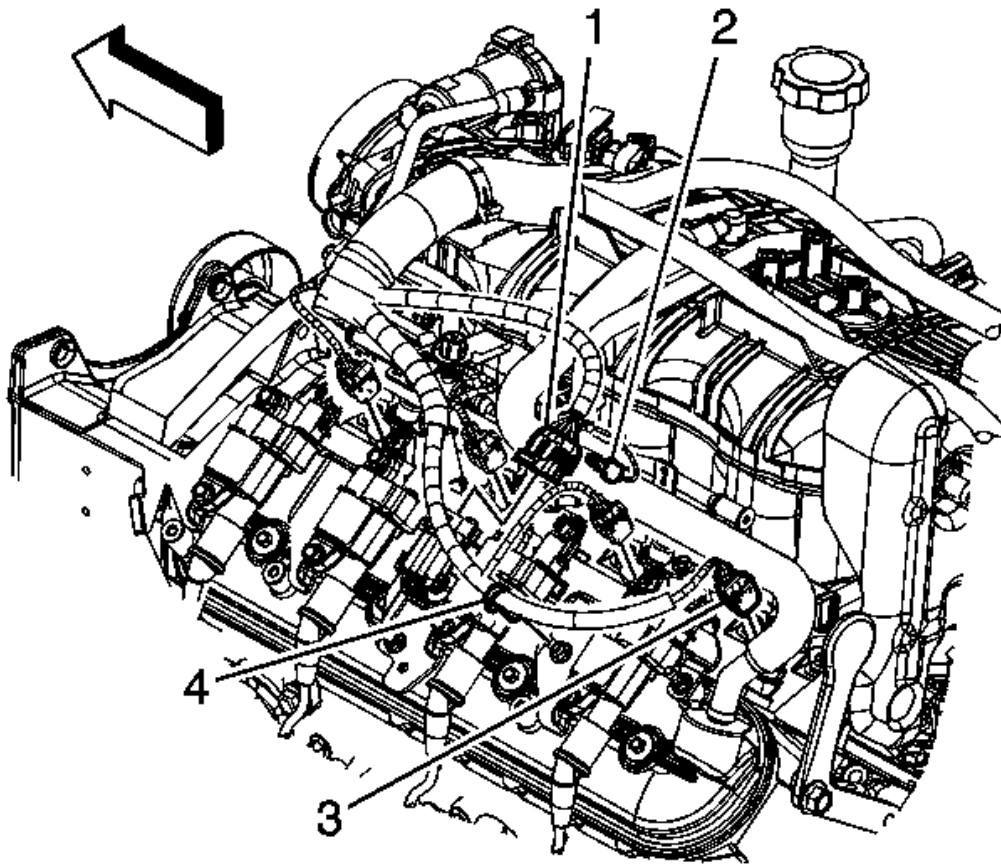


Fig. 107: View Of CPA Retainer, Electrical Connectors & Engine Harness Clips
Courtesy of GENERAL MOTORS CORP.

41. Install the engine harness clip (4) to the ignition coil bracket stud.
42. Connect the engine harness electrical connectors (3) to the left side fuel injectors.
43. Connect the engine harness electrical connector (1) to the ignition coil harness electrical connector.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

44. Install the CPA retainer (1).

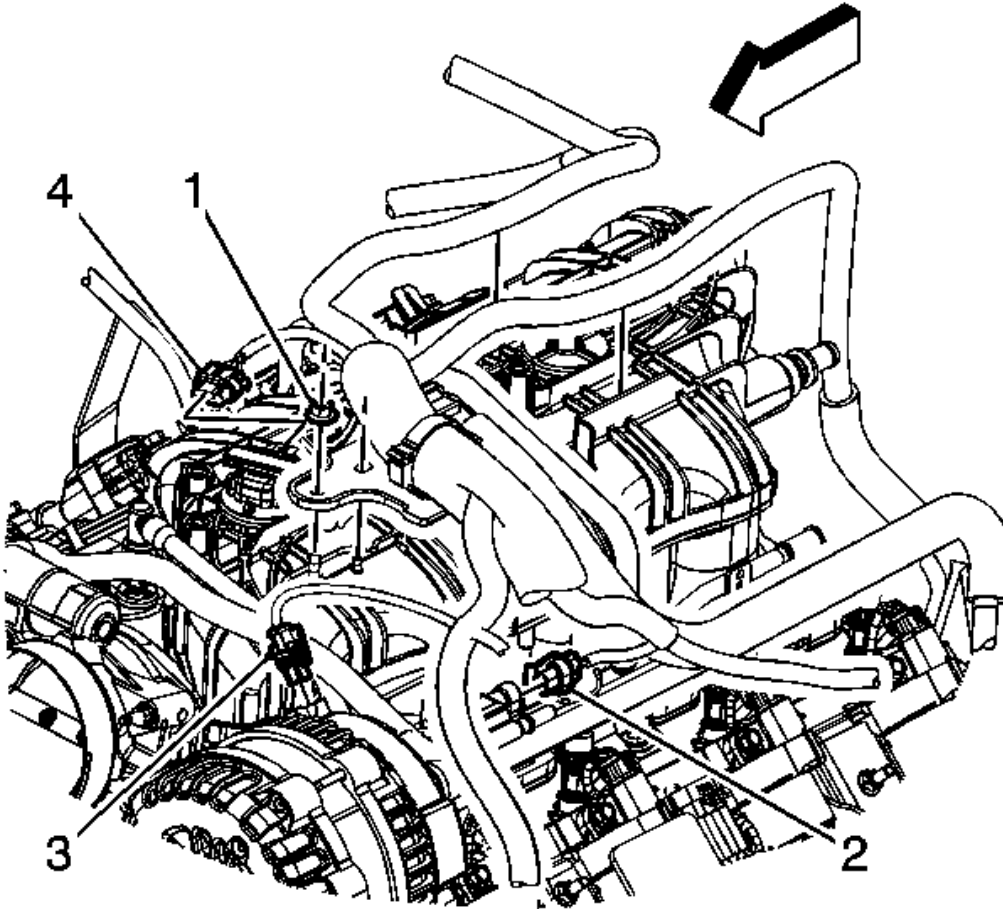


Fig. 108: View Of Engine Harness Retainer Nut & Electrical Connectors
Courtesy of GENERAL MOTORS CORP.

45. Connect the engine wiring harness electrical connector (4) to the MAP sensor.
46. Connect the engine harness electrical connector (2) to the EVAP canister purge solenoid.
47. Install the engine harness retainer to the stud and locator pin.
48. Install the engine harness retainer nut (1).

Tighten: Tighten the nut to 5 N.m (44 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

49. Install the generator. Refer to **Generator Replacement (4.8L, 5.3L, 6.0L, and 6.2L)** .
50. Install the air cleaner outlet duct. Refer to **Air Cleaner Resonator Outlet Duct Replacement** .

INTAKE MANIFOLD REPLACEMENT (L92 - SECOND DESIGN)

Removal Procedure

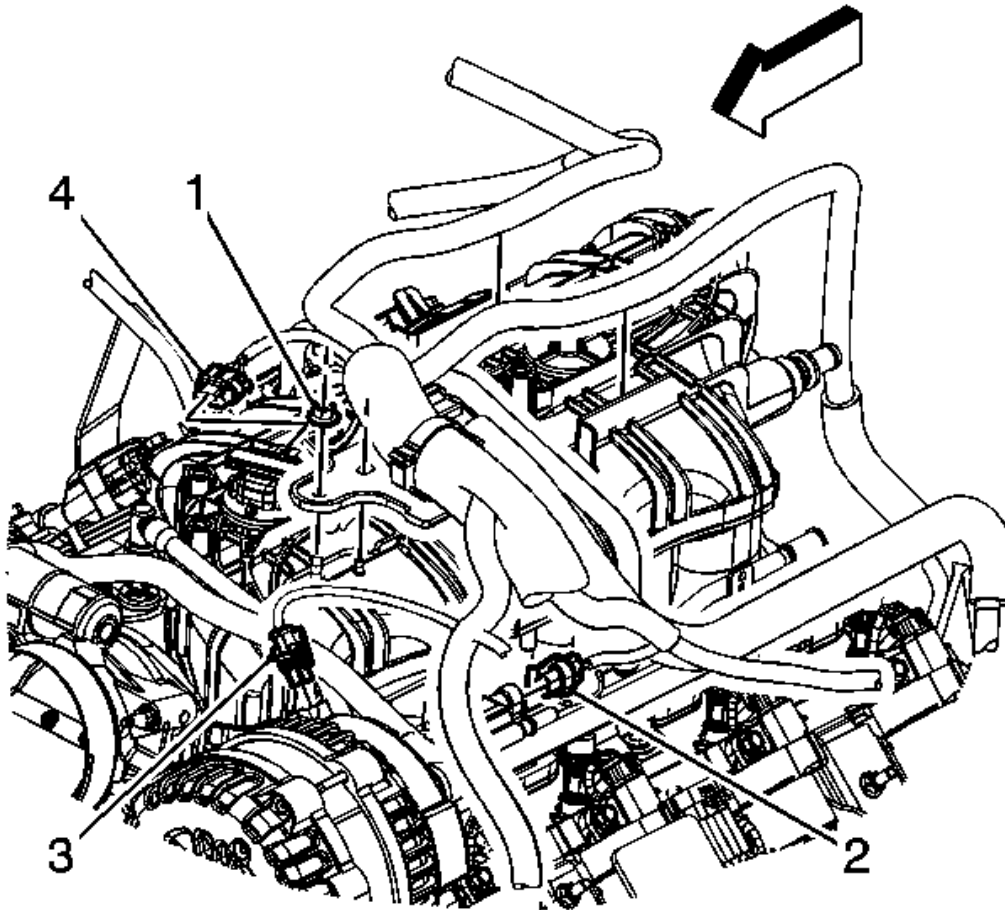


Fig. 109: View Of Engine Harness Retainer Nut & Electrical Connectors
Courtesy of GENERAL MOTORS CORP.

1. Remove the air cleaner outlet duct. Refer to **Air Cleaner Resonator Outlet Duct Replacement** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Remove the generator. Refer to **Generator Replacement (4.8L, 5.3L, 6.0L, and 6.2L)** .
3. Remove the engine harness retainer nut (1).
4. Remove the engine harness retainer from the stud and locator pin.
5. Disconnect the engine harness electrical connector (2) from the evaporative emission (EVAP) canister purge solenoid.
6. Disconnect the engine wiring harness electrical connector (4) from the manifold absolute pressure (MAP) sensor.

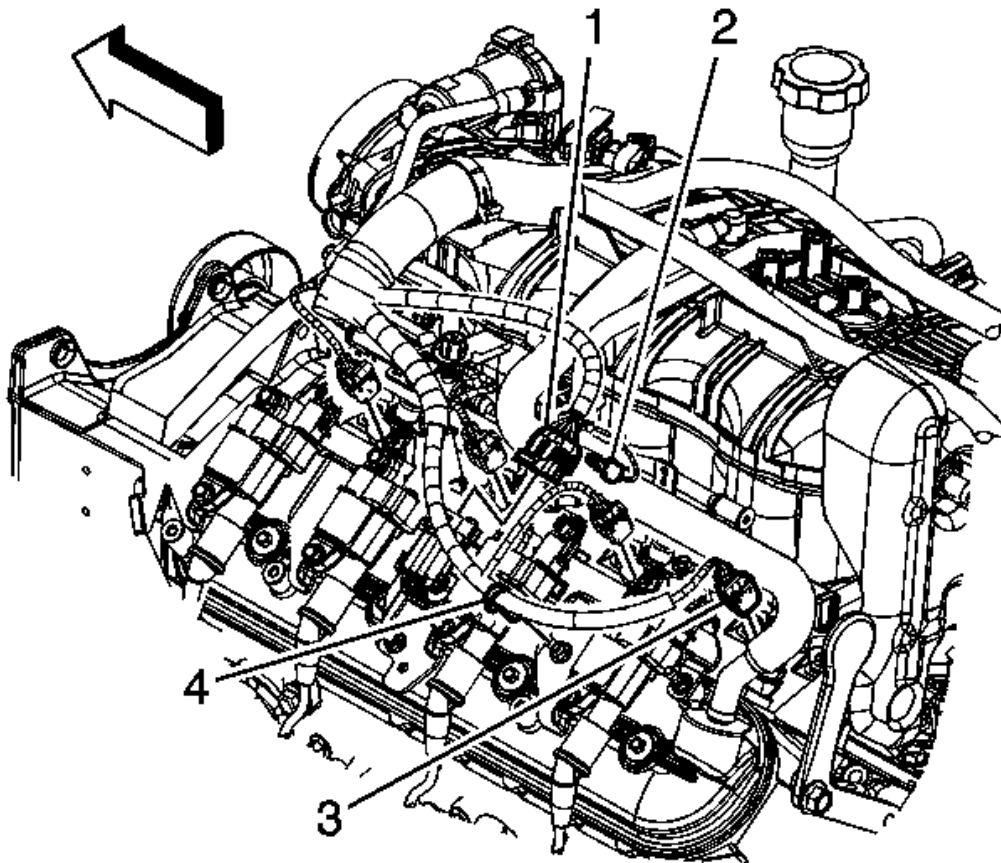


Fig. 110: View Of CPA Retainer, Electrical Connectors & Engine Harness Clips
Courtesy of GENERAL MOTORS CORP.

7. Remove the connector position assurance (CPA) retainer (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

8. Disconnect the engine harness electrical connector (1) from the ignition coil harness electrical connector.
9. Disconnect the engine harness electrical connectors (3) from the left side fuel injectors.
10. Remove the engine harness clip (4) from the ignition coil bracket stud.

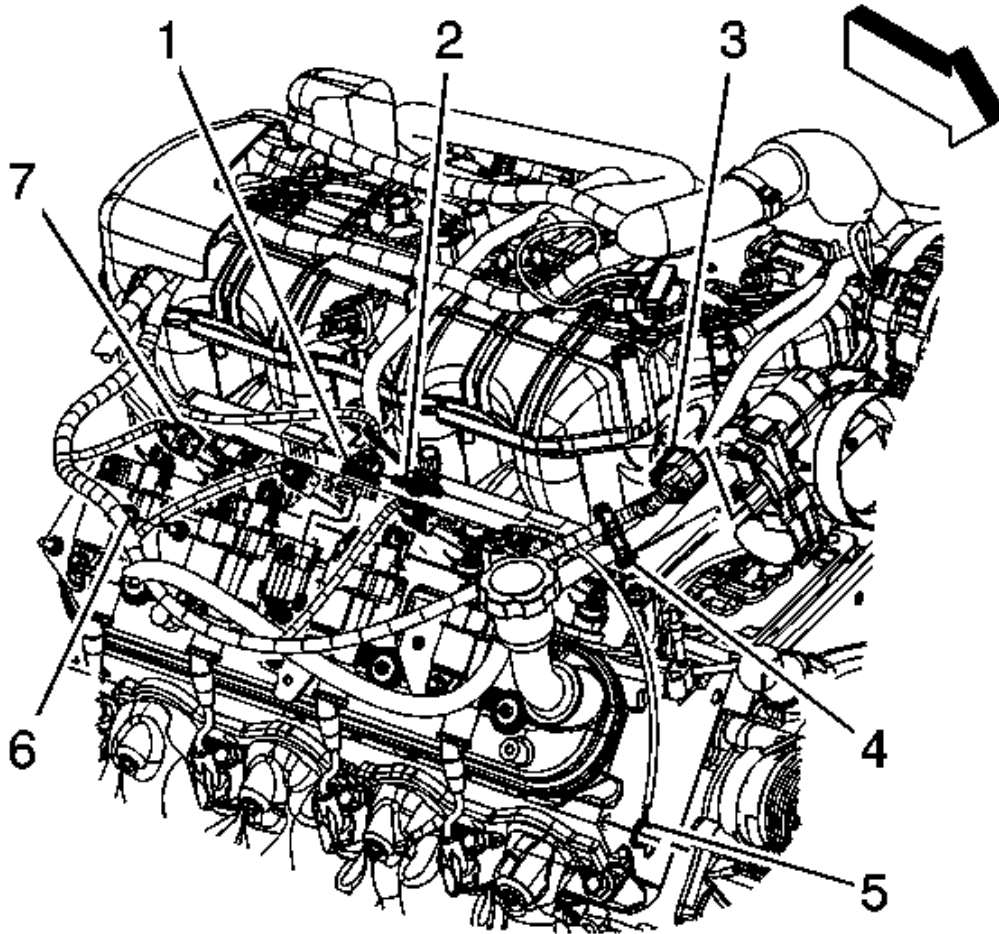


Fig. 111: View Of CPA Retainer, Engine Harness Electrical Connectors & Harness Clips
Courtesy of GENERAL MOTORS CORP.

11. Remove the CPA retainer (2).
12. Disconnect the engine harness electrical connector (1) from the ignition coil harness

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

electrical connector.

13. Disconnect the engine harness electrical connector (3) from the throttle actuator.
14. Remove the engine harness clip (4) from the generator battery jumper cable.
15. Remove the engine harness clip (6) from the ignition coil bracket stud.
16. Disconnect the engine harness electrical connectors (7) from the right side fuel injectors.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

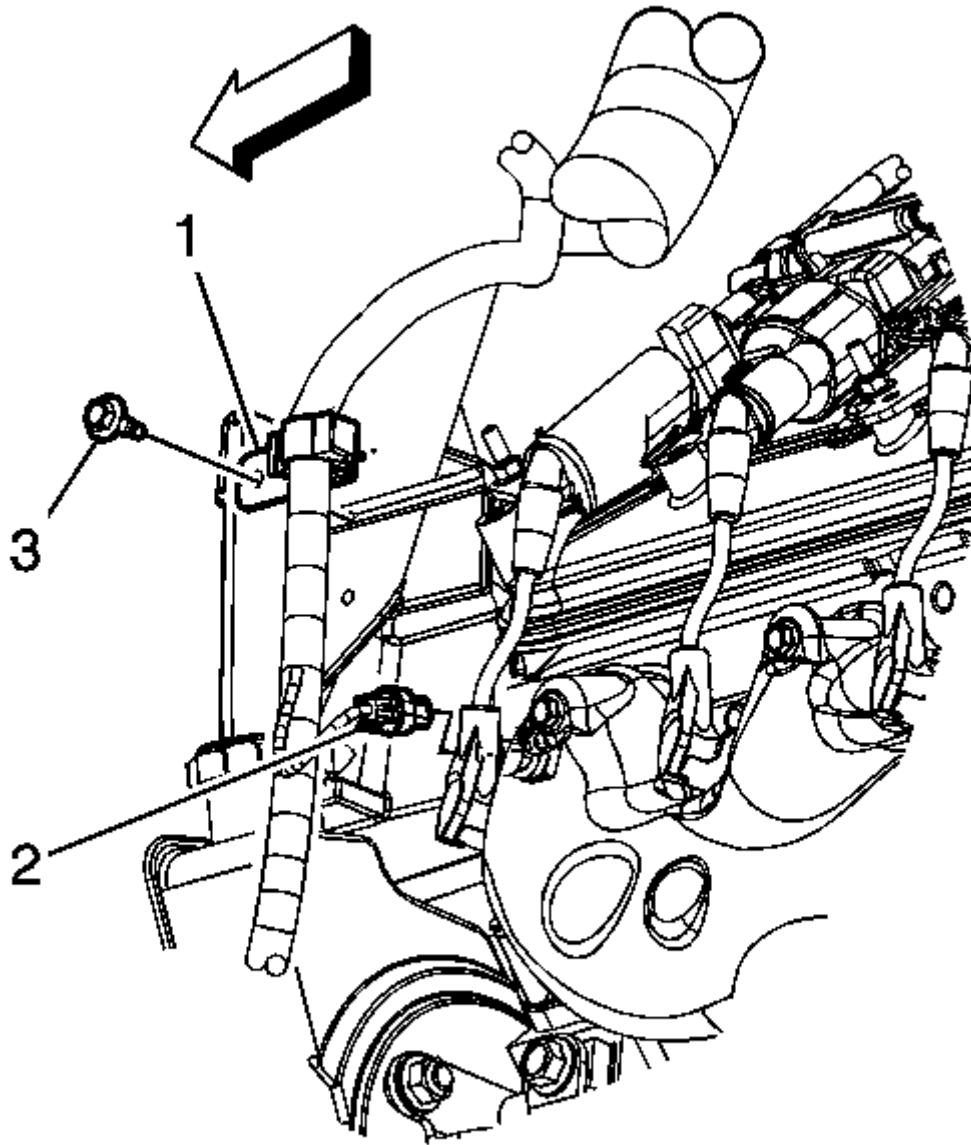


Fig. 112: View Of Engine Wiring Harness, Clip, Bolt & Connector
Courtesy of GENERAL MOTORS CORP.

17. Remove the engine harness clip (1) bolt (3).
18. Disconnect the engine harness electrical connector (2) from the engine coolant temperature (ECT) sensor.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

19. Gather the engine harness branches and tie the harness up out of the way to the cowl panel.

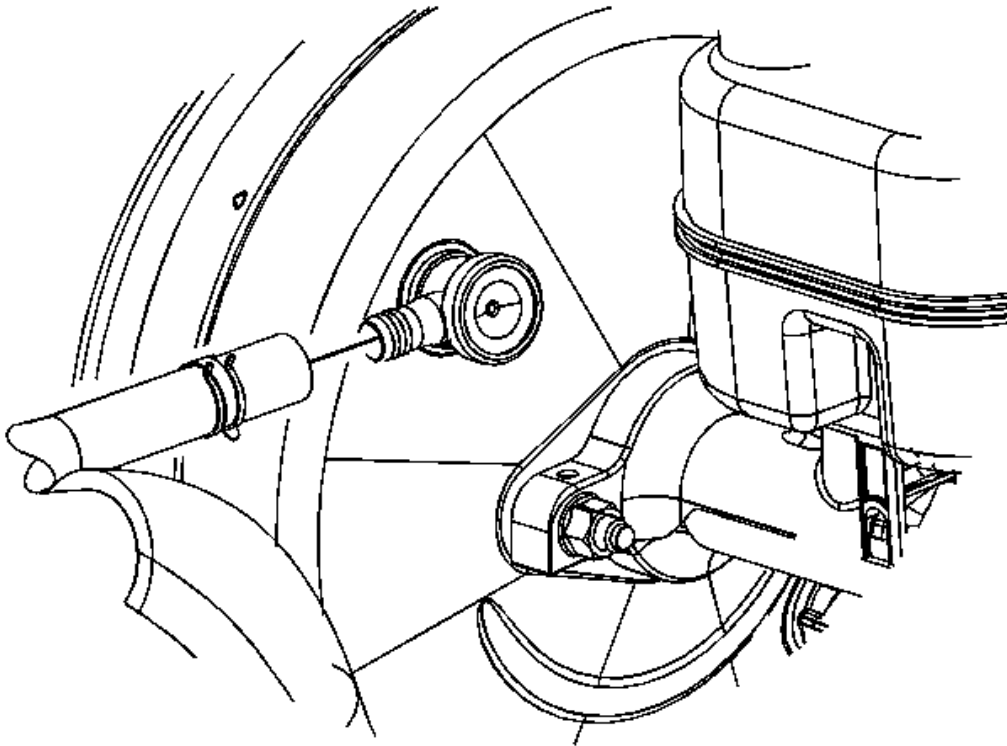


Fig. 113: View Of Brake Booster Vacuum Hose & Booster Fitting
Courtesy of GENERAL MOTORS CORP.

20. Reposition the brake booster vacuum hose clamp at the booster.
21. Remove the brake booster vacuum hose from the booster fitting.
22. Secure the brake booster vacuum hose to the intake manifold.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

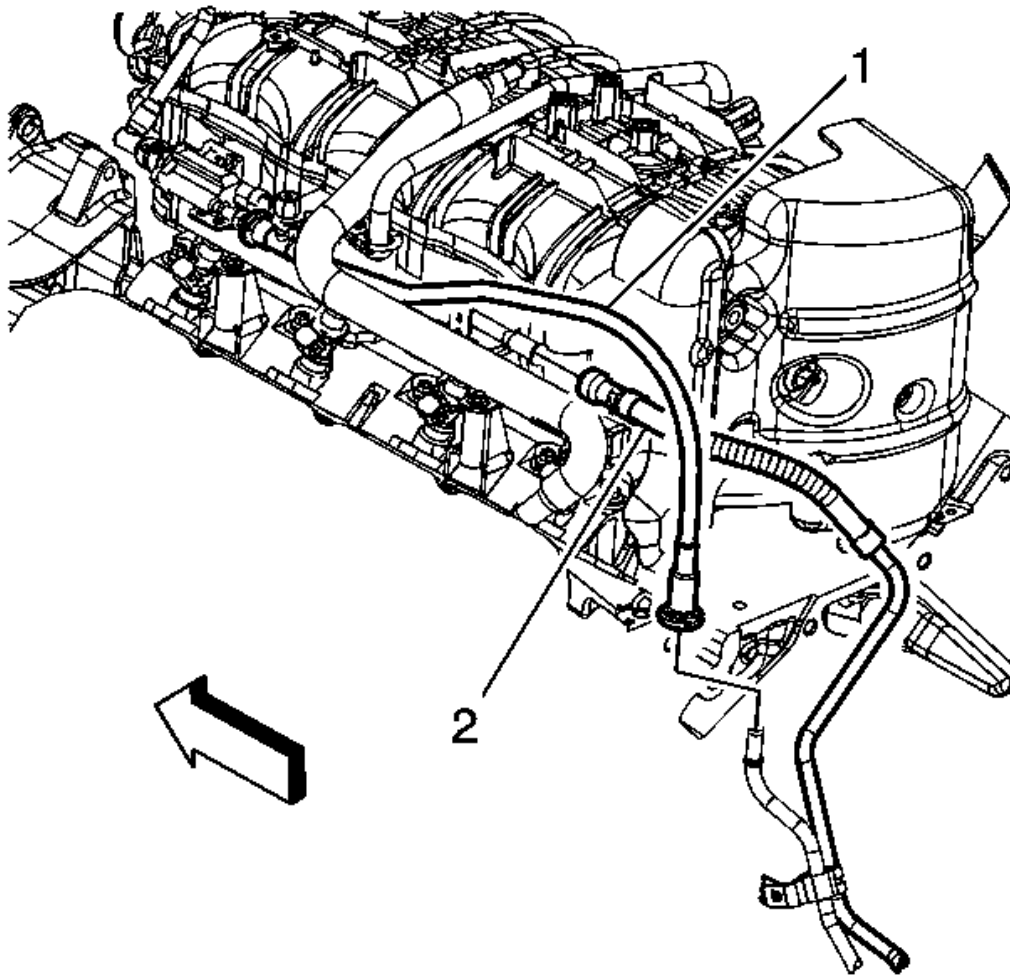


Fig. 114: View Of EVAP Canister Purge Tube & Quick Connect Fitting
Courtesy of GENERAL MOTORS CORP.

23. Disconnect the EVAP canister purge tube (1) quick connect fitting from the EVAP canister purge solenoid. Refer to **Plastic Collar Quick Connect Fitting Service** .
24. Disconnect the fuel feed line quick connect fitting (2) from the fuel rail. Refer to **Metal Collar Quick Connect Fitting Service** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

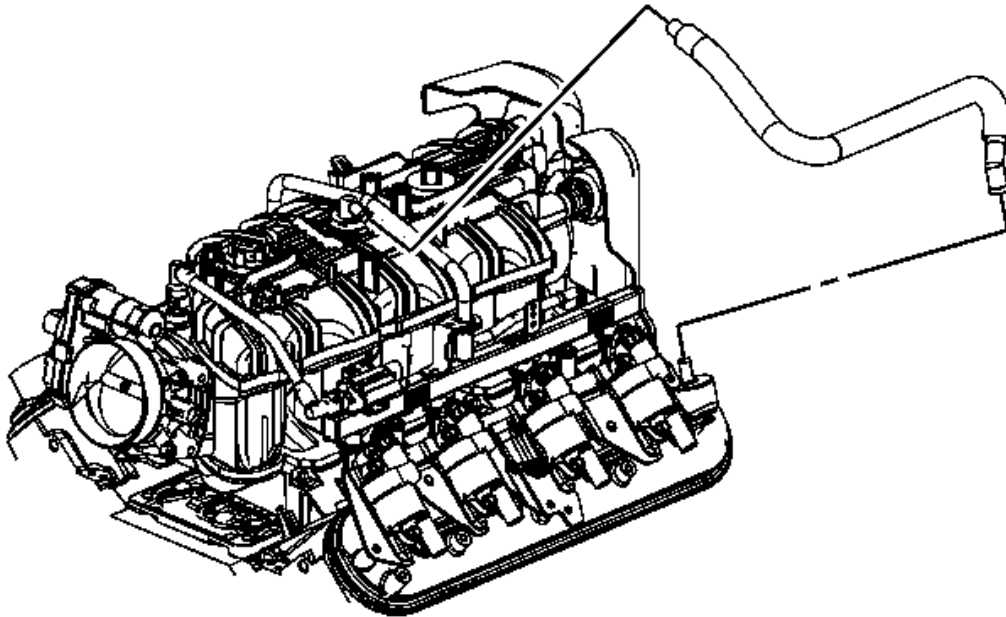


Fig. 115: View Of PCV Hose
Courtesy of GENERAL MOTORS CORP.

25. Remove the positive crankcase ventilation (PCV) hose from the intake manifold fitting.
26. Position the hose out of the way.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

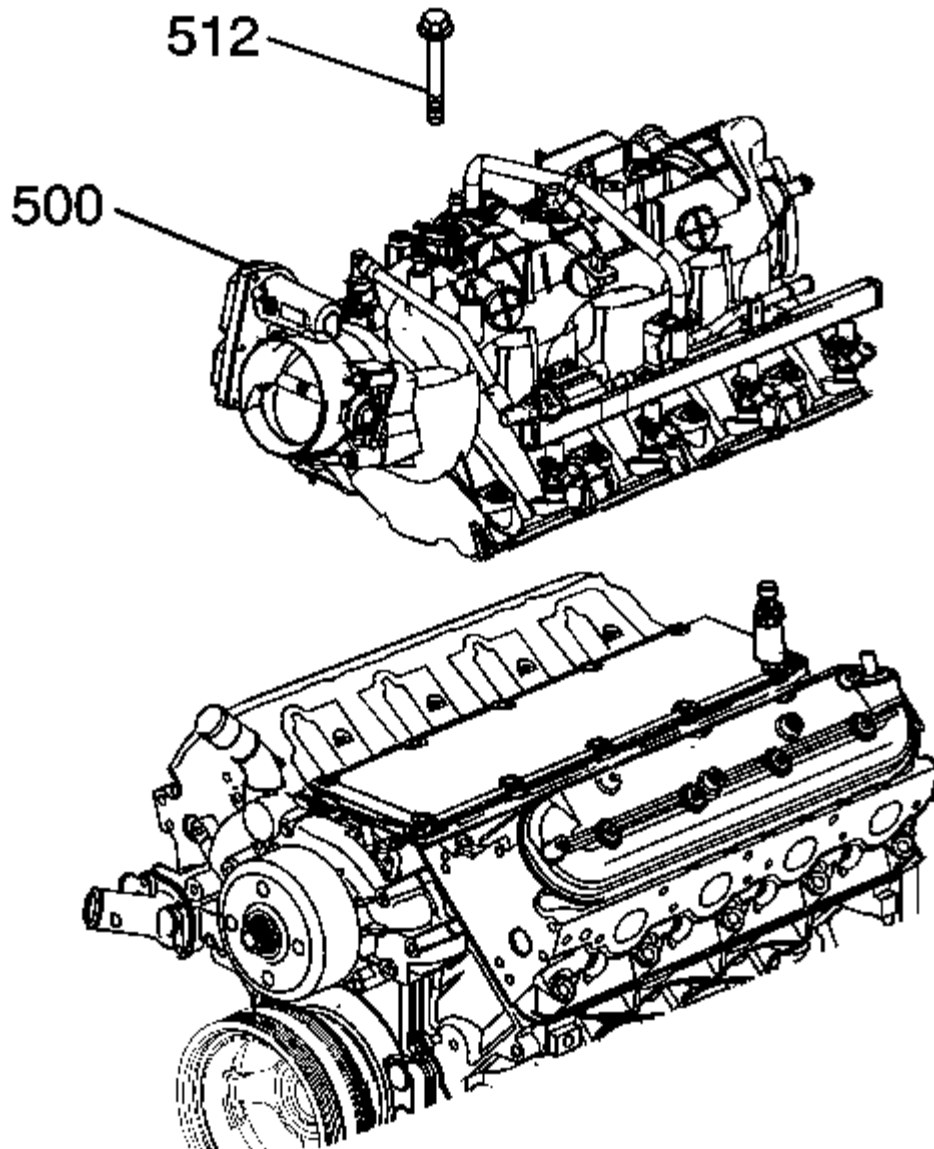


Fig. 116: Removing/Installing Intake Manifold Bolts
Courtesy of GENERAL MOTORS CORP.

27. Loosen the intake manifold bolts (512).

IMPORTANT: The aid of an assistant may be helpful in holding the engine

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

harness up out of the way so the upper intake manifold cover does not get caught against the engine harness.

28. Remove the intake manifold (500).
29. Cover the cylinder head passages in order to prevent dirt or debris from entering the passages.

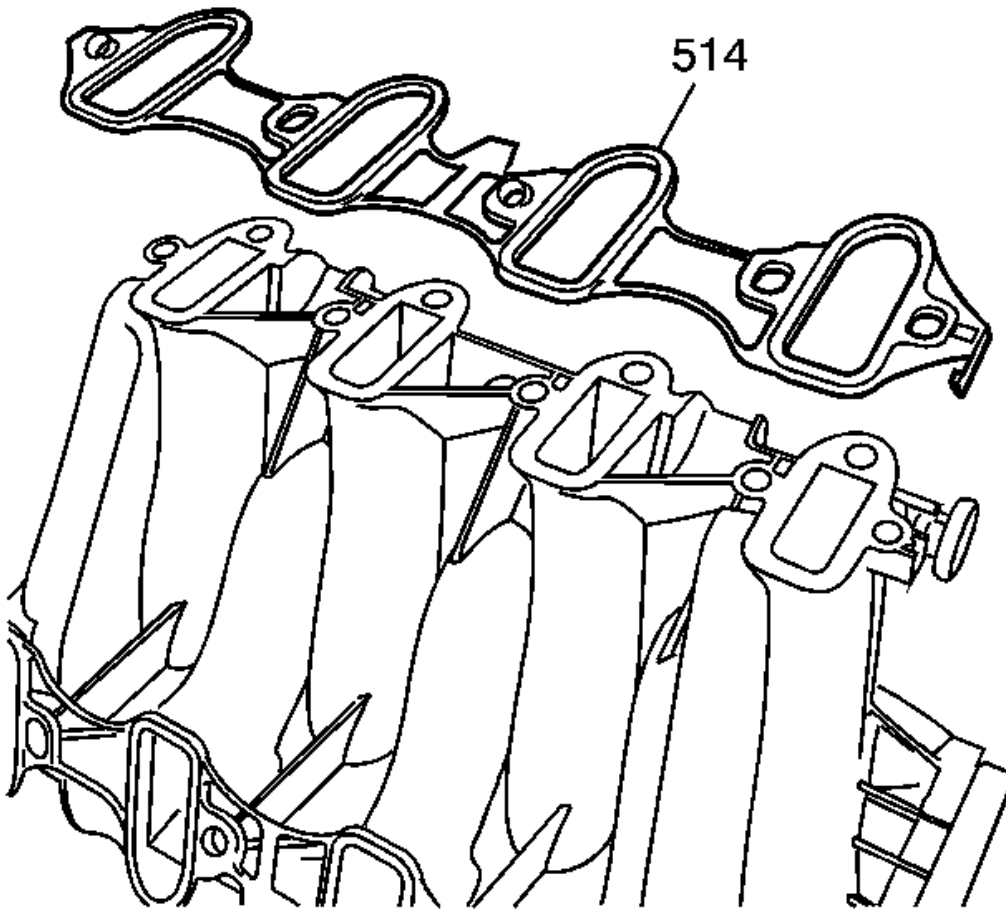


Fig. 117: View Of Intake Manifold-To-Cylinder Head Gasket
Courtesy of GENERAL MOTORS CORP.

30. Remove and discard the intake manifold gaskets (514).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

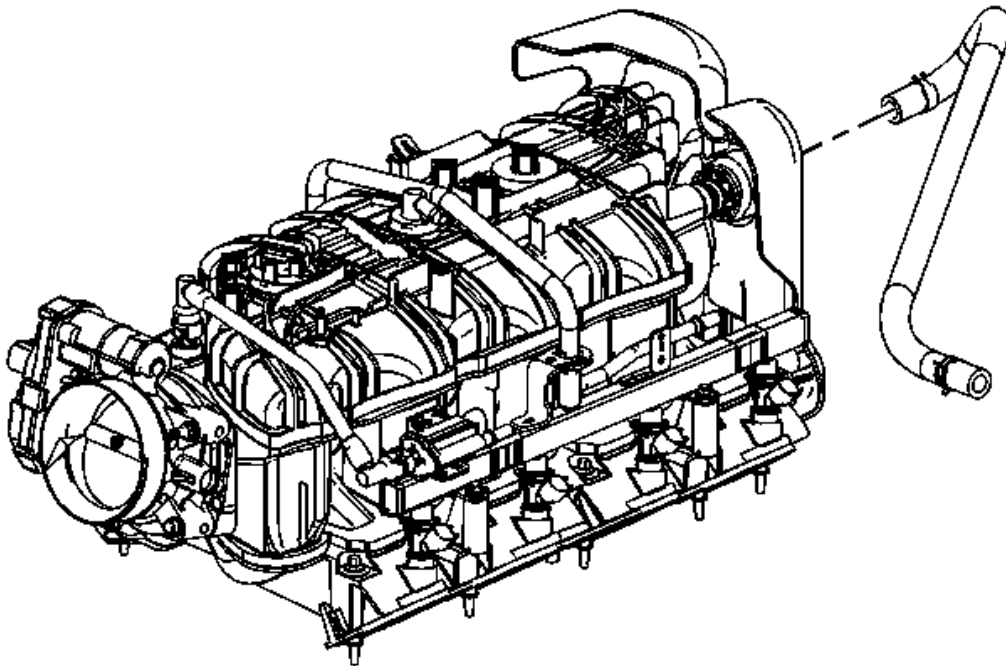


Fig. 118: View Of Vacuum Brake Booster Hose
Courtesy of GENERAL MOTORS CORP.

31. If replacing the intake manifold, perform the following steps, otherwise proceed to step 21 of the installation procedure.
32. Place the intake manifold on a clean work surface.
33. Reposition the brake booster vacuum hose clamp at the intake manifold.
34. Remove the brake booster vacuum hose from the intake manifold nipple.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

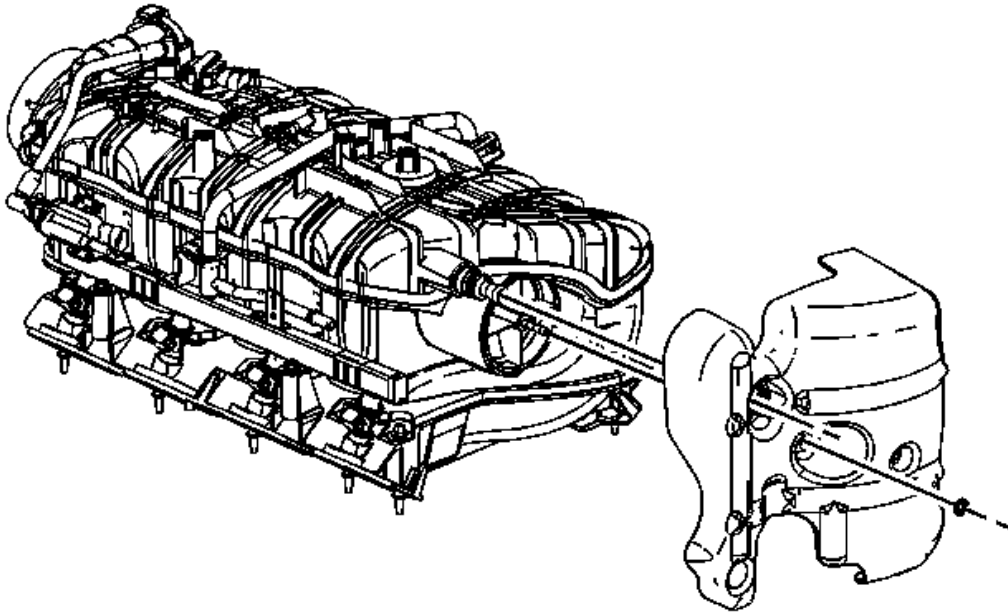


Fig. 119: View Of Upper Intake Manifold Cover & Nut
Courtesy of GENERAL MOTORS CORP.

35. Remove the upper intake manifold cover nut.
36. Remove the upper intake manifold cover.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

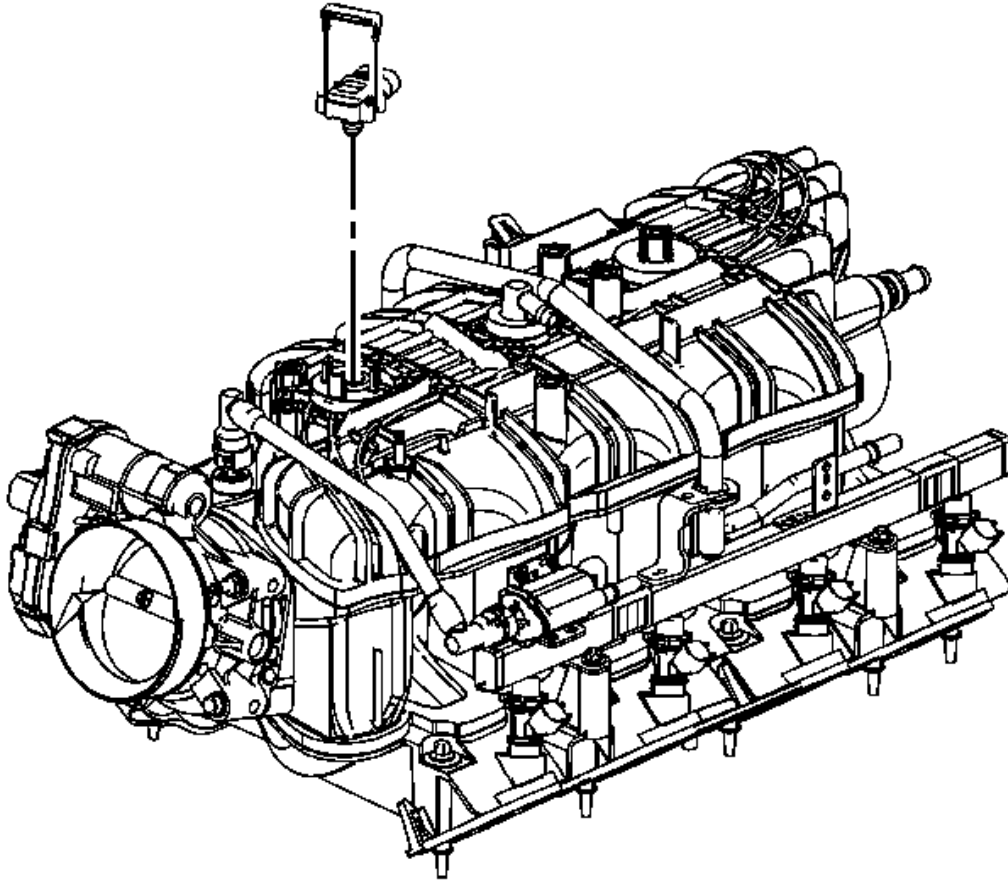


Fig. 120: View Of MAP Sensor & Retainer
Courtesy of GENERAL MOTORS CORP.

37. Remove the manifold absolute pressure (MAP) sensor retainer.
38. Remove the MAP sensor.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

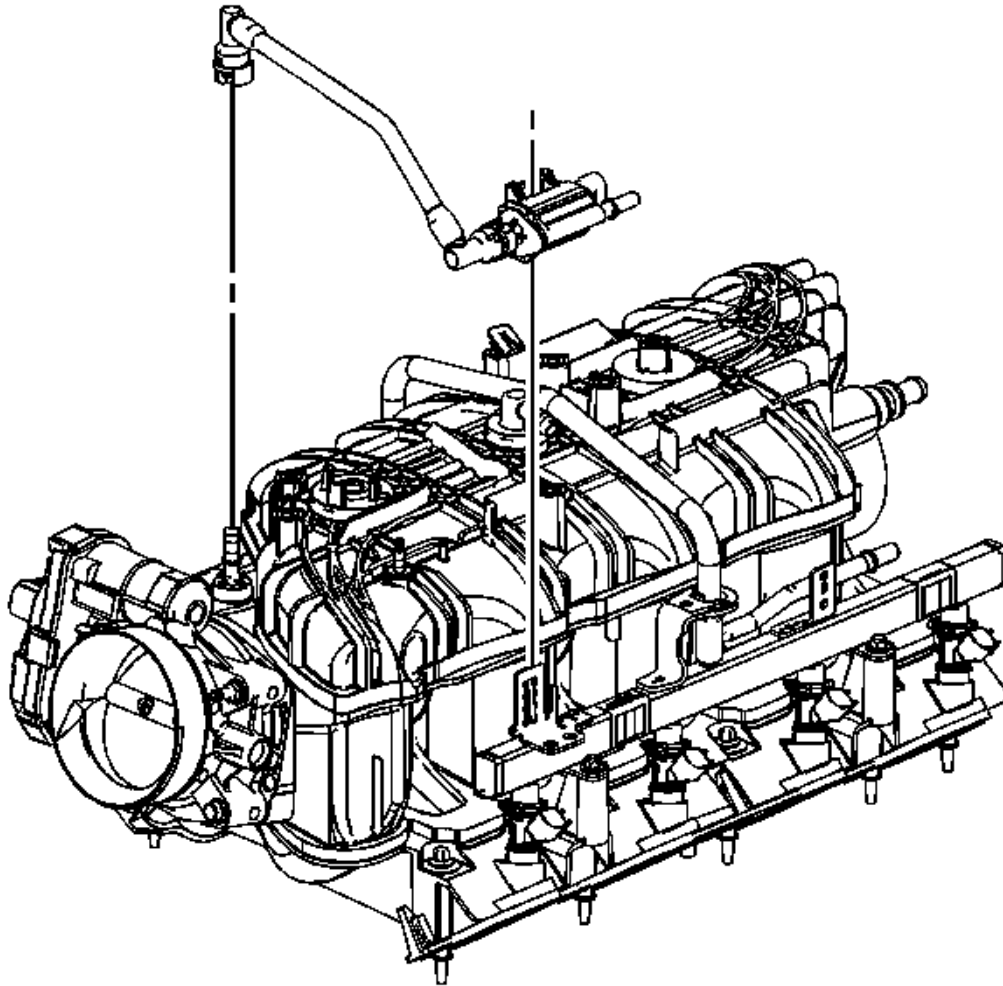


Fig. 121: View Of EVAP Tube & Purge Solenoid
Courtesy of GENERAL MOTORS CORP.

39. Disconnect the EVAP tube quick connect fitting at the intake manifold. Refer to **Plastic Collar Quick Connect Fitting Service** .
40. Disengage the retainer securing the EVAP canister purge solenoid to the fuel rail.
41. Remove the EVAP tube and purge solenoid.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

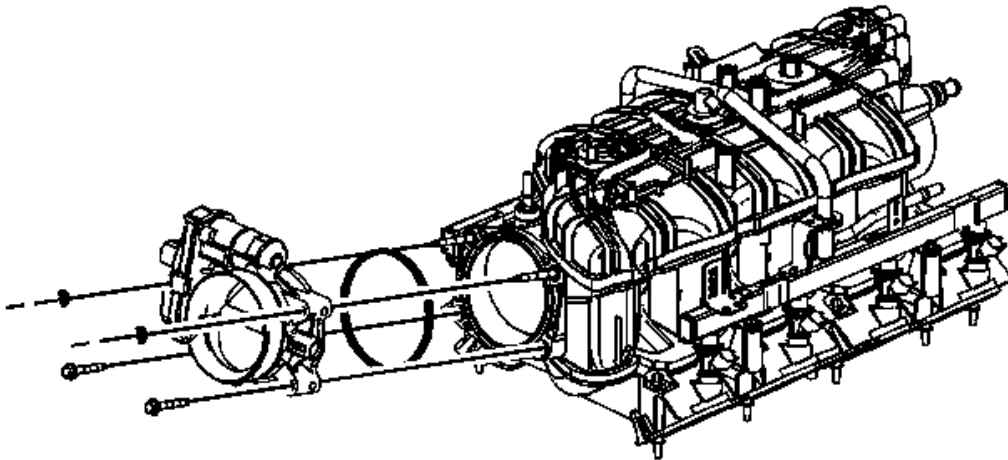


Fig. 122: View Of Throttle Body, Gasket & Bolts/Nuts
Courtesy of GENERAL MOTORS CORP.

42. Remove the throttle body bolts/nuts.
43. Remove the throttle body.
44. Remove and discard the throttle body gasket.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

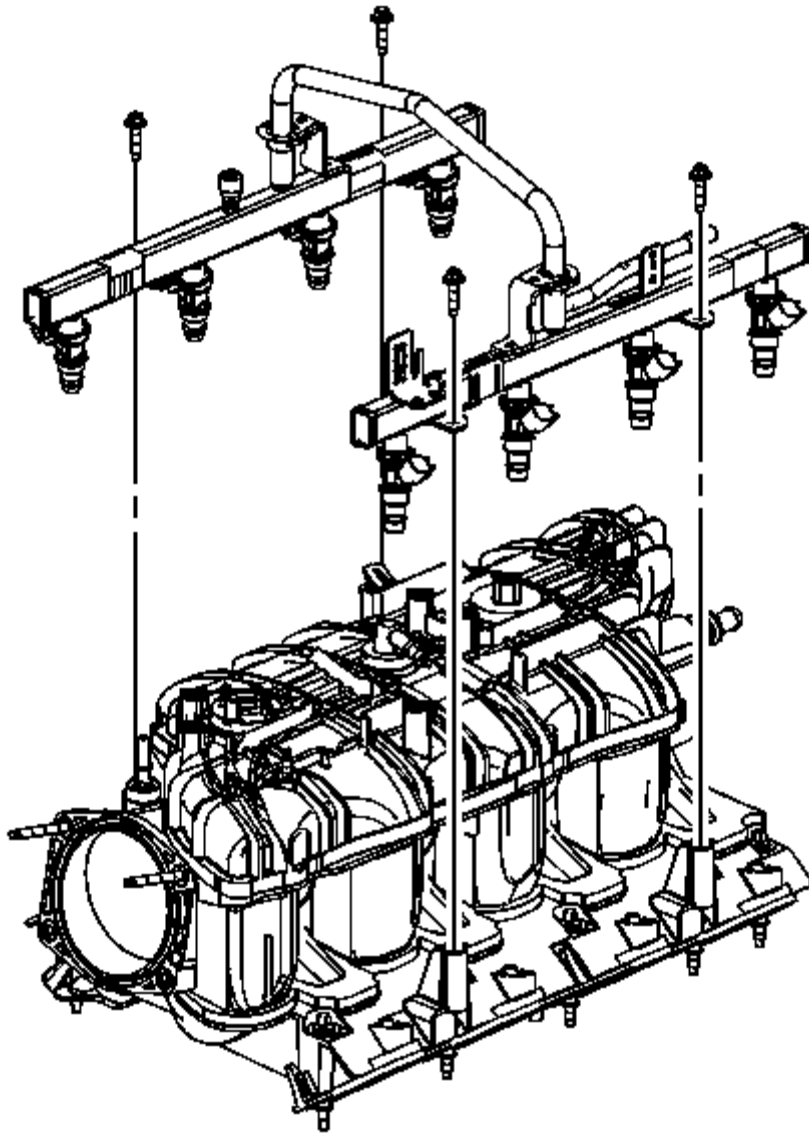


Fig. 123: View Of Fuel Rail & Bolts
Courtesy of GENERAL MOTORS CORP.

45. Remove the fuel rail bolts.

IMPORTANT: Lift evenly on both sides of the fuel rail until all injectors are

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

removed from their bores.

46. Remove the fuel rail.
47. Remove and discard the fuel injector lower O-ring seals.

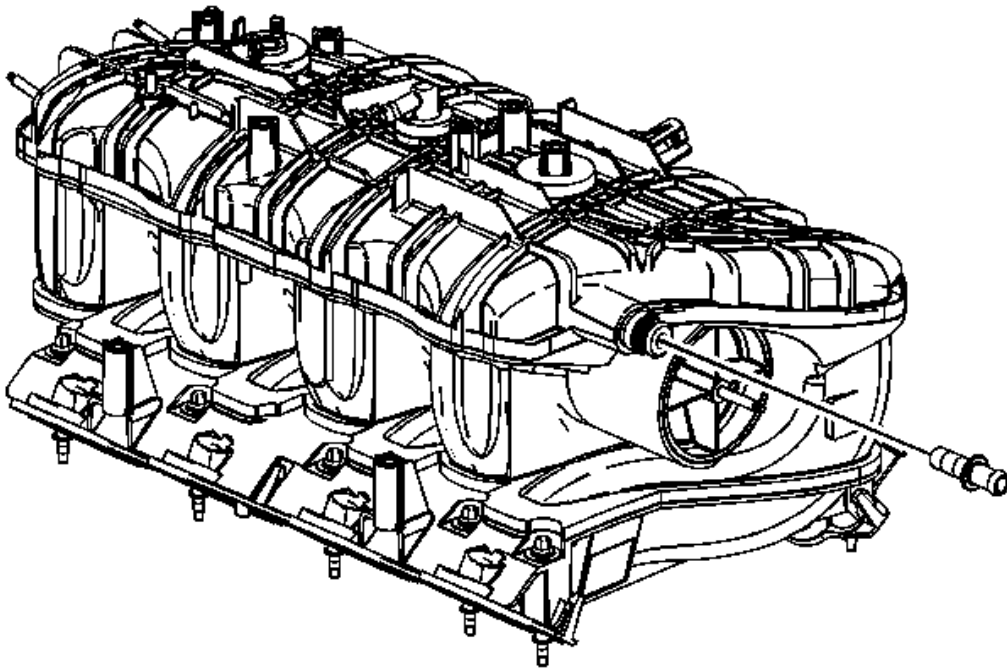


Fig. 124: View Of Brake Booster Vacuum Hose Nipple
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Evenly push in the RED collar in order to remove the nipple.

48. Remove the brake booster vacuum hose nipple.

Installation Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

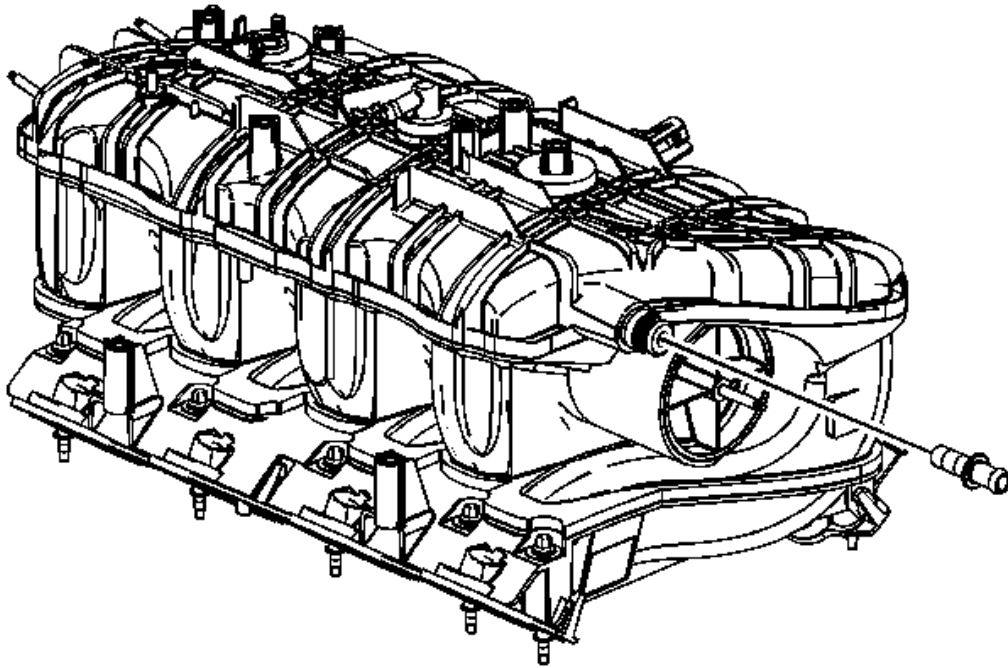


Fig. 125: View Of Brake Booster Vacuum Hose Nipple
Courtesy of GENERAL MOTORS CORP.

1. If the intake manifold was replaced perform the following steps, otherwise proceed to step 21.

IMPORTANT: Evenly push in the RED collar in order to install the nipple.

2. Install the brake booster vacuum hose nipple to the NEW intake manifold.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

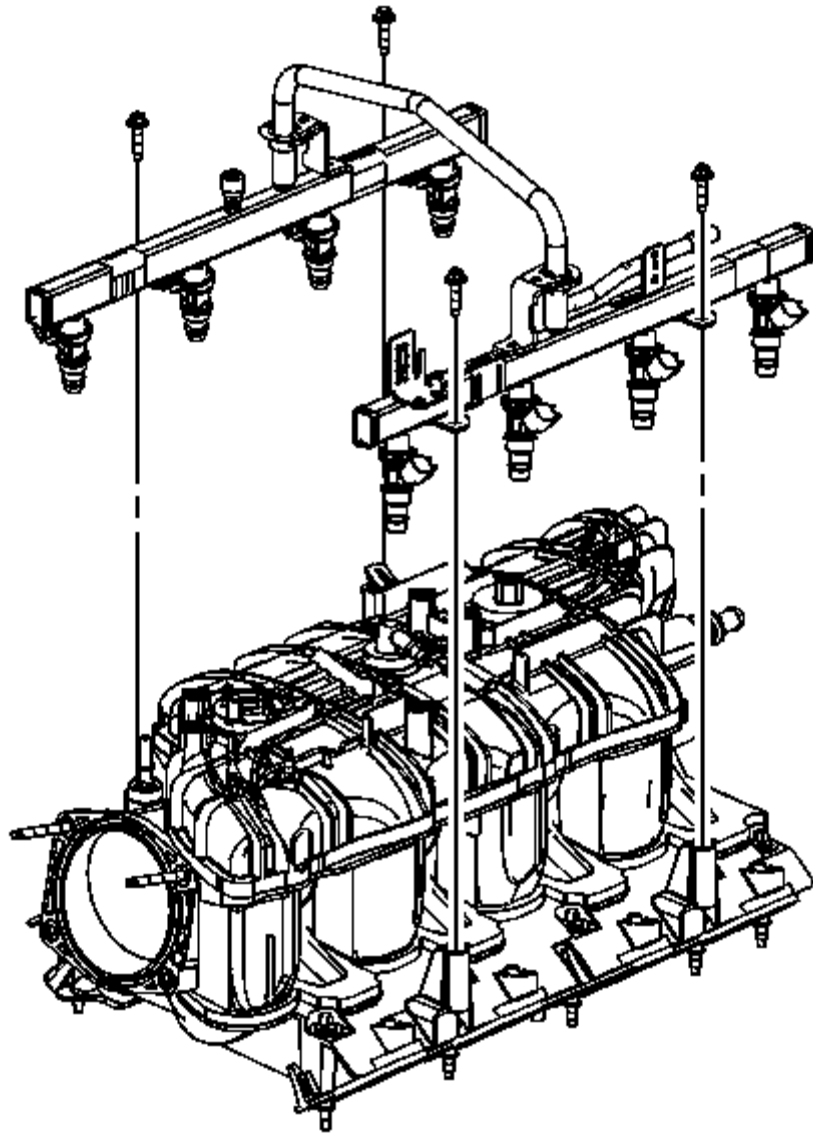


Fig. 126: View Of Fuel Rail & Bolts
Courtesy of GENERAL MOTORS CORP.

3. Install NEW fuel injector lower O-ring seals onto the injectors.
4. Lubricate the NEW O-ring seals with clean engine oil.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

IMPORTANT: Push down firmly on both sides of the rail until all the injectors have been seated into their bores.

5. Install the fuel rail.

NOTE: Refer to Fastener Notice .

6. Install the fuel rail bolts.

Tighten: Tighten the bolts to 10 N.m (89 lb in).

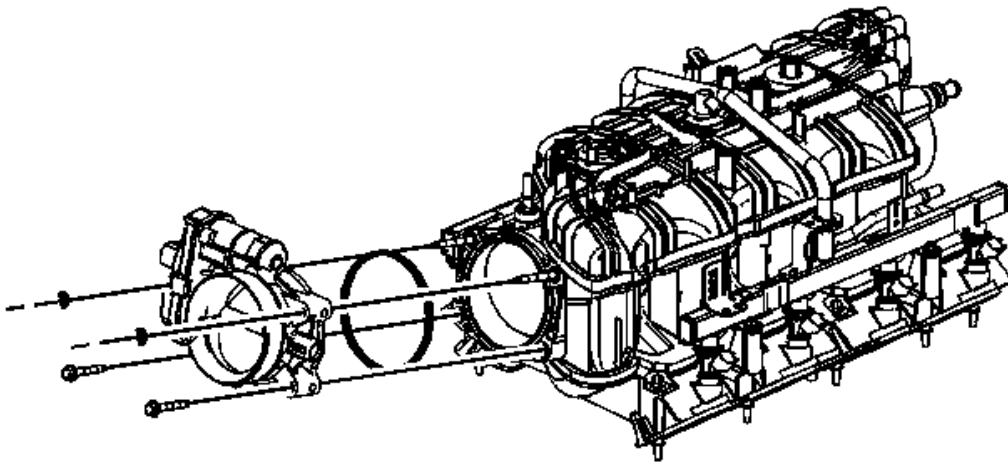


Fig. 127: View Of Throttle Body, Gasket & Bolts/Nuts
Courtesy of GENERAL MOTORS CORP.

7. Install a NEW throttle body gasket to the intake manifold.

8. Install the throttle body.

9. Install the throttle body bolts/nuts.

Tighten: Tighten the bolts/nuts to 10 N.m (89 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

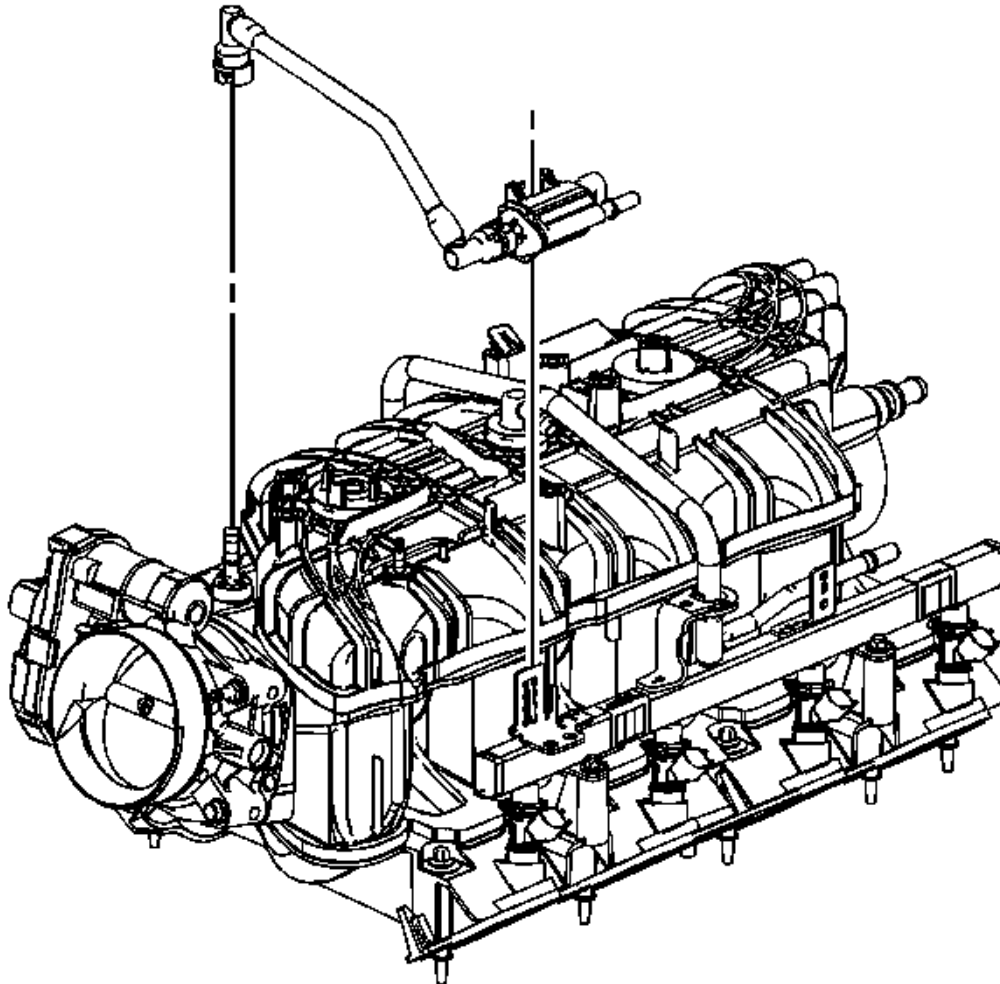


Fig. 128: View Of EVAP Tube & Purge Solenoid
Courtesy of GENERAL MOTORS CORP.

10. Install the EVAP tube and purge solenoid.
11. Install the EVAP canister purge solenoid to the fuel rail bracket and engage the retainer.
12. Connect the EVAP tube quick connect fitting at the intake manifold. Refer to **Plastic Collar Quick Connect Fitting Service** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

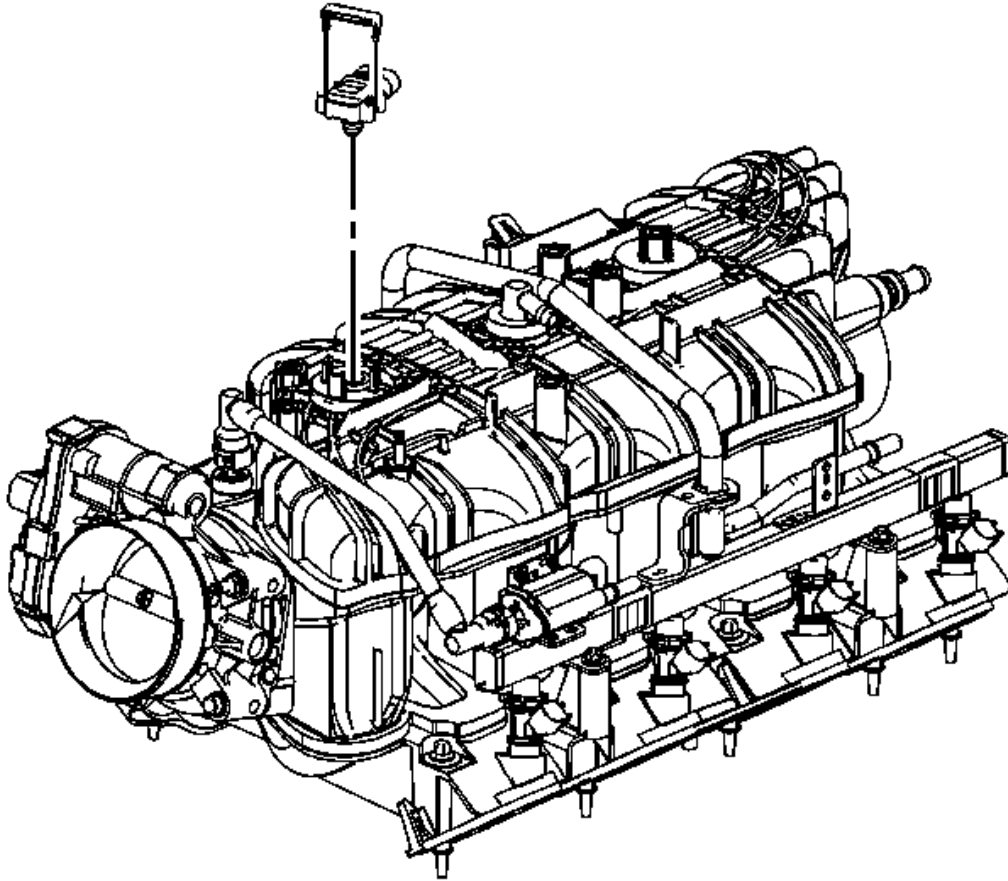


Fig. 129: View Of MAP Sensor & Retainer
Courtesy of GENERAL MOTORS CORP.

13. Lubricate the MAP sensor seal with clean engine oil.
14. Install the MAP sensor.
15. Install the MAP sensor retainer.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

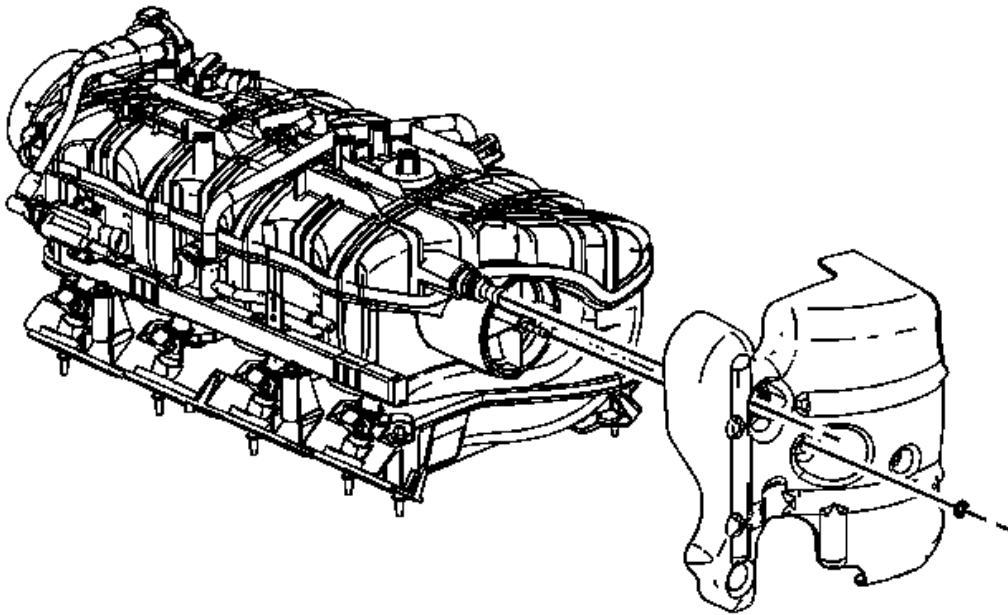


Fig. 130: View Of Upper Intake Manifold Cover & Nut
Courtesy of GENERAL MOTORS CORP.

16. Install the upper intake manifold cover.
17. Install the upper intake manifold cover nut until snug

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

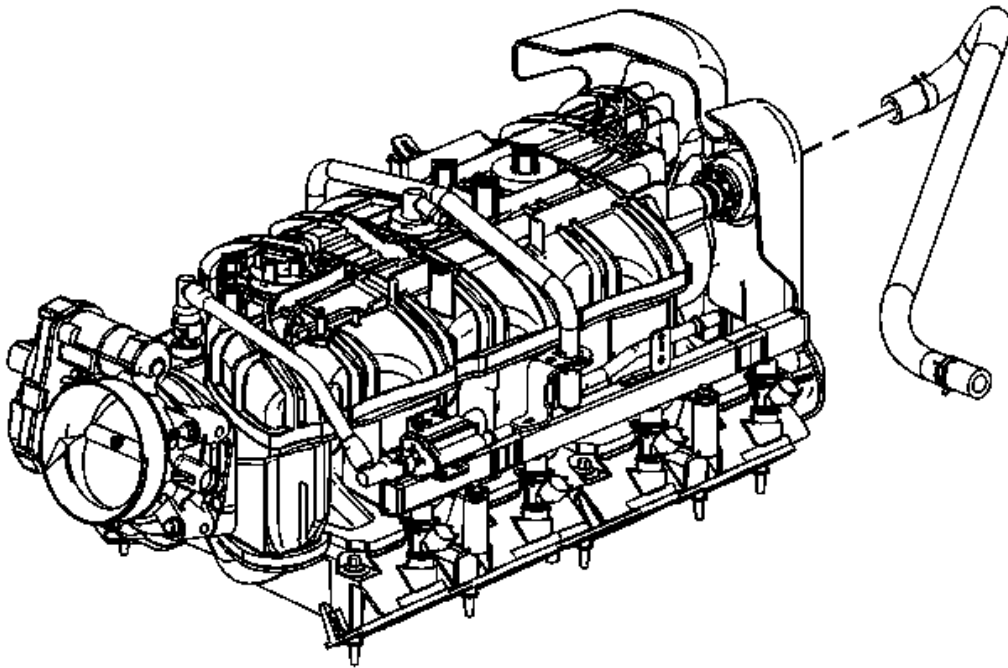


Fig. 131: View Of Vacuum Brake Booster Hose
Courtesy of GENERAL MOTORS CORP.

18. Install the brake booster vacuum hose to the intake manifold nipple.
19. Position the brake booster vacuum hose clamp at the intake manifold.
20. Secure the brake booster vacuum hose to the intake manifold.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

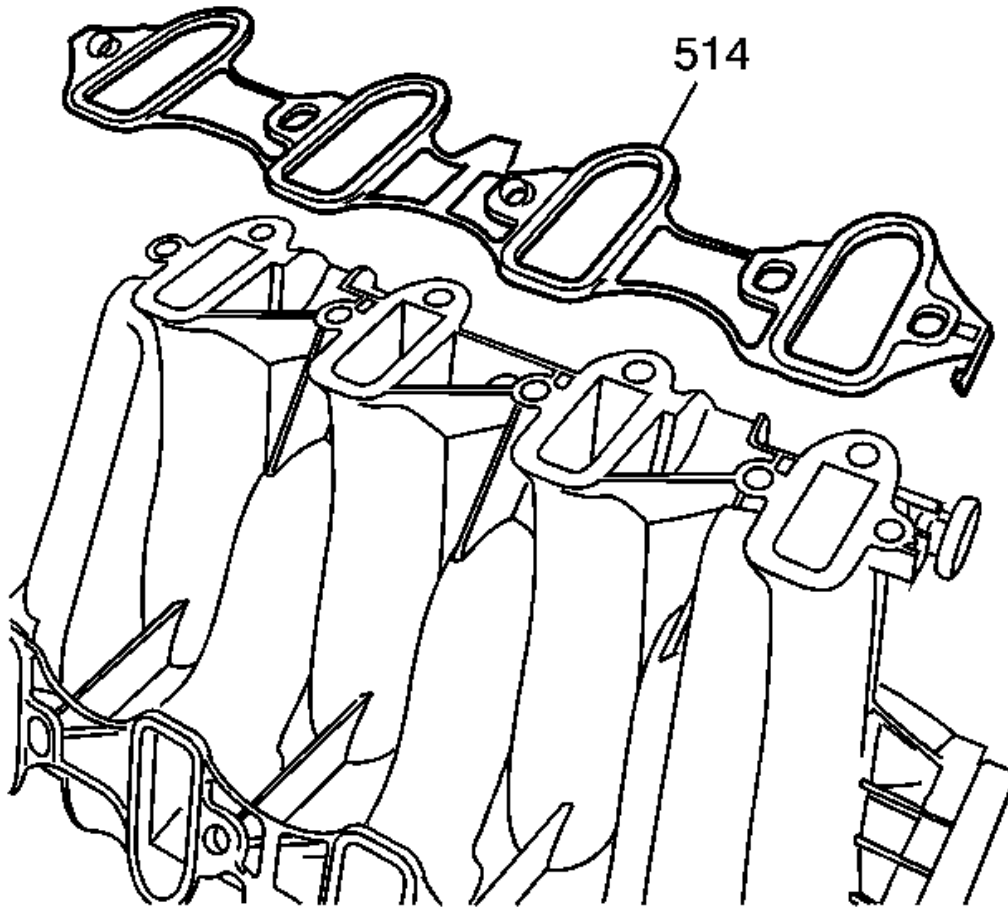


Fig. 132: View Of Intake Manifold-To-Cylinder Head Gasket
Courtesy of GENERAL MOTORS CORP.

21. Install NEW intake manifold gaskets (514) to the intake manifold.
22. Remove the covers from the cylinder head passages.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

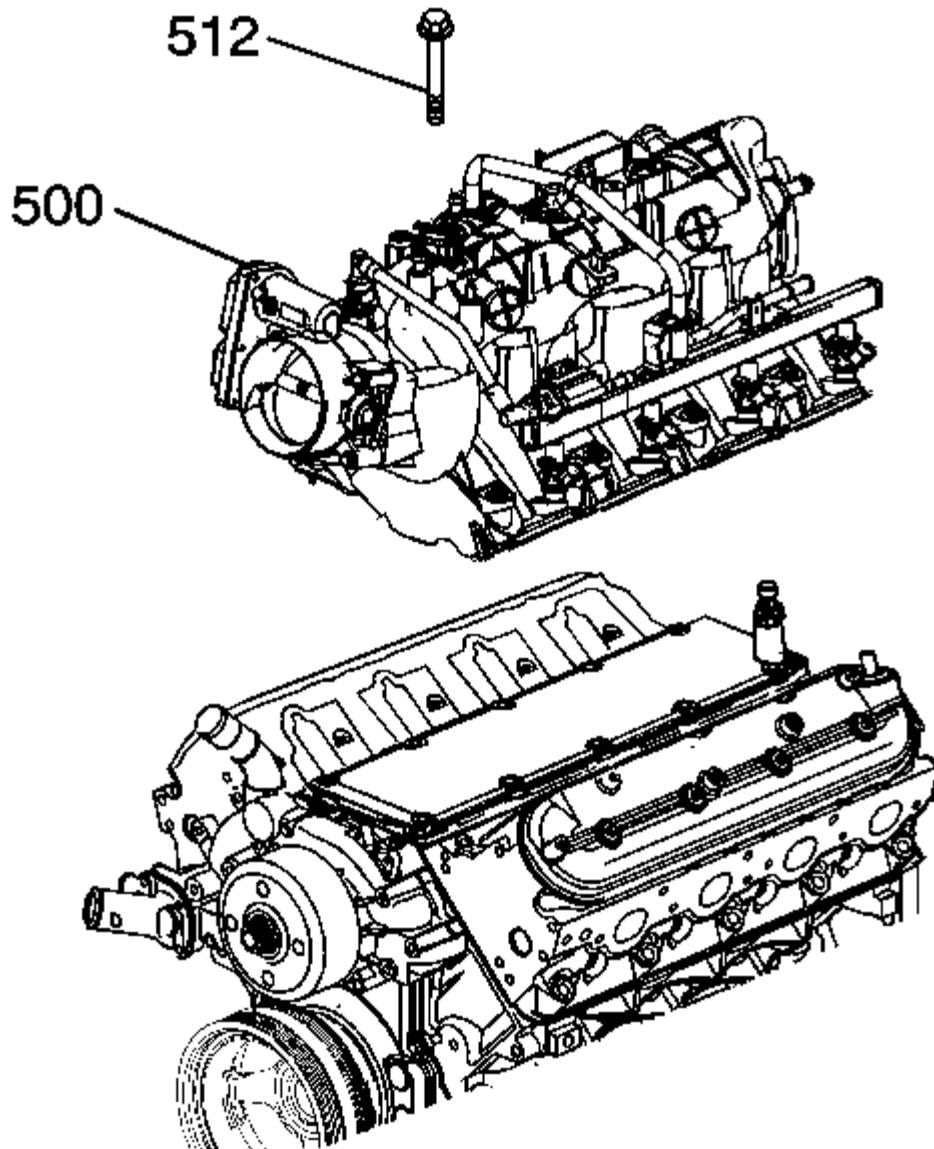


Fig. 133: Removing/Installing Intake Manifold Bolts
Courtesy of GENERAL MOTORS CORP.

23. Install the intake manifold (500).

IMPORTANT: The aid of an assistant may be helpful in holding the engine

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

harness up out of the way so the upper intake manifold cover does not get caught against the engine harness.

24. Tighten the intake manifold bolts (512) until snug.

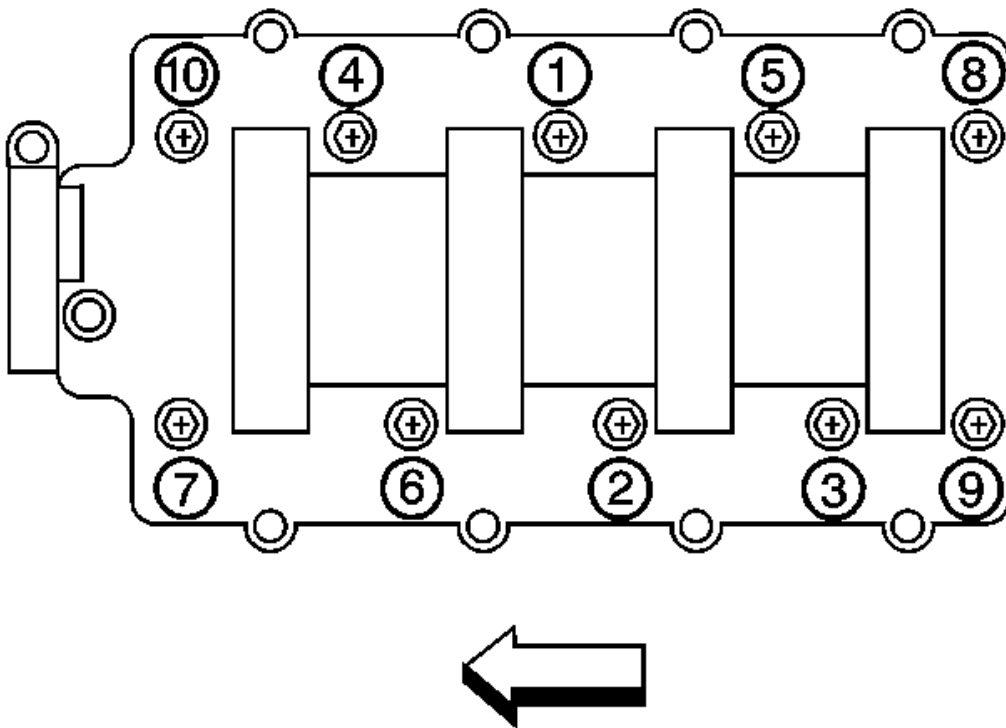


Fig. 134: Identifying Intake Manifold Bolt Tightening Sequence
Courtesy of GENERAL MOTORS CORP.

25. Tighten the intake manifold bolts to specifications.

Tighten:

- Tighten the bolts a first pass in the sequence shown to 5 N.m (44 lb in).
- Tighten the bolts a final pass in the sequence shown to 10 N.m (89 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

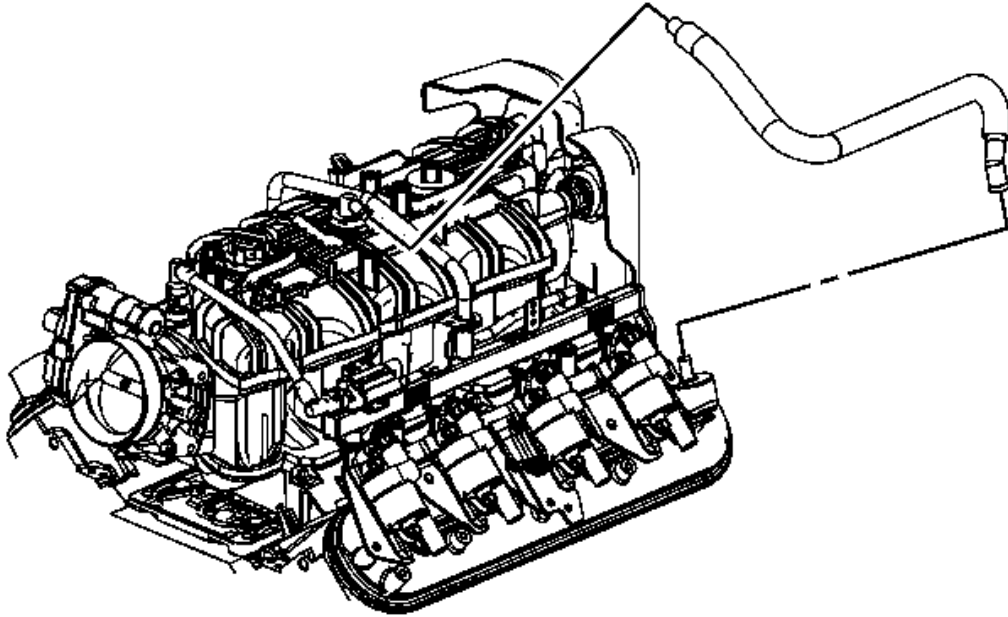


Fig. 135: View Of PCV Hose
Courtesy of GENERAL MOTORS CORP.

26. Position and install the PCV hose to the intake manifold fitting.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

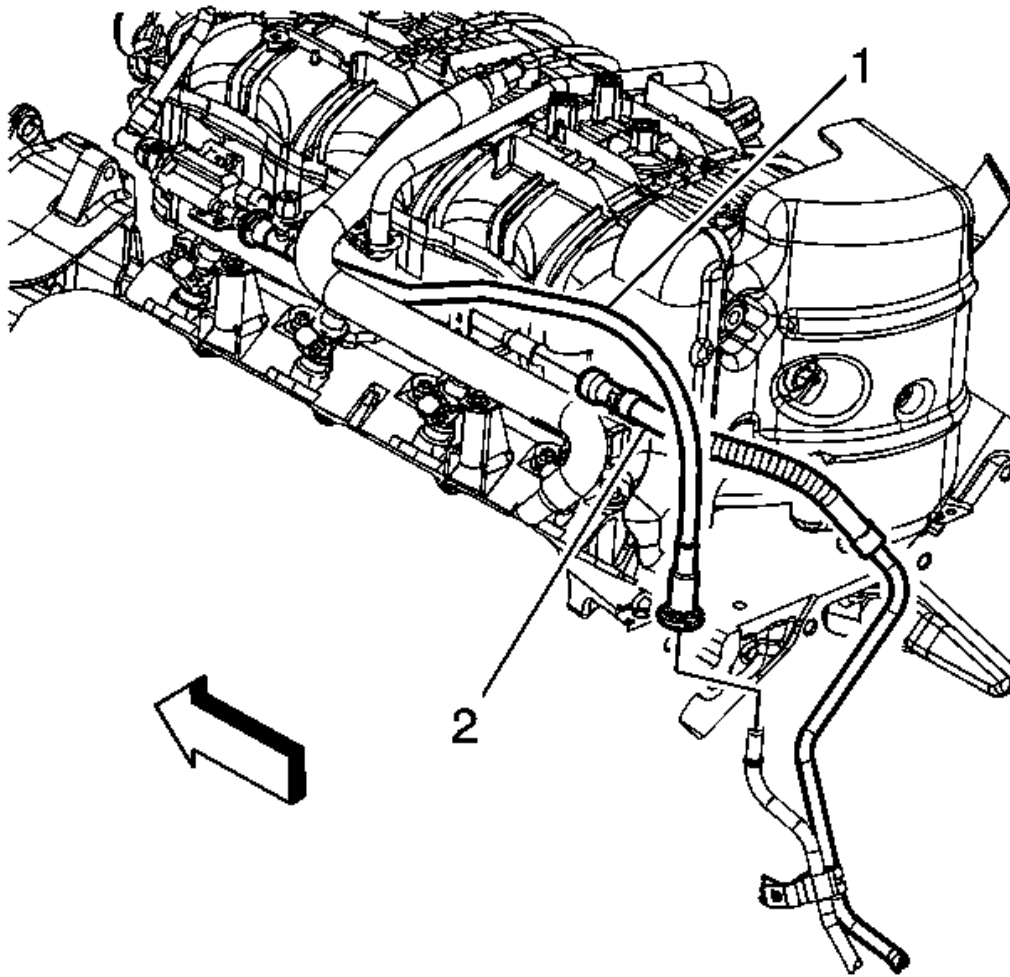


Fig. 136: View Of EVAP Canister Purge Tube & Quick Connect Fitting
Courtesy of GENERAL MOTORS CORP.

27. Connect the fuel feed line quick connect fitting (2) to the fuel rail. Refer to **Metal Collar Quick Connect Fitting Service** .
28. Connect the EVAP canister purge tube (1) quick connect fitting to the EVAP canister purge solenoid. Refer to **Plastic Collar Quick Connect Fitting Service** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

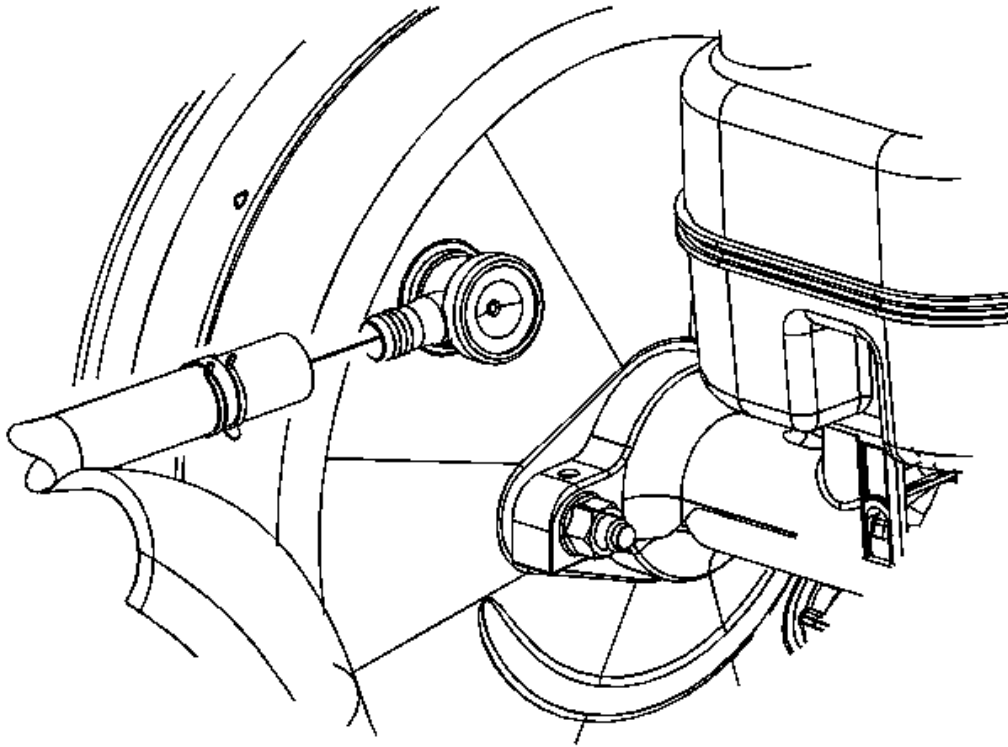


Fig. 137: View Of Brake Booster Vacuum Hose & Booster Fitting
Courtesy of GENERAL MOTORS CORP.

29. Unsecure the brake booster vacuum hose from the intake manifold.
30. Install the brake booster vacuum hose to the booster fitting.
31. Position the brake booster vacuum hose clamp at the booster.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

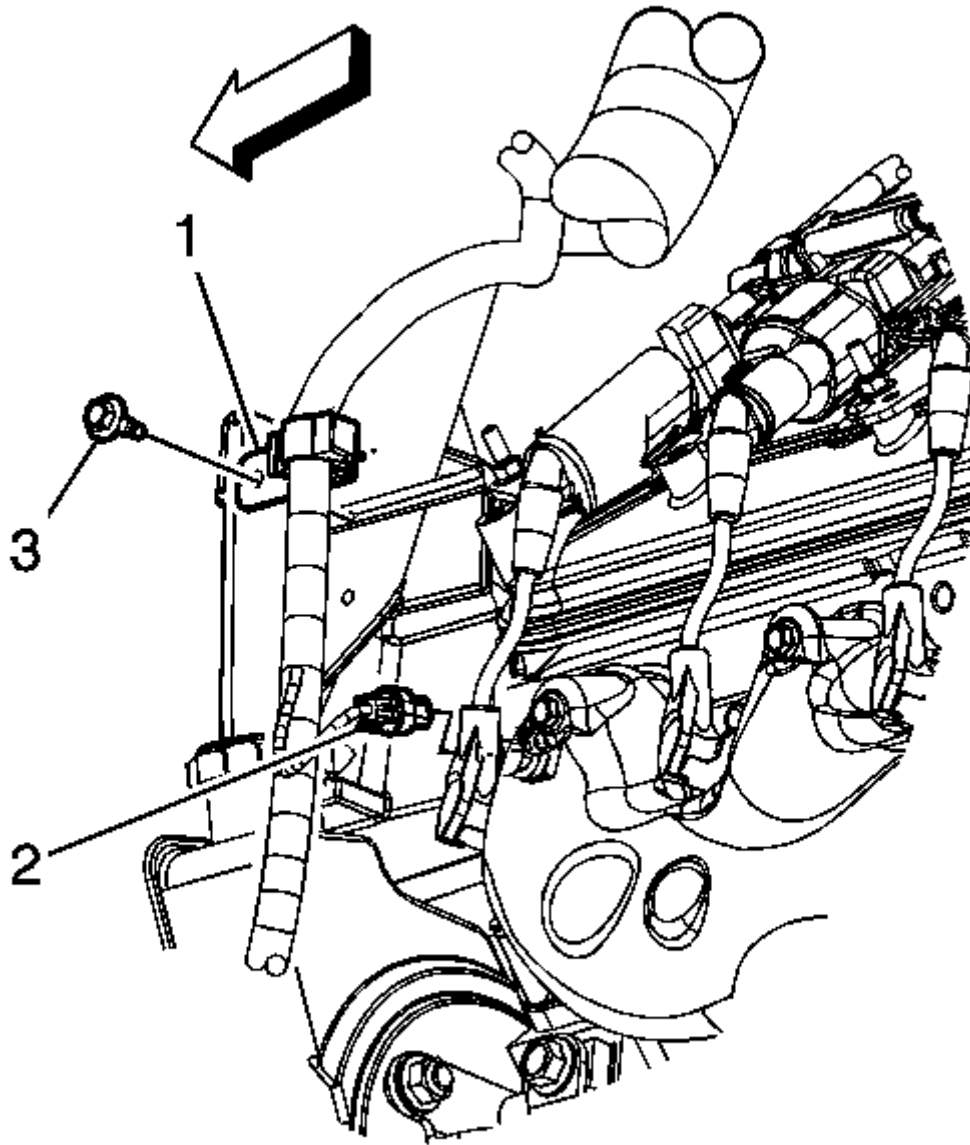


Fig. 138: View Of Engine Wiring Harness, Clip, Bolt & Connector
Courtesy of GENERAL MOTORS CORP.

32. Untie the engine harness branches from the cowl panel and position over the engine.
33. Connect the engine harness electrical connector (2) to the ECT sensor.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

34. Position the engine harness clip (1) to the generator bracket and install the bolt (3).

Tighten: Tighten the bolt to 9 N.m (80 lb in).

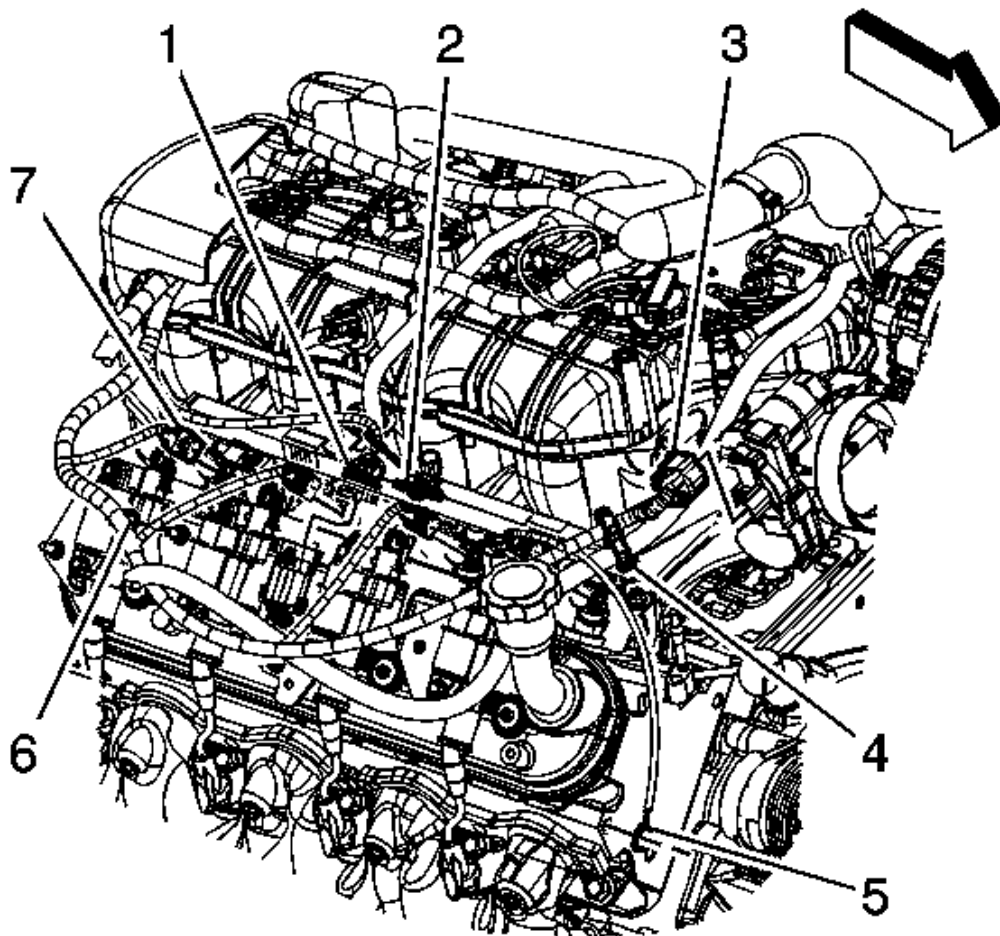


Fig. 139: View Of CPA Retainer, Engine Harness Electrical Connectors & Harness Clips

Courtesy of GENERAL MOTORS CORP.

35. Connect the engine harness electrical connectors (7) to the right side fuel injectors.

36. Install the engine harness clip (6) to the ignition coil bracket stud.

37. Install the engine harness clip (4) to the generator battery jumper cable.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

38. Connect the engine harness electrical connector (3) to the throttle actuator.
39. Connect the engine harness electrical connector (1) to the ignition coil harness electrical connector.
40. Install the CPA retainer (2).

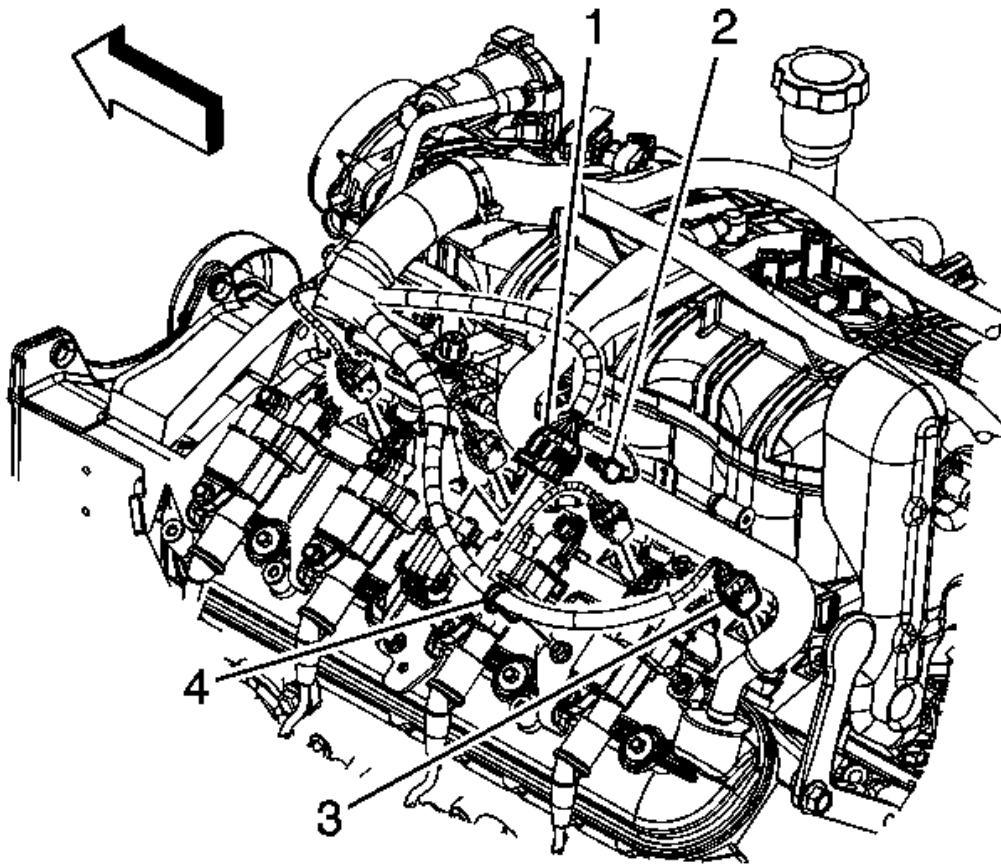


Fig. 140: View Of CPA Retainer, Electrical Connectors & Engine Harness Clips
Courtesy of GENERAL MOTORS CORP.

41. Install the engine harness clip (4) to the ignition coil bracket stud.
42. Connect the engine harness electrical connectors (3) to the left side fuel injectors.
43. Connect the engine harness electrical connector (1) to the ignition coil harness electrical connector.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

44. Install the CPA retainer (1).

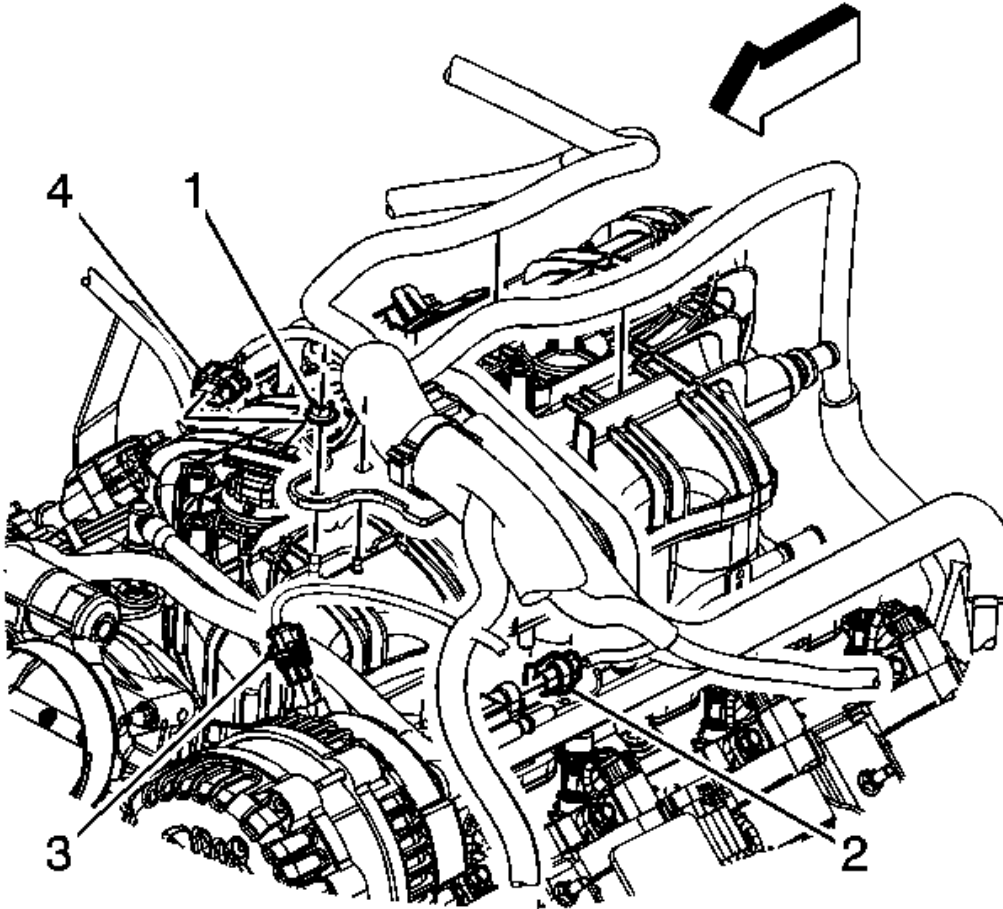


Fig. 141: View Of Engine Harness Retainer Nut & Electrical Connectors
Courtesy of GENERAL MOTORS CORP.

45. Connect the engine wiring harness electrical connector (4) to the MAP sensor.
46. Connect the engine harness electrical connector (2) to the EVAP canister purge solenoid.
47. Install the engine harness retainer to the stud and locator pin.
48. Install the engine harness retainer nut (1).

Tighten: Tighten the nut to 5 N.m (44 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

49. Install the generator. Refer to **Generator Replacement (4.8L, 5.3L, 6.0L, and 6.2L)** .
50. Install the air cleaner outlet duct. Refer to **Air Cleaner Resonator Outlet Duct Replacement** .

INTAKE MANIFOLD REPLACEMENT (LY2 AND LY6)

Removal Procedure

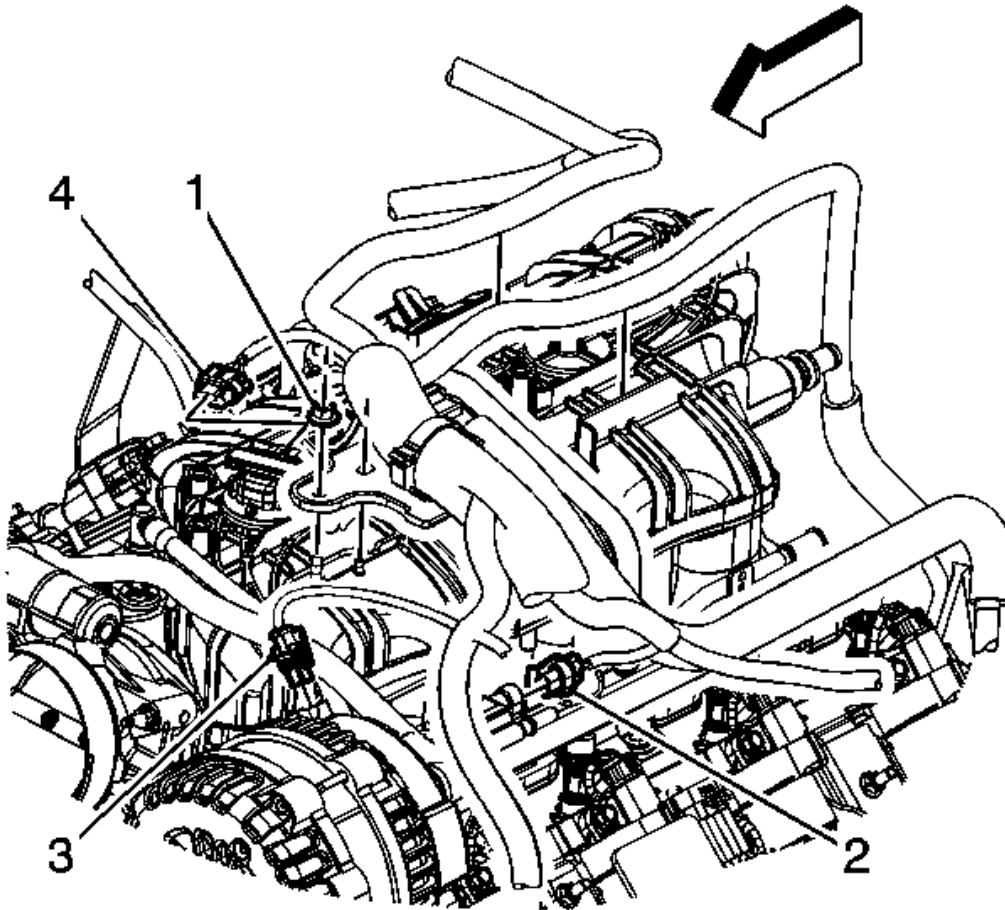


Fig. 142: View Of Engine Harness Retainer Nut & Electrical Connectors
Courtesy of GENERAL MOTORS CORP.

1. Remove the air cleaner outlet duct. Refer to **Air Cleaner Resonator Outlet Duct Replacement** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Remove the generator. Refer to **Generator Replacement (4.8L, 5.3L, 6.0L, and 6.2L)** .
3. Remove the engine harness retainer nut (1).
4. Remove the engine harness retainer from the stud and locator pin.
5. Disconnect the engine harness electrical connector (2) from the evaporative emission (EVAP) canister purge solenoid.
6. Disconnect the engine wiring harness electrical connector (4) from the manifold absolute pressure (MAP) sensor.

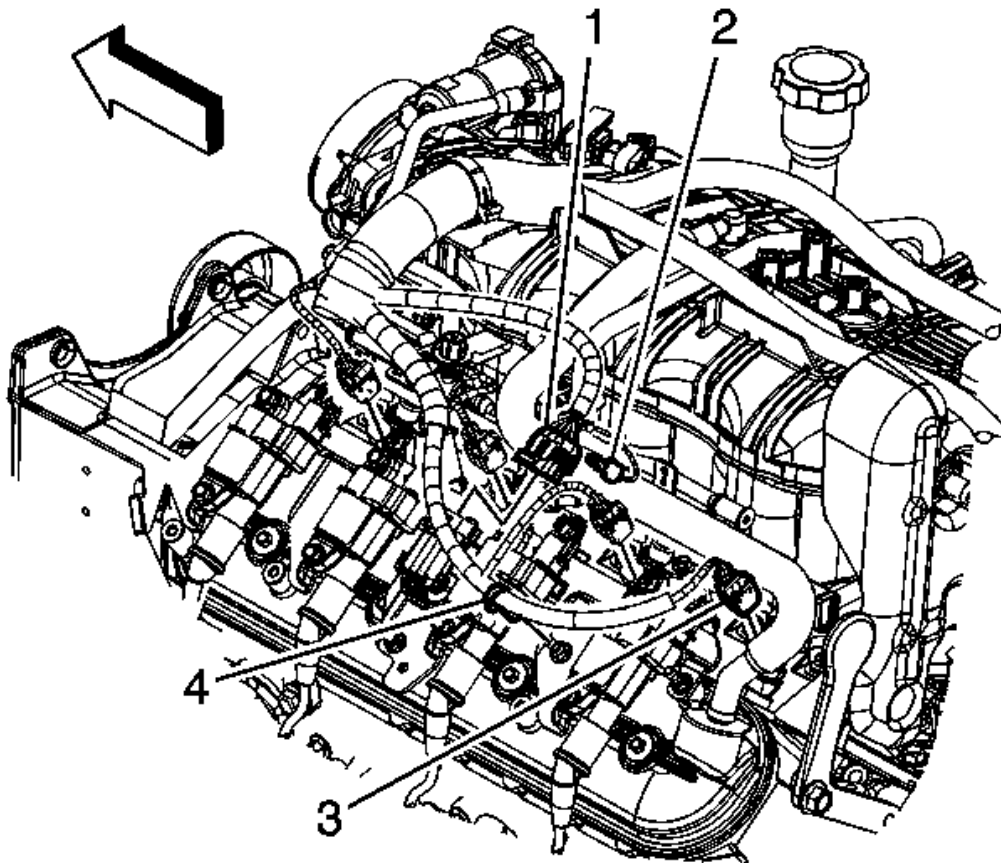


Fig. 143: View Of CPA Retainer, Electrical Connectors & Engine Harness Clips
Courtesy of GENERAL MOTORS CORP.

7. Remove the connector position assurance (CPA) retainer (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

8. Disconnect the engine harness electrical connector (1) from the ignition coil harness electrical connector.
9. Disconnect the engine harness electrical connectors (3) from the left side fuel injectors.
10. Remove the engine harness clip (4) from the ignition coil bracket stud.

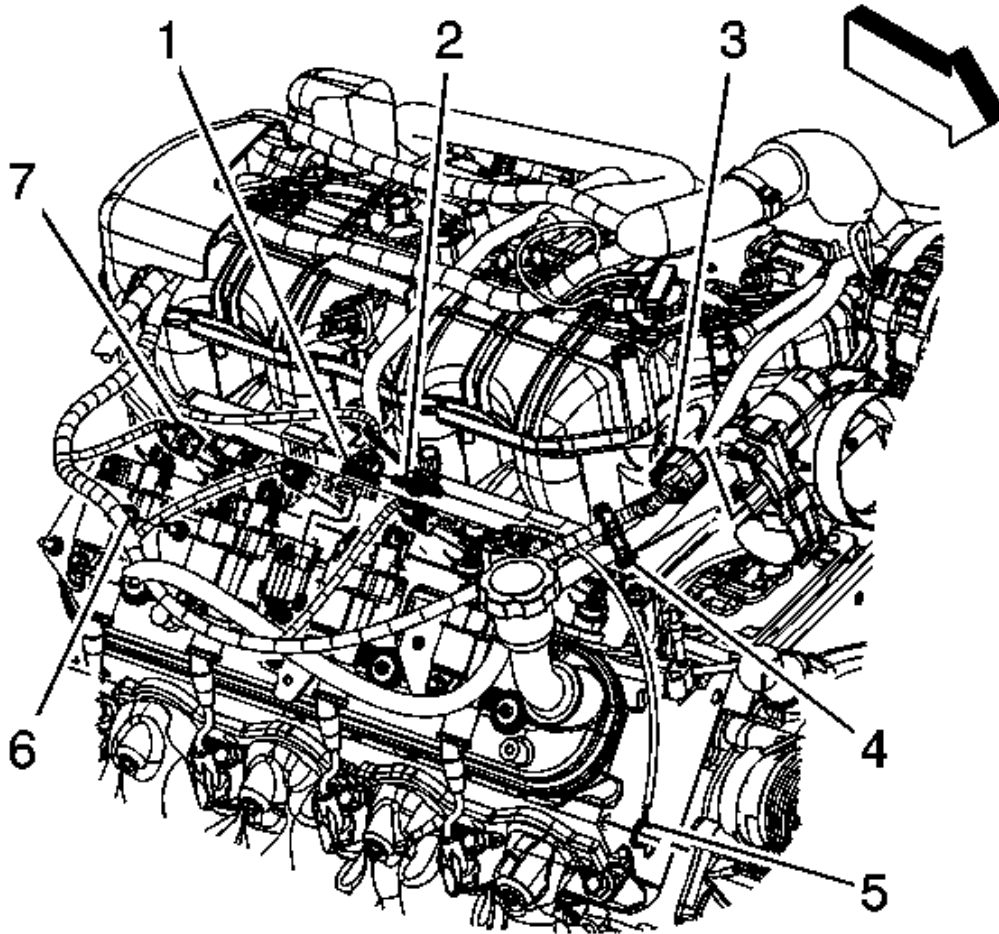


Fig. 144: View Of CPA Retainer, Engine Harness Electrical Connectors & Harness Clips
Courtesy of GENERAL MOTORS CORP.

11. Remove the CPA retainer (2).
12. Disconnect the engine harness electrical connector (1) from the ignition coil harness

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

electrical connector.

13. Disconnect the engine harness electrical connector (3) from the throttle actuator.
14. Remove the engine harness clip (4) from the generator battery jumper cable.
15. Remove the engine harness clip (6) from the ignition coil bracket stud.
16. Disconnect the engine harness electrical connectors (7) from the right side fuel injectors.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

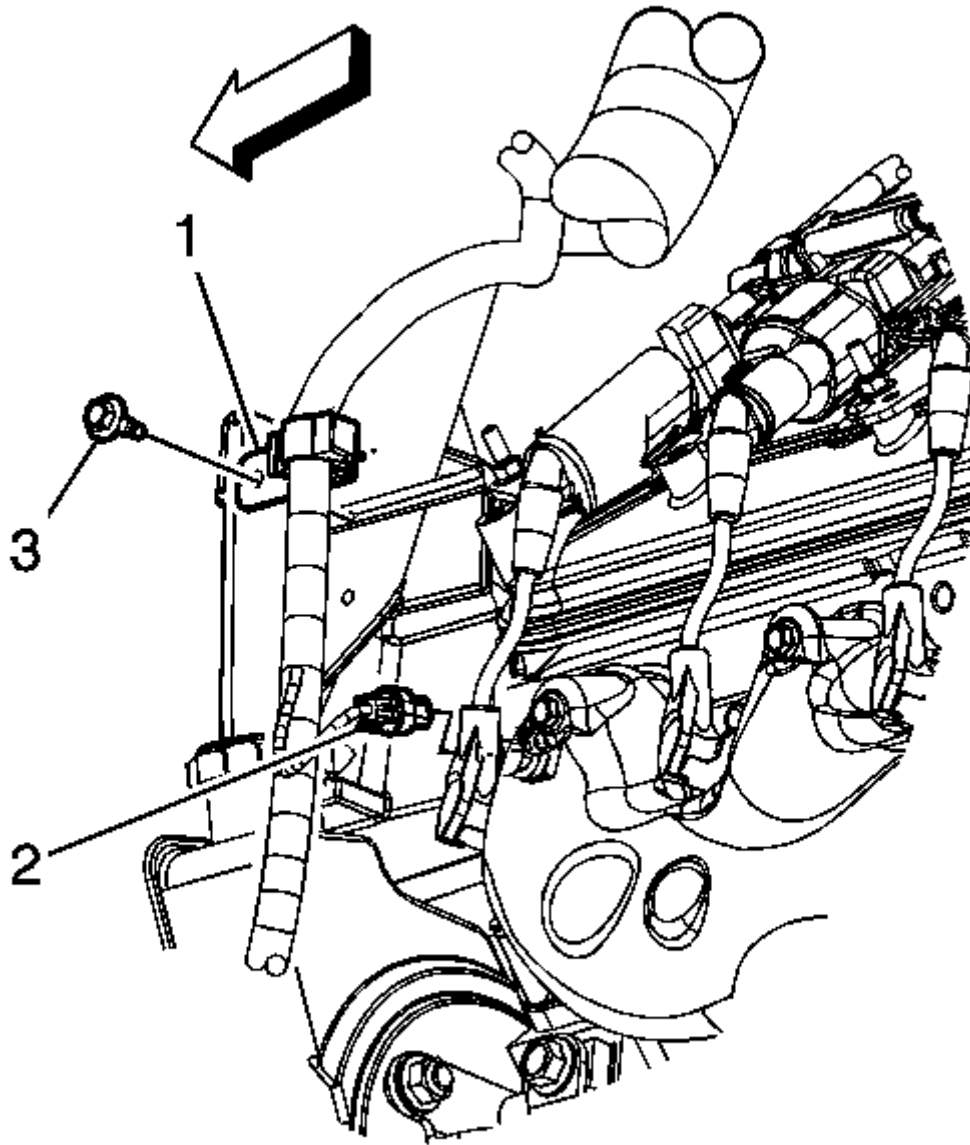


Fig. 145: View Of Engine Wiring Harness, Clip, Bolt & Connector
Courtesy of GENERAL MOTORS CORP.

17. Remove the engine harness clip (1) bolt (3).
18. Disconnect the engine harness electrical connector (2) from the engine coolant temperature (ECT) sensor.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

19. Gather the engine harness branches and tie the harness up out of the way to the cowl panel.

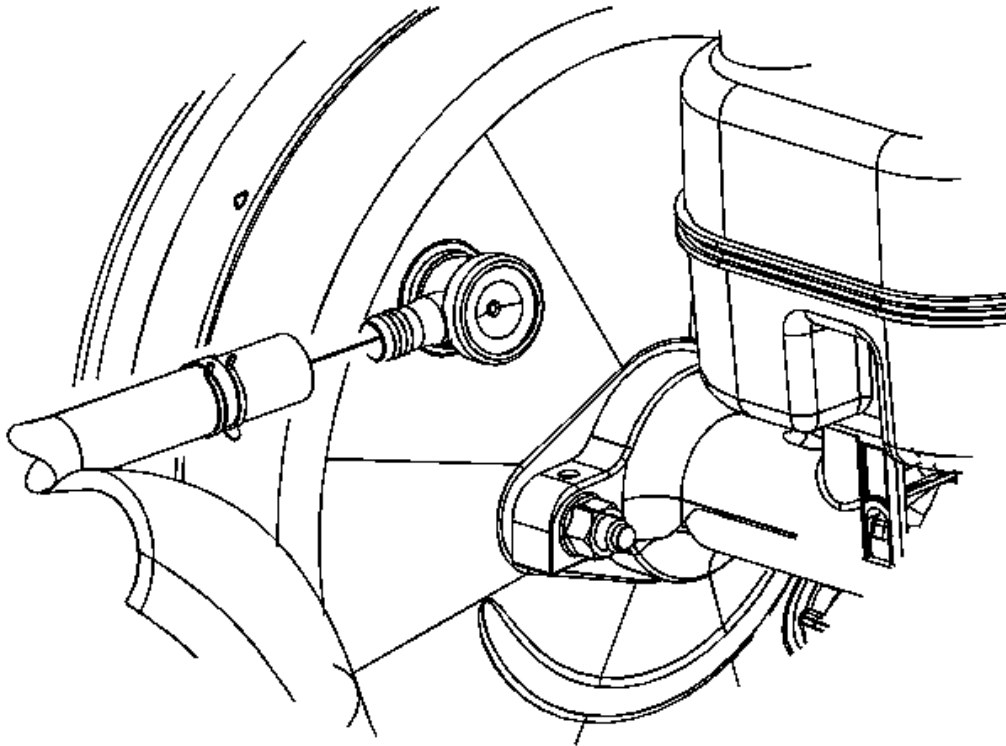


Fig. 146: View Of Brake Booster Vacuum Hose & Booster Fitting
Courtesy of GENERAL MOTORS CORP.

20. Reposition the brake booster vacuum hose clamp at the booster.
21. Remove the brake booster vacuum hose from the booster fitting.
22. Secure the brake booster vacuum hose to the intake manifold.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

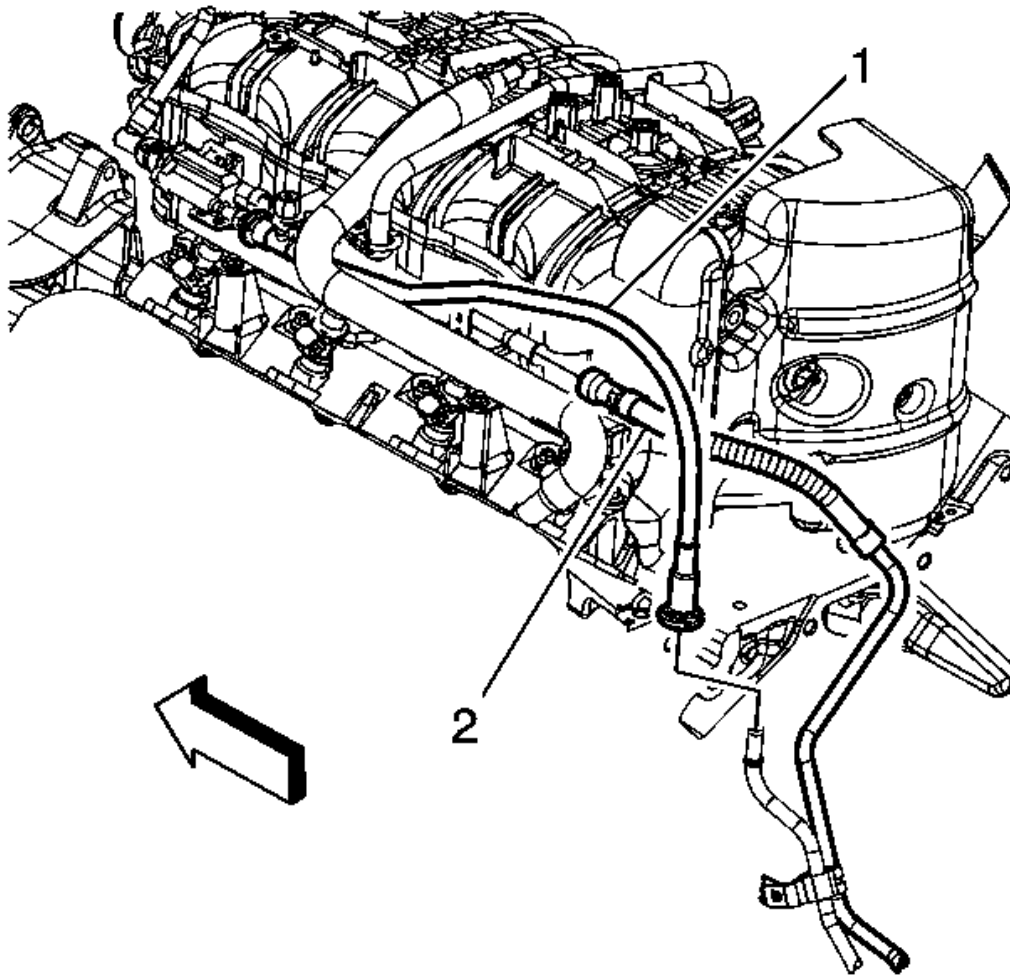


Fig. 147: View Of EVAP Canister Purge Tube & Quick Connect Fitting
Courtesy of GENERAL MOTORS CORP.

23. Disconnect the EVAP canister purge tube (1) quick connect fitting from the EVAP canister purge solenoid. Refer to **Plastic Collar Quick Connect Fitting Service** .
24. Disconnect the fuel feed line quick connect fitting (2) from the fuel rail. Refer to **Metal Collar Quick Connect Fitting Service** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

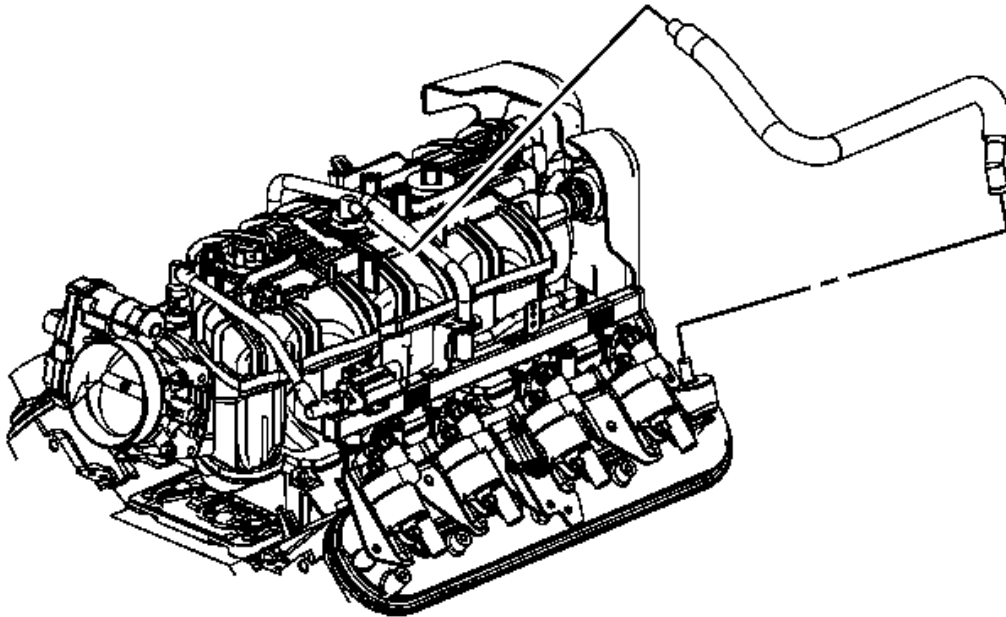


Fig. 148: View Of PCV Hose
Courtesy of GENERAL MOTORS CORP.

25. Remove the positive crankcase ventilation (PCV) hose from the intake manifold fitting.
26. Position the hose out of the way.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

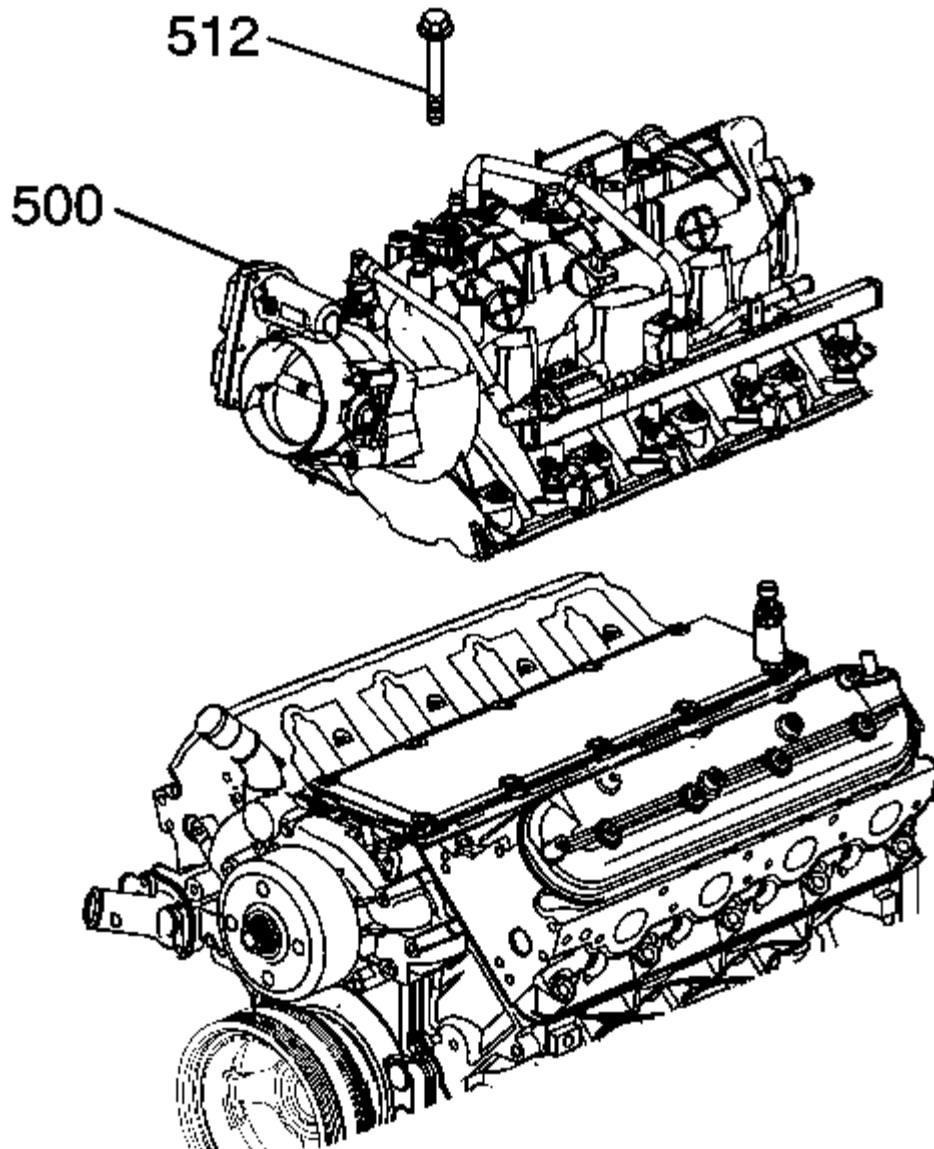


Fig. 149: View Of Intake Manifold Bolts
Courtesy of GENERAL MOTORS CORP.

27. Loosen the intake manifold bolts (512).

IMPORTANT: The aid of an assistant may be helpful in holding the engine

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

harness up out of the way so the upper intake manifold cover does not get caught against the engine harness.

28. Remove the intake manifold (500).
29. Cover the cylinder head passages in order to prevent dirt or debris from entering the passages.

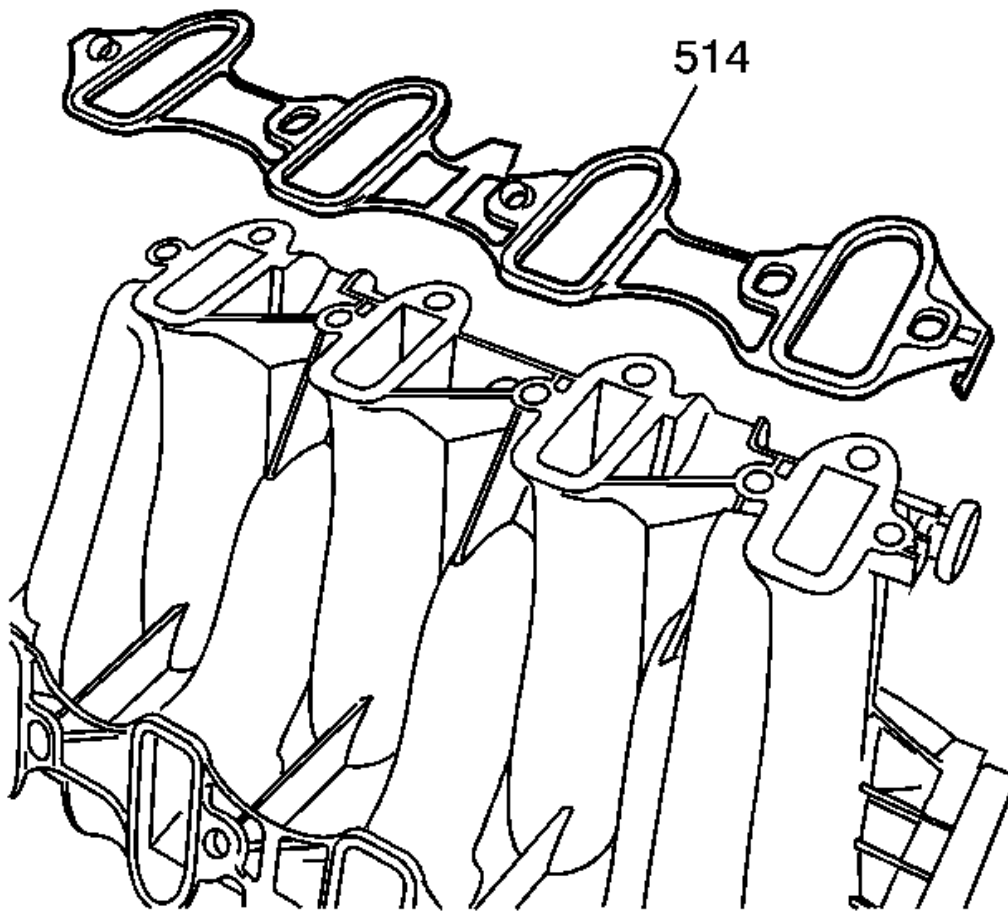


Fig. 150: View Of Intake Manifold-To-Cylinder Head Gasket
Courtesy of GENERAL MOTORS CORP.

30. Remove and discard the intake manifold gaskets (514).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

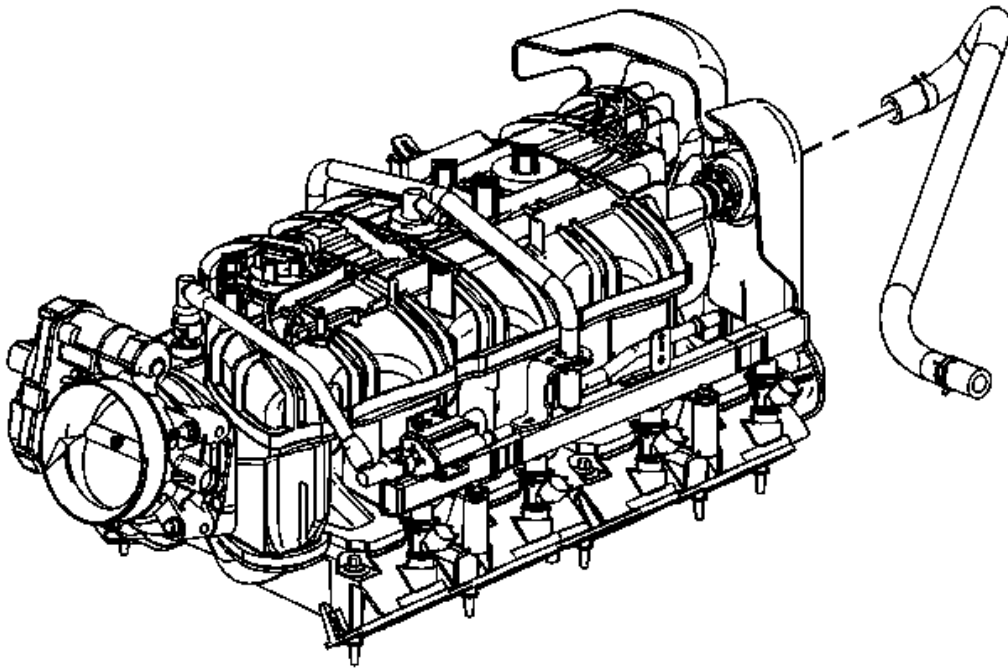


Fig. 151: View Of Vacuum Brake Booster Hose
Courtesy of GENERAL MOTORS CORP.

31. If replacing the intake manifold, perform the following steps, otherwise proceed to step 21 of the installation procedure.
32. Place the intake manifold on a clean work surface.
33. Reposition the brake booster vacuum hose clamp at the intake manifold.
34. Remove the brake booster vacuum hose from the intake manifold nipple.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

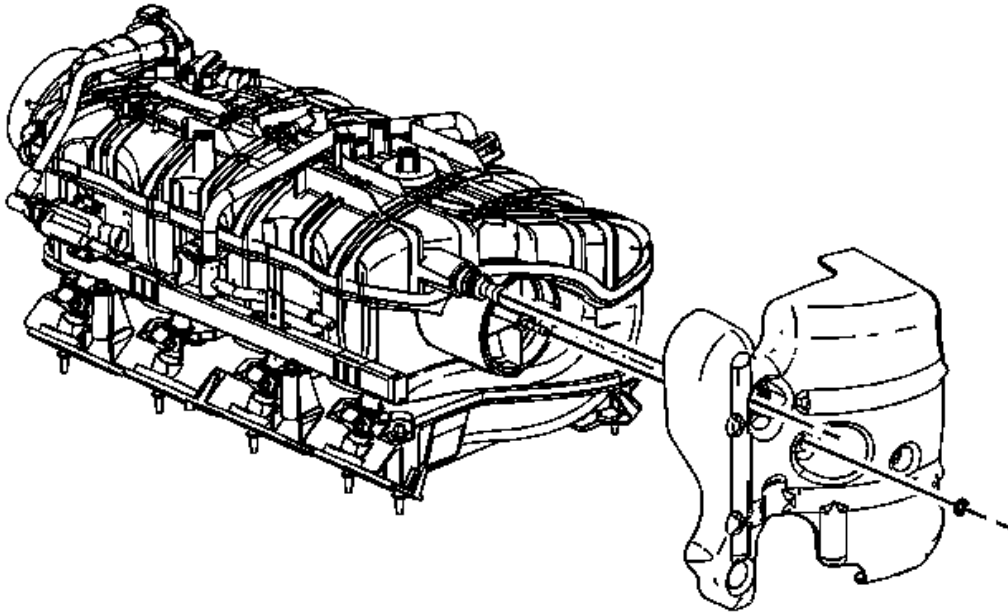


Fig. 152: View Of Upper Intake Manifold Cover & Nut
Courtesy of GENERAL MOTORS CORP.

35. Remove the upper intake manifold cover nut.
36. Remove the upper intake manifold cover.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

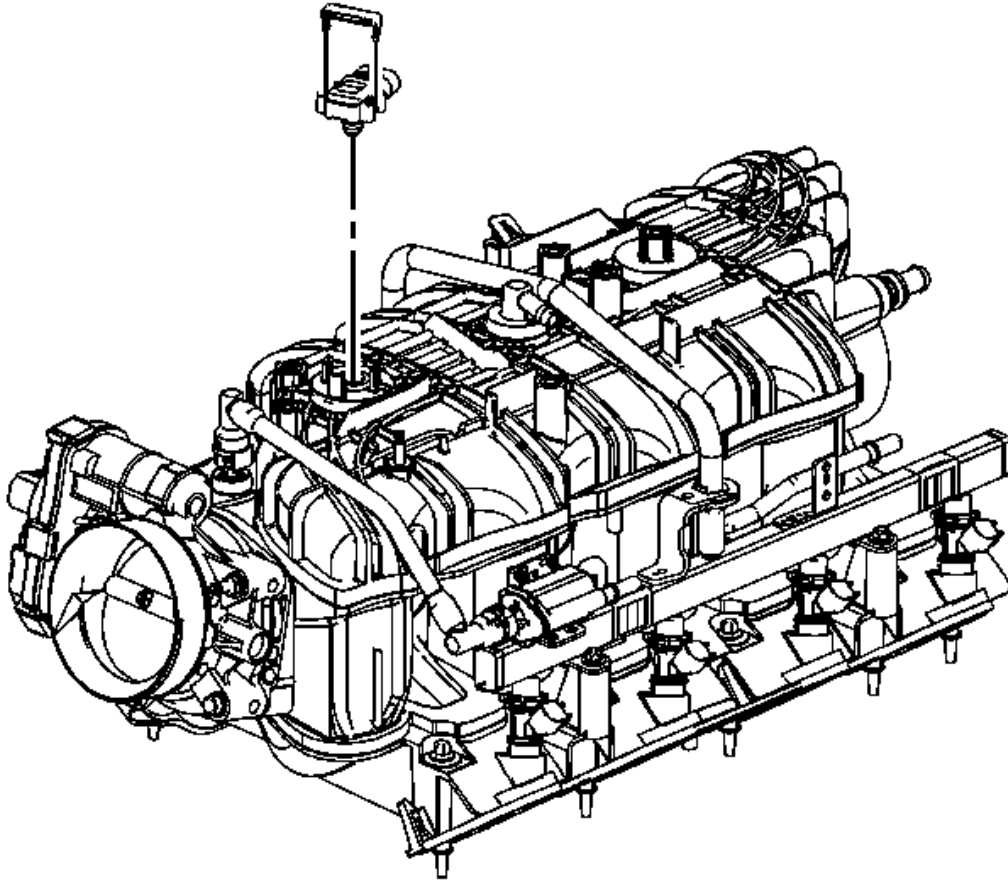


Fig. 153: View Of MAP Sensor & Retainer
Courtesy of GENERAL MOTORS CORP.

37. Remove the manifold absolute pressure (MAP) sensor retainer.
38. Remove the MAP sensor.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

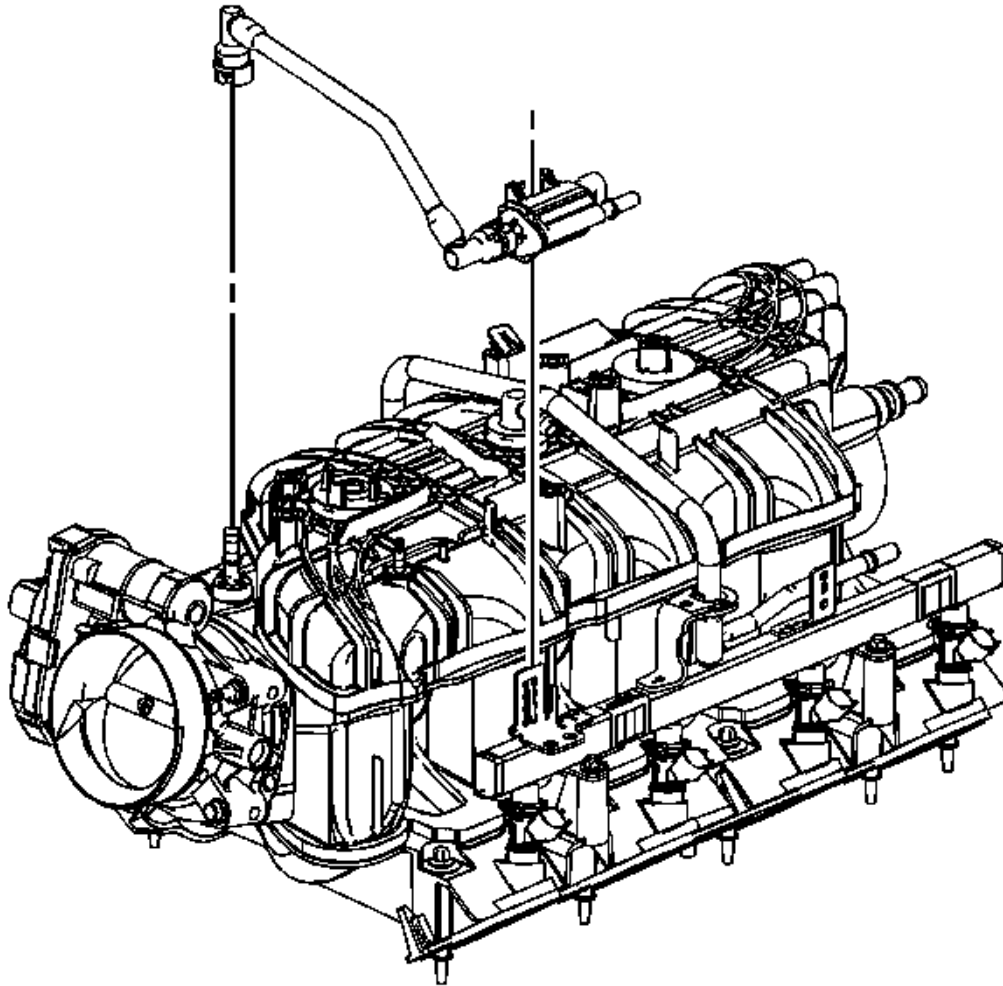


Fig. 154: View Of EVAP Tube & Purge Solenoid
Courtesy of GENERAL MOTORS CORP.

39. Disconnect the EVAP tube quick connect fitting at the intake manifold. Refer to **Plastic Collar Quick Connect Fitting Service** .
40. Disengage the retainer securing the EVAP canister purge solenoid to the fuel rail.
41. Remove the EVAP tube and purge solenoid.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

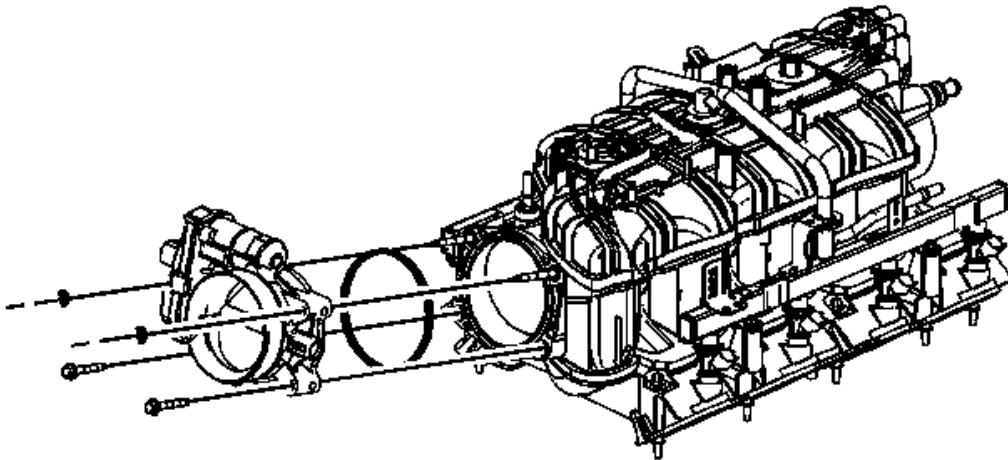


Fig. 155: View Of Throttle Body, Gasket & Bolts/Nuts
Courtesy of GENERAL MOTORS CORP.

42. Remove the throttle body bolts/nuts.
43. Remove the throttle body.
44. Remove and discard the throttle body gasket.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

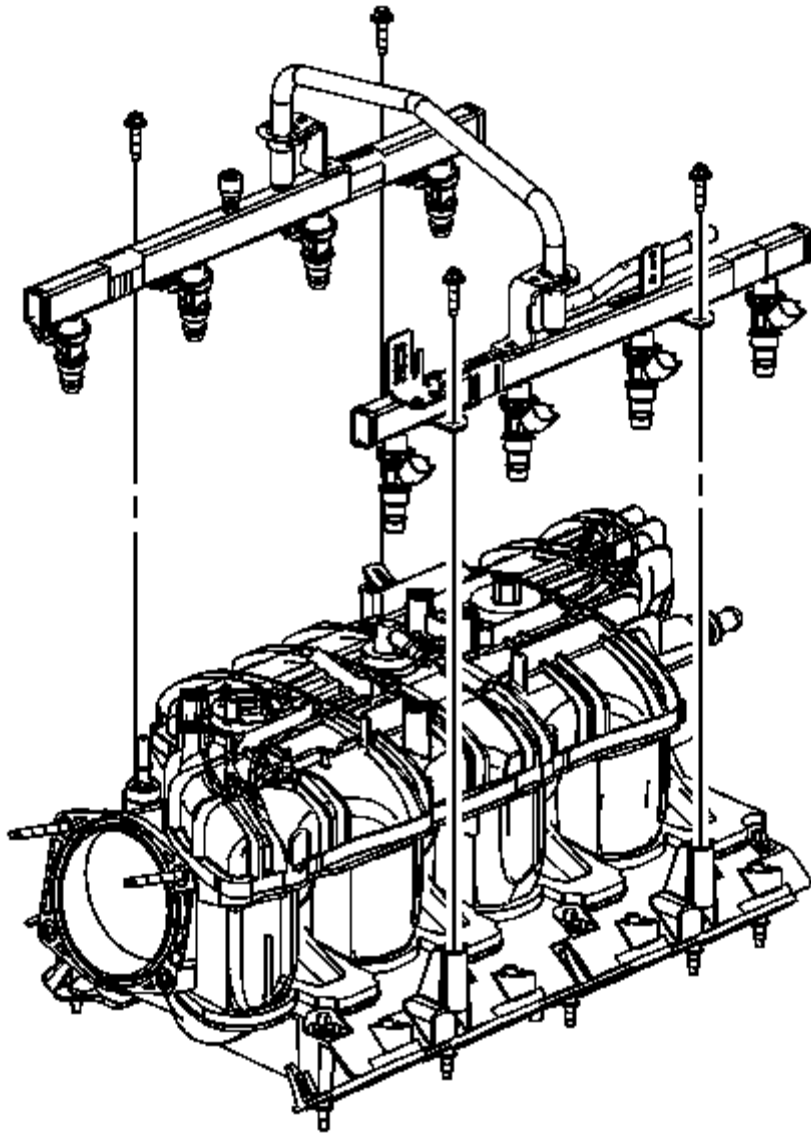


Fig. 156: View Of Fuel Rail & Bolts
Courtesy of GENERAL MOTORS CORP.

45. Remove the fuel rail bolts.

IMPORTANT: Lift evenly on both sides of the fuel rail until all injectors are

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

removed from their bores.

46. Remove the fuel rail.
47. Remove and discard the fuel injector lower O-ring seals.

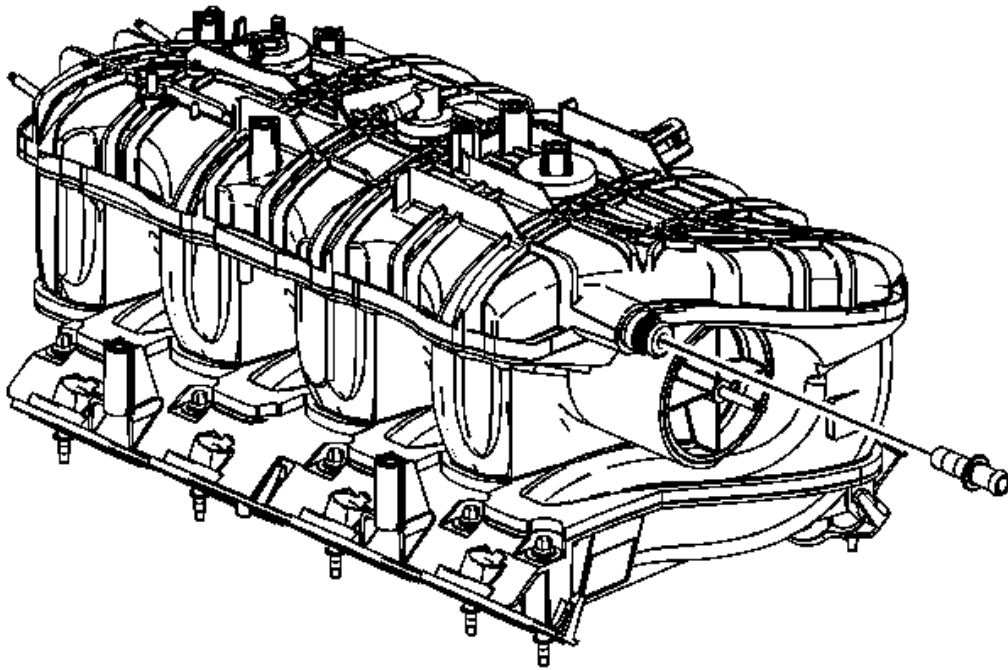


Fig. 157: View Of Brake Booster Vacuum Hose Nipple
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Evenly push in the RED collar in order to remove the nipple.

48. Remove the brake booster vacuum hose nipple.

Installation Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

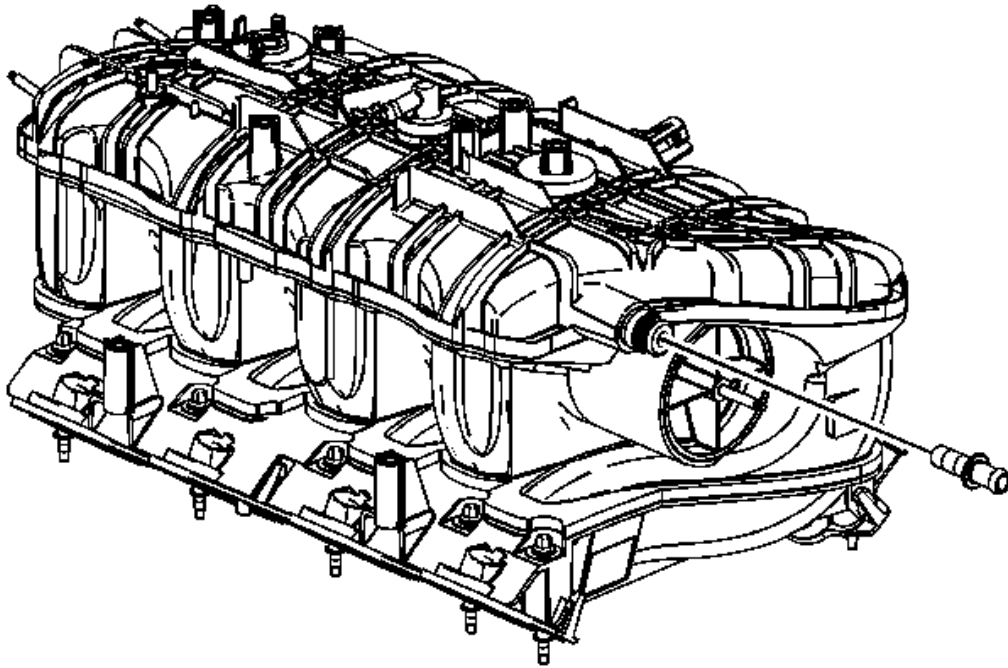


Fig. 158: View Of Brake Booster Vacuum Hose Nipple
Courtesy of GENERAL MOTORS CORP.

1. If the intake manifold was replaced perform the following steps, otherwise proceed to step 21.

IMPORTANT: Evenly push in the RED collar in order to install the nipple.

2. Install the brake booster vacuum hose nipple to the NEW intake manifold.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

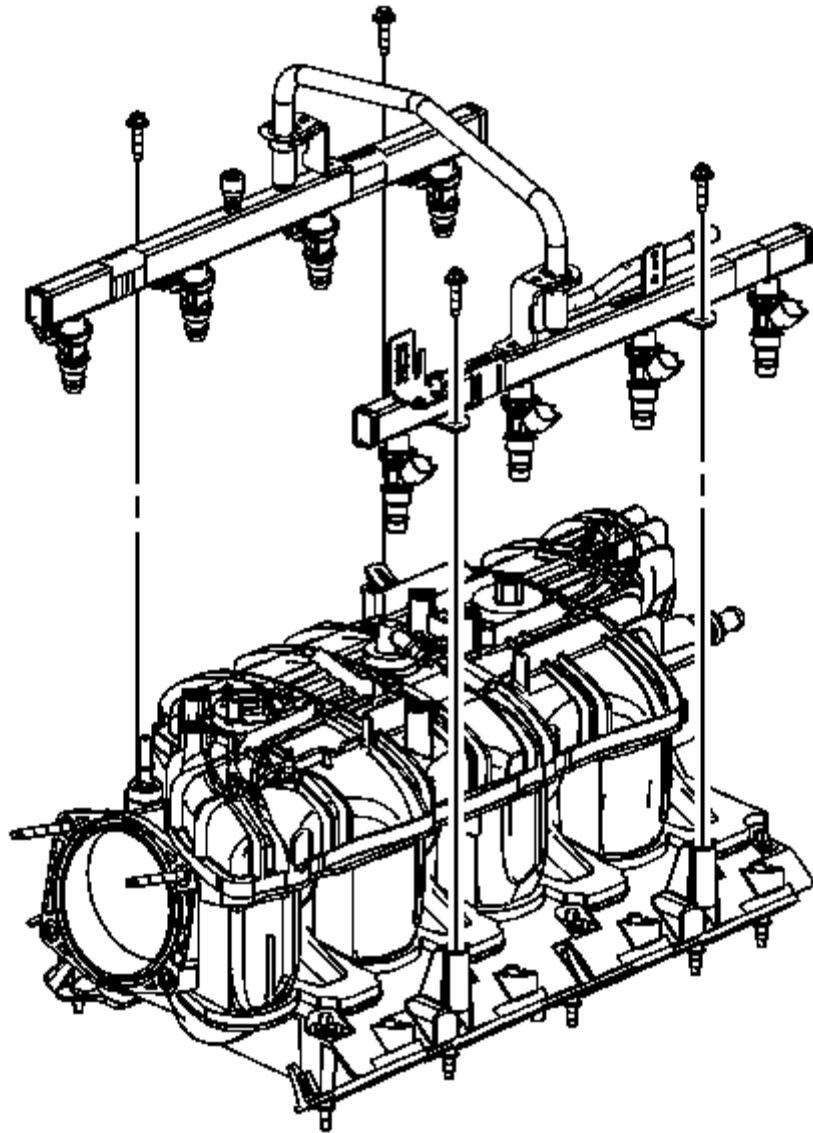


Fig. 159: View Of Fuel Rail & Bolts
Courtesy of GENERAL MOTORS CORP.

3. Install NEW fuel injector lower O-ring seals onto the injectors.
4. Lubricate the NEW O-ring seals with clean engine oil.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

IMPORTANT: Push down firmly on both sides of the rail until all the injectors have been seated into their bores.

5. Install the fuel rail.

NOTE: Refer to Fastener Notice .

6. Install the fuel rail bolts.

Tighten: Tighten the bolts to 10 N.m (89 lb in).

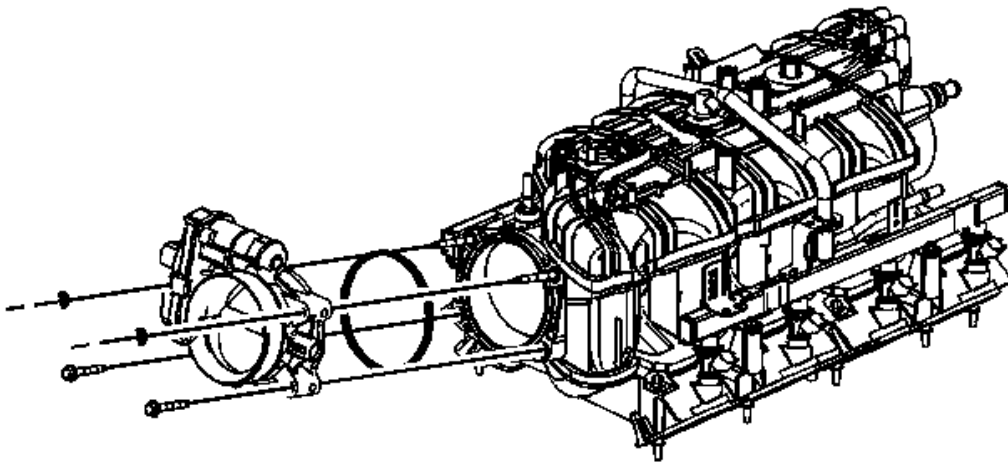


Fig. 160: View Of Throttle Body, Gasket & Bolts/Nuts
Courtesy of GENERAL MOTORS CORP.

7. Install a NEW throttle body gasket to the intake manifold.

8. Install the throttle body.

9. Install the throttle body bolts/nuts.

Tighten: Tighten the bolts/nuts to 10 N.m (89 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

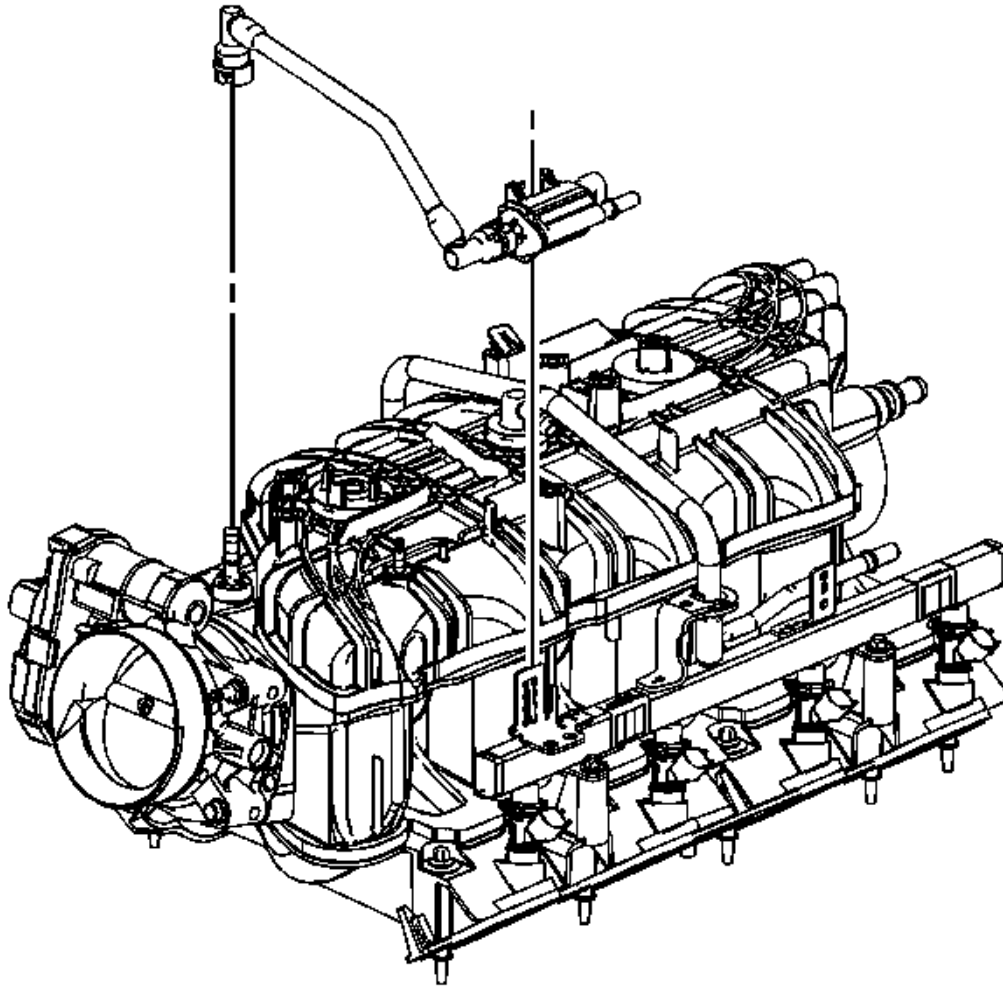


Fig. 161: View Of EVAP Tube & Purge Solenoid
Courtesy of GENERAL MOTORS CORP.

10. Install the EVAP tube and purge solenoid.
11. Install the EVAP canister purge solenoid to the fuel rail bracket and engage the retainer.
12. Connect the EVAP tube quick connect fitting at the intake manifold. Refer to **Plastic Collar Quick Connect Fitting Service** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

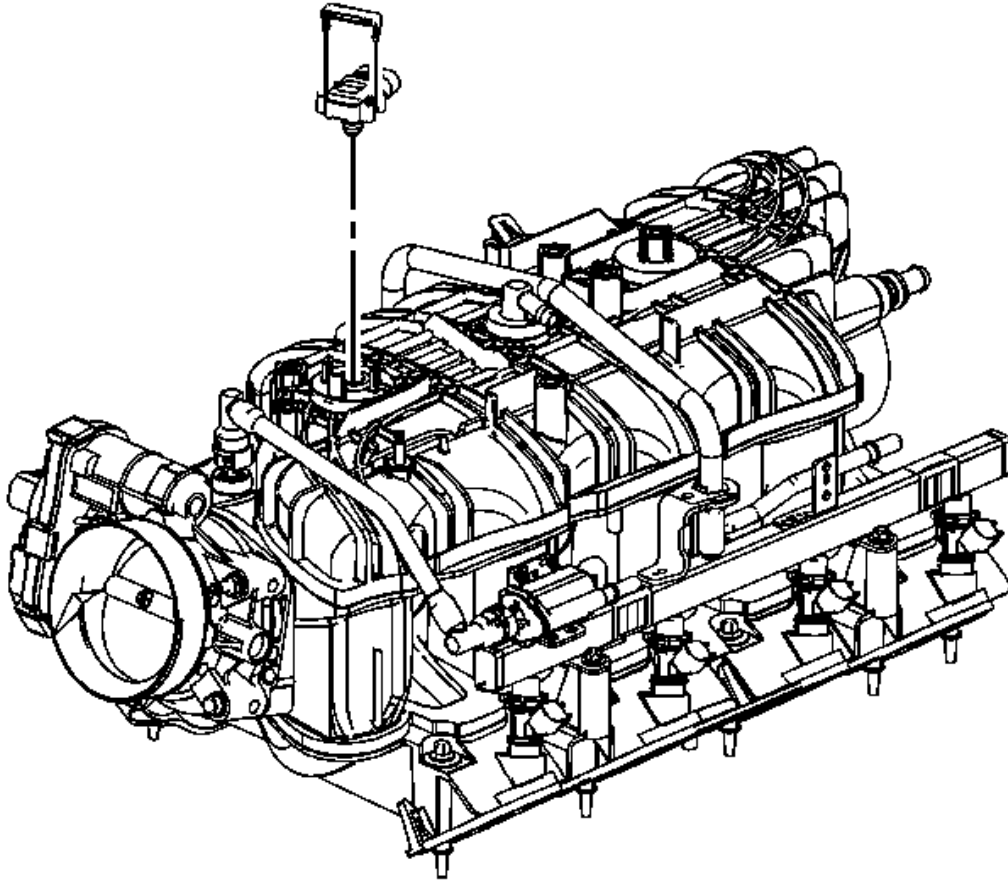


Fig. 162: View Of MAP Sensor & Retainer
Courtesy of GENERAL MOTORS CORP.

13. Lubricate the MAP sensor seal with clean engine oil.
14. Install the MAP sensor.
15. Install the MAP sensor retainer.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

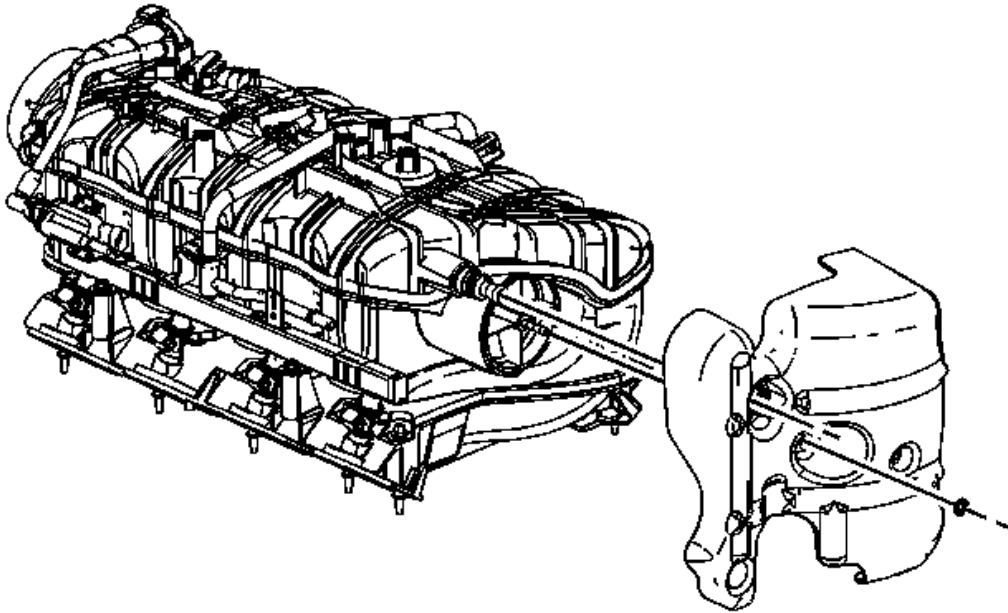


Fig. 163: View Of Upper Intake Manifold Cover & Nut
Courtesy of GENERAL MOTORS CORP.

16. Install the upper intake manifold cover.
17. Install the upper intake manifold cover nut until snug

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

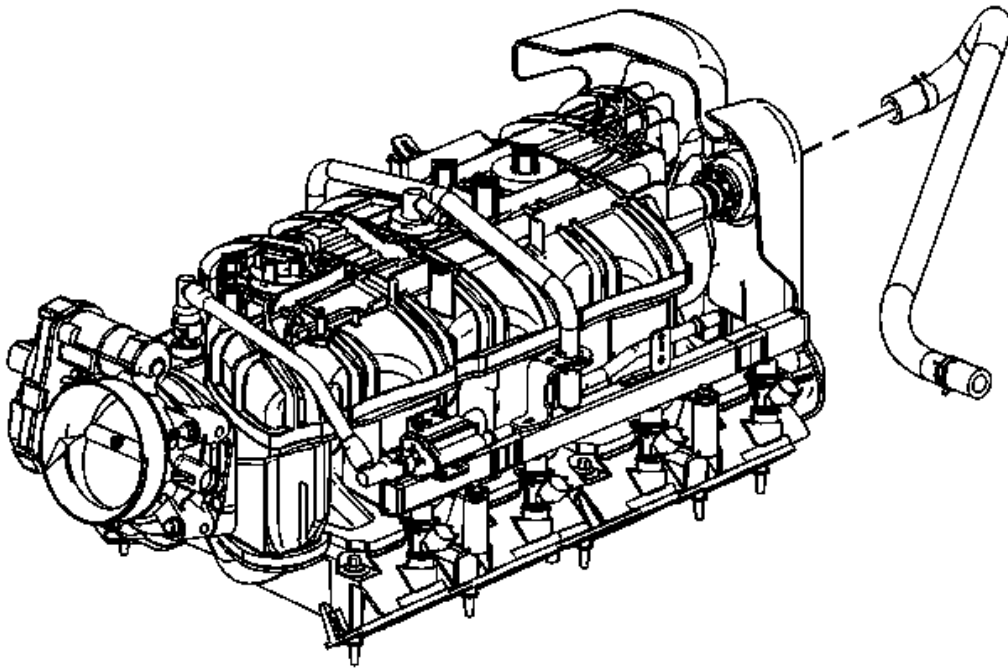


Fig. 164: View Of Vacuum Brake Booster Hose
Courtesy of GENERAL MOTORS CORP.

18. Install the brake booster vacuum hose to the intake manifold nipple.
19. Position the brake booster vacuum hose clamp at the intake manifold.
20. Secure the brake booster vacuum hose to the intake manifold.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

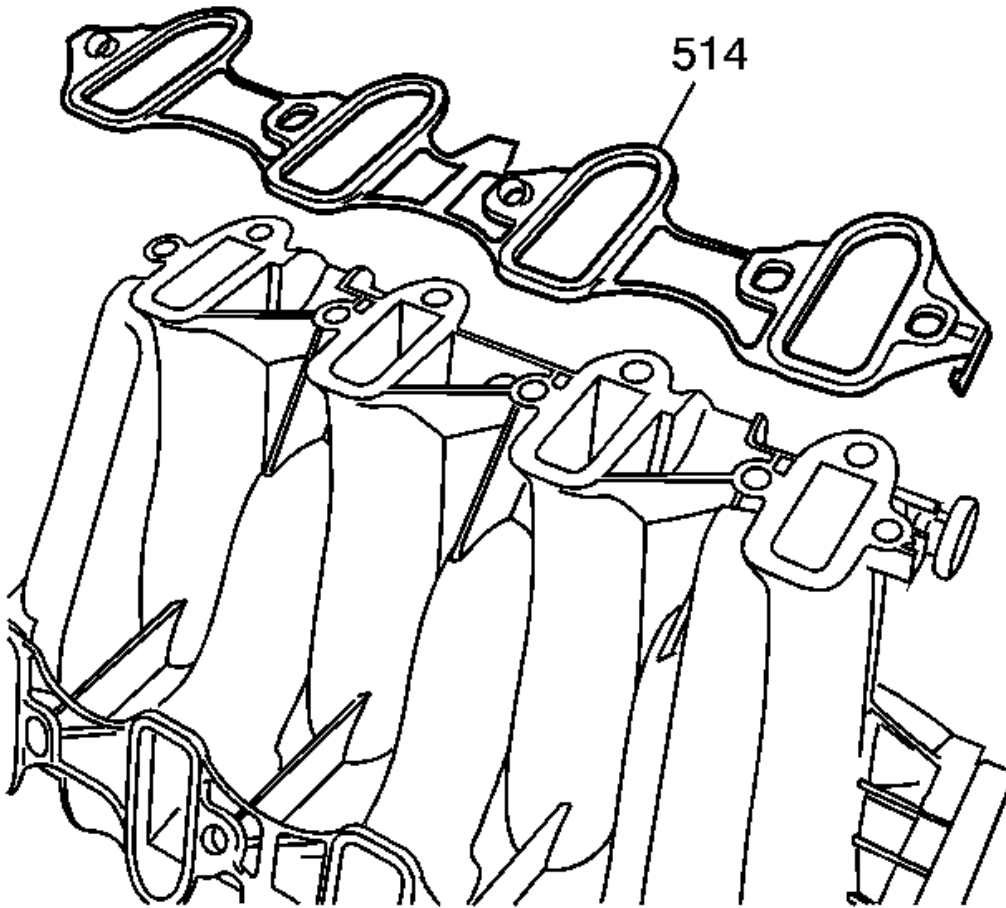


Fig. 165: View Of Intake Manifold-To-Cylinder Head Gasket
Courtesy of GENERAL MOTORS CORP.

21. Install NEW intake manifold gaskets (514) to the intake manifold.
22. Remove the covers from the cylinder head passages.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

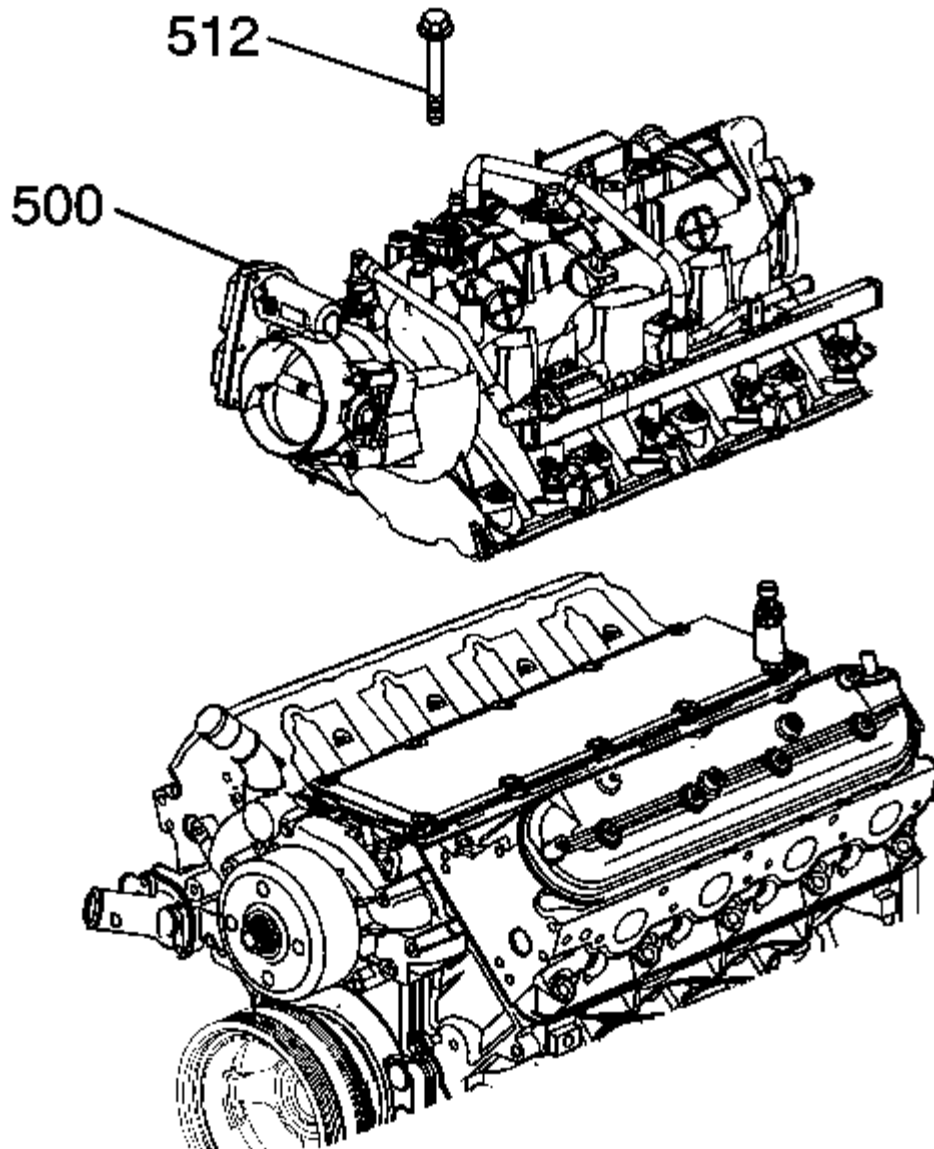


Fig. 166: View Of Intake Manifold Bolts
Courtesy of GENERAL MOTORS CORP.

23. Install the intake manifold (500).

IMPORTANT: The aid of an assistant may be helpful in holding the engine

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

harness up out of the way so the upper intake manifold cover does not get caught against the engine harness.

24. Tighten the intake manifold bolts (512) until snug.

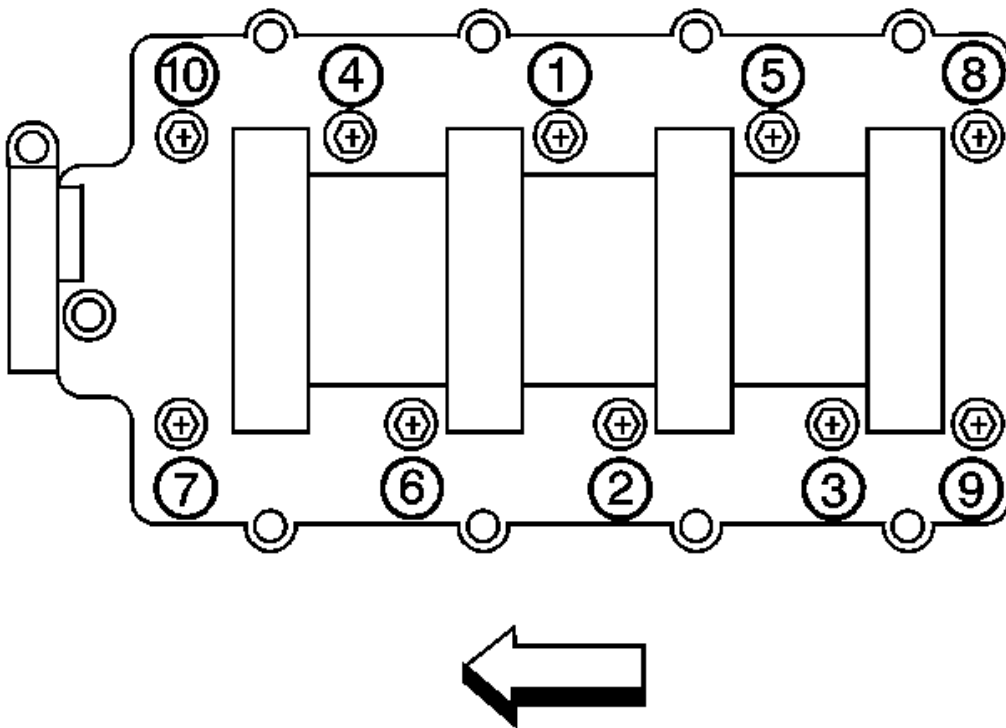


Fig. 167: Intake Manifold Bolt Tightening Sequence
Courtesy of GENERAL MOTORS CORP.

25. Tighten the intake manifold bolts to specifications.

Tighten:

- Tighten the bolts a first pass in the sequence shown to 5 N.m (44 lb in).
- Tighten the bolts a final pass in the sequence shown to 10 N.m (89 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

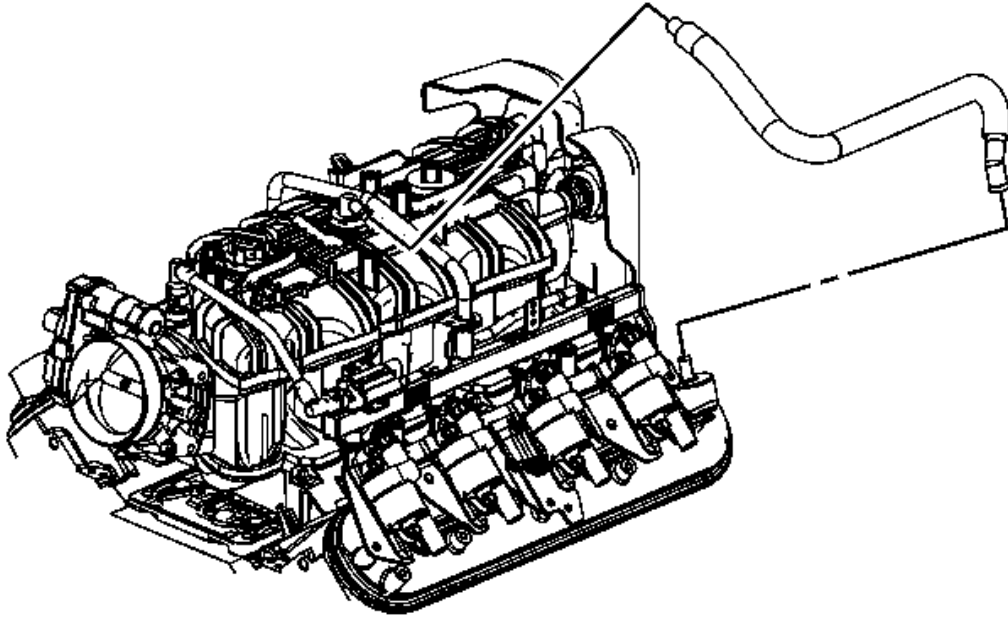


Fig. 168: View Of PCV Hose
Courtesy of GENERAL MOTORS CORP.

26. Position and install the PCV hose to the intake manifold fitting.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

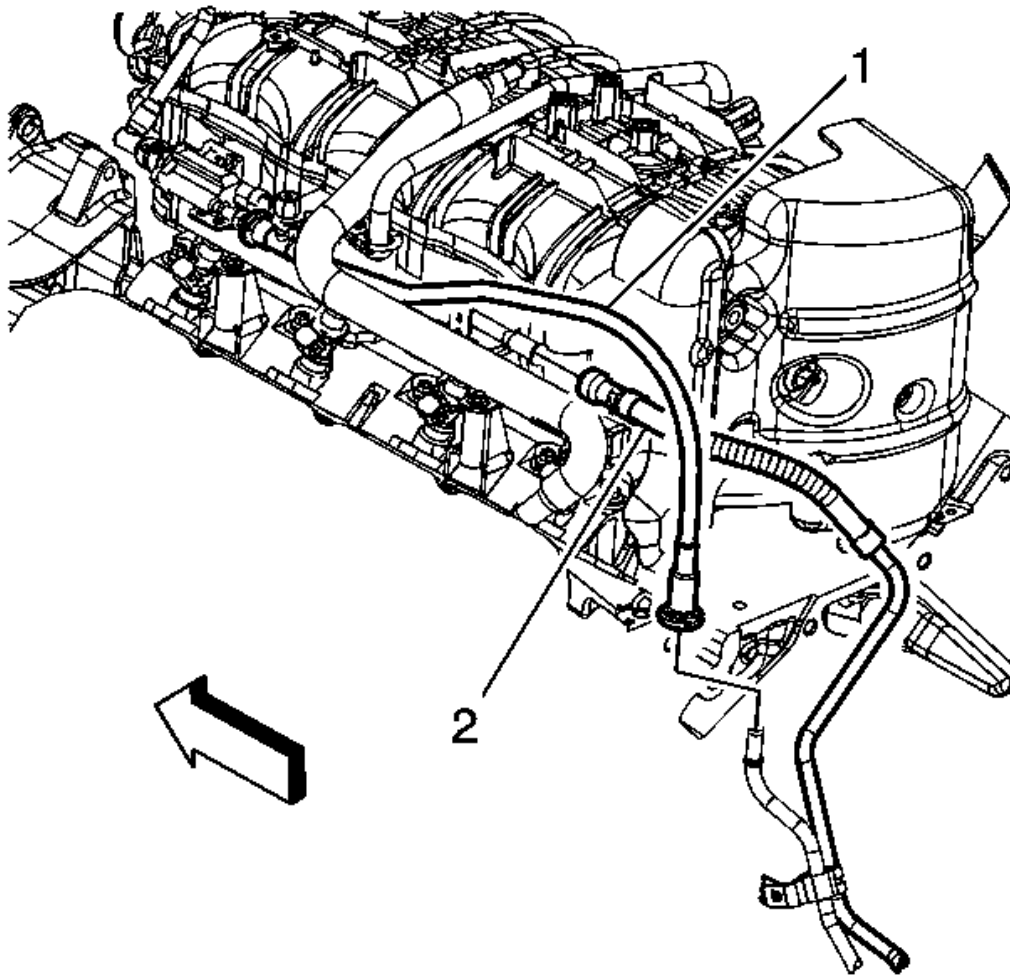


Fig. 169: View Of EVAP Canister Purge Tube & Quick Connect Fitting
Courtesy of GENERAL MOTORS CORP.

27. Connect the fuel feed line quick connect fitting (2) to the fuel rail. Refer to **Metal Collar Quick Connect Fitting Service** .
28. Connect the EVAP canister purge tube (1) quick connect fitting to the EVAP canister purge solenoid. Refer to **Plastic Collar Quick Connect Fitting Service** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

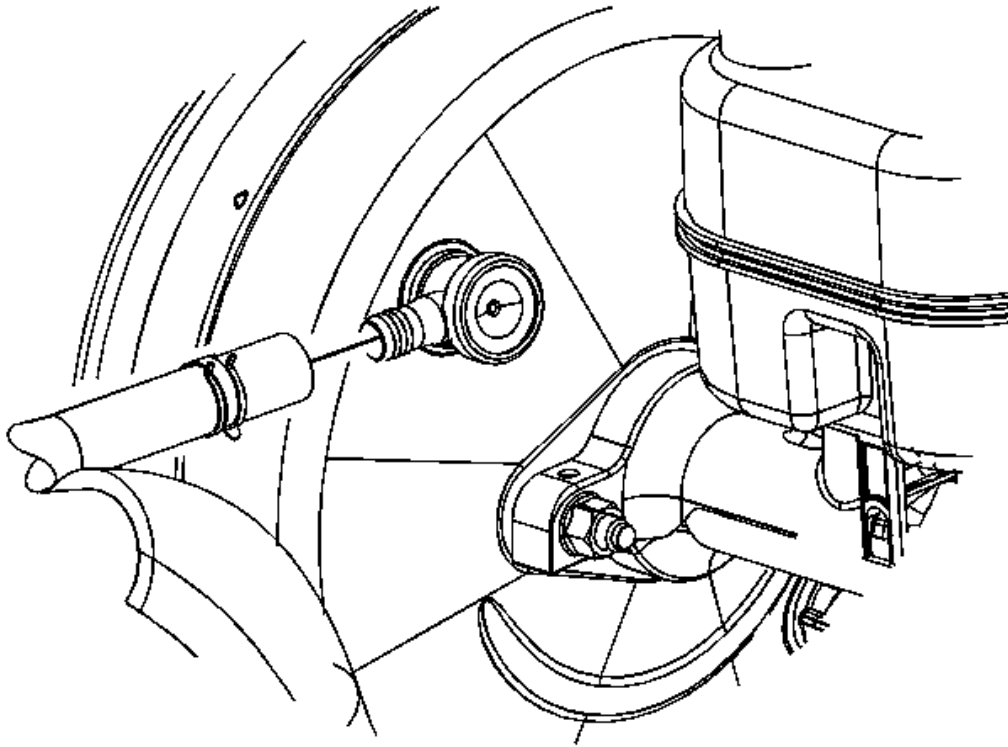


Fig. 170: View Of Brake Booster Vacuum Hose & Booster Fitting
Courtesy of GENERAL MOTORS CORP.

29. Unsecure the brake booster vacuum hose from the intake manifold.
30. Install the brake booster vacuum hose to the booster fitting.
31. Position the brake booster vacuum hose clamp at the booster.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

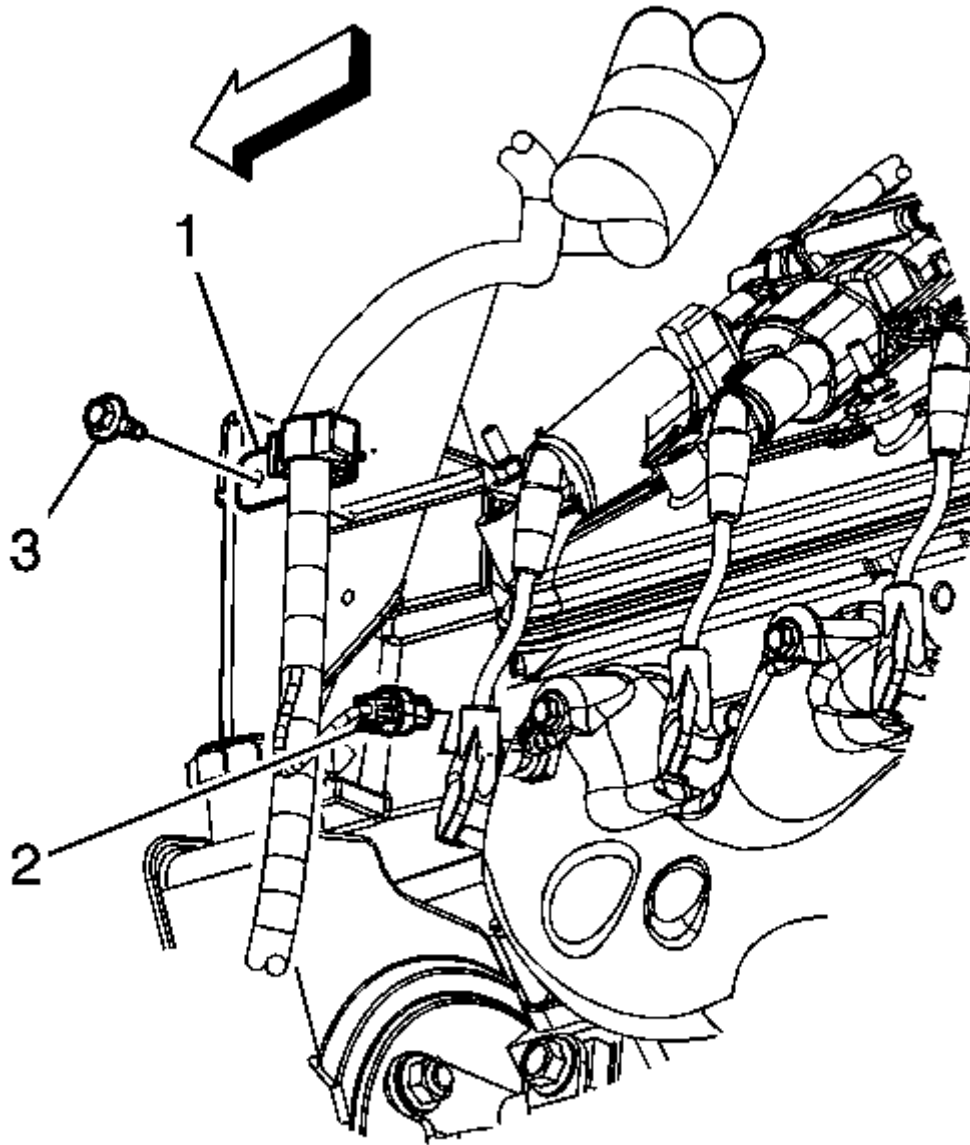


Fig. 171: View Of Engine Wiring Harness, Clip, Bolt & Connector
Courtesy of GENERAL MOTORS CORP.

32. Untie the engine harness branches from the cowl panel and position over the engine.
33. Connect the engine harness electrical connector (2) to the ECT sensor.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

34. Position the engine harness clip (1) to the generator bracket and install the bolt (3).

Tighten: Tighten the bolt to 9 N.m (80 lb in).

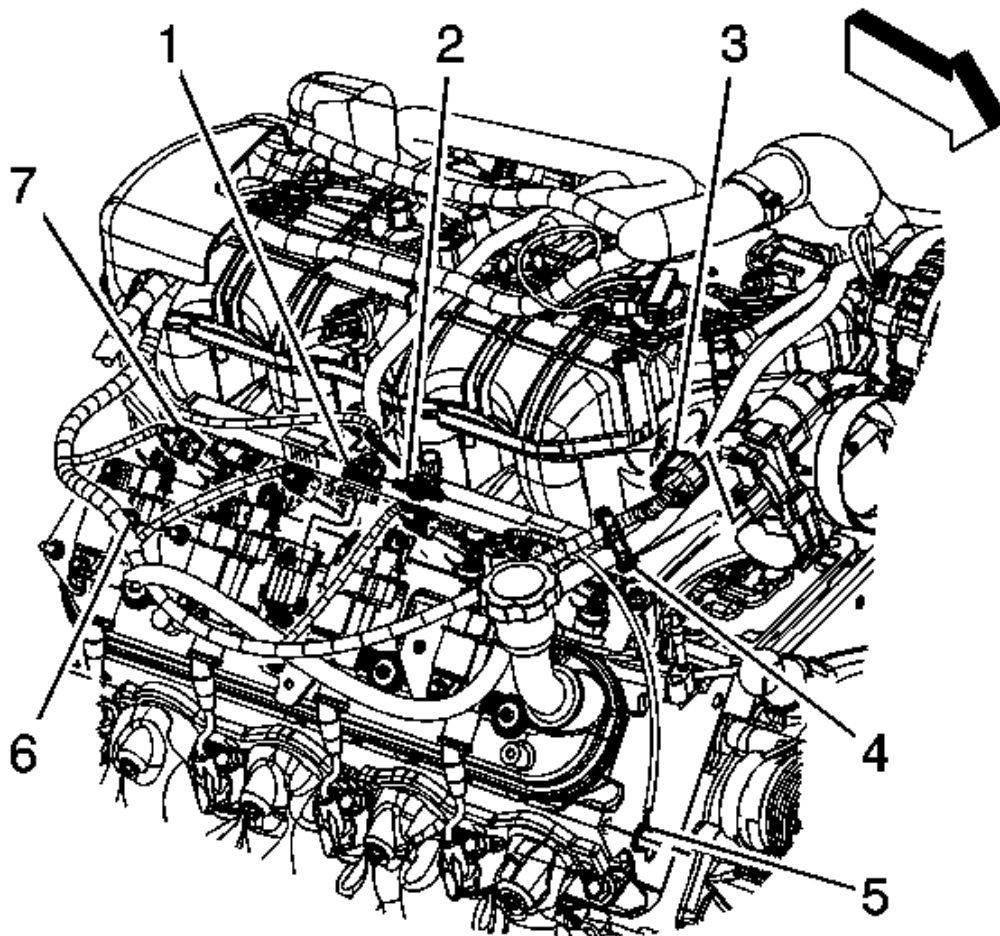


Fig. 172: View Of CPA Retainer, Engine Harness Electrical Connectors & Harness Clips

Courtesy of GENERAL MOTORS CORP.

35. Connect the engine harness electrical connectors (7) to the right side fuel injectors.

36. Install the engine harness clip (6) to the ignition coil bracket stud.

37. Install the engine harness clip (4) to the generator battery jumper cable.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

38. Connect the engine harness electrical connector (3) to the throttle actuator.
39. Connect the engine harness electrical connector (1) to the ignition coil harness electrical connector.
40. Install the CPA retainer (2).

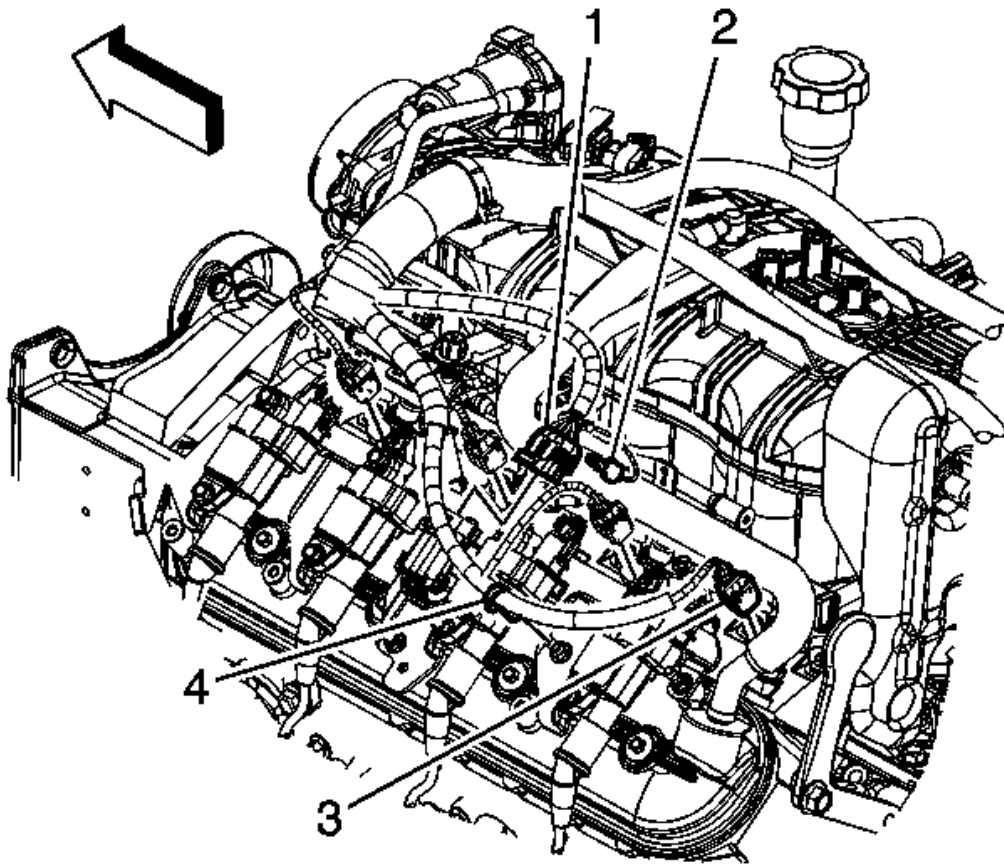


Fig. 173: View Of CPA Retainer, Electrical Connectors & Engine Harness Clips
Courtesy of GENERAL MOTORS CORP.

41. Install the engine harness clip (4) to the ignition coil bracket stud.
42. Connect the engine harness electrical connectors (3) to the left side fuel injectors.
43. Connect the engine harness electrical connector (1) to the ignition coil harness electrical connector.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

44. Install the CPA retainer (1).

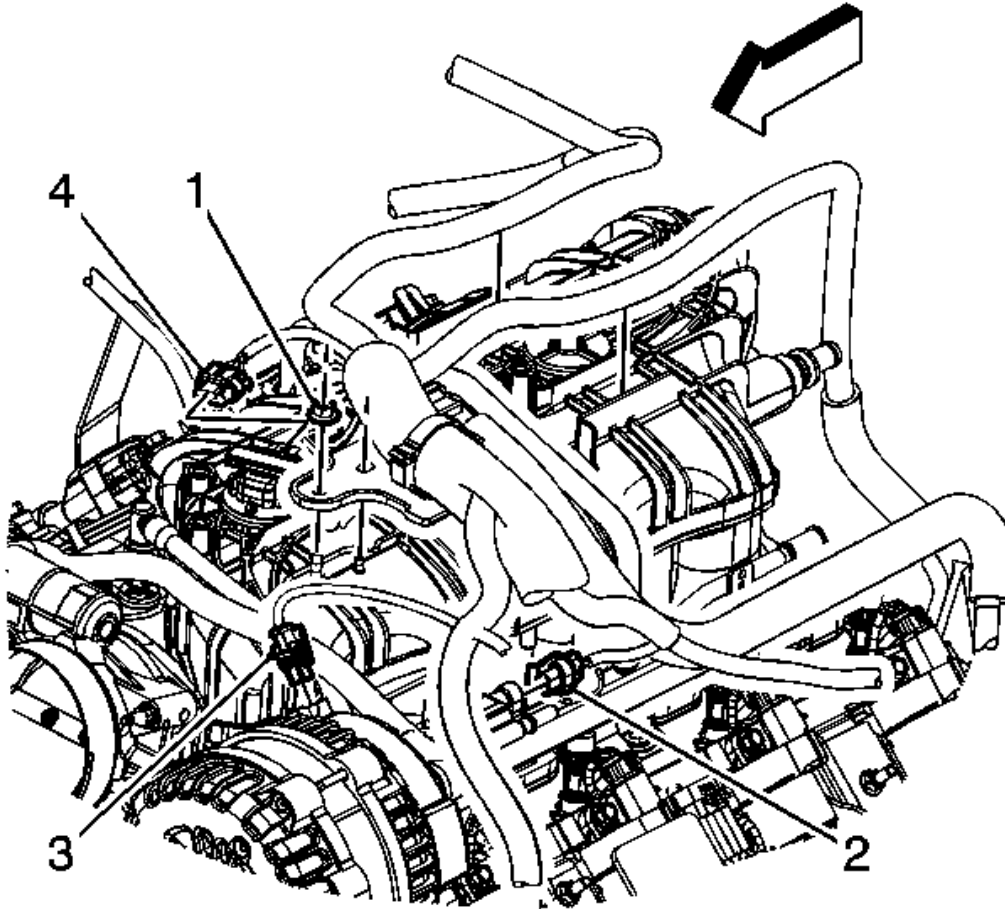


Fig. 174: View Of Engine Harness Retainer Nut & Electrical Connectors
Courtesy of GENERAL MOTORS CORP.

45. Connect the engine wiring harness electrical connector (4) to the MAP sensor.
46. Connect the engine harness electrical connector (2) to the EVAP canister purge solenoid.
47. Install the engine harness retainer to the stud and locator pin.
48. Install the engine harness retainer nut (1).

Tighten: Tighten the nut to 5 N.m (44 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

49. Install the generator. Refer to **Generator Replacement (4.8L, 5.3L, 6.0L, and 6.2L)** .
50. Install the air cleaner outlet duct. Refer to **Air Cleaner Resonator Outlet Duct Replacement** .

INTAKE MANIFOLD REPLACEMENT (LH6, LMG, LY5 AND L76)

Removal Procedure

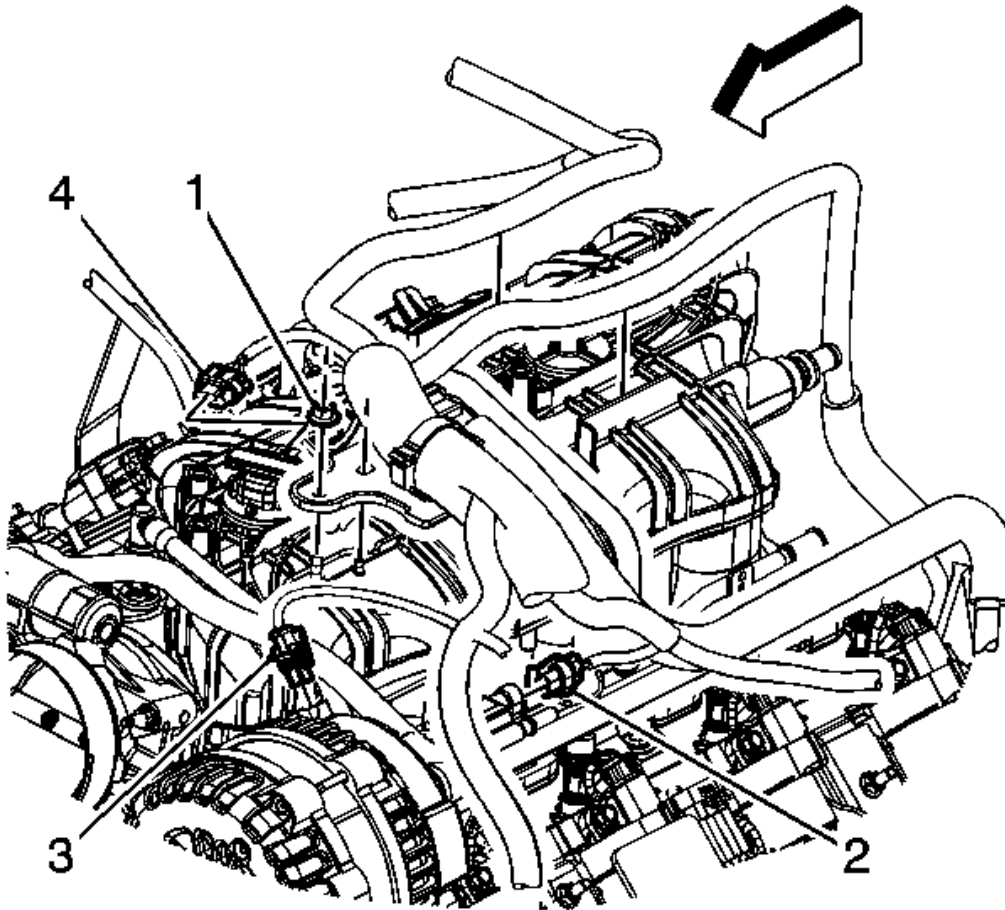


Fig. 175: View Of Engine Harness Retainer Nut & Electrical Connectors
Courtesy of GENERAL MOTORS CORP.

1. Remove the air cleaner outlet duct. Refer to **Air Cleaner Resonator Outlet Duct Replacement** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Remove the generator. Refer to **Generator Replacement (4.8L, 5.3L, 6.0L, and 6.2L)** .
3. Remove the engine harness retainer nut (1).
4. Remove the engine harness retainer from the stud and locator.
5. Disconnect the engine harness electrical connector (2) from the evaporative emission (EVAP) canister purge solenoid.
6. Disconnect the engine wiring harness electrical connector (4) from the manifold absolute pressure (MAP) sensor.

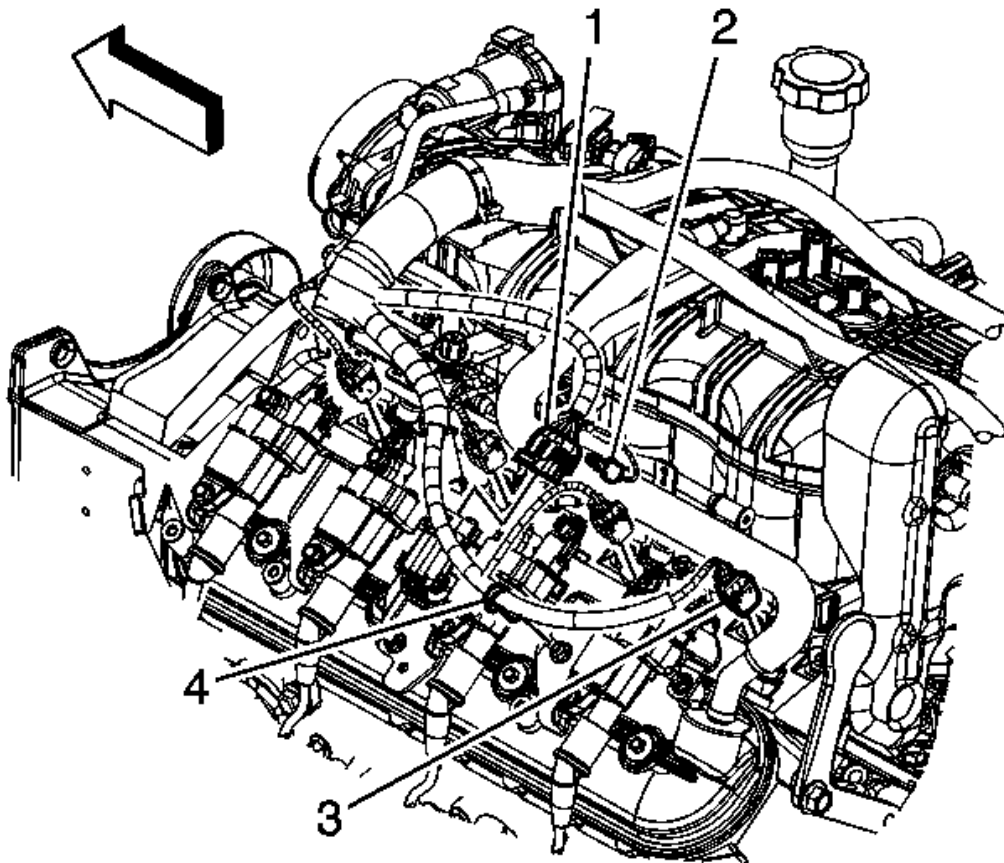


Fig. 176: View Of CPA Retainer, Electrical Connectors & Engine Harness Clips
Courtesy of GENERAL MOTORS CORP.

7. Remove the connector position assurance (CPA) retainer (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

8. Disconnect the engine harness electrical connector (1) from the ignition coil harness electrical connector.
9. Disconnect the engine harness electrical connectors (3) from the left side fuel injectors.
10. Remove the engine harness clip (4) from the ignition coil bracket stud.

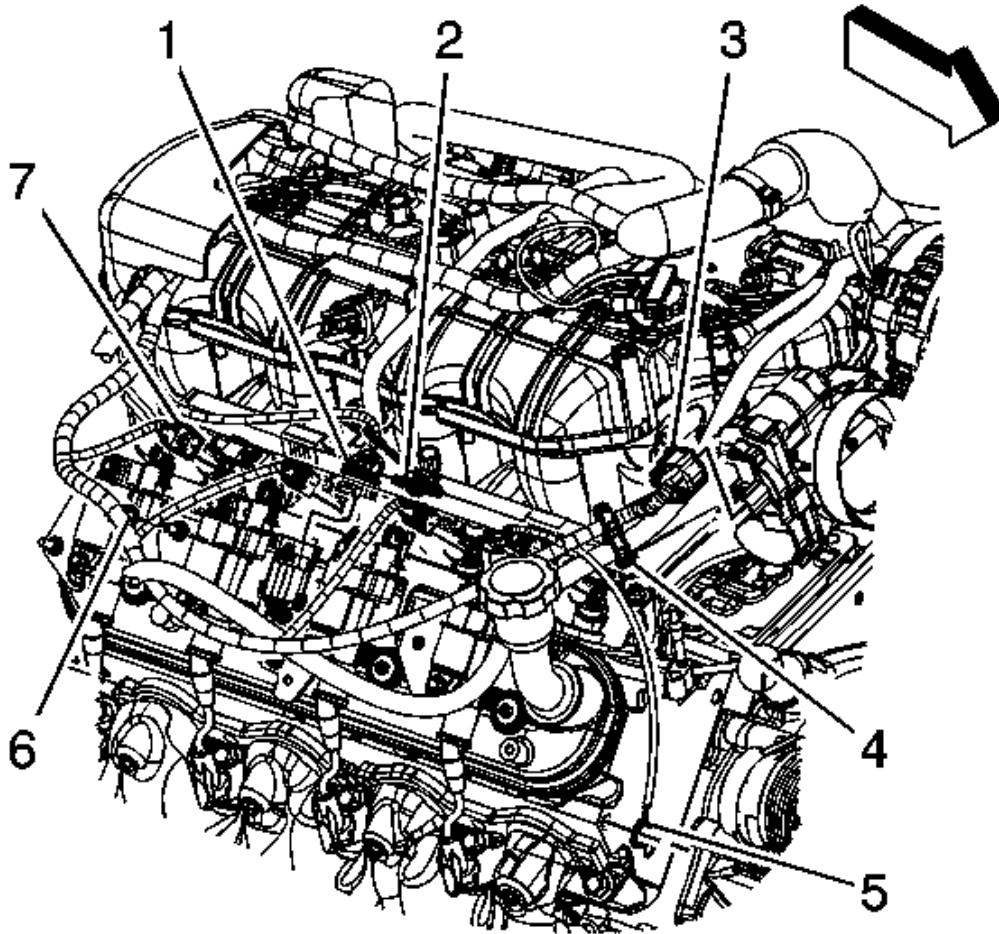


Fig. 177: View Of CPA Retainer, Engine Harness Electrical Connectors & Harness Clips
Courtesy of GENERAL MOTORS CORP.

11. Remove the CPA retainer (2).
12. Disconnect the engine harness electrical connector (1) from the ignition coil harness

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

electrical connector.

13. Disconnect the engine harness electrical connector (3) from the throttle actuator.
14. Remove the engine harness clip (4) from the generator battery jumper cable.
15. Remove the engine harness clip (6) from the ignition coil bracket stud.
16. Disconnect the engine harness electrical connectors (7) from the right side fuel injectors.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

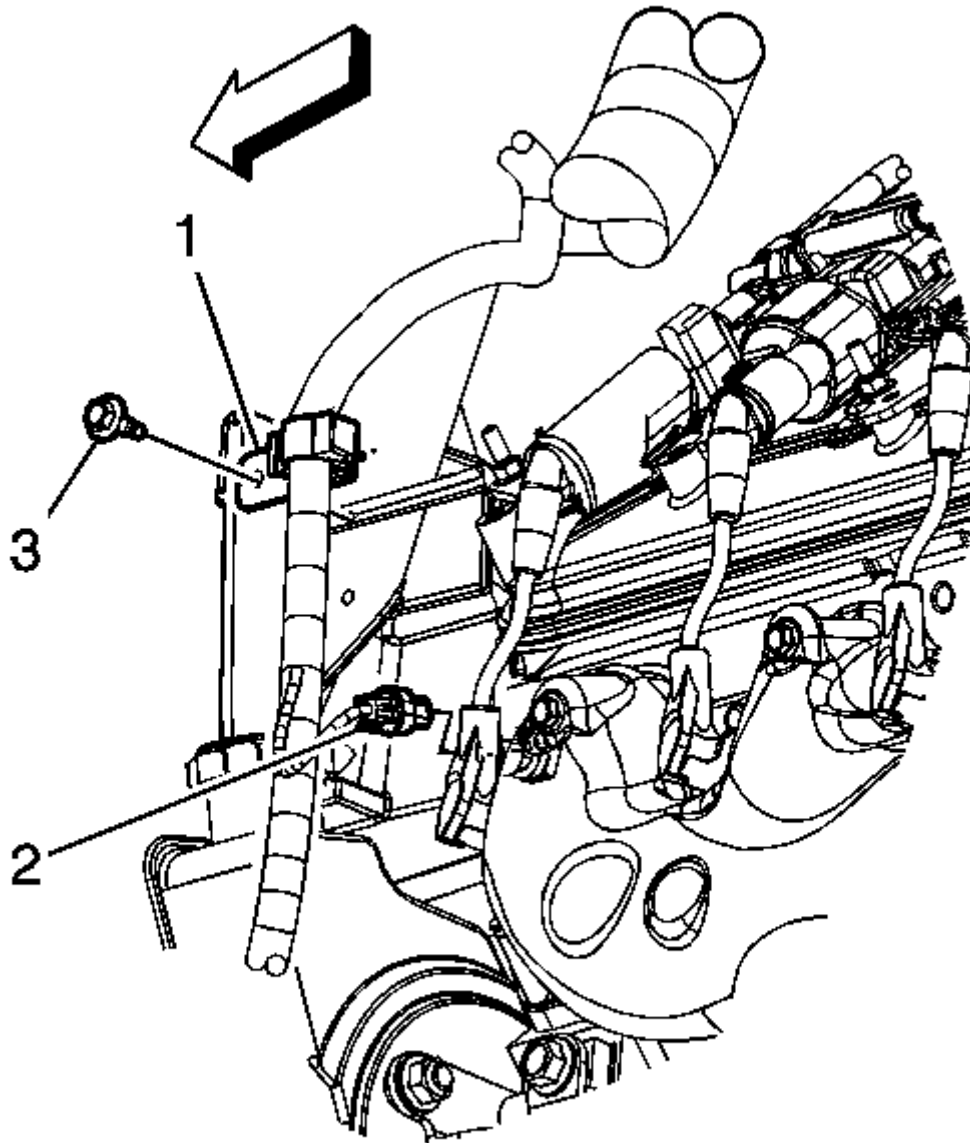


Fig. 178: View Of Engine Wiring Harness, Clip, Bolt & Connector
Courtesy of GENERAL MOTORS CORP.

17. Remove the engine harness clip (1) bolt (3).
18. Disconnect the engine harness electrical connector (2) from the engine coolant temperature (ECT) sensor.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

19. Gather the engine harness branches and tie the harness up out of the way to the cowl panel.

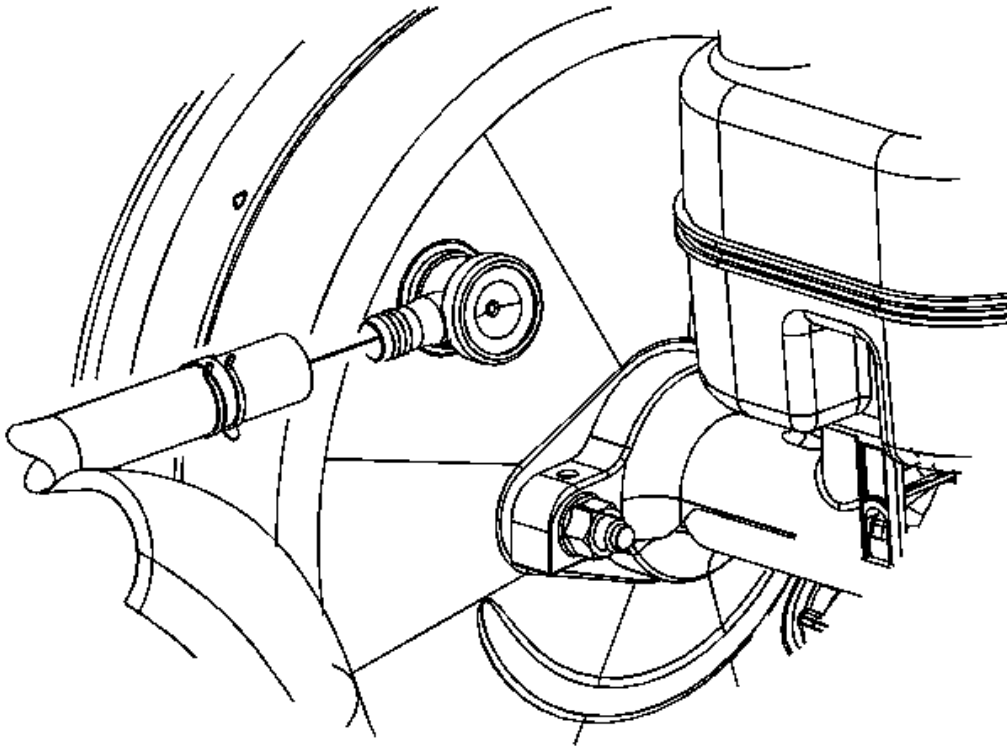


Fig. 179: View Of Brake Booster Vacuum Hose & Booster Fitting
Courtesy of GENERAL MOTORS CORP.

20. Reposition the brake booster vacuum hose clamp at the booster, if necessary.
21. Remove the brake booster vacuum hose from the booster fitting, if necessary.
22. Secure the brake booster vacuum hose to the intake manifold if necessary.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

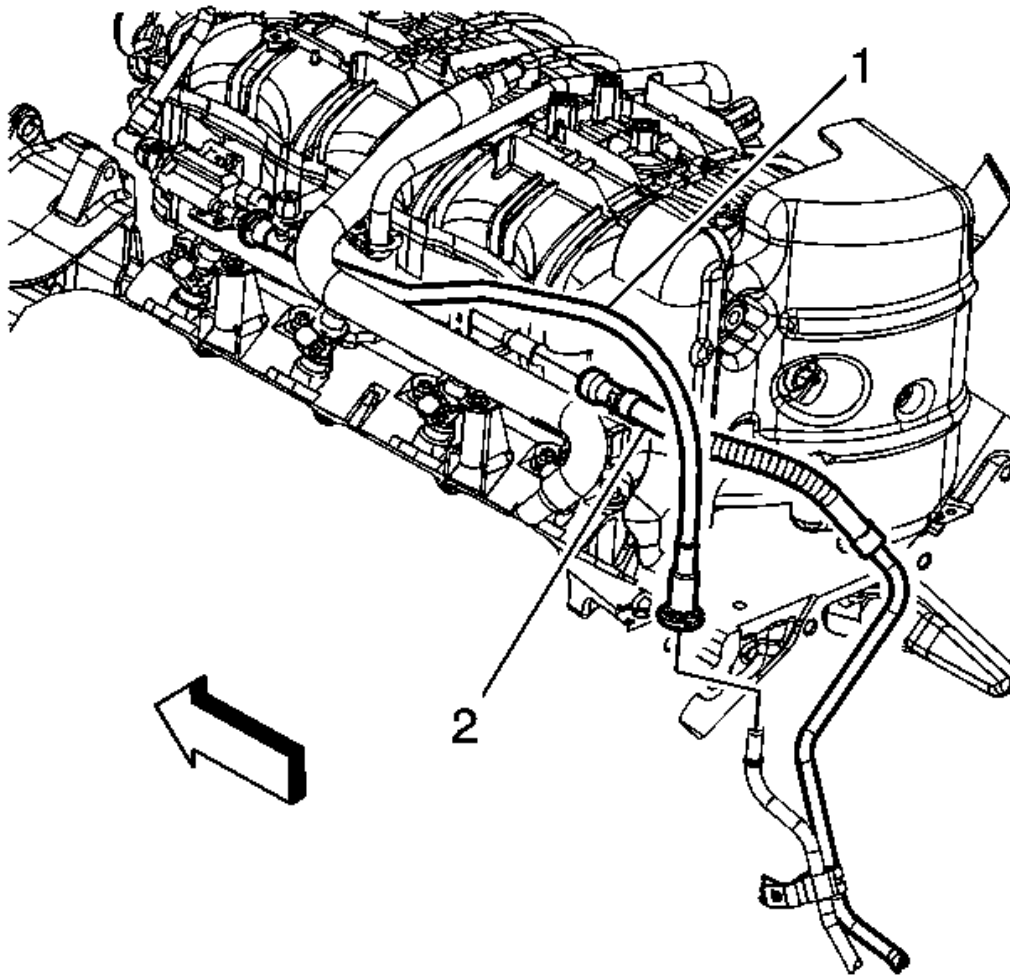


Fig. 180: View Of EVAP Canister Purge Tube & Quick Connect Fitting
Courtesy of GENERAL MOTORS CORP.

23. Disconnect the EVAP canister purge tube (1) quick connect fitting from the EVAP canister purge solenoid. Refer to **Plastic Collar Quick Connect Fitting Service** .
24. Disconnect the fuel feed line quick connect fitting (2) from the fuel rail. Refer to **Metal Collar Quick Connect Fitting Service** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

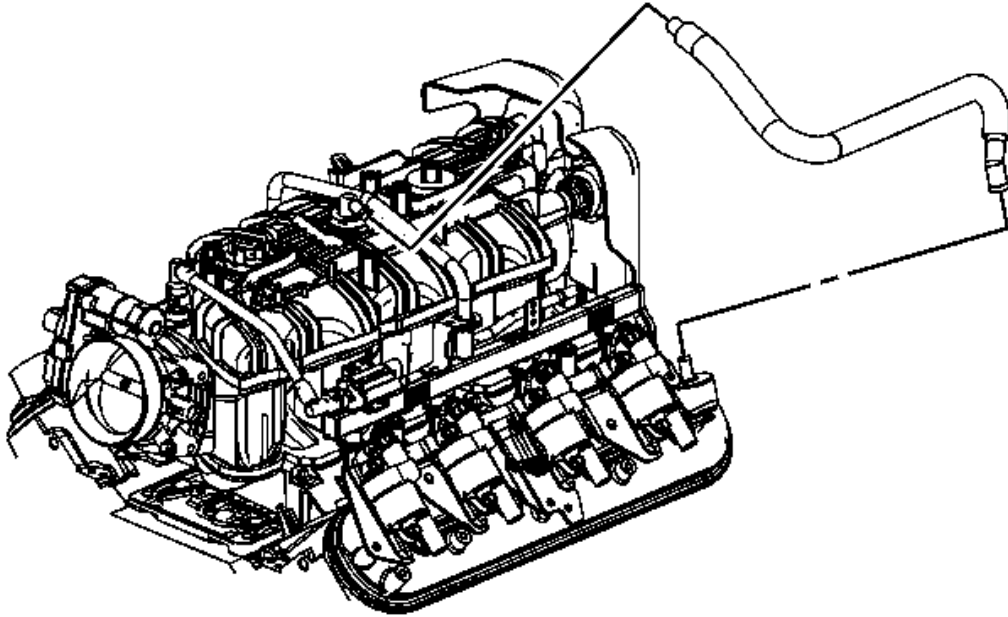


Fig. 181: View Of PCV Hose
Courtesy of GENERAL MOTORS CORP.

25. Remove the positive crankcase ventilation (PCV) hose from the intake manifold fitting.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

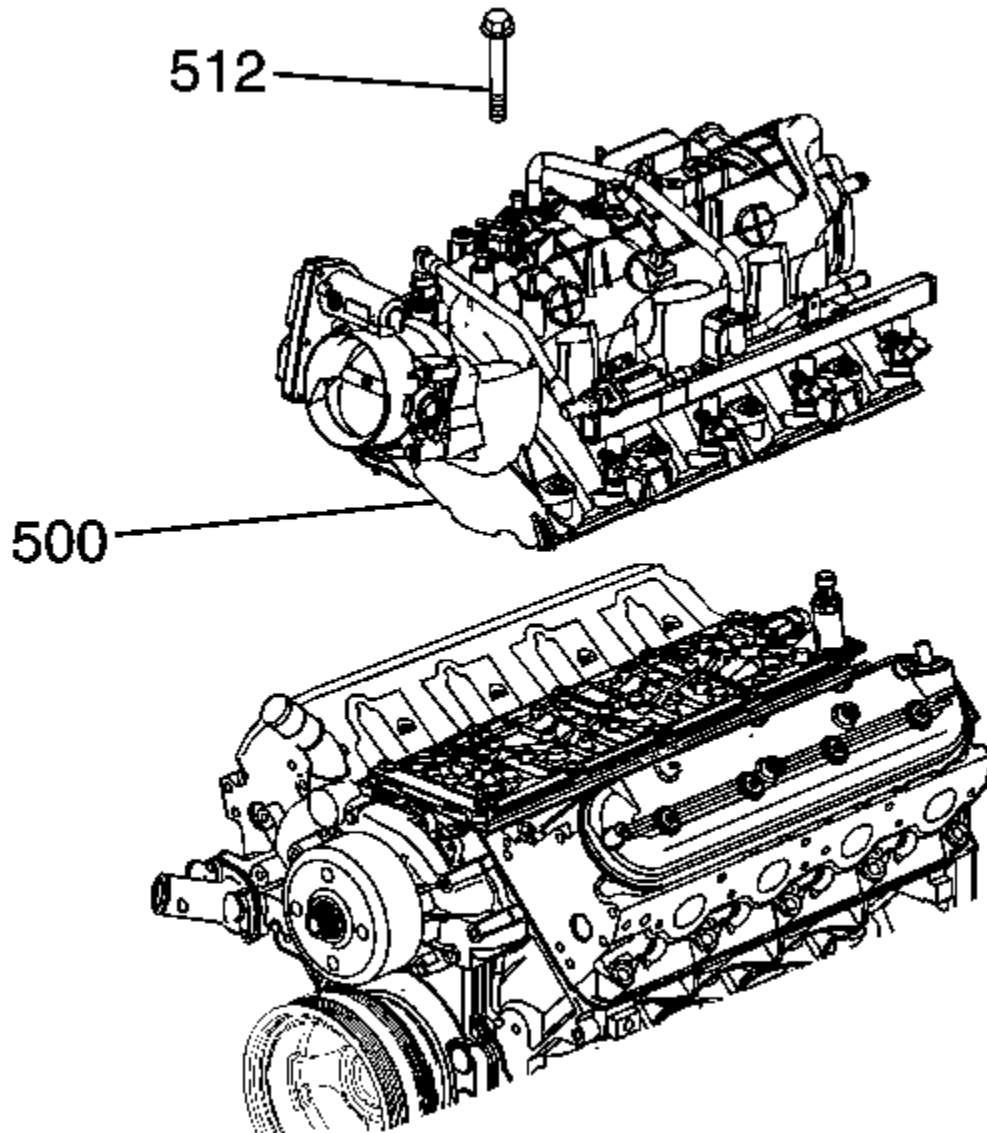


Fig. 182: Intake Manifold

Courtesy of GENERAL MOTORS CORP.

26. Loosen the intake manifold bolts.
27. Remove the intake manifold (500).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

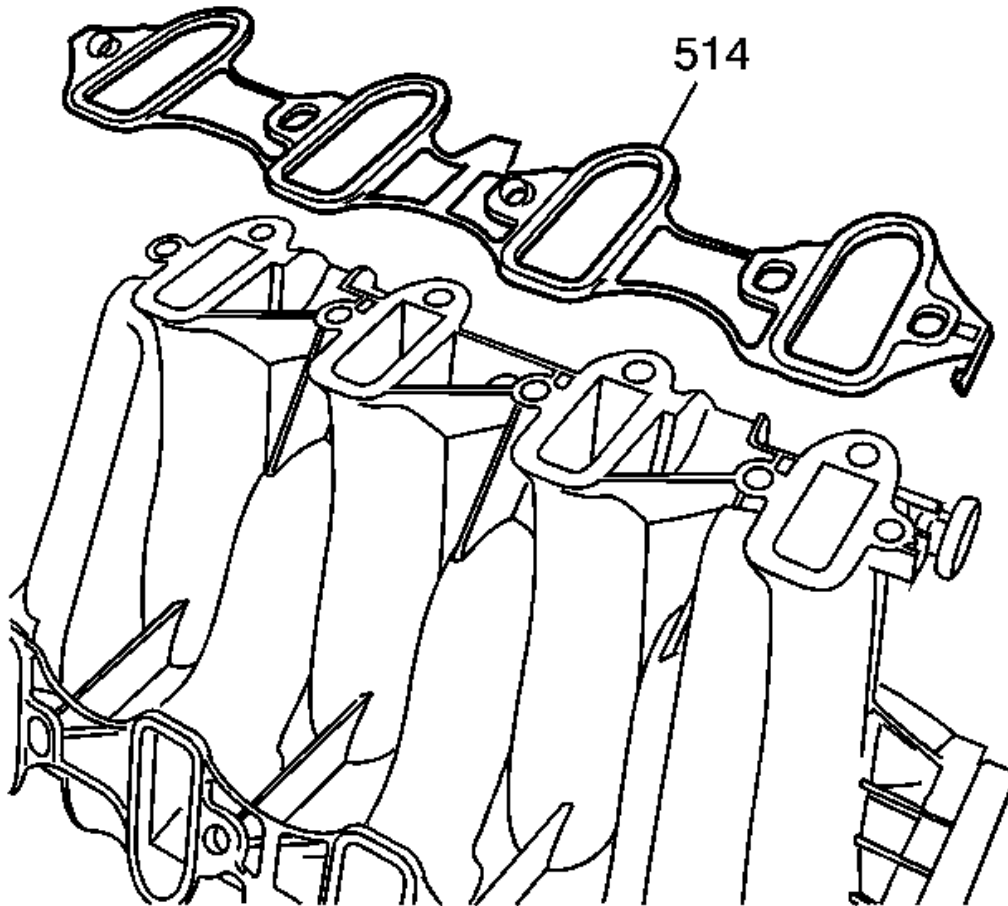


Fig. 183: View Of Intake Manifold-To-Cylinder Head Gasket
Courtesy of GENERAL MOTORS CORP.

28. Remove and discard the intake manifold gaskets (514).
29. Cover the cylinder head passages in order to prevent dirt or debris from entering the passages.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

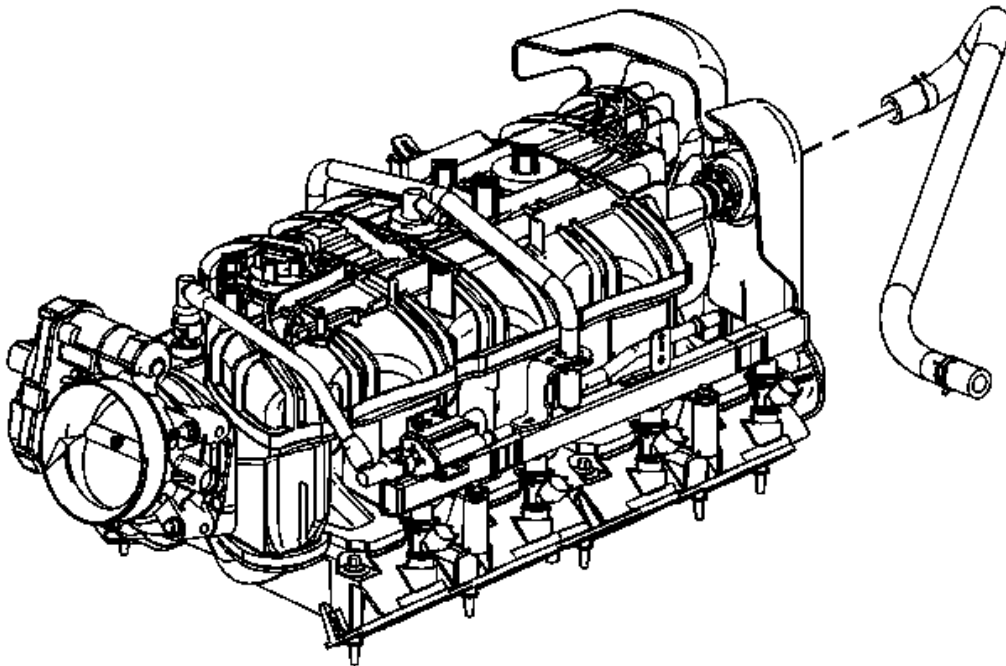


Fig. 184: View Of Vacuum Brake Booster Hose
Courtesy of GENERAL MOTORS CORP.

30. If replacing the intake manifold, perform the following steps, otherwise proceed to step 21 of the installation procedure.
31. Place the intake manifold on a clean work surface.
32. Reposition the brake booster vacuum hose clamp at the intake manifold.
33. Remove the brake booster vacuum hose from the intake manifold nipple.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

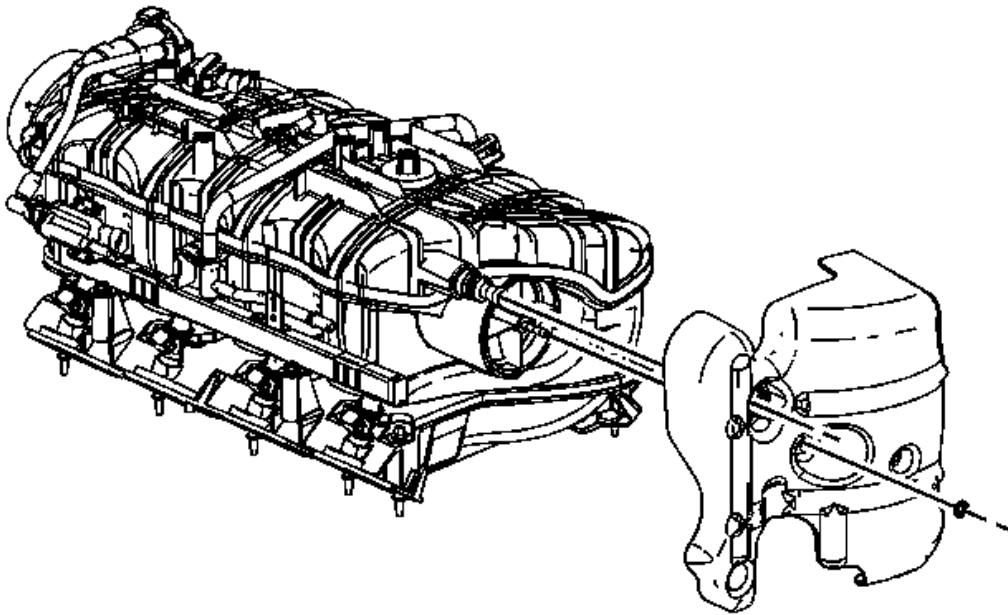


Fig. 185: View Of Upper Intake Manifold Cover & Nut
Courtesy of GENERAL MOTORS CORP.

34. Remove the upper intake manifold cover nut.
35. Remove the upper intake manifold cover.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

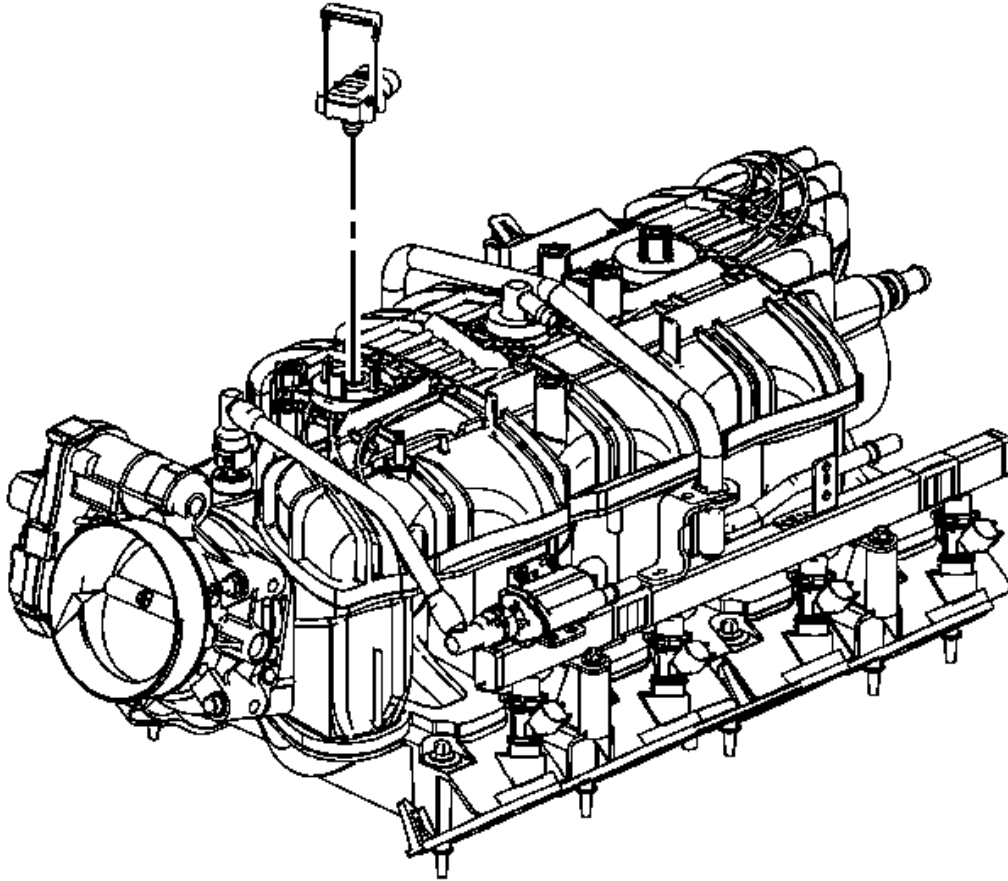


Fig. 186: View Of MAP Sensor & Retainer
Courtesy of GENERAL MOTORS CORP.

36. Remove the manifold absolute pressure (MAP) sensor retainer.
37. Remove the MAP sensor.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

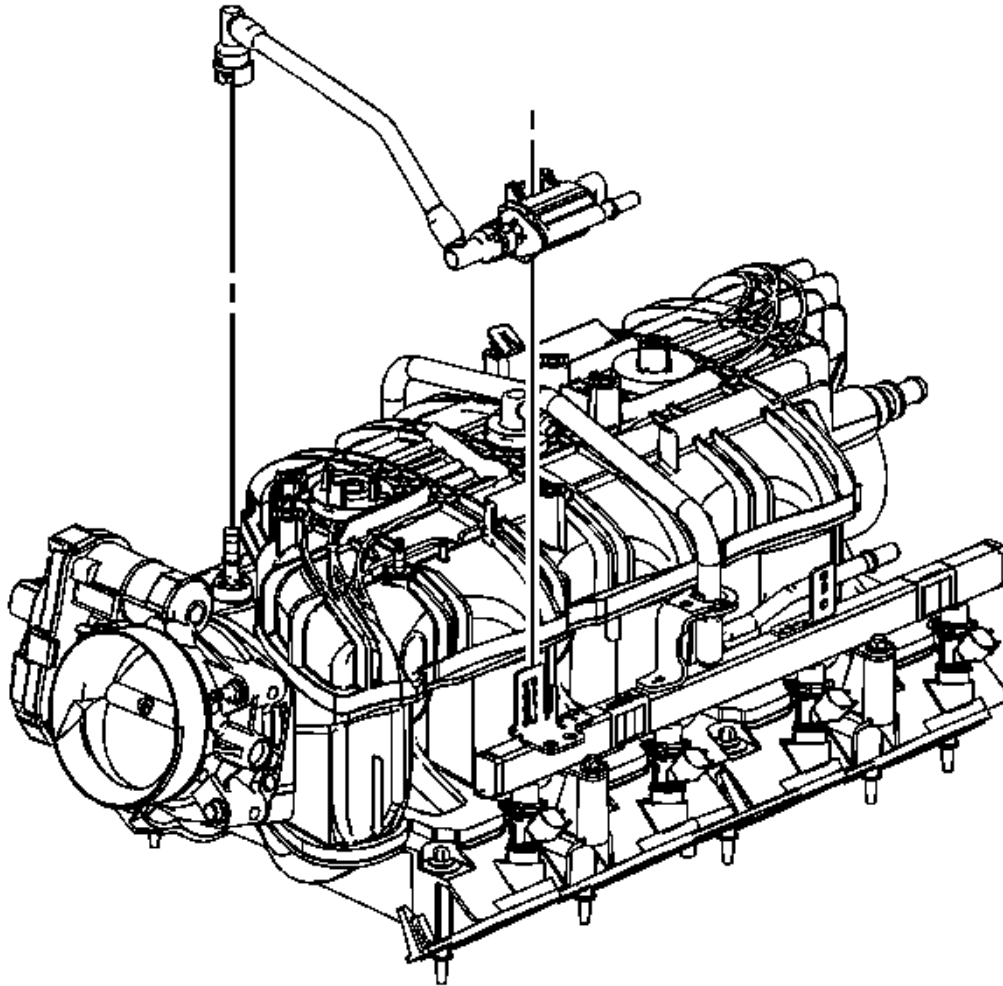


Fig. 187: View Of EVAP Tube & Purge Solenoid
Courtesy of GENERAL MOTORS CORP.

38. Disconnect the EVAP tube quick connect fitting at the intake manifold. Refer to **Plastic Collar Quick Connect Fitting Service** .
39. Disengage the retainer securing the EVAP canister purge solenoid to the fuel rail.
40. Remove the EVAP tube and purge solenoid.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

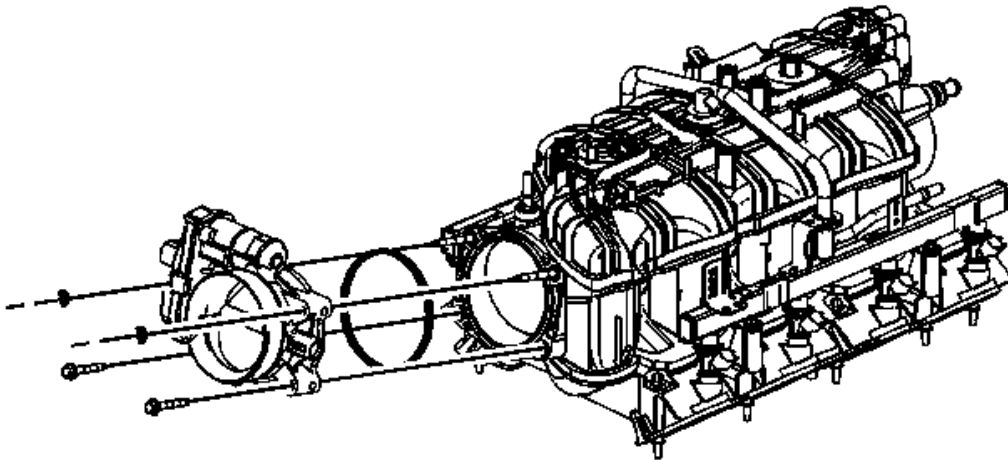


Fig. 188: View Of Throttle Body, Gasket & Bolts/Nuts
Courtesy of GENERAL MOTORS CORP.

41. Remove the throttle body bolts/nuts.
42. Remove the throttle body.
43. Remove and discard the throttle body gasket.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

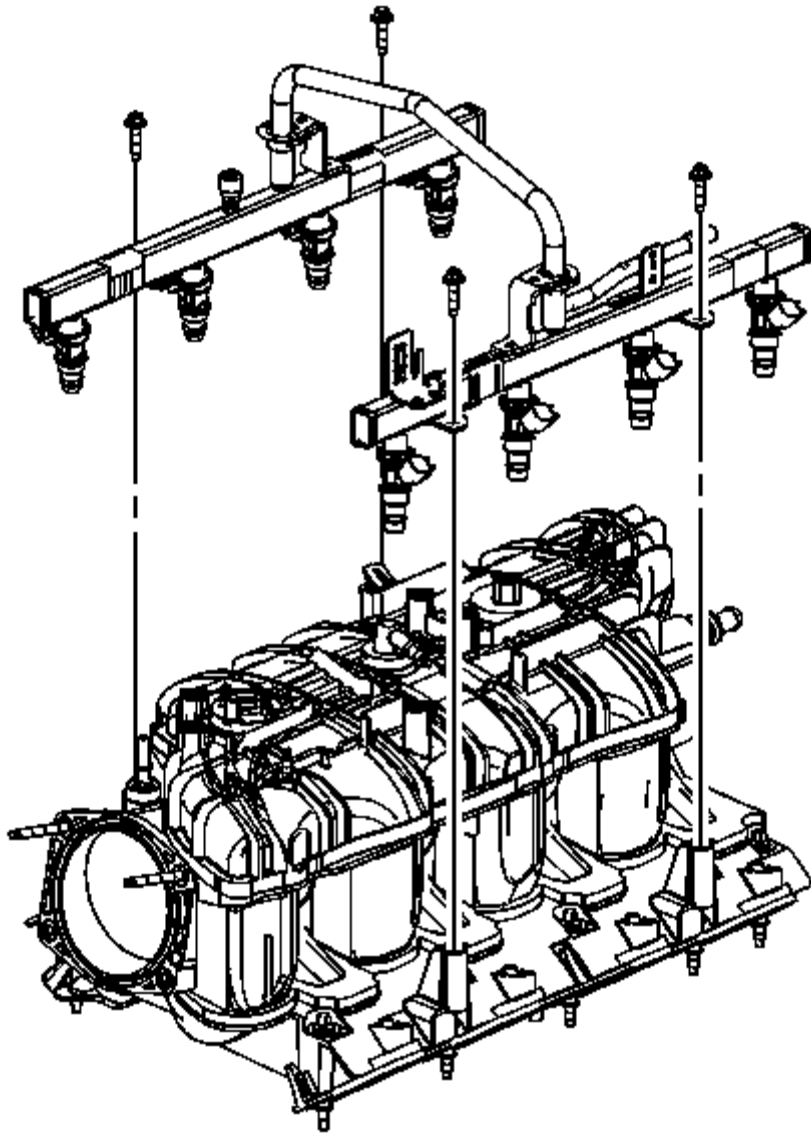


Fig. 189: View Of Fuel Rail & Bolts
Courtesy of GENERAL MOTORS CORP.

44. Remove the fuel rail bolts.

IMPORTANT: Lift evenly on both sides of the fuel rail until all injectors are

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

removed from their bores.

45. Remove the fuel rail.
46. Remove and discard the fuel injector lower O-ring seals.

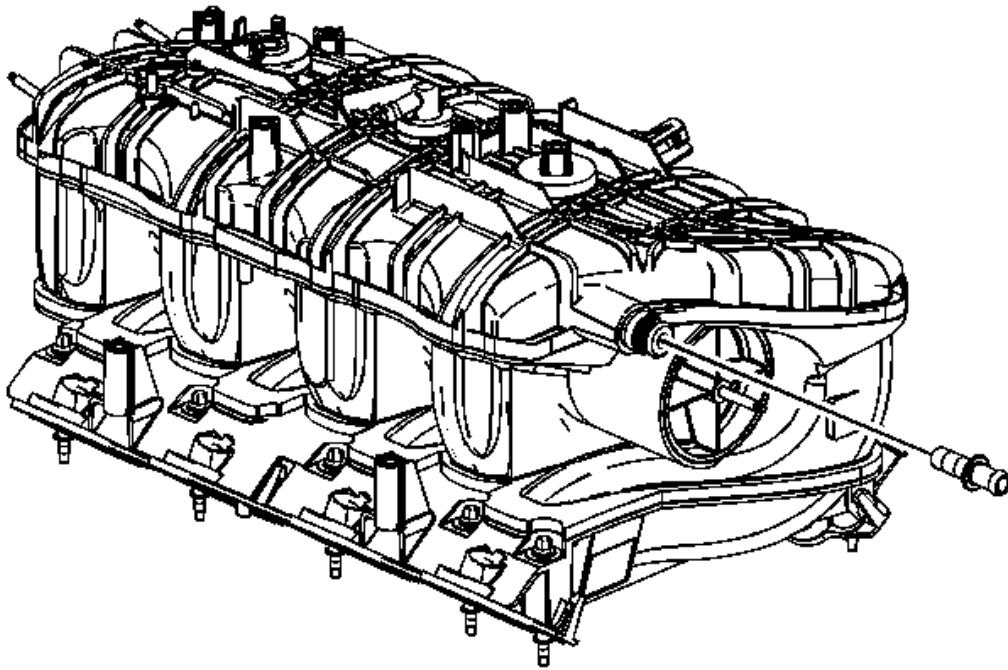


Fig. 190: View Of Brake Booster Vacuum Hose Nipple
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Evenly push in the RED collar in order to remove the nipple.

47. Remove the brake booster vacuum hose nipple.

Installation Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

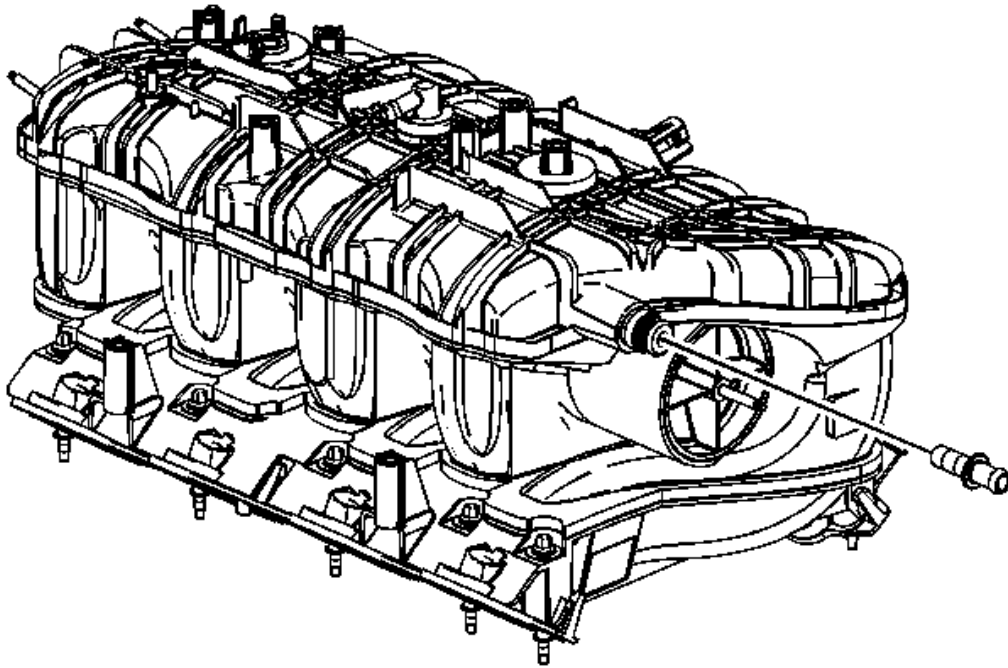


Fig. 191: View Of Brake Booster Vacuum Hose Nipple
Courtesy of GENERAL MOTORS CORP.

1. If the intake manifold was replaced perform the following steps, otherwise proceed to step 21.

IMPORTANT: Evenly push in the RED collar in order to install the nipple.

2. Install the brake booster vacuum hose nipple to the NEW intake manifold.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

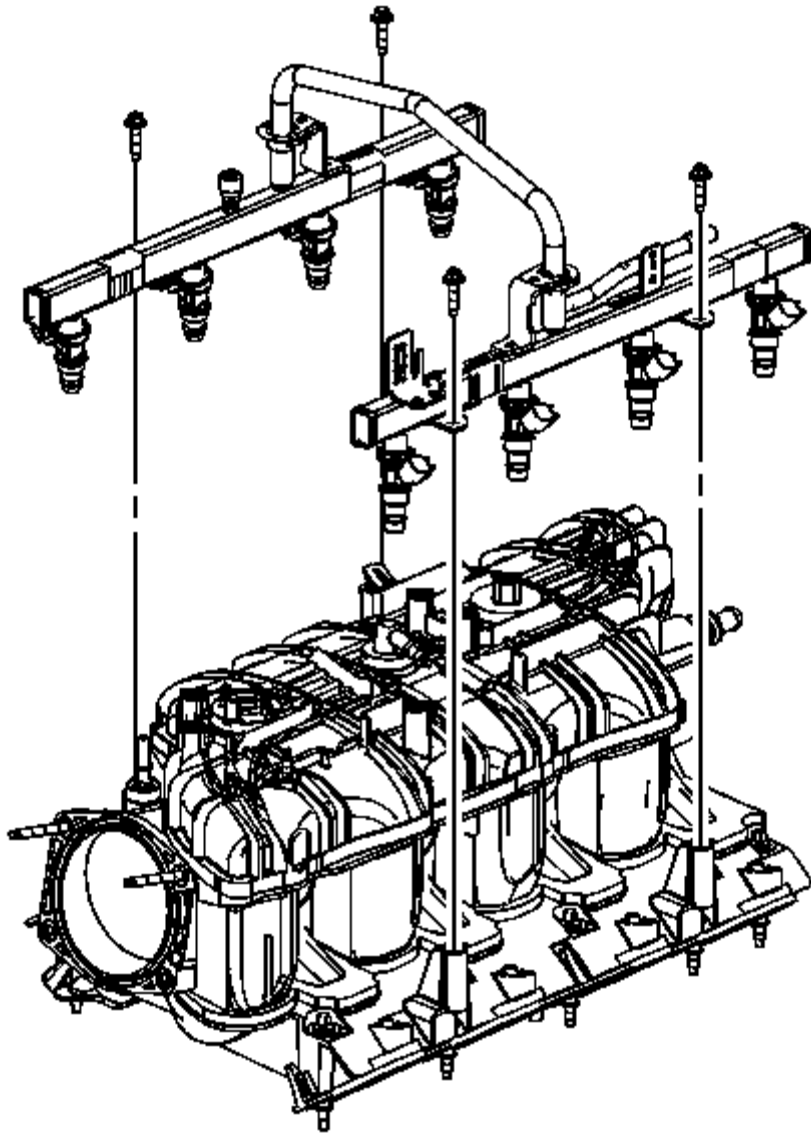


Fig. 192: View Of Fuel Rail & Bolts
Courtesy of GENERAL MOTORS CORP.

3. Install NEW fuel injector lower O-ring seals onto the injectors.
4. Lubricate the NEW O-ring seals with clean engine oil.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

IMPORTANT: Push down firmly on both sides of the rail until all the injectors have been seated into their bores.

5. Install the fuel rail.

NOTE: Refer to Fastener Notice .

6. Install the fuel rail bolts.

Tighten: Tighten the bolts to 10 N.m (89 lb in).

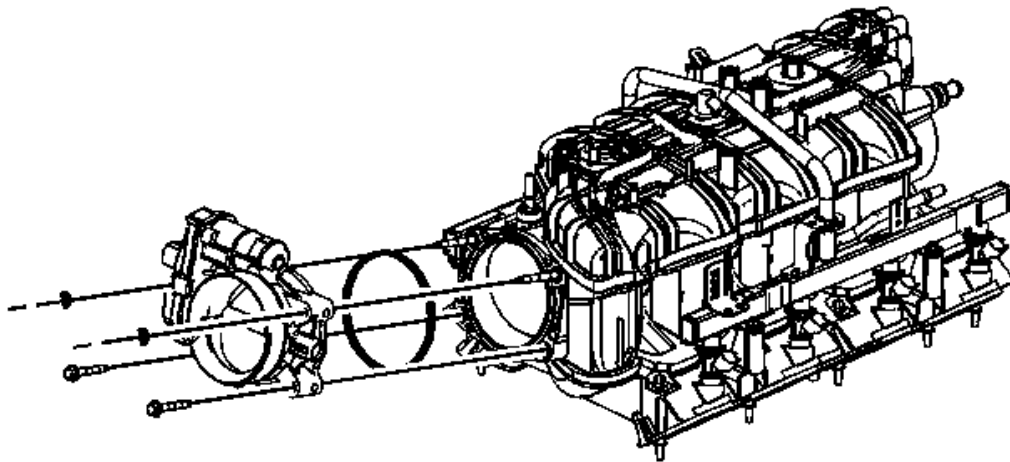


Fig. 193: View Of Throttle Body, Gasket & Bolts/Nuts
Courtesy of GENERAL MOTORS CORP.

7. Install a NEW throttle body gasket to the intake manifold.

8. Install the throttle body.

9. Install the throttle body bolts/nuts.

Tighten: Tighten the bolts/nuts to 10 N.m (89 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

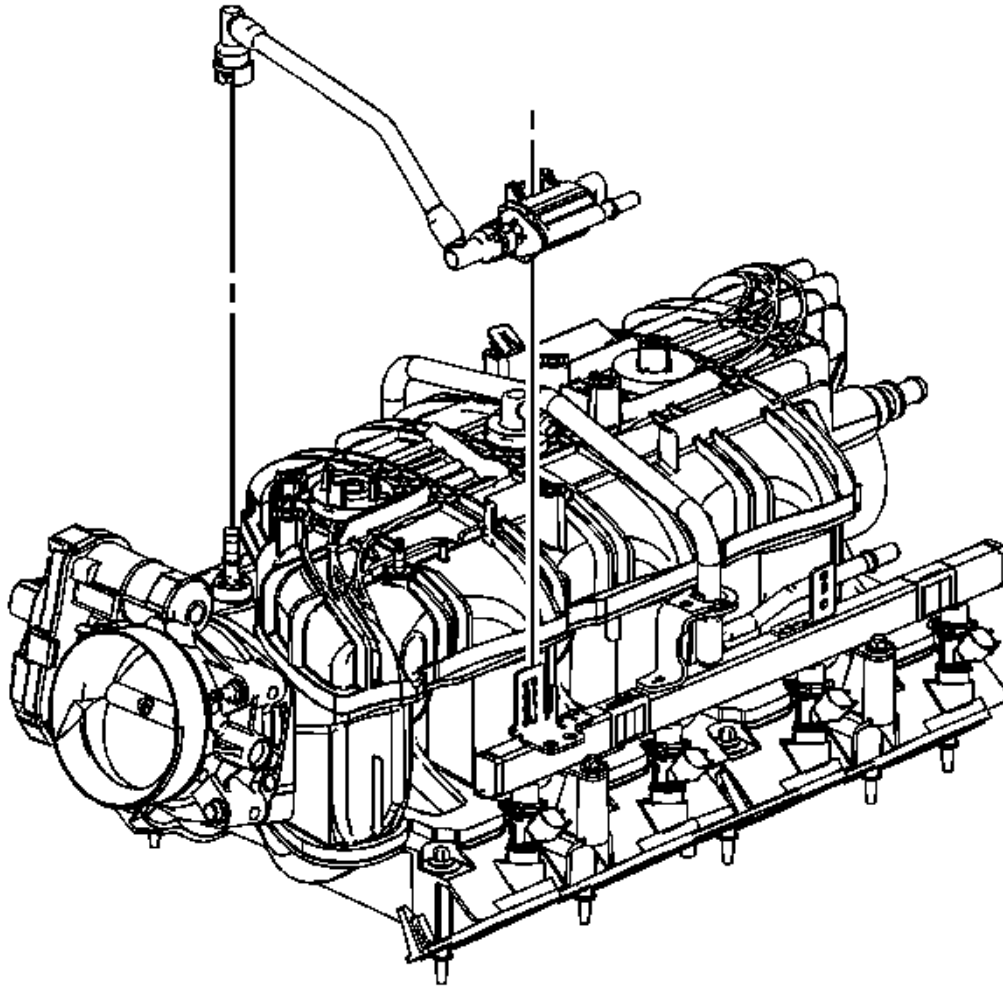


Fig. 194: View Of EVAP Tube & Purge Solenoid
Courtesy of GENERAL MOTORS CORP.

10. Install the EVAP tube and purge solenoid.
11. Install the EVAP canister purge solenoid to the fuel rail bracket and engage the retainer.
12. Connect the EVAP tube quick connect fitting at the intake manifold. Refer to **Plastic Collar Quick Connect Fitting Service** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

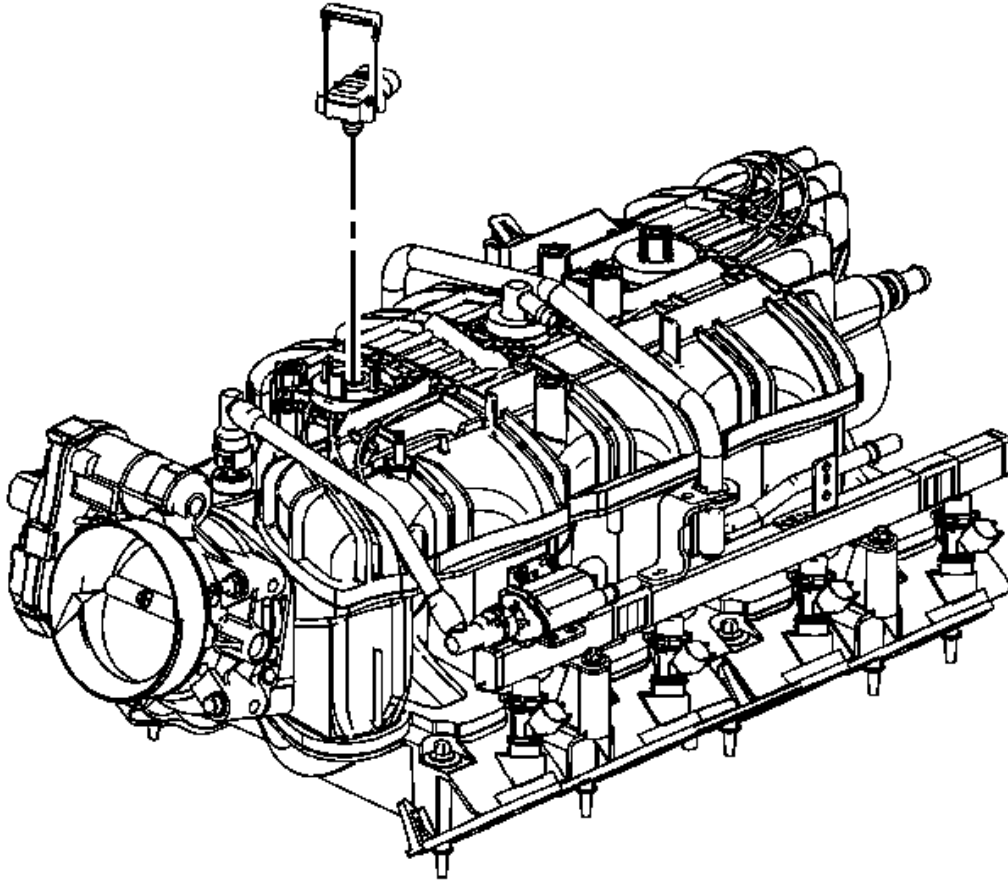


Fig. 195: View Of MAP Sensor & Retainer
Courtesy of GENERAL MOTORS CORP.

13. Lubricate the MAP sensor seal with clean engine oil.
14. Install the MAP sensor.
15. Install the MAP sensor retainer.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

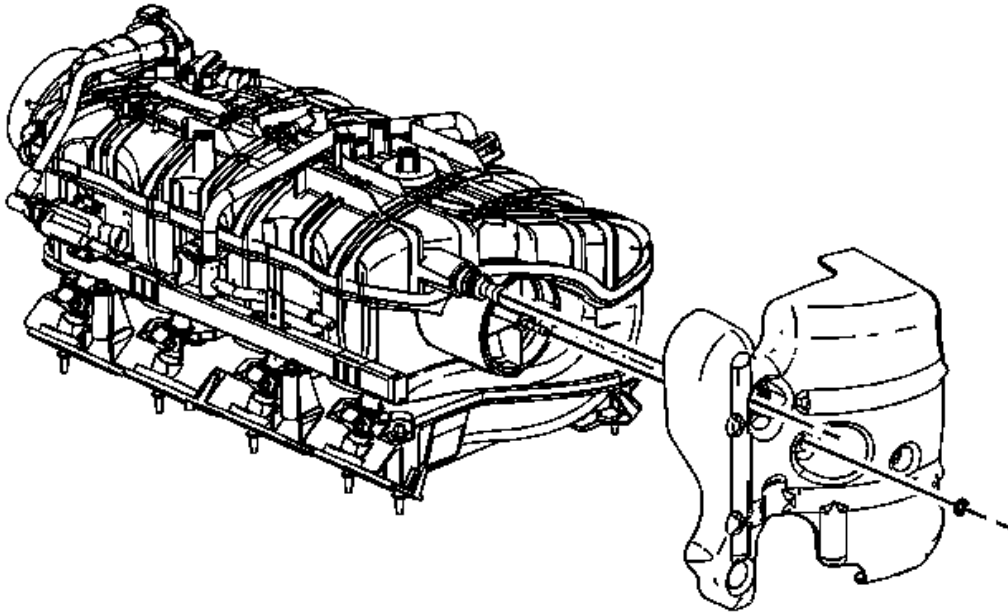


Fig. 196: View Of Upper Intake Manifold Cover & Nut
Courtesy of GENERAL MOTORS CORP.

16. Install the upper intake manifold cover.
17. Install the upper intake manifold cover nut until snug

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

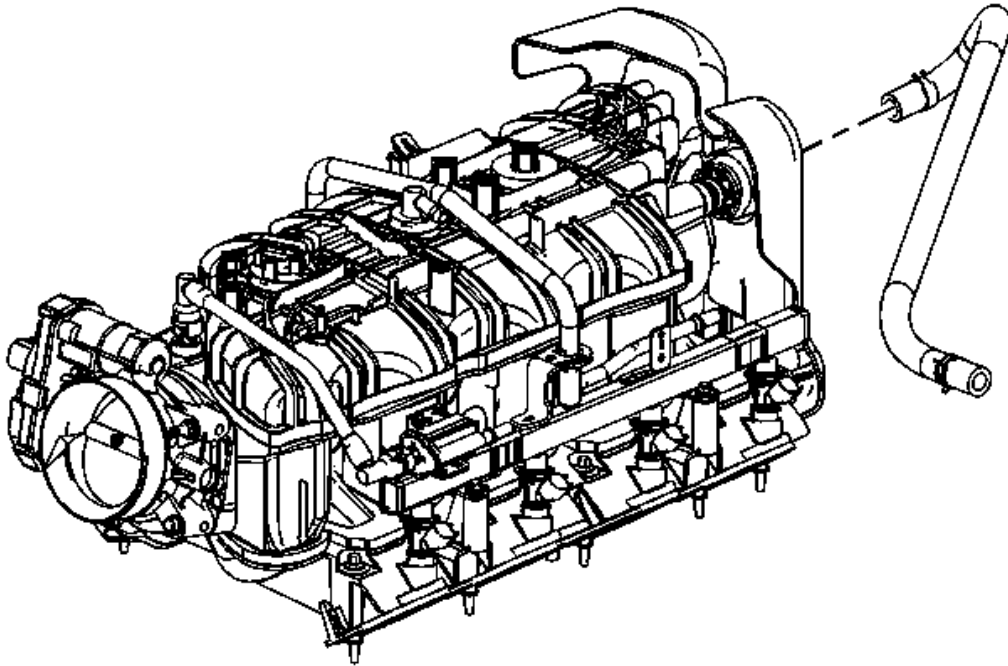


Fig. 197: View Of Vacuum Brake Booster Hose
Courtesy of GENERAL MOTORS CORP.

18. Install the brake booster vacuum hose to the intake manifold nipple.
19. Position the brake booster vacuum hose clamp at the intake manifold.
20. Secure the brake booster vacuum hose to the intake manifold.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

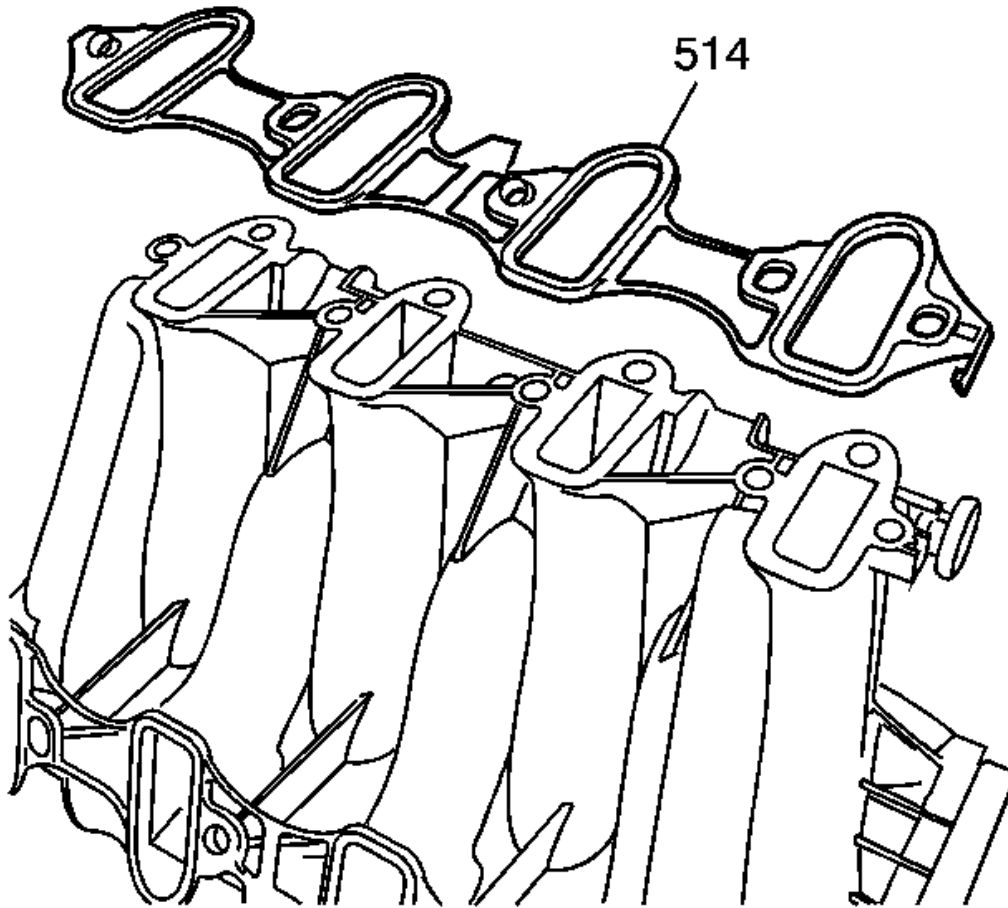


Fig. 198: View Of Intake Manifold-To-Cylinder Head Gasket
Courtesy of GENERAL MOTORS CORP.

21. Install NEW intake manifold gaskets (514) to the intake manifold.
22. Remove the covers from the cylinder head passages.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

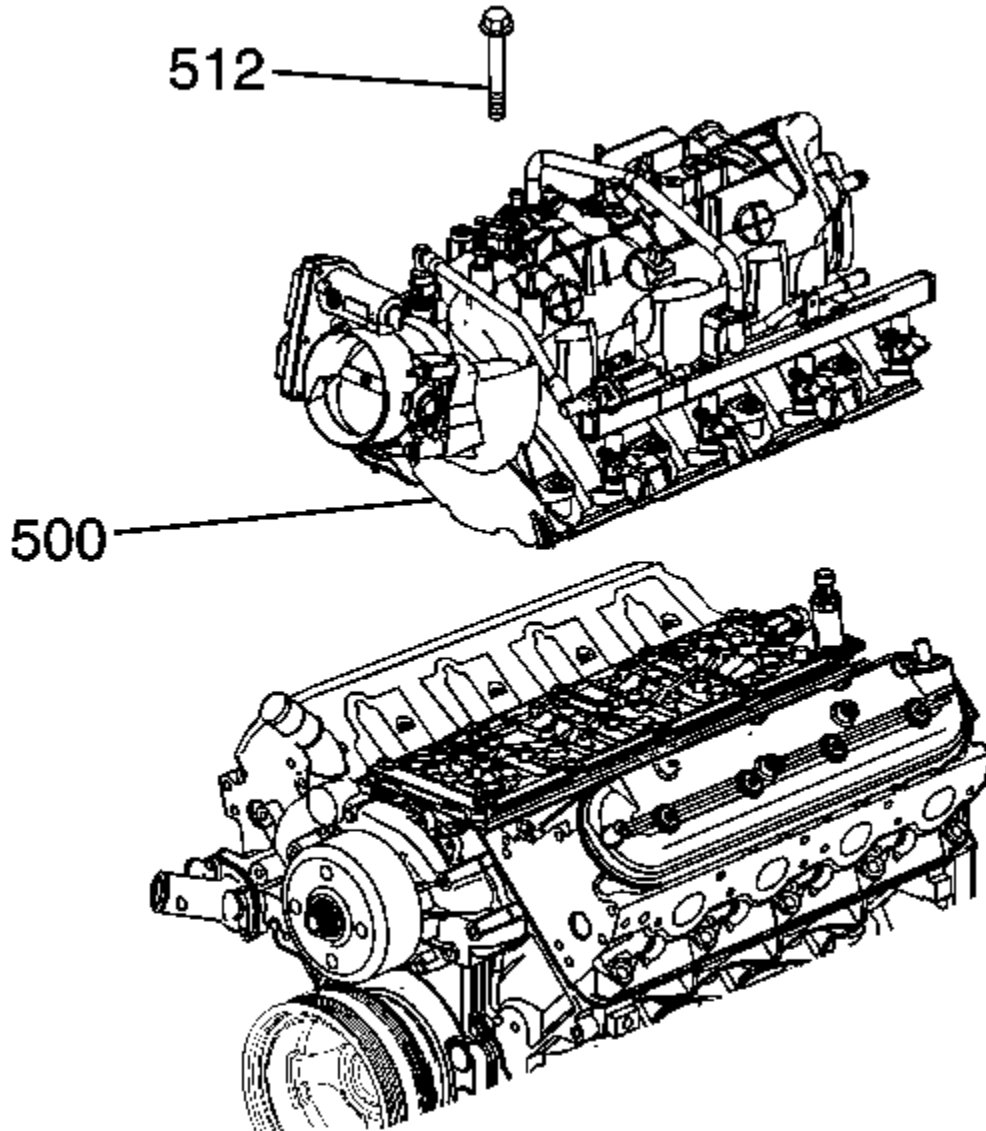


Fig. 199: Intake Manifold

Courtesy of GENERAL MOTORS CORP.

23. Install the intake manifold (500).

IMPORTANT: The aid of an assistant may be helpful in holding the engine

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

harness up out of the way so the upper intake manifold cover does not get caught against the engine harness.

24. Tighten the intake manifold bolts (512) until snug.

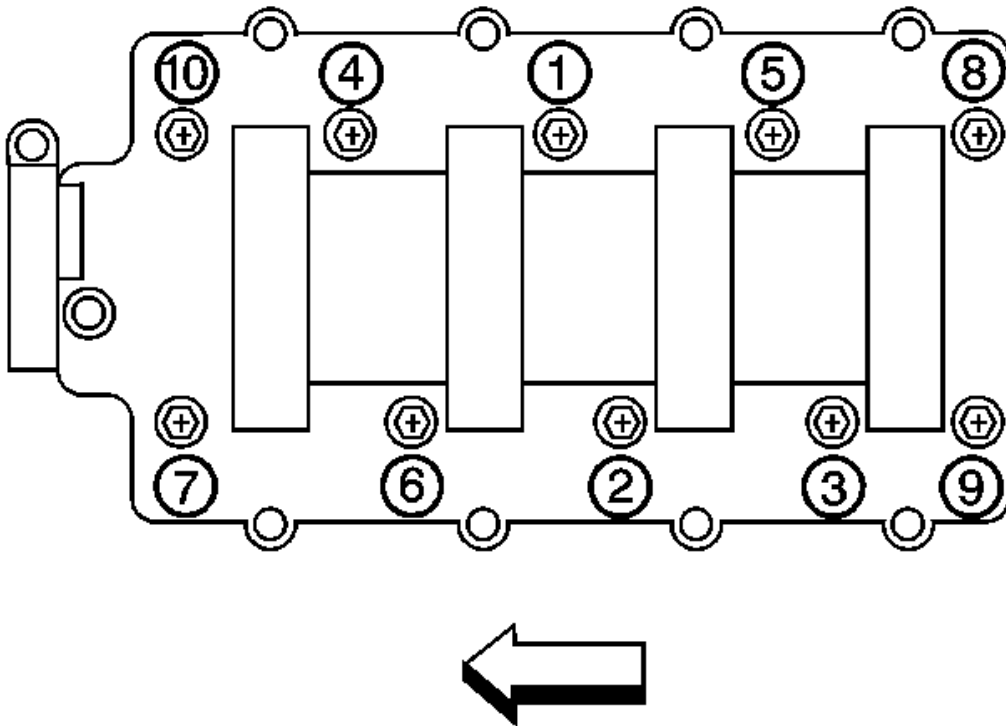


Fig. 200: Intake Manifold Bolt Tightening Sequence
Courtesy of GENERAL MOTORS CORP.

25. Tighten the intake manifold bolts to specifications.

Tighten:

- Tighten the bolts a first pass in the sequence shown to 5 N.m (44 lb in).
- Tighten the bolts a final pass in the sequence shown to 10 N.m (89 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

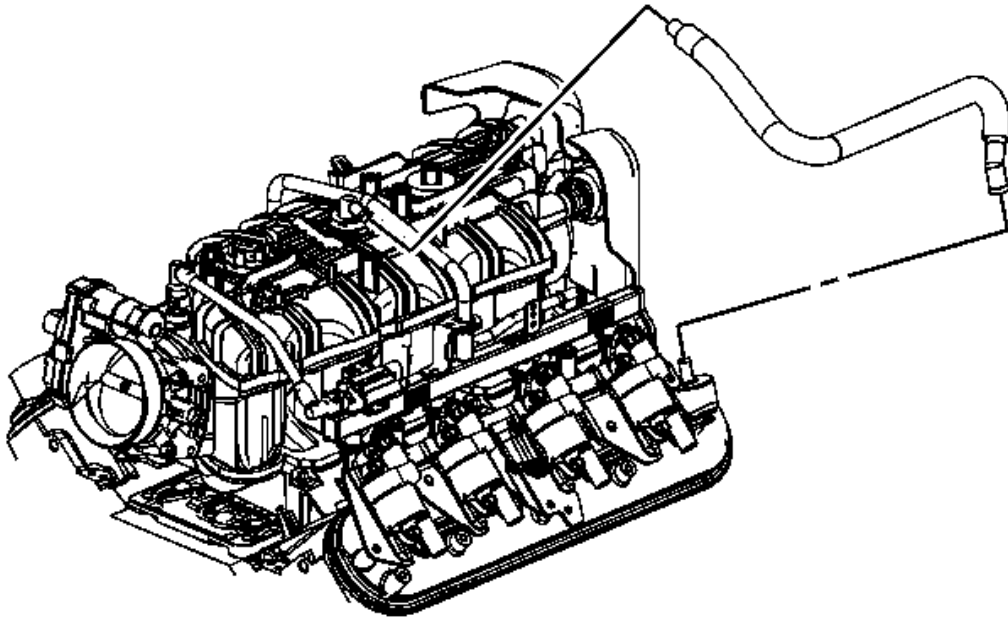


Fig. 201: View Of PCV Hose
Courtesy of GENERAL MOTORS CORP.

26. Position and install the PCV hose to the intake manifold fitting.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

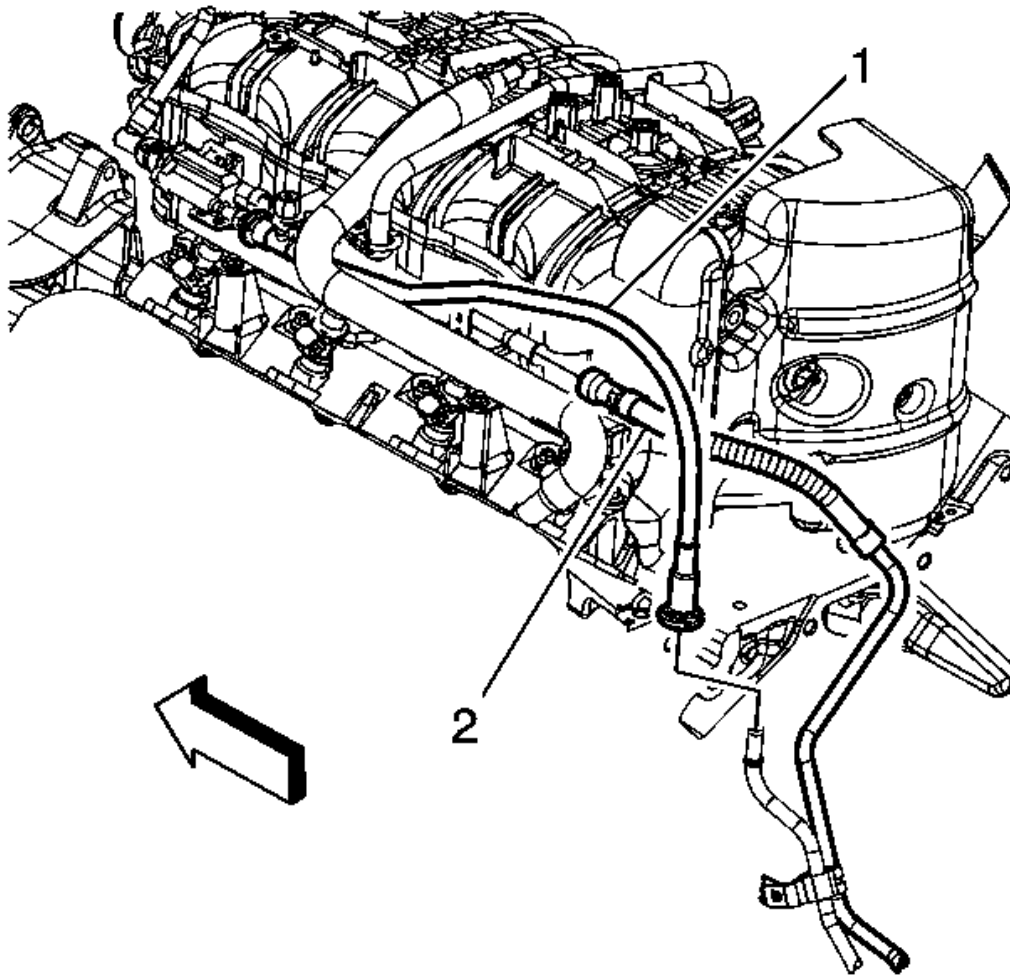


Fig. 202: View Of EVAP Canister Purge Tube & Quick Connect Fitting
Courtesy of GENERAL MOTORS CORP.

27. Connect the fuel feed line quick connect fitting (2) to the fuel rail. Refer to **Metal Collar Quick Connect Fitting Service** .
28. Connect the EVAP canister purge tube (1) quick connect fitting to the EVAP canister purge solenoid. Refer to **Plastic Collar Quick Connect Fitting Service** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

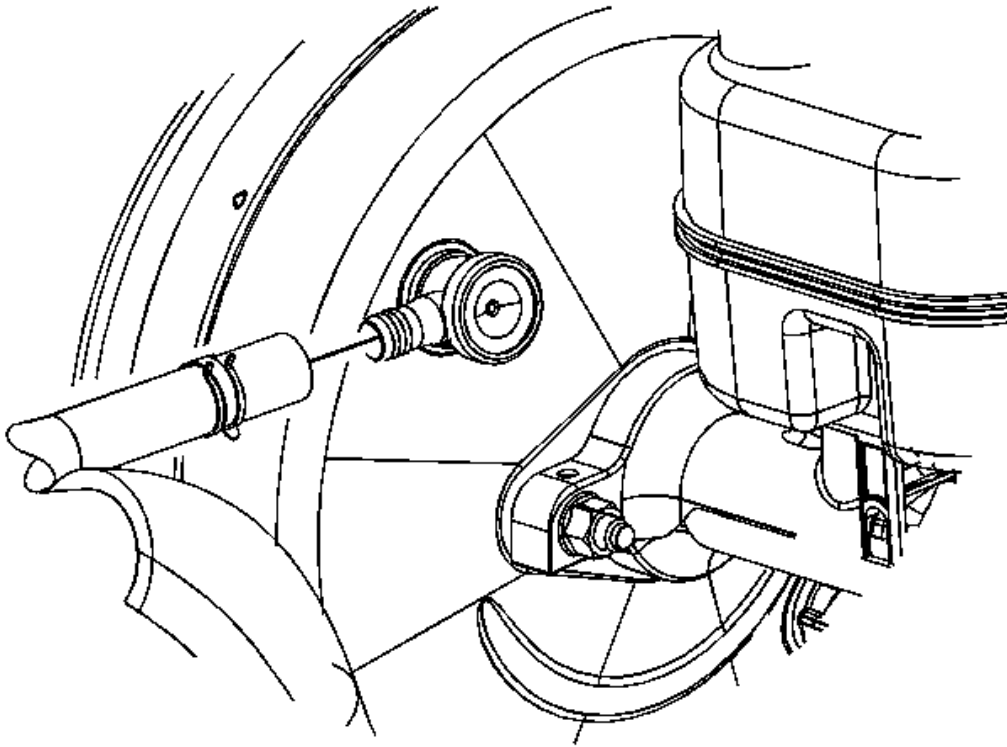


Fig. 203: View Of Brake Booster Vacuum Hose & Booster Fitting
Courtesy of GENERAL MOTORS CORP.

29. Unsecure the brake booster vacuum hose from the intake manifold, if removed.
30. Install the brake booster vacuum hose to the booster fitting, if removed.
31. Position the brake booster vacuum hose clamp at the booster, if removed.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

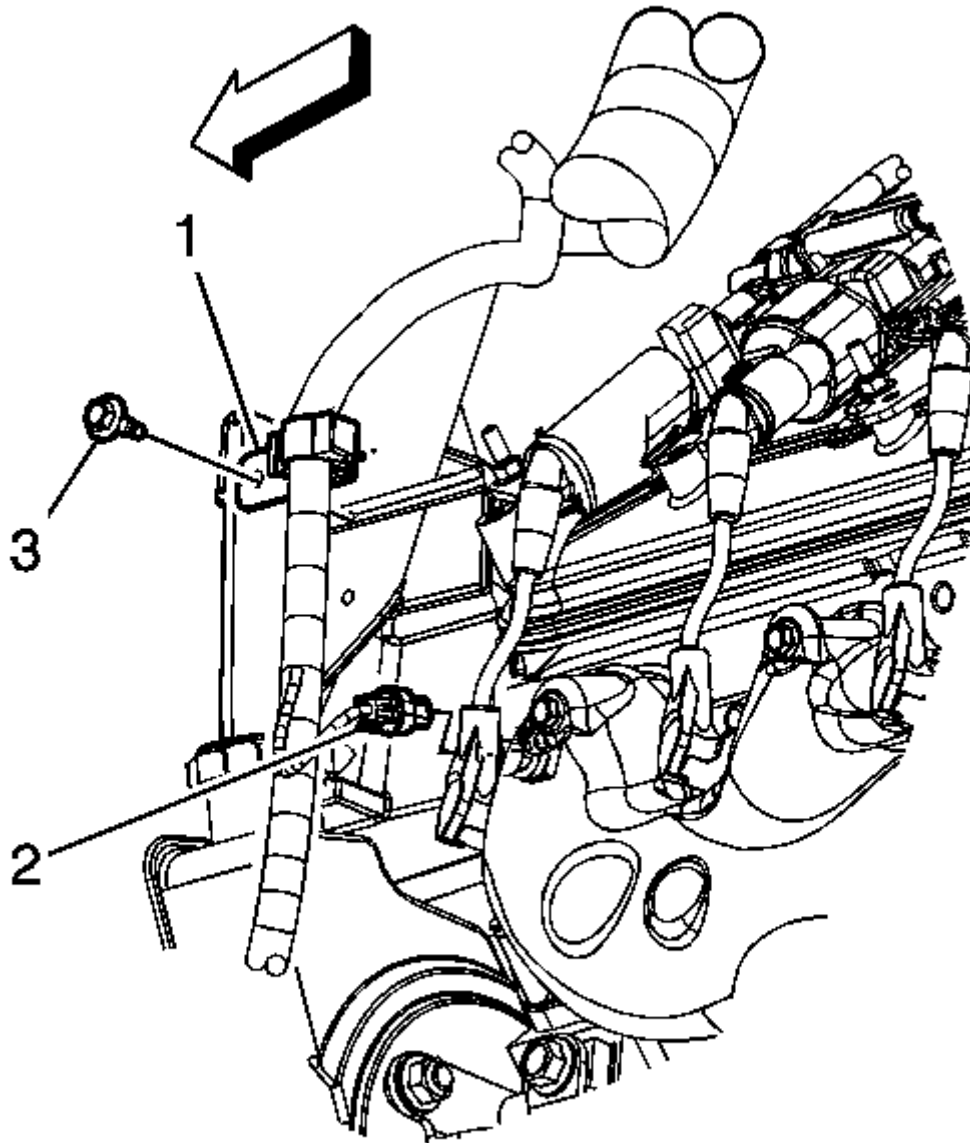


Fig. 204: View Of Engine Wiring Harness, Clip, Bolt & Connector
Courtesy of GENERAL MOTORS CORP.

32. Untie the engine harness branches from the cowl panel and position over the engine.
33. Connect the engine harness electrical connector (2) to the ECT sensor.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

34. Position the engine harness clip (1) to the generator bracket and install the bolt (3).

Tighten: Tighten the bolt to 9 N.m (80 lb in).

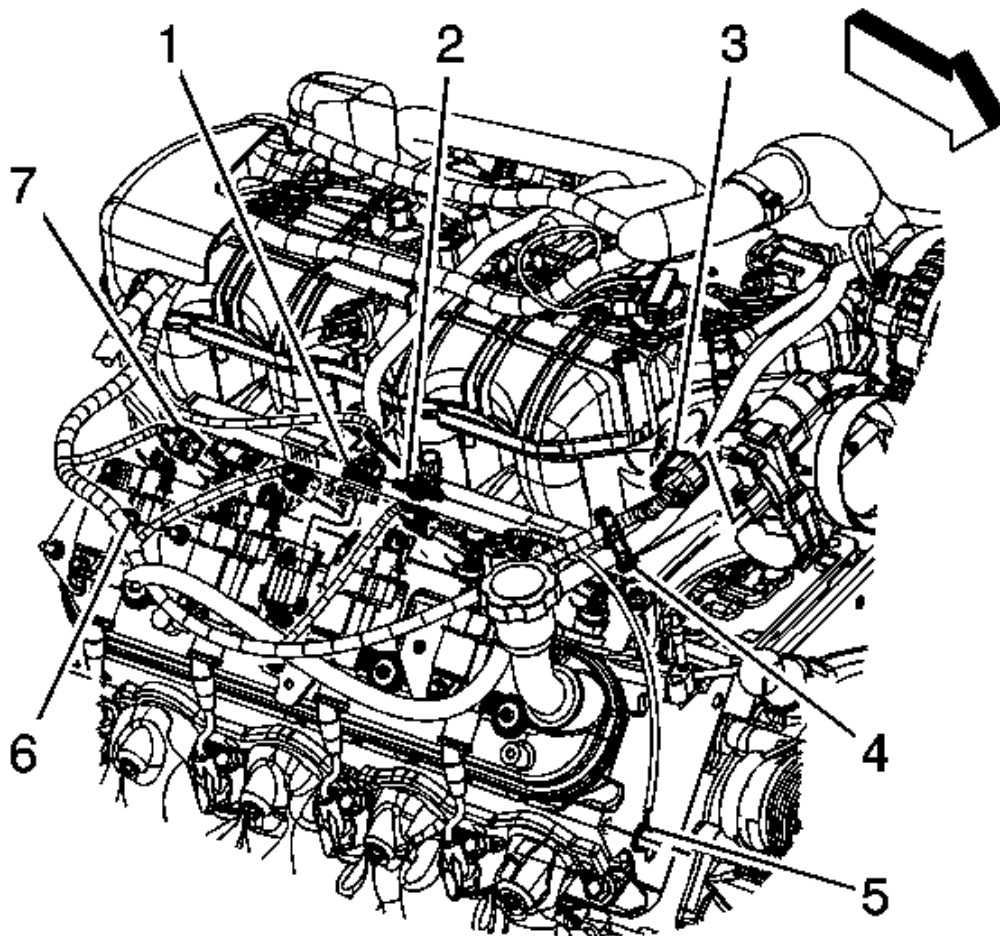


Fig. 205: View Of CPA Retainer, Engine Harness Electrical Connectors & Harness Clips

Courtesy of GENERAL MOTORS CORP.

35. Connect the engine harness electrical connectors (7) to the right side fuel injectors.

36. Install the engine harness clip (6) to the ignition coil bracket stud.

37. Install the engine harness clip (4) to the generator battery jumper cable.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

38. Connect the engine harness electrical connector (3) to the throttle actuator.
39. Connect the engine harness electrical connector (1) to the ignition coil harness electrical connector.
40. Install the CPA retainer (2).

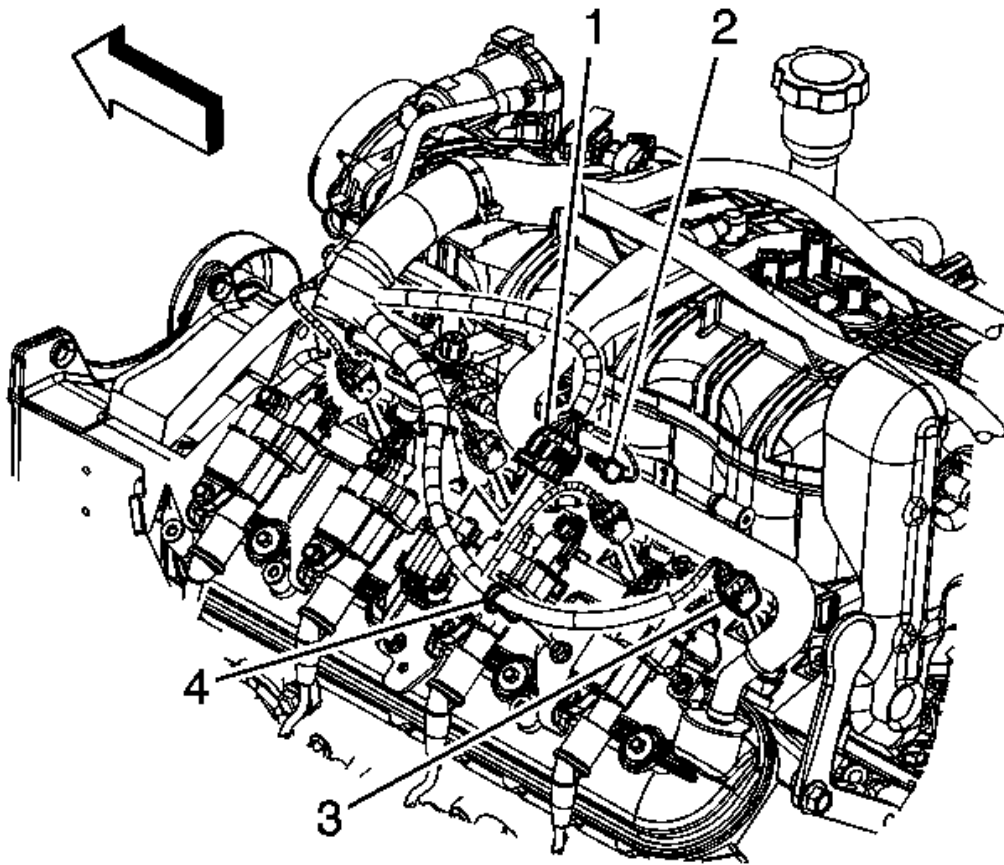


Fig. 206: View Of CPA Retainer, Electrical Connectors & Engine Harness Clips
Courtesy of GENERAL MOTORS CORP.

41. Install the engine harness clip (4) to the ignition coil bracket stud.
42. Connect the engine harness electrical connectors (3) to the left side fuel injectors.
43. Connect the engine harness electrical connector (1) to the ignition coil harness electrical connector.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

44. Install the CPA retainer (1).

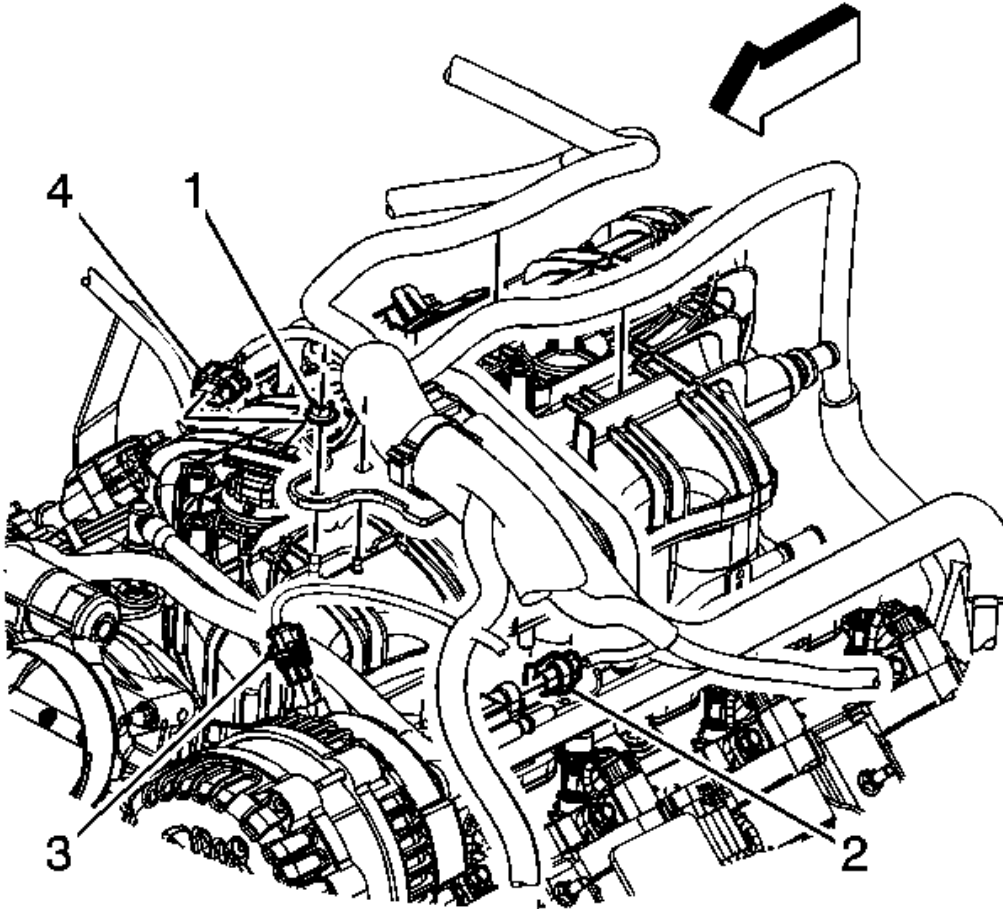


Fig. 207: View Of Engine Harness Retainer Nut & Electrical Connectors
Courtesy of GENERAL MOTORS CORP.

45. Connect the engine wiring harness electrical connector (4) to the MAP sensor.
46. Connect the engine harness electrical connector (2) to the EVAP canister purge solenoid.
47. Install the engine harness retainer to the stud and locator pin.
48. Install the engine harness retainer nut (1).

Tighten: Tighten the nut to 5 N.m (44 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

49. Install the generator. Refer to **Generator Replacement (4.8L, 5.3L, 6.0L, and 6.2L)** .
50. Install the air cleaner outlet duct. Refer to **Air Cleaner Resonator Outlet Duct Replacement** .

UPPER INTAKE MANIFOLD COVER REPLACEMENT

Removal Procedure

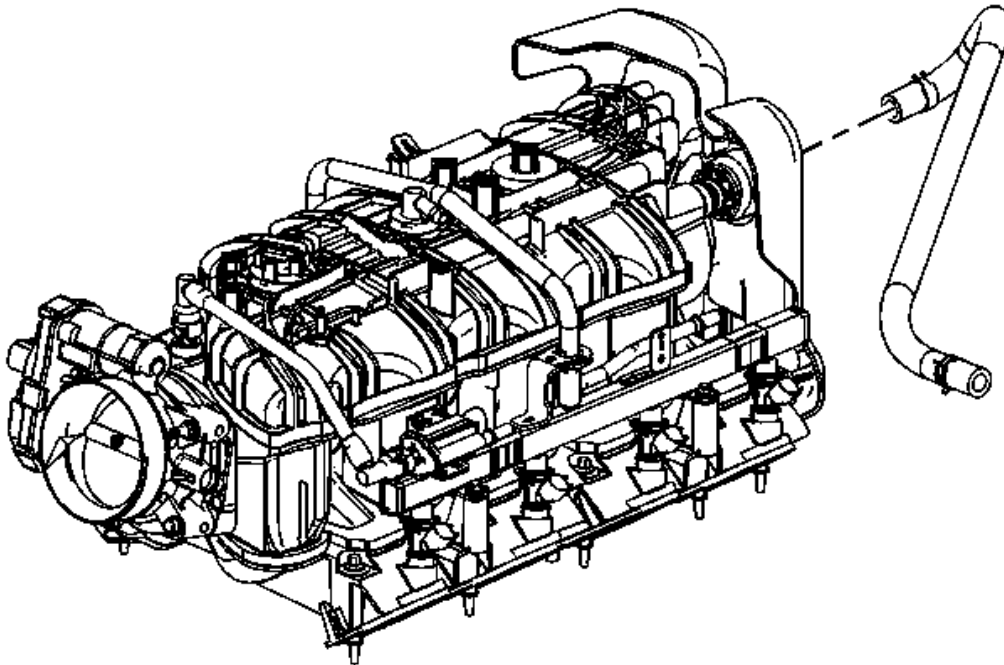


Fig. 208: View Of Vacuum Brake Booster Hose
Courtesy of GENERAL MOTORS CORP.

1. Remove the intake manifold. Refer to **Intake Manifold Replacement (L92 - First Design)** or **Intake Manifold Replacement (L92 - Second Design)** or **Intake Manifold Replacement (LY2 and LY6)** or **Intake Manifold Replacement (LH6, LMG, LY5 and L76)** .
2. Reposition the brake booster vacuum hose clamp at the intake manifold.
3. Remove the brake booster vacuum hose from the intake manifold nipple.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

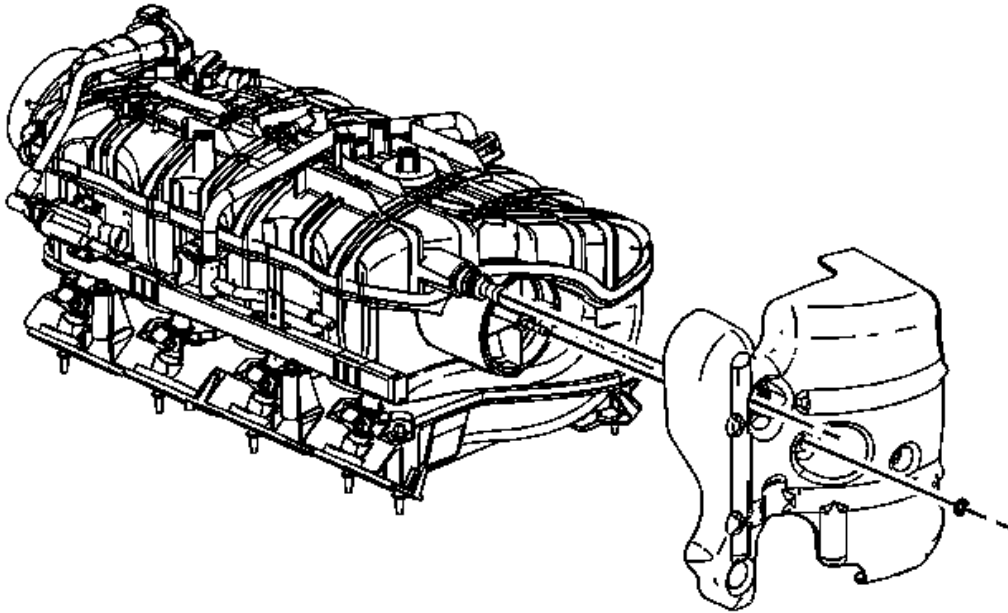


Fig. 209: View Of Upper Intake Manifold Cover & Nut
Courtesy of GENERAL MOTORS CORP.

4. Remove the upper intake manifold cover nut.
5. Remove the upper intake manifold cover.

Installation Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

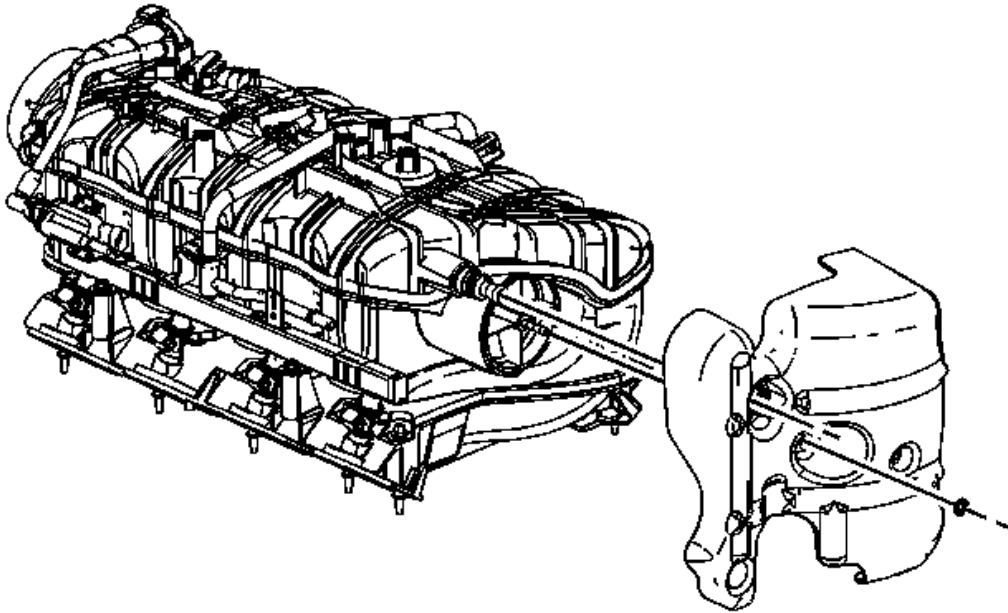


Fig. 210: View Of Upper Intake Manifold Cover & Nut
Courtesy of GENERAL MOTORS CORP.

1. Install the upper intake manifold cover.
2. Install the upper intake manifold cover nut until snug

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

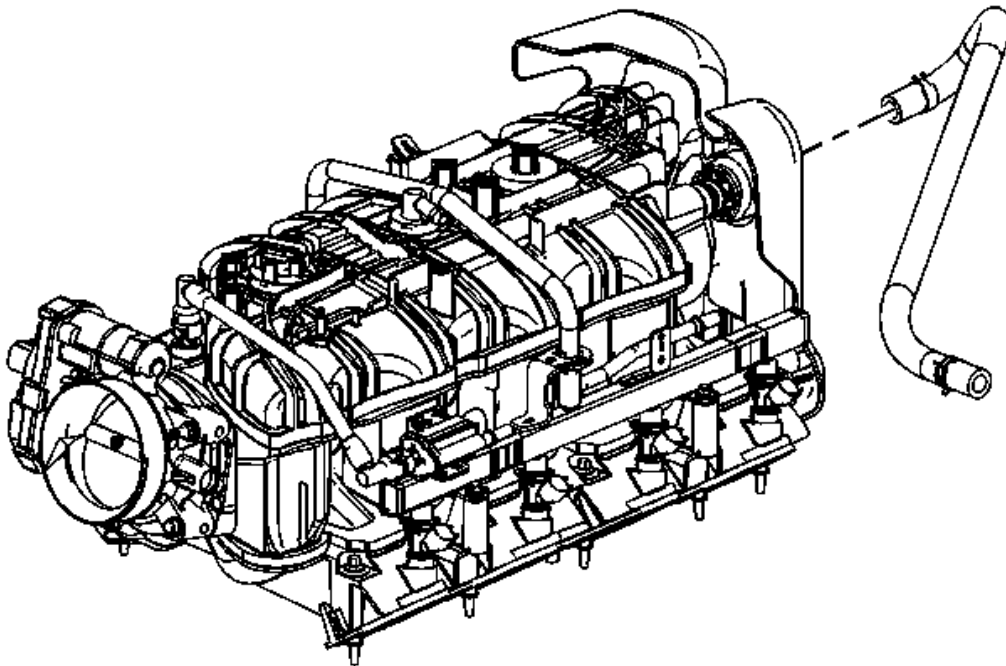


Fig. 211: View Of Vacuum Brake Booster Hose
Courtesy of GENERAL MOTORS CORP.

3. Install the brake booster vacuum hose to the intake manifold nipple.
4. Position the brake booster vacuum hose clamp at the intake manifold.
5. Install the intake manifold. Refer to **Intake Manifold Replacement (L92 - First Design)** or **Intake Manifold Replacement (L92 - Second Design)** or **Intake Manifold Replacement (LY2 and LY6)** or **Intake Manifold Replacement (LH6, LMG, LY5 and L76)**.

ENGINE BLOCK VALLEY COVER REPLACEMENT

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

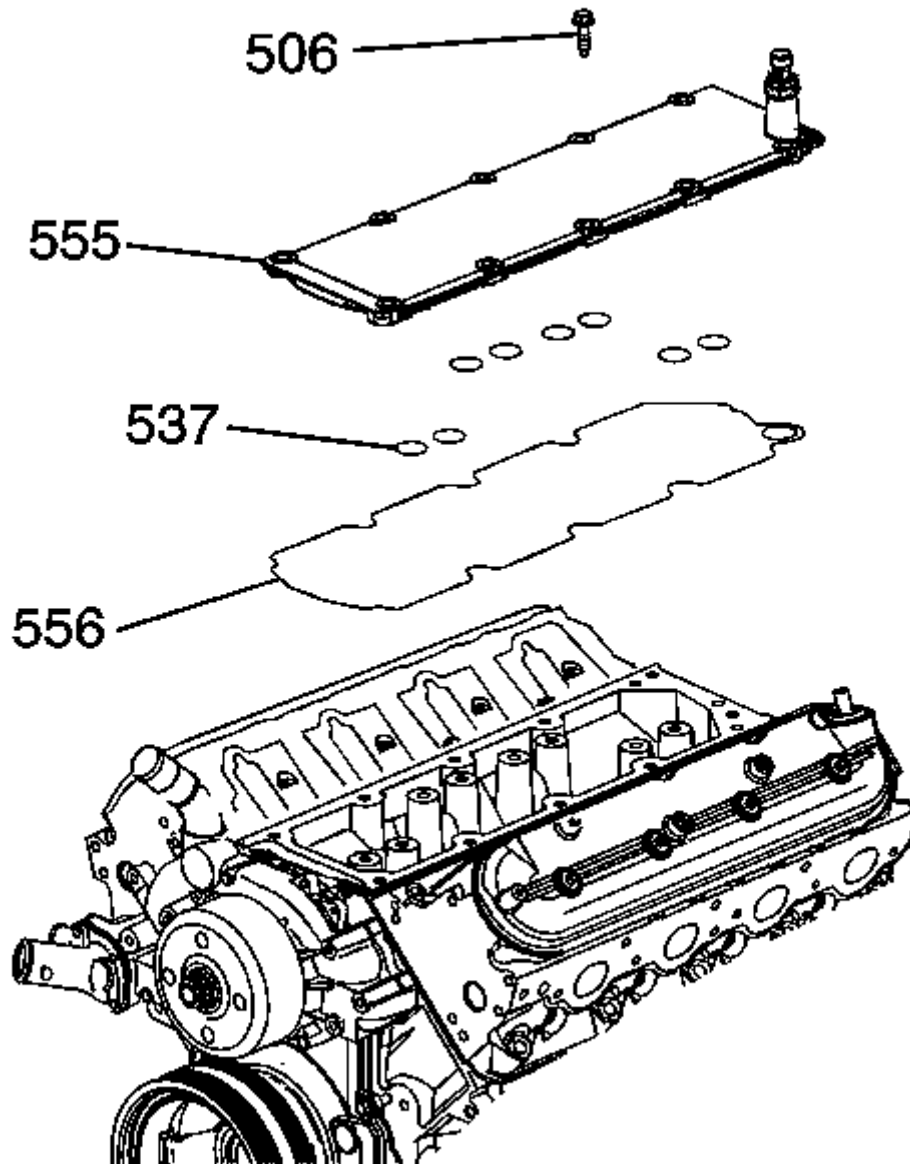


Fig. 212: Removing/Installing Engine Valley Cover
Courtesy of GENERAL MOTORS CORP.

1. Remove the intake manifold. Refer to **Intake Manifold Replacement (L92 - First Design)** or **Intake Manifold Replacement (L92 - Second Design)** or **Intake Manifold**

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Replacement (LY2 and LY6) or Intake Manifold Replacement (LH6, LMG, LY5 and L76).

2. Remove the engine valley cover bolts (506).
3. Remove the engine valley cover (555) and gasket (556).
4. Remove the O-ring seals (537) from the cover.

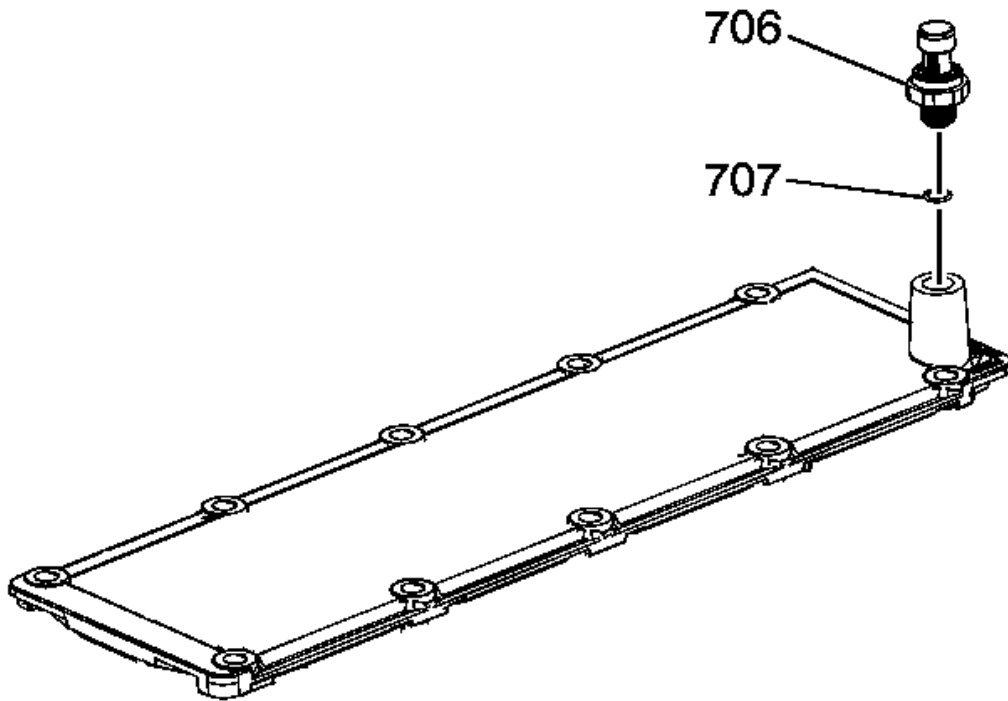


Fig. 213: Removing/Installing Oil Pressure Sensor & Washer
Courtesy of GENERAL MOTORS CORP.

5. Remove the oil pressure sensor (706) and washer (707).

Installation Procedure

IMPORTANT: All gasket surfaces should be free of oil or other foreign material during assembly.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

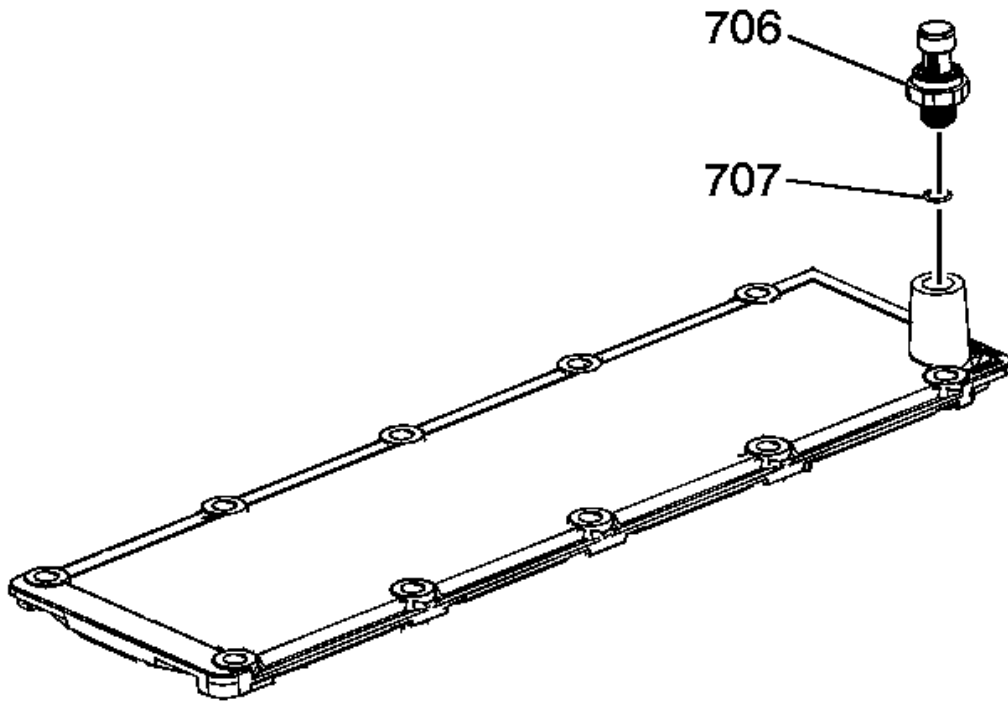


Fig. 214: Removing/Installing Oil Pressure Sensor & Washer
Courtesy of GENERAL MOTORS CORP.

1. Apply sealant GM P/N 12346004 (Canadian P/N 10953480) or equivalent, to the threads of the oil pressure sensor.

NOTE: Refer to Fastener Notice .

2. Install a NEW washer (707) and the oil pressure sensor (706).

Tighten: Tighten the sensor to 35 N.m (26 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

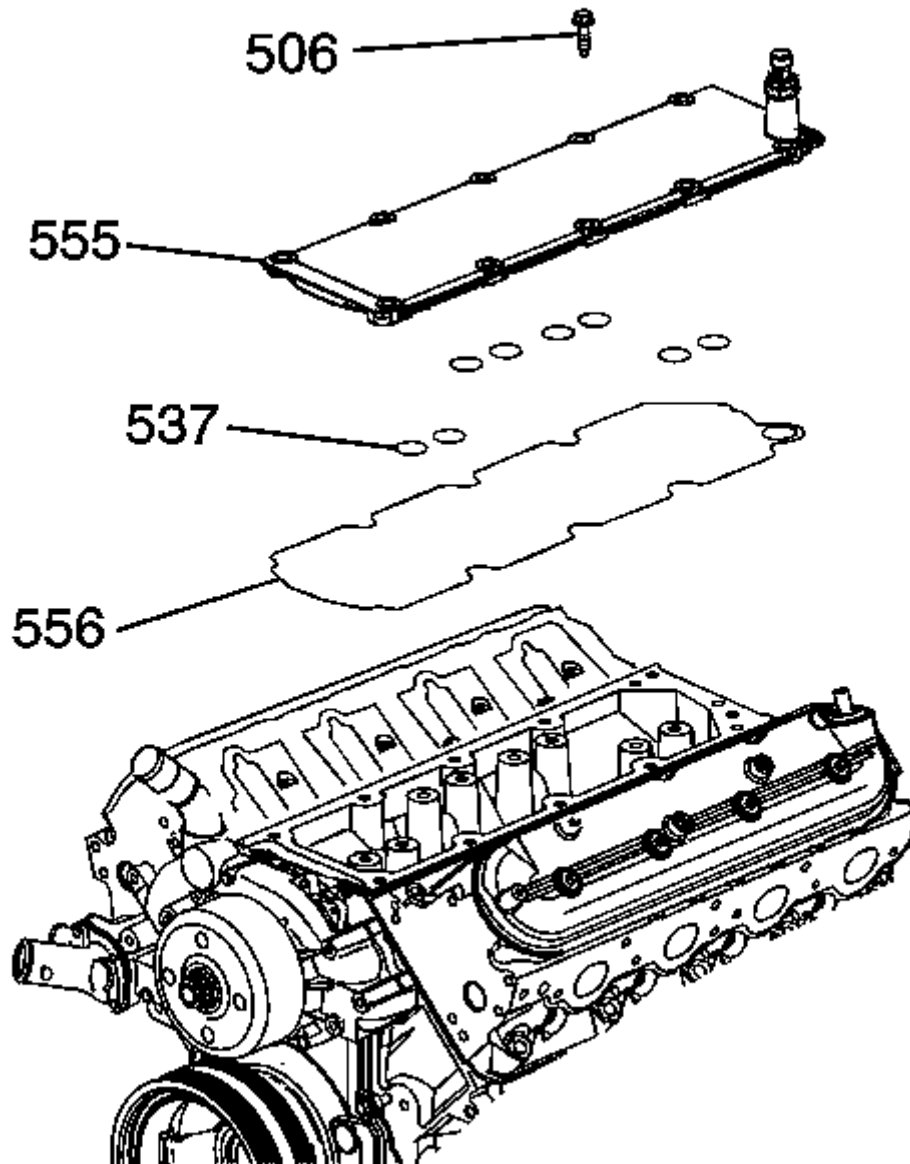


Fig. 215: Removing/Installing Engine Valley Cover
Courtesy of GENERAL MOTORS CORP.

3. Lubricate the O-ring seals with clean engine oil.
4. Install the O-ring seals (537) to the cover.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

5. Set the engine valley cover (555) onto the engine.
6. Install the engine valley cover bolts (506).

Tighten: Tighten the bolts to 25 N.m (18 lb ft).

7. Install the intake manifold. Refer to **Intake Manifold Replacement (L92 - First Design)** or **Intake Manifold Replacement (L92 - Second Design)** or **Intake Manifold Replacement (LY2 and LY6)** or **Intake Manifold Replacement (LH6, LMG, LY5 and L76)**.

VALVE LIFTER OIL MANIFOLD REPLACEMENT

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

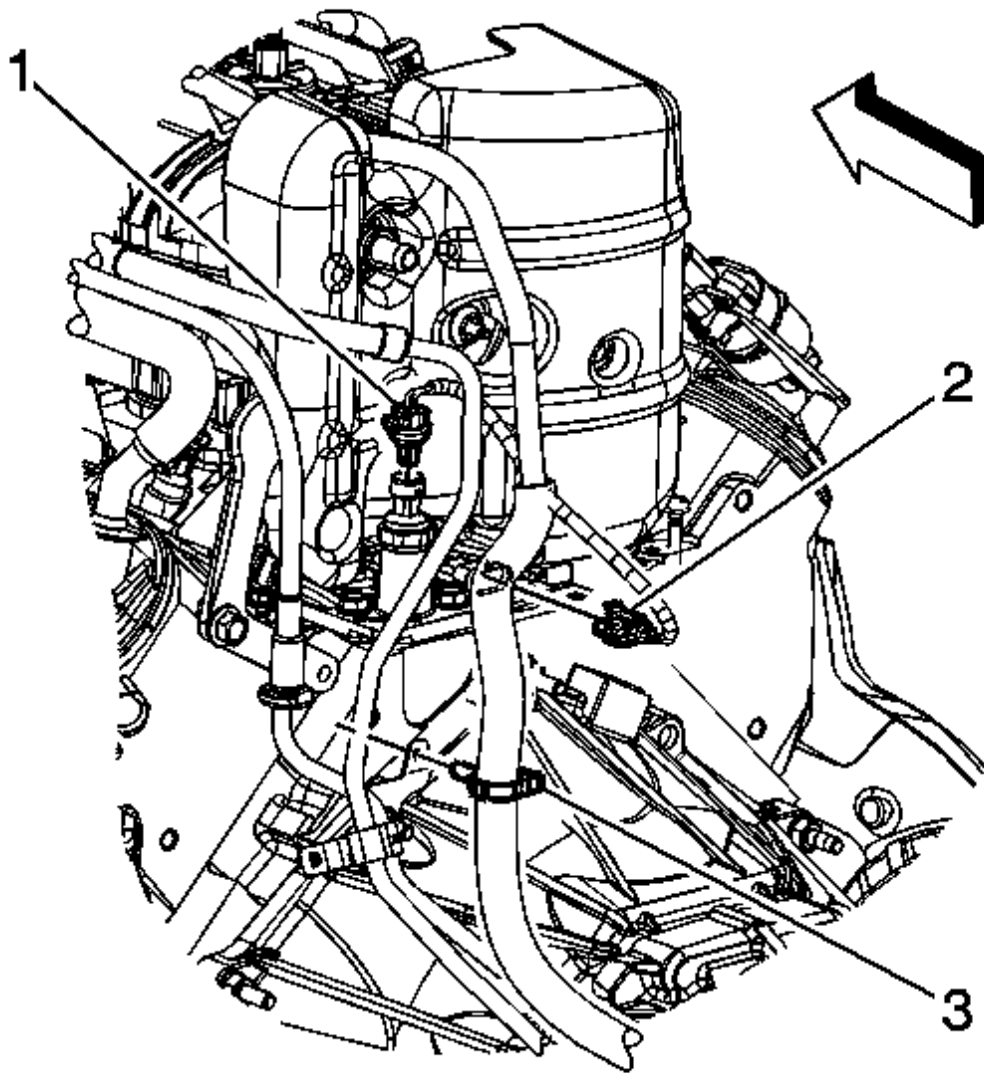


Fig. 216: View Of Engine Harness Electrical Connectors & Inlet Hose Clamp
Courtesy of GENERAL MOTORS CORP.

1. Remove the intake manifold. Refer to **Intake Manifold Replacement (L92 - First Design)** or **Intake Manifold Replacement (L92 - Second Design)** or **Intake Manifold Replacement (LY2 and LY6)** or **Intake Manifold Replacement (LH6, LMG, LY5 and L76)**.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Disconnect the engine harness electrical connector (1) from the oil pressure sensor.

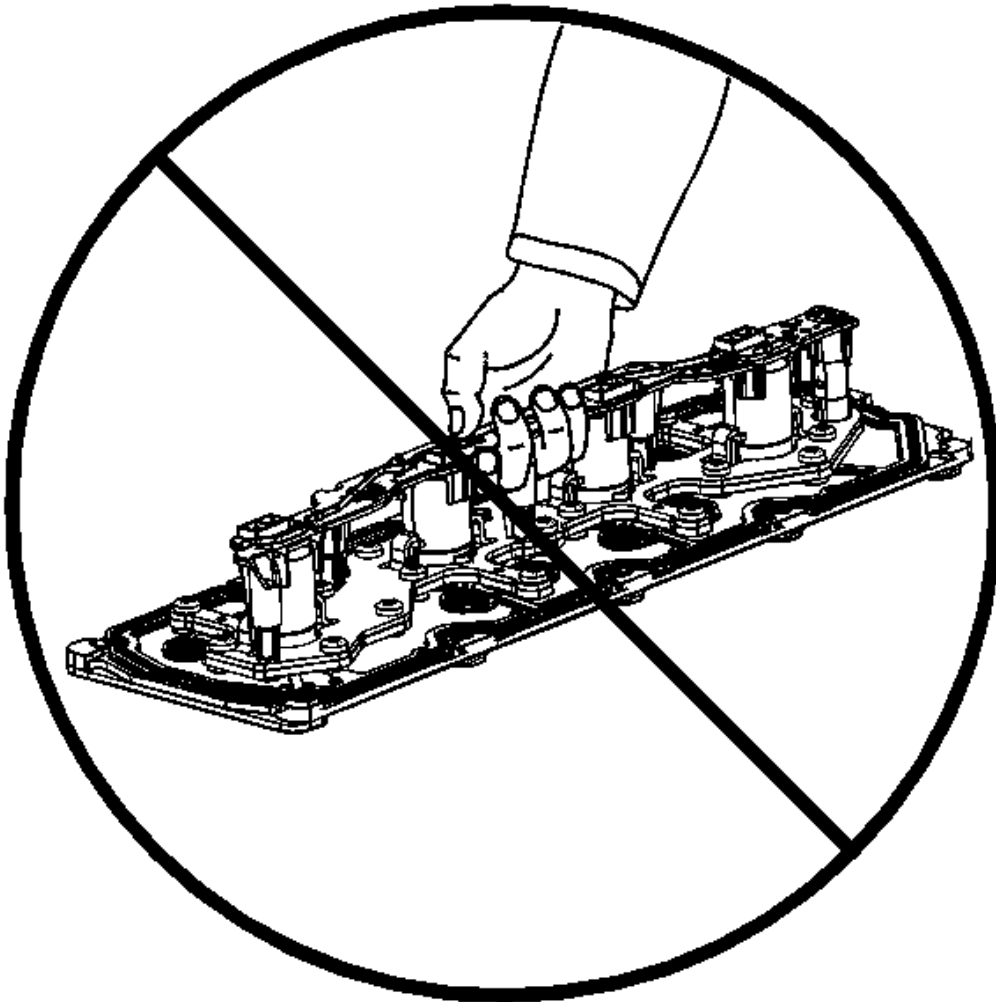


Fig. 217: Valve Lifter Oil Manifold
Courtesy of GENERAL MOTORS CORP.

3. DO NOT lift the valve lifter oil manifold by the electrical lead frame.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

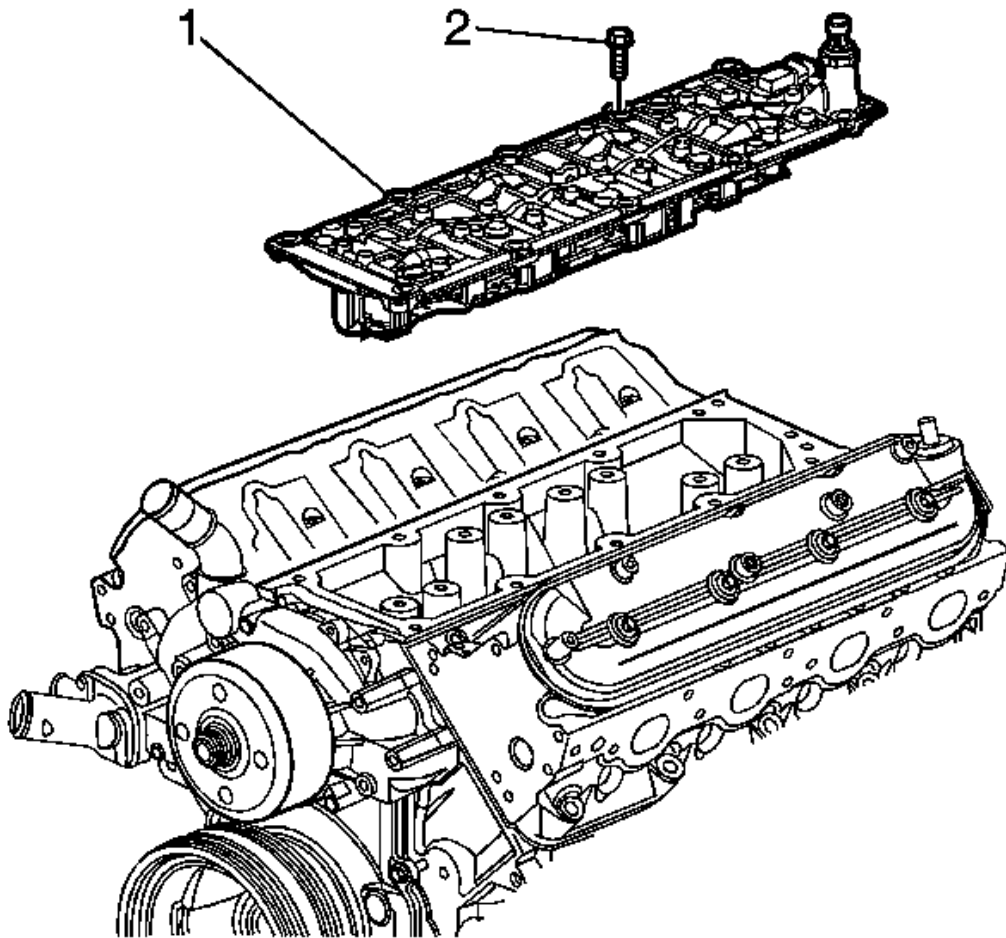


Fig. 218: Valve Lifter Oil Manifold
Courtesy of GENERAL MOTORS CORP.

4. Remove the valve lifter oil manifold bolts (2).
5. Remove the valve lifter oil manifold (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

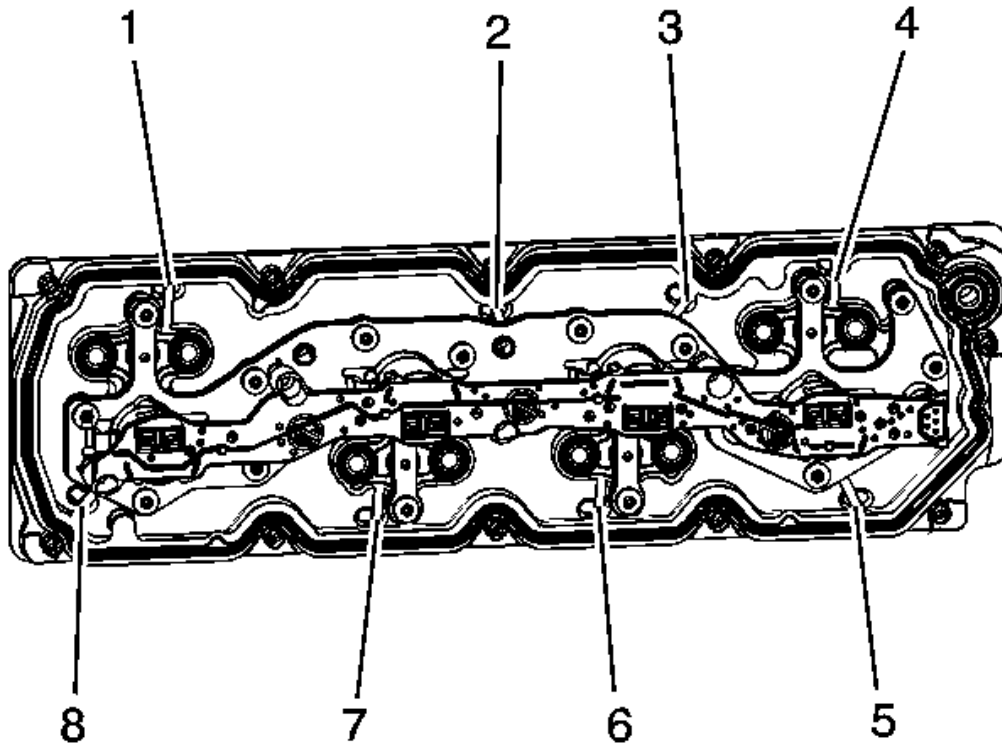


Fig. 219: Gasket Retaining Strap Locations
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Remove only the outer gasket from the manifold. Do not disassemble any of the internal components of the manifold in an attempt to remove the 8 inner sealing gaskets. If the inner gaskets are cut or damaged, replace the manifold as an assembly. Only use a wire-cutter type tool in order to minimize the amount of debris. Do not use a rotary-type cutting tool on the retaining straps.

6. Identify the 8 gasket retaining strap locations (1-8).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

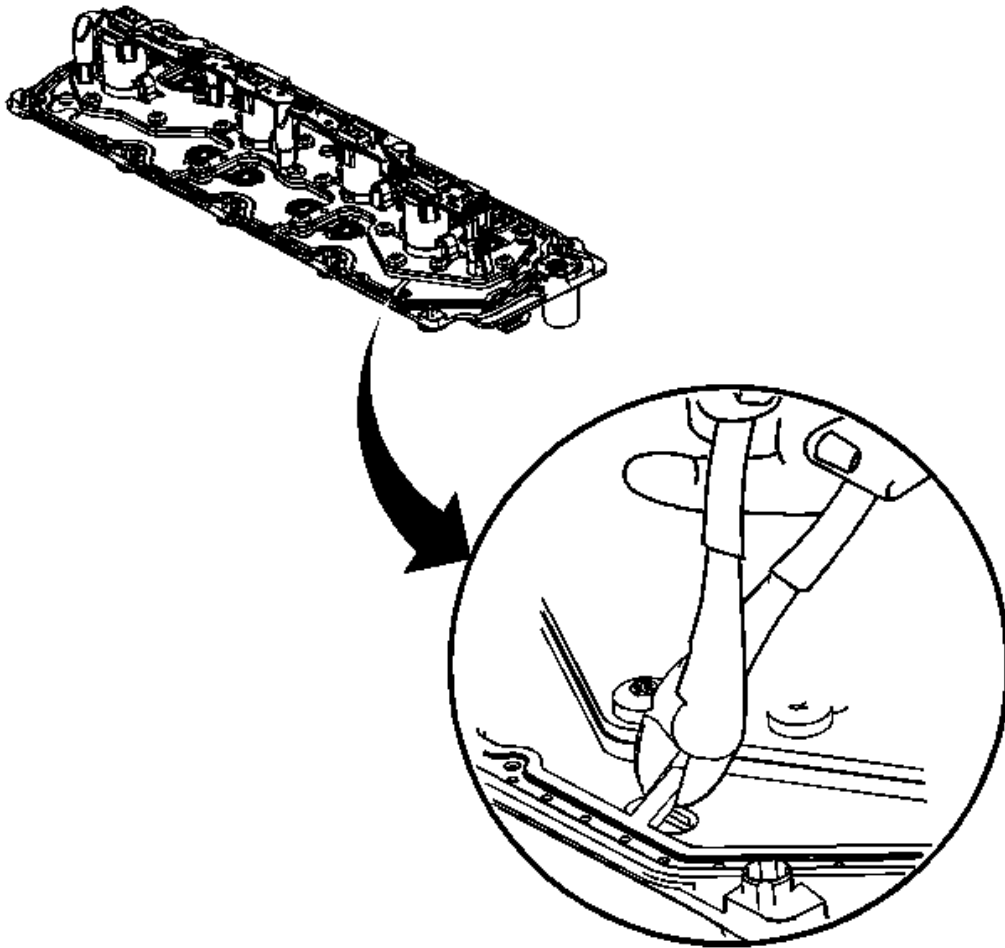


Fig. 220: Retaining Strap
Courtesy of GENERAL MOTORS CORP.

7. Using a cutter type tool, cut the 8 retaining straps.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

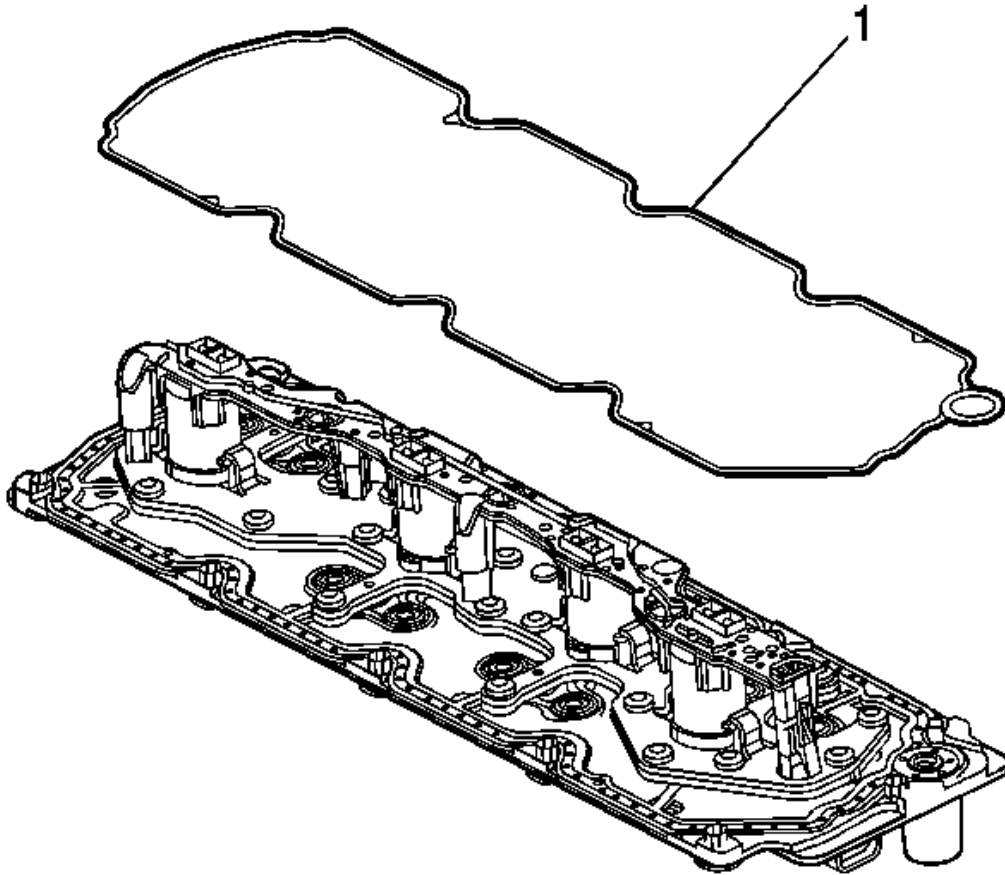


Fig. 221: Identifying Valve Cover Outer Gasket
Courtesy of GENERAL MOTORS CORP.

8. Remove the outer gasket (1) from the valve lifter oil manifold.

Installation Procedure

IMPORTANT: All gasket surfaces should be free of oil or other foreign material during assembly.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

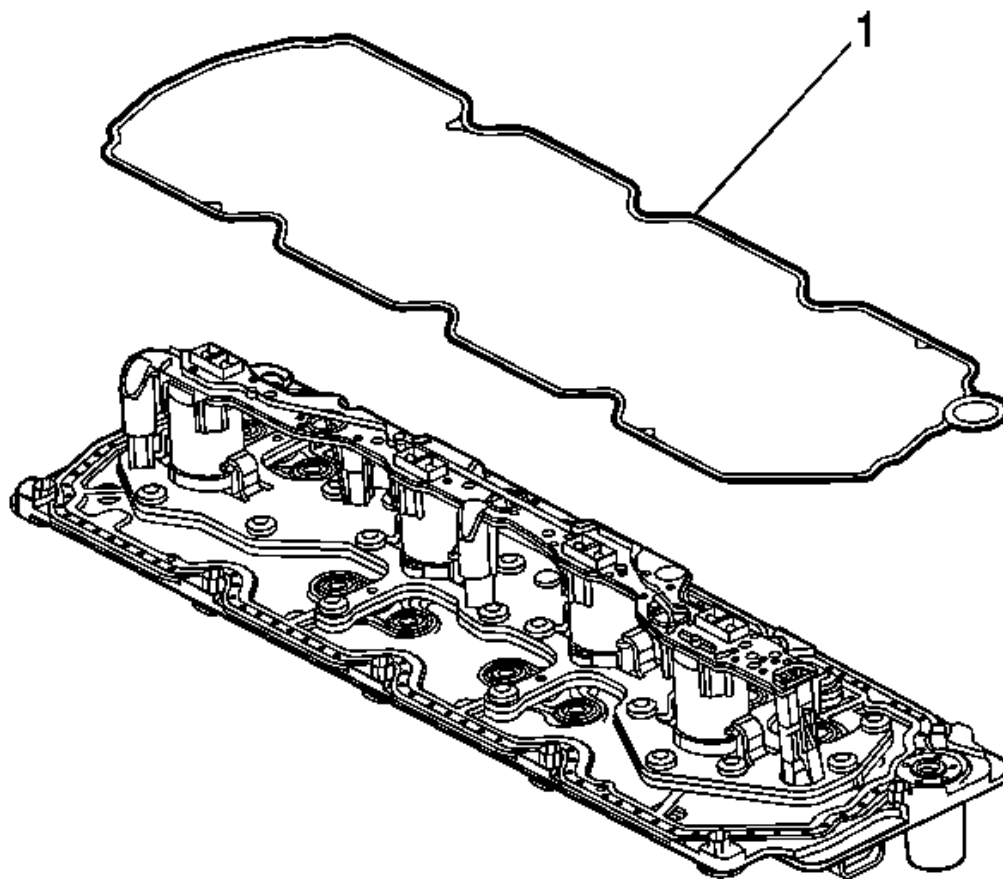


Fig. 222: Identifying Valve Cover Outer Gasket
Courtesy of GENERAL MOTORS CORP.

1. Place the service gasket (1) onto the valve lifter oil manifold.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

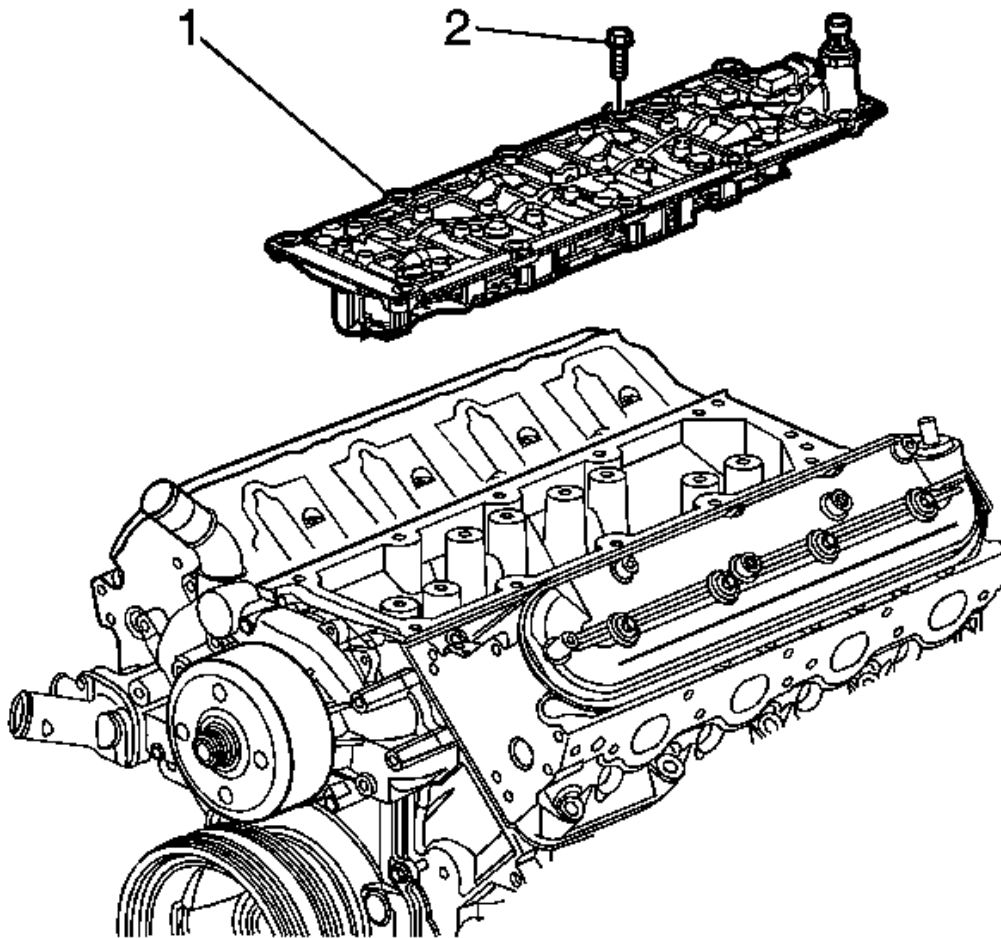


Fig. 223: Valve Lifter Oil Manifold
Courtesy of GENERAL MOTORS CORP.

2. Install the valve lifter oil manifold (1) to the engine.

NOTE: Refer to Fastener Notice .

3. Install the valve lifter oil manifold bolts (2).

Tighten: Tighten the bolts to 25 N.m (18 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

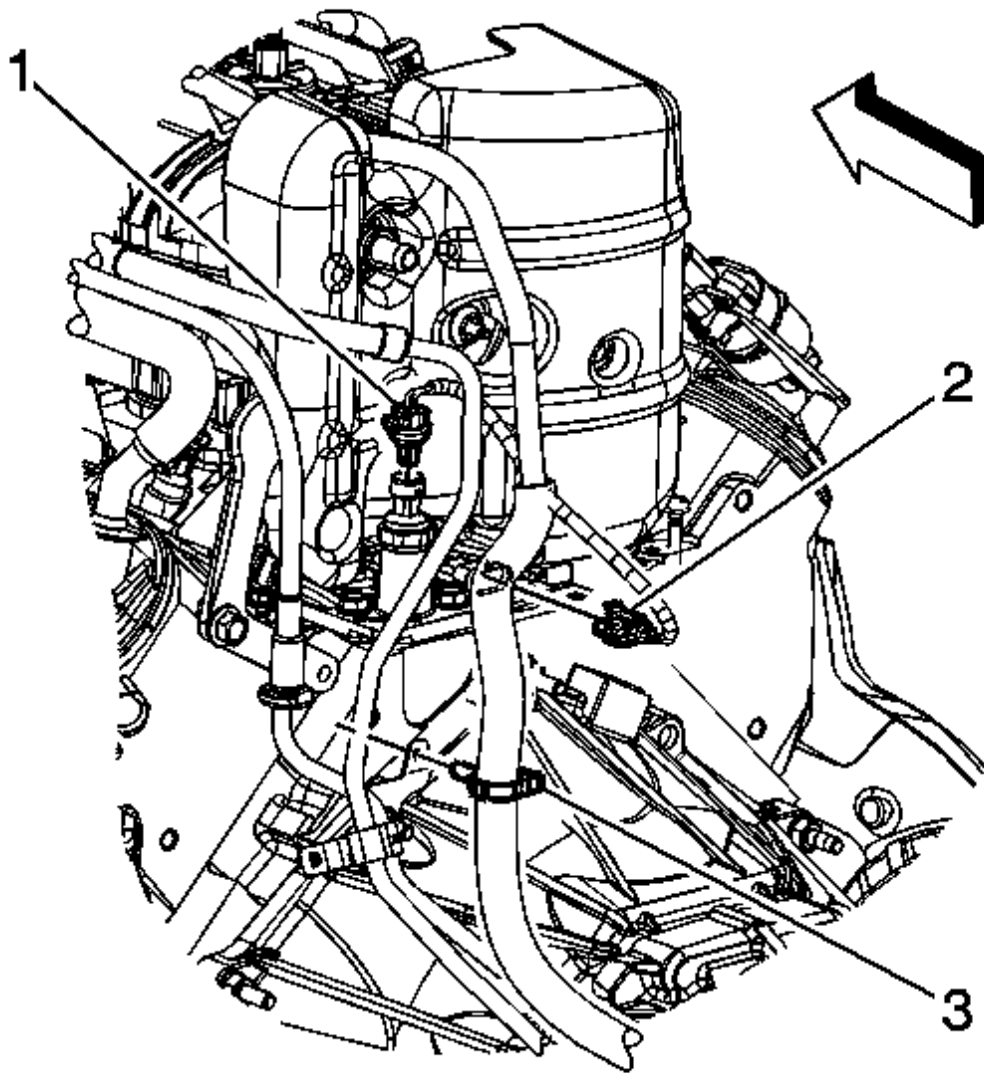


Fig. 224: View Of Engine Harness Electrical Connectors & Inlet Hose Clamp
Courtesy of GENERAL MOTORS CORP.

4. Connect the engine harness electrical connector (1) to the oil pressure sensor.
5. Install the intake manifold. Refer to **Intake Manifold Replacement (L92 - First Design)** or **Intake Manifold Replacement (L92 - Second Design)** or **Intake Manifold Replacement (LY2 and LY6)** or **Intake Manifold Replacement (LH6, LMG, LY5 and**

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

L76.

VALVE LIFTER OIL FILTER REPLACEMENT

Removal Procedure

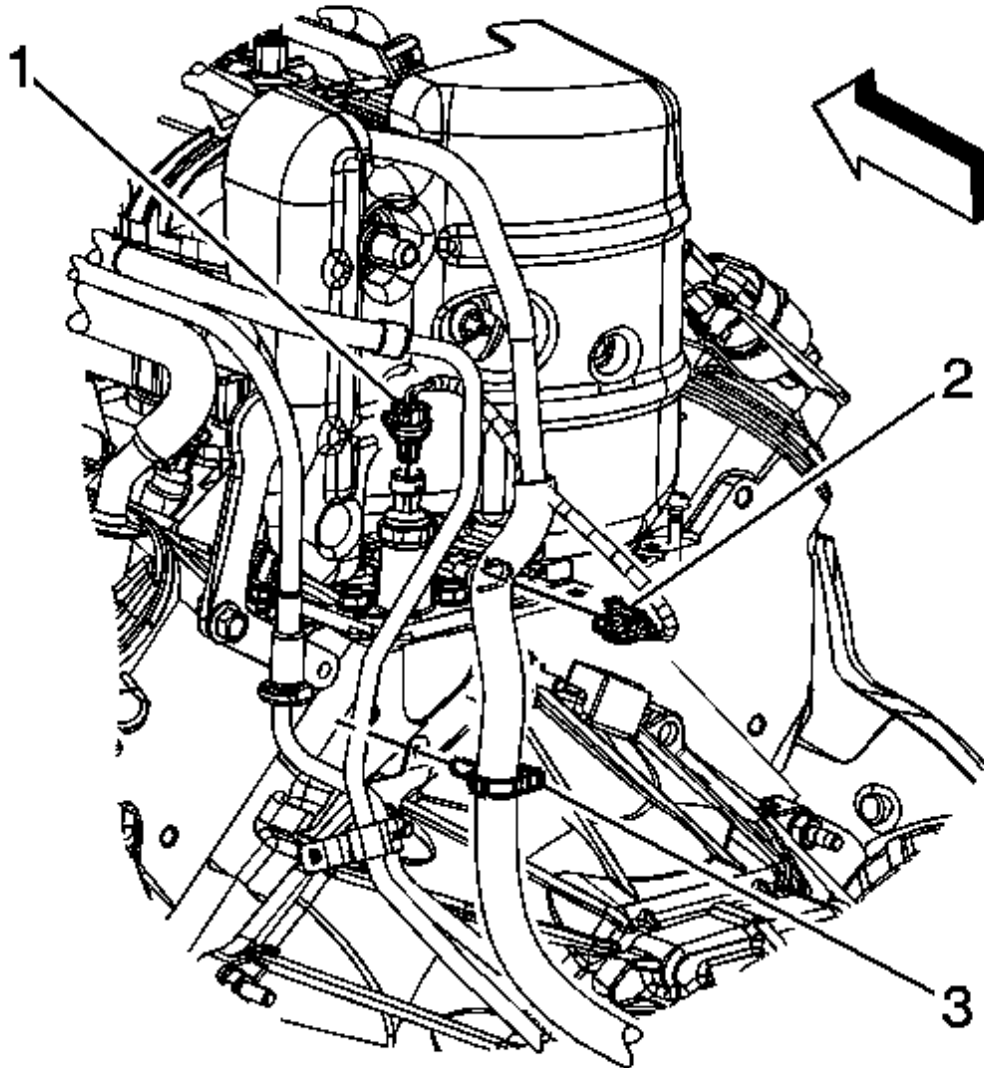


Fig. 225: View Of Engine Harness Electrical Connectors & Inlet Hose Clamp
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Remove the intake manifold. Refer to **Intake Manifold Replacement (L92 - First Design)** or **Intake Manifold Replacement (L92 - Second Design)** or **Intake Manifold Replacement (LY2 and LY6)** or **Intake Manifold Replacement (LH6, LMG, LY5 and L76)**.
2. Disconnect the engine harness electrical connector (1) from the oil pressure sensor.

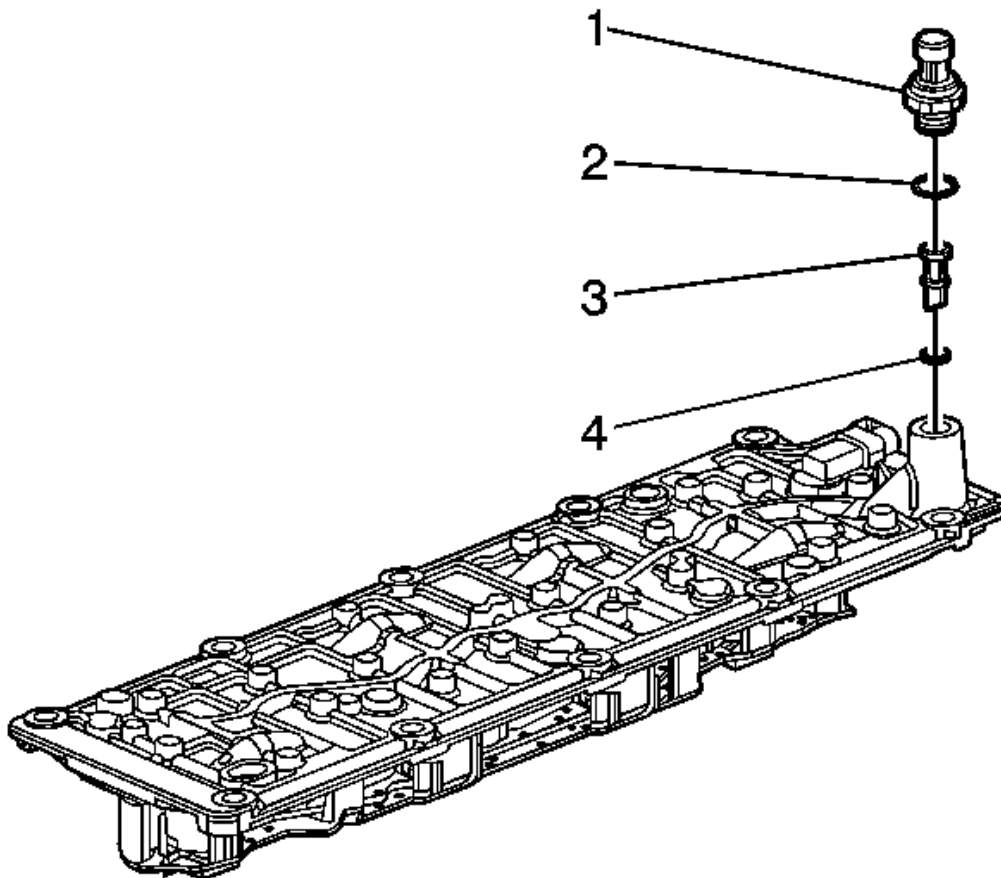


Fig. 226: View Of Oil Pressure Sensor
Courtesy of GENERAL MOTORS CORP.

3. Remove the oil pressure sensor (1) and washer (2).
4. Remove and discard the valve lifter oil filter (3).
5. Remove and discard the valve lifter oil filter O-ring seal (4).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Installation Procedure

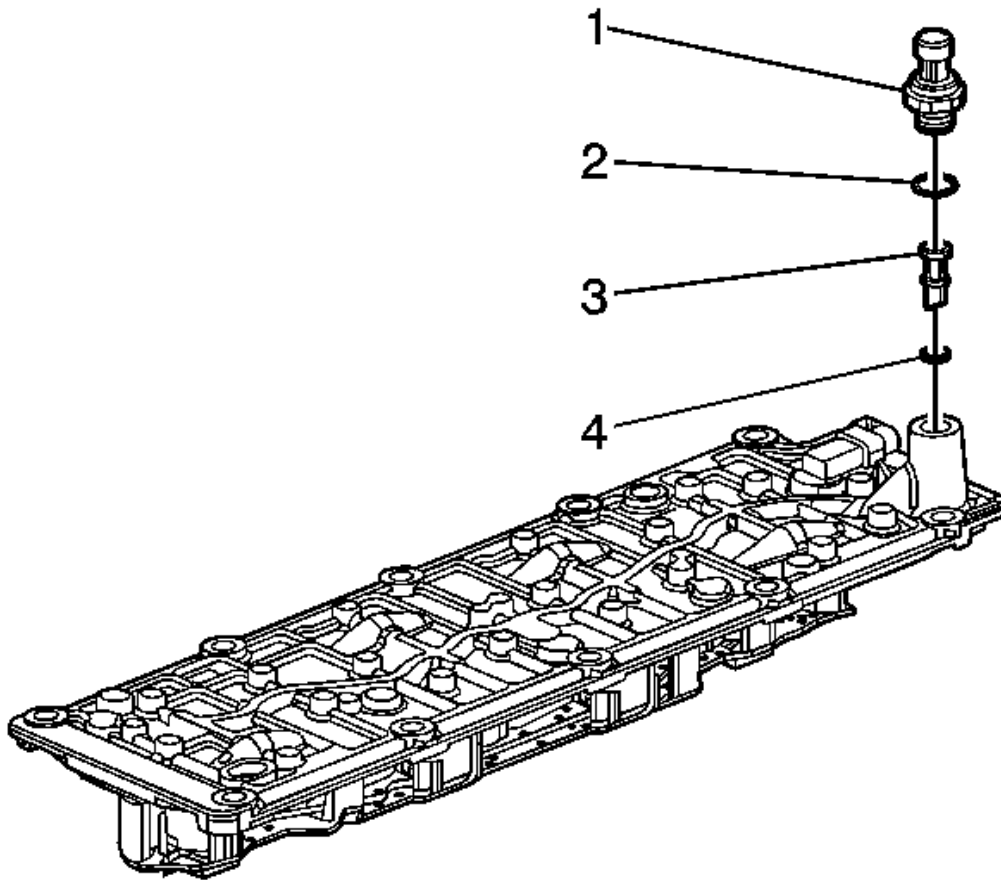


Fig. 227: View Of Oil Pressure Sensor
Courtesy of GENERAL MOTORS CORP.

1. Install a NEW valve lifter oil filter O-ring seal (4) into the valve lifter oil manifold.
2. Install the NEW valve lifter oil filter (3).
3. Apply sealant GM P/N 12346004 (Canadian P/N 10953480) or equivalent to the threads of the oil pressure sensor.

NOTE: Refer to Fastener Notice .

4. Install the oil pressure sensor washer (2) and sensor (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Tighten: Tighten the sensor to 35 N.m (26 lb ft).

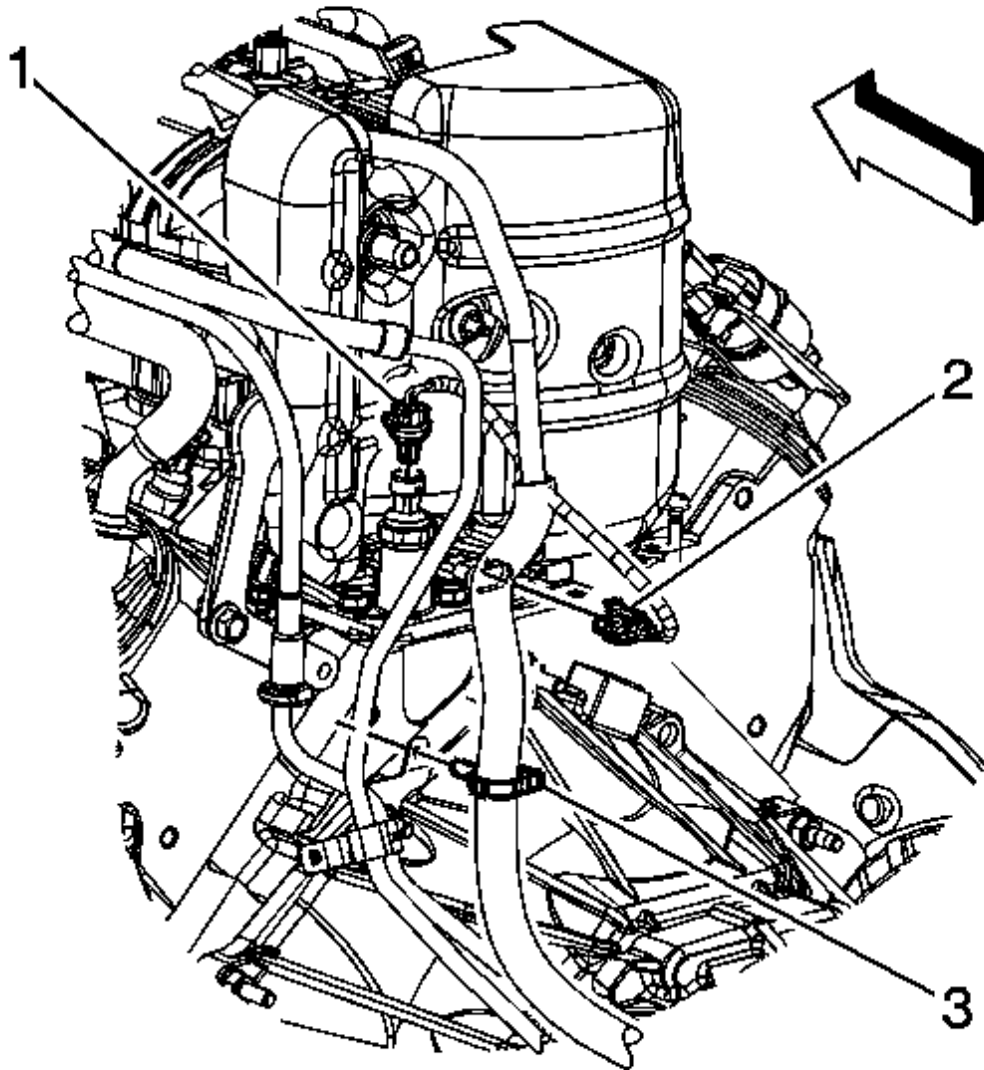


Fig. 228: View Of Engine Harness Electrical Connectors & Inlet Hose Clamp
Courtesy of GENERAL MOTORS CORP.

5. Connect the engine harness electrical connector (1) to the oil pressure sensor.
6. Install the intake manifold. Refer to **Intake Manifold Replacement (L92 - First Design)**

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

or **Intake Manifold Replacement (L92 - Second Design)** or **Intake Manifold Replacement (LY2 and LY6)** or **Intake Manifold Replacement (LH6, LMG, LY5 and L76)**.

VALVE ROCKER ARM COVER REPLACEMENT - LEFT SIDE

Removal Procedure

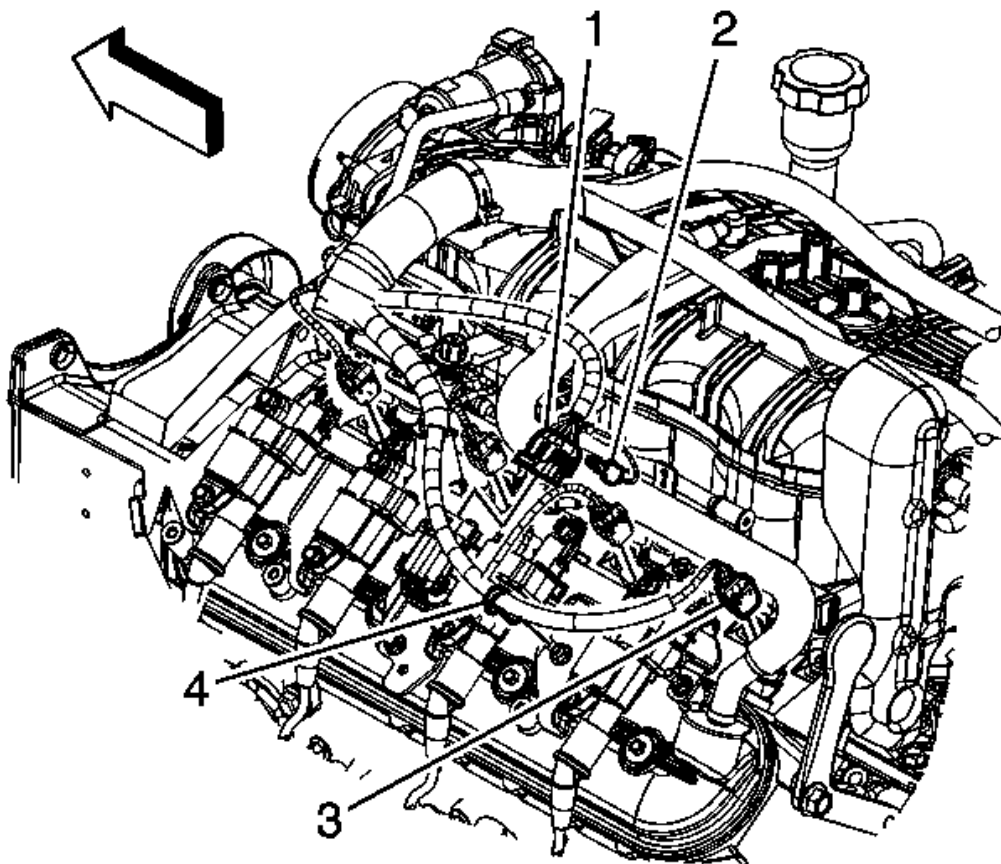


Fig. 229: View Of CPA Retainer, Electrical Connectors & Engine Harness Clips
Courtesy of GENERAL MOTORS CORP.

1. Remove the intake manifold cover. Refer to **Upper Intake Manifold Sight Shield Replacement**.
2. Remove the connector position assurance (CPA) retainer (2).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

3. Disconnect the engine harness electrical connector (1) from the ignition coil wire harness.
4. Remove the engine harness clip (4) from the ignition coil bracket stud.
5. Reposition the engine harness, as necessary.

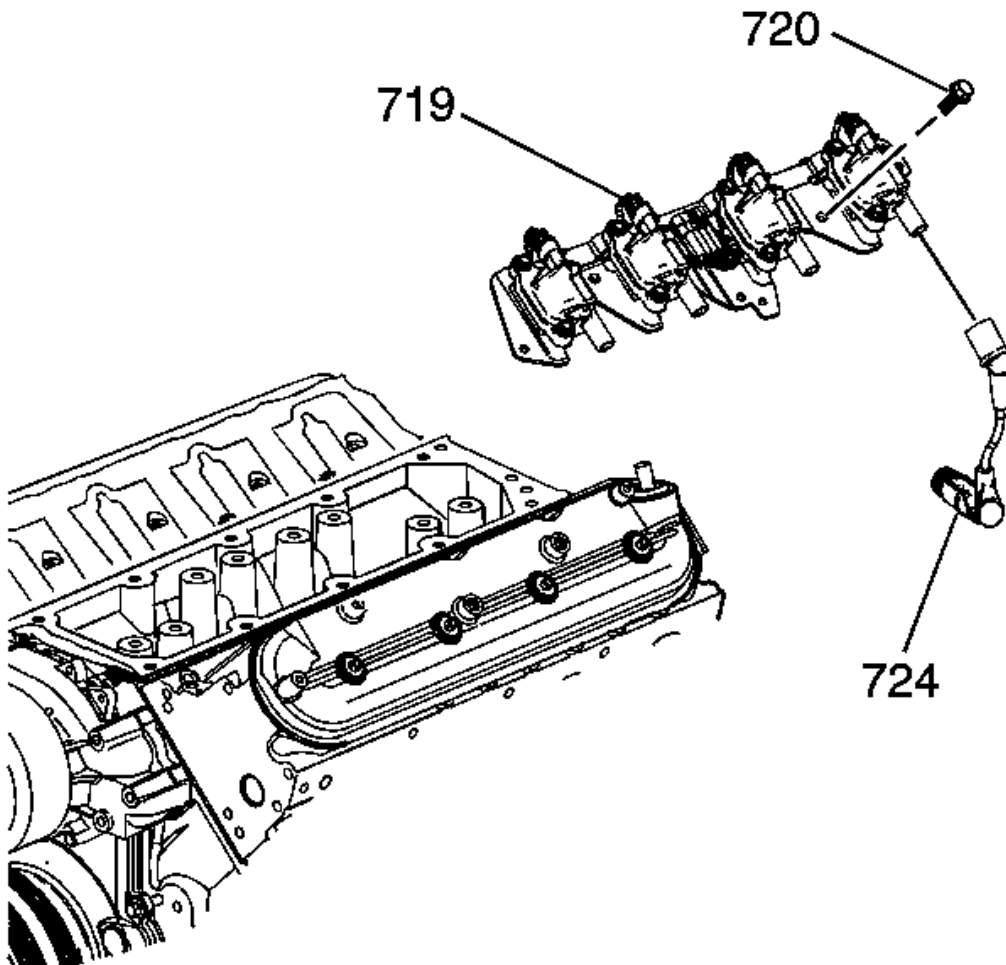


Fig. 230: Ignition Coils & Bracket
Courtesy of GENERAL MOTORS CORP.

6. Remove the spark plug wires (724) from the ignition coils.
 - Twist each plug wire 1/2 turn.
 - Pull only on the boot in order to remove the wire from the ignition coil.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

7. Remove the ignition coil bracket studs (720).
8. Remove the ignition coil bracket (719).

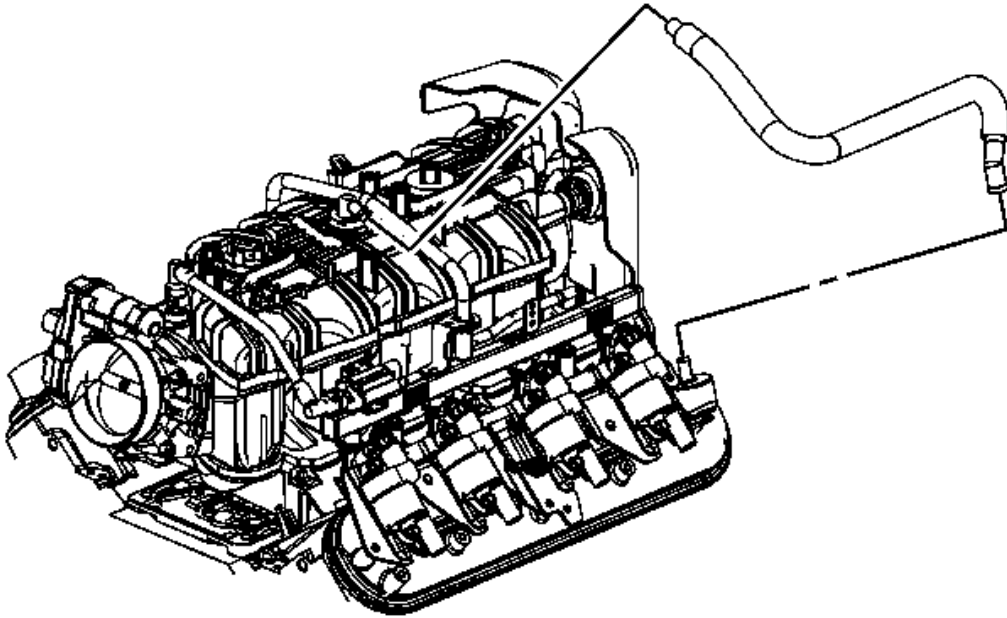


Fig. 231: View Of PCV Hose
Courtesy of GENERAL MOTORS CORP.

9. Remove the positive crankcase ventilation (PCV) hose.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

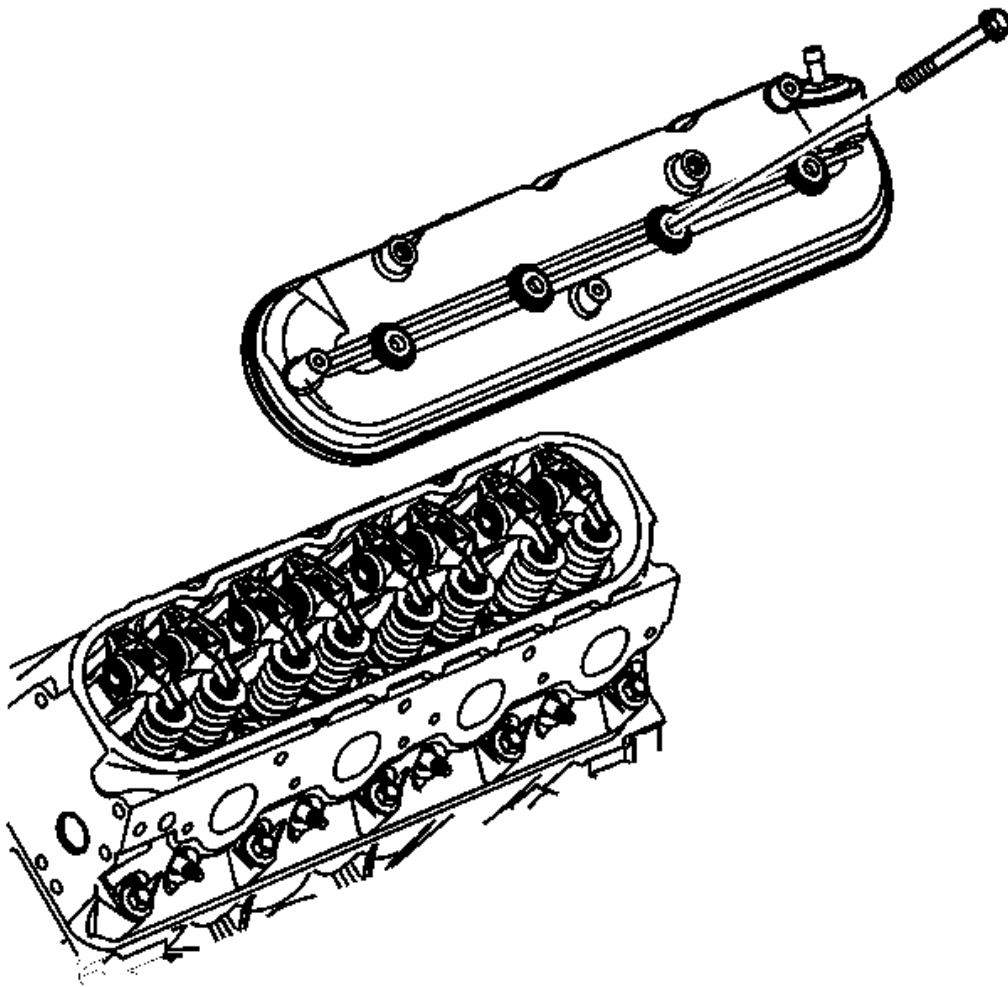


Fig. 232: View Of Valve Rocker Arm Cover
Courtesy of GENERAL MOTORS CORP.

10. Loosen the valve rocker arm cover bolts.
11. Remove the valve rocker arm cover.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

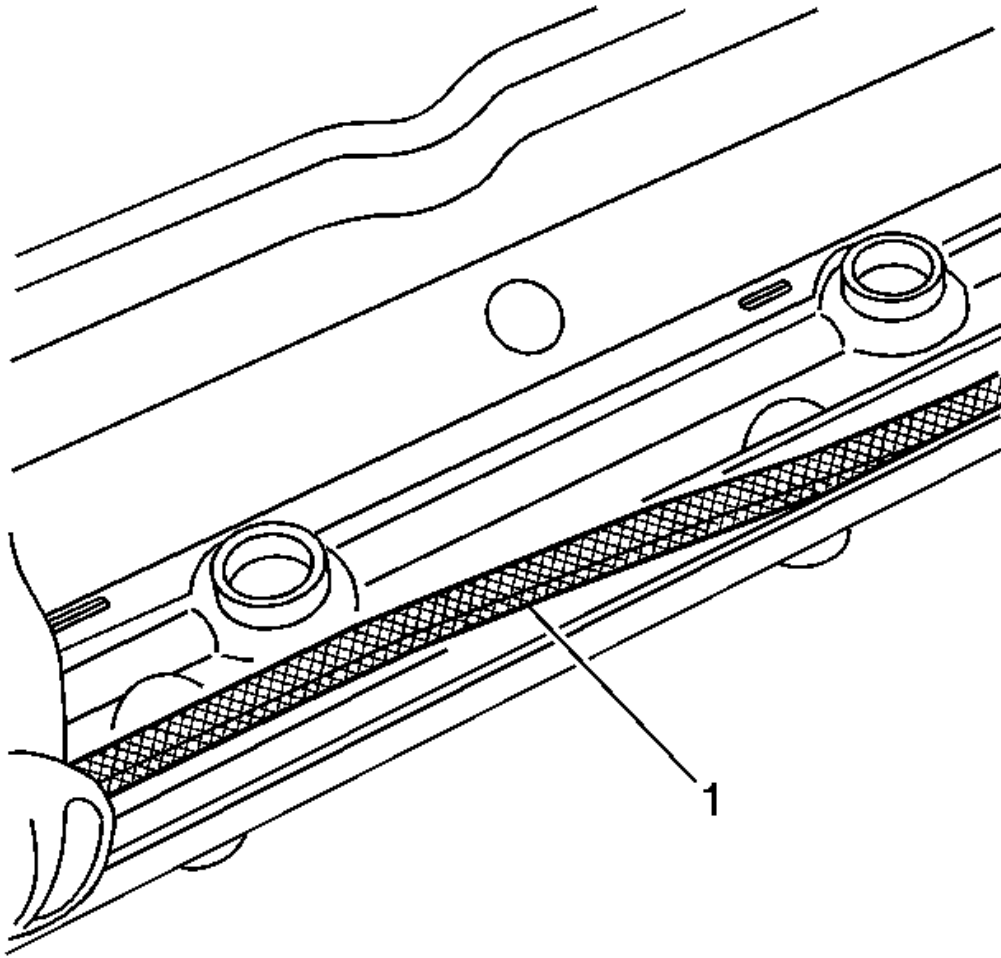


Fig. 233: Rocker Arm Cover Gasket
Courtesy of GENERAL MOTORS CORP.

12. Remove and discard the old gasket (1).

Installation Procedure

IMPORTANT:

- All gasket surfaces should be free of oil an/or other foreign material during assembly.
- DO NOT reuse the valve rocker arm cover gasket.
- If the PCV valve grommet has been removed from the rocker

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

cover, install a NEW grommet during assembly.

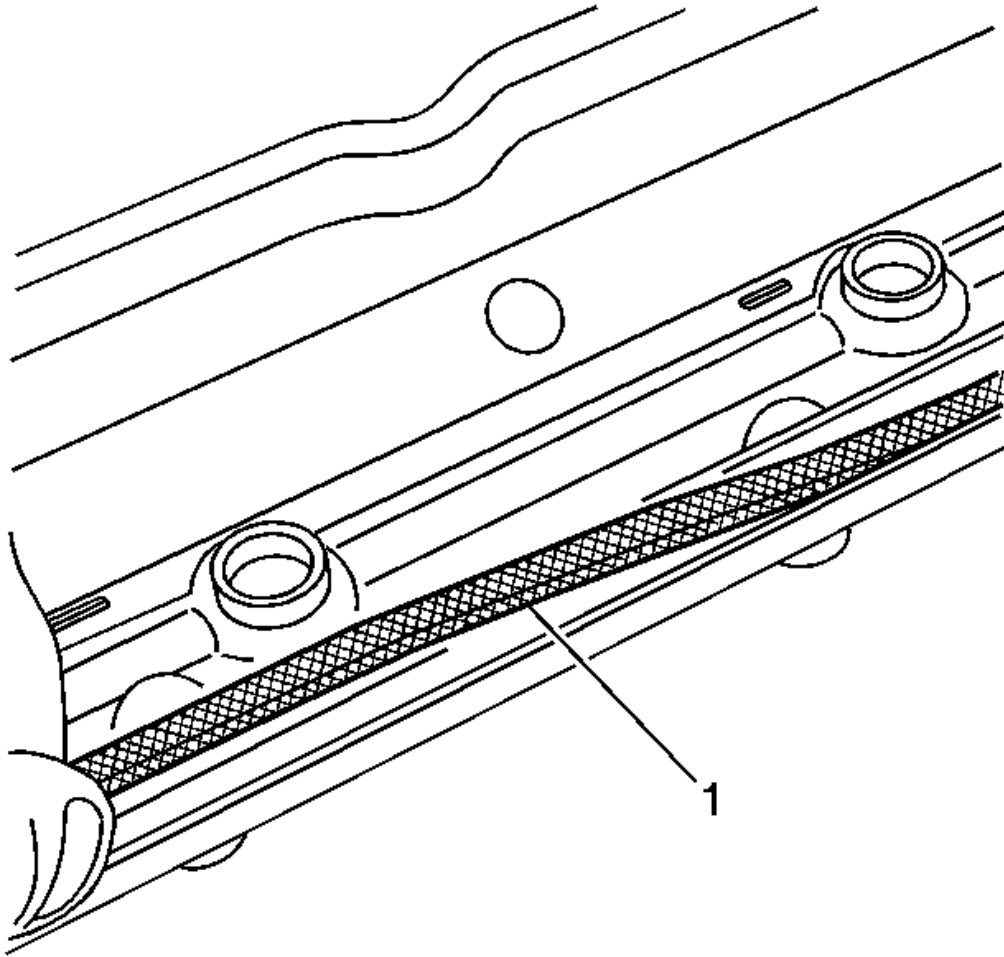


Fig. 234: Rocker Arm Cover Gasket
Courtesy of GENERAL MOTORS CORP.

1. Install a NEW rocker cover gasket (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

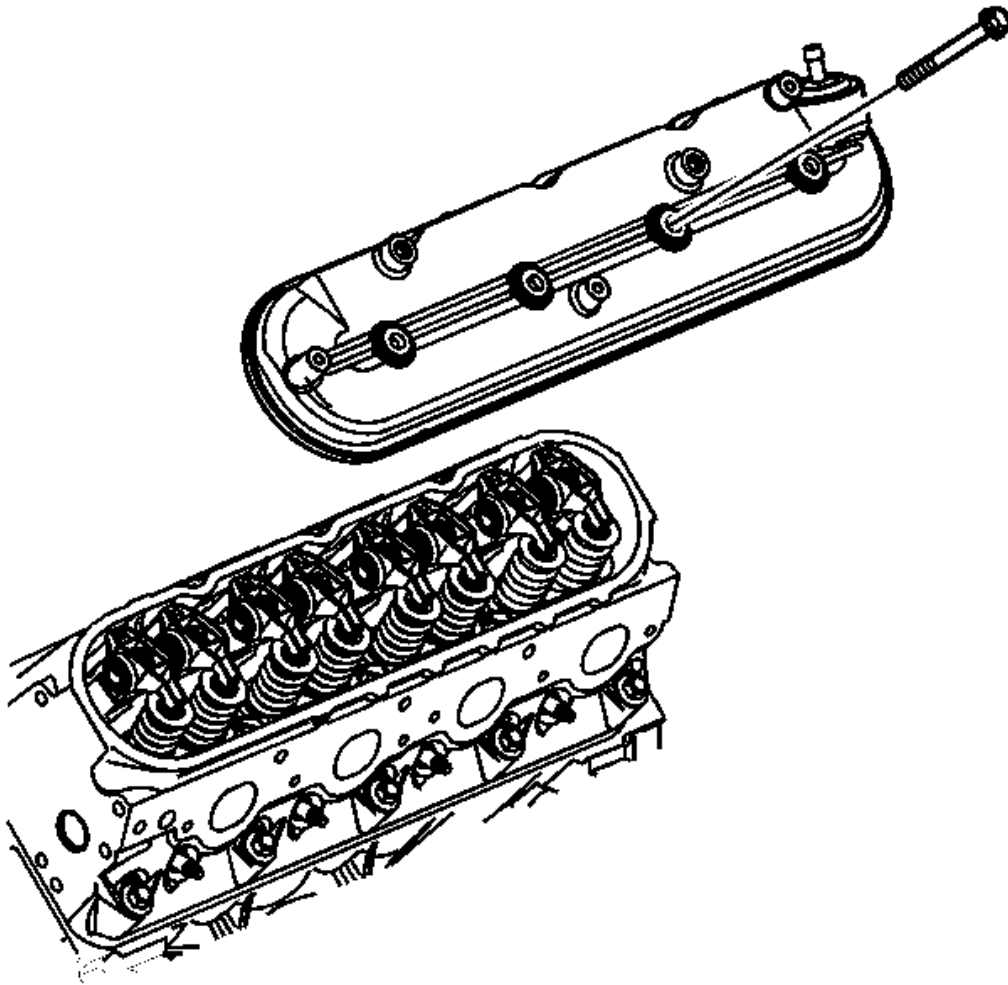


Fig. 235: View Of Valve Rocker Arm Cover
Courtesy of GENERAL MOTORS CORP.

2. Install the valve rocker arm cover.

NOTE: Refer to Fastener Notice .

3. Tighten the rocker arm cover bolts.

Tighten: Tighten the bolts to 12 N.m (106 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

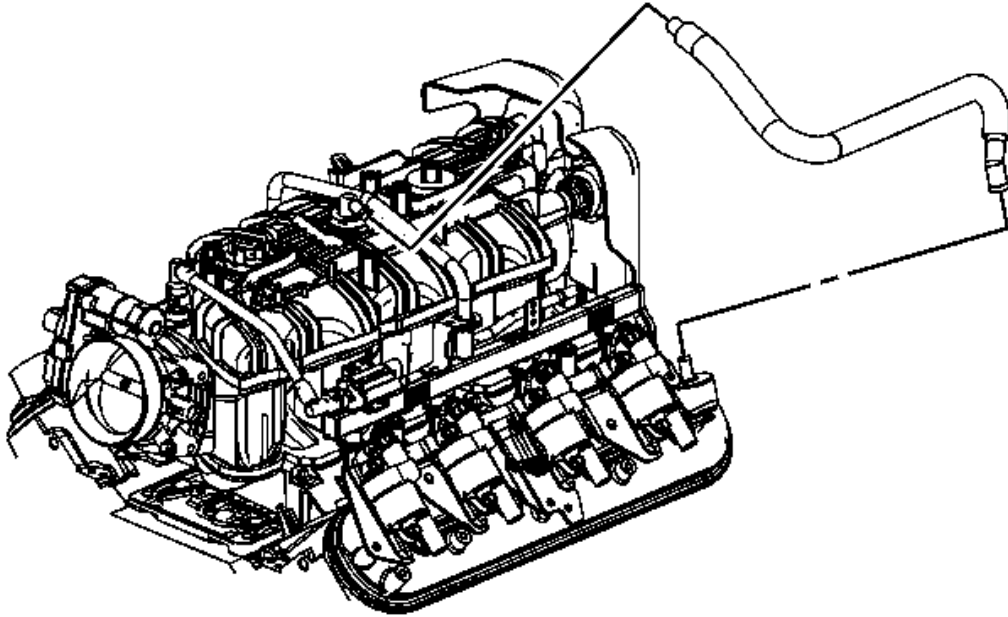


Fig. 236: View Of PCV Hose
Courtesy of GENERAL MOTORS CORP.

4. Install the PCV hose.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

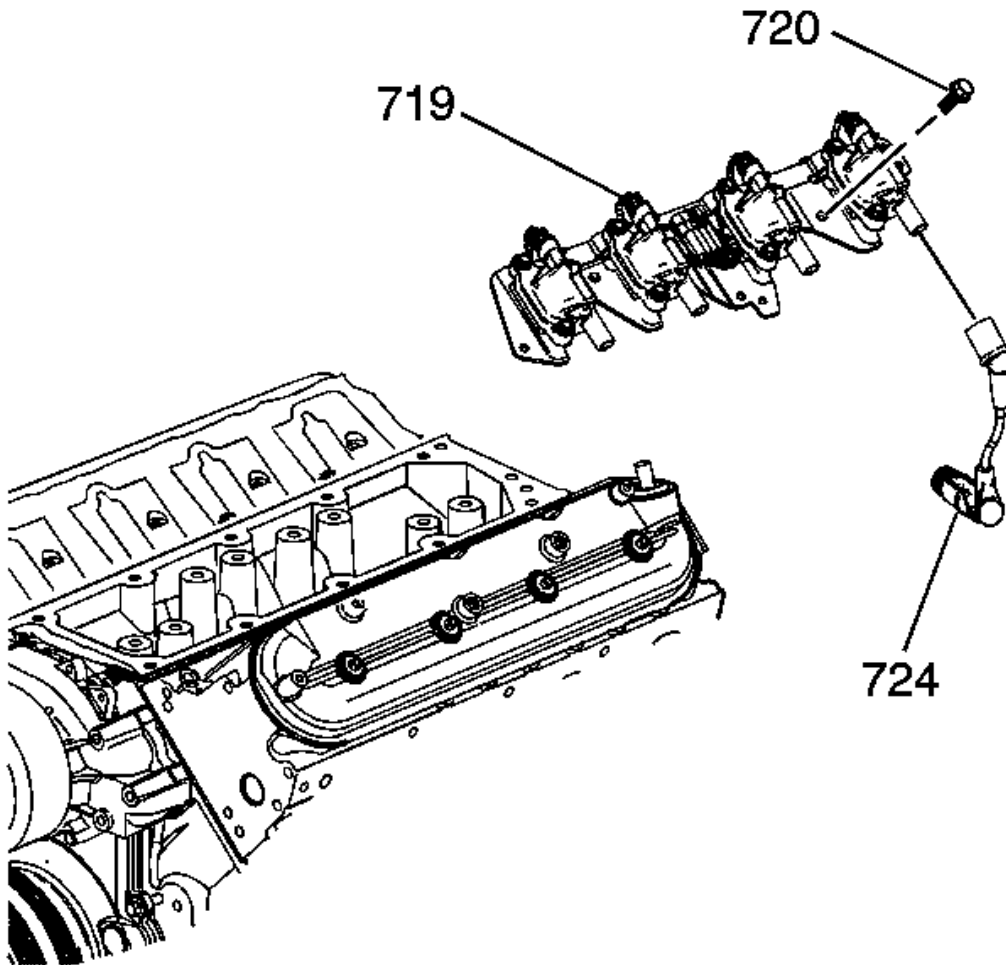


Fig. 237: Ignition Coils & Bracket
Courtesy of GENERAL MOTORS CORP.

5. Apply threadlock to the threads of the ignition coil bracket studs. Refer to **Sealers, Adhesives, and Lubricants**.
6. Position the ignition coil bracket (719) onto the rocker cover.
7. Install the ignition coil bracket studs (720).

Tighten: Tighten the studs to 12 N.m (106 lb in).

8. Install the spark plug wires (724) to the ignition coils.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

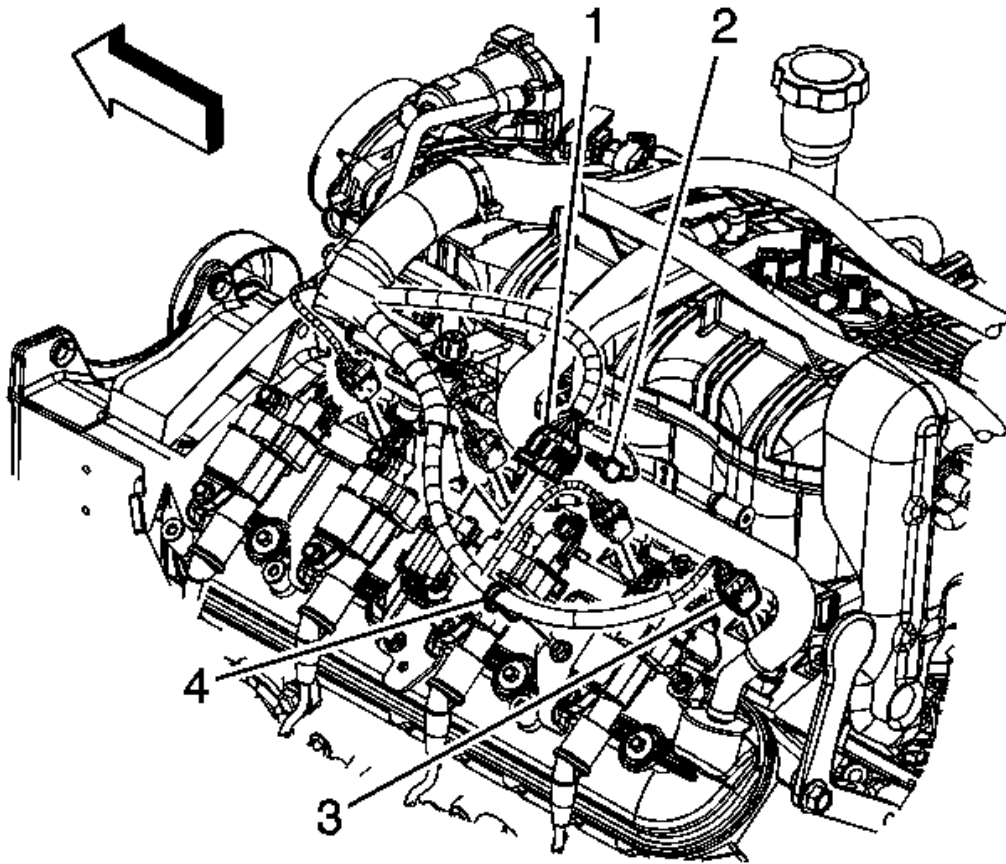


Fig. 238: View Of CPA Retainer, Electrical Connectors & Engine Harness Clips
Courtesy of GENERAL MOTORS CORP.

9. Position the engine harness, as necessary.
10. Install the engine harness clip (4) to the ignition coil bracket stud.
11. Connect the engine harness electrical connector (1) to the ignition coil wire harness.
12. Install the CPA retainer (2).
13. Install the intake manifold cover. Refer to **Upper Intake Manifold Sight Shield Replacement**.

VALVE ROCKER ARM COVER REPLACEMENT - RIGHT SIDE

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

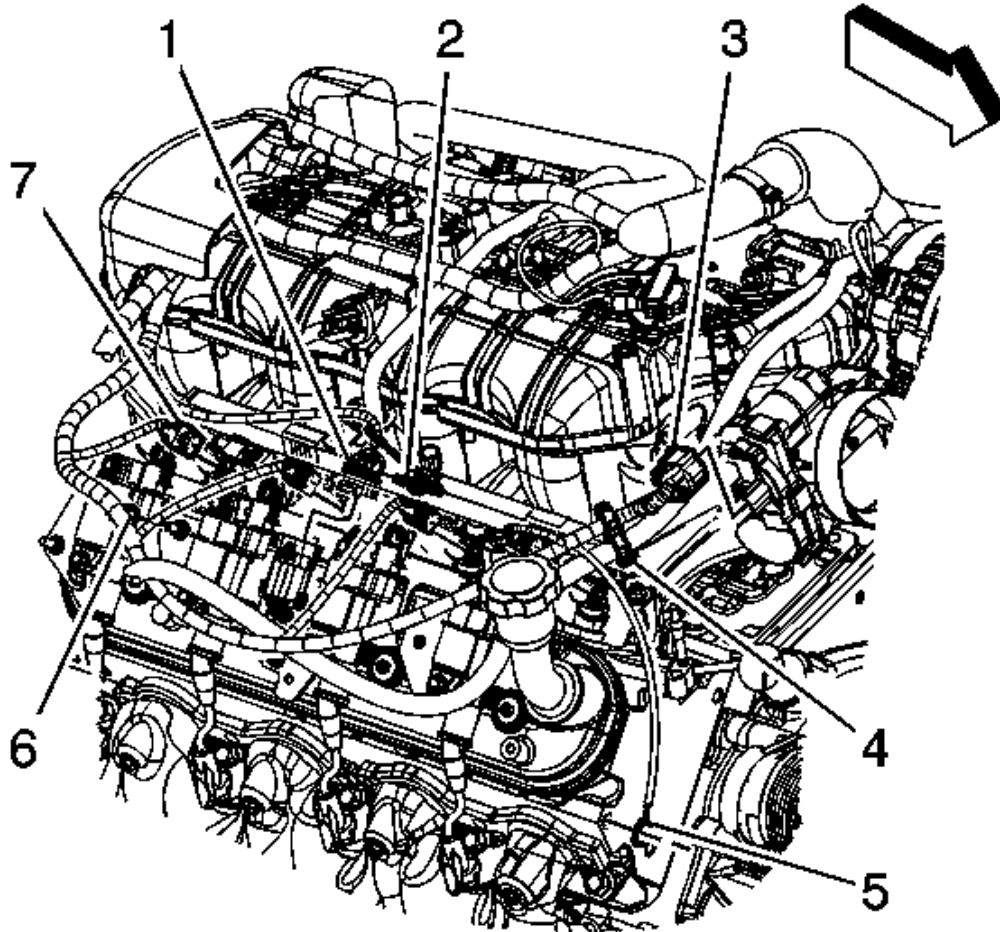


Fig. 239: View Of CPA Retainer, Engine Harness Electrical Connectors & Harness Clips

Courtesy of GENERAL MOTORS CORP.

1. Remove the intake manifold cover. Refer to **Upper Intake Manifold Sight Shield Replacement**.
2. Remove the connector position assurance (CPA) retainer (2).
3. Disconnect the engine harness electrical connector (1) from the ignition coil wire harness.
4. Remove the engine wiring harness (electronic throttle control branch) clip (6) from the ignition coil bracket stud.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

5. Reposition the engine wiring harness (electronic throttle control branch) as necessary.

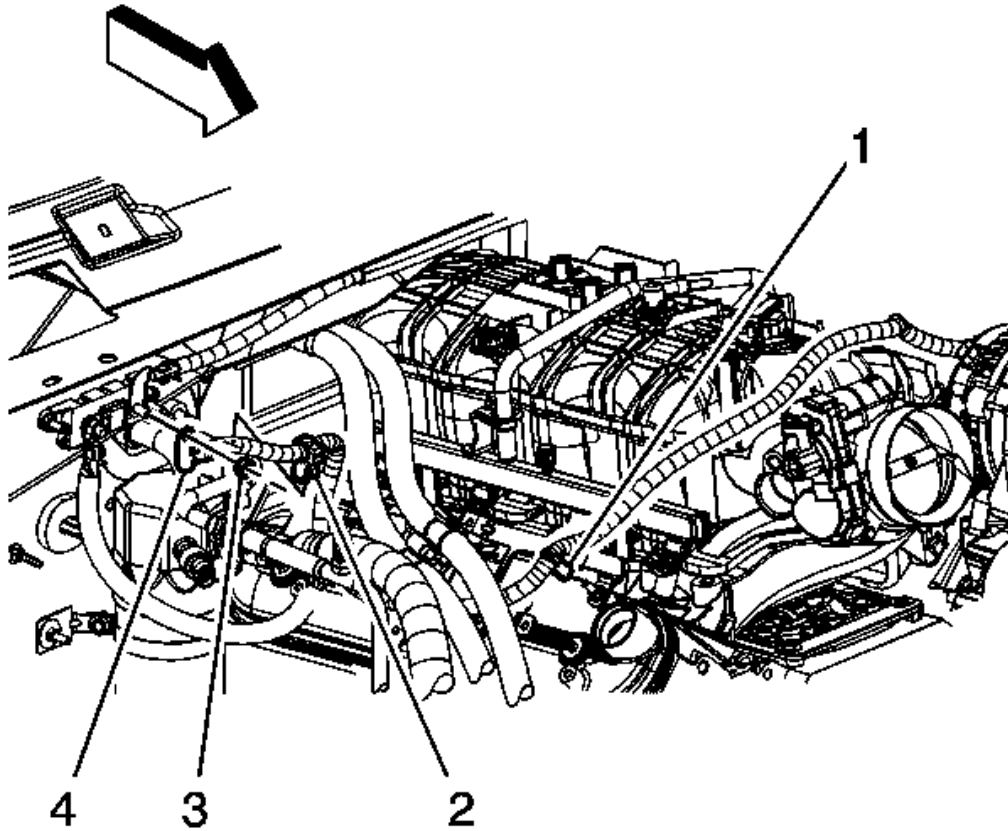


Fig. 240: View Of Generator Battery Jumper Cable & Components
Courtesy of GENERAL MOTORS CORP.

6. Remove the generator battery cable clip (1) from the ignition coil bracket stud.
7. Reposition the generator battery cable as necessary.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

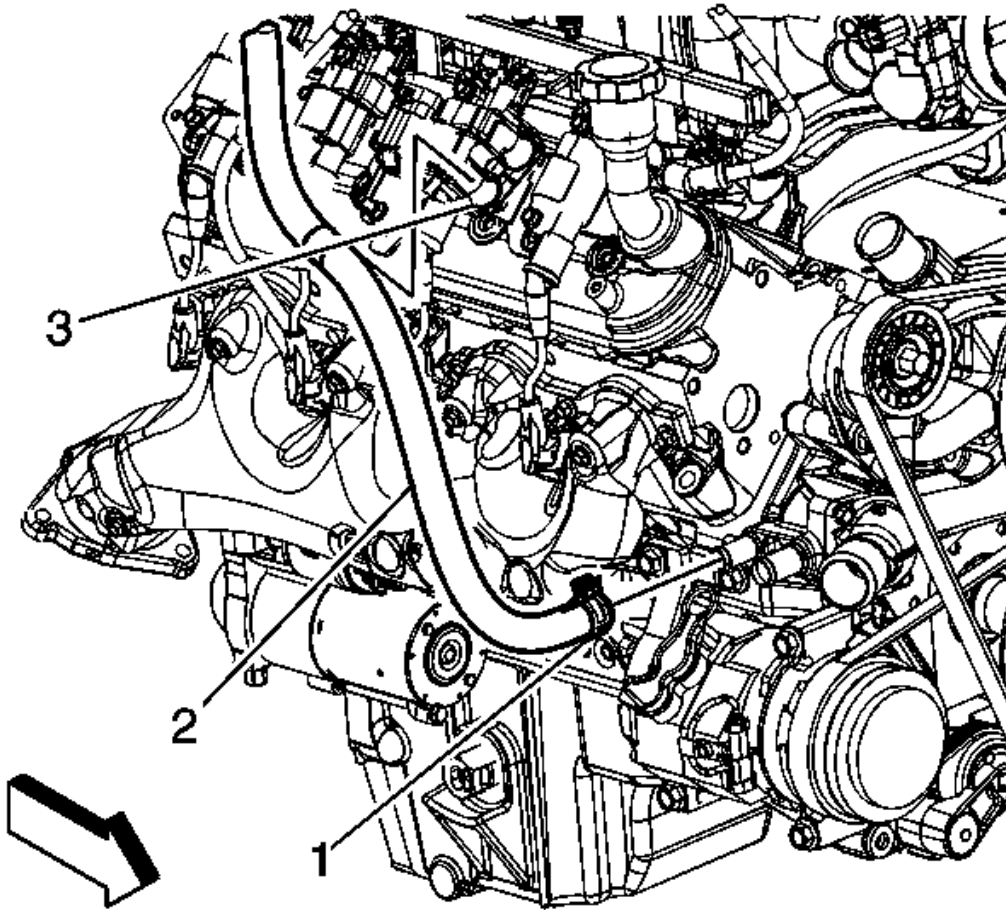


Fig. 241: View Of Heater Inlet Hose, Clamp & Water Pump
Courtesy of GENERAL MOTORS CORP.

8. Remove the heater inlet hose (2) from the heater hose bracket (3).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

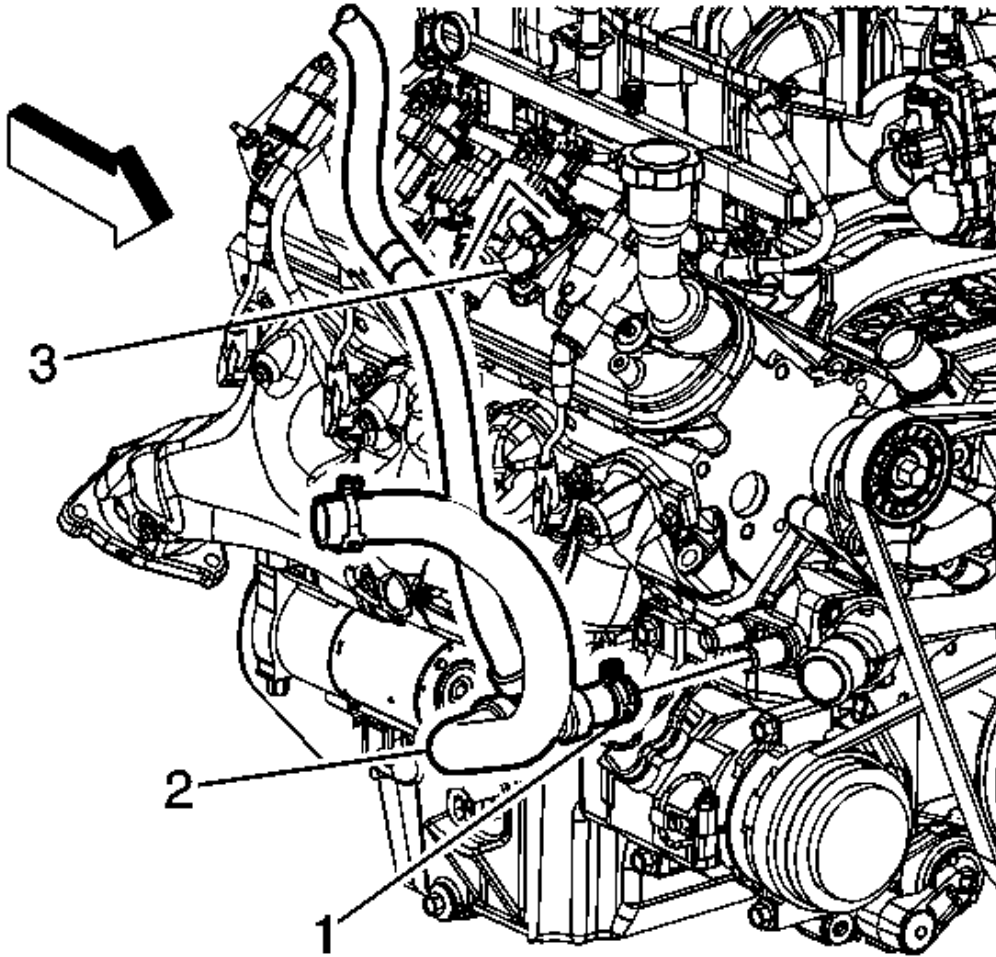


Fig. 242: View Of Radiator Surge Tank Outlet Hose, Clamp & Water Pump
Courtesy of GENERAL MOTORS CORP.

9. Remove the surge tank outlet hose (2) from the heater hose bracket (3).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

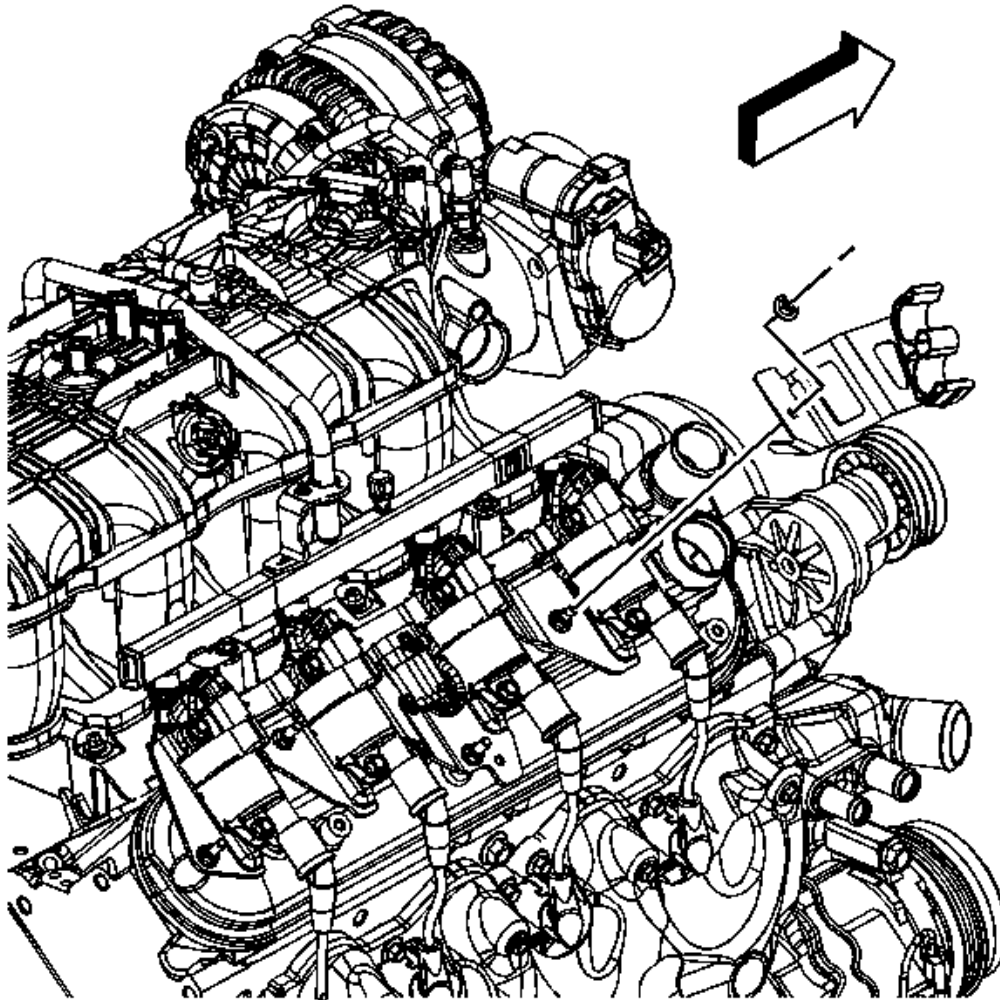


Fig. 243: View Of Heater Hose Bracket & Nut
Courtesy of GENERAL MOTORS CORP.

10. Remove the heater hose bracket nut and bracket

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

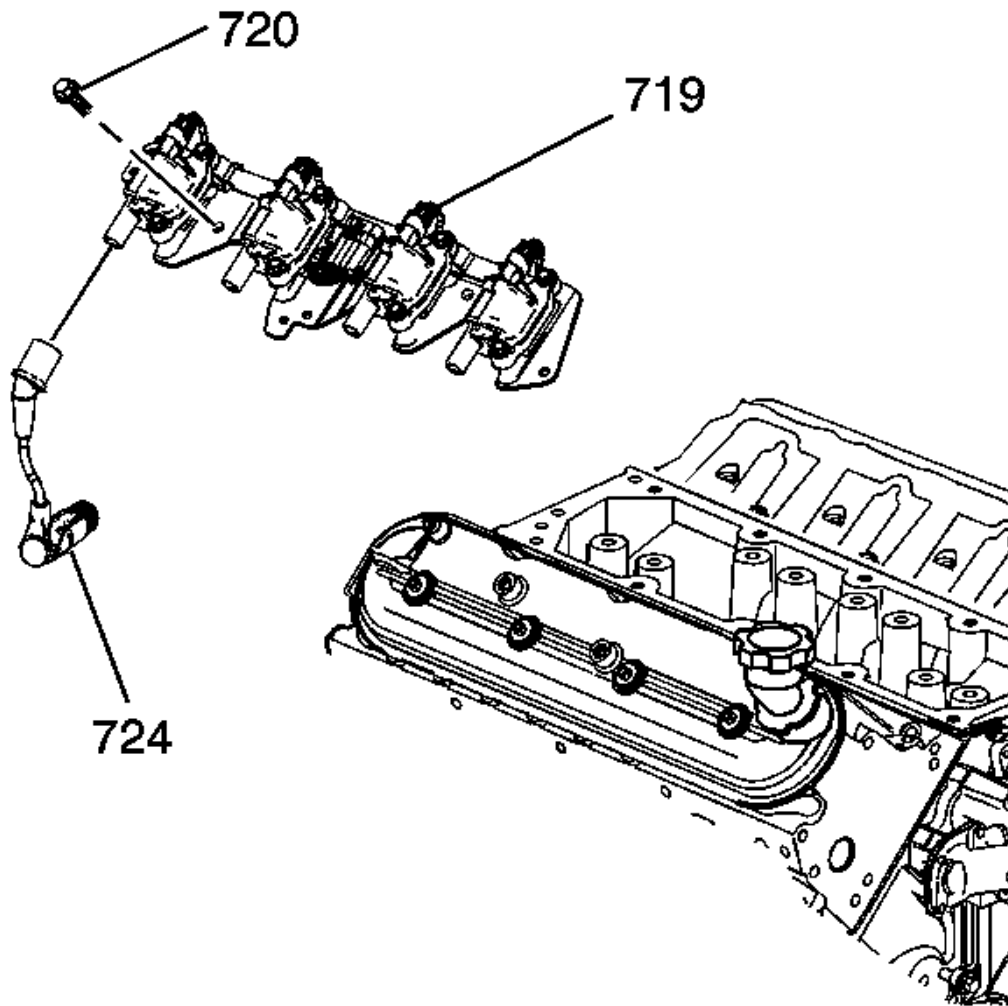


Fig. 244: Ignition Coils & Bracket
Courtesy of GENERAL MOTORS CORP.

11. Remove the spark plug wires (724) from the ignition coils.
 - Twist each plug wire 1/2 turn.
 - Pull only on the boot in order to remove the wire from the ignition coil.
12. Remove the ignition coil bracket studs (720).
13. Remove the ignition coil bracket (719).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

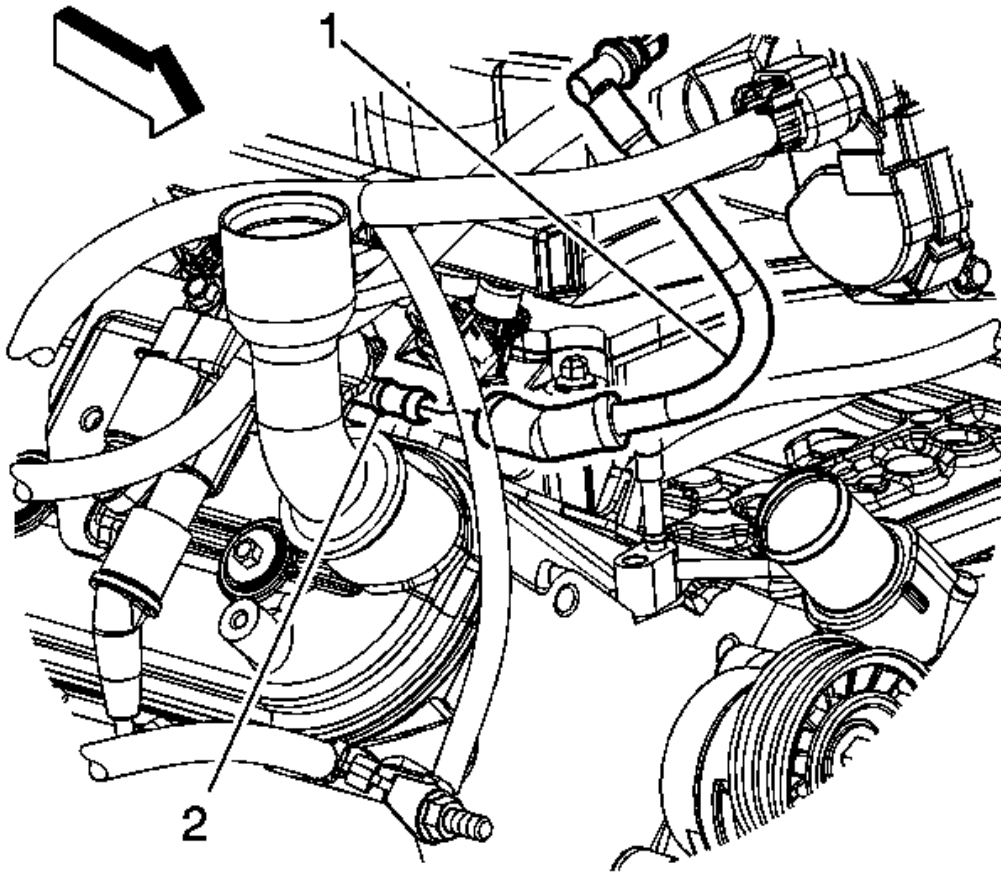


Fig. 245: View Of PCV Tube & Right Valve Rocker Arm Cover Fitting
Courtesy of GENERAL MOTORS CORP.

14. Remove the positive crankcase ventilation (PCV) tube (1) from the valve rocker cover (2).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

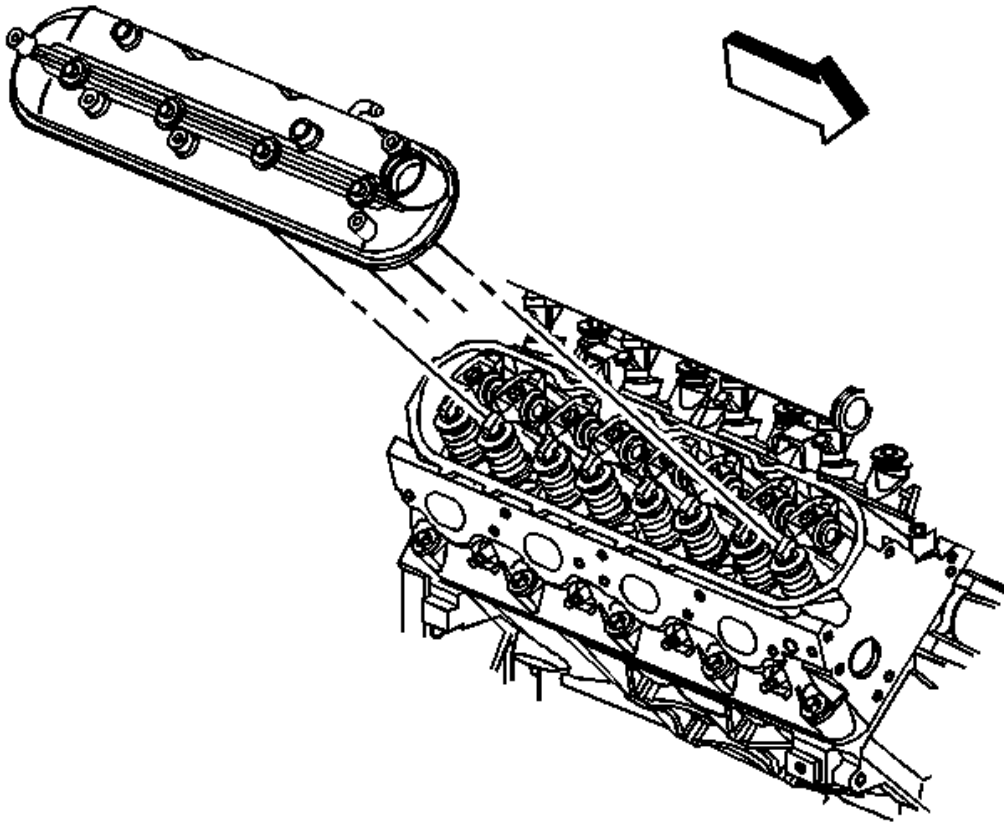


Fig. 246: View Of Valve Rocker Arm Cover (Right)
Courtesy of GENERAL MOTORS CORP.

15. Loosen the valve rocker arm cover bolts.
16. Remove the valve rocker arm cover.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

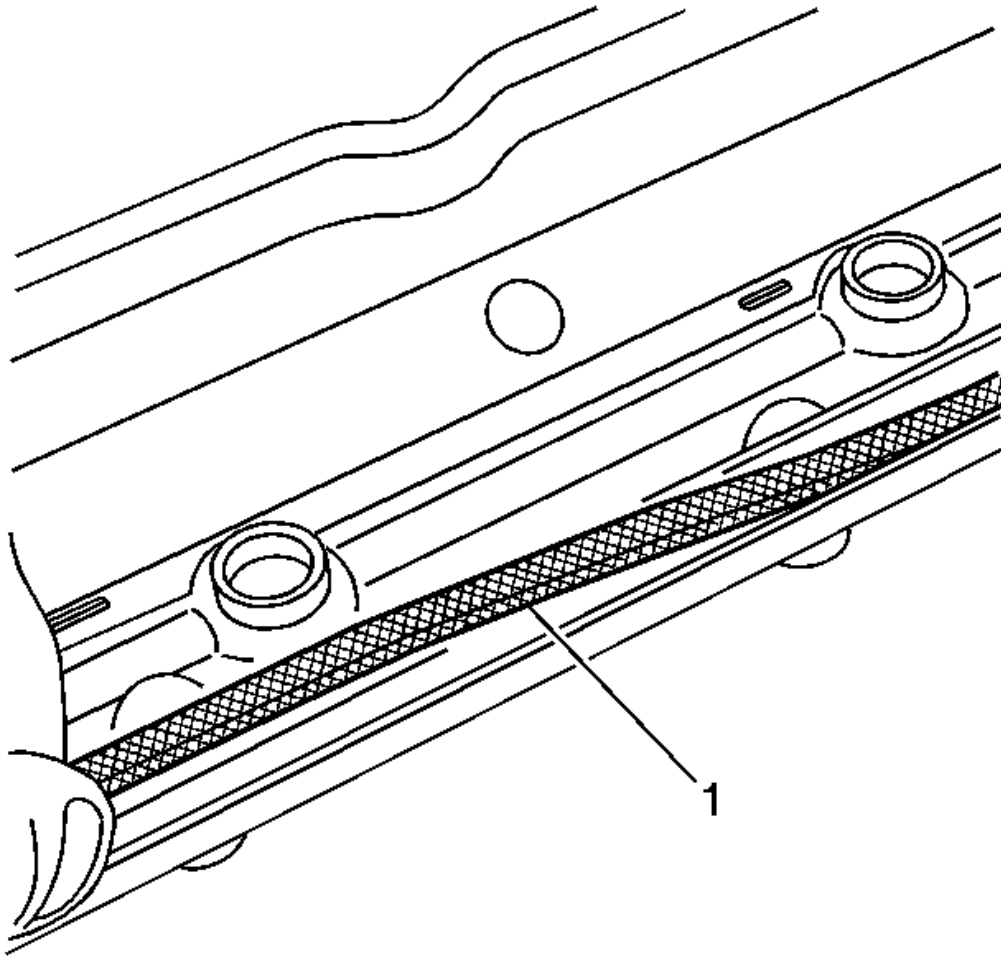


Fig. 247: Rocker Arm Cover Gasket
Courtesy of GENERAL MOTORS CORP.

17. Remove and discard the old gasket (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

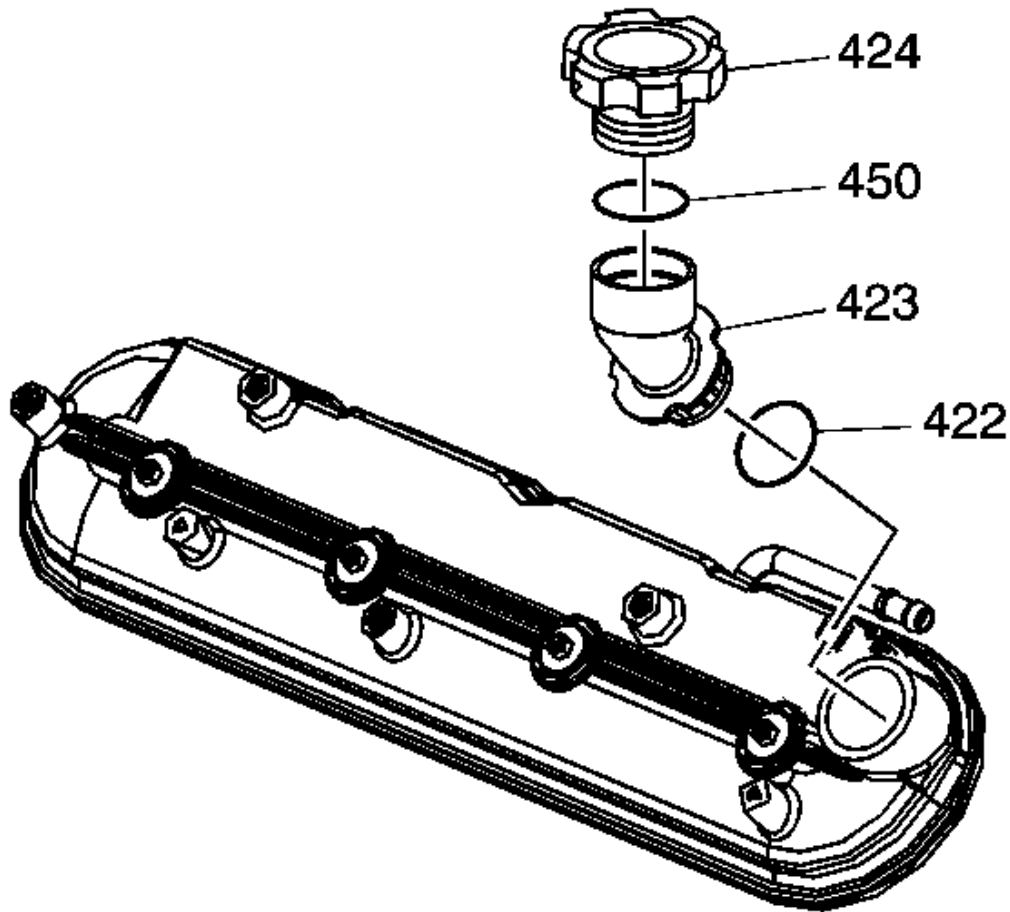


Fig. 248: Oil Fill Cap & Oil Fill Tube
Courtesy of GENERAL MOTORS CORP.

18. Remove the oil fill cap (424) from the oil fill tube (423), if necessary.
19. Remove and discard the oil fill tube, if necessary.

Installation Procedure

- IMPORTANT:**
- All gasket surfaces should be free of oil or other foreign material during assembly.
 - DO NOT reuse the valve rocker arm cover gasket.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- If the oil fill tube has been removed from the rocker arm cover, install a **NEW** fill tube during assembly.

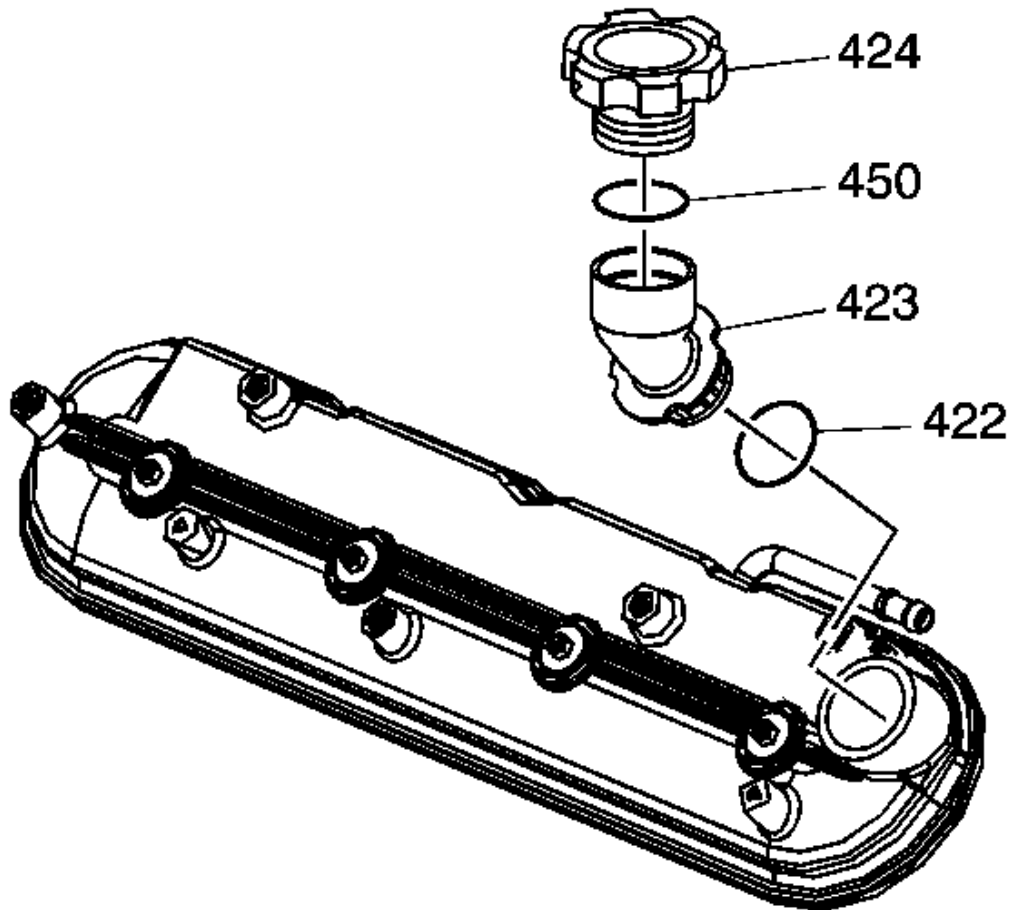


Fig. 249: Oil Fill Cap & Oil Fill Tube
Courtesy of GENERAL MOTORS CORP.

1. Lubricate the O-ring seal (422) of the NEW oil fill tube with clean engine oil.
2. Insert the NEW oil fill tube (423) into the rocker arm cover.

Rotate the tube clockwise until locked in the proper position.

3. Install the oil fill cap (424) into the tube.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Rotate the cap clockwise until locked in the proper position.

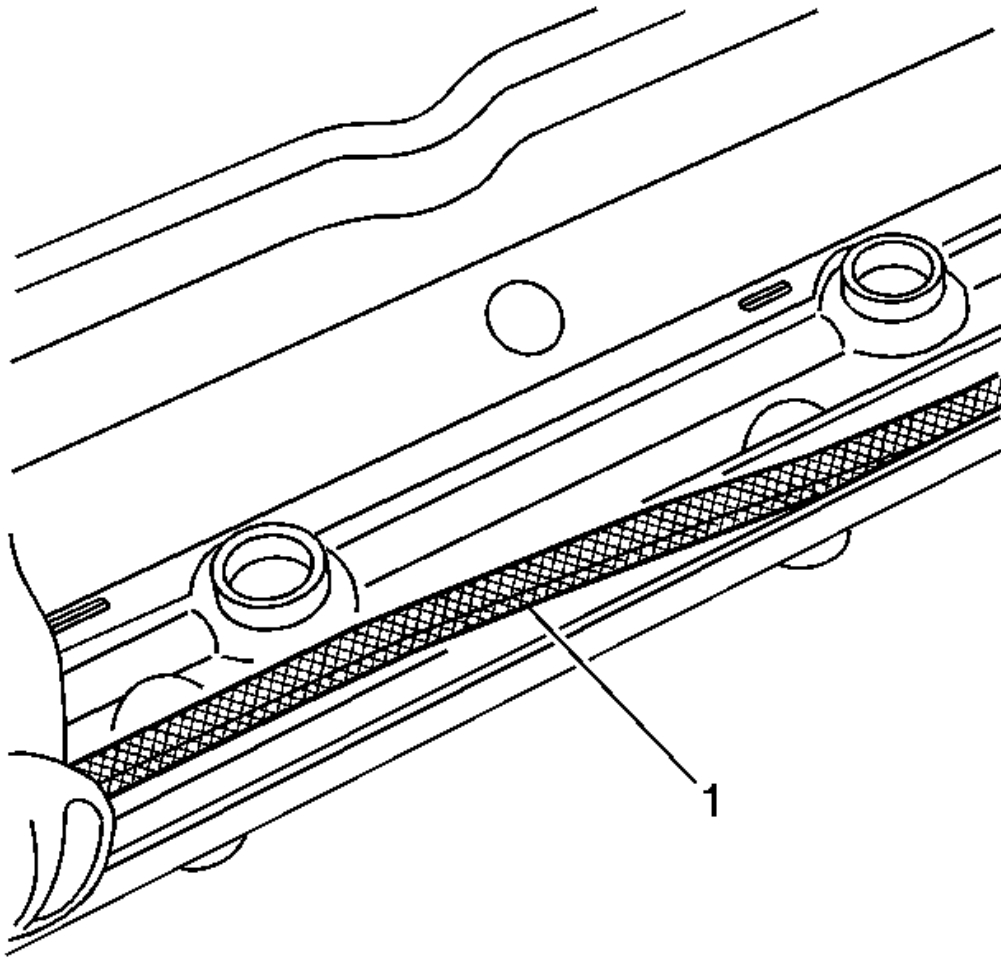


Fig. 250: Rocker Arm Cover Gasket
Courtesy of GENERAL MOTORS CORP.

4. Install a NEW rocker cover gasket (1) into the valve rocker arm cover lip.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

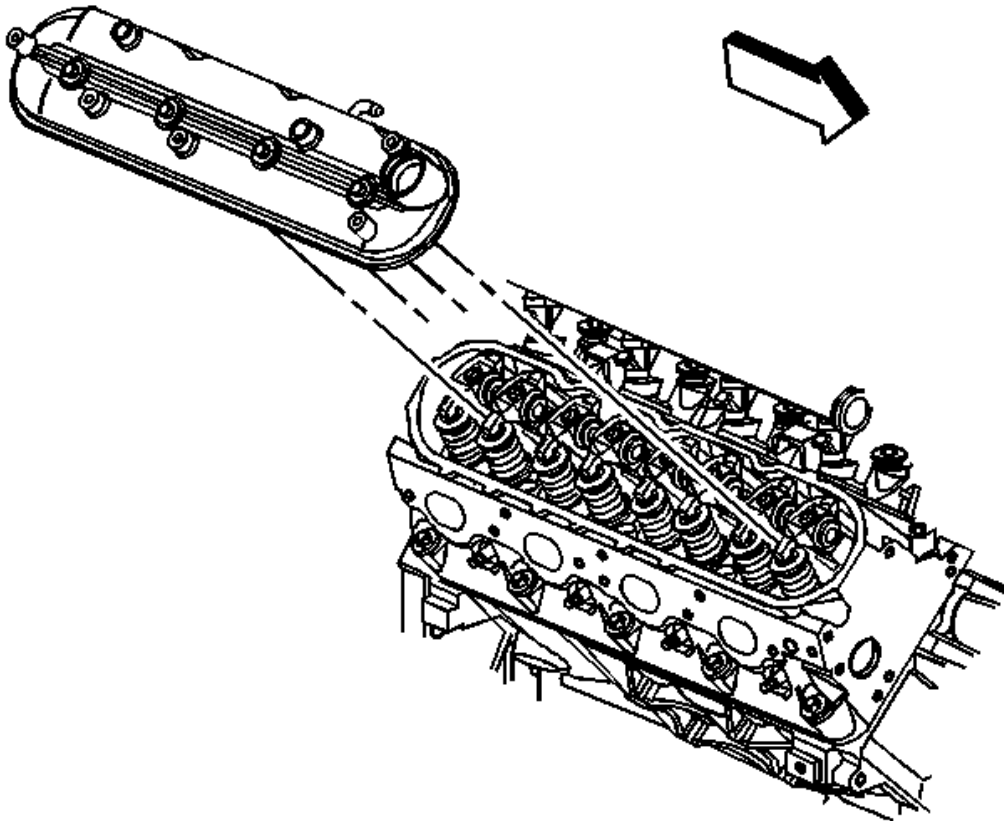


Fig. 251: View Of Valve Rocker Arm Cover (Right)
Courtesy of GENERAL MOTORS CORP.

5. Install the valve rocker arm cover.

NOTE: Refer to Fastener Notice .

6. Tighten the rocker arm cover bolts.

Tighten: Tighten the bolts to 12 N.m (106 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

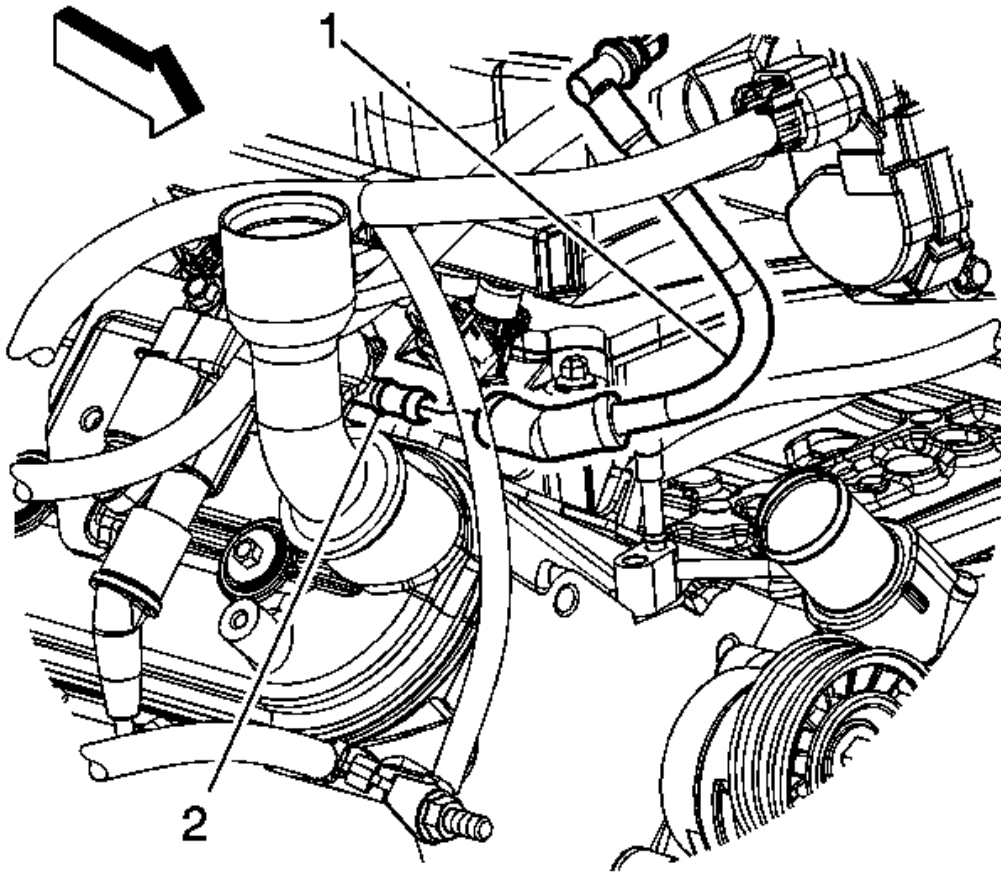


Fig. 252: View Of PCV Tube & Right Valve Rocker Arm Cover Fitting
Courtesy of GENERAL MOTORS CORP.

7. Install the PCV tube (1) to the valve rocker cover (2).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

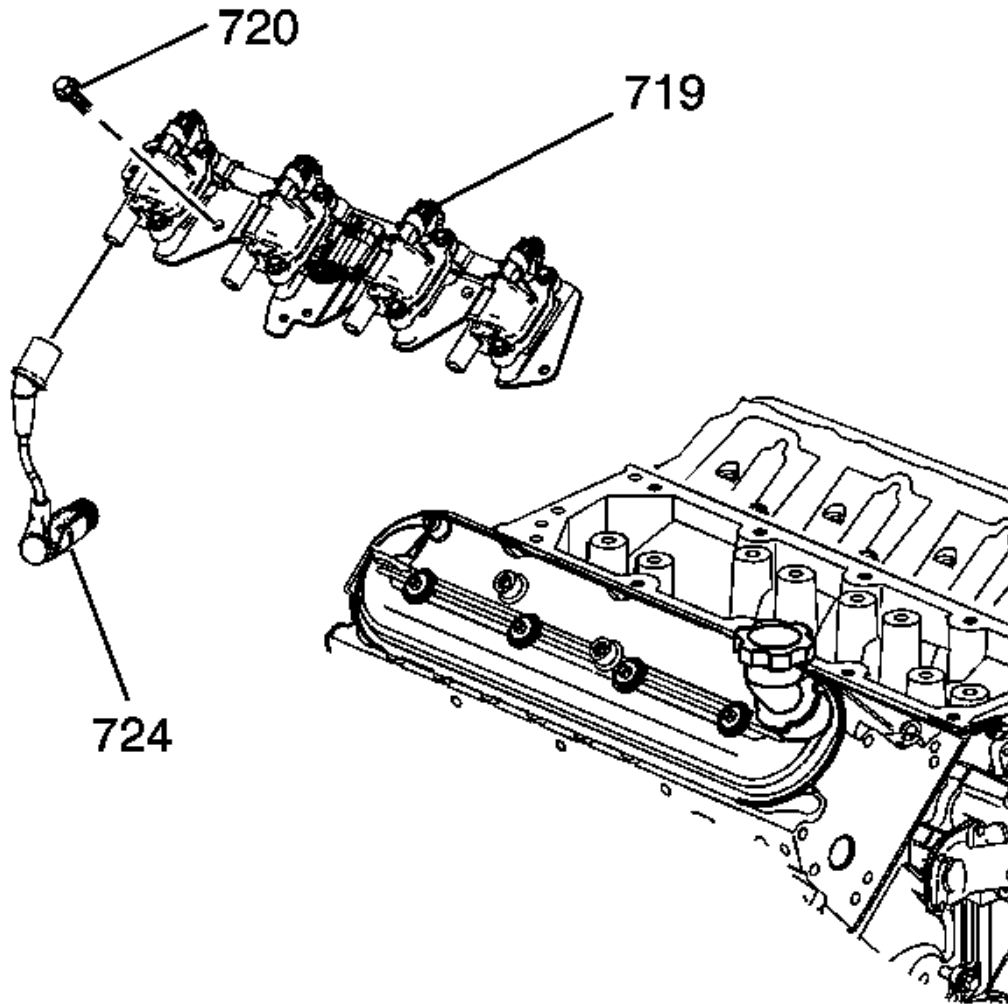


Fig. 253: Ignition Coils & Bracket
Courtesy of GENERAL MOTORS CORP.

8. Apply threadlock GM P/N 12345382 (Canadian P/N 10953489), or equivalent to the threads of the ignition coil bracket studs.
9. Position the ignition coil bracket (719) onto the rocker cover.
10. Install the ignition coil bracket studs (720).

Tighten: Tighten the studs to 12 N.m (106 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

11. Install the spark plug wires (724) to the ignition coils.

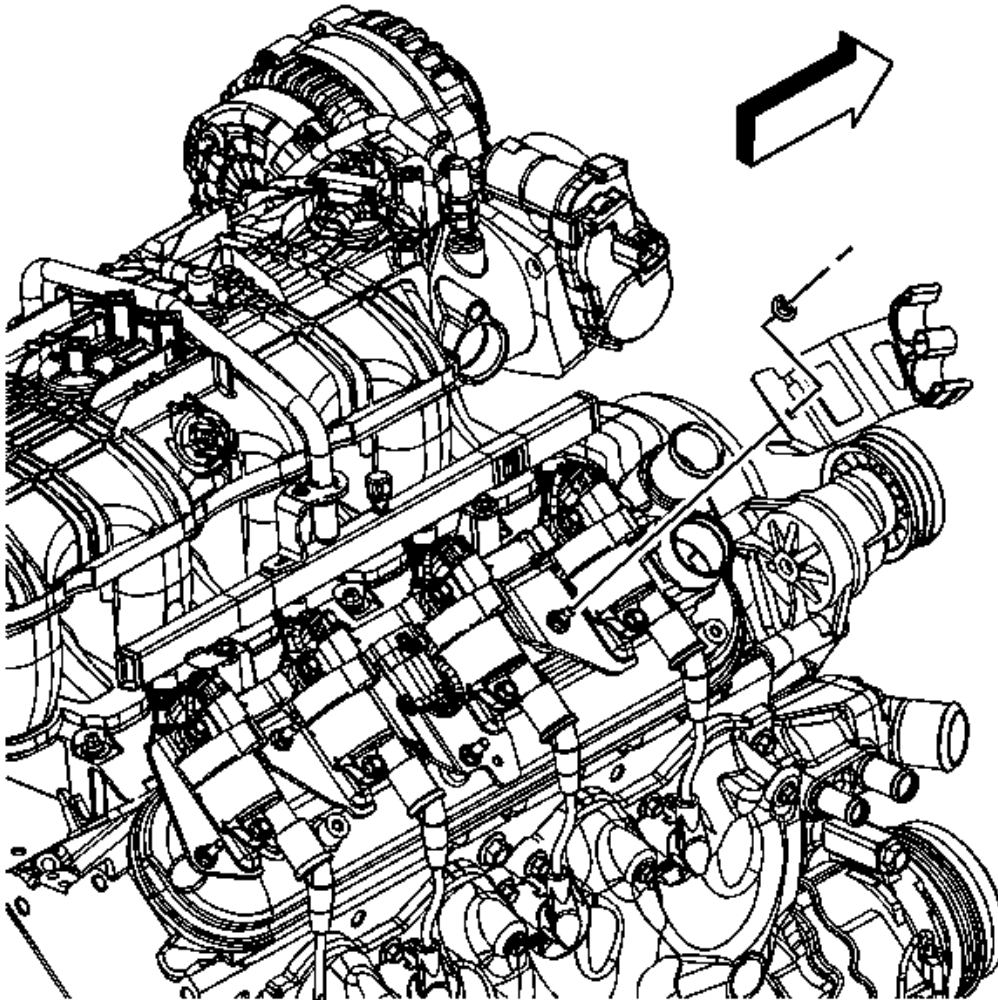


Fig. 254: View Of Heater Hose Bracket & Nut
Courtesy of GENERAL MOTORS CORP.

12. Install the heater hose bracket and nut.

Tighten: Tighten the nut to 9 N.m (80 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

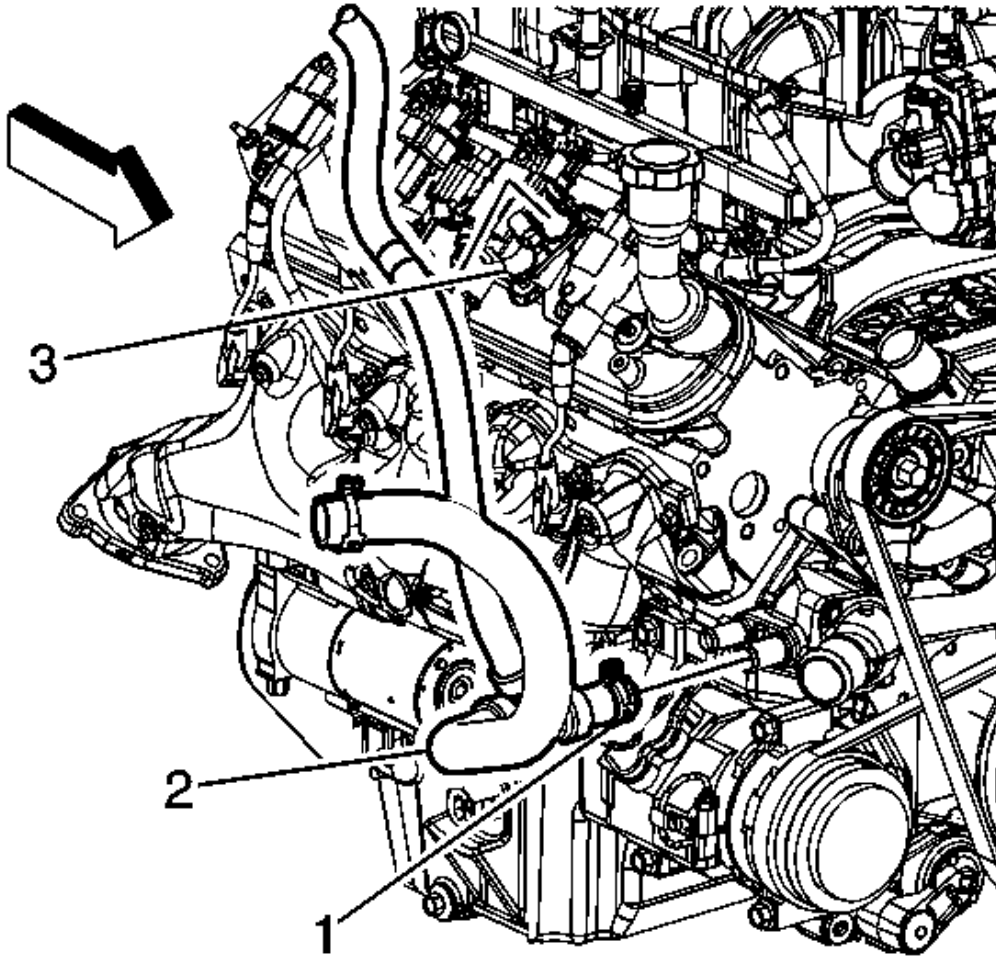


Fig. 255: View Of Radiator Surge Tank Outlet Hose, Clamp & Water Pump
Courtesy of GENERAL MOTORS CORP.

13. Install the surge tank outlet hose (2) to the heater hose bracket (3).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

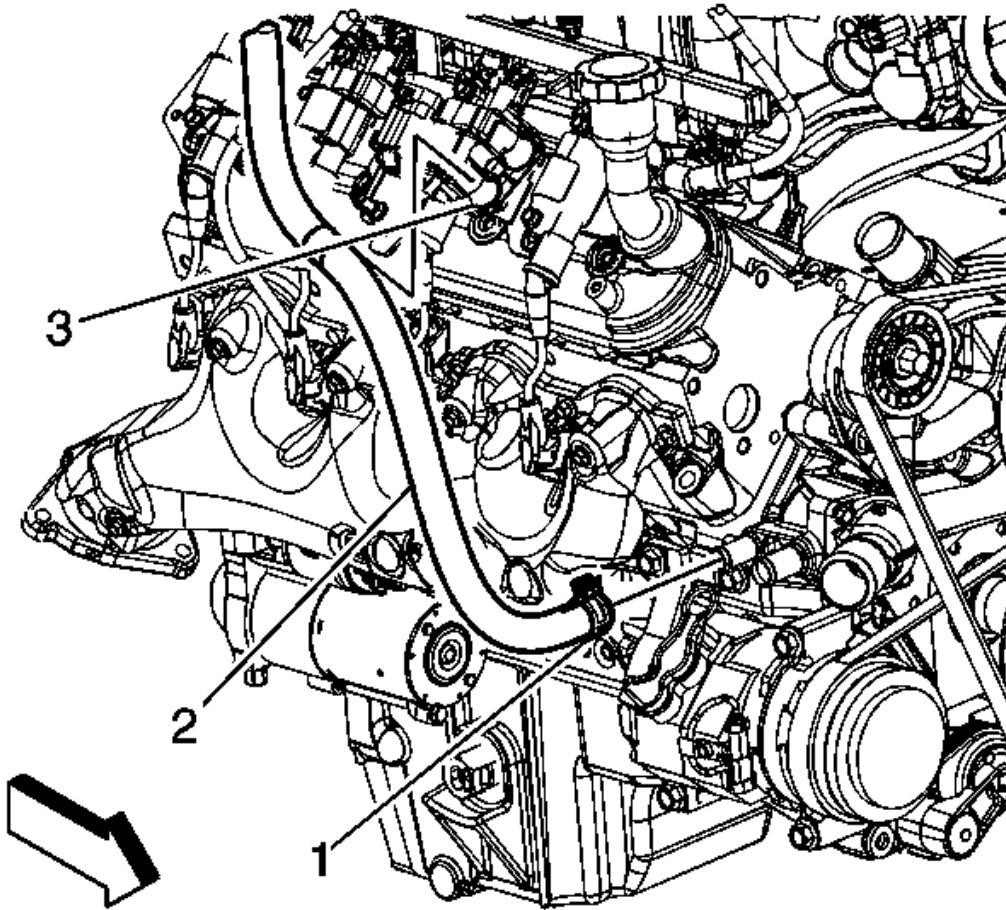


Fig. 256: View Of Heater Inlet Hose, Clamp & Water Pump
Courtesy of GENERAL MOTORS CORP.

14. Install the heater inlet hose (2) to the heater hose bracket (3).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

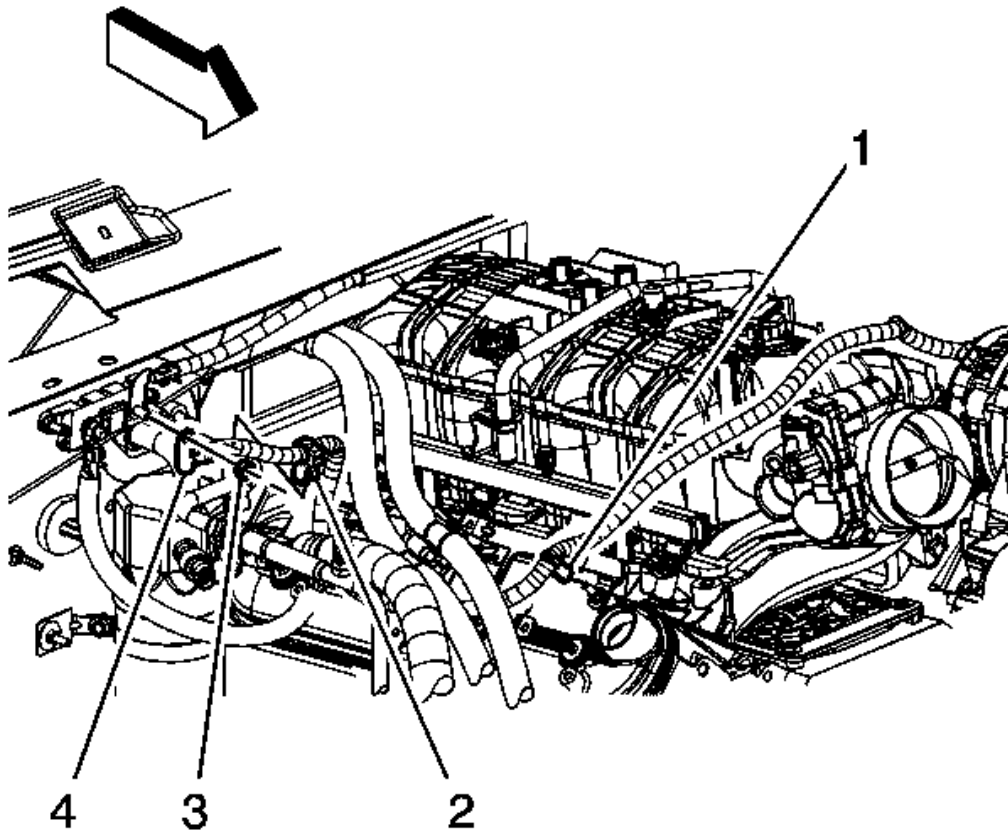


Fig. 257: View Of Generator Battery Jumper Cable & Components
Courtesy of GENERAL MOTORS CORP.

15. Position the generator battery cable as necessary.
16. Install the generator battery cable clip (1) to the ignition coil bracket stud.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

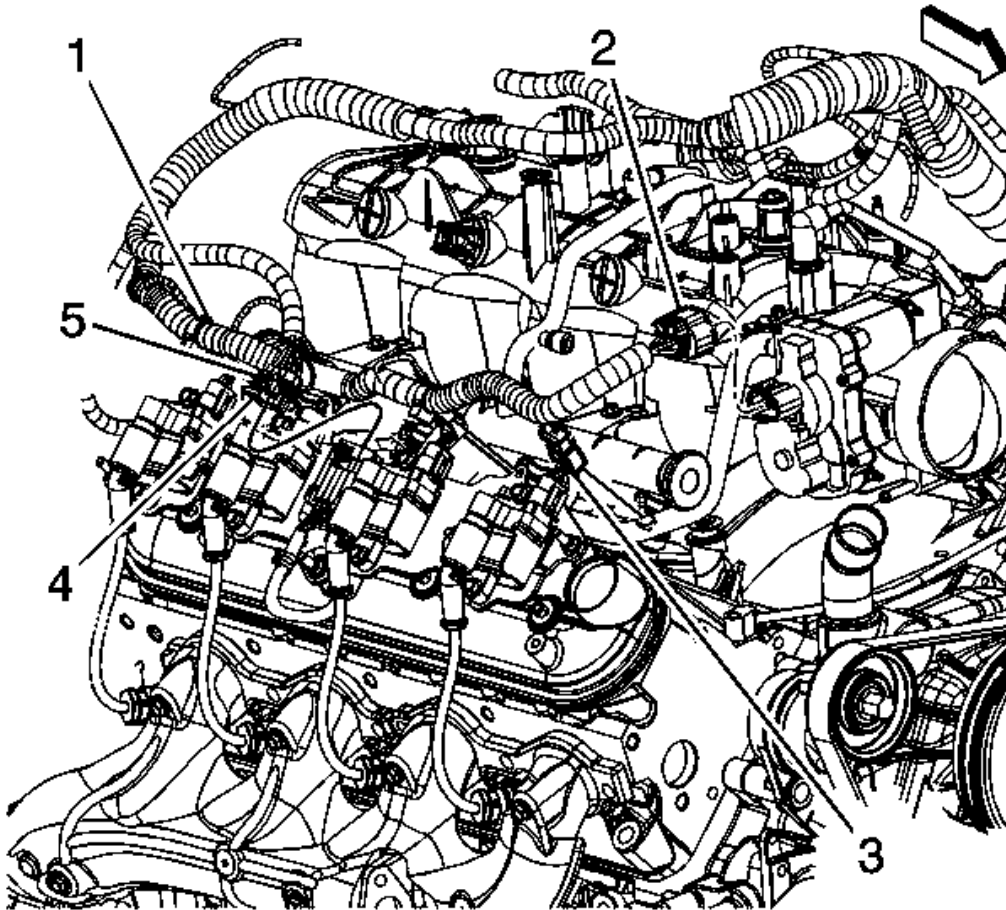


Fig. 258: Identifying Right Side Main Electrical Connectors
Courtesy of GENERAL MOTORS CORP.

17. Position the engine wiring harness (electronic throttle control branch) as necessary.
18. Install the engine wiring harness (electronic throttle control branch) clip (6) to the ignition coil bracket stud.
19. Connect the engine harness electrical connector (1) to the ignition coil wire harness.
20. Install the CPA retainer (2).
21. Install the intake manifold cover. Refer to **Upper Intake Manifold Sight Shield Replacement**.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Removal Procedure

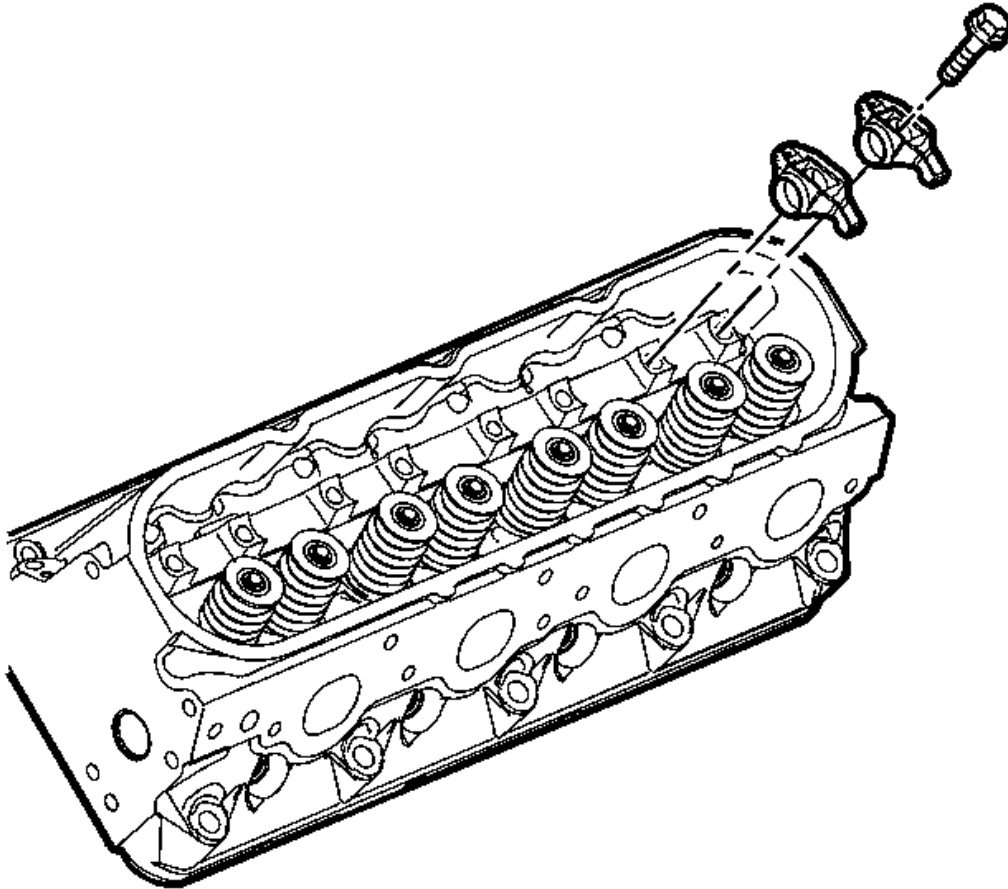


Fig. 259: View Of Rocker Arms & Bolts
Courtesy of GENERAL MOTORS CORP.

1. Remove the rocker arm cover. Refer to Valve Rocker Arm Cover Replacement - Left Side or Valve Rocker Arm Cover Replacement - Right Side.

IMPORTANT: The engine firing order is 1, 8, 7, 2, 6, 5, 4, 3. Cylinders 1, 3, 5 and 7 are the left bank.

2. Remove the number one cylinder spark plug. Refer to Spark Plug Replacement.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

IMPORTANT: Place the rocker arms, pushrods, and pivot support, in a rack so that they can be installed in the same location from which they were removed.

3. Remove the rocker arm bolts.
4. Remove the rocker arms.

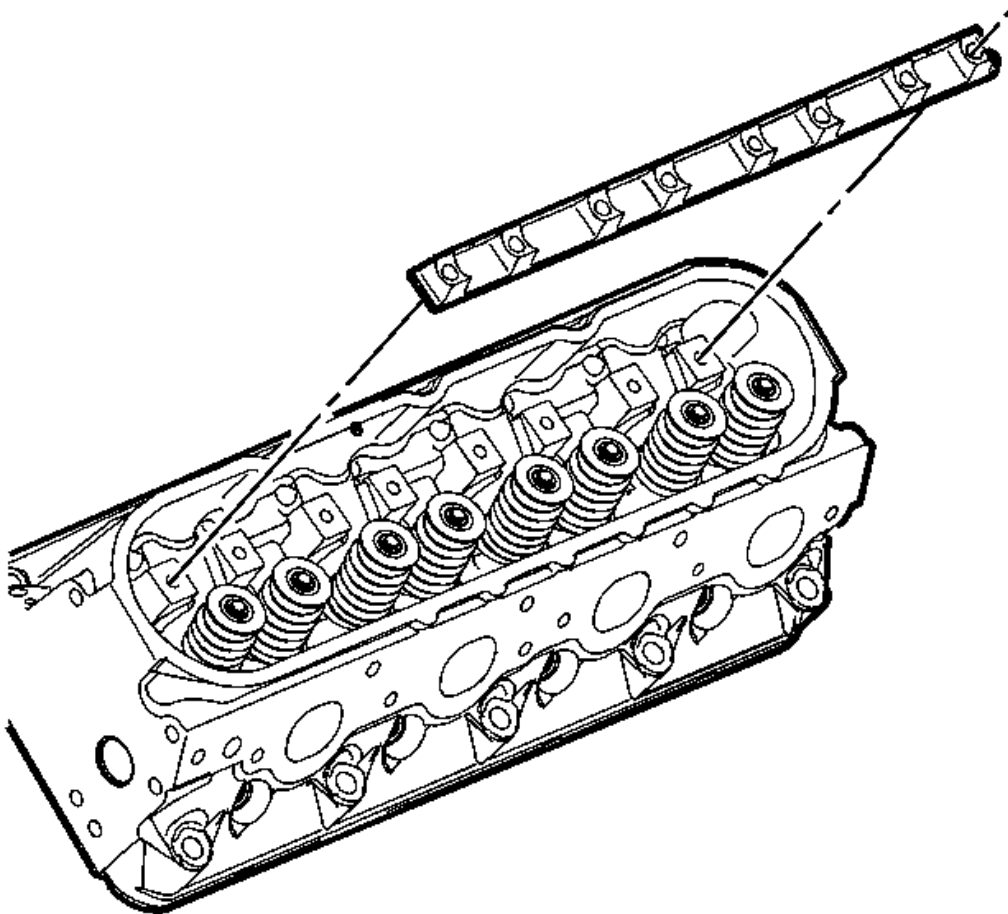


Fig. 260: View Of Valve Rocker Arm Pivot Support
Courtesy of GENERAL MOTORS CORP.

5. Remove the rocker arm pivot support.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

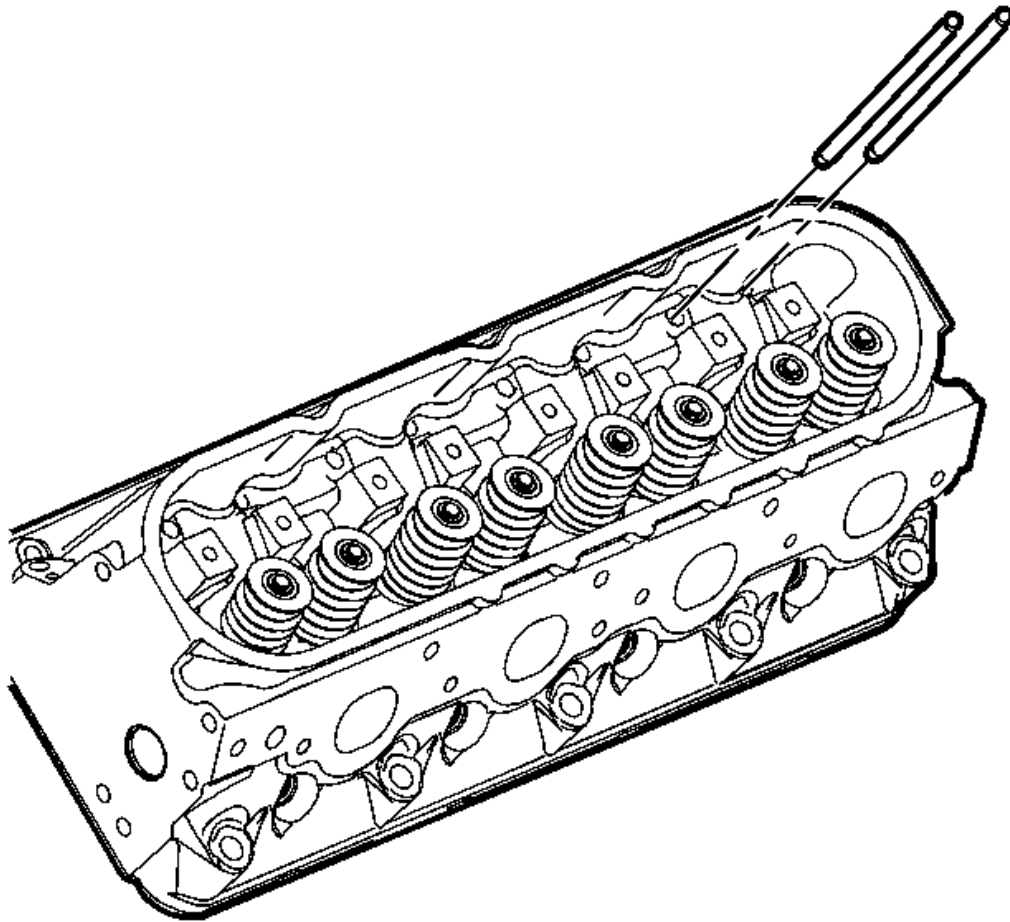


Fig. 261: View Of Pushrods
Courtesy of GENERAL MOTORS CORP.

6. Remove the pushrods.
7. Clean and inspect the rocker arms and pushrods, if required. Refer to **Valve Rocker Arm and Push Rod Cleaning and Inspection** .

Installation Procedure

IMPORTANT: When reusing the valve train components, always install the components to the original location and position.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Valve lash is net build, no valve adjustment is required.

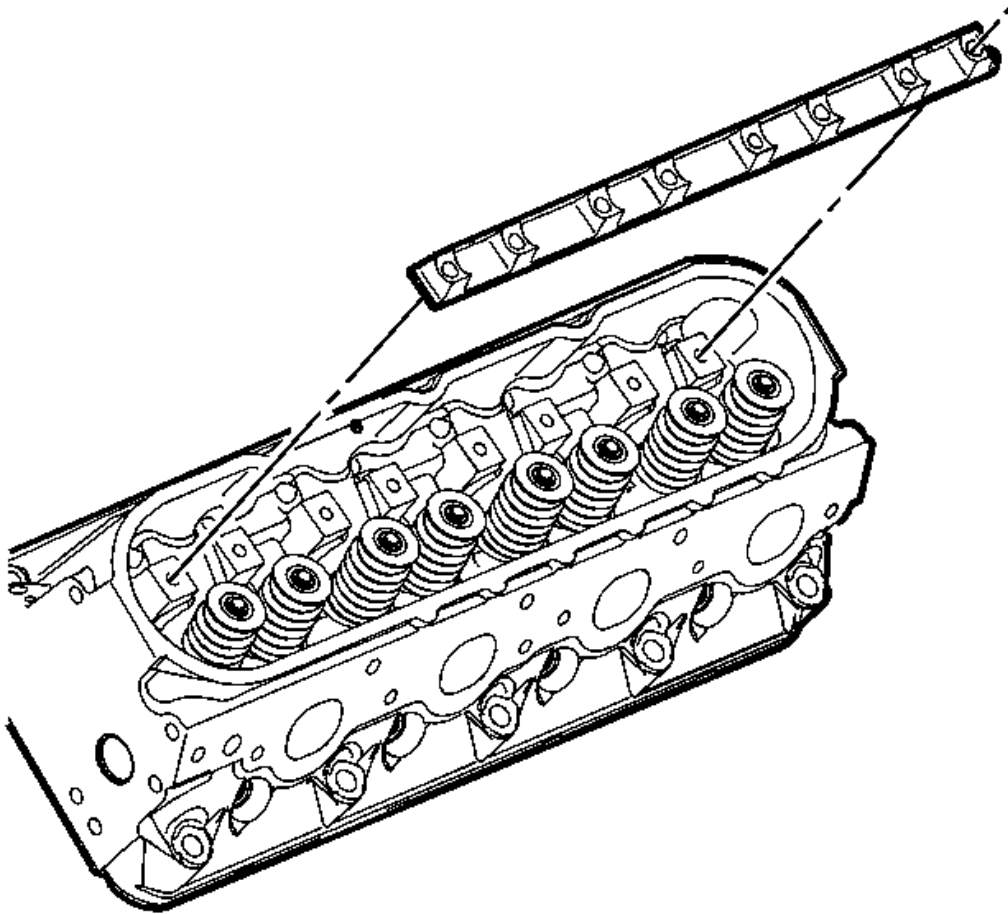


Fig. 262: View Of Valve Rocker Arm Pivot Support
Courtesy of GENERAL MOTORS CORP.

1. Lubricate the rocker arms and pushrods with clean engine oil.
2. Lubricate the flange of the rocker arm bolts with clean engine oil. Lubricate the flange or washer surface of the bolt that will contact the rocker arm.
3. Install the rocker arm pivot support.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

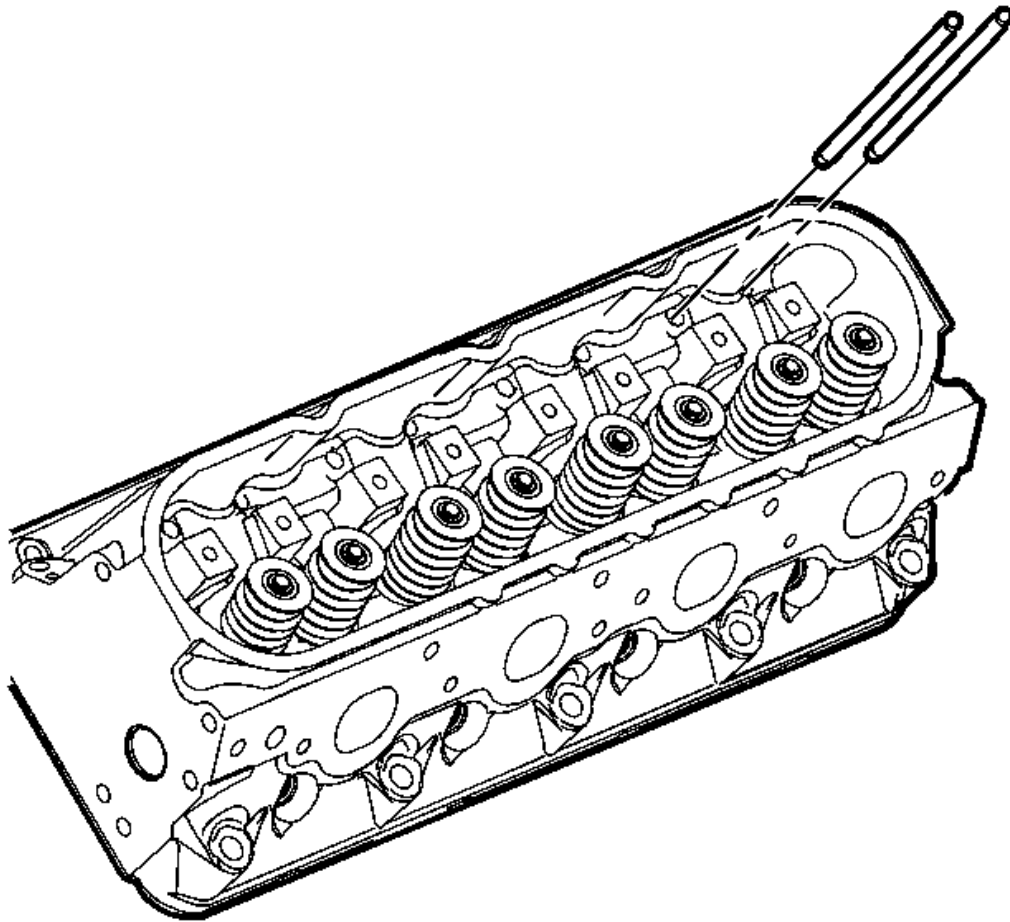


Fig. 263: View Of Pushrods

Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Make sure that the pushrods seat properly to the valve lifter sockets.

4. Install the pushrods.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

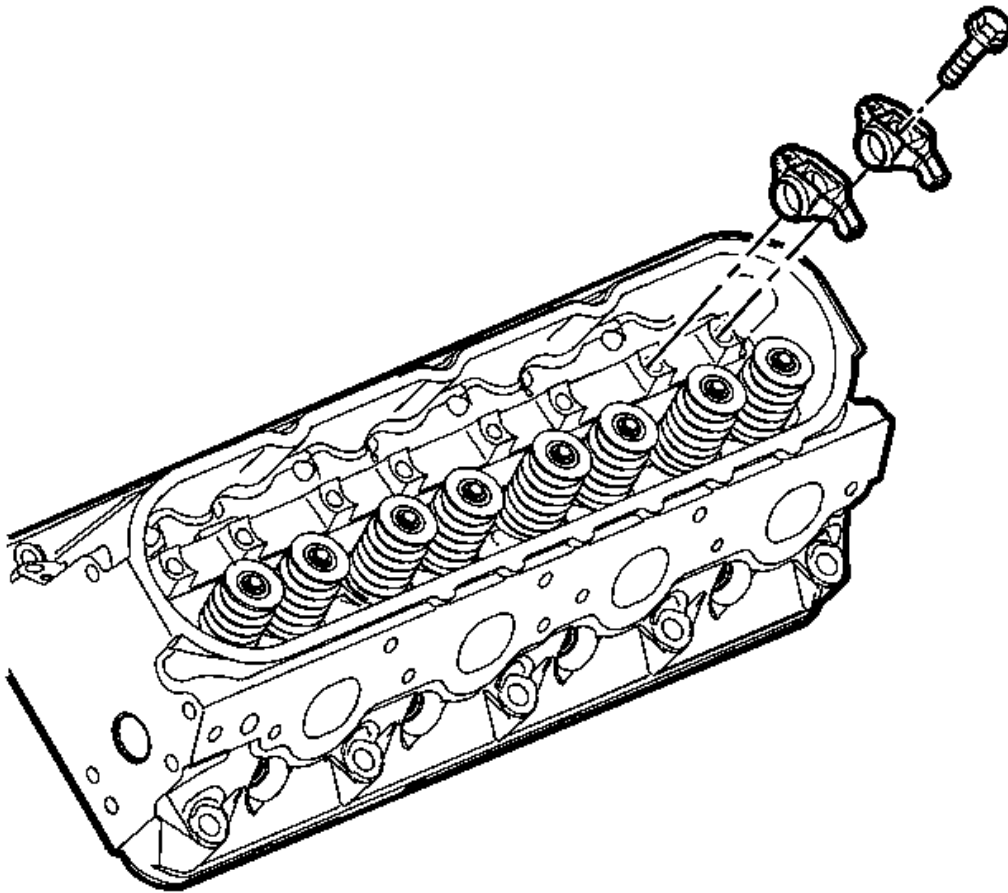


Fig. 264: View Of Rocker Arms & Bolts

Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Make sure that the pushrods seat properly to the ends of the rocker arms. **DO NOT** tighten the rocker arm bolts at this time.

5. Install the rocker arms and bolts.

IMPORTANT: The engine firing order is 1, 8, 7, 2, 6, 5, 4, 3. Cylinders 1, 3, 5 and 7 are the left bank. Cylinders 2, 4, 6 and 8 are the right bank.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

6. Rotate the crankshaft until the number one piston is at top dead center (TDC) of the compression stroke. In this position, the number one cylinder rocker arms will be off lobe lift.

NOTE: Refer to Fastener Notice .

7. With the engine in the number one firing position, tighten the following rocker arm bolts:

Tighten:

- Tighten cylinders 1,2,7 and 8 exhaust valve rocker arm bolts to 30 N.m (22 lb ft).
- Tighten cylinders 1,3,4 and 5 intake valve rocker arm bolts to 30 N.m (22 lb ft).

8. Rotate the crankshaft 360 degrees.
9. Tighten the following rocker arm bolts:

Tighten:

- Tighten cylinders 3, 4, 5 and 6 exhaust valve rocker arm bolts to 30 N.m (22 lb ft).
- Tighten cylinders 2, 6, 7 and 8 intake valve rocker arm bolts to 30 N.m (22 lb ft).

10. Install the number one cylinder spark plug. Refer to Spark Plug Replacement .
11. Install the rocker arm cover. Refer to Valve Rocker Arm Cover Replacement - Left Side or Valve Rocker Arm Cover Replacement - Right Side.

VALVE STEM OIL SEAL AND VALVE SPRING REPLACEMENT

Tools Required

- **J 22794** Spark Plug Port Adapter
- **J 38606** Valve Spring Compressor

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

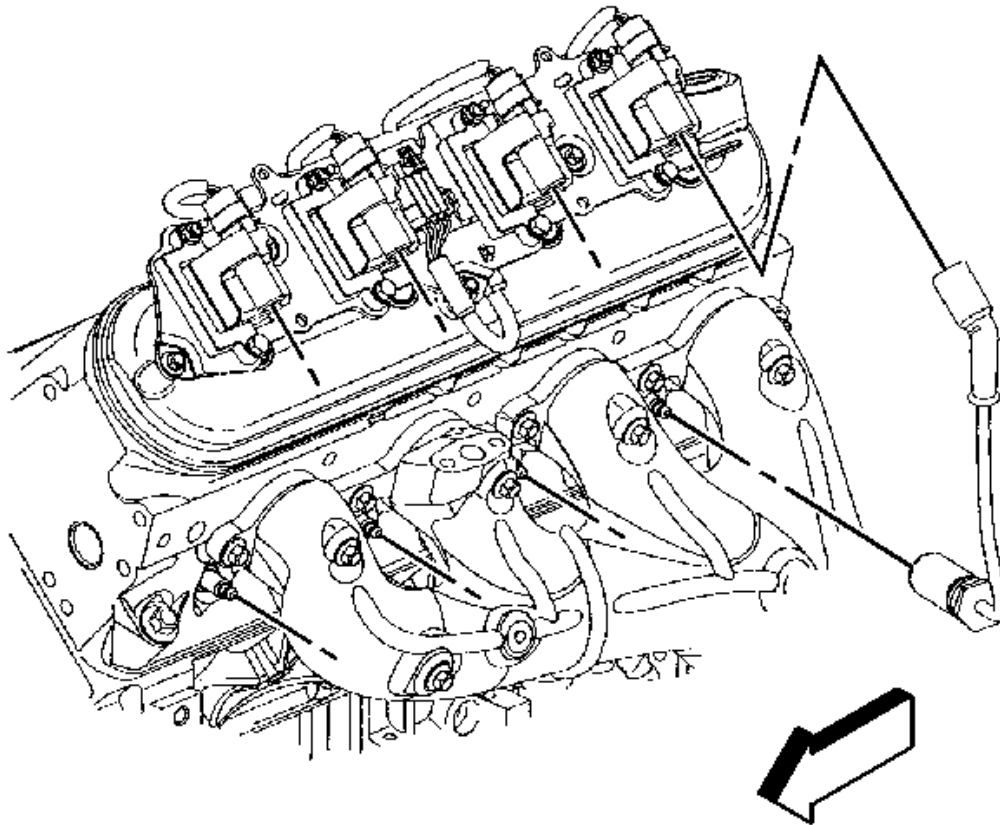


Fig. 265: View Of Spark Plug Wire & Boot
Courtesy of GENERAL MOTORS CORP.

1. Remove the rocker arm. Refer to **Valve Rocker Arm and Push Rod Replacement**.
2. Disconnect the spark plug wire at the spark plug.
 - Twist each plug wire boot 1/2 turn.
 - Pull only on the boot in order to remove the wire from the spark plug.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

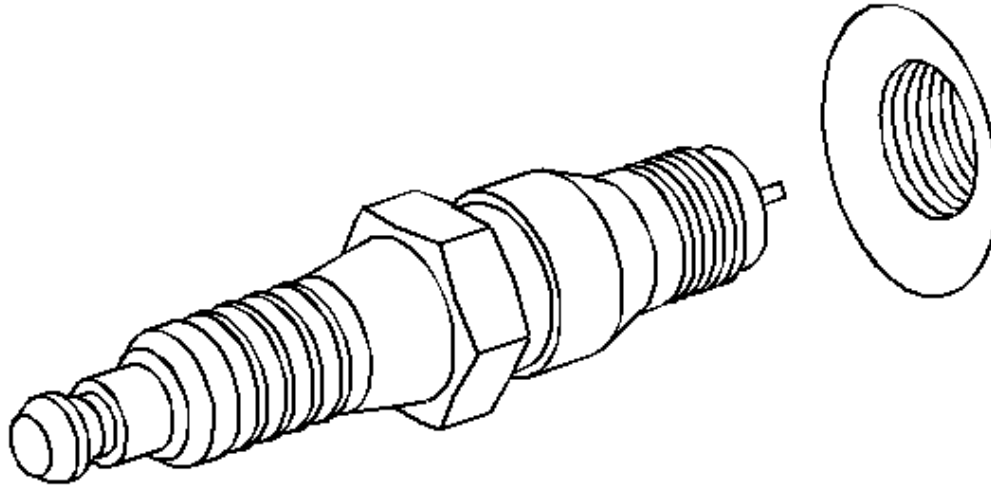


Fig. 266: View Of Spark Plug And Sparkplug Seat
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Remove the spark plugs from the cylinder head with the engine at room temperature.

3. Loosen the spark plug 1 or 2 turns.
4. Brush or air blast away any dirt or debris from around the spark plug.
5. Remove the spark plug.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

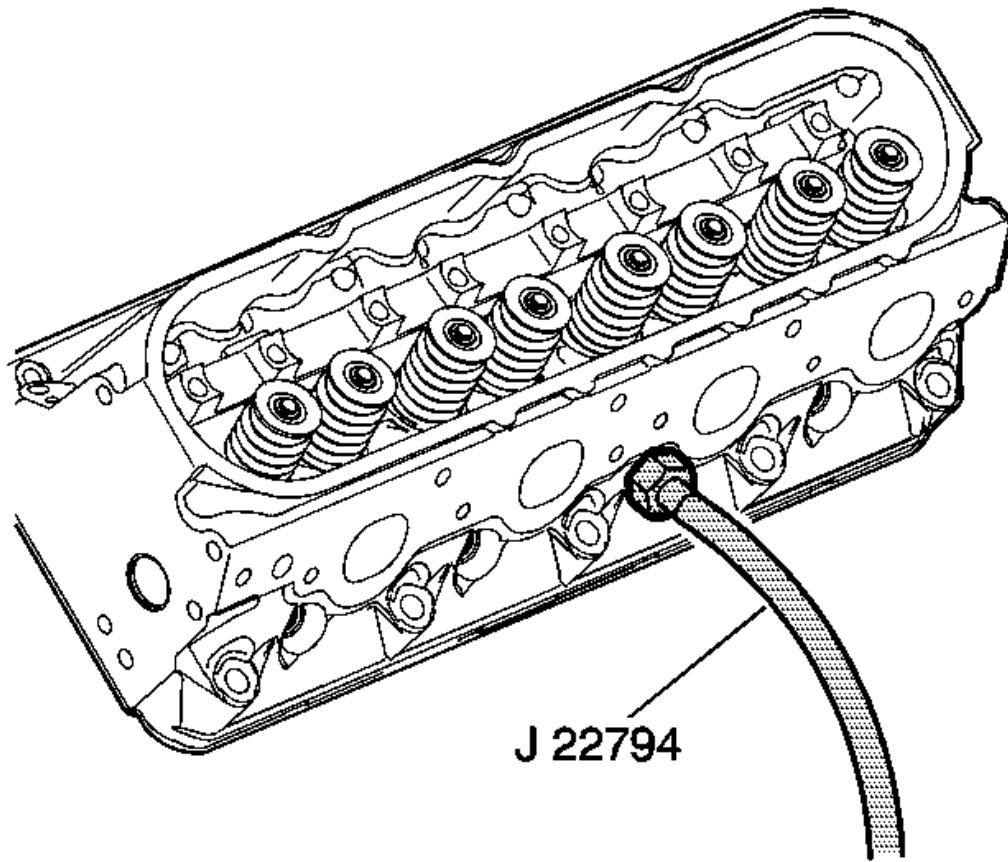


Fig. 267: Applying Compressed Air To J 22794
Courtesy of GENERAL MOTORS CORP.

6. Install the **J 22794** into the spark plug hole.
7. Attach an air hose to the **J 22794** .
8. Apply compressed air to the **J 22794** in order to hold the valves in place.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

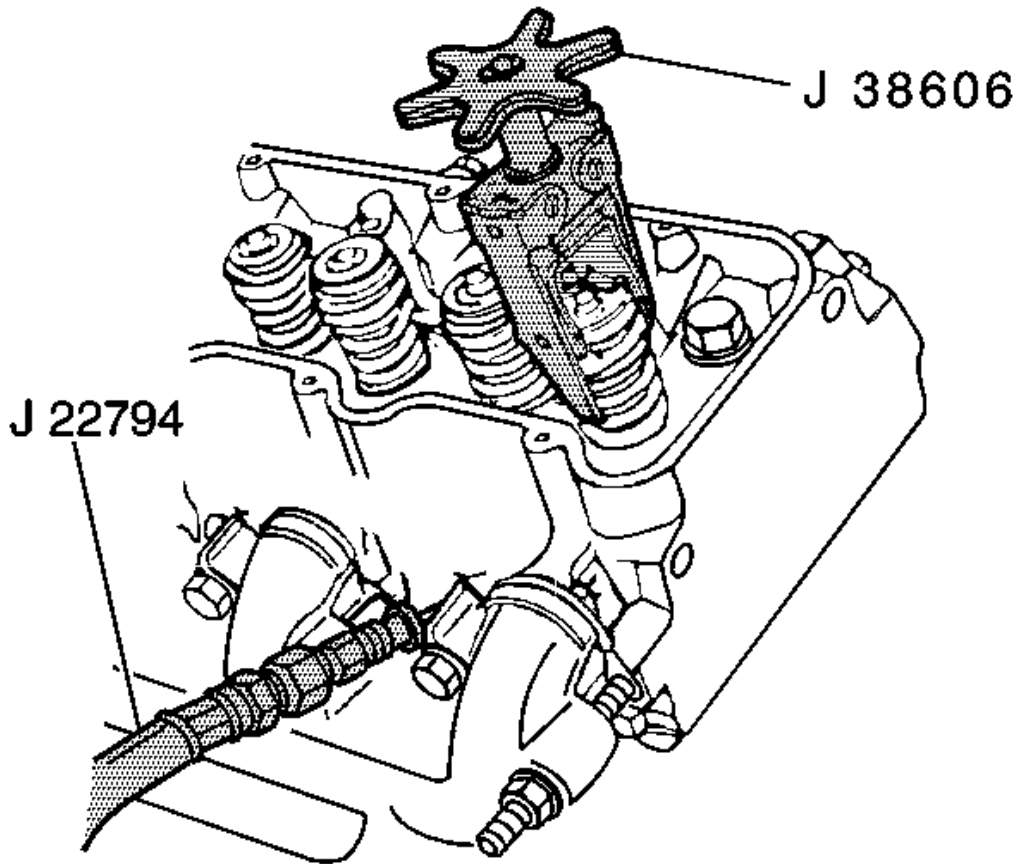


Fig. 268: Compressing Valve Spring (Cylinder Head Installed) Using Special Tools
Courtesy of GENERAL MOTORS CORP.

9. Use the **J 38606** in order to compress the valve spring.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

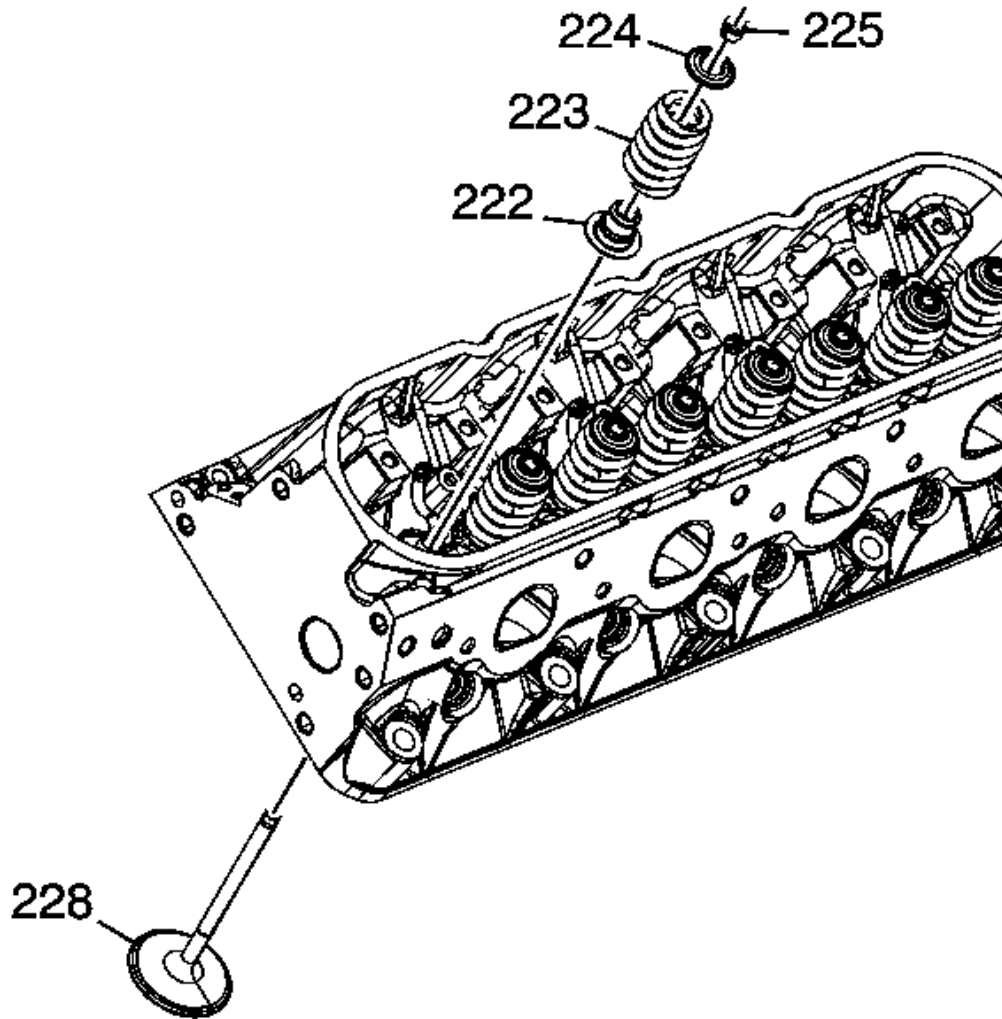


Fig. 269: Valve Stem Keys, Valve Spring Cap & Valve Spring
Courtesy of GENERAL MOTORS CORP.

10. Remove the valve stem keys (225).
11. Carefully release the valve spring tension.
12. Remove the **J 38606** .
13. Remove the valve spring cap (224).
14. Remove the valve spring (223).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

15. Remove the valve stem oil seal (222).

16. Remove the valve (228).

Installation Procedure

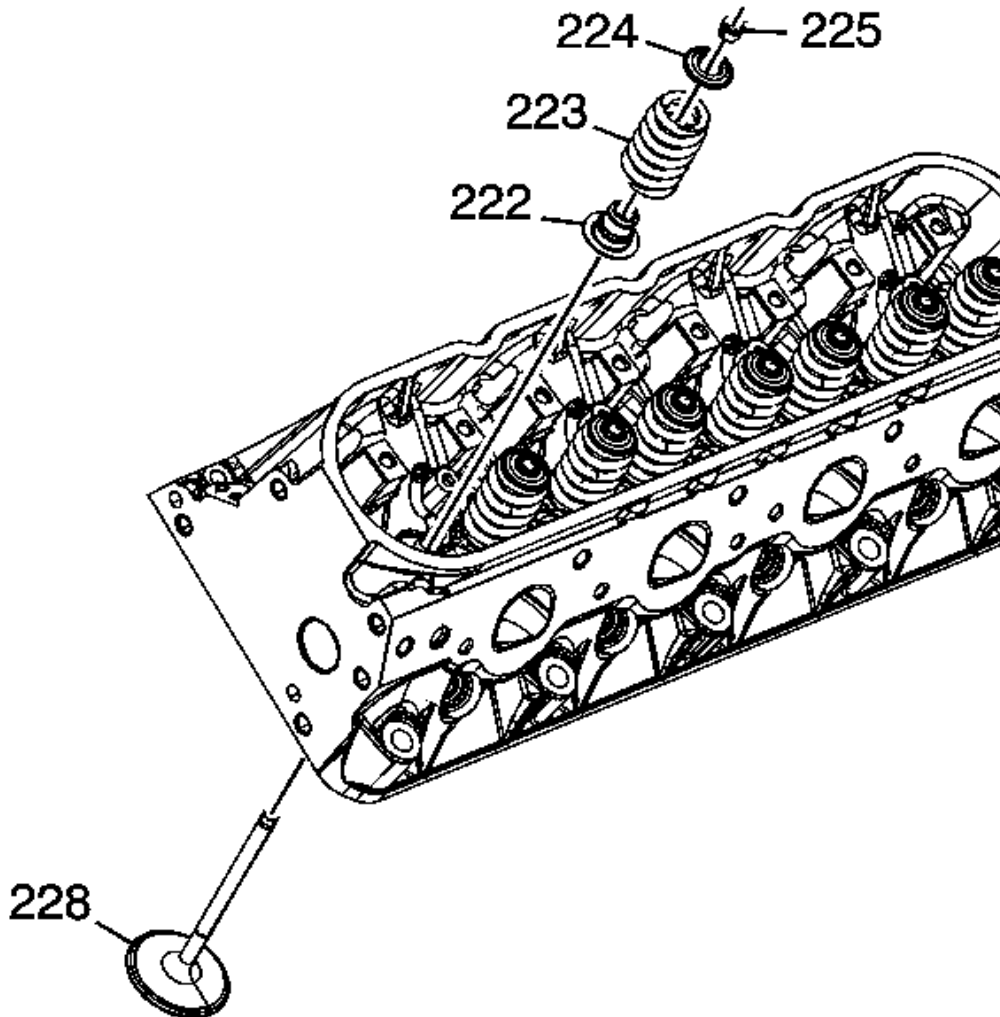


Fig. 270: Valve Stem Keys, Valve Spring Cap & Valve Spring
Courtesy of GENERAL MOTORS CORP.

1. Clean the cylinder head valve spring seat area.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Lubricate the valve guide and valve stem oil seal with clean engine oil.
3. Install the valves (228) into the proper port.
4. Install the valve stem oil seal (222).
5. Install the valve spring (223).
6. Install the valve spring cap (224).

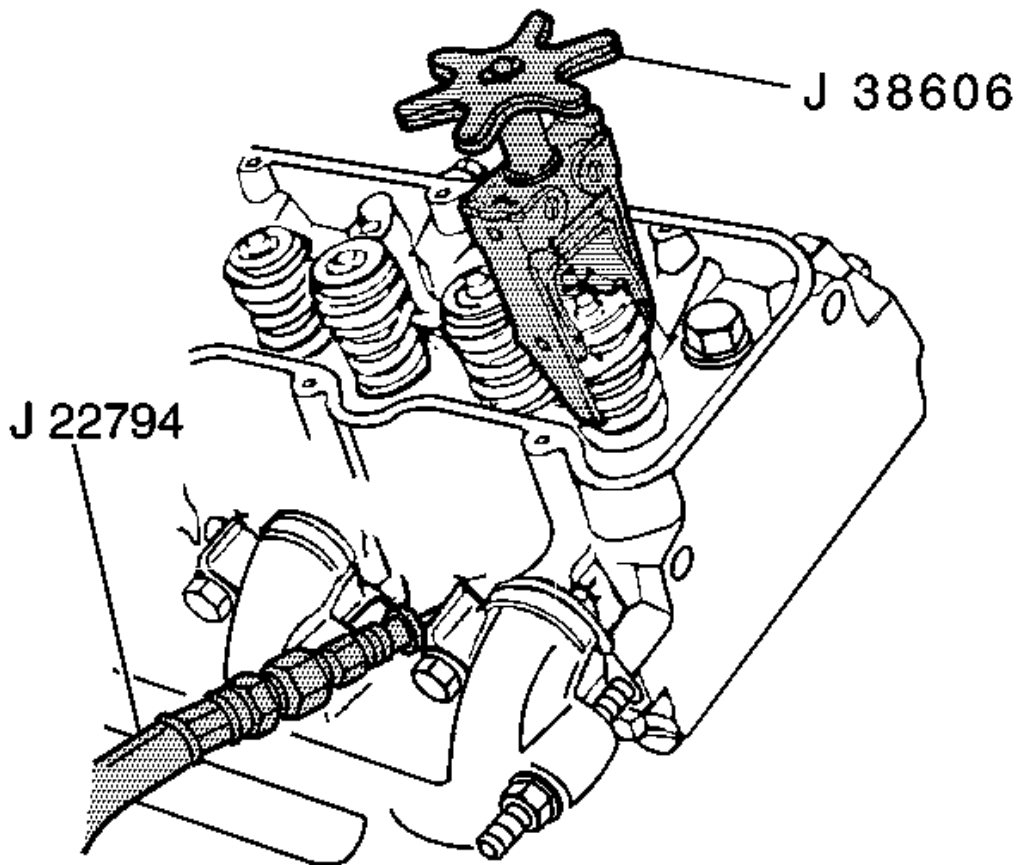


Fig. 271: Compressing Valve Spring (Cylinder Head Installed) Using Special Tools
Courtesy of GENERAL MOTORS CORP.

7. Compress the valve spring using the J 38606 .
8. Install the valve keys.
 - Use grease in order to hold the valve keys in place.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- Make sure the keys seat properly in the groove of the valve stem.
- Carefully release the valve spring pressure, making sure the valve keys stay in place.
- Remove the **J 38606** .
- Tap the end of the valve stem with a plastic faced hammer to seat the keys, if necessary.

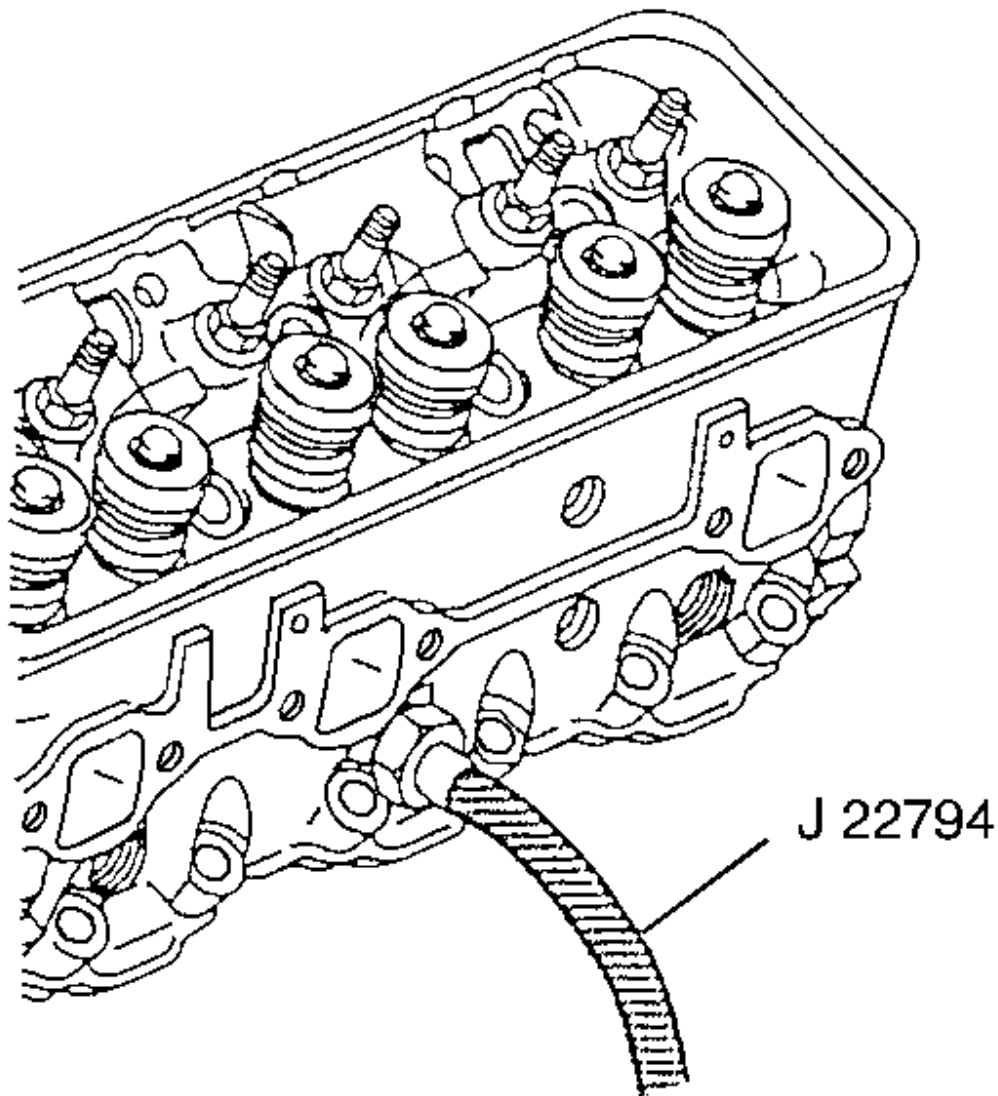


Fig. 272: View Of J 22794
Courtesy of GENERAL MOTORS CORP.

9. Remove the **J 22794** from the spark plug port.

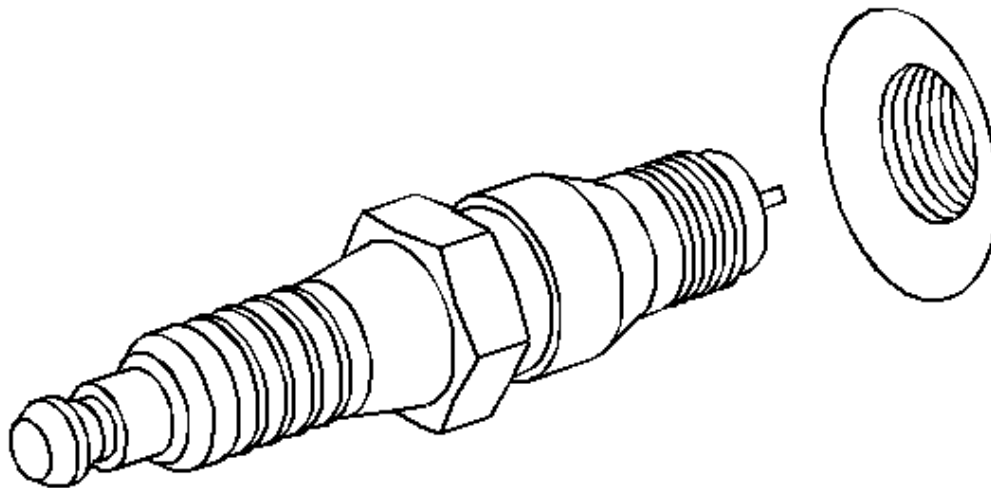


Fig. 273: View Of Spark Plug And Sparkplug Seat
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

10. Hand start the spark plug.

Tighten: Tighten the spark plug to 15 N.m (11 lb ft).

11. Install the spark plug wires at the ignition coil.
12. Install the spark plug wire to the spark plug.
13. Inspect the wires for proper installation:
 - Push sideways on each boot in order to check for proper installation.
 - Reinstall any loose boot.
14. Install the rocker arm. Refer to Valve Rocker Arm and Push Rod Replacement.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

OIL LEVEL INDICATOR AND TUBE REPLACEMENT

Removal Procedure

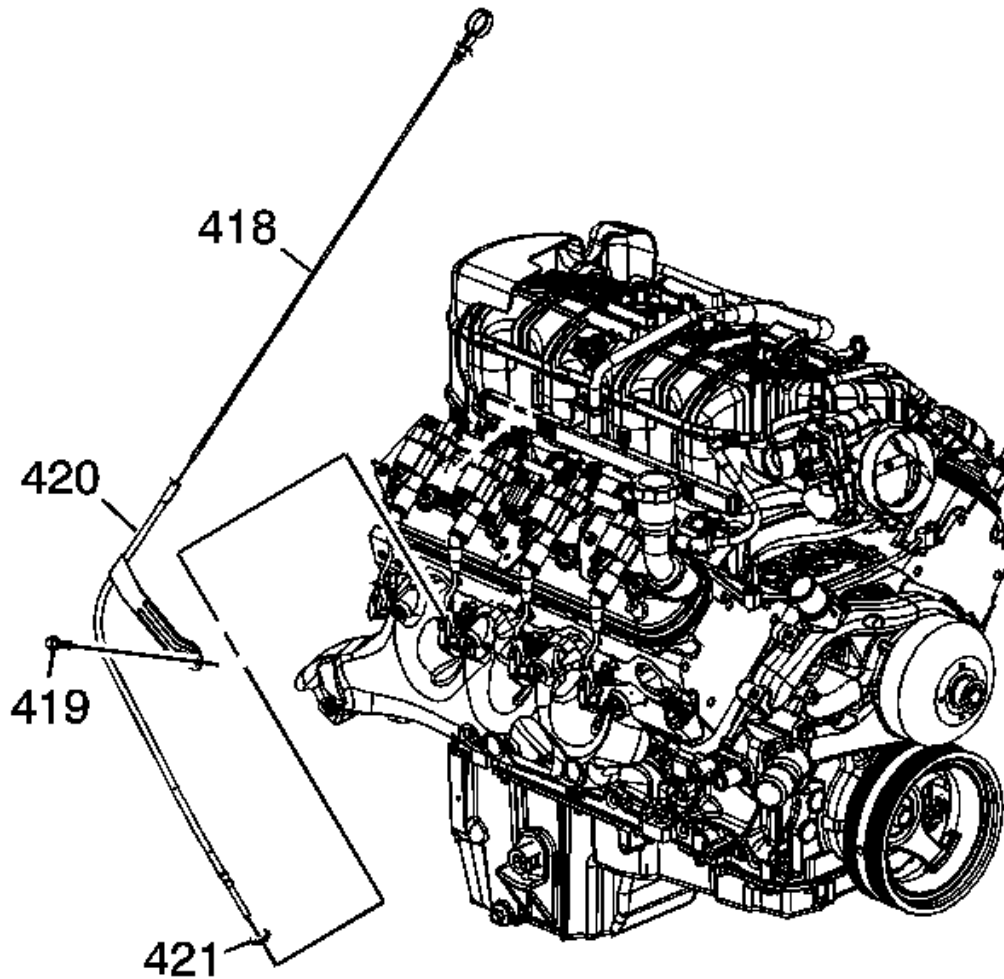


Fig. 274: View Of Oil Level Indicator, Tube Bolt, Indicator Tube & O-Ring Seal
Courtesy of GENERAL MOTORS CORP.

1. Remove the oil level indicator (418).
2. Remove the oil level indicator tube bolt (419).
3. Remove the oil level indicator tube (420) from the engine block.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

IMPORTANT: The O-ring seal may be reused if not cut or damaged.

4. Inspect the O-ring seal for cuts or damage.
5. Remove the O-ring seal (421) from the tube, if required.

Installation Procedure

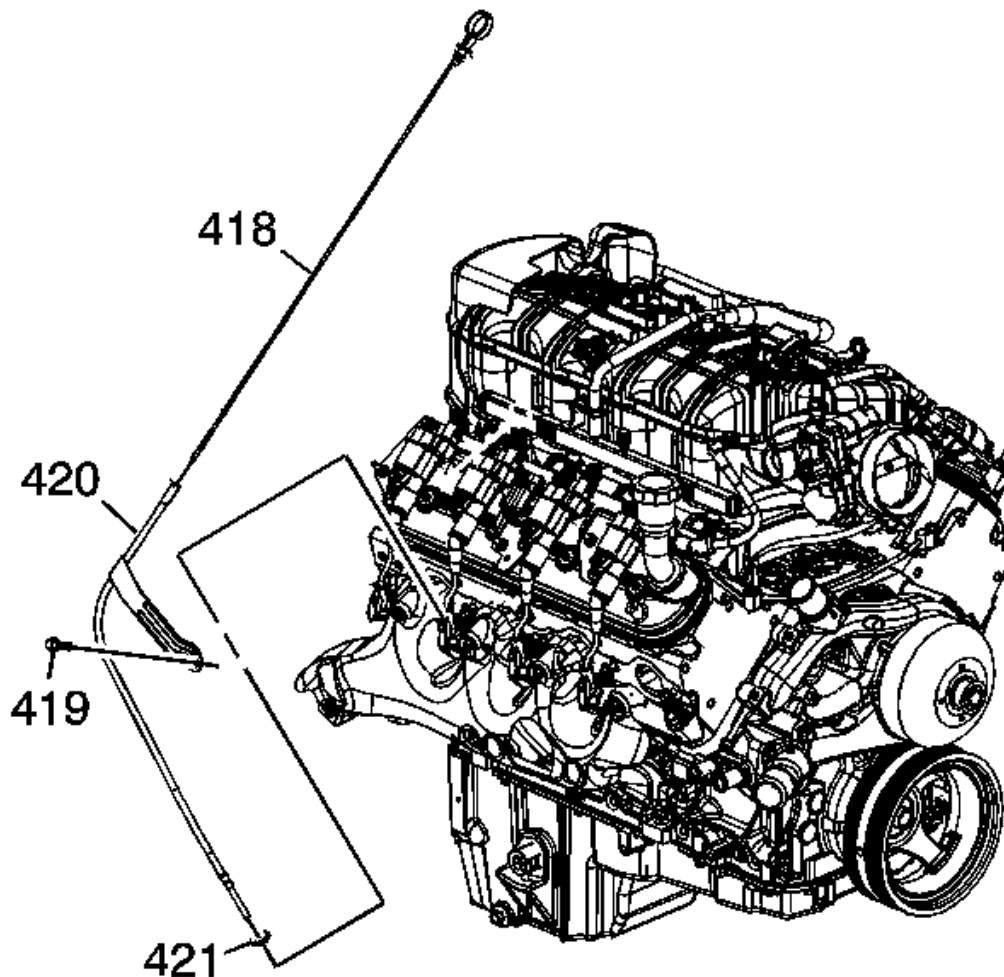


Fig. 275: View Of Oil Level Indicator, Tube Bolt, Indicator Tube & O-Ring Seal
Courtesy of GENERAL MOTORS CORP.

1. Lubricate the O-ring seal (421) with clean engine oil.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Install a NEW O-ring seal onto the oil level indicator tube, if required.
3. Install the oil level indicator tube (420) between the exhaust manifold and engine block.
4. Raise and suitably support the vehicle. Refer to **Lifting and Jacking the Vehicle** .
5. Insert the oil level indicator tube into the block. The tube must be installed with the collar flush to the block.
6. Lower the vehicle.

NOTE: Refer to **Fastener Notice** .

7. Install the oil level indicator tube bolt (419).

Tighten: Tighten the bolt to 25 N.m (18 lb ft).

8. Install the oil level indicator (418).

CYLINDER HEAD REPLACEMENT - LEFT SIDE

Tools Required

- **J 45059** Angle Meter
- **J 42385-200** Common Thread Repair Kit. See **Special Tools** .

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

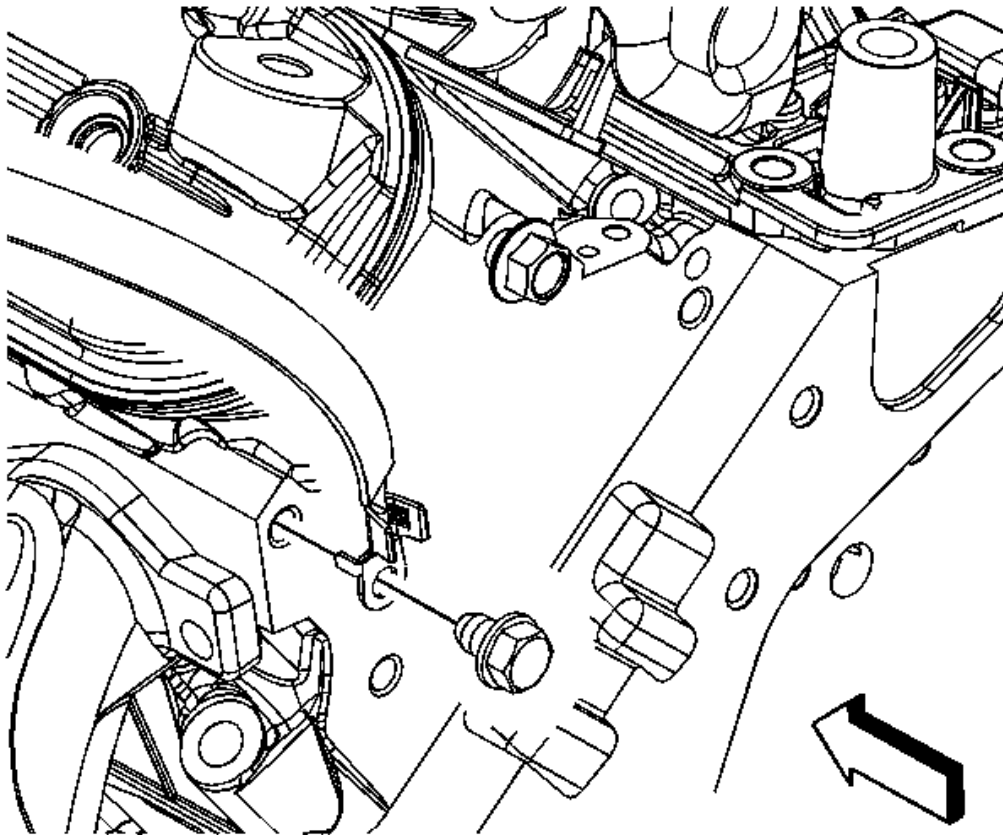


Fig. 276: View Of Engine Ground Strap & Bolt
Courtesy of GENERAL MOTORS CORP.

1. Remove the generator bracket. Refer to **Generator Replacement (4.8L, 5.3L, 6.0L, and 6.2L)** .
2. Remove the intake manifold. Refer to **Intake Manifold Replacement (L92 - First Design)** or **Intake Manifold Replacement (L92 - Second Design)** or **Intake Manifold Replacement (LY2 and LY6)** or **Intake Manifold Replacement (LH6, LMG, LY5 and L76)**.
3. Remove the coolant air bleed pipe. Refer to **Coolant Air Bleed Pipe Assembly Replacement (LH6, LY5, LMG, L76, L92)** or **Coolant Air Bleed Pipe Assembly Replacement (LY2, LY6)** .
4. Remove the left exhaust manifold. Refer to **Exhaust Manifold Replacement - Left Side**

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

(4.8L, 5.3L, 6.0L, and 6.2L) .

5. Remove the pushrods. Refer to **Valve Rocker Arm and Push Rod Replacement.**
6. Remove the engine ground strap bolt from the rear of the cylinder head.
7. Remove the ground strap from the cylinder head.

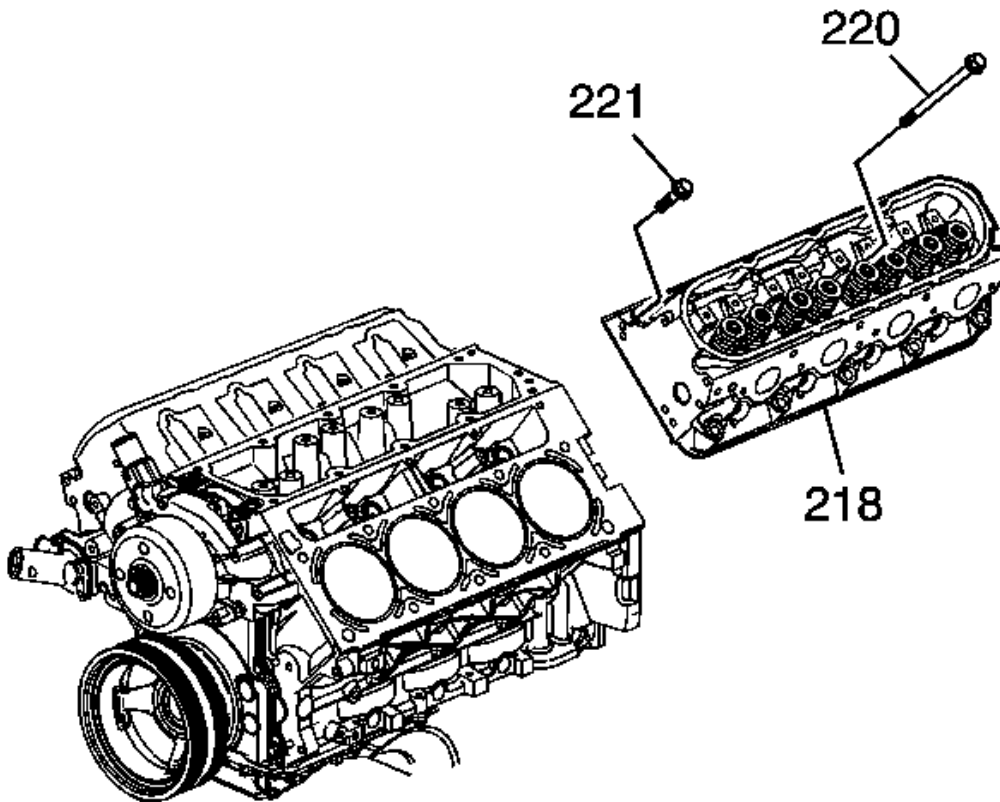


Fig. 277: View Of Cylinder Head & Bolts
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The cylinder head bolts are of a torque-to-yield design and are **NOT** to be reused.

8. Remove and discard the cylinder head bolts (220, 221).

NOTE: After removal, place the cylinder head on 2 wood blocks in

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

order to prevent damage to the sealing surfaces.

9. Remove the cylinder head (218).

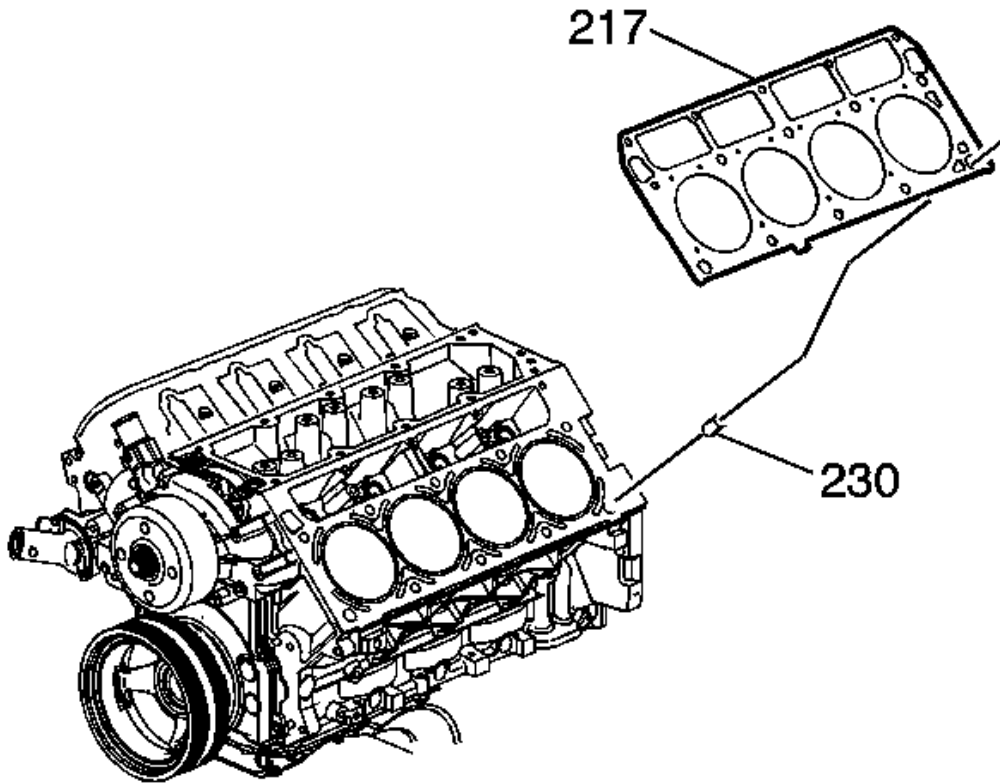


Fig. 278: View Of Cylinder Head Gasket & Locating Pins
Courtesy of GENERAL MOTORS CORP.

10. Remove and discard the cylinder head gasket (217).
11. If required, clean and inspect the cylinder head. Refer to **Cylinder Head Cleaning and Inspection** .

Installation Procedure

CAUTION: Wear safety glasses in order to avoid eye damage.

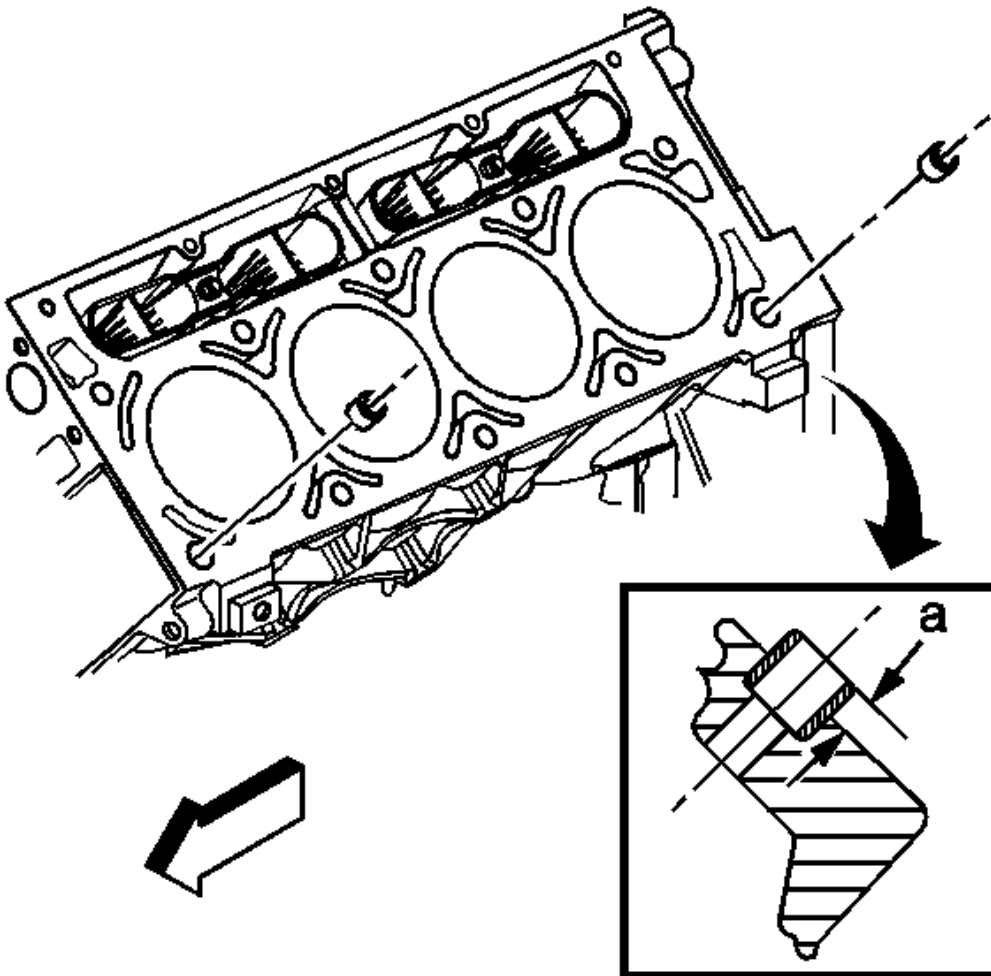
2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

NOTE: Clean all dirt, debris, and coolant from the engine block cylinder head bolt holes. Failure to remove all foreign material may result in damaged threads, improperly tightened fasteners or damage to components.

IMPORTANT:

- Do not reuse the cylinder head bolts. Install **NEW** cylinder head bolts during assembly.
- Do not use any type of sealant on the cylinder head gasket (unless specified).



2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Fig. 279: Checking Cylinder Head Bolt Holes Courtesy of GENERAL MOTORS CORP.

1. Clean the engine block cylinder head bolt holes, if required. Thread repair tool J 42385-107, found in **J 42385-200** may be used to clean the threads of old threadlocking material. See **Special Tools** .
2. Spray cleaner GM P/N 12346139, P/N 12377981 (Canadian P/N 10953463), or equivalent into the hole.
3. Clean the cylinder head bolt holes with compressed air.
4. Check the cylinder head locating pins for proper installation (a) 8.3 mm (0.327 in).

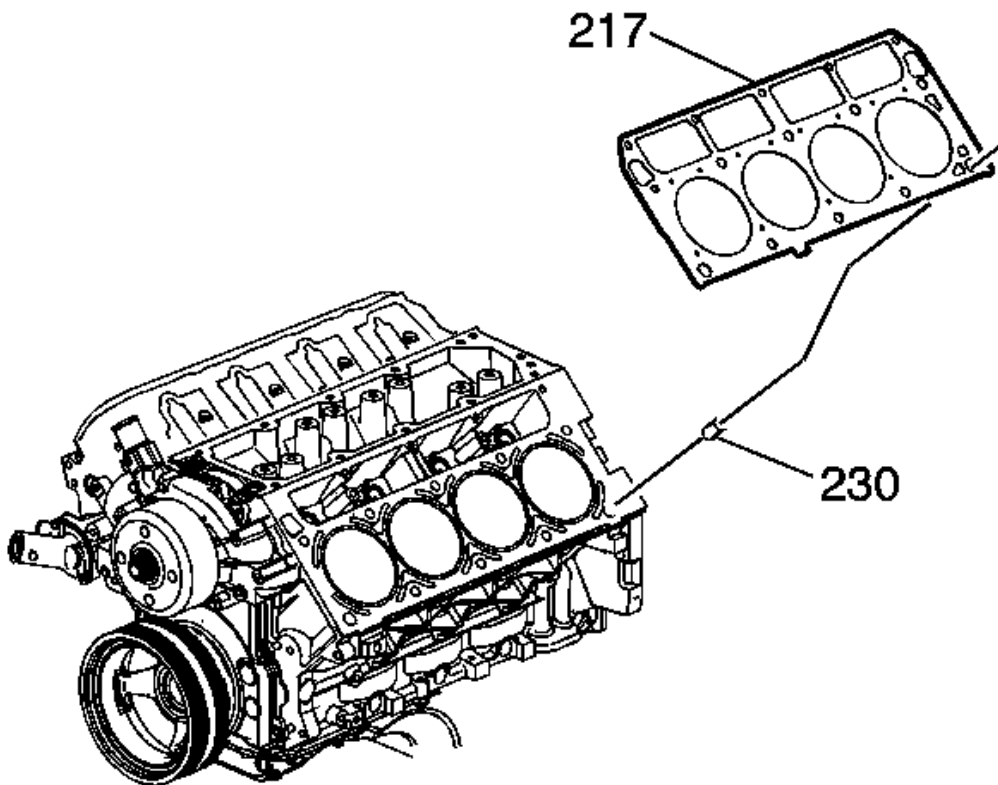


Fig. 280: View Of Cylinder Head Gasket & Locating Pins Courtesy of GENERAL MOTORS CORP.

IMPORTANT: When properly installed, with FRONT on the left side, the tab

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

on the cylinder head gasket should be located left of center.

5. Install the NEW cylinder head gasket (217) onto the locating pins.

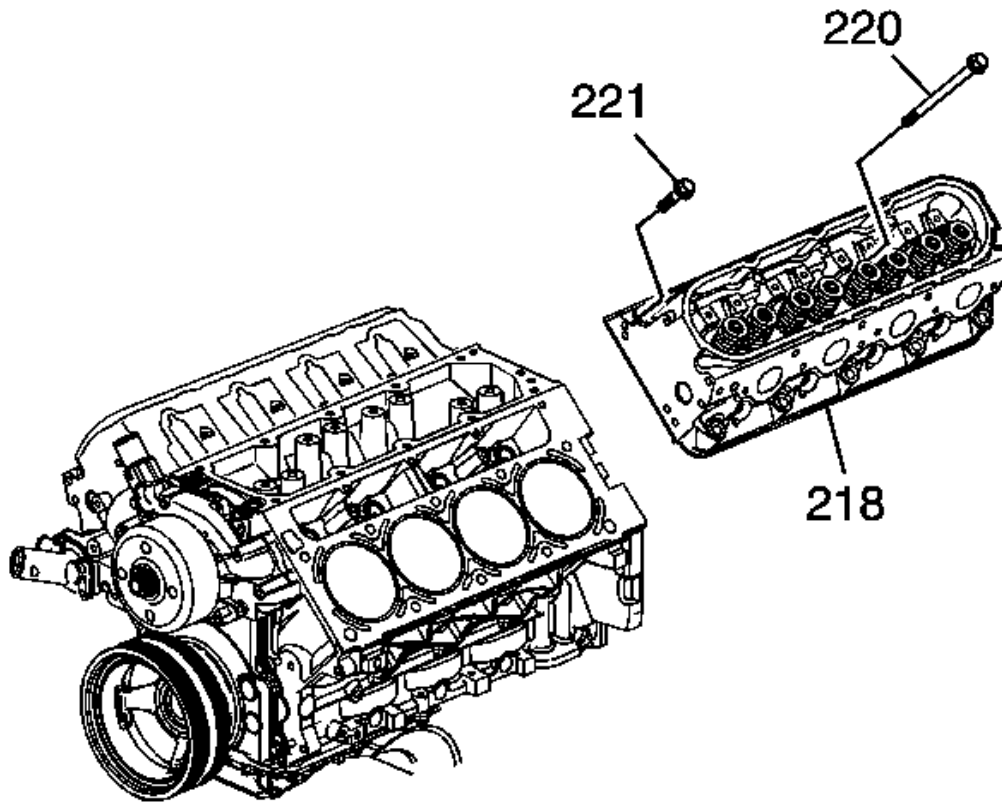


Fig. 281: View Of Cylinder Head & Bolts
Courtesy of GENERAL MOTORS CORP.

6. Install the cylinder head (218) onto the locating pins.
7. Install the NEW cylinder head bolts (220, 221).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

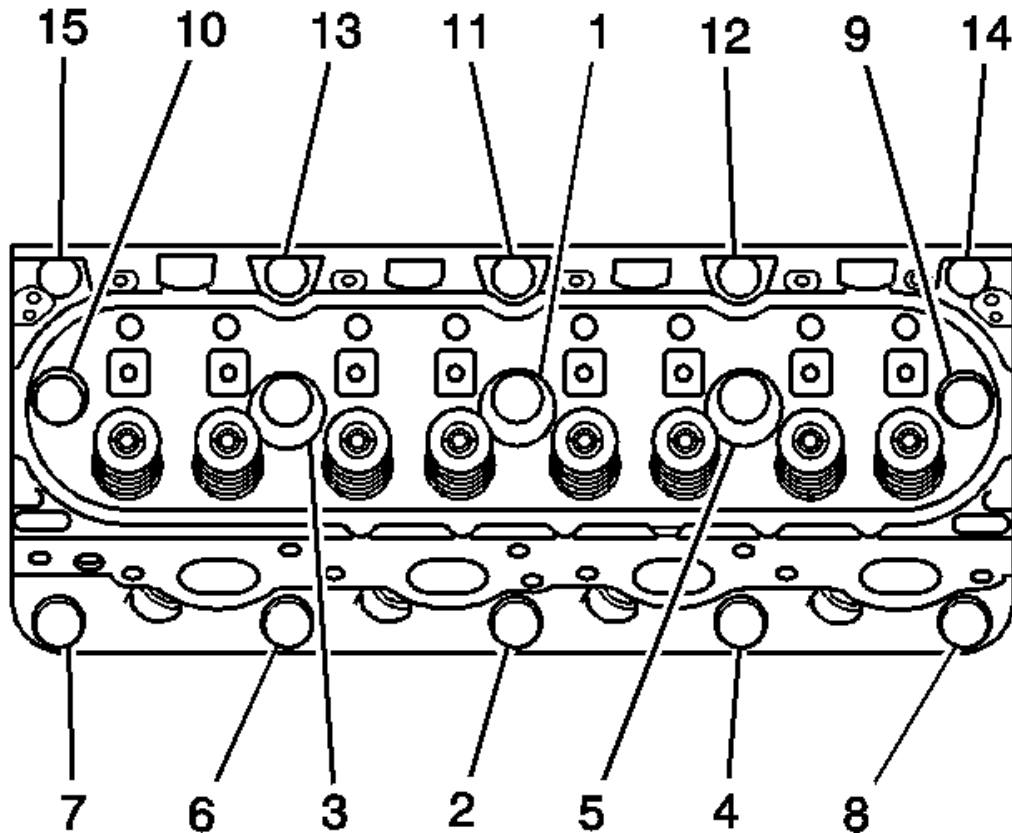


Fig. 282: Cylinder Head Bolts Tightening Sequence
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

8. Tighten the cylinder head bolts.

Tighten:

1. Tighten the M11 cylinder head bolts (1-10) a first pass in sequence to 30 N.m (22 lb ft).
2. Tighten the M11 cylinder head bolts (1-10) a second pass in sequence to 90 degrees using **J 45059** .
3. Tighten the M11 cylinder head bolts (1-10) a final pass to 70 degrees using **J 45059** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

4. Tighten the M8 cylinder head bolts (11-15) to 30 N.m (22 lb ft). Begin with the center bolt (11) and alternating side-to-side, work outward tightening all of the bolts.

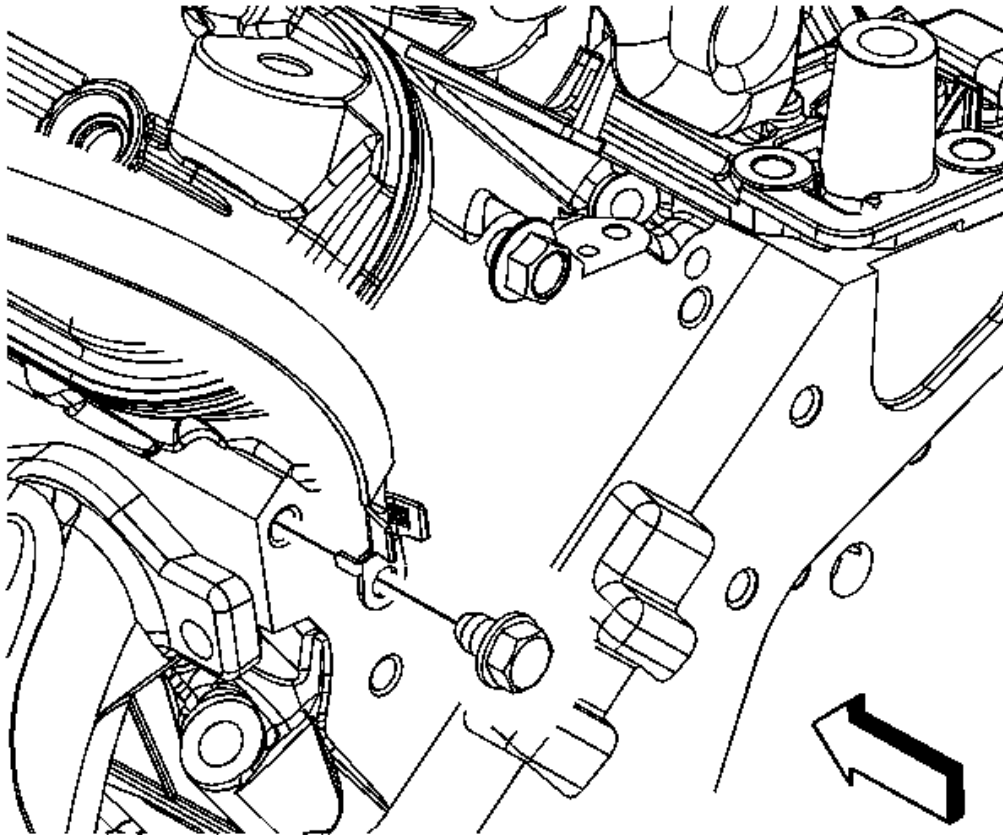


Fig. 283: View Of Engine Ground Strap & Bolt
Courtesy of GENERAL MOTORS CORP.

9. Position the ground strap to the rear of the left cylinder head.
10. Install the engine ground strap bolt to the rear of the left cylinder head.

Tighten: Tighten the bolt to 16 N.m (12 lb ft).

11. Install the pushrods. Refer to Valve Rocker Arm and Push Rod Replacement.
12. Install the left exhaust manifold. Refer to Exhaust Manifold Replacement - Left Side (4.8L, 5.3L, 6.0L, and 6.2L).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

13. Install the coolant air bleed pipe. Refer to **Coolant Air Bleed Pipe Assembly Replacement (LH6, LY5, LMG, L76, L92)** or **Coolant Air Bleed Pipe Assembly Replacement (LY2, LY6)** .
14. Install the intake manifold. Refer to **Intake Manifold Replacement (L92 - First Design)** or **Intake Manifold Replacement (L92 - Second Design)** or **Intake Manifold Replacement (LY2 and LY6)** or **Intake Manifold Replacement (LH6, LMG, LY5 and L76)** .
15. Install the generator bracket. Refer to **Generator Replacement (4.8L, 5.3L, 6.0L, and 6.2L)** .

CYLINDER HEAD REPLACEMENT - RIGHT SIDE

Tools Required

- **J 45059** Angle Meter
- **J 42385-200** Common Thread Repair Kit. See **Special Tools** .

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

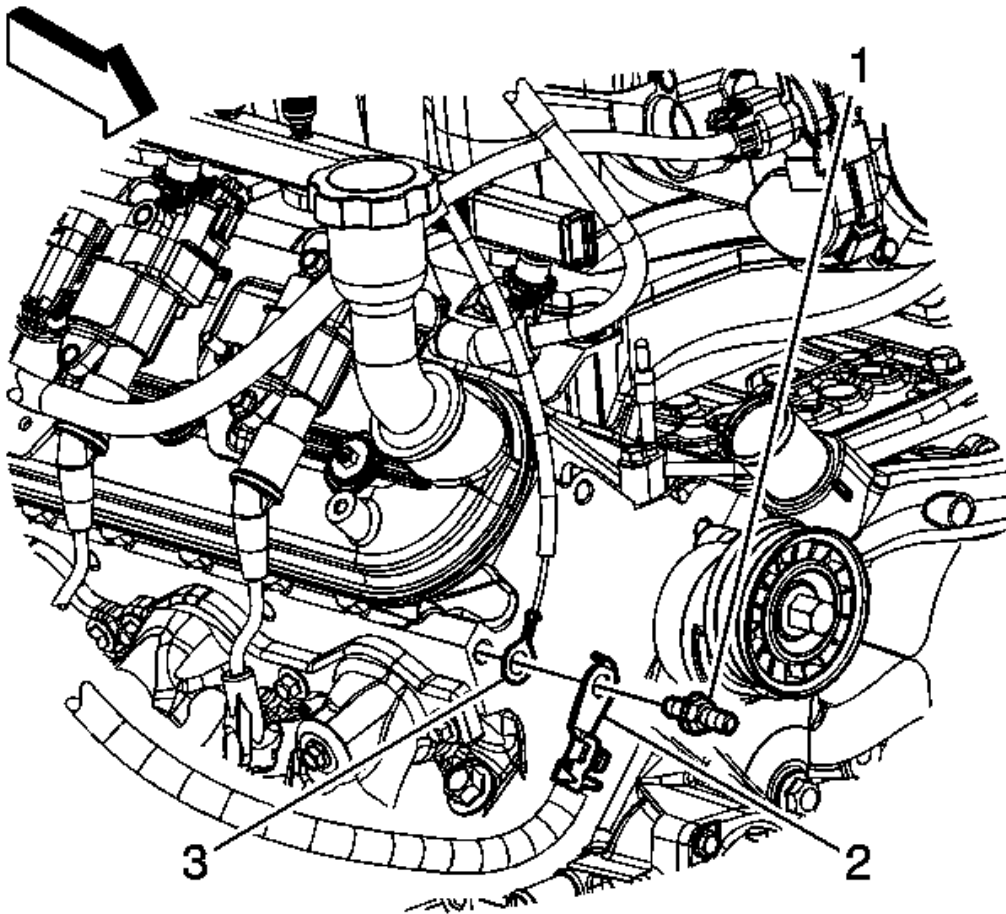


Fig. 284: View Of Battery Cable Terminals & Stud
Courtesy of GENERAL MOTORS CORP.

1. Remove the oil level indicator. Refer to **Oil Level Indicator and Tube Replacement**.
2. Remove the intake manifold. Refer to **Intake Manifold Replacement (L92 - First Design)** or **Intake Manifold Replacement (L92 - Second Design)** or **Intake Manifold Replacement (LY2 and LY6)** or **Intake Manifold Replacement (LH6, LMG, LY5 and L76)**.
3. Remove the coolant air bleed pipe. Refer to **Coolant Air Bleed Pipe Assembly Replacement (LH6, LY5, LMG, L76, L92)** or **Coolant Air Bleed Pipe Assembly Replacement (LY2, LY6)** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

4. Remove the right exhaust manifold. Refer to **Exhaust Manifold Replacement - Right Side (4.8L, 5.3L, 6.0L, and 6.2L)** .
5. Remove the pushrods. Refer to **Valve Rocker Arm and Push Rod Replacement**.
6. Remove the negative battery cable stud (1) from the front of the right cylinder head.
7. Remove the negative battery cable terminal (2) and the engine harness terminal (3) from the cylinder head.

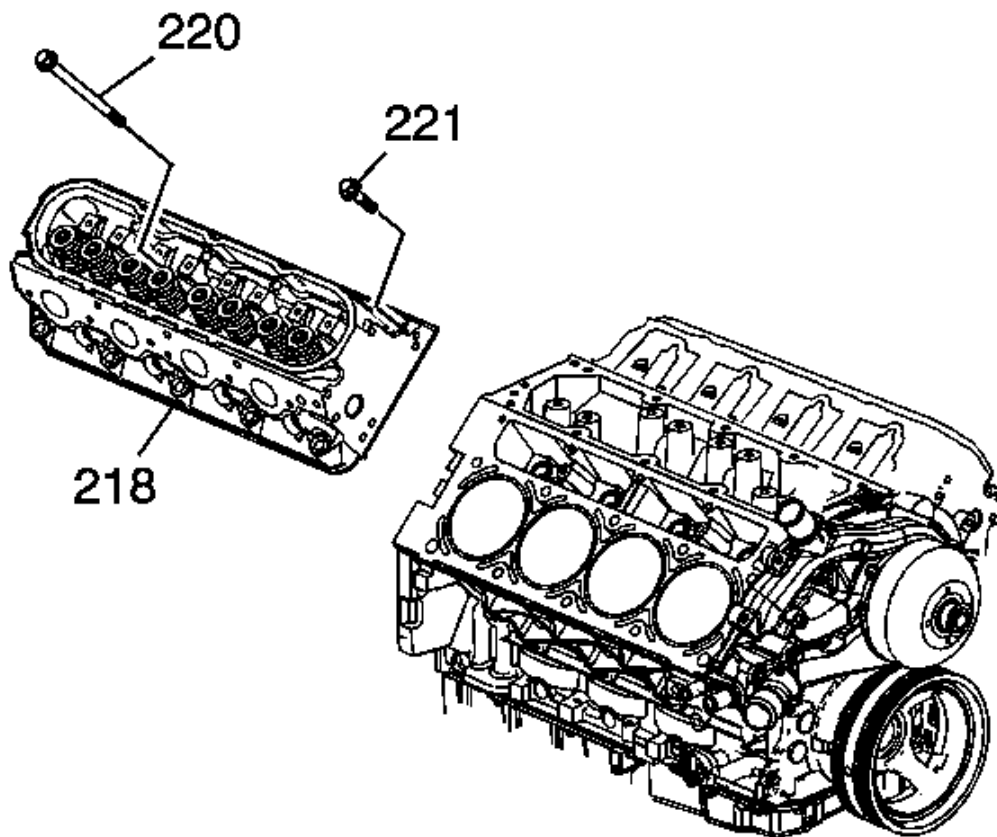


Fig. 285: View Of Cylinder Head & Bolts
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The cylinder head bolts are of a torque-to-yield design and are NOT to be reused.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

8. Remove and discard the cylinder head bolts (220, 221).

NOTE: After removal, place the cylinder head on 2 wood blocks in order to prevent damage to the sealing surfaces.

9. Remove the cylinder head (218).

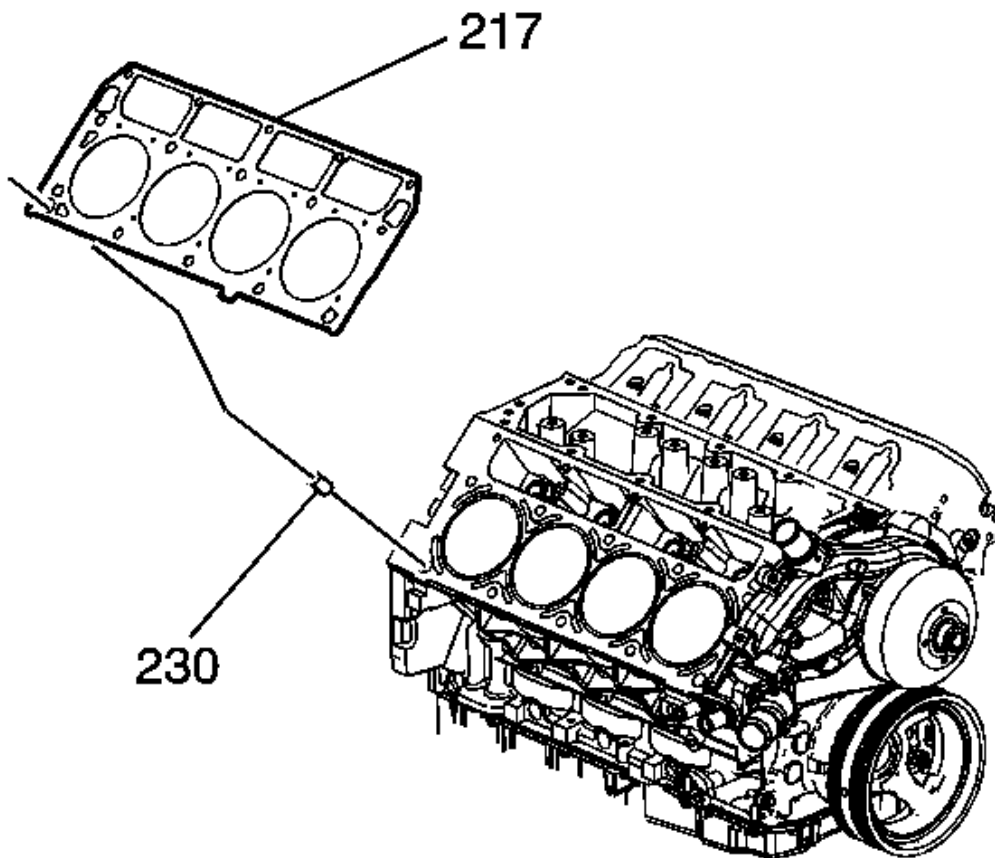


Fig. 286: View Of Cylinder Head Gasket & Locating Pins
Courtesy of GENERAL MOTORS CORP.

10. Remove and discard the cylinder head gasket (217).

11. If required, clean and inspect the cylinder head. Refer to **Cylinder Head Cleaning and Inspection** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Installation Procedure

CAUTION: Wear safety glasses in order to avoid eye damage.

NOTE: Clean all dirt, debris, and coolant from the engine block cylinder head bolt holes. Failure to remove all foreign material may result in damaged threads, improperly tightened fasteners or damage to components.

IMPORTANT:

- Do not reuse the cylinder head bolts. Install **NEW** cylinder head bolts during assembly.
- Do not use any type of sealant on the cylinder head gasket (unless specified).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

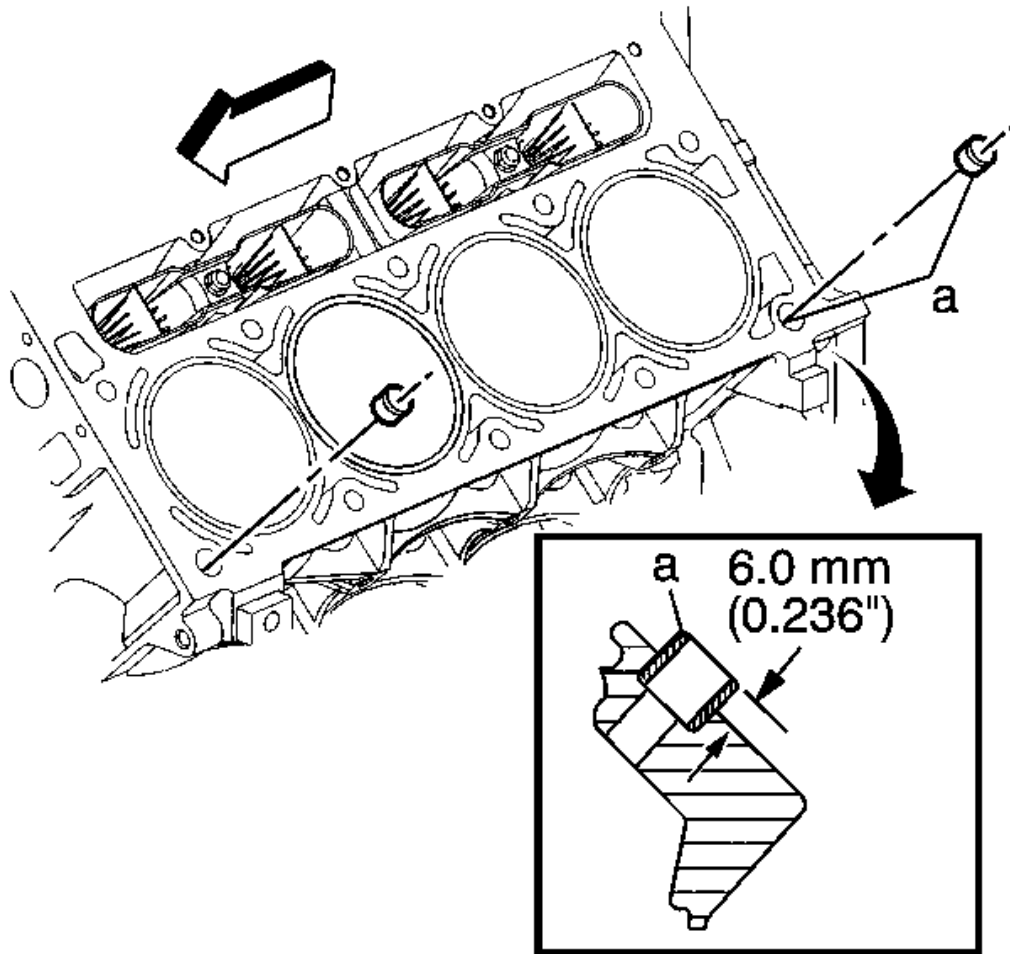


Fig. 287: Identifying Cylinder Head Locating Pins Installation Position
Courtesy of GENERAL MOTORS CORP.

1. Clean the engine block cylinder head bolt holes, if required. Thread repair tool J 42385-107, found in **J 42385-200** may be used to clean the threads of old threadlocking material. See **Special Tools** .
2. Spray cleaner GM P/N 12346139, P/N 12377981 (Canadian P/N 10953463), or equivalent into the hole.
3. Clean the cylinder head bolt holes with compressed air.
4. Check the cylinder head locating pins for proper installation (a) 8.3 mm (0.327 in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

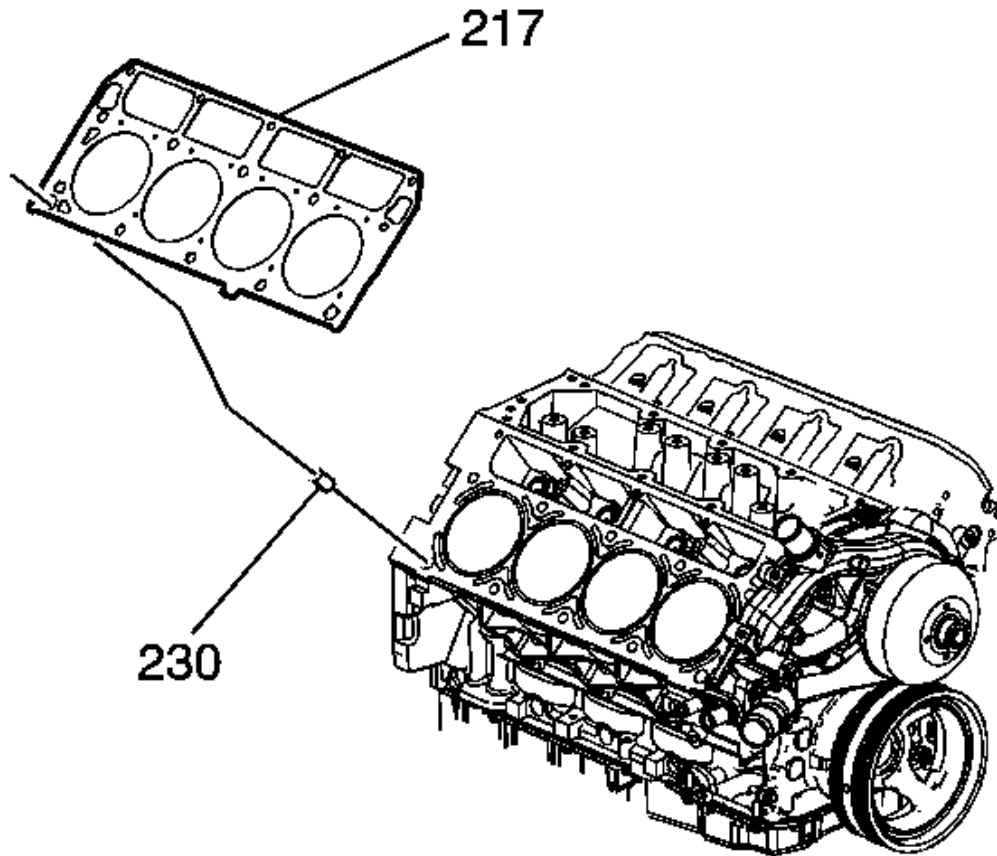


Fig. 288: View Of Cylinder Head Gasket & Locating Pins
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: When properly installed, with FRONT on the right side, the tab on the cylinder head gasket should be located right of center.

5. Install the NEW cylinder head gasket (217) onto the locating pins.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

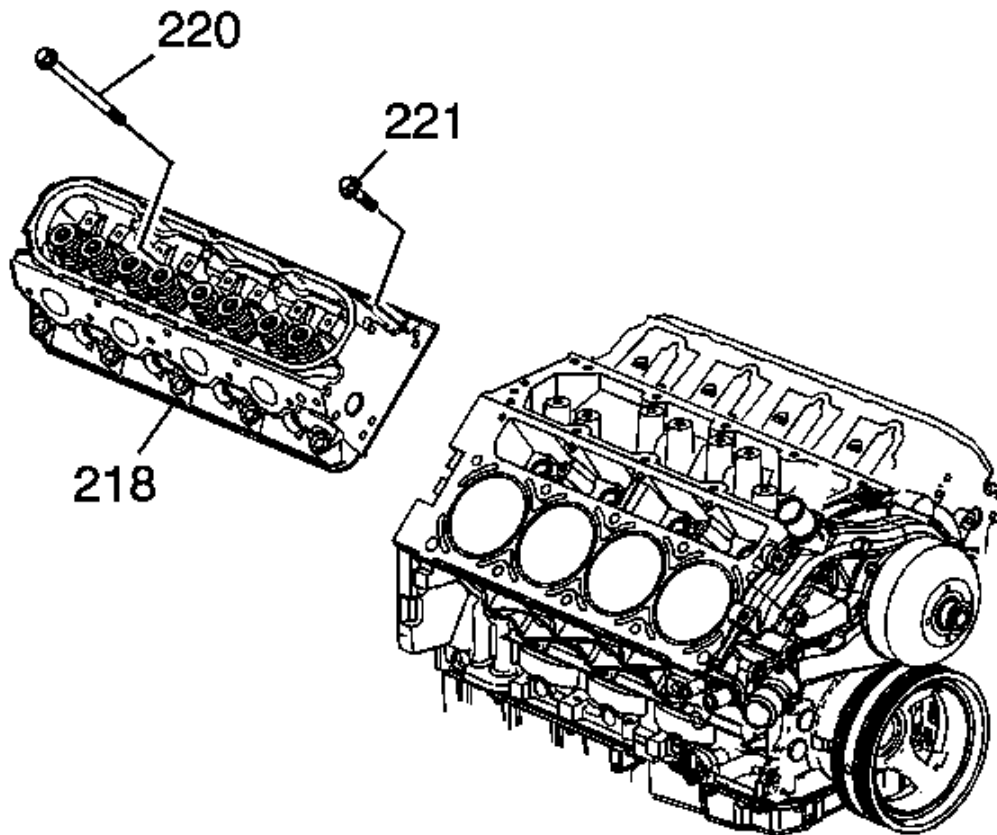


Fig. 289: View Of Cylinder Head & Bolts
Courtesy of GENERAL MOTORS CORP.

6. Install the cylinder head (218) onto the locating pins.
7. Install the NEW cylinder head bolts (220, 221).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

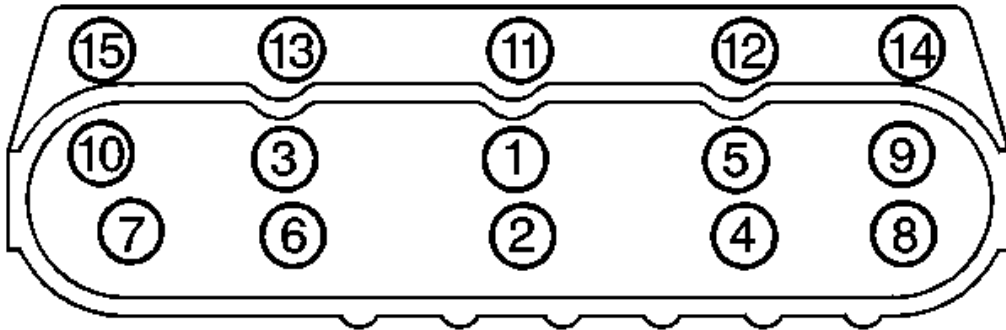


Fig. 290: Cylinder Head Bolt Tightening Sequence
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

8. Tighten the cylinder head bolts.

Tighten:

1. Tighten the M11 cylinder head bolts (1-10) a first pass in sequence to 30 N.m (22 lb ft).
2. Tighten the M11 cylinder head bolts (1-10) a second pass in sequence to 90 degrees using **J 45059** .
3. Tighten the M11 cylinder head bolts (1-10) a final pass to 70 degrees in sequence using **J 45059** .
4. Tighten the M8 cylinder head bolts (11-15) to 30 N.m (22 lb ft). Begin with the center bolt (11) and alternating side-to-side, work outward tightening all of the bolts.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

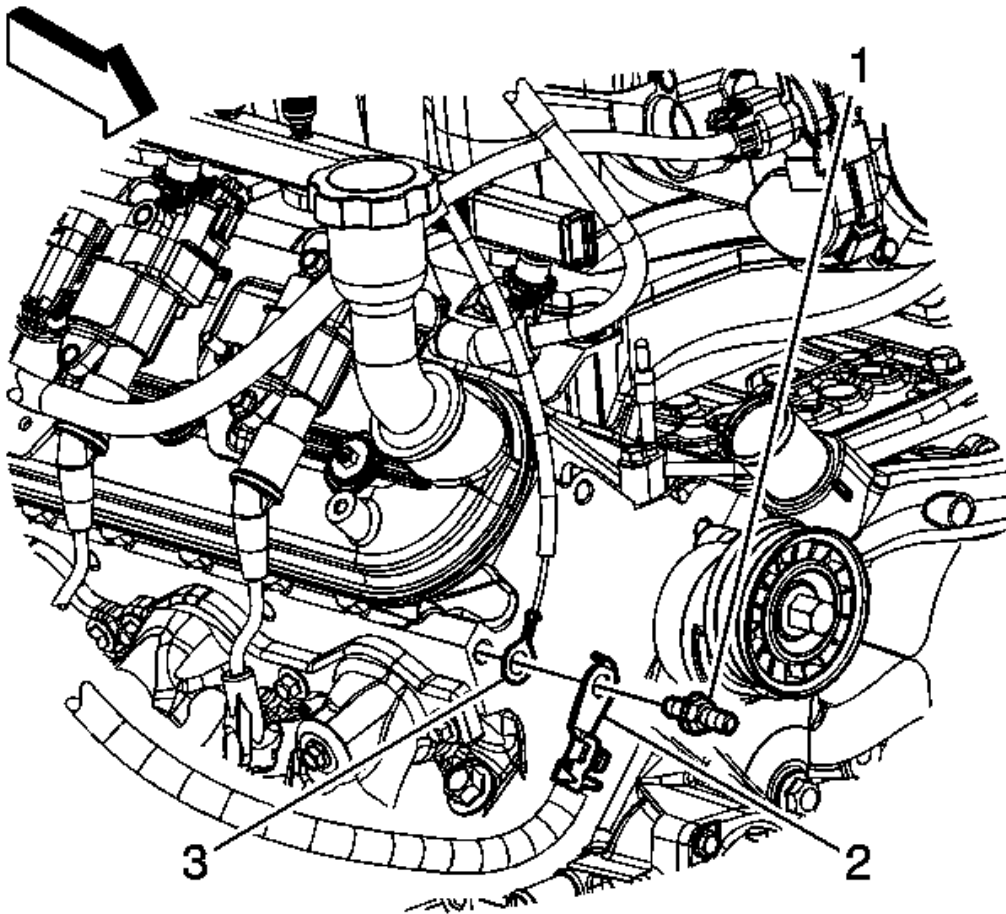


Fig. 291: View Of Battery Cable Terminals & Stud
Courtesy of GENERAL MOTORS CORP.

9. Ensure that the engine harness terminal (3) is positioned behind the negative battery cable terminal (2).
10. Position the negative battery cable terminal (2) to the cylinder head.
11. Install the negative battery cable stud (1) to the front of the right cylinder head.

Tighten: Tighten the stud to 25 N.m (18 lb ft).

12. Install the pushrods. Refer to **Valve Rocker Arm and Push Rod Replacement**.
13. Install the right exhaust manifold. Refer to **Exhaust Manifold Replacement - Right Side**

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

(4.8L, 5.3L, 6.0L, and 6.2L)

14. Install the coolant air bleed pipe. Refer to **Coolant Air Bleed Pipe Assembly Replacement (LH6, LY5, LMG, L76, L92)** or **Coolant Air Bleed Pipe Assembly Replacement (LY2, LY6)** .
15. Install the intake manifold. Refer to **Intake Manifold Replacement (L92 - First Design)** or **Intake Manifold Replacement (L92 - Second Design)** or **Intake Manifold Replacement (LY2 and LY6)** or **Intake Manifold Replacement (LH6, LMG, LY5 and L76)**.
16. Install the oil level indicator. Refer to **Oil Level Indicator and Tube Replacement**.

VALVE LIFTER REPLACEMENT (L92 - FIRST DESIGN)

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

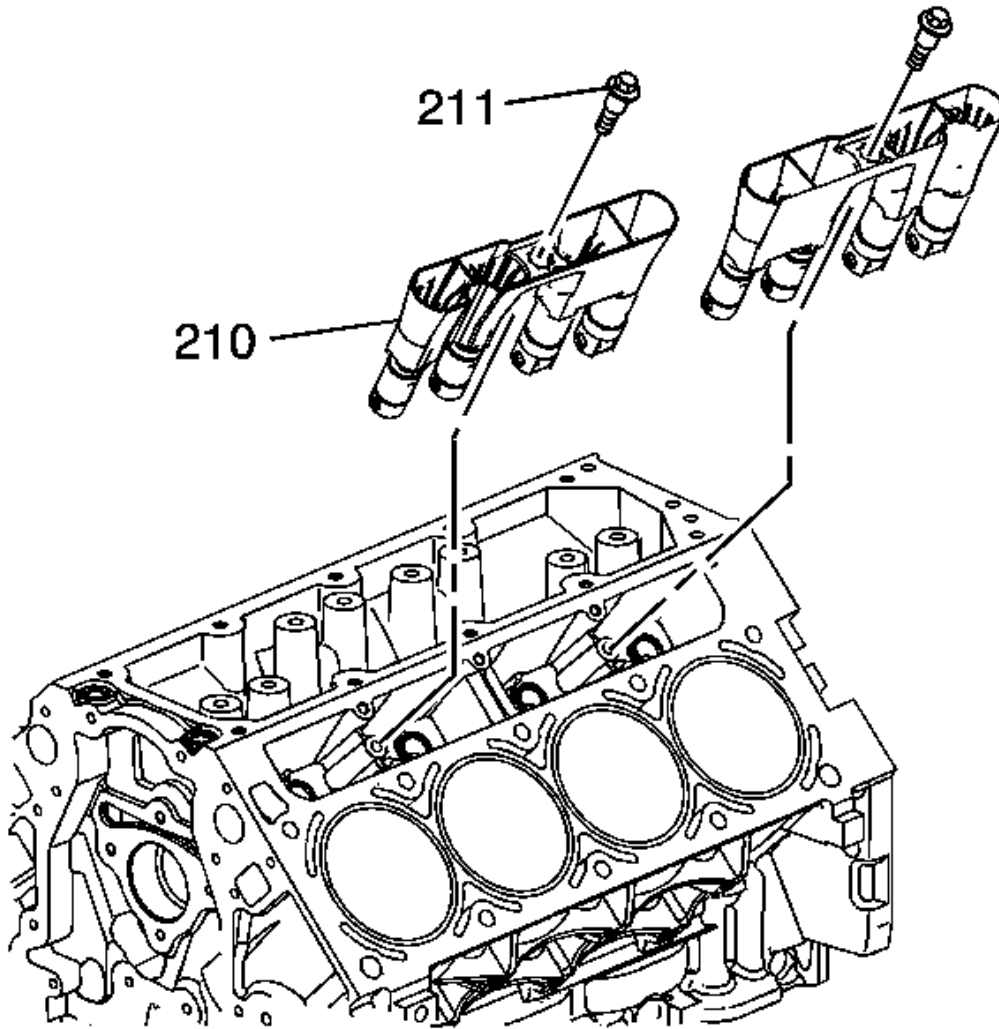


Fig. 292: View Of Lifter Guides & Lifters
Courtesy of GENERAL MOTORS CORP.

1. Remove the cylinder head and gasket. Refer to **Cylinder Head Replacement - Left Side** or **Cylinder Head Replacement - Right Side**.
2. Remove the valve lifter guide bolts (211).
3. Remove the valve lifter guides (210) with the lifters. Note the installed position of the guides. The notched area of the guides is to align with the locating tab on the engine block.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

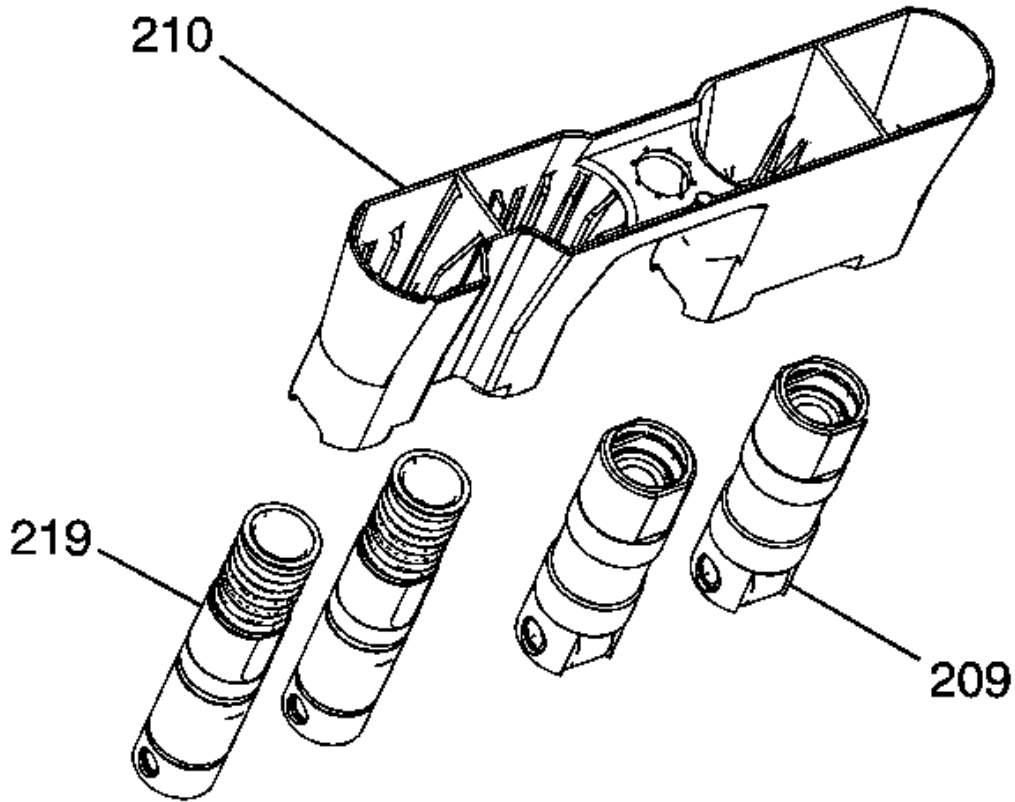


Fig. 293: Exploded View Of Lifter Guides & Lifters
Courtesy of GENERAL MOTORS CORP.

4. Remove the valve lifters (209, 219) from the guide (210).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

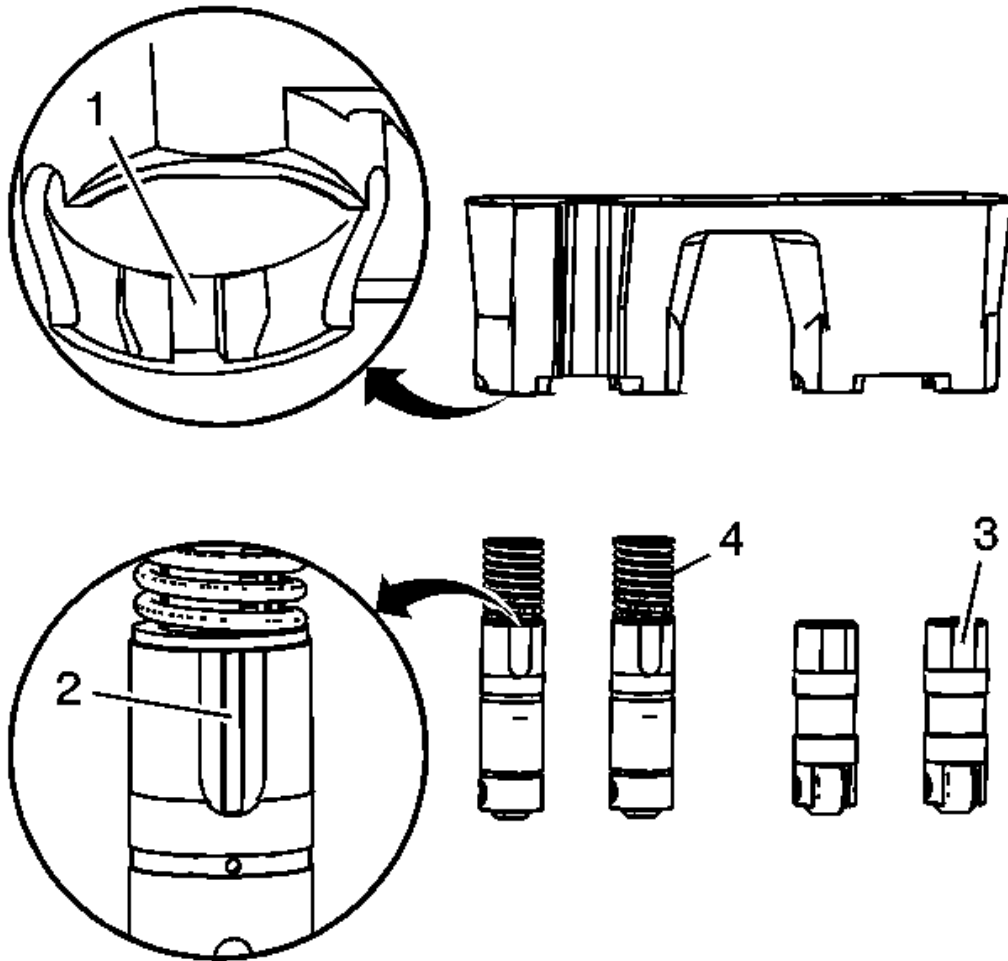


Fig. 294: Inserting Valve Lifters Into Lifter Guides
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The active fuel management lifters are installed into the guide by aligning the notched area of the guide (1) with the raised surface on the side of the lifter (2).

5. Organize or mark the components so that they can be installed in the same location from which they were removed, if required.
6. Clean and inspect the valve lifters, if required. Refer to Valve Lifters and Guides Cleaning and Inspection (RPO LY2/LY6/L92) or Valve Lifters and Guides Cleaning

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

and Inspection (RPO LH6/LMG/LY5/LC9/L76) .

Installation Procedure

- IMPORTANT:**
- When reusing valve lifters, install the lifters to their original locations.
 - Each of the 4 valve guide assemblies will contain 2 active fuel management valve lifters and 2 non active fuel management valve lifters.
 - With the lifters and guides properly installed, cylinders 1, 4, 6, and 7 lifter bores will each contain 2 active fuel management valve lifters.

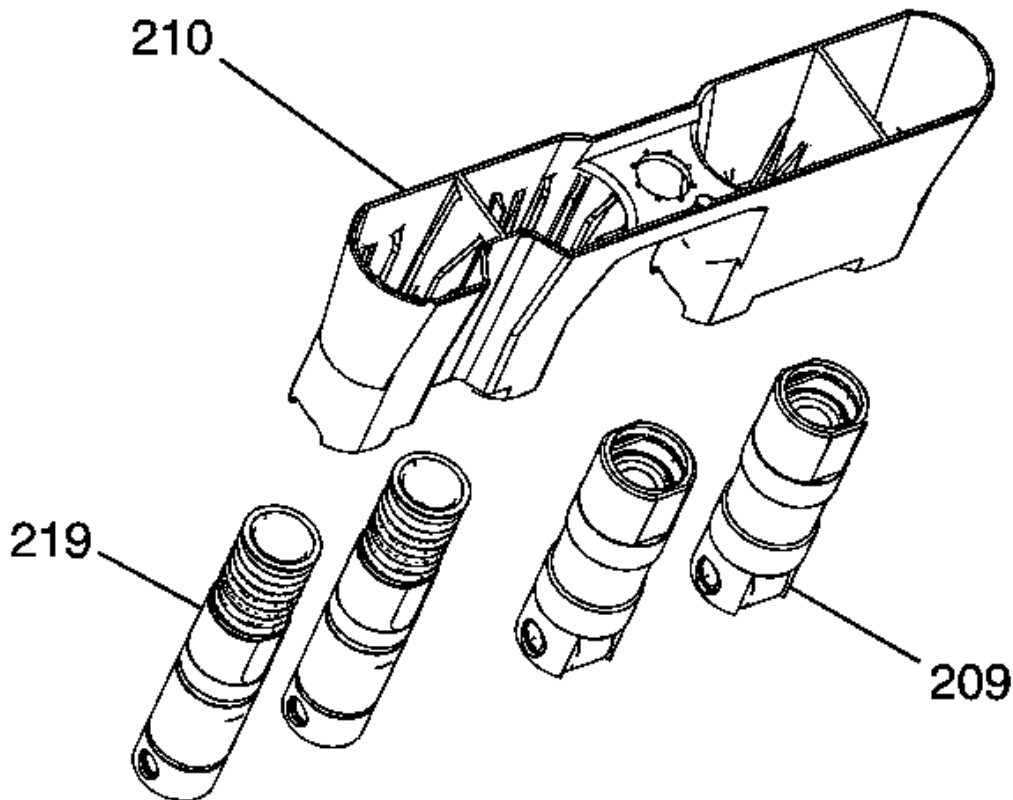


Fig. 295: Exploded View Of Lifter Guides & Lifters

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Courtesy of GENERAL MOTORS CORP.

1. Lubricate the valve lifters (209, 219) and engine block valve lifter bores with clean engine oil.

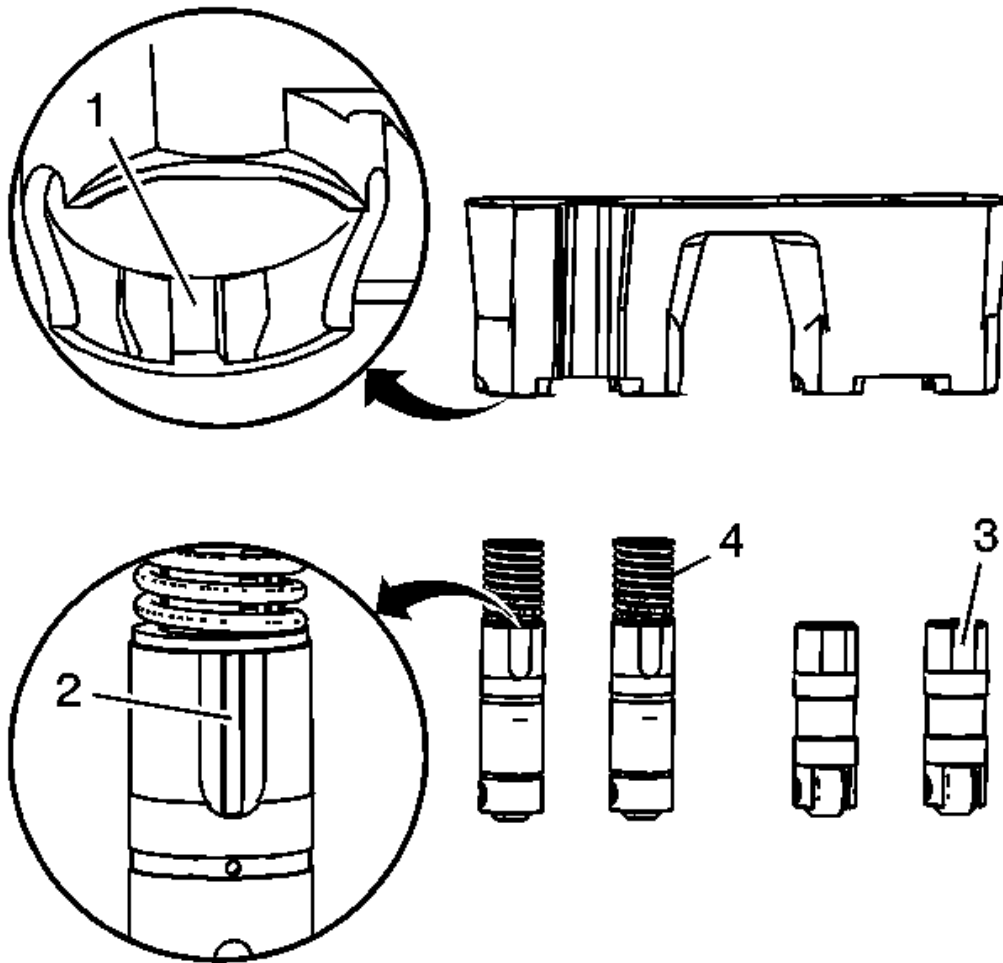


Fig. 296: Inserting Valve Lifters Into Lifter Guides
Courtesy of GENERAL MOTORS CORP.

2. Insert the valve lifters into the lifter guides.
 - Align the flat area (3) on the top of the non active fuel management lifter with the flat area in the lifter guide bore. Push the lifter completely into the guide bore.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- The active fuel management lifters are to be installed into the guide, with the notch in the guide (1) aligned with the raised area (2) of the lifter.

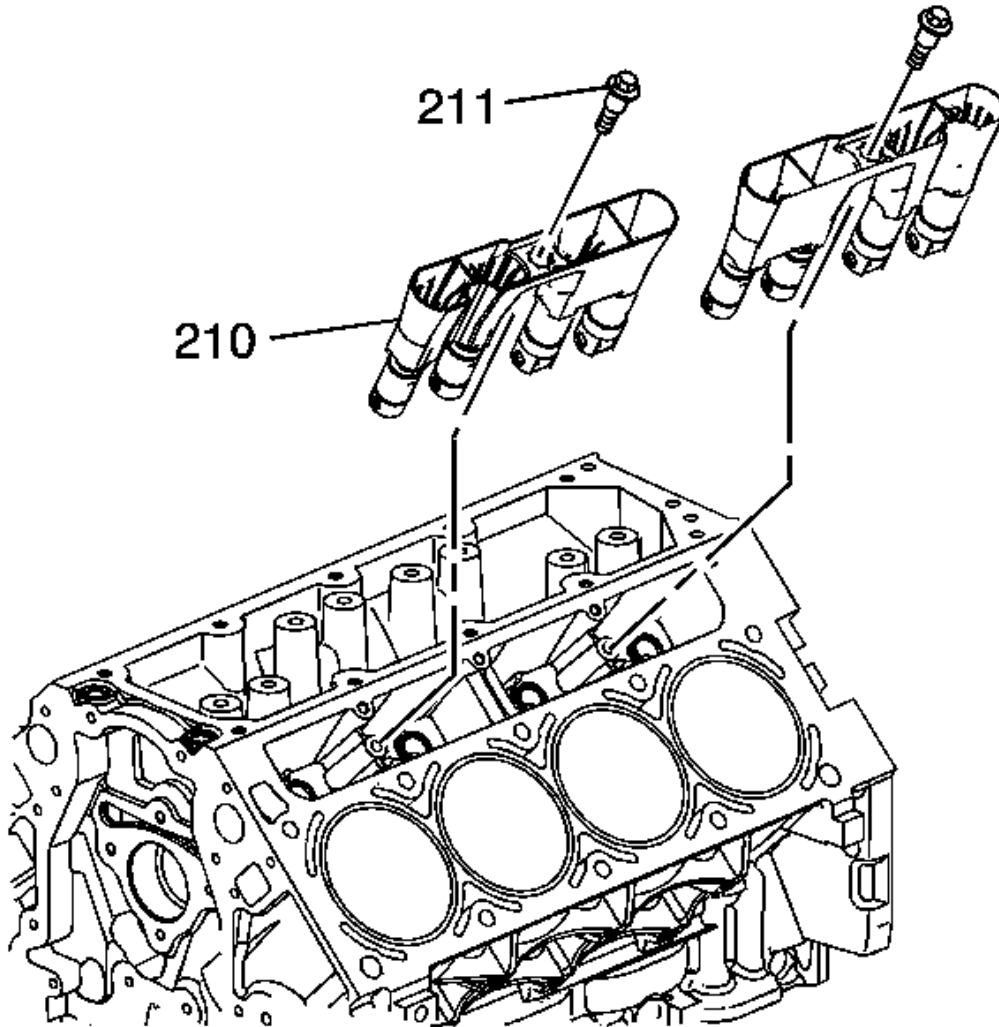


Fig. 297: View Of Lifter Guides & Lifters
Courtesy of GENERAL MOTORS CORP.

3. Install the valve lifters and guide (210) to the engine block.

NOTE: Refer to Fastener Notice .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

4. Install the valve lifter guide bolts (211).

Tighten: Tighten the bolt to 12 N.m (106 lb in).

5. Install the cylinder head and gasket. Refer to **Cylinder Head Replacement - Left Side** or **Cylinder Head Replacement - Right Side**.

VALVE LIFTER REPLACEMENT (L92 - SECOND DESIGN)

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

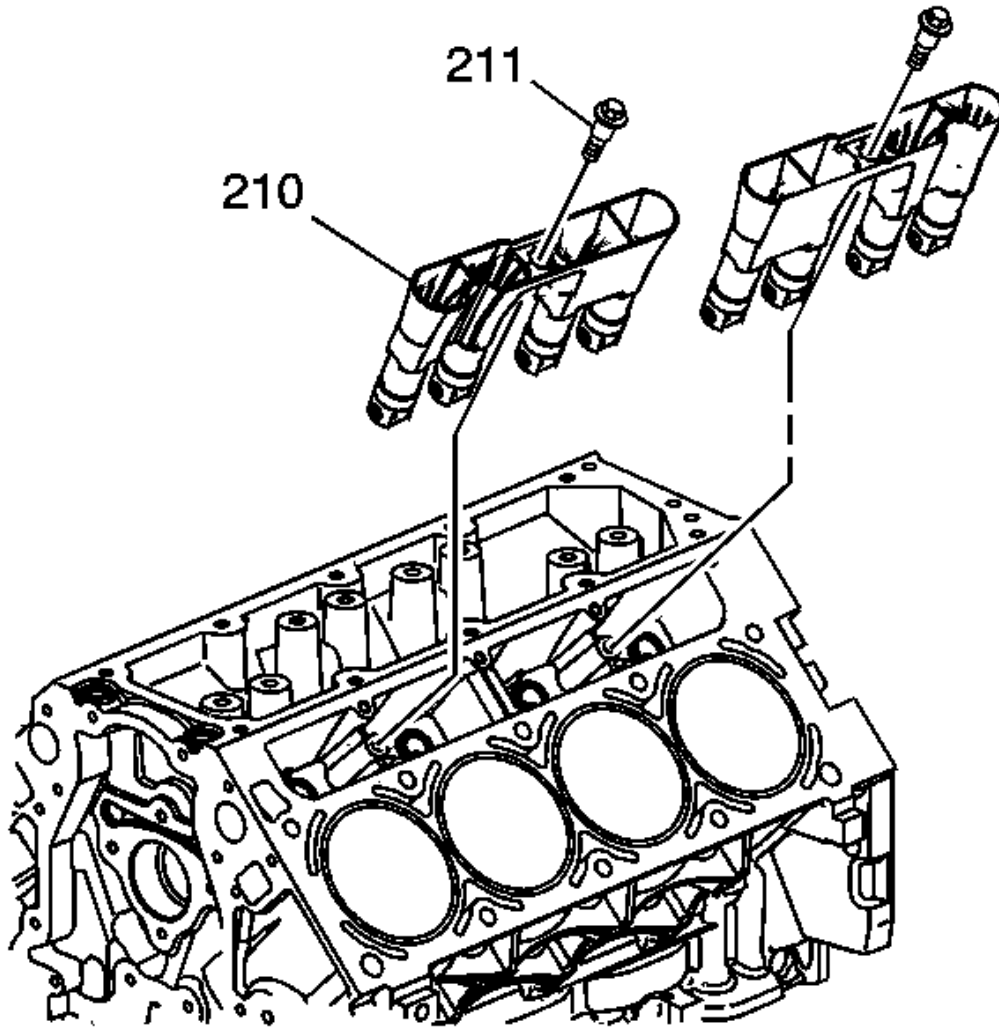


Fig. 298: Valve Lifter Guides, Cylinder Head & Bolts
Courtesy of GENERAL MOTORS CORP.

1. Remove the cylinder head and gasket. Refer to **Cylinder Head Replacement - Left Side** or **Cylinder Head Replacement - Right Side**.
2. Remove the valve lifter guide bolts (211).
3. Remove the valve lifter guides (210) with the lifters. Note the installed position of the guides. The notched area of the guides is to align with the locating tab on the engine block.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

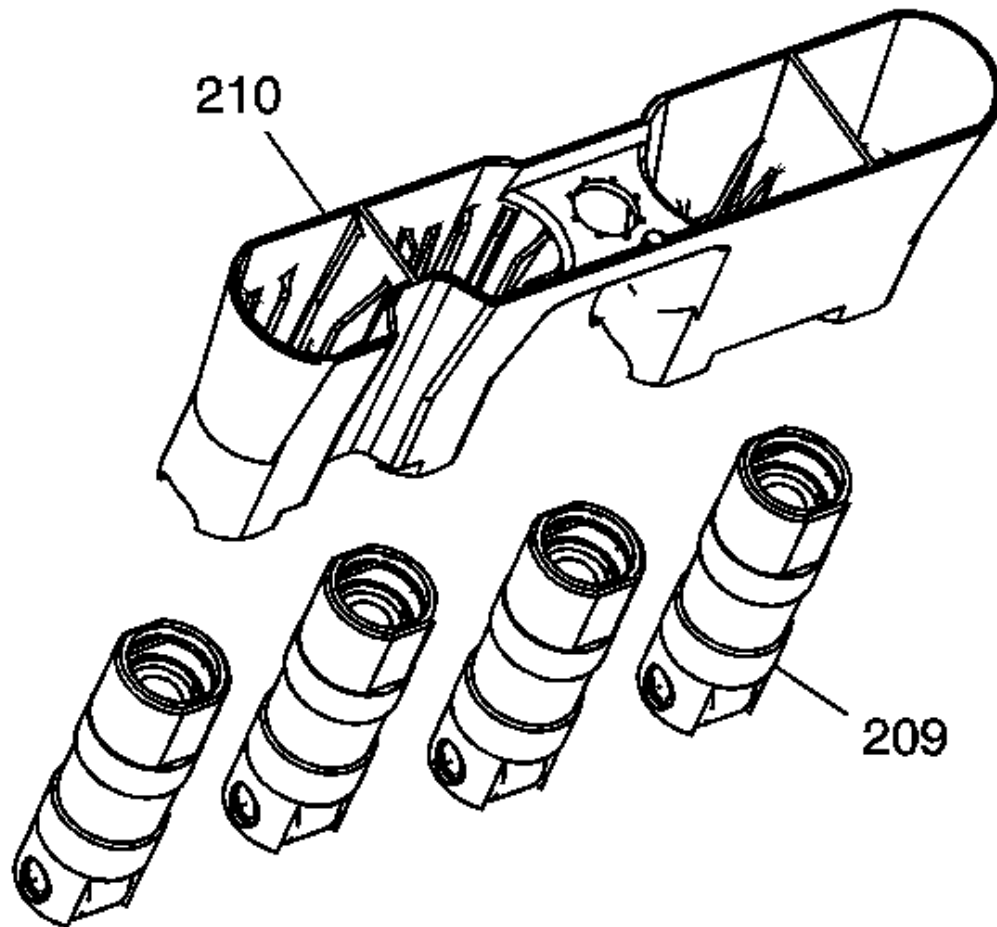


Fig. 299: Valve Lifter Guides & Bolts
Courtesy of GENERAL MOTORS CORP.

4. Remove the valve lifters (209) from the guide (210).
5. Organize or mark the components so that they can be installed in the same location from which they were removed, if required.
6. Clean and inspect the valve lifters, if required. Refer to **Valve Lifters and Guides Cleaning and Inspection (RPO LY2/LY6/L92)** or **Valve Lifters and Guides Cleaning and Inspection (RPO LH6/LMG/LY5/LC9/L76)** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

IMPORTANT: When reusing valve lifters, install the lifters to their original locations.

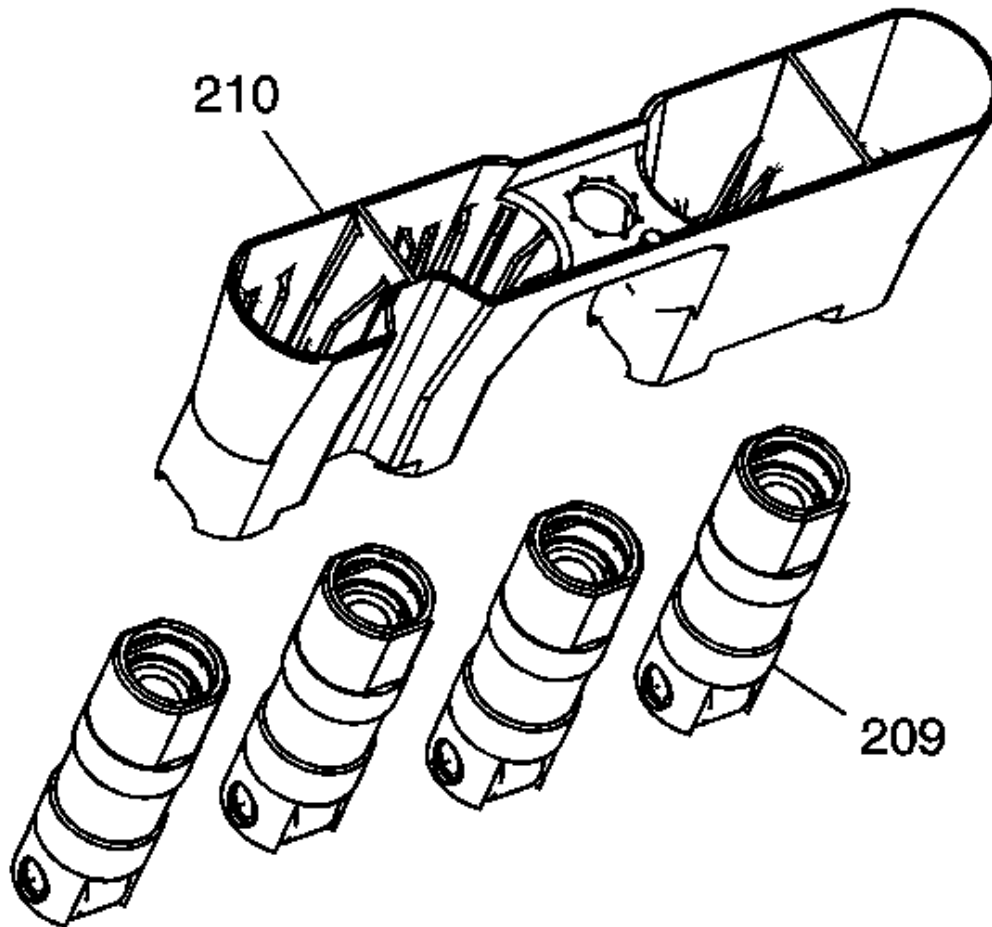


Fig. 300: Valve Lifter Guides & Bolts
Courtesy of GENERAL MOTORS CORP.

1. Lubricate the valve lifters (209) and engine block valve lifter bores with clean engine oil.
2. Insert the valve lifters into the lifter guides (210). Align the flat area on the top of the lifter with the flat area in the lifter guide bore. Push the lifter completely into the guide bore.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

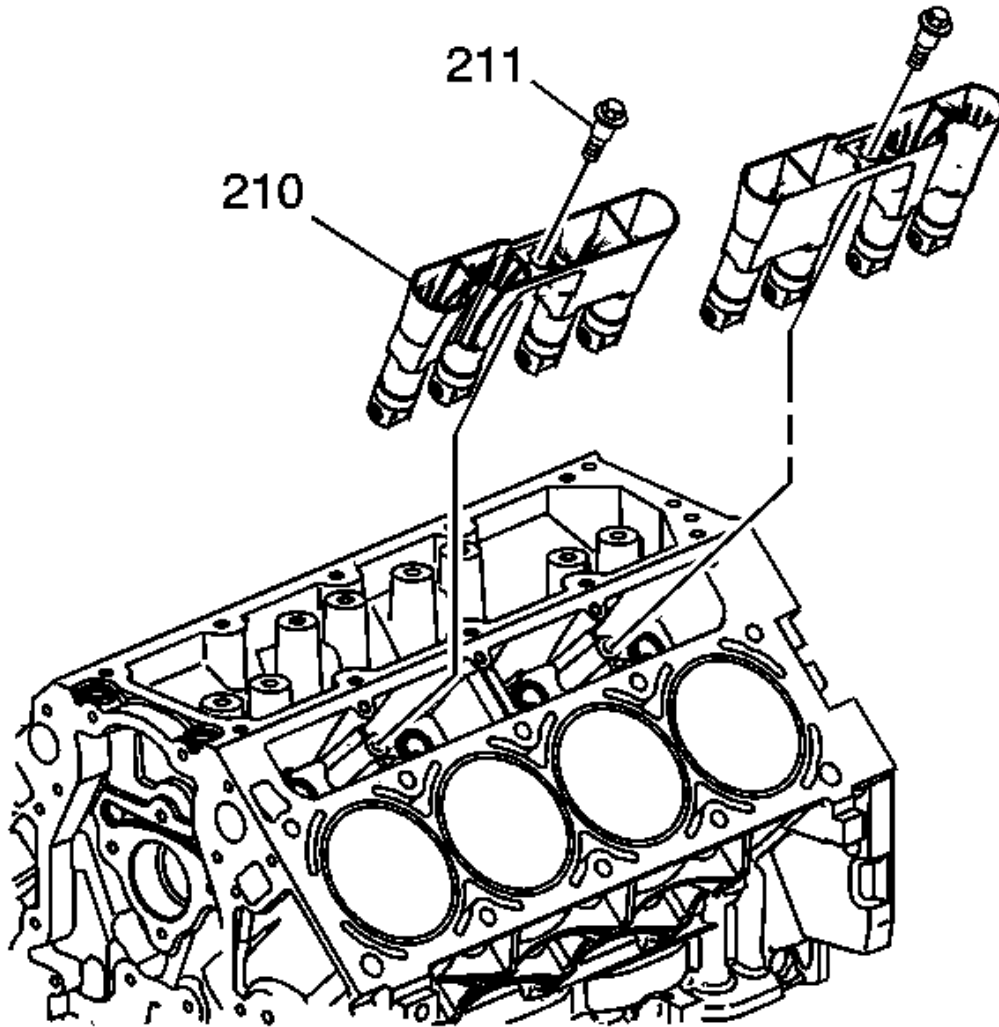


Fig. 301: Valve Lifter Guides, Cylinder Head & Bolts
Courtesy of GENERAL MOTORS CORP.

3. Install the valve lifters and guide (210) to the engine block.

NOTE: Refer to Fastener Notice .

4. Install the valve lifter guide bolts.

Tighten: Tighten the bolt to 12 N.m (106 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

5. Install the cylinder head and gasket. Refer to [Cylinder Head Replacement - Left Side](#) or [Cylinder Head Replacement - Right Side](#).

VALVE LIFTER REPLACEMENT (LY2 AND LY6)

Removal Procedure

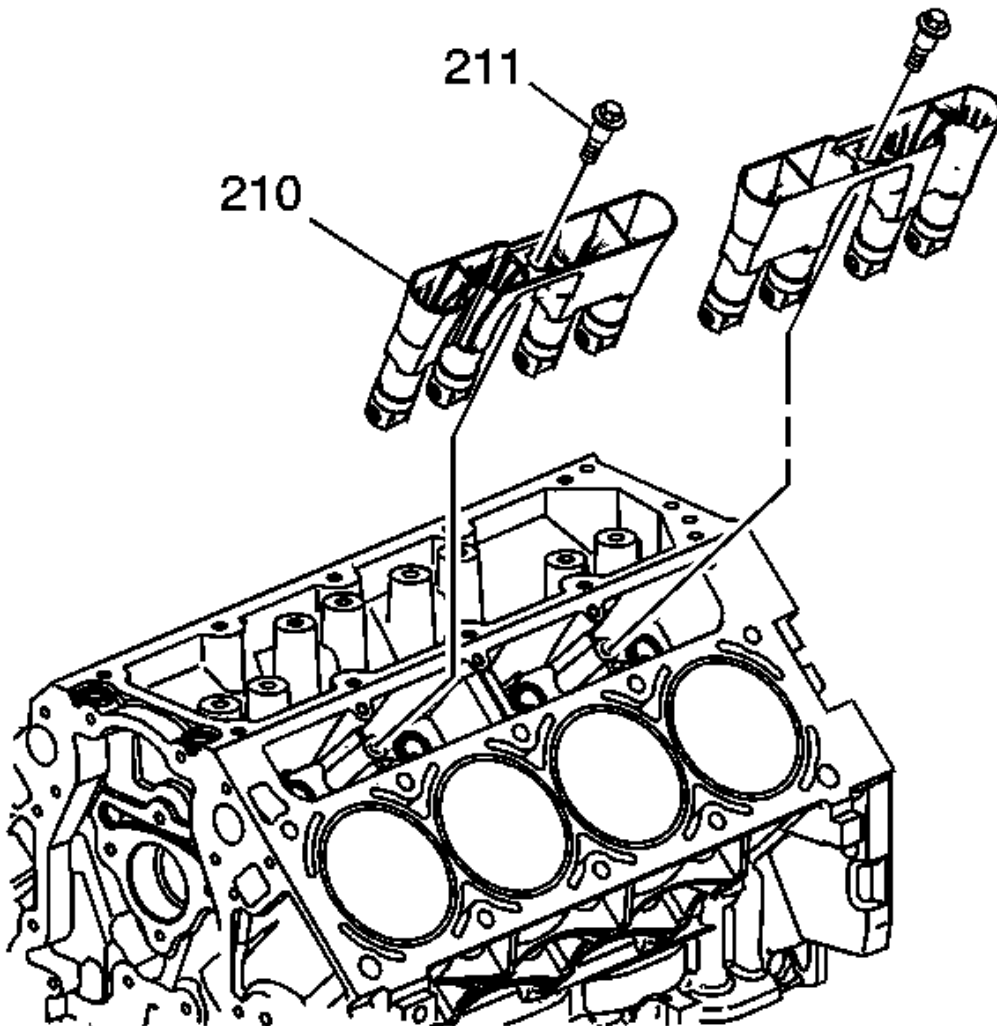


Fig. 302: Valve Lifter Guides, Cylinder Head & Bolts
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Remove the cylinder head and gasket. Refer to **Cylinder Head Replacement - Left Side** or **Cylinder Head Replacement - Right Side**.
2. Remove the valve lifter guide bolts (211).
3. Remove the valve lifter guides (210) with the lifters. Note the installed position of the guides. The notched area of the guides is to align with the locating tab on the engine block.

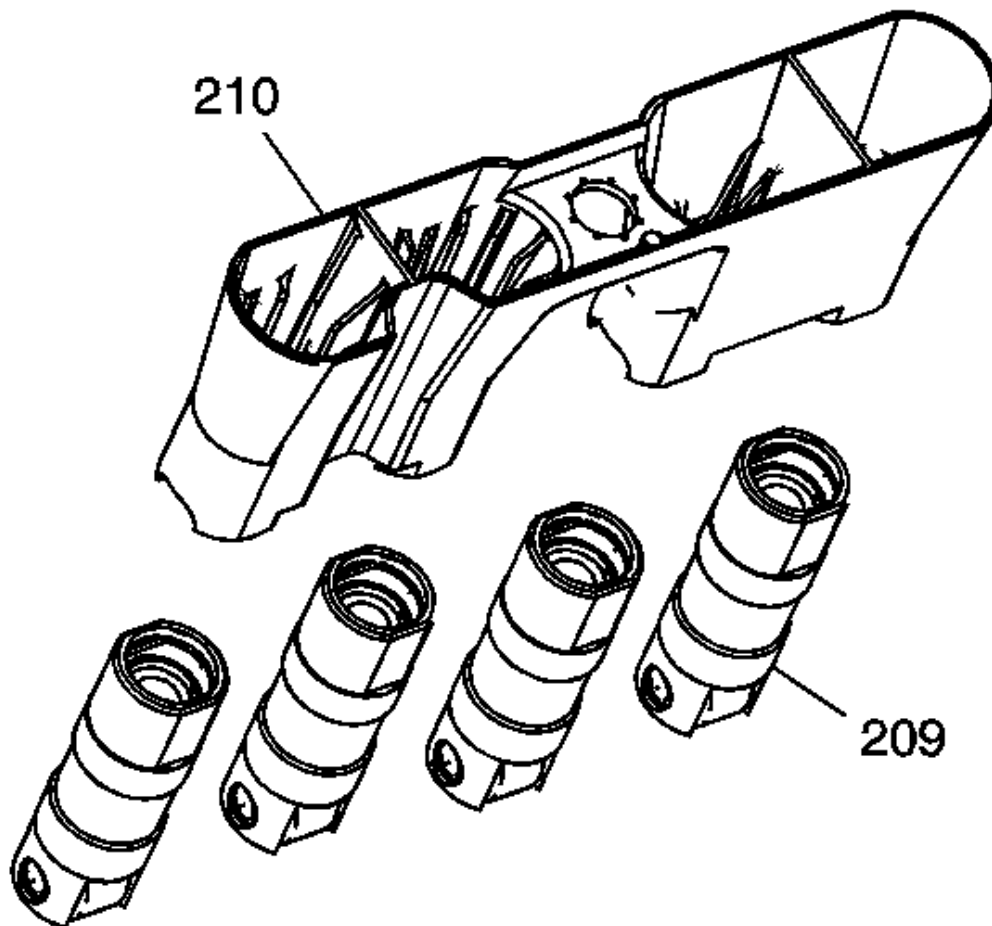


Fig. 303: Valve Lifter Guides & Bolts
Courtesy of GENERAL MOTORS CORP.

4. Remove the valve lifters (209) from the guide (210).
5. Organize or mark the components so that they can be installed in the same location from

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

which they were removed, if required.

6. Clean and inspect the valve lifters, if required. Refer to Valve Lifters and Guides Cleaning and Inspection (RPO LY2/LY6/L92) or Valve Lifters and Guides Cleaning and Inspection (RPO LH6/LMG/LY5/LC9/L76) .

Installation Procedure

IMPORTANT: When reusing valve lifters, install the lifters to their original locations.

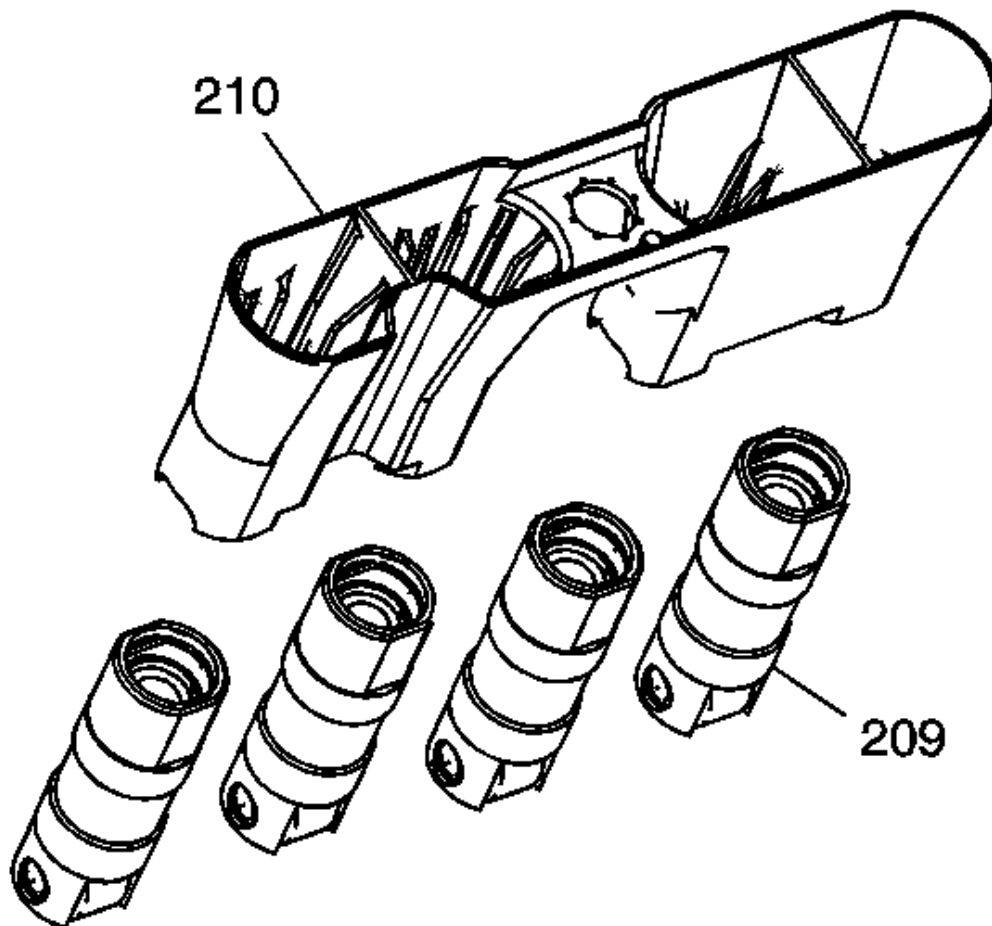


Fig. 304: Valve Lifter Guides & Bolts

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Courtesy of GENERAL MOTORS CORP.

1. Lubricate the valve lifters (209) and engine block valve lifter bores with clean engine oil.
2. Insert the valve lifters into the lifter guides (210). Align the flat area on the top of the lifter with the flat area in the lifter guide bore. Push the lifter completely into the guide bore.

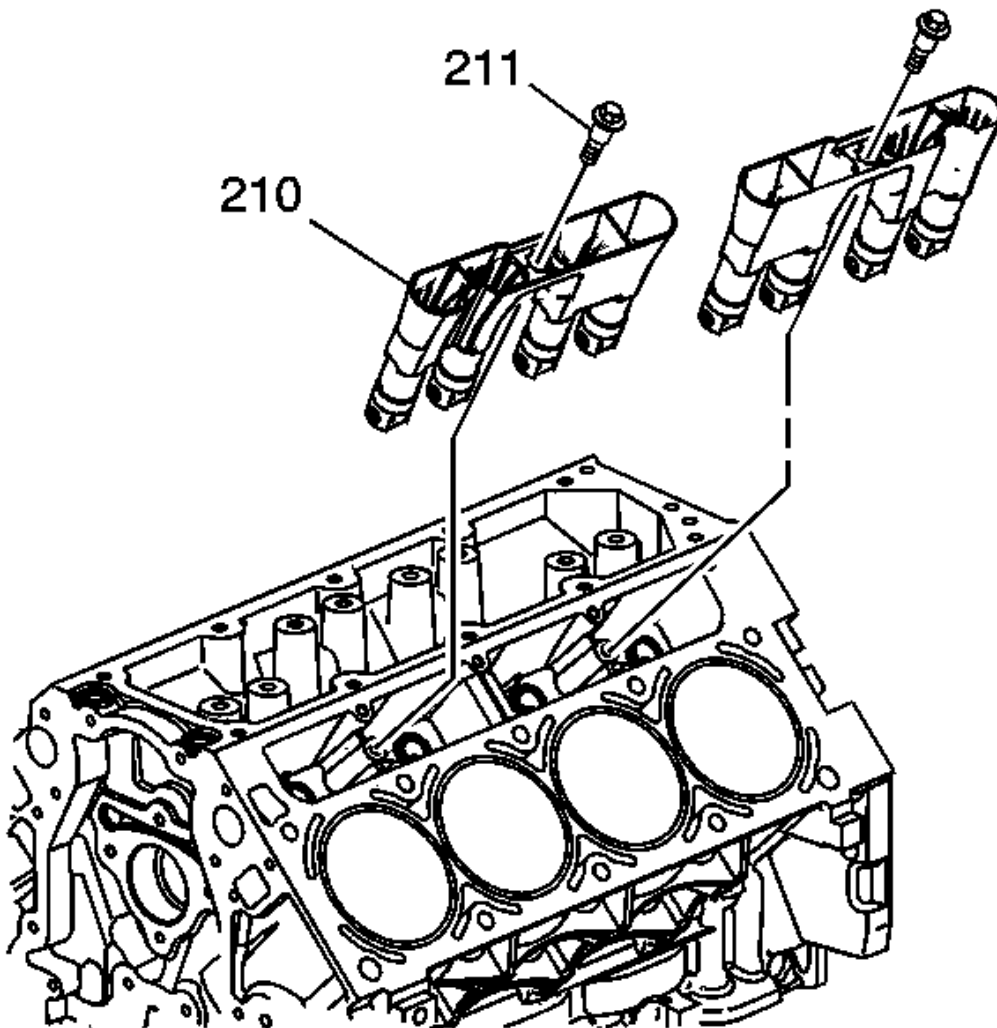


Fig. 305: Valve Lifter Guides, Cylinder Head & Bolts
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

3. Install the valve lifters and guide (210) to the engine block.

NOTE: Refer to Fastener Notice .

4. Install the valve lifter guide bolts.

Tighten: Tighten the bolt to 12 N.m (106 lb in).

5. Install the cylinder head and gasket. Refer to Cylinder Head Replacement - Left Side or Cylinder Head Replacement - Right Side.

VALVE LIFTER REPLACEMENT (LH6, LMG, LY5 AND L76)

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

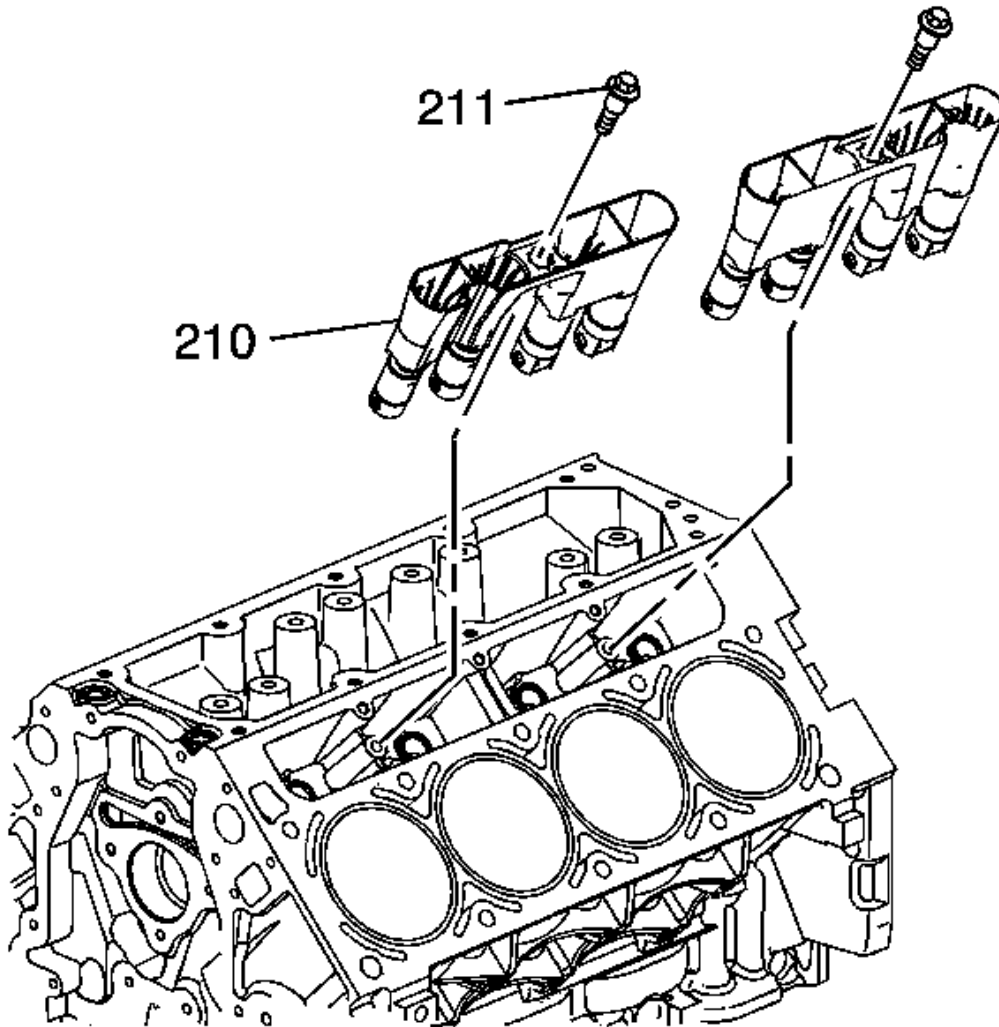


Fig. 306: View Of Lifter Guides & Lifters
Courtesy of GENERAL MOTORS CORP.

1. Remove the cylinder head and gasket. Refer to **Cylinder Head Replacement - Left Side** or **Cylinder Head Replacement - Right Side**.
2. Remove the valve lifter guide bolts (211).
3. Remove the valve lifter guides (210) with the lifters. Note the installed position of the guides. The notched area of the guides is to align with the locating tab on the engine block.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

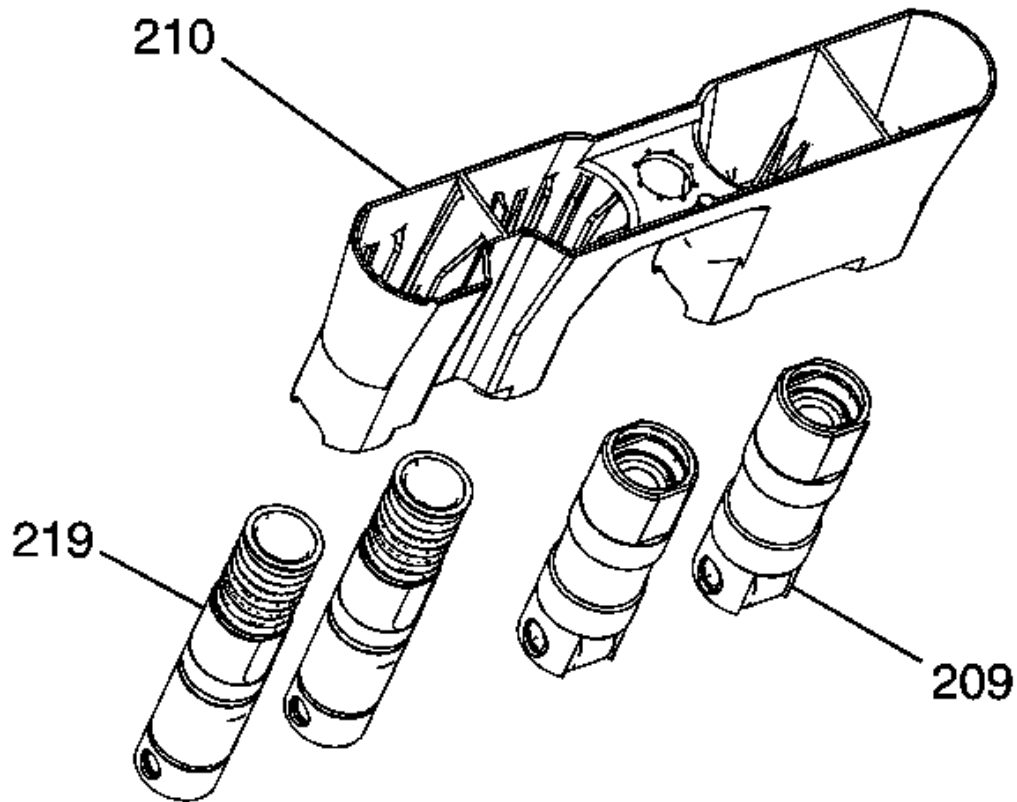


Fig. 307: Exploded View Of Lifter Guides & Lifters
Courtesy of GENERAL MOTORS CORP.

4. Remove the valve lifters (209, 219) from the guide (210).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

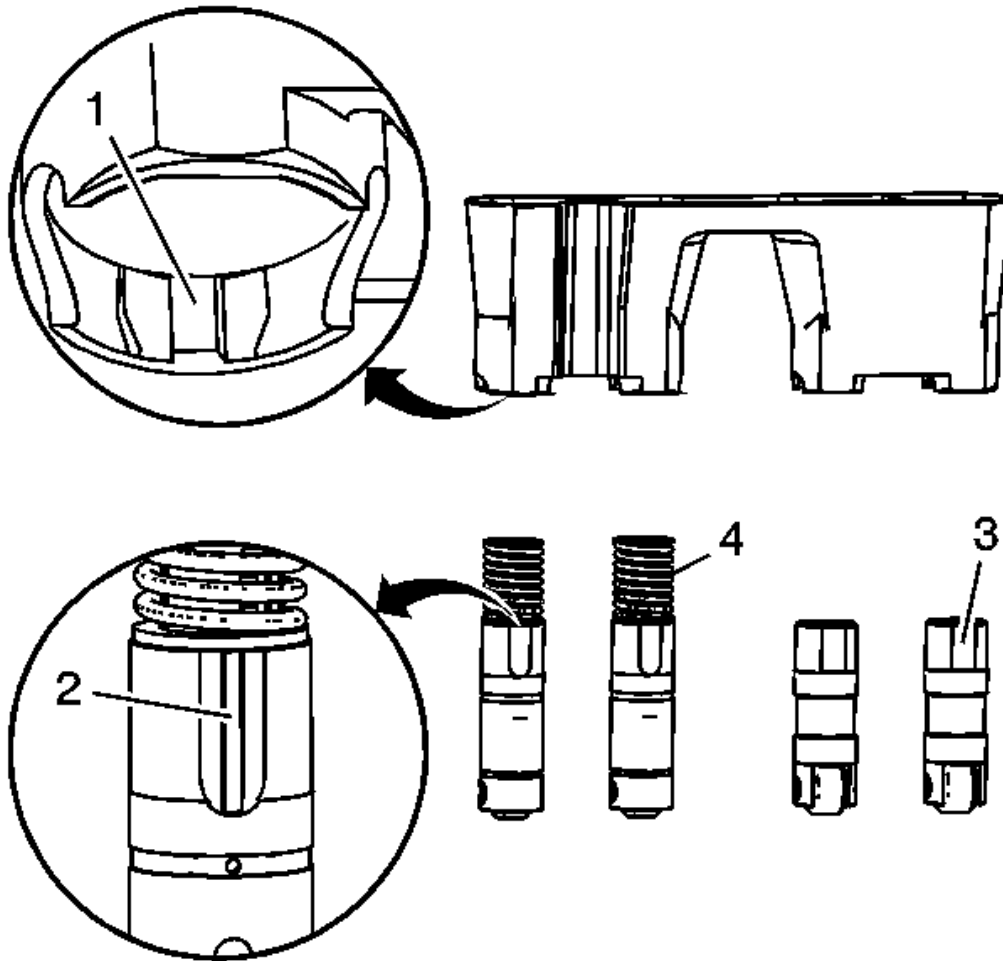


Fig. 308: Inserting Valve Lifters Into Lifter Guides
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The active fuel management lifters are installed into the guide by aligning the notched area of the guide (1) with the raised surface on the side of the lifter (2).

5. Organize or mark the components so that they can be installed in the same location from which they were removed, if required.
6. Clean and inspect the valve lifters, if required. Refer to Valve Lifters and Guides Cleaning and Inspection (RPO LY2/LY6/L92) or Valve Lifters and Guides Cleaning

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

and Inspection (RPO LH6/LMG/LY5/LC9/L76) .

Installation Procedure

- IMPORTANT:**
- When reusing valve lifters, install the lifters to their original locations.
 - Each of the 4 valve guide assemblies will contain 2 active fuel management valve lifters and 2 non active fuel management valve lifters.
 - With the lifters and guides properly installed, cylinders 1, 4, 6, and 7 lifter bores will each contain 2 active fuel management valve lifters.

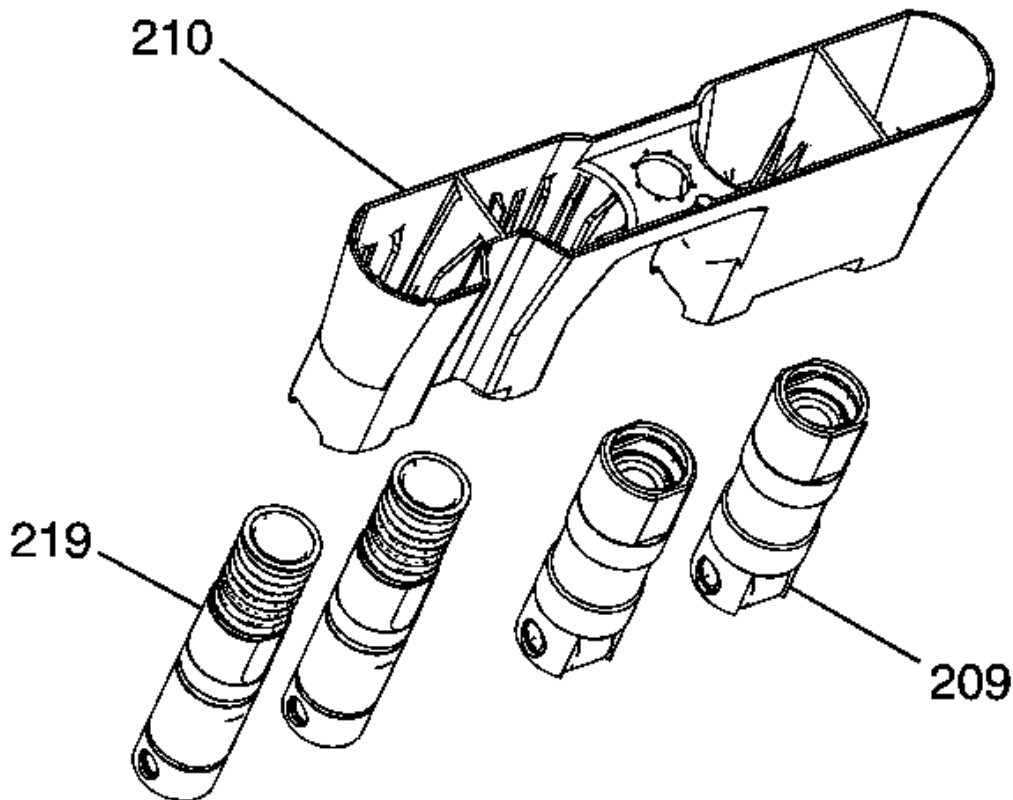


Fig. 309: Exploded View Of Lifter Guides & Lifters

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Courtesy of GENERAL MOTORS CORP.

1. Lubricate the valve lifters (209, 219) and engine block valve lifter bores with clean engine oil.

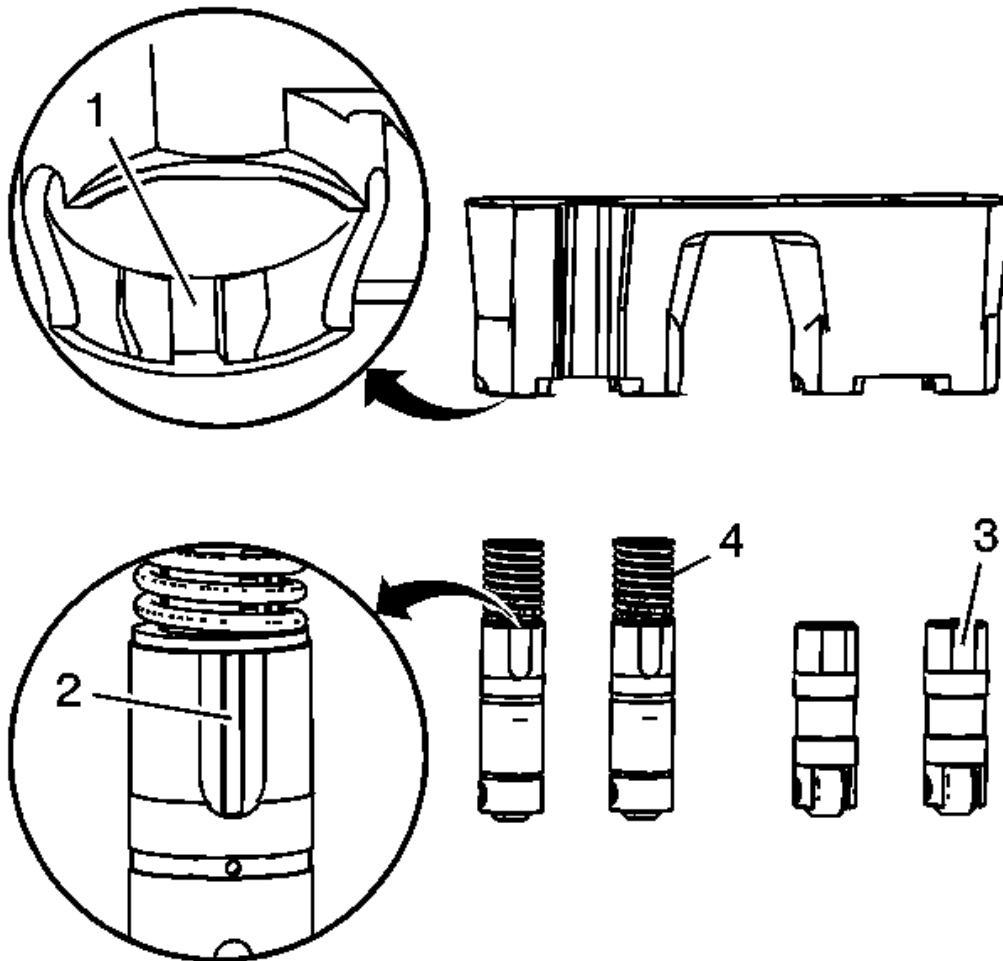


Fig. 310: Inserting Valve Lifters Into Lifter Guides
Courtesy of GENERAL MOTORS CORP.

2. Insert the valve lifters into the lifter guides.
 - Align the flat area (3) on the top of the non active fuel management lifter with the flat area in the lifter guide bore. Push the lifter completely into the guide bore.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- The active fuel management lifters are to be installed into the guide, with the notch in the guide (1) aligned with the raised area (2) of the lifter.

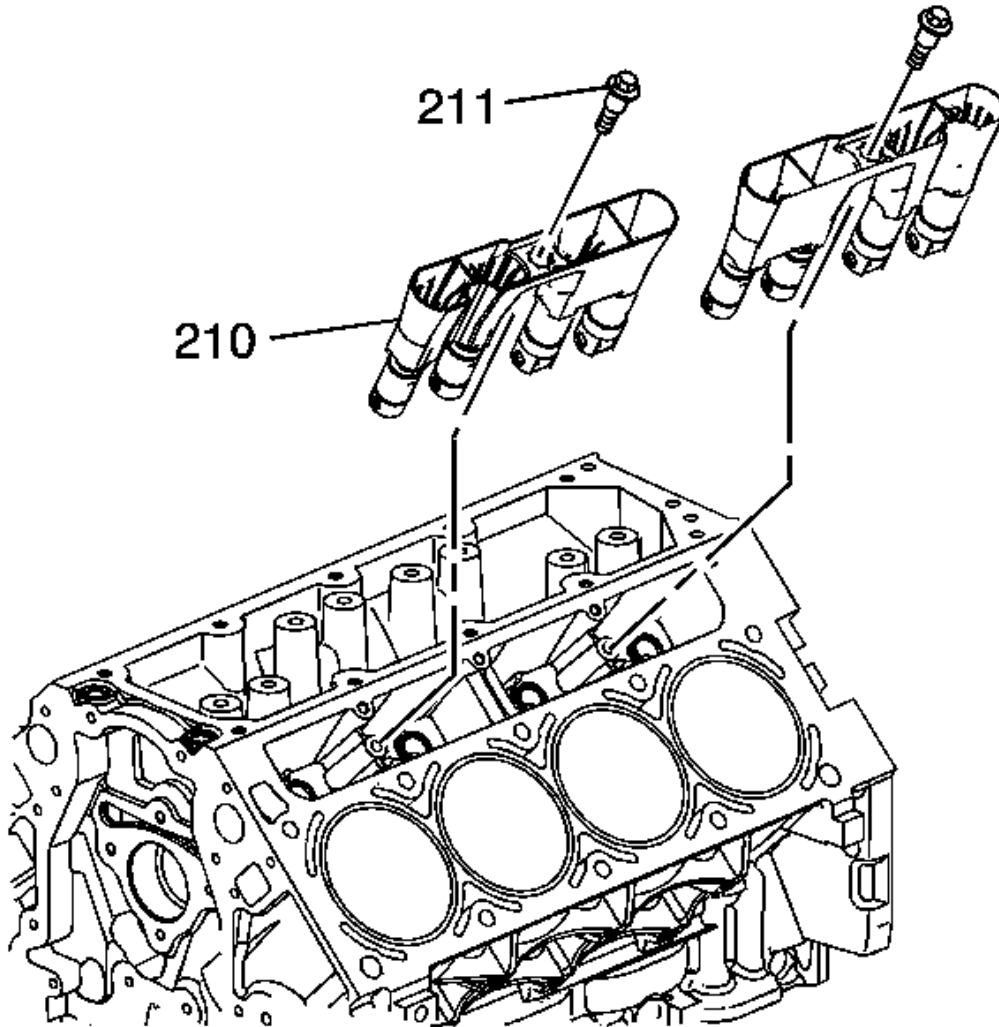


Fig. 311: View Of Lifter Guides & Lifters
Courtesy of GENERAL MOTORS CORP.

3. Install the valve lifters and guide (210) to the engine block.

NOTE: Refer to Fastener Notice .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

4. Install the valve lifter guide bolts (211).

Tighten: Tighten the bolt to 12 N.m (106 lb in).

5. Install the cylinder head and gasket. Refer to **Cylinder Head Replacement - Left Side** or **Cylinder Head Replacement - Right Side**.

CRANKSHAFT BALANCER REPLACEMENT

Tools Required

- **J 41478** Crankshaft Front Oil Seal Installer. See **Special Tools** .
- **J 41665** Crankshaft Balancer and Sprocket Installer. See **Special Tools** .
- **J 41816-A** Crankshaft Balancer Remover. See **Special Tools** .
- **J 41816-2** Crankshaft End Protector. See **Special Tools** .
- **J 42386-A** Flywheel Holding Tool. See **Special Tools** .
- **J 45059** Angle Meter

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

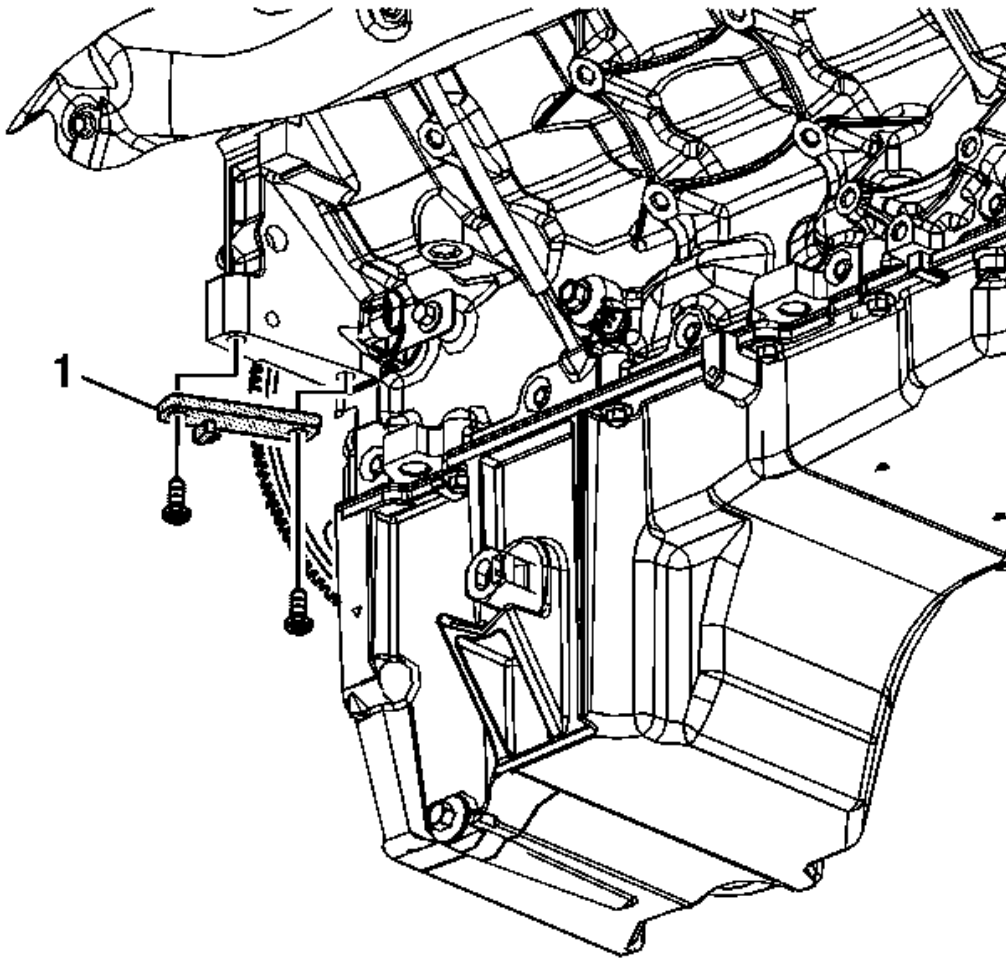


Fig. 312: View Of Special Tool & Bolts
Courtesy of GENERAL MOTORS CORP.

1. Remove the air conditioning (A/C) drive belt. Refer to **Air Conditioning Compressor Belt Replacement**.
2. Remove the cooling fan and shroud. Refer to **Cooling Fan and Shroud Replacement (Non-HP2)**.
3. Remove the starter motor. Refer to **Starter Motor Replacement (4.8L, 5.3L, 6.0L, and 6.2L)**.

NOTE: Refer to **Fastener Notice**.

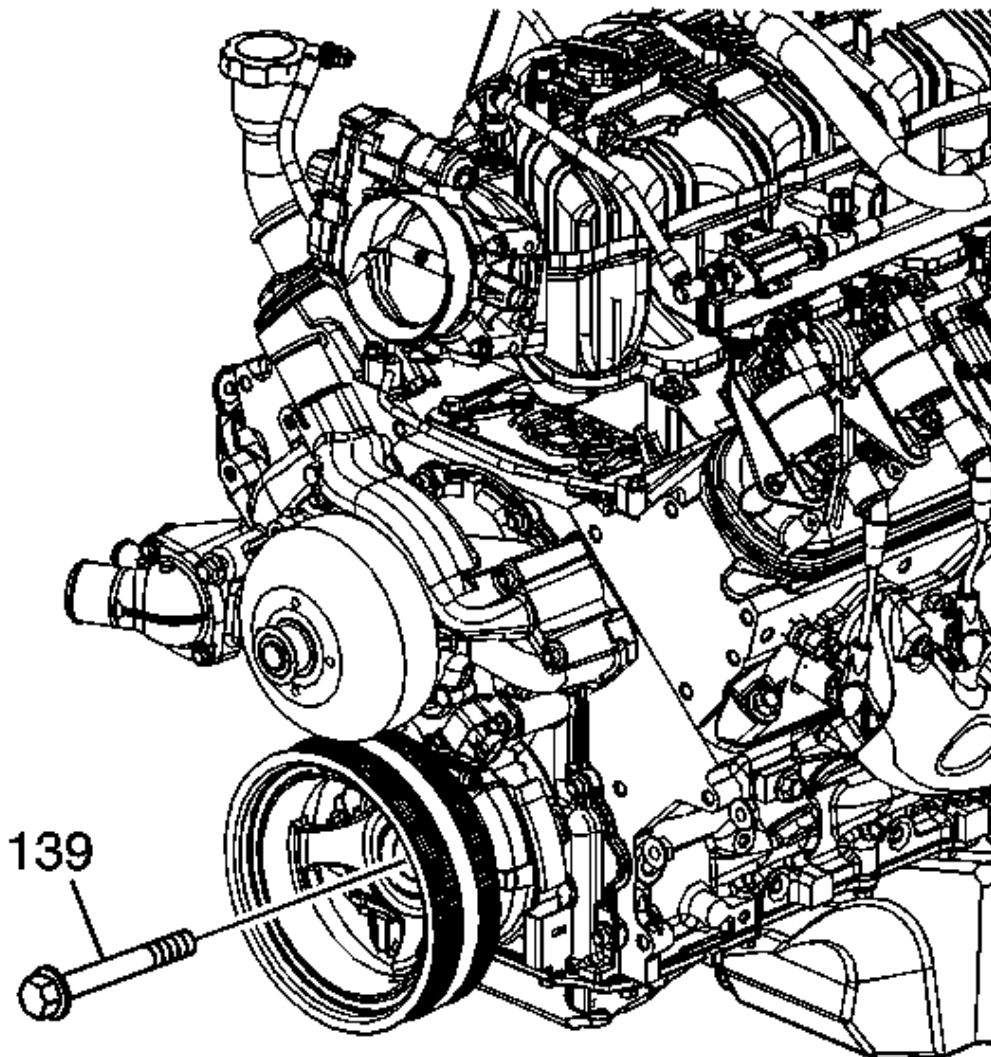
2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

IMPORTANT: Ensure that the teeth of the J 42386-A mesh with the teeth of the engine flywheel. See Special Tools .

4. Install the **J 42386-A** (1) and bolts. See Special Tools . Use one M10-1.5 x 120 mm and one M10-1.5 x 45 mm bolt for proper tool operation.

Tighten: Tighten the **J 42386-A** bolts to 50 N. See Special Tools .m (37 lb ft).

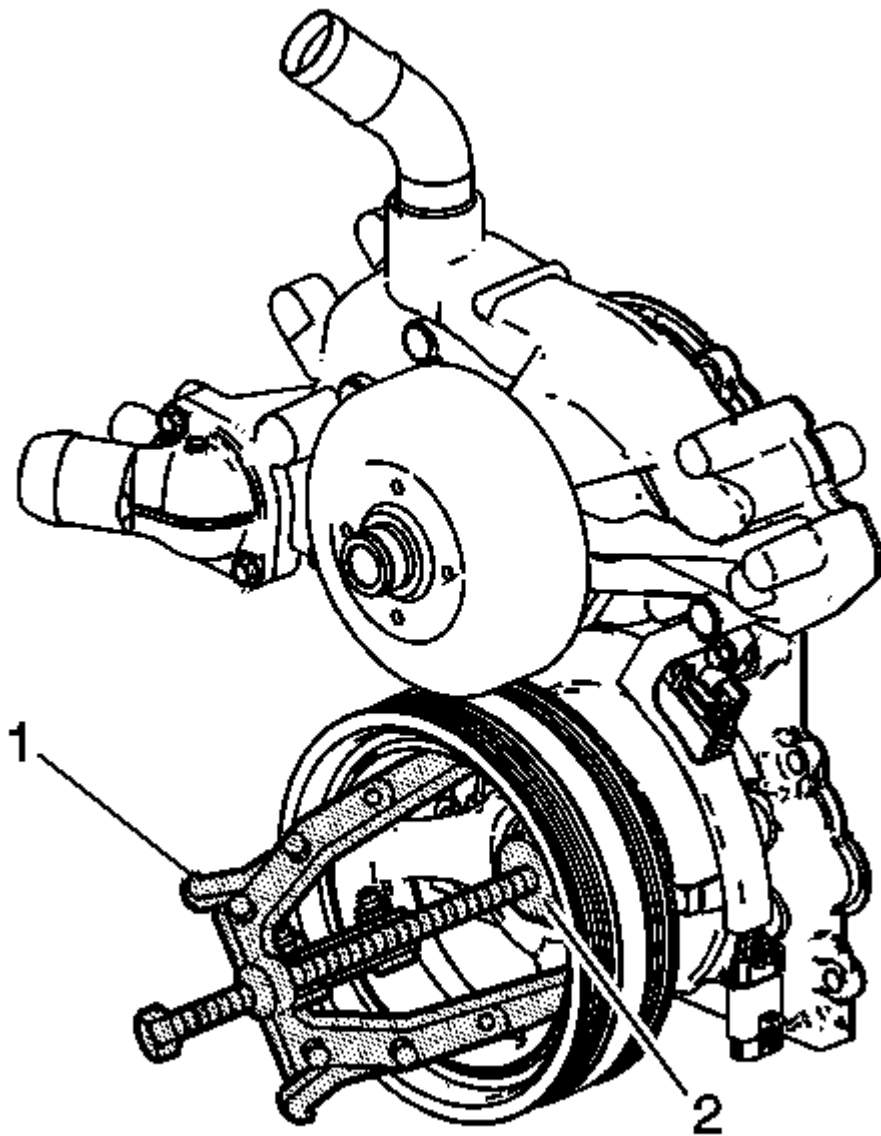


2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Fig. 313:
Courtesy of GENERAL MOTORS CORP.

5. Remove the crankshaft balancer bolt (139). Do not discard the crankshaft balancer bolt at this time. The old balancer bolt will be used during the balancer installation procedure.



2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Fig. 314: Removing Crankshaft Balancer Courtesy of GENERAL MOTORS CORP.

6. Install the **J 41816** (1) and **J 41816-2** (2) to the crankshaft balancer. See **Special Tools**.

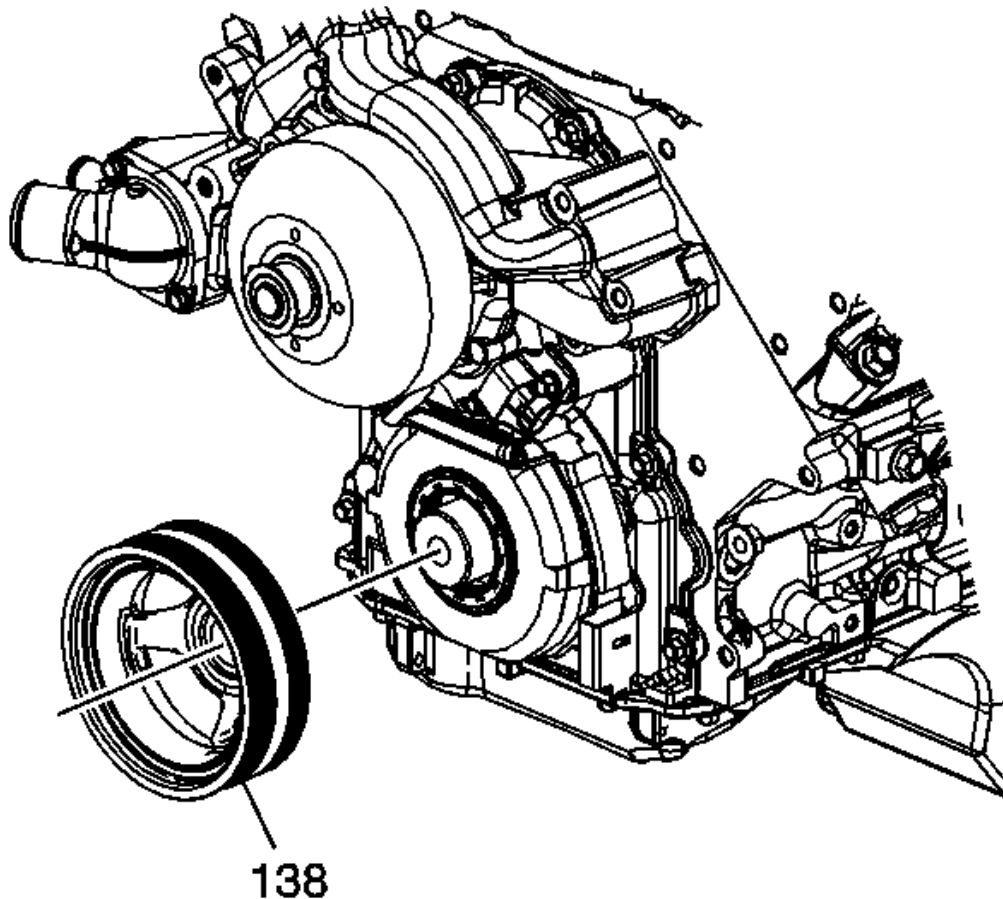


Fig. 315: Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The crankshaft balancer is balanced as an individual component. It is not necessary to mark the balancer prior to removal.

7. Use the **J 41816** and the **J 41816-2** to remove the crankshaft balancer (138). See **Special**

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Tools .

8. Remove the **J 41816** and the **J 41816-2** from the crankshaft balancer. See **Special Tools** .

Installation Procedure

IMPORTANT:

- **The crankshaft balancer installation and bolt tightening involves a four stage tightening process. The first pass ensures that the balancer is installed completely onto the crankshaft. The second, third, and fourth passes tighten the NEW bolt to the proper torque.**
- **The used crankshaft balancer bolt will be used ONLY during the first pass of the balancer installation procedure. Install a NEW bolt and tighten as described in the second, third and fourth passes of the balancer bolt tightening procedure.**

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

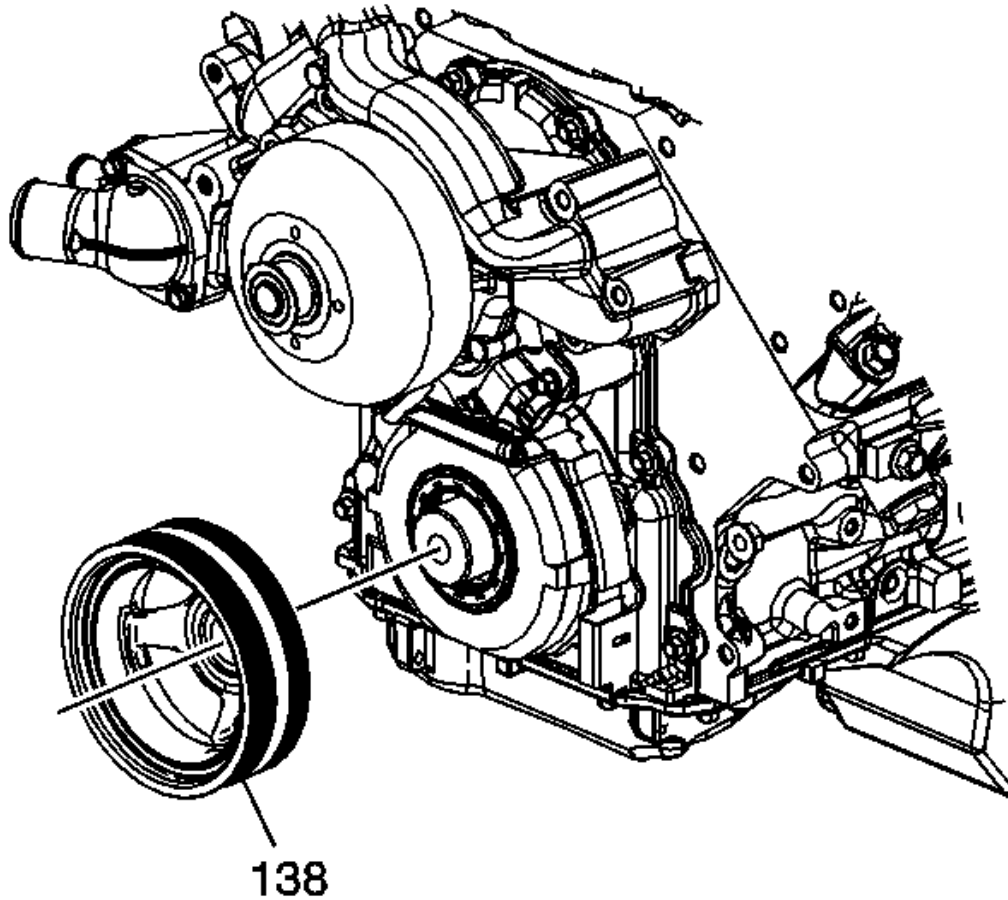


Fig. 316:
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The balancer should be positioned onto the end of the crankshaft as straight as possible prior to tool installation.

1. Position the crankshaft balancer (138) onto the end of the crankshaft.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

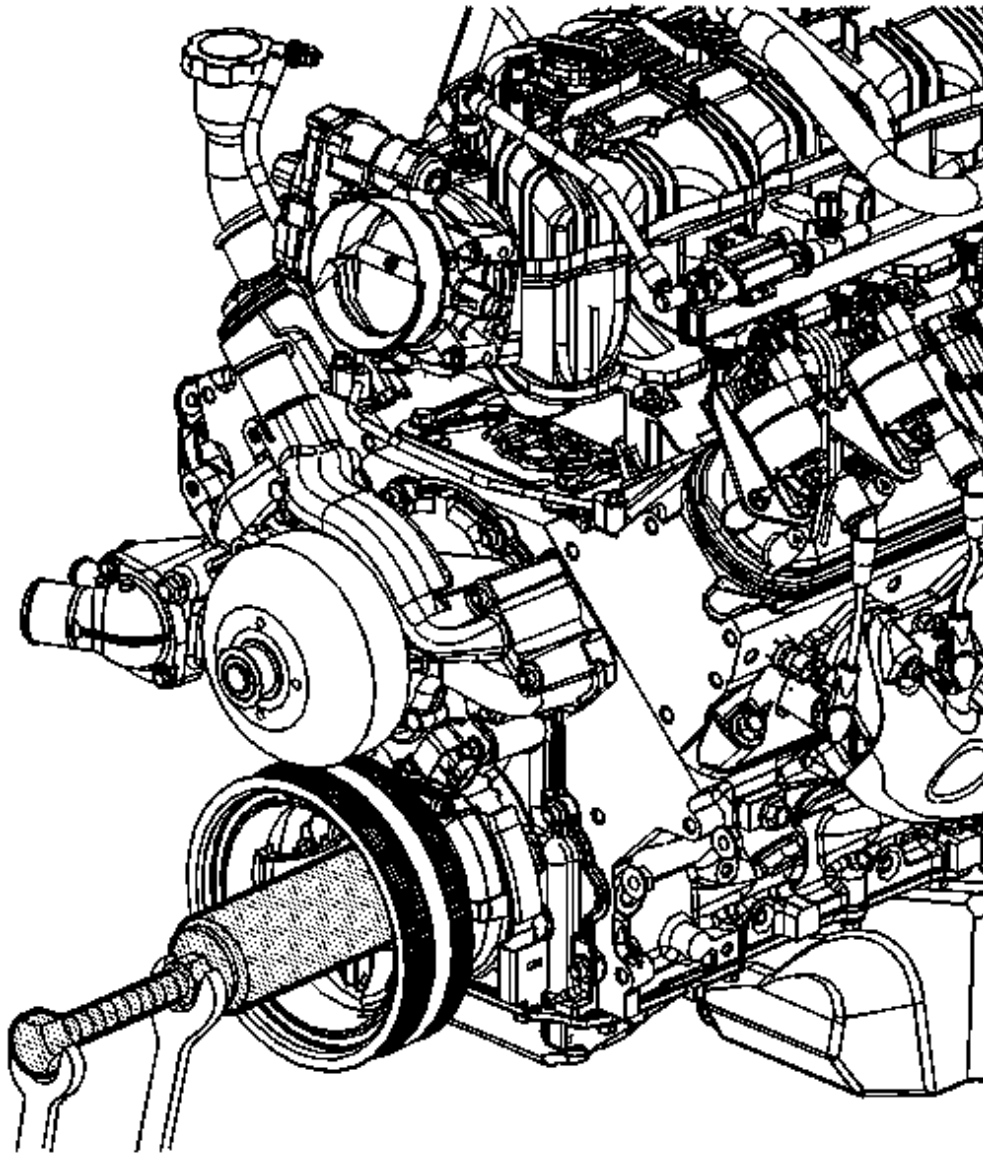


Fig. 317:
Courtesy of GENERAL MOTORS CORP.

2. Install the **J 41665** and the threaded rod from the **J 41478** to crankshaft balancer and install the balancer. See **Special Tools** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Assemble the threaded rod, nut, washer and installer. Insert the smaller end of the installer into the front of the balancer.
2. Use a wrench and hold the hex end of the threaded rod.
3. Use a second wrench and rotate the installation tool nut clockwise until the balancer is started onto the crankshaft.
4. Remove the tool and reverse the installation tool.

Position the larger end of the installer against the front of the balancer.

5. Use a wrench and hold the hex end of the threaded rod.
6. Use a second wrench and rotate the installation tool nut clockwise until the balancer is installed onto the crankshaft.
7. Remove the **J 41665** and the threaded rod. See **Special Tools** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

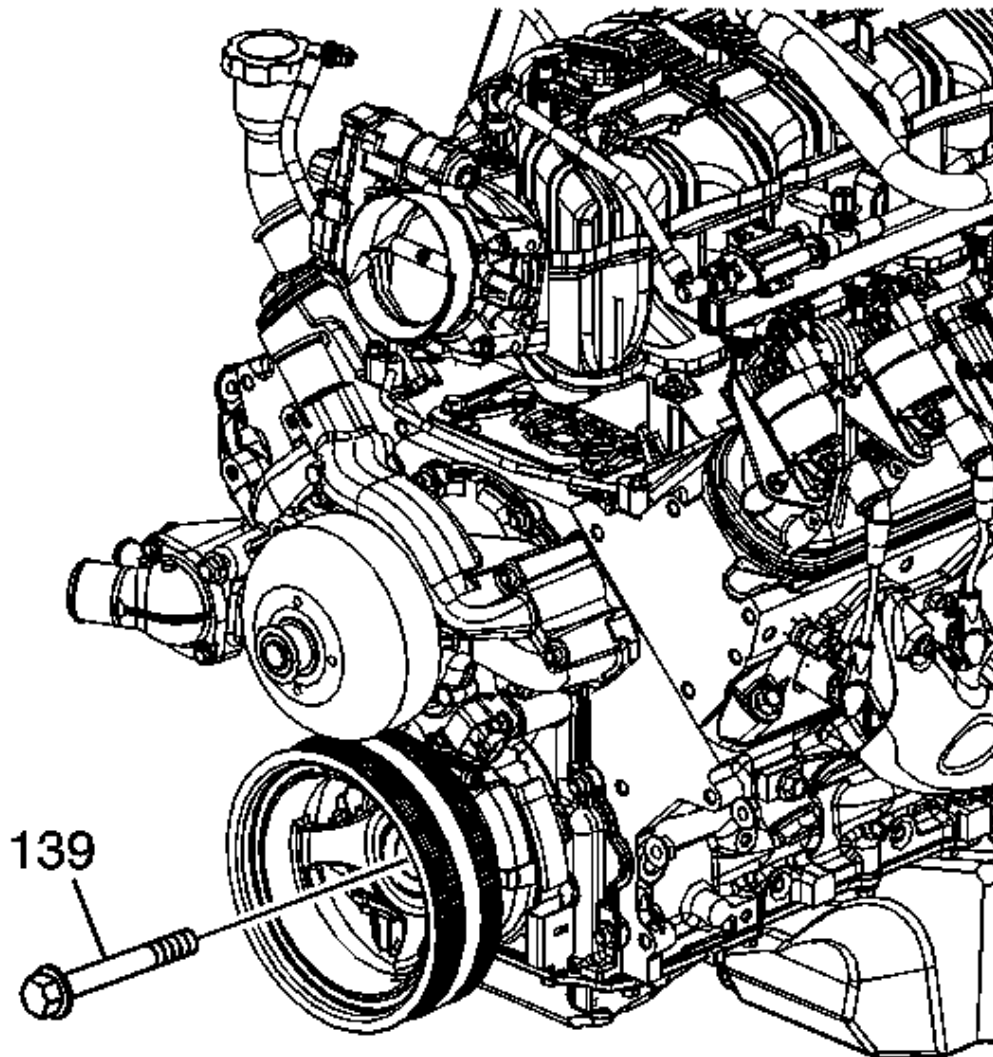


Fig. 318:
Courtesy of GENERAL MOTORS CORP.

3. Install the USED crankshaft balancer bolt (139).

Tighten: Tighten the USED bolt to 330 N.m (240 lb ft).

4. Remove the USED crankshaft balancer bolt.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

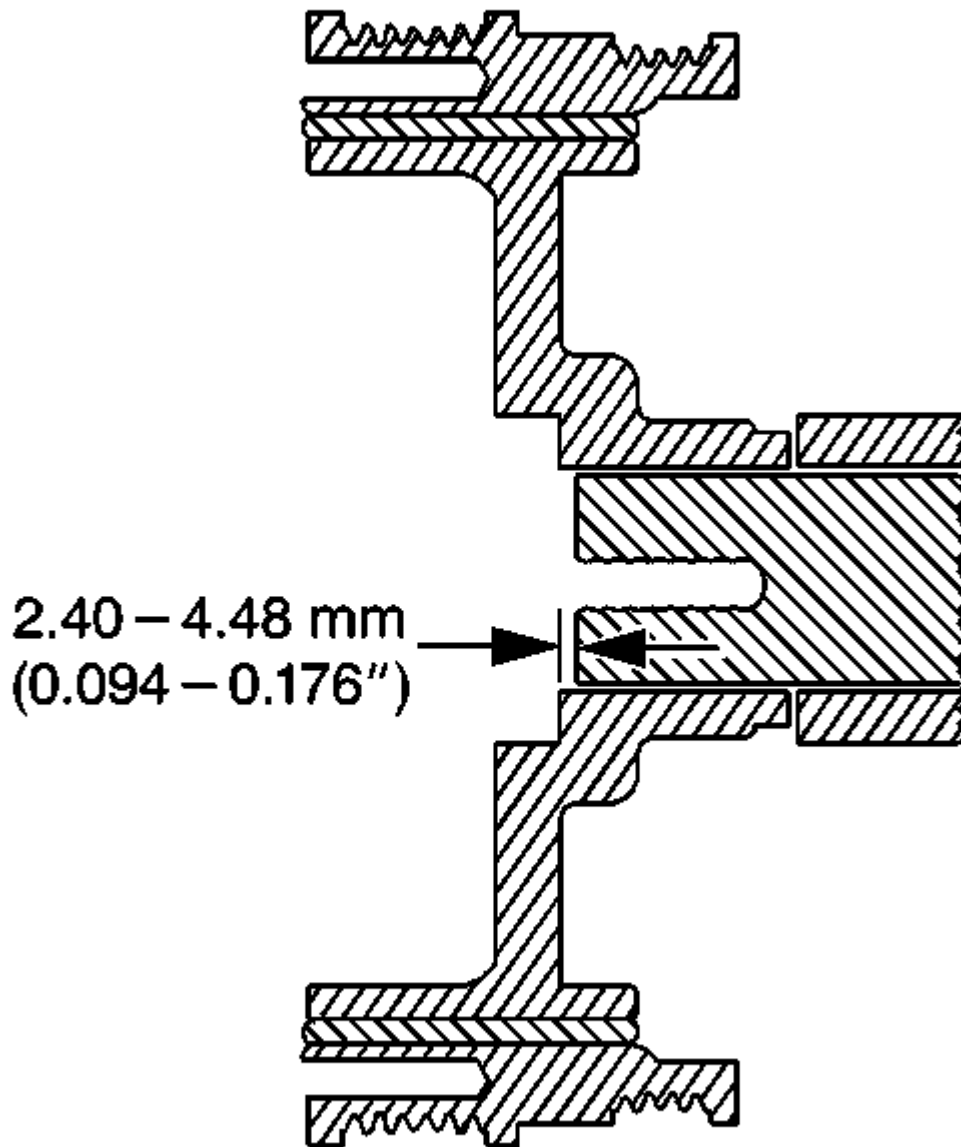


Fig. 319: Identifying Hub To Crankshaft Distance
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The nose of the crankshaft should be recessed 2.4-4.48 mm (0.094-0.176 in) into the balancer bore.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

5. Measure for a correctly installed balancer. If the balancer is not installed to the proper dimension, install the **J 41665** and repeat the installation procedure. See **Special Tools** .

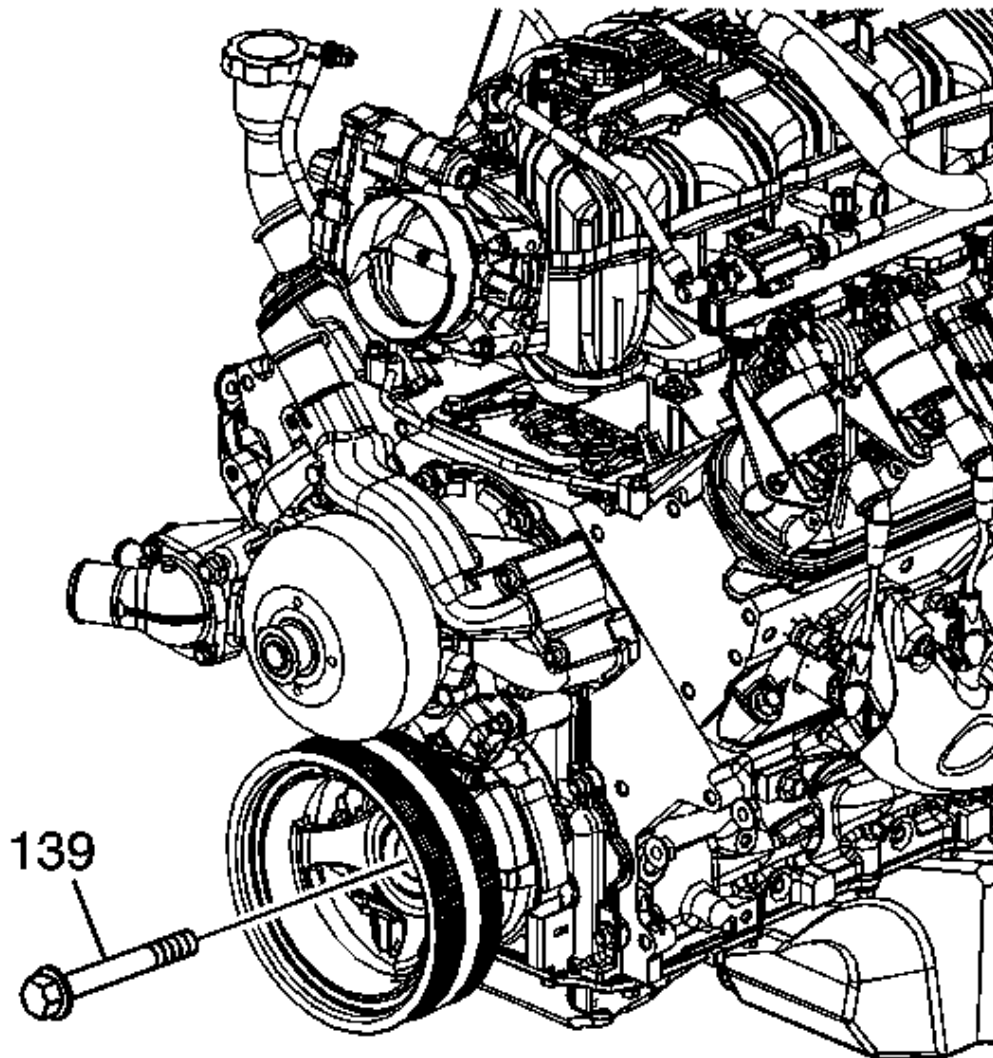


Fig. 320:
Courtesy of GENERAL MOTORS CORP.

6. Install the NEW crankshaft balancer bolt (139).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Tighten:

1. Tighten the bolt a first pass to 50 N.m (37 lb ft).
2. Tighten the bolt a final pass to 140 degrees using **J 45059** .

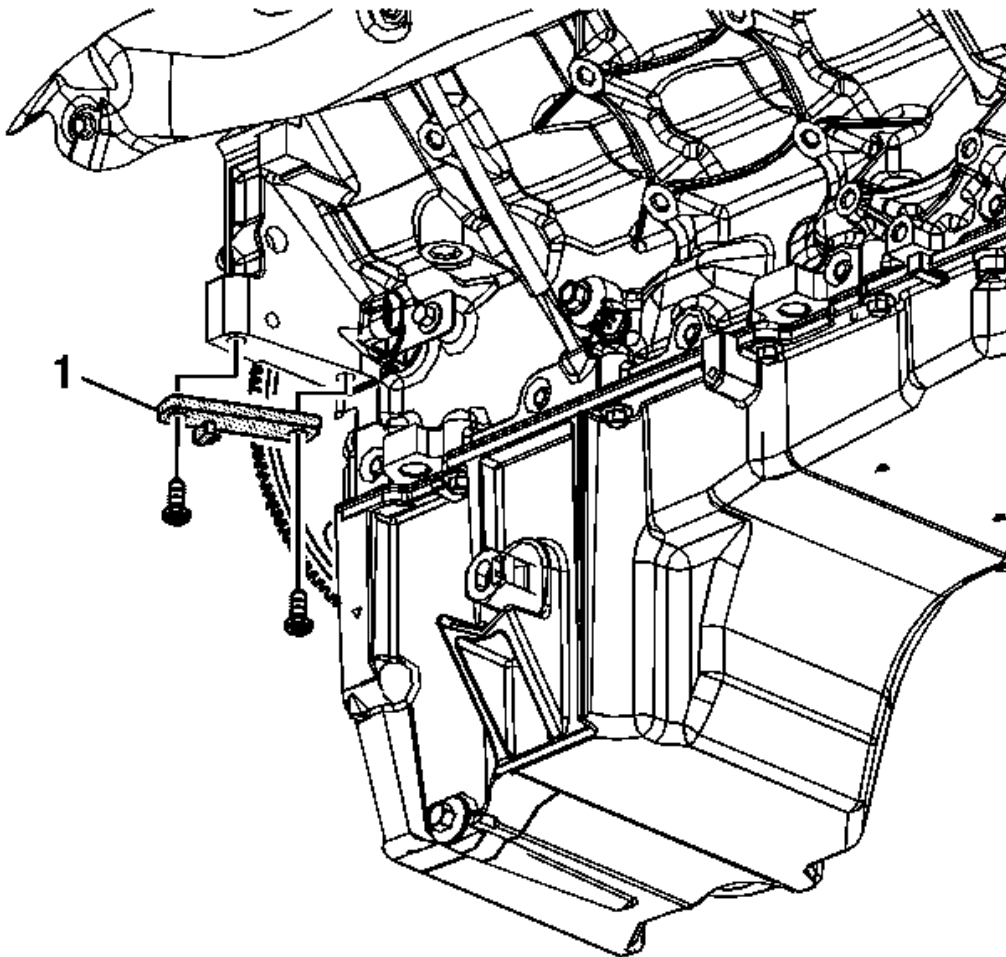


Fig. 321: View Of Special Tool & Bolts
Courtesy of GENERAL MOTORS CORP.

7. Remove the **J 42386-A** (1) and bolts. See Special Tools .
8. Install the starter motor. Refer to Starter Motor Replacement (4.8L, 5.3L, 6.0L, and 6.2L) .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

9. Install the cooling fan and shroud. Refer to **Cooling Fan and Shroud Replacement (Non-HP2)** .
10. Install the A/C drive belt. Refer to **Air Conditioning Compressor Belt Replacement**.
11. Perform the crankshaft position (CKP) system variation learn procedure. Refer to **Crankshaft Position System Variation Learn** .

CRANKSHAFT FRONT OIL SEAL REPLACEMENT (LMG, LY2 AND LY5)

Tools Required

J 41478 Crankshaft Front Oil Seal Installer. See **Special Tools** .

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

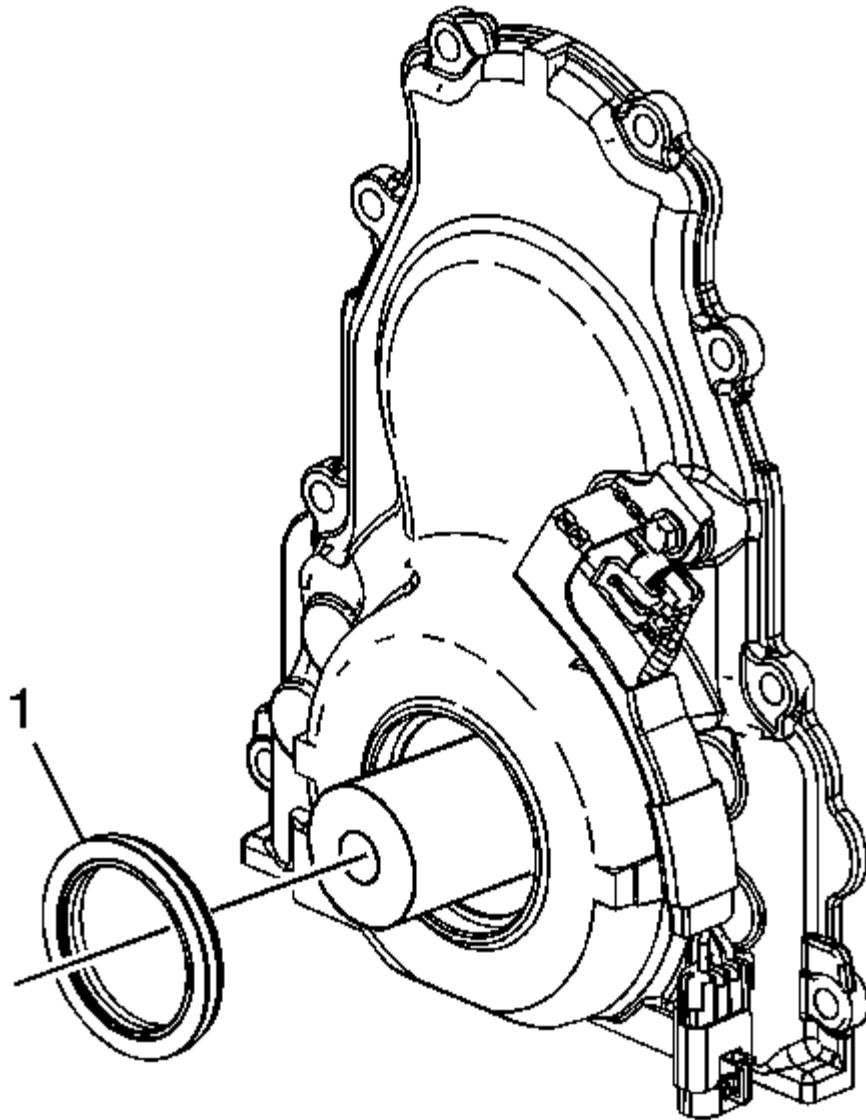


Fig. 322: View Of Crankshaft Front Oil Seal
Courtesy of GENERAL MOTORS CORP.

1. Remove the crankshaft balancer. Refer to **Crankshaft Balancer Replacement**.
2. Remove the crankshaft front oil seal (1) from the front cover.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- IMPORTANT:**
- Do not lubricate the oil seal sealing surface.
 - Do not reuse the crankshaft front oil seal.

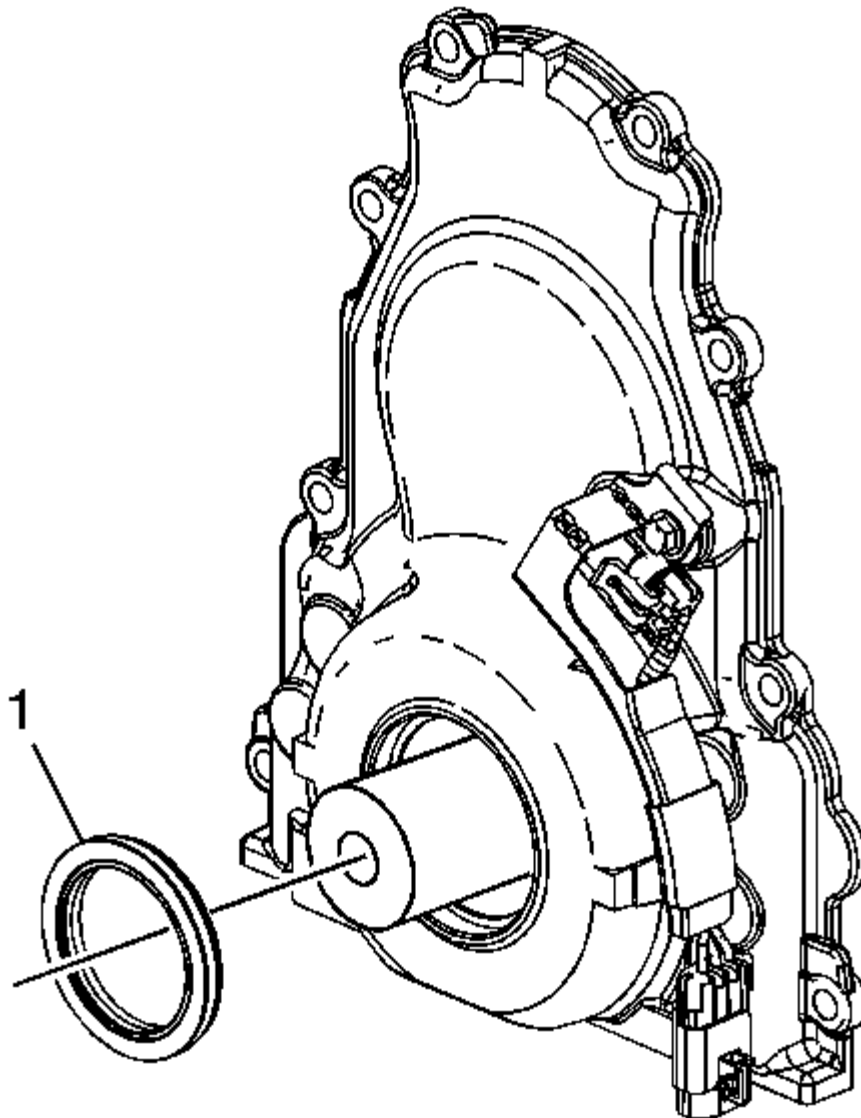


Fig. 323: View Of Crankshaft Front Oil Seal
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Lubricate the outer edge of the oil seal (1) with clean engine oil.
2. Lubricate the front cover oil seal bore with clean engine oil.

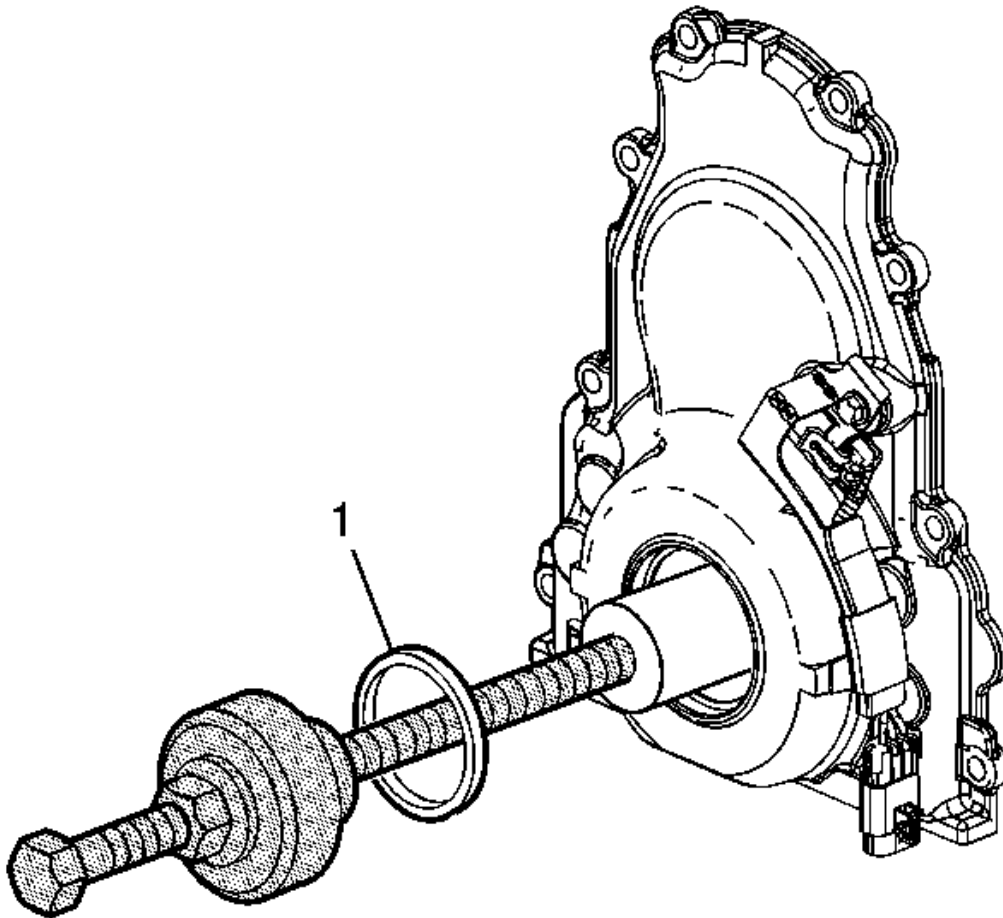


Fig. 324: View Of Crankshaft Front Oil Seal Installation
Courtesy of GENERAL MOTORS CORP.

3. Install the crankshaft front oil seal (1) onto the **J 41478** guide. See **Special Tools** .
4. Install the **J 41478** threaded rod (with nut, washer, guide, and oil seal) into the end of the crankshaft. See **Special Tools** .
5. Use the **J 41478** in order to install the oil seal into the cover bore. See **Special Tools** .
 1. Use a wrench and hold the hex on the installer bolt.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Use a second wrench and rotate the installer nut clockwise until the seal bottoms in the cover bore.
3. Remove the **J 41478** . See **Special Tools** .
4. Inspect the oil seal for proper installation. The oil seal should be installed evenly and completely into the front cover bore.
6. Install the crankshaft balancer. Refer to **Crankshaft Balancer Replacement**.

CRANKSHAFT FRONT OIL SEAL REPLACEMENT (LH6, LY6, L76 AND L92)

Tools Required

J 41478 Crankshaft Front Oil Seal Installer. See **Special Tools** .

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

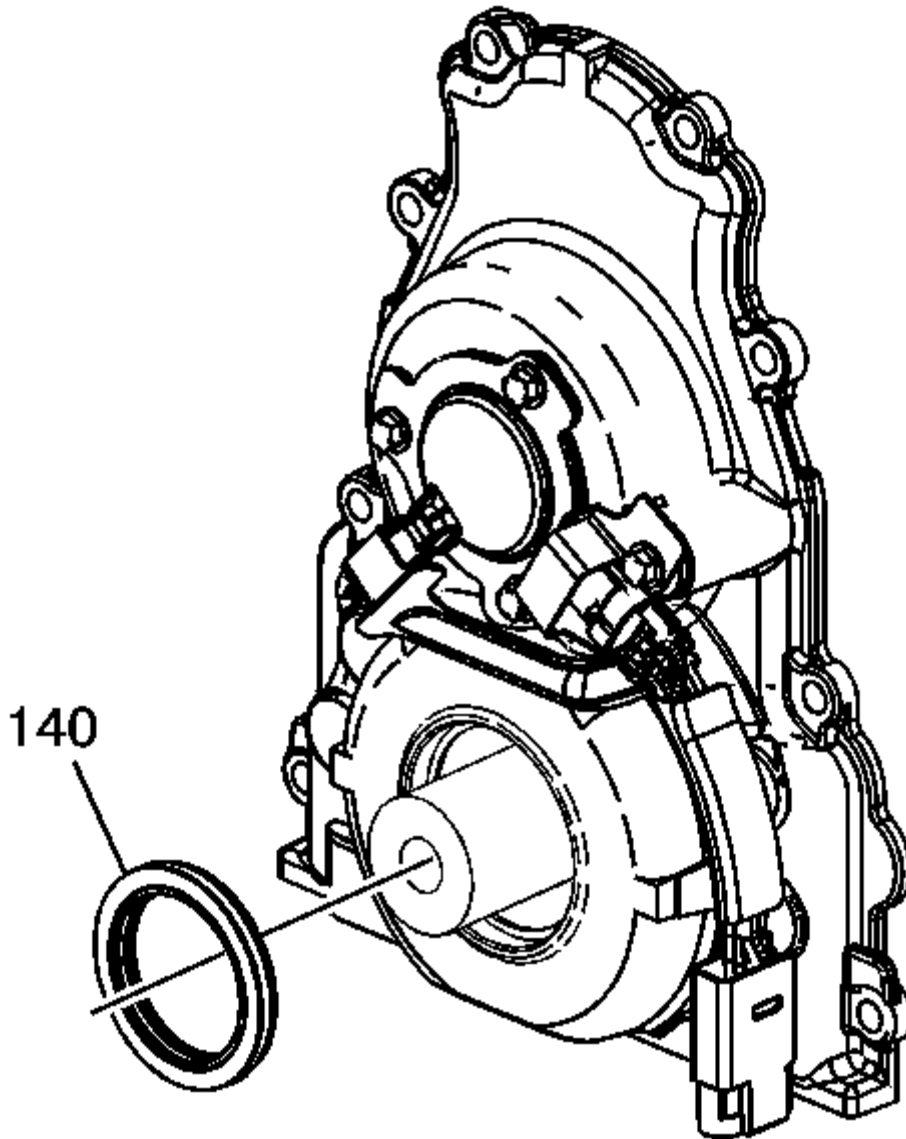


Fig. 325:
Courtesy of GENERAL MOTORS CORP.

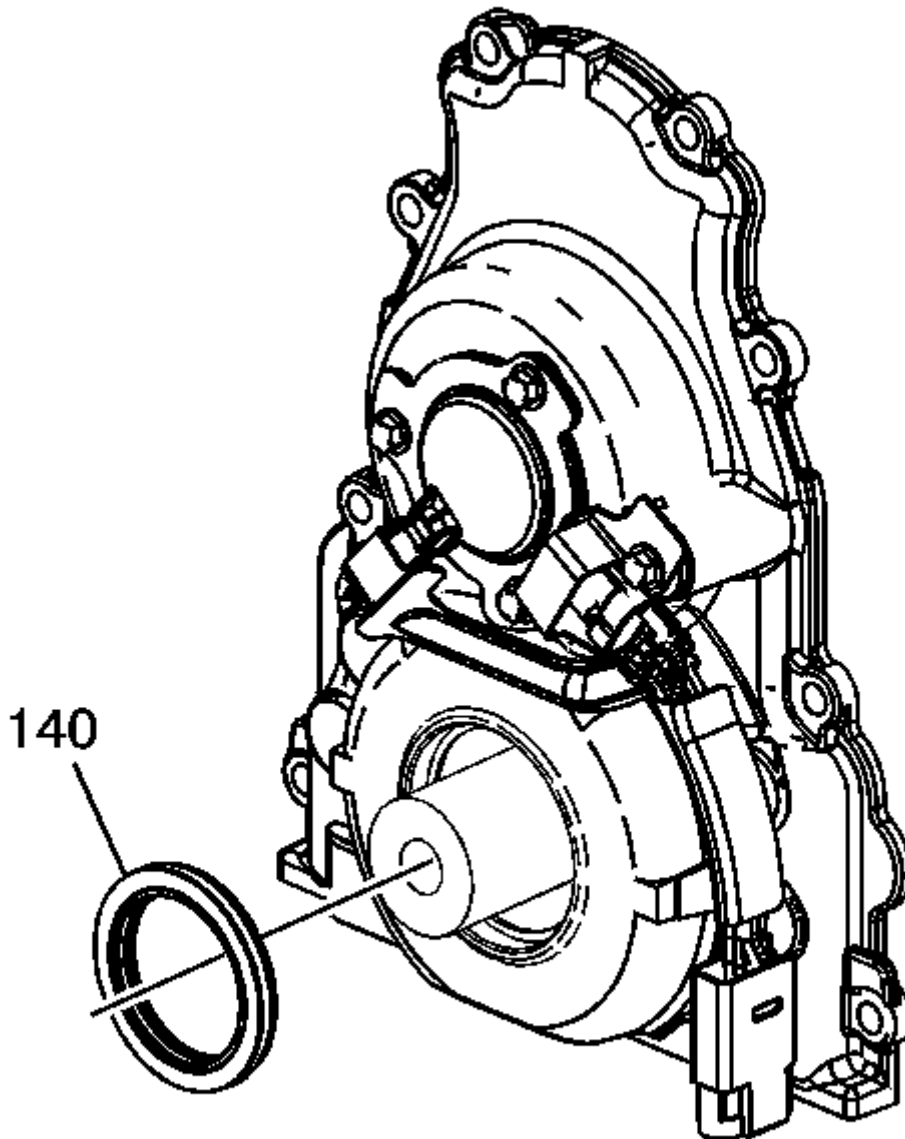
1. Remove the crankshaft balancer. Refer to **Crankshaft Balancer Replacement**.
2. Remove the crankshaft front oil seal (140) from the front cover.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Installation Procedure

- IMPORTANT:**
- Do not lubricate the oil seal sealing surface.
 - Do not reuse the crankshaft front oil seal.



2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Fig. 326:
Courtesy of GENERAL MOTORS CORP.

1. Lubricate the outer edge of the oil seal (140) with clean engine oil.
2. Lubricate the front cover oil seal bore with clean engine oil.

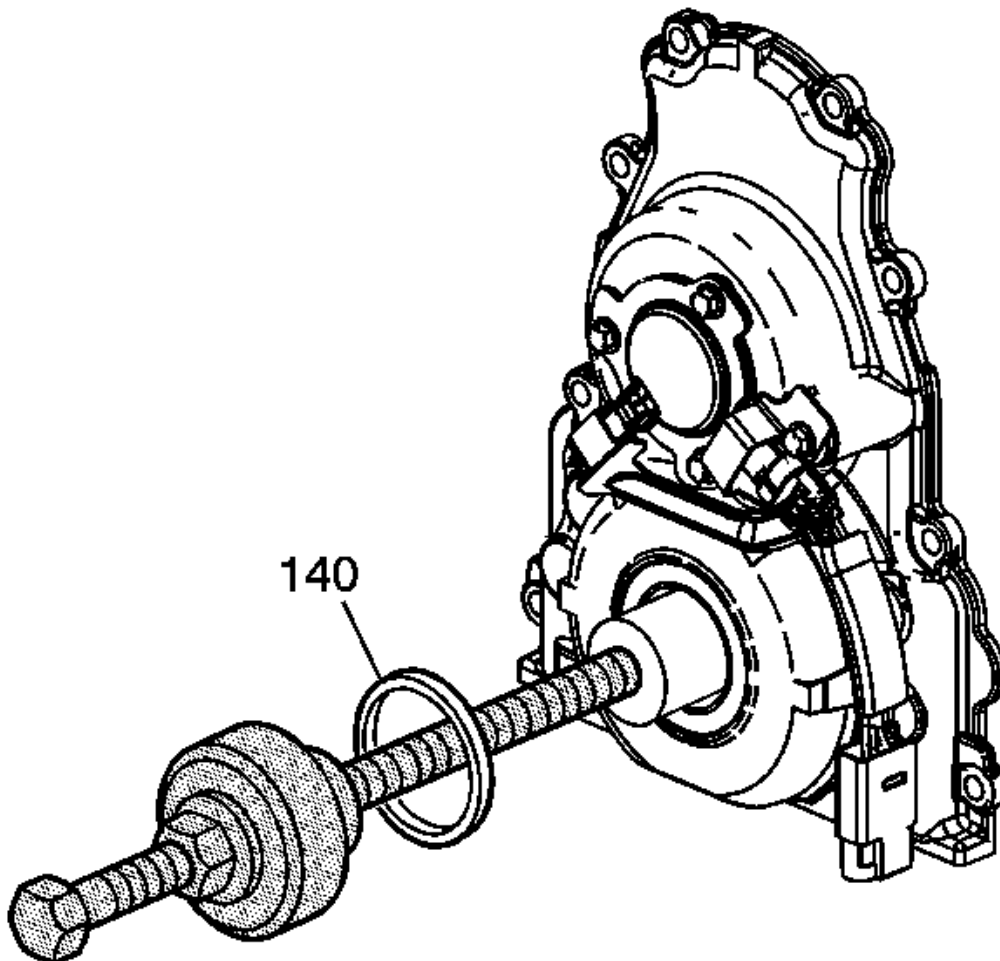


Fig. 327:
Courtesy of GENERAL MOTORS CORP.

3. Install the crankshaft front oil seal (140) onto the **J 41478** guide. See **Special Tools** .
4. Install the **J 41478** threaded rod (with nut, washer, guide, and oil seal) into the end of the

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

crankshaft. See **Special Tools** .

5. Use the **J 41478** in order to install the oil seal into the cover bore. See **Special Tools** .
 1. Use a wrench and hold the hex on the installer bolt.
 2. Use a second wrench and rotate the installer nut clockwise until the seal bottoms in the cover bore.
 3. Remove the **J 41478** . See **Special Tools** .
 4. Inspect the oil seal for proper installation. The oil seal should be installed evenly and completely into the front cover bore.
6. Install the crankshaft balancer. Refer to **Crankshaft Balancer Replacement**.

CAMSHAFT POSITION ACTUATOR MAGNET REPLACEMENT

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

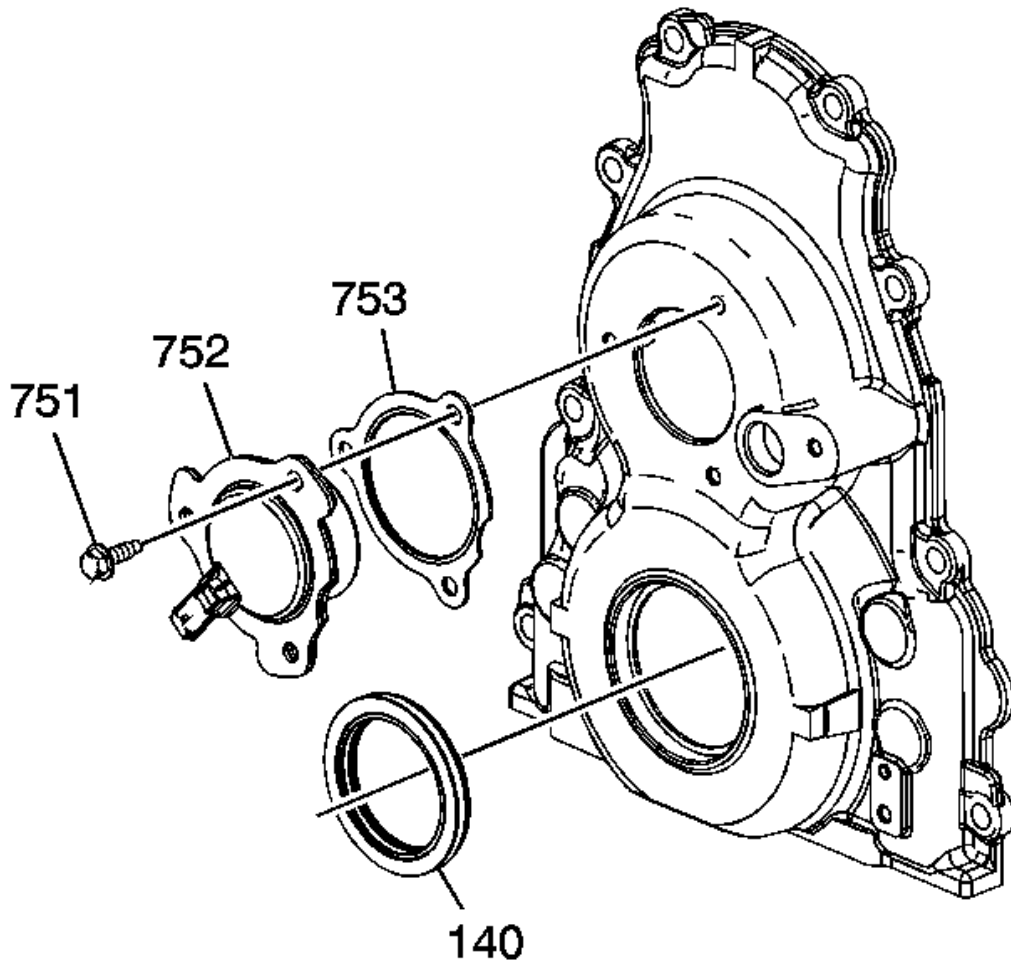


Fig. 328: View Of CMP Actuator Magnet, Bolts, Gasket & Oil Seal
Courtesy of GENERAL MOTORS CORP.

1. Remove the water pump. Refer to **Water Pump Replacement (LY6, L76 and L92)** or **Water Pump Replacement (LH6, LY2, LY5, and LMG)** .
2. Disconnect the engine harness electrical connector from the camshaft position (CMP) actuator magnet.
3. Remove the CMP actuator magnet bolts (751) and magnet (752).
4. Remove and discard the CMP actuator magnet gasket (753).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

IMPORTANT: The gasket surface should be free of oil or other foreign material during assembly.

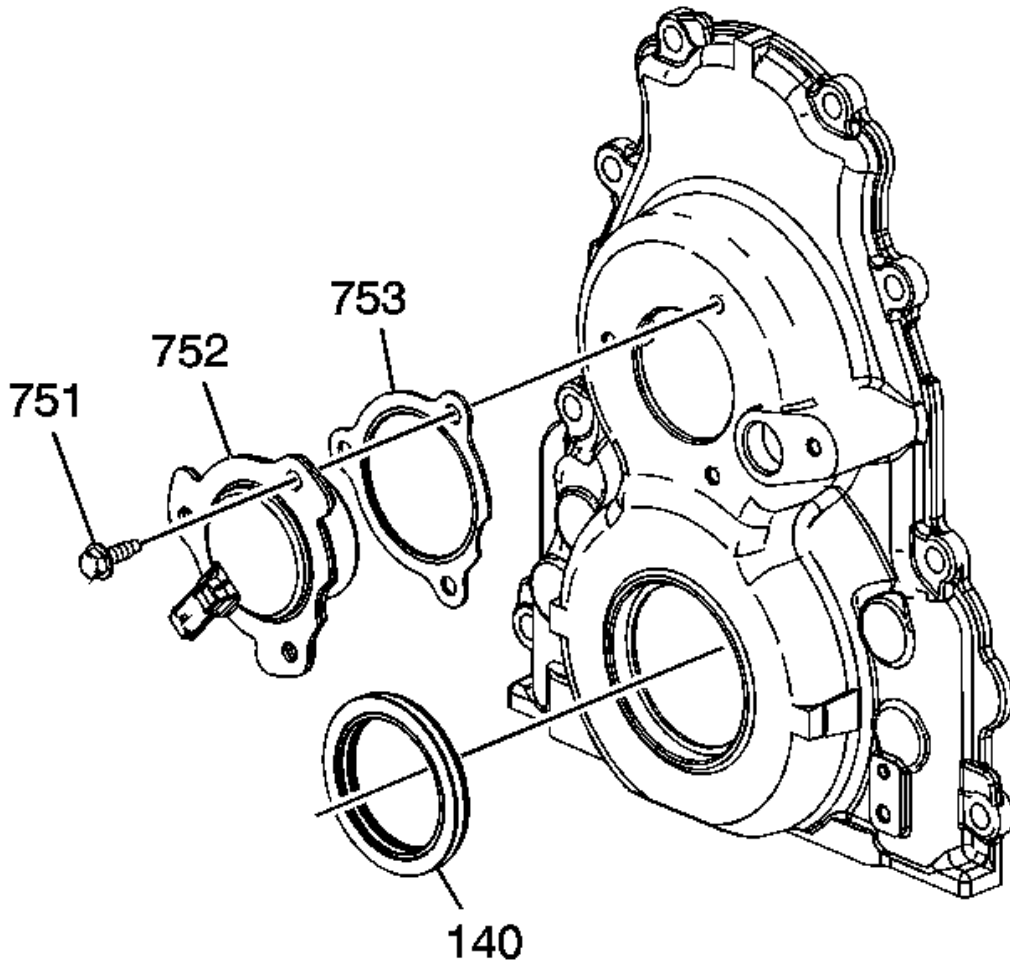


Fig. 329: View Of CMP Actuator Magnet, Bolts, Gasket & Oil Seal
Courtesy of GENERAL MOTORS CORP.

1. Install a NEW CMP actuator magnet gasket (753) onto the CMP actuator magnet.
2. Install the CMP actuator magnet (752) to the front cover.

NOTE: Refer to Fastener Notice .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

3. Install the CMP actuator magnet bolts (751).

Tighten: Tighten the bolts to 12 N.m (106 lb in).

4. Connect the engine harness electrical connector to the CMP actuator magnet.

5. Install the water pump. Refer to **Water Pump Replacement (LY6, L76 and L92)** or **Water Pump Replacement (LH6, LY2, LY5, and LMG)** .

ENGINE FRONT COVER REPLACEMENT (LC9, LH6, LMG, LY2 AND LY5)

Tools Required

J 41476 Front and Rear Cover Alignment Tool. See **Special Tools** .

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

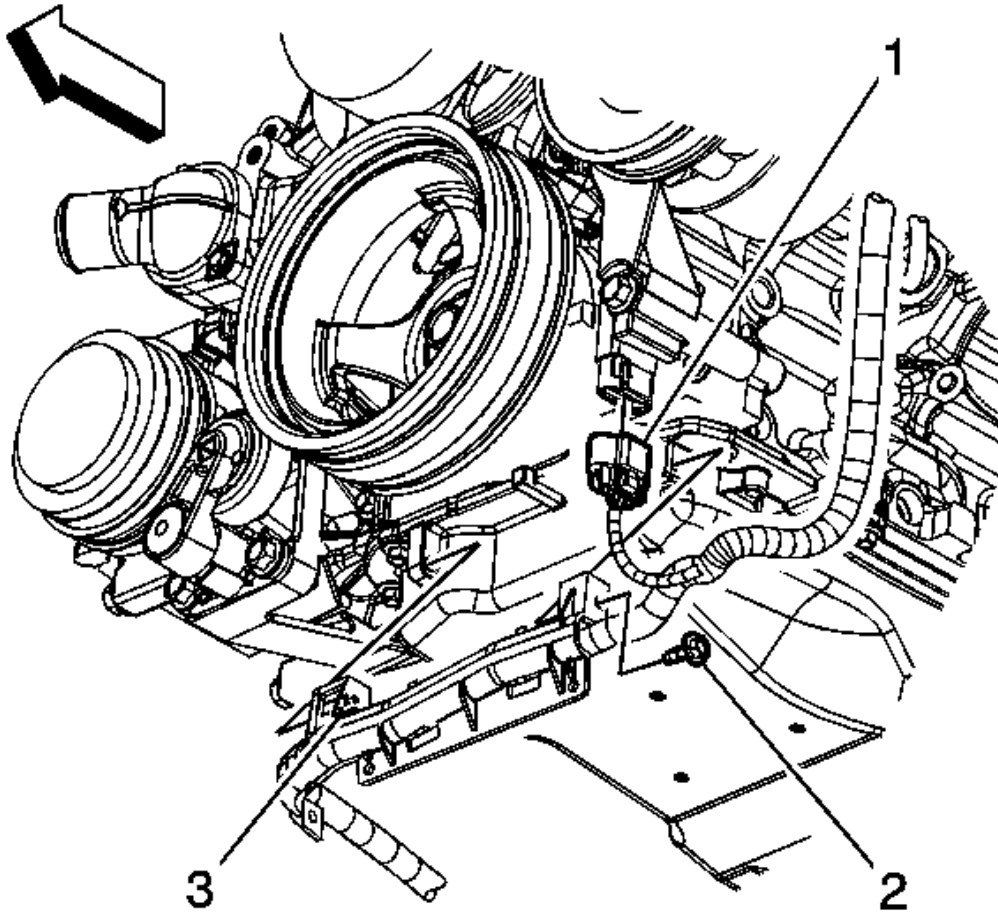


Fig. 330: View Of Electrical Connector, Cable Channel Bolt & Pin
Courtesy of GENERAL MOTORS CORP.

1. Remove the water pump. Refer to **Water Pump Replacement (LY6, L76 and L92)** or **Water Pump Replacement (LH6, LY2, LY5, and LMG)** .
2. Remove the crankshaft balancer. Refer to **Crankshaft Balancer Replacement**.
3. Disconnect the engine harness electrical connector (1) from the camshaft position (CMP) sensor wire harness electrical connector.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

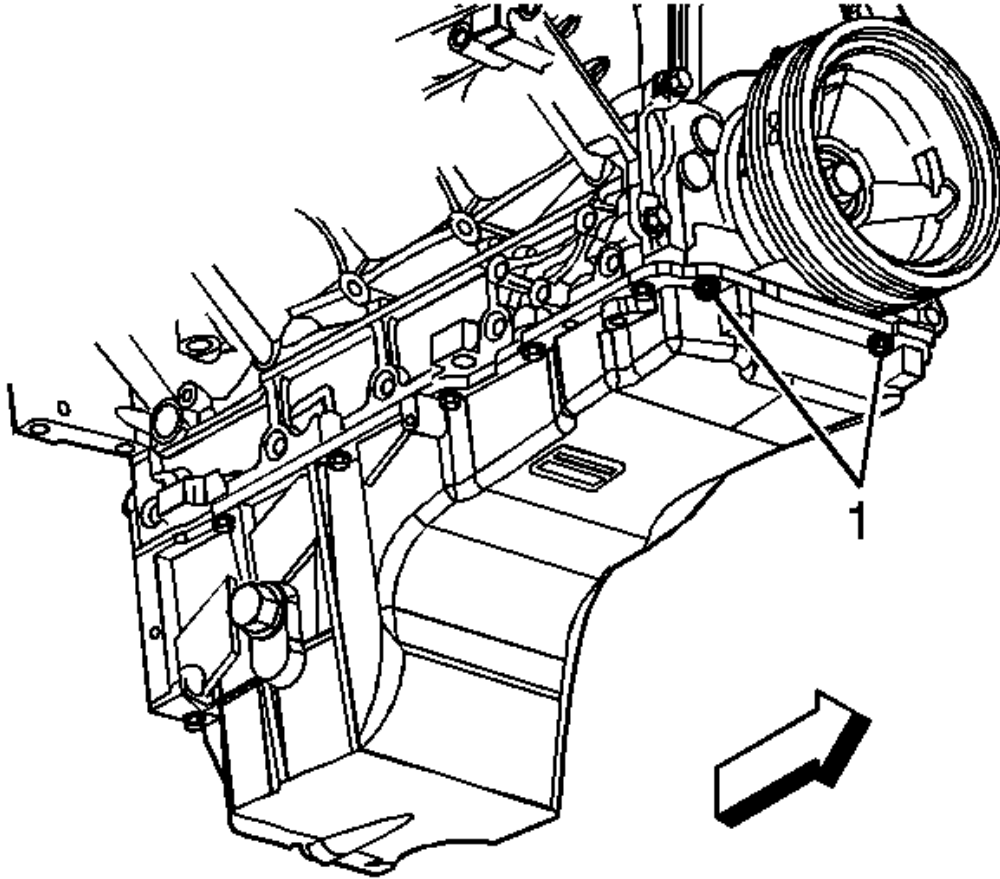


Fig. 331: View Of Oil Pan-To-Front Cover Bolts
Courtesy of GENERAL MOTORS CORP.

4. Remove the oil pan-to-front cover bolts (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

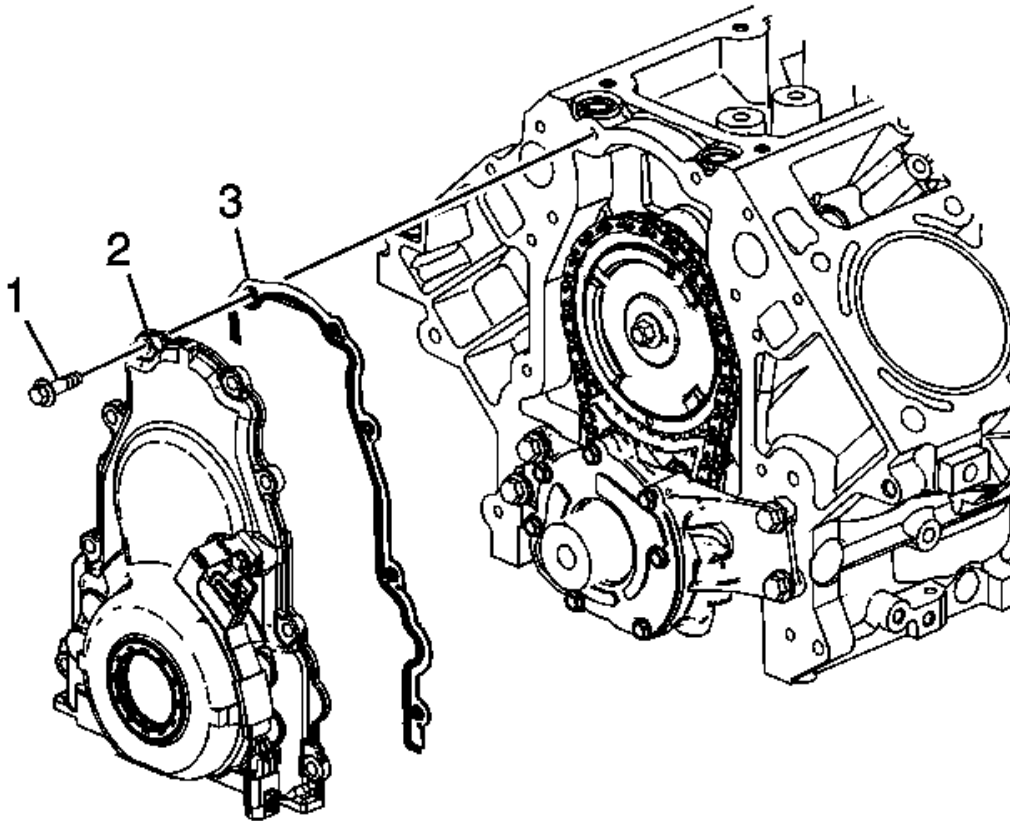


Fig. 332: View Of Front Cover & Gasket
Courtesy of GENERAL MOTORS CORP.

5. Remove the front cover bolts (1).
6. Remove the front cover (2) and gasket (3).
7. Discard the front cover gasket.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

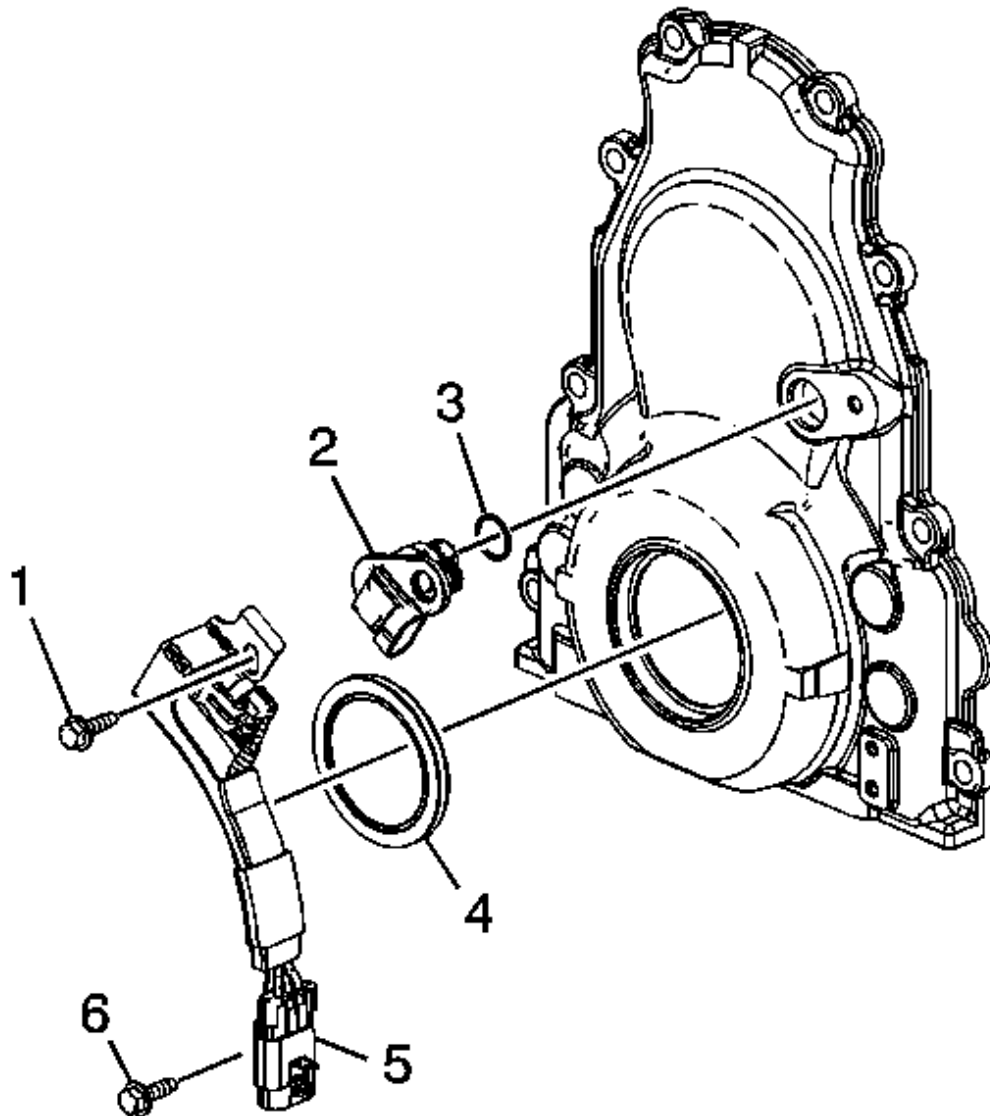


Fig. 333: View Of Front Cover, Oil Seal, Camshaft Position Sensor, Bracket & O Ring

Courtesy of GENERAL MOTORS CORP.

8. Remove the crankshaft front oil seal (4).
9. If replacing the engine front cover perform the following steps, otherwise proceed to step 8

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

of the installation procedure.

10. Remove the CMP sensor wire harness bolts (1 and 6).
11. Disconnect the CMP sensor wire harness from the CMP sensor.
12. Remove the CMP sensor wire harness (5).
13. Remove the CMP sensor (2).

Installation Procedure

IMPORTANT:

- **Do not reuse the crankshaft oil seal or front cover gasket.**
- **Do not apply any type of sealant to the front cover gasket, unless specified.**
- **The special tool in this procedure is used to properly center the front crankshaft front oil seal.**
 - **All gasket surfaces should be free of oil or other foreign material during assembly.**
 - **The crankshaft front oil seal **MUST** be centered in relation to the crankshaft.**
 - **An improperly aligned front cover may cause premature front oil seal wear and/or engine oil leaks.**

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

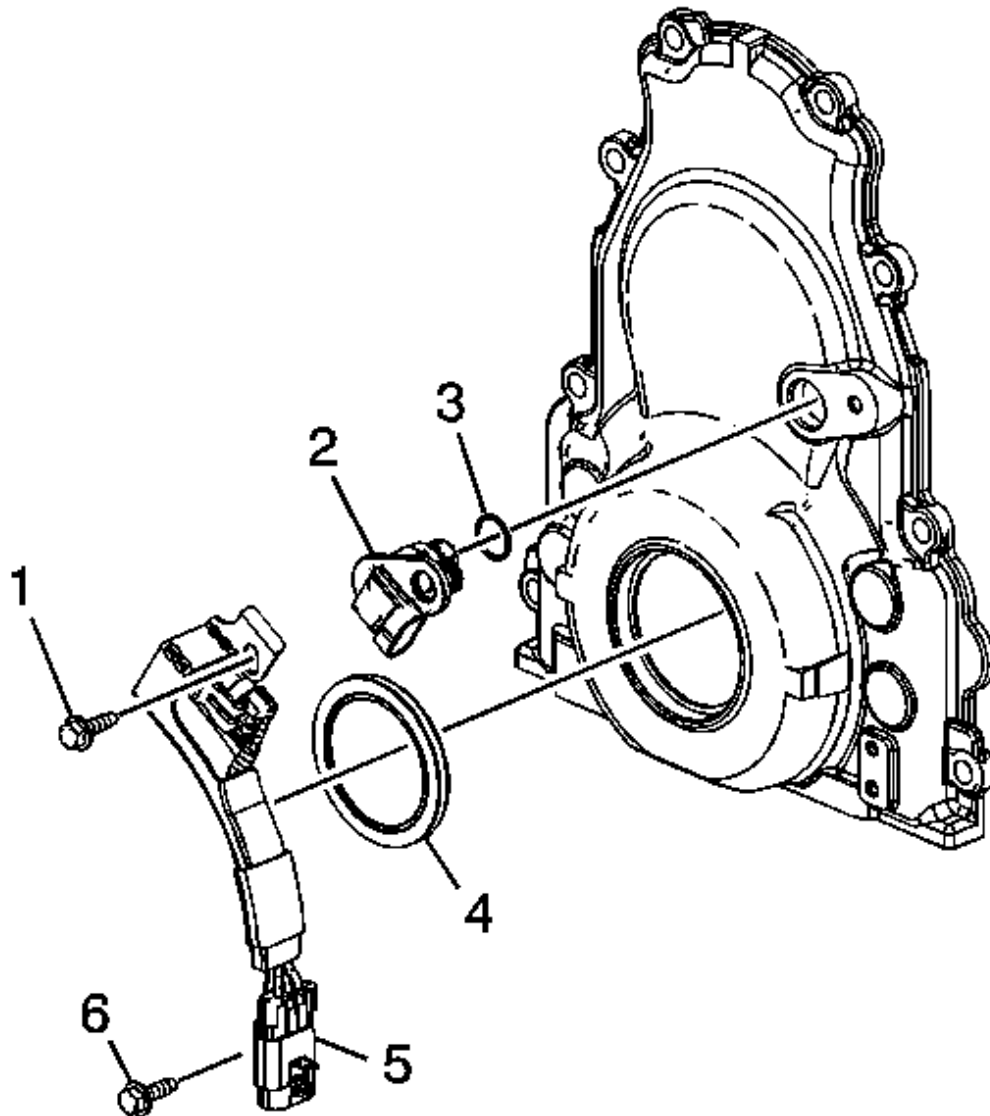


Fig. 334: View Of Front Cover, Oil Seal, Camshaft Position Sensor, Bracket & O Ring

Courtesy of GENERAL MOTORS CORP.

1. If replacing the front cover perform the following steps, otherwise proceed to step 8.
2. Inspect the CMP sensor O-ring seal for cuts or damage. If the seal is not cut or damaged, it

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

may be reused.

3. Lubricate the O-ring seal (3) with clean engine oil.
4. Install the CMP sensor (2).
5. Position the CMP sensor wire harness (5) to the front cover.
6. Connect the CMP sensor wire harness to the CMP sensor.

NOTE: Refer to Fastener Notice .

7. Install the CMP sensor wire harness bolts (1 and 6).

Tighten: Tighten the bolts to 12 N.m (106 lb in).

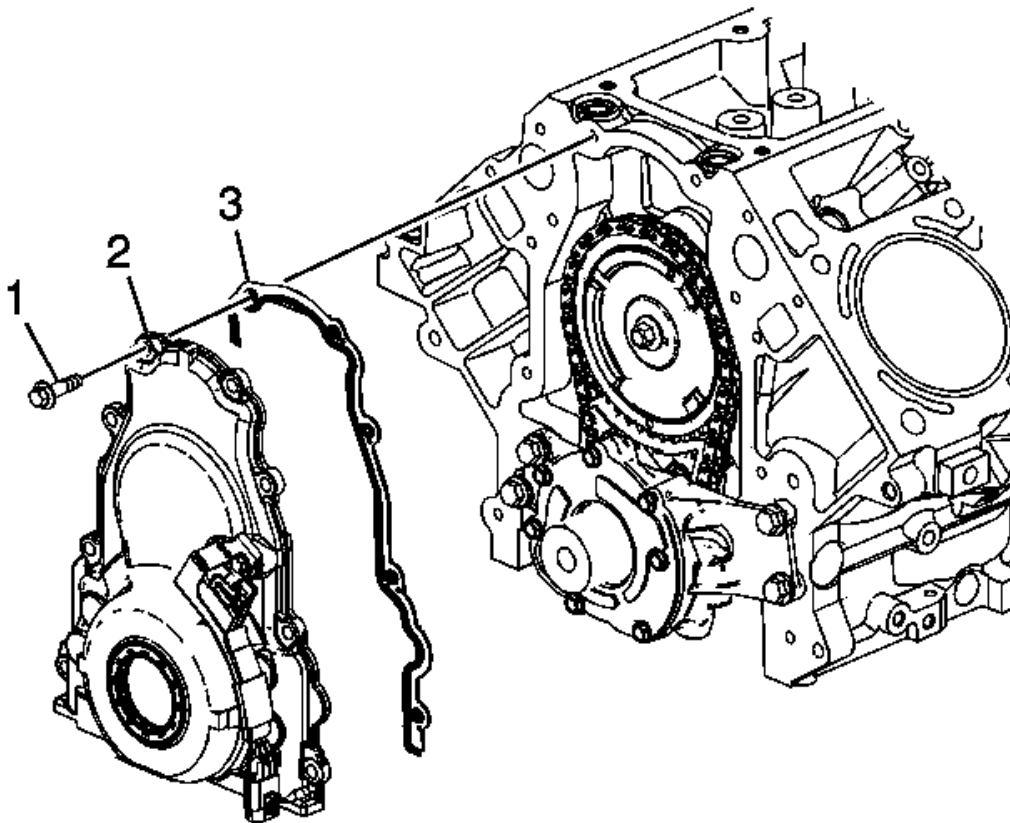


Fig. 335: View Of Front Cover & Gasket
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

8. Apply a 5 mm (0.20 in) bead of sealant, 20 mm (0.80 in) long to the oil pan to engine block junction. Refer to **Sealers, Adhesives, and Lubricants** .
9. Position the NEW engine front cover gasket (3) and front cover (2) to the engine.
10. Install the front cover bolts (1) until snug. Do not overtighten.

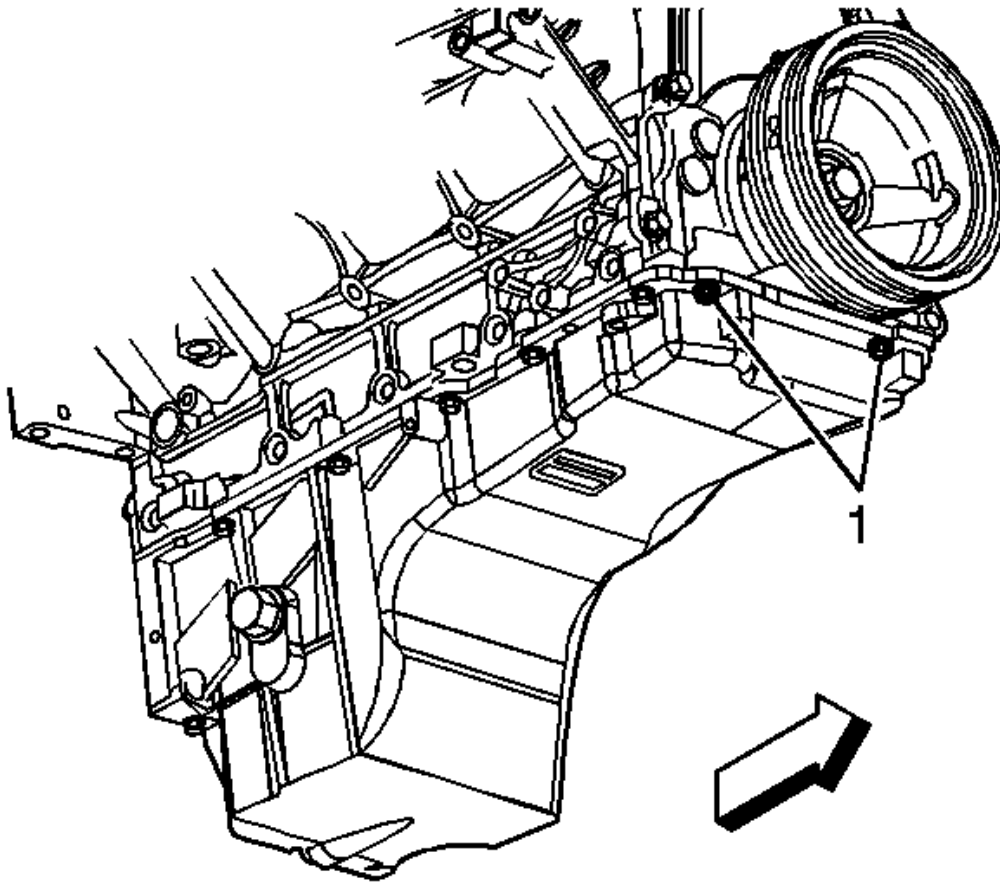


Fig. 336: View Of Oil Pan-To-Front Cover Bolts
Courtesy of GENERAL MOTORS CORP.

11. Install the oil pan-to-front cover bolts (1) until snug. Do not over tighten.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

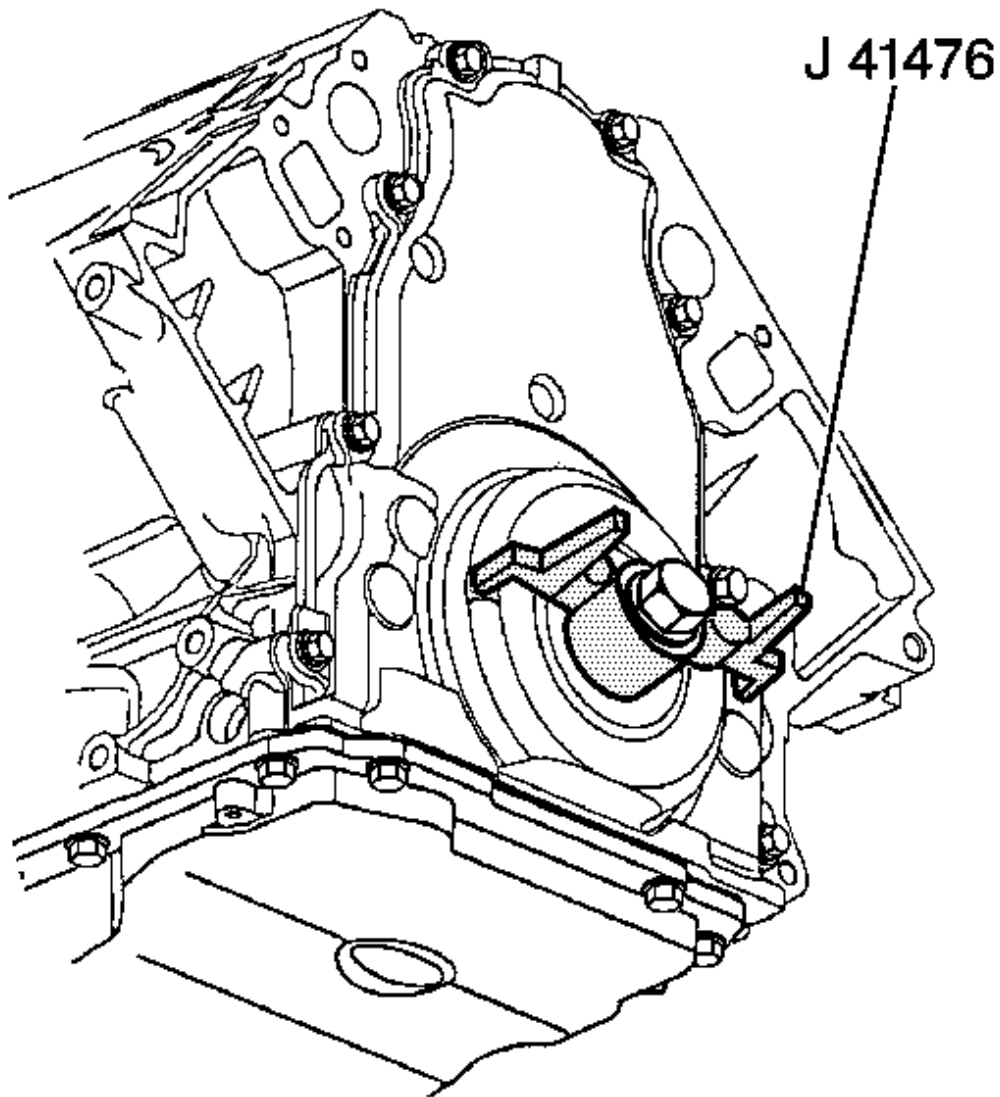


Fig. 337: View of J 41476 Installed To Front Cover
Courtesy of GENERAL MOTORS CORP.

12. Install **J 41476** to the front cover. See **Special Tools** .
13. Align the tapered legs of the **J 41476** with the machined alignment surfaces on the front cover. See **Special Tools** .
14. Install the crankshaft balancer bolt until snug. Do not overtighten.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Tighten:

1. Tighten the oil pan to front cover bolts to 25 N.m (18 lb ft).
2. Tighten the engine front cover bolts to 25 N.m (18 lb ft).

15. Remove the **J 41476** . See **Special Tools** .

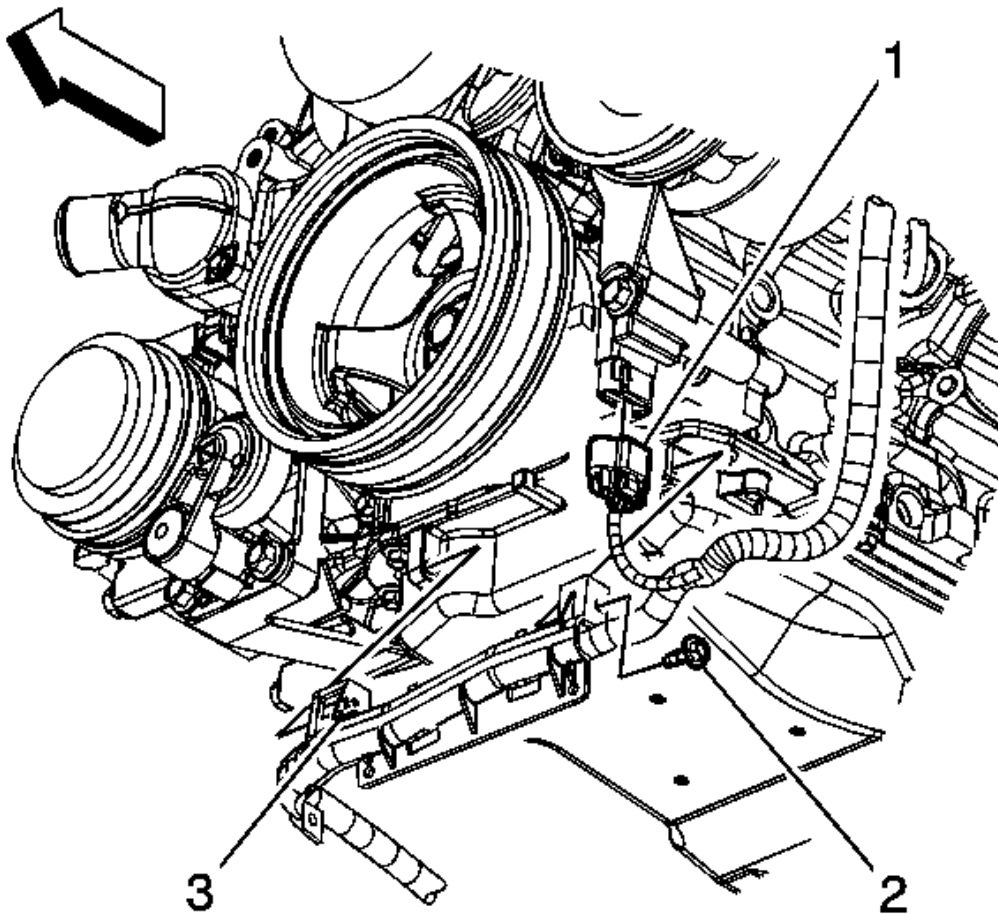


Fig. 338: View Of Electrical Connector, Cable Channel Bolt & Pin
Courtesy of GENERAL MOTORS CORP.

16. Connect the engine harness electrical connector (1) to the CMP sensor wire harness electrical connector.
17. Install a NEW crankshaft front oil seal. Refer to **Crankshaft Front Oil Seal Replacement**

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

(LMG, LY2 and LY5) or Crankshaft Front Oil Seal Replacement (LH6, LY6, L76 and L92).

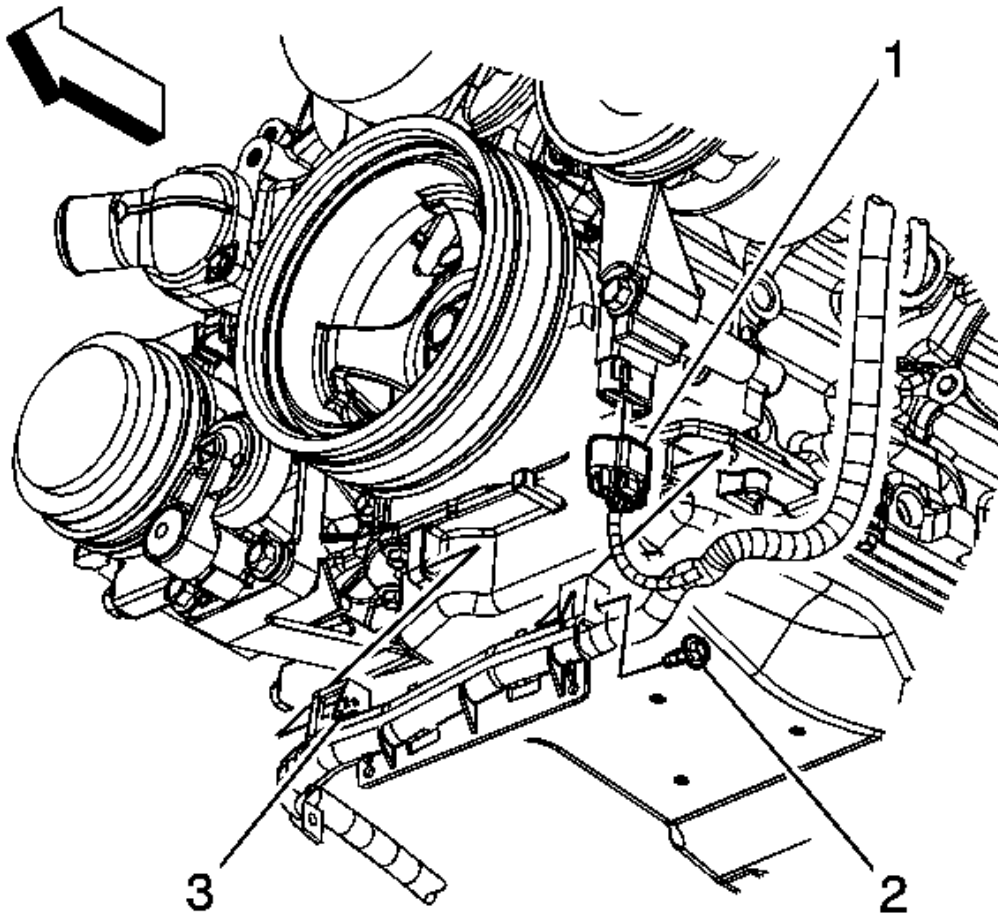
18. Install the water pump. Refer to **Water Pump Replacement (LY6, L76 and L92)** or **Water Pump Replacement (LH6, LY2, LY5, and LMG)** .

ENGINE FRONT COVER REPLACEMENT (LY6, L76 AND L92)

Tools Required

J 41476 Front and Rear Cover Alignment Tool. See **Special Tools** .

Removal Procedure



2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Fig. 339: View Of Electrical Connector, Cable Channel Bolt & Pin
Courtesy of GENERAL MOTORS CORP.

1. Remove the water pump. Refer to Water Pump Replacement (LY6, L76 and L92) or Water Pump Replacement (LH6, LY2, LY5, and LMG) .
2. Remove the crankshaft balancer. Refer to Crankshaft Balancer Replacement.
3. Disconnect the engine harness electrical connector (1) from the camshaft position (CMP) sensor wire harness electrical connector.

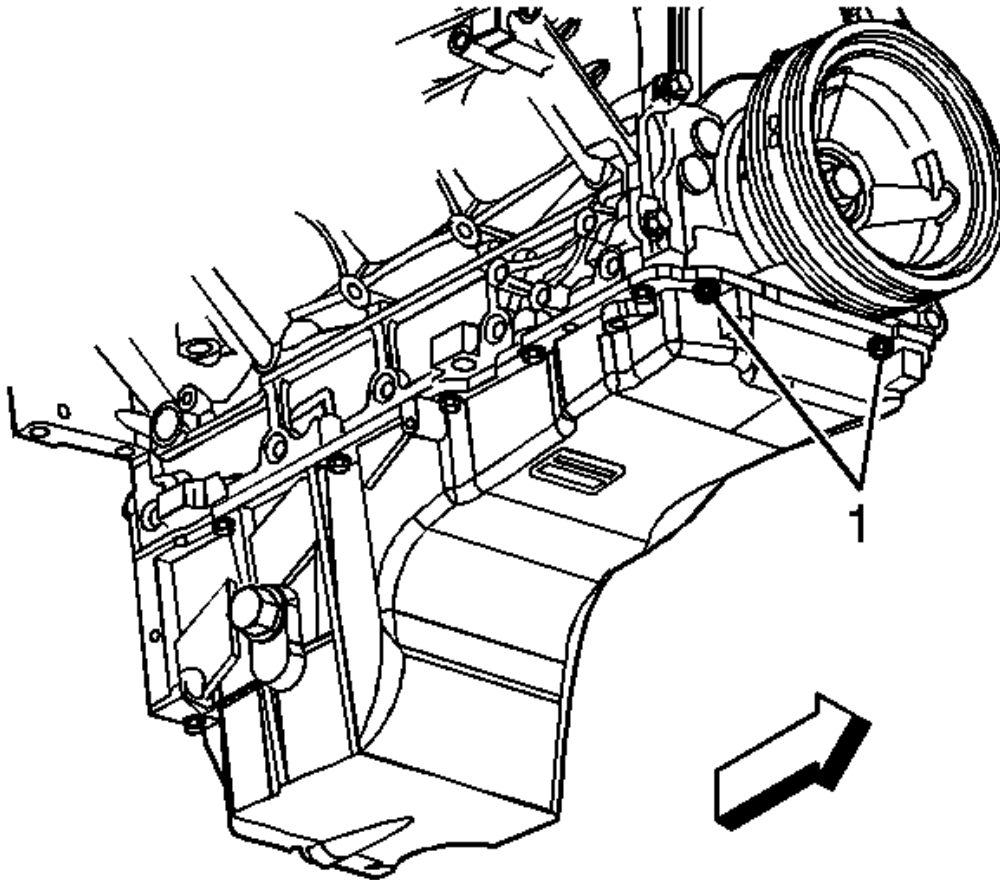


Fig. 340: View Of Oil Pan-To-Front Cover Bolts
Courtesy of GENERAL MOTORS CORP.

4. Remove the oil pan-to-front cover bolts (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

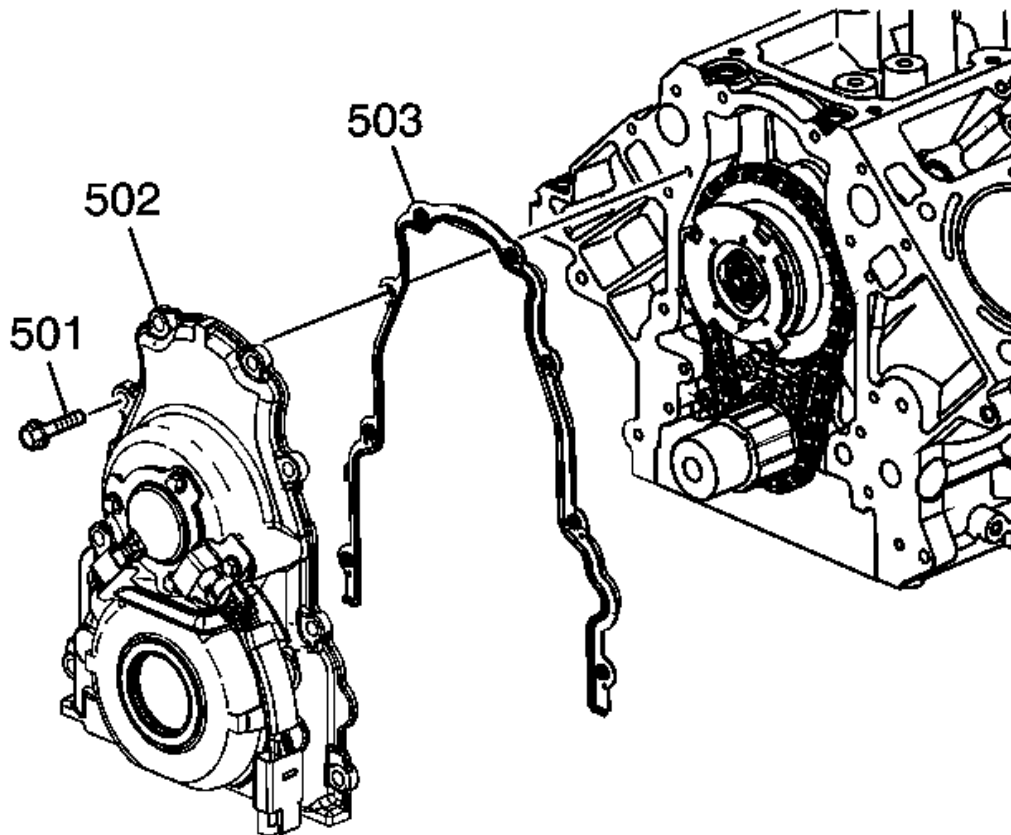


Fig. 341: View Of Front Cover, Bolts & Gasket
Courtesy of GENERAL MOTORS CORP.

5. Remove the front cover bolts (501).
6. Remove the front cover (502) and gasket (503).
7. Discard the front cover gasket.
8. Remove the crankshaft front oil seal.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

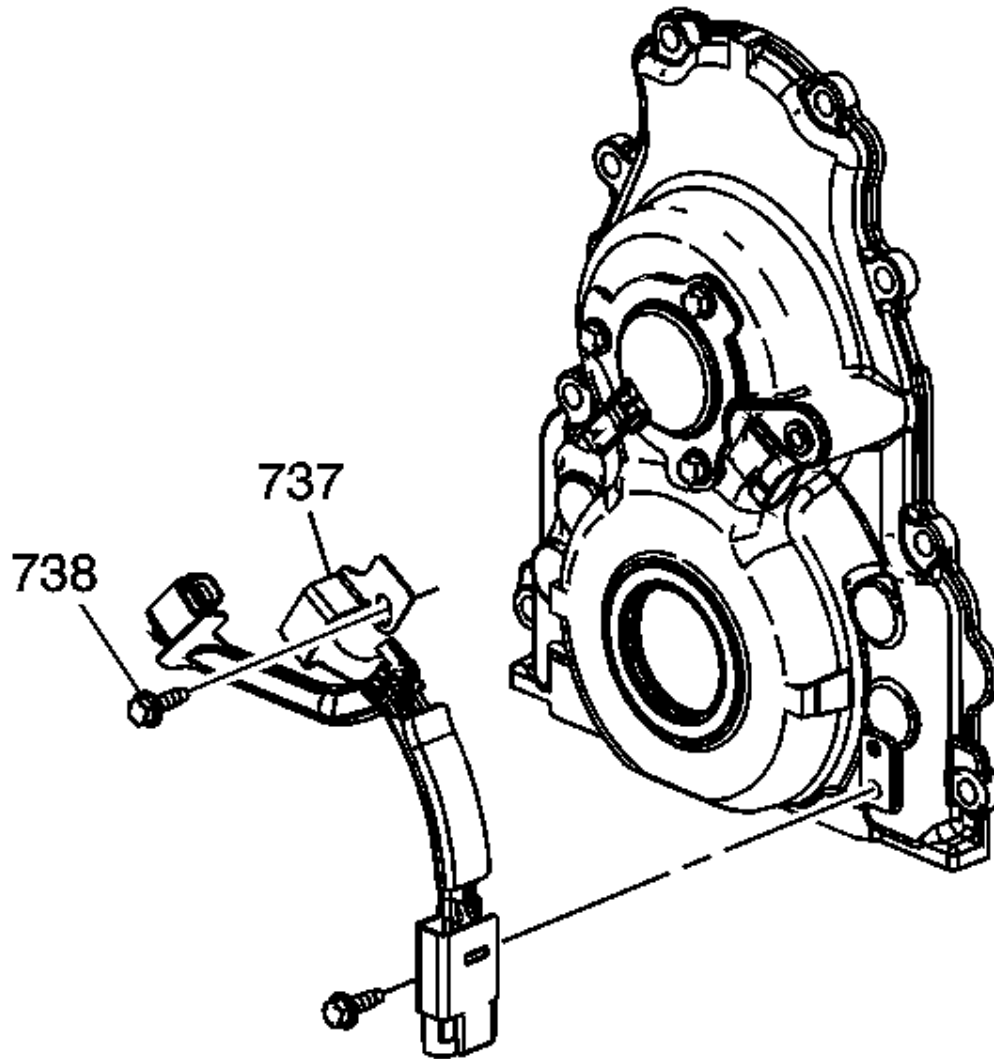


Fig. 342: View Of CMP Sensor Wire Harness & Bolts
Courtesy of GENERAL MOTORS CORP.

9. If replacing the engine front cover perform the following steps, otherwise proceed to step 10 of the installation procedure.
10. Remove the CMP sensor wire harness bolts (738).
11. Disconnect the CMP sensor wire harness from the CMP sensor.
12. Remove the CMP sensor wire harness (737).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

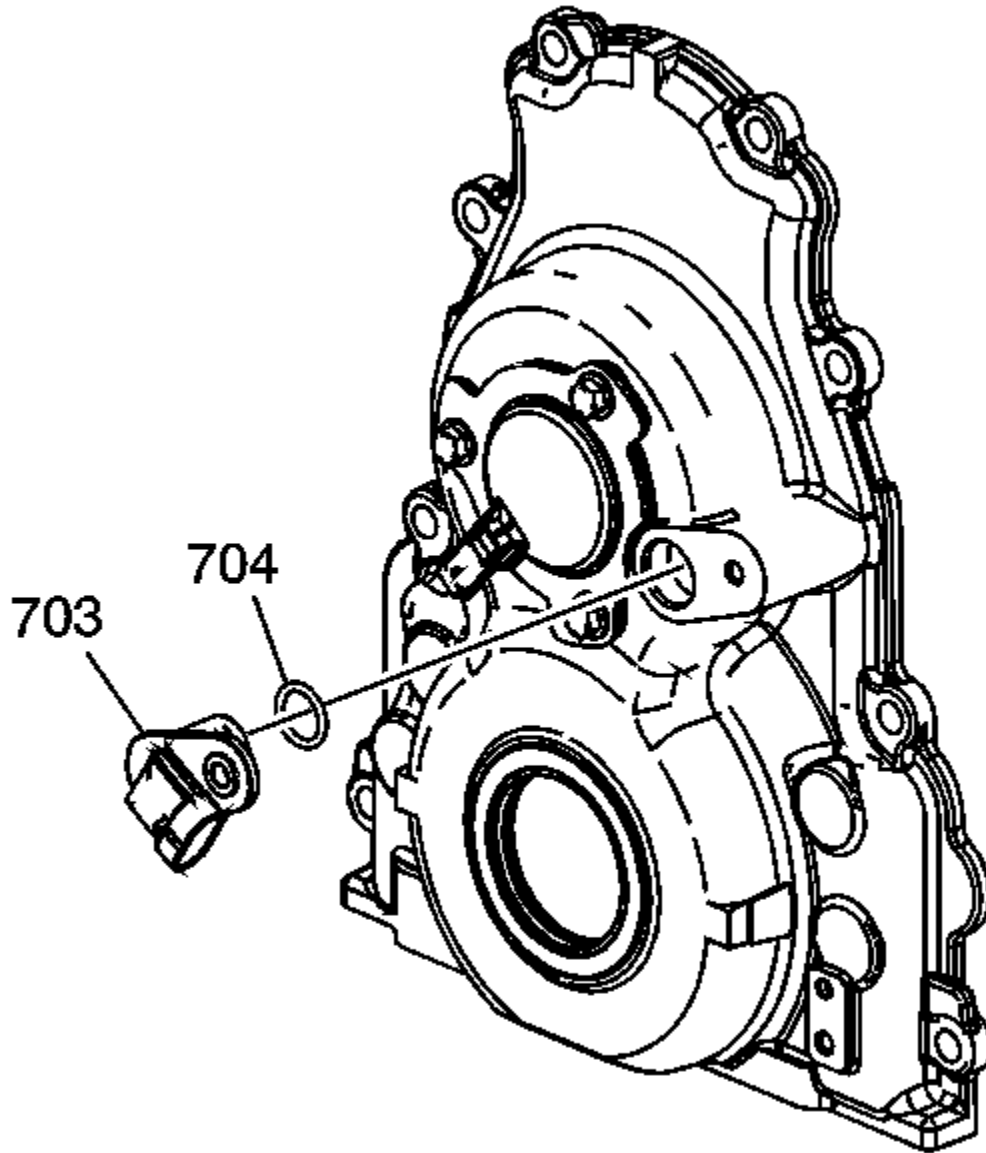


Fig. 343: View Of CMP Sensor & O-Ring
Courtesy of GENERAL MOTORS CORP.

13. Remove the CMP sensor (703).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

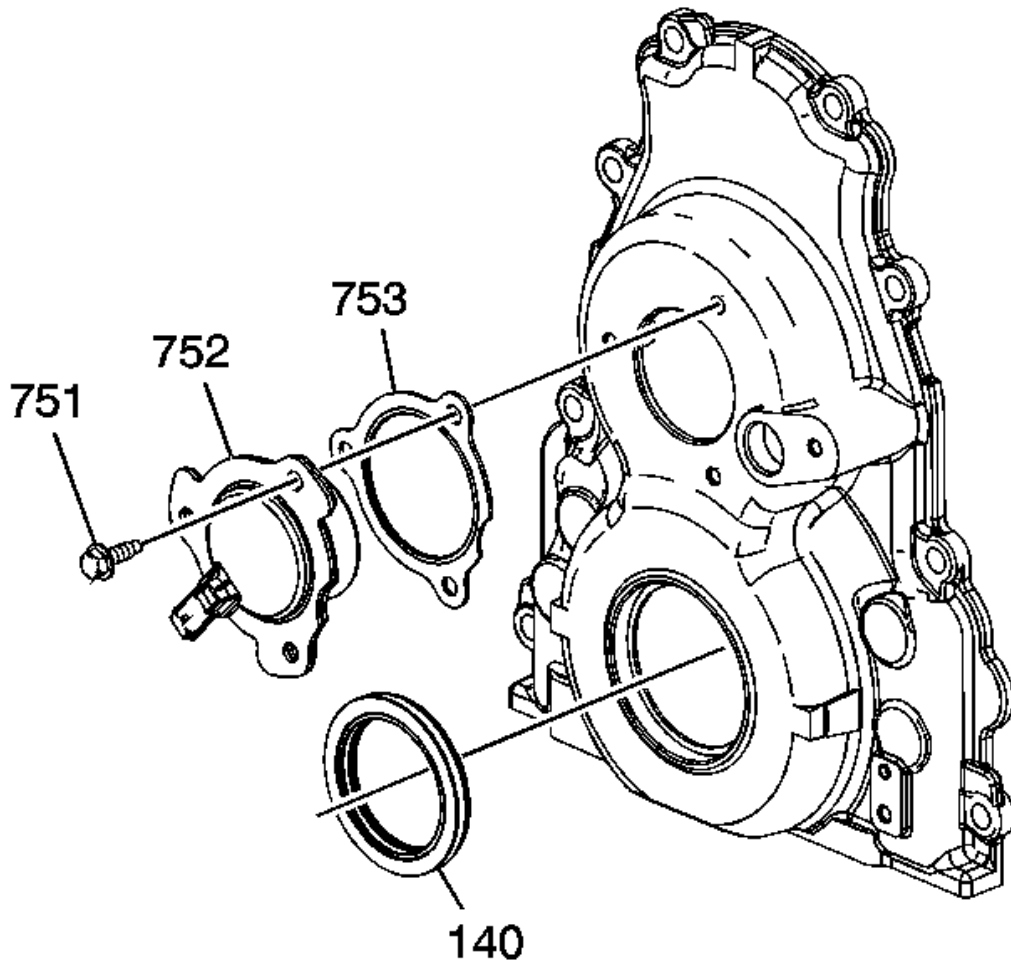


Fig. 344: View Of CMP Actuator Magnet, Bolts, Gasket & Oil Seal
Courtesy of GENERAL MOTORS CORP.

14. Remove the CMP actuator magnet bolts (751), and magnet (752).
15. Remove and discard the CMP actuator magnet gasket (753).

Installation Procedure

- IMPORTANT:**
- Do not reuse the crankshaft oil seal or front cover gasket.
 - Do not apply any type of sealant to the front cover gasket, unless specified.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- The special tool in this procedure is used to properly center the front crankshaft front oil seal.
 - All gasket surfaces should be free of oil or other foreign material during assembly.
 - The crankshaft front oil seal **MUST** be centered in relation to the crankshaft.
 - An improperly aligned front cover may cause premature front oil seal wear and/or engine oil leaks.

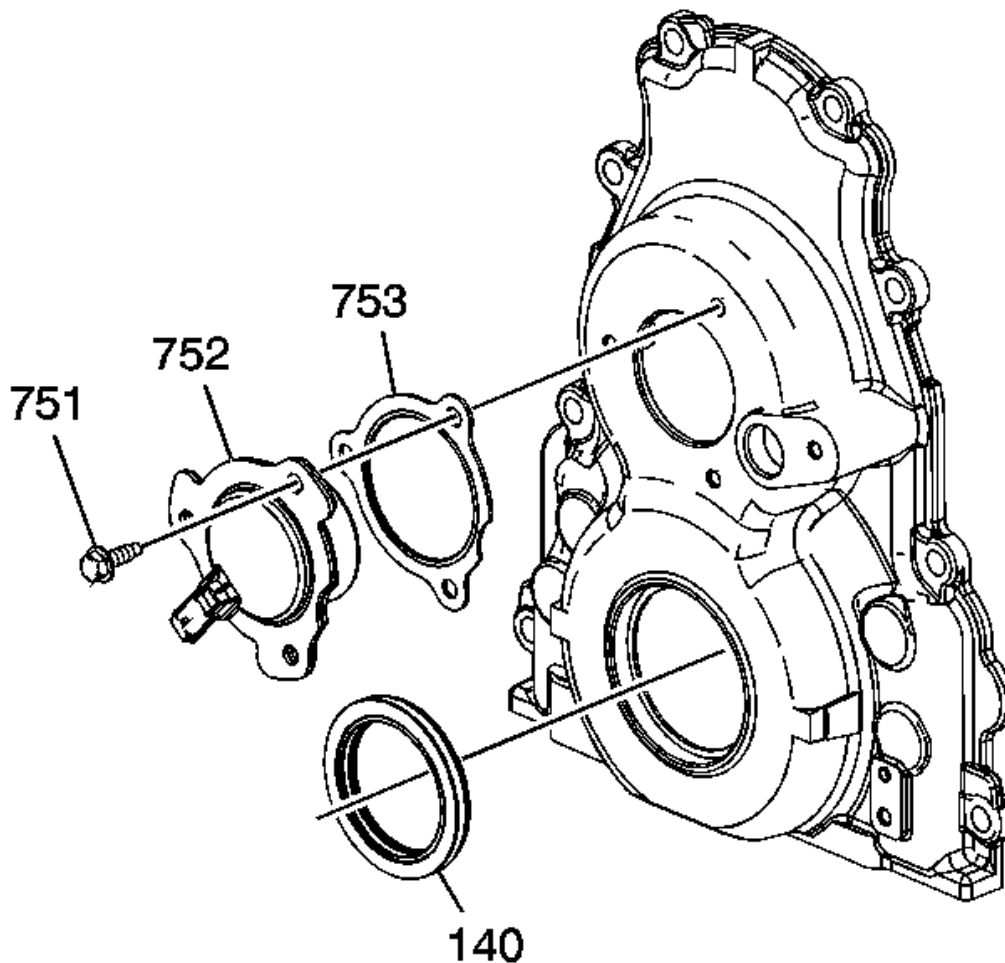


Fig. 345: View Of CMP Actuator Magnet, Bolts, Gasket & Oil Seal

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Courtesy of GENERAL MOTORS CORP.

1. If replacing the front cover perform the following steps, otherwise proceed to step 10.
2. Install a NEW CMP actuator magnet gasket (753) onto the magnet.

NOTE: Refer to Fastener Notice .

3. Install the CMP actuator magnet (752) and bolts (751).

Tighten: Tighten the bolts to 12 N.m (106 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

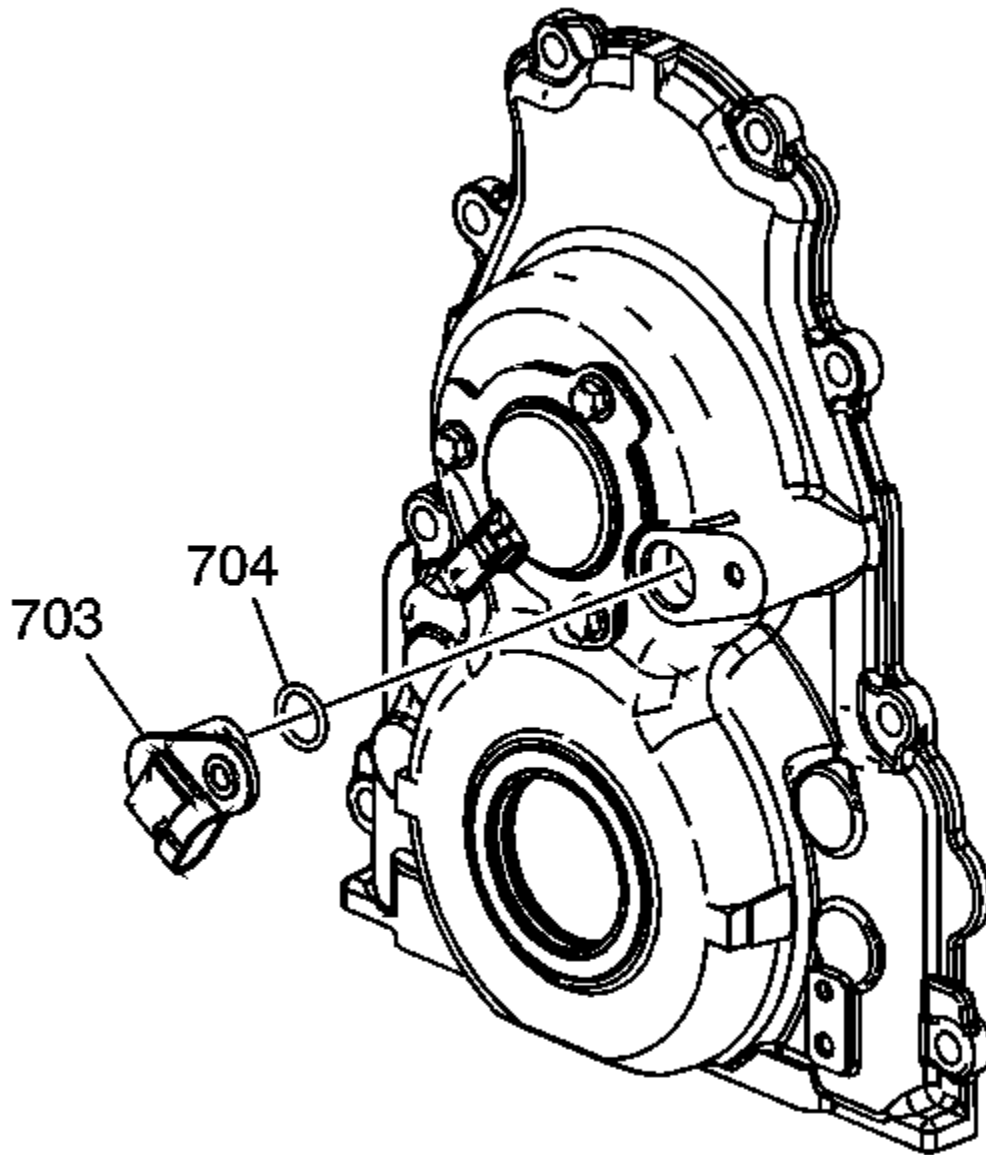


Fig. 346: View Of CMP Sensor & O-Ring
Courtesy of GENERAL MOTORS CORP.

4. Inspect the CMP sensor O-ring seal for cuts or damage. If the seal is not cut or damaged, it may be reused.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

5. Lubricate the O-ring seal (704) with clean engine oil.
6. Install the CMP sensor (703).

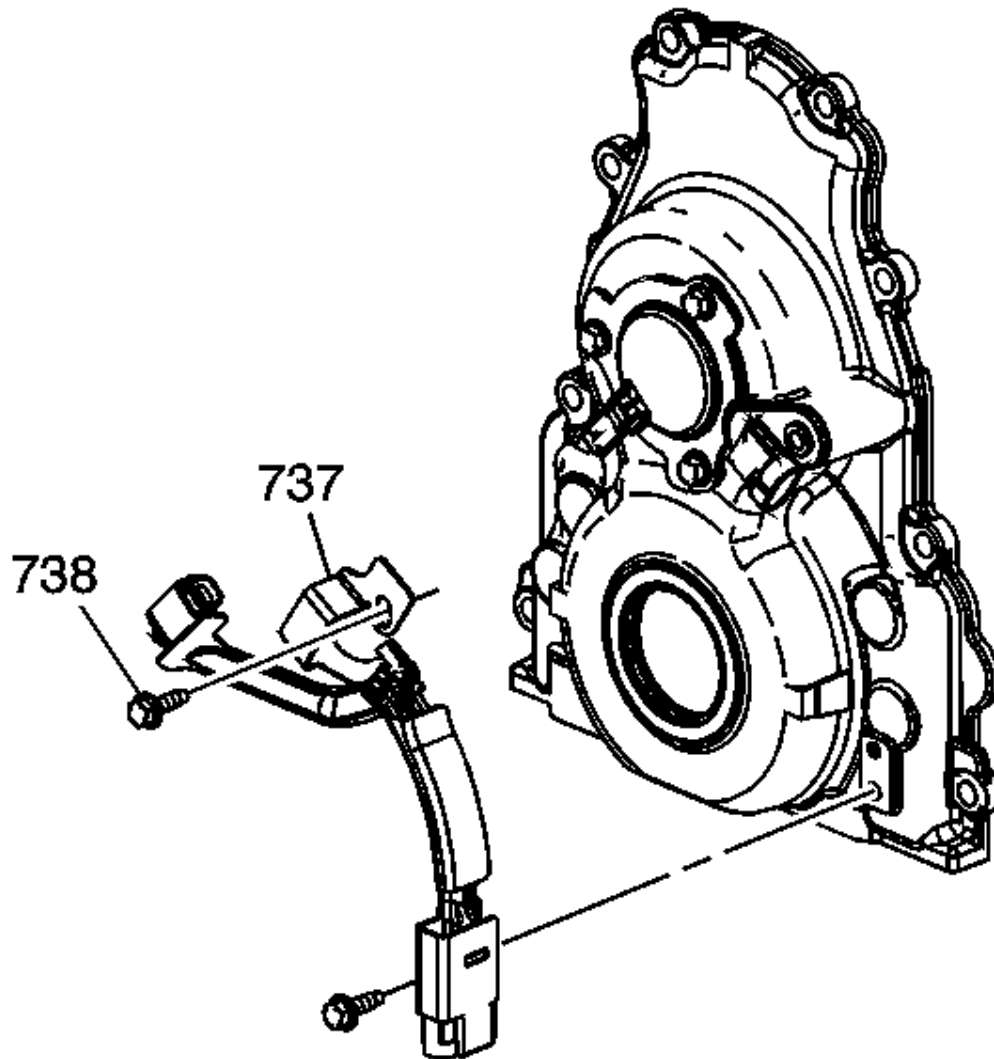


Fig. 347: View Of CMP Sensor Wire Harness & Bolts
Courtesy of GENERAL MOTORS CORP.

7. Position the CMP sensor wire harness (737) to the front cover
8. Connect the CMP sensor wire harness to the CMP sensor.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

9. Install the CMP sensor wire harness bolts (738).

Tighten: Tighten the bolts to 12 N.m (106 lb in).

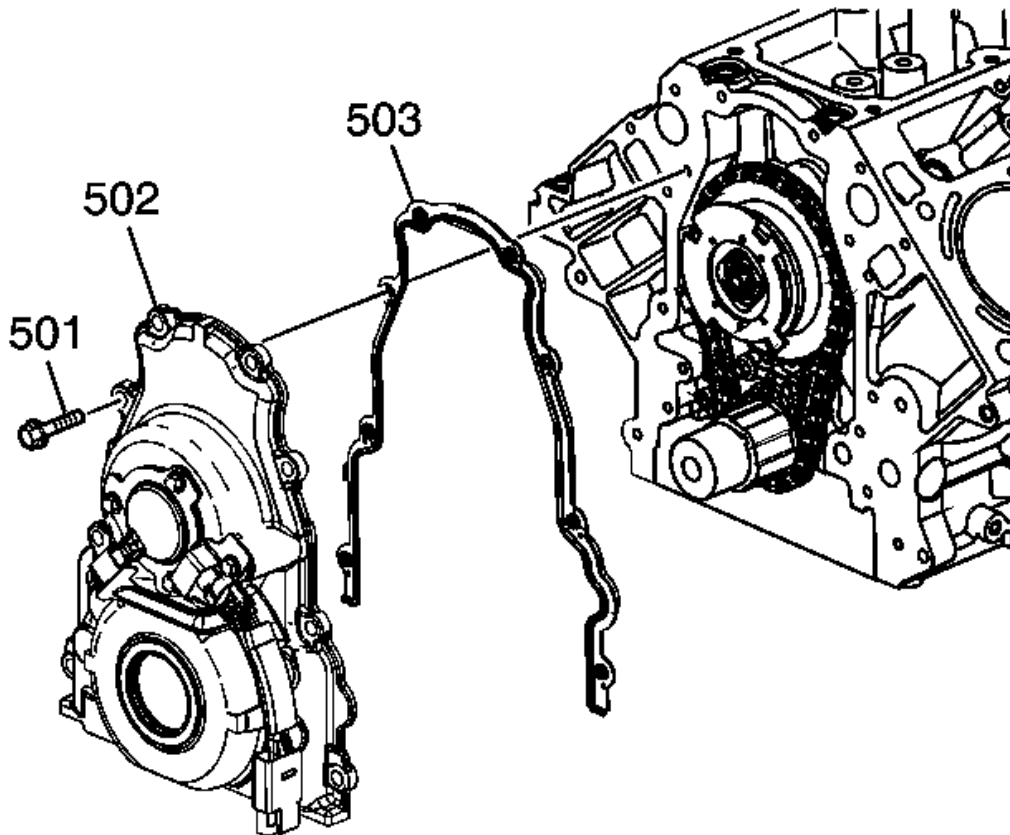


Fig. 348: View Of Front Cover, Bolts & Gasket
Courtesy of GENERAL MOTORS CORP.

10. Apply a 5 mm (0.20 in) bead of sealant, 20 mm (0.80 in) long to the oil pan to engine block junction. Refer to Sealers, Adhesives, and Lubricants .
11. Position the NEW engine front cover gasket (503) and front cover (502) to the engine.
12. Install the front cover bolts (501) until snug. Do not overtighten.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

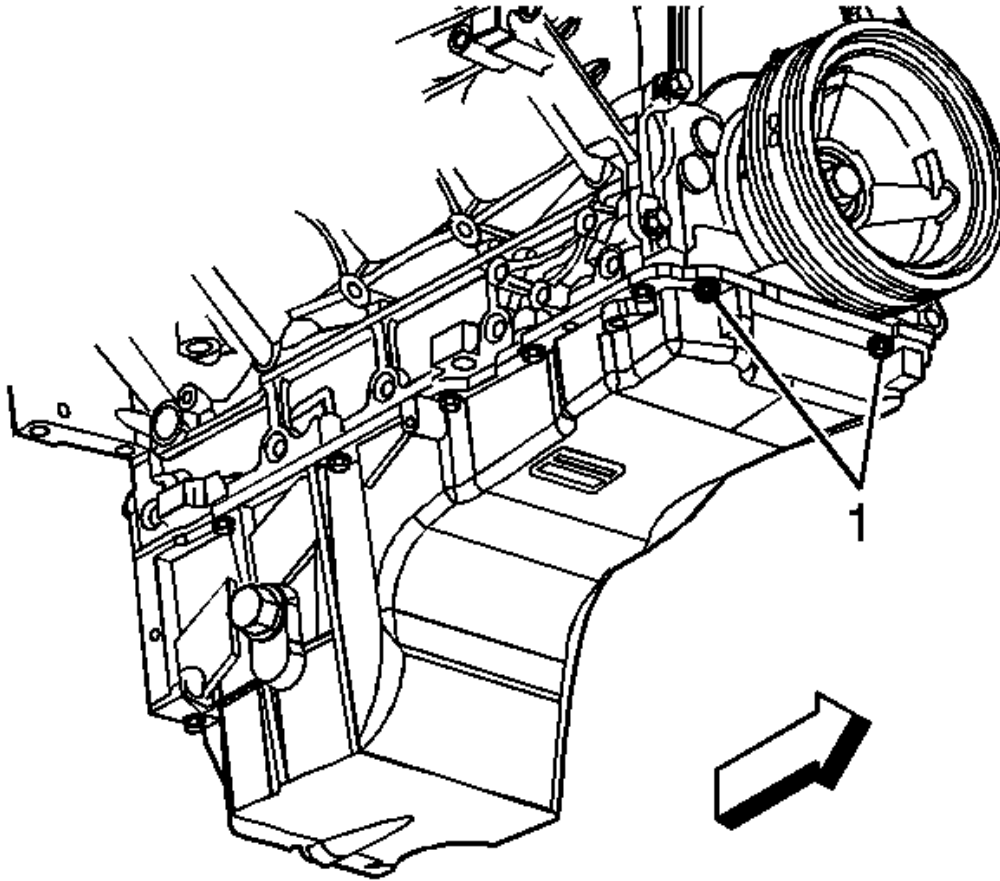


Fig. 349: View Of Oil Pan-To-Front Cover Bolts
Courtesy of GENERAL MOTORS CORP.

13. Install the oil pan-to-front cover bolts (1) until snug. Do not over tighten.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

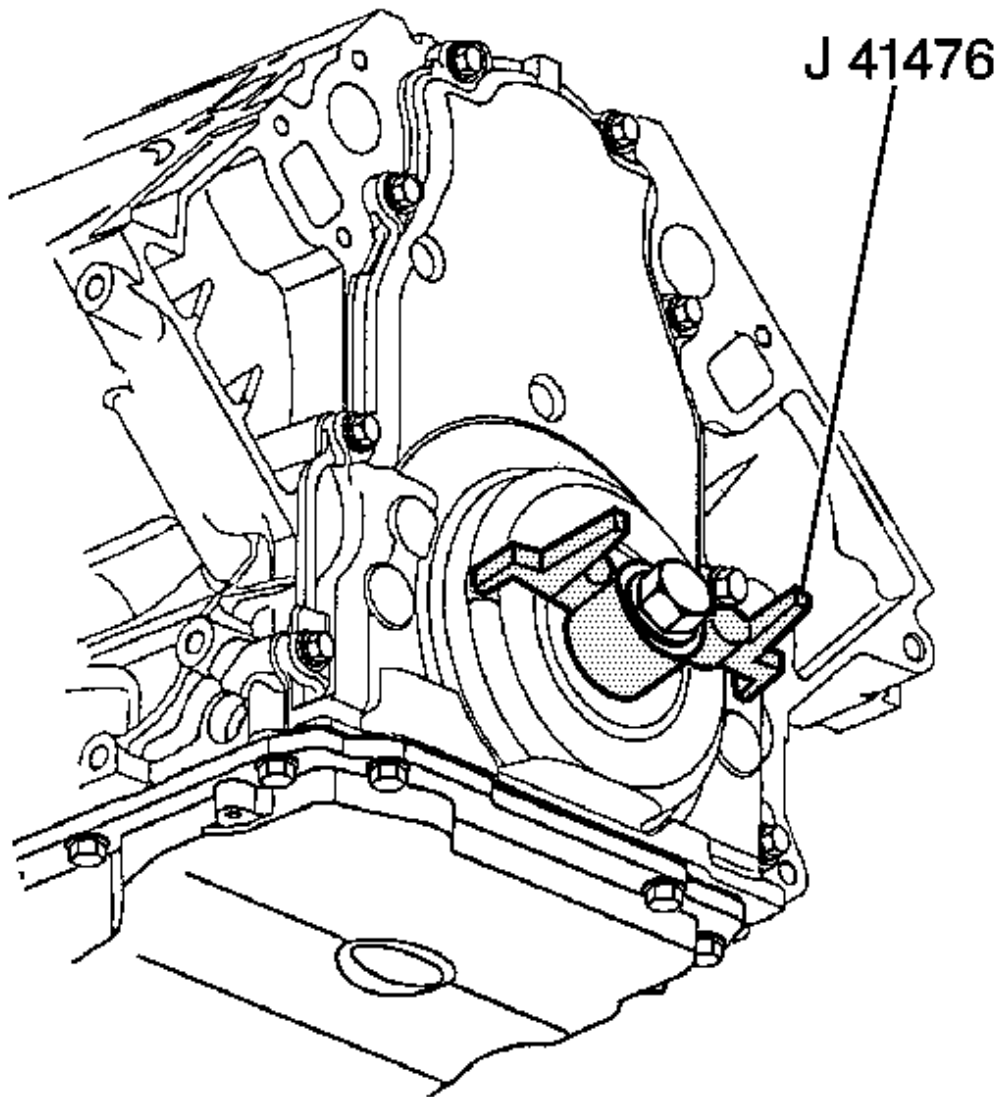


Fig. 350: View of J 41476 Installed To Front Cover
Courtesy of GENERAL MOTORS CORP.

14. Install **J 41476** to the front cover. See **Special Tools** .
15. Align the tapered legs of the **J 41476** with the machined alignment surfaces on the front cover. See **Special Tools** .
16. Install the crankshaft balancer bolt until snug. Do not overtighten.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Tighten:

1. Tighten the oil pan to front cover bolts to 25 N.m (18 lb ft).
2. Tighten the engine front cover bolts to 25 N.m (18 lb ft).

17. Remove the **J 41476** . See **Special Tools** .

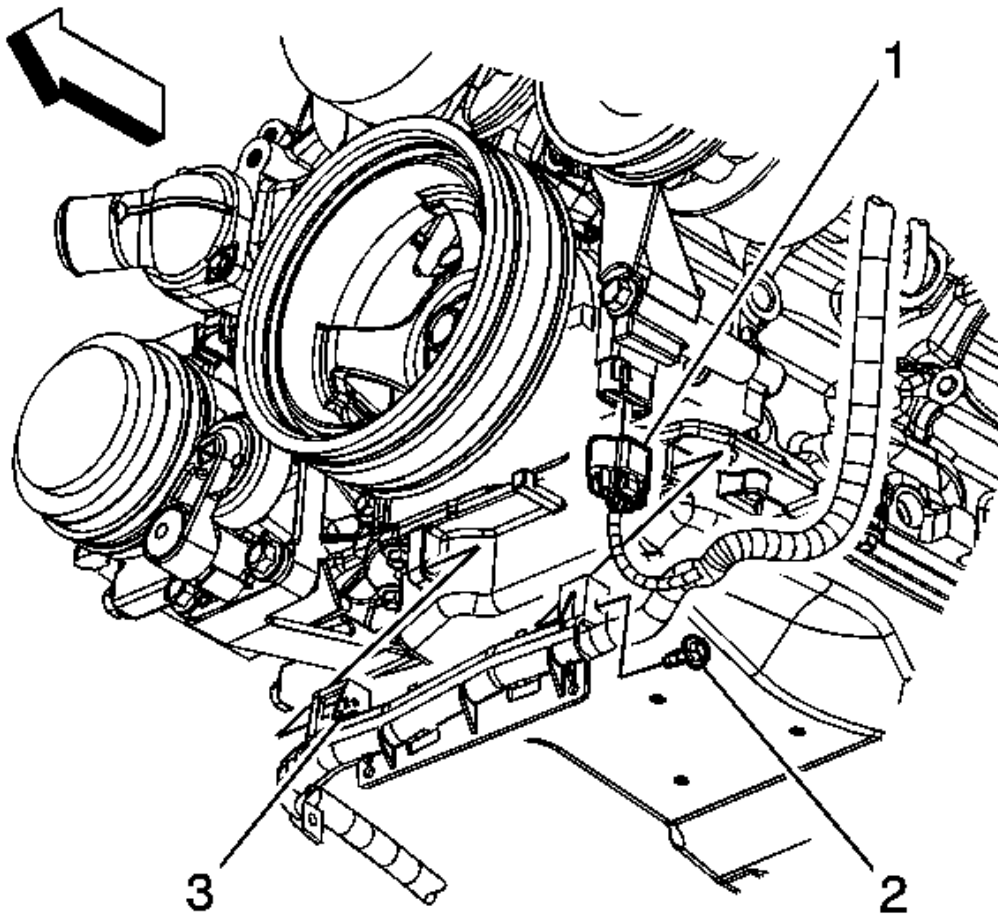


Fig. 351: View Of Electrical Connector, Cable Channel Bolt & Pin
Courtesy of GENERAL MOTORS CORP.

18. Connect the engine harness electrical connector (1) to the CMP sensor wire harness electrical connector.
19. Install a NEW crankshaft front oil seal. Refer to **Crankshaft Front Oil Seal Replacement**

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

(LMG, LY2 and LY5) or Crankshaft Front Oil Seal Replacement (LH6, LY6, L76 and L92).

20. Install the water pump. Refer to **Water Pump Replacement (LY6, L76 and L92)** or **Water Pump Replacement (LH6, LY2, LY5, and LMG)** .

CAMSHAFT POSITION ACTUATOR SOLENOID VALVE REPLACEMENT

Special Tools

- **J 42386-A** Flywheel Holding Tool. See **Special Tools** .
- **J 45059** Angle Meter

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

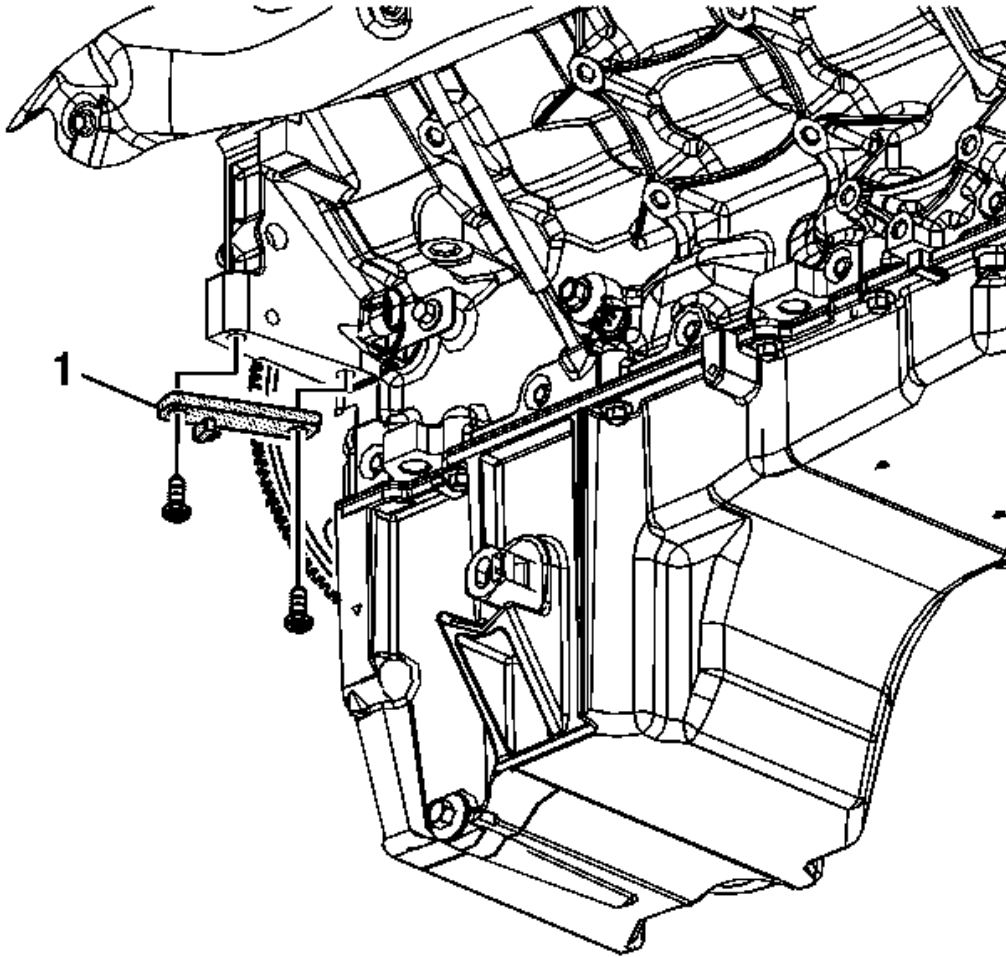


Fig. 352: View Of Special Tool & Bolts
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

1. Install the **J 42386-A** (1) and bolts. See Special Tools . Use 1 M10 - 1.5 x 120 mm and 1 M10 - 1.5 x 45 mm bolt for proper tool operation.

Tighten: Tighten the **J 42386-A** bolts to 50 N. See Special Tools .m (37 lb ft).

2. Remove the camshaft position (CMP) actuator magnet. Refer to Camshaft Position

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Actuator Magnet Replacement.

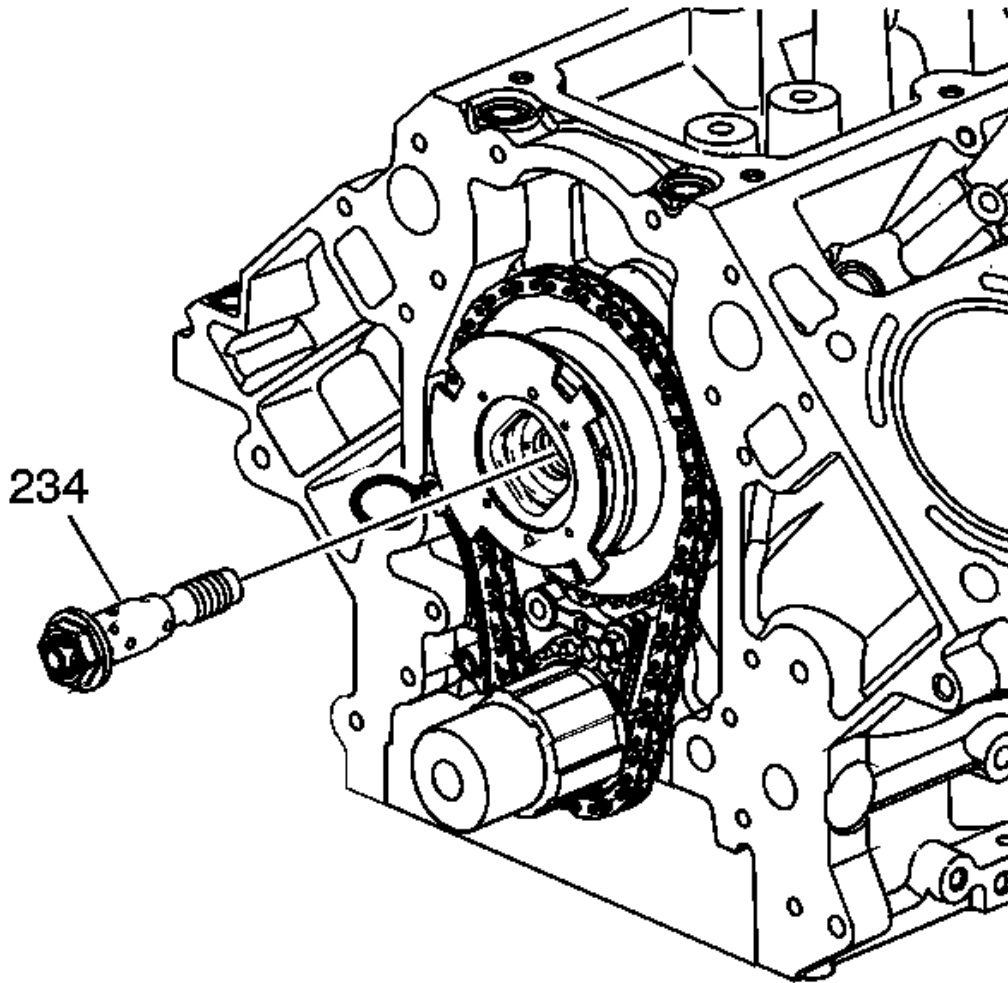


Fig. 353: View Of CMP Actuator Solenoid Valve
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to Camshaft Position Actuator Removal and Installation Caution .

3. Remove the CMP actuator solenoid valve (234).
4. Discard the solenoid valve.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Installation Procedure

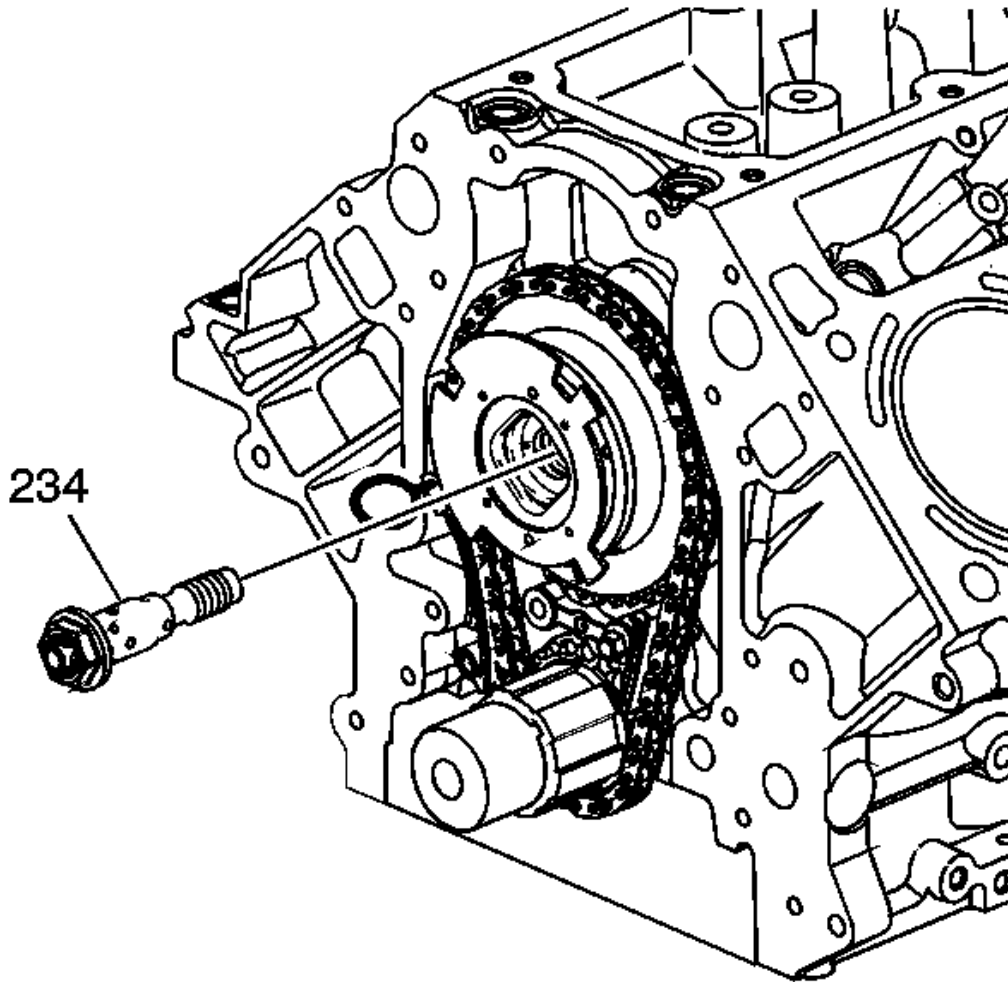


Fig. 354: View Of CMP Actuator Solenoid Valve
Courtesy of GENERAL MOTORS CORP.

1. Install a NEW CMP actuator solenoid valve (234).

With the CMP actuator properly positioned onto the camshaft, the CMP actuator solenoid valve can be threaded completely into the camshaft using light hand pressure. Tighten by hand until snug.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

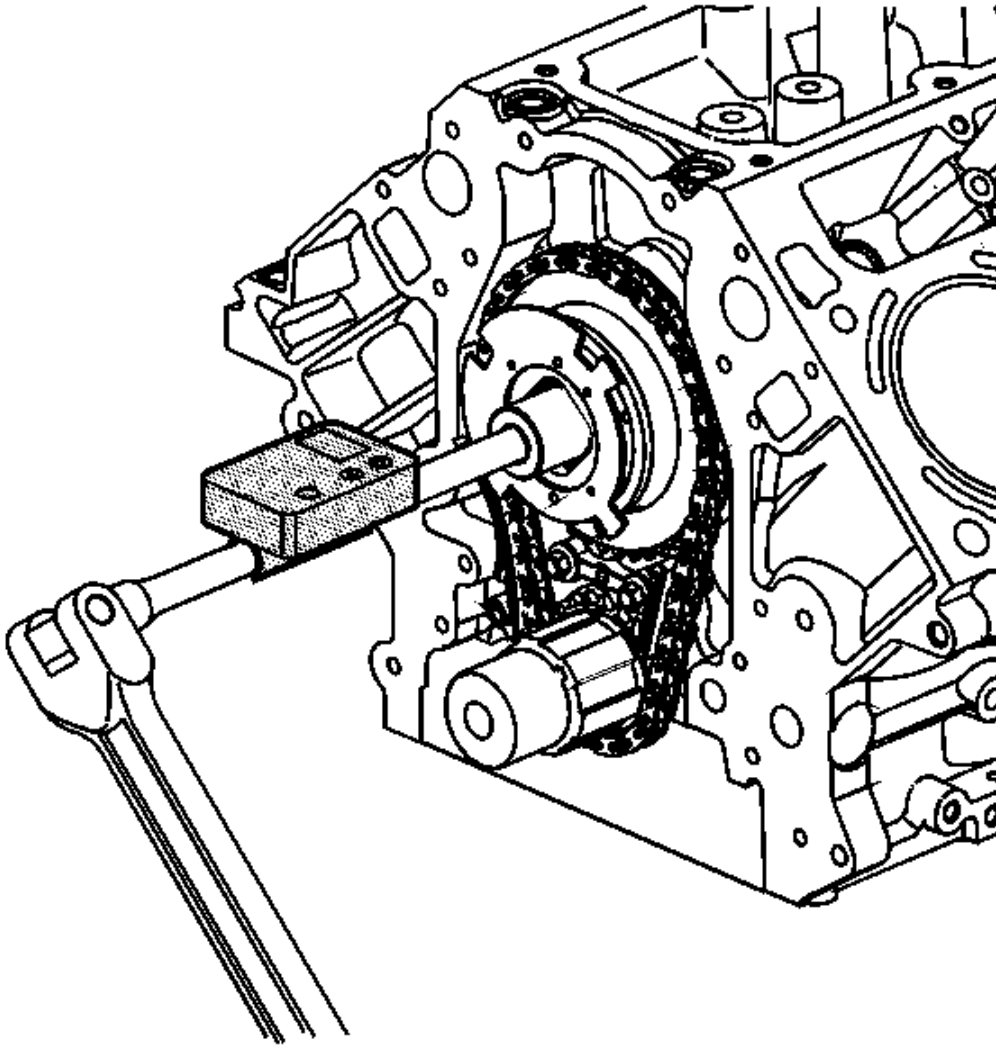


Fig. 355: Tightening CMP Actuator Solenoid Valve
Courtesy of GENERAL MOTORS CORP.

2. Tighten the CMP actuator solenoid valve.

Tighten:

1. Tighten the CMP actuator solenoid valve a first pass to 65 N.m (48 lb ft).
2. Tighten the CMP actuator solenoid valve a final pass an additional 90 degrees using the.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

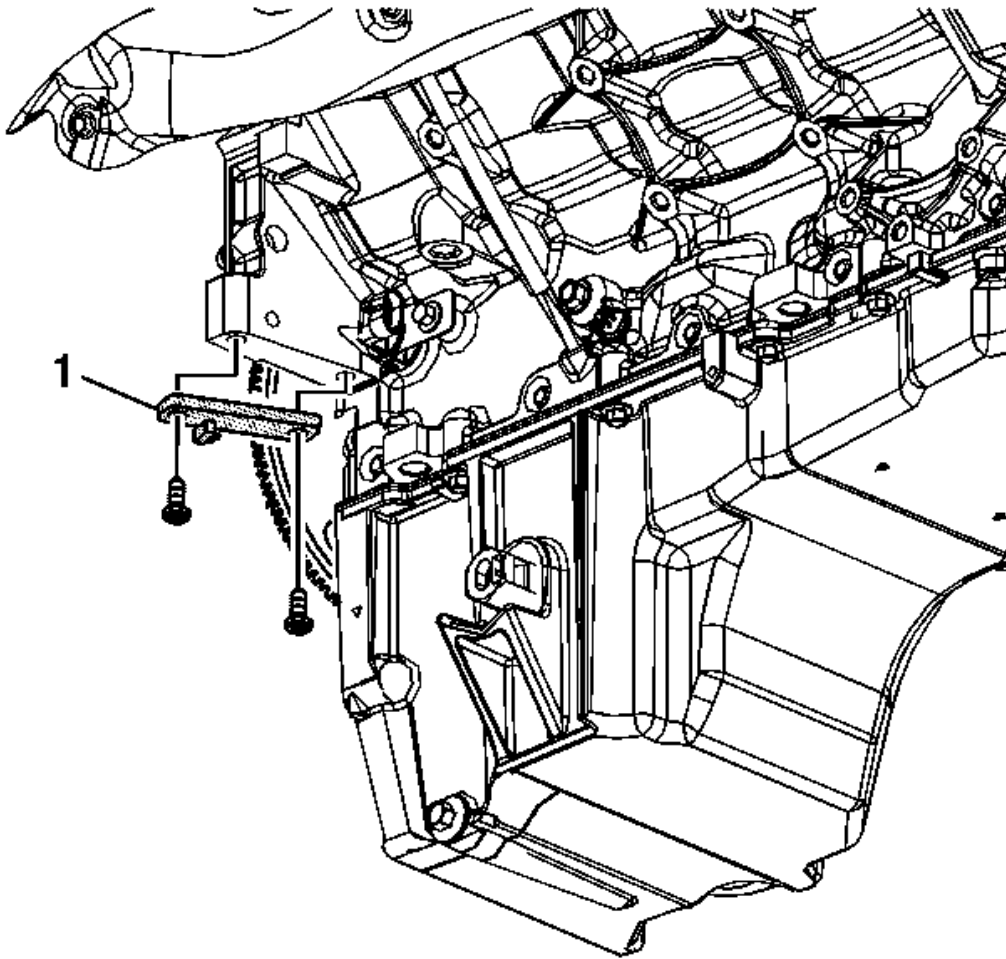


Fig. 356: View Of Special Tool & Bolts
Courtesy of GENERAL MOTORS CORP.

3. Remove the J 42386-A (1). See Special Tools .
4. Install the CMP actuator magnet. Refer to Camshaft Position Actuator Magnet Replacement.

CAMSHAFT POSITION ACTUATOR REPLACEMENT

Tools Required

- EN 46330 Timing Belt Tensioner Retaining Pin. See Special Tools .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

• J 45059 Angle Meter

Removal Procedure

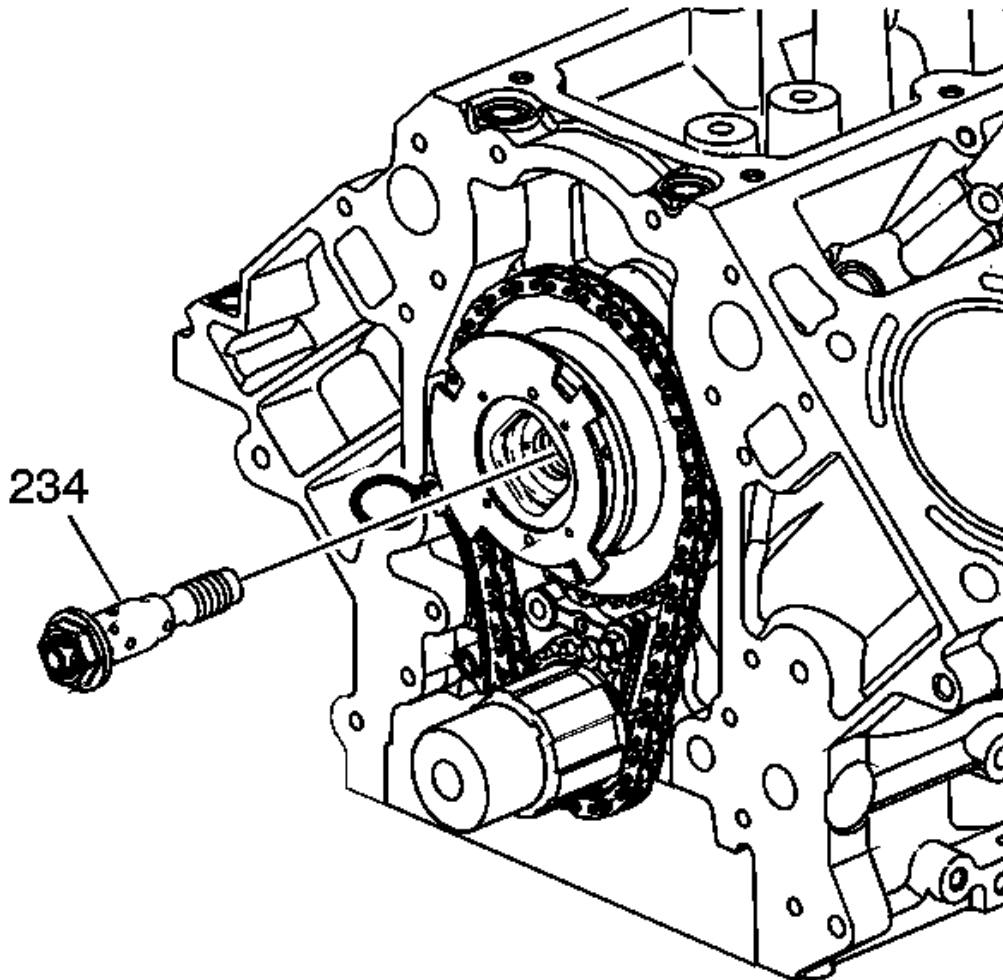


Fig. 357: View Of CMP Actuator Solenoid Valve
Courtesy of GENERAL MOTORS CORP.

1. Remove the oil pump. Refer to **Oil Pump, Screen, and Crankshaft Oil Deflector Replacement (LY6, L76 and L92)** or **Oil Pump, Screen, and Crankshaft Oil Deflector Replacement (LH6, LMG, LY2 and LY5)** .
2. Remove and discard the camshaft position (CMP) actuator solenoid valve (234).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

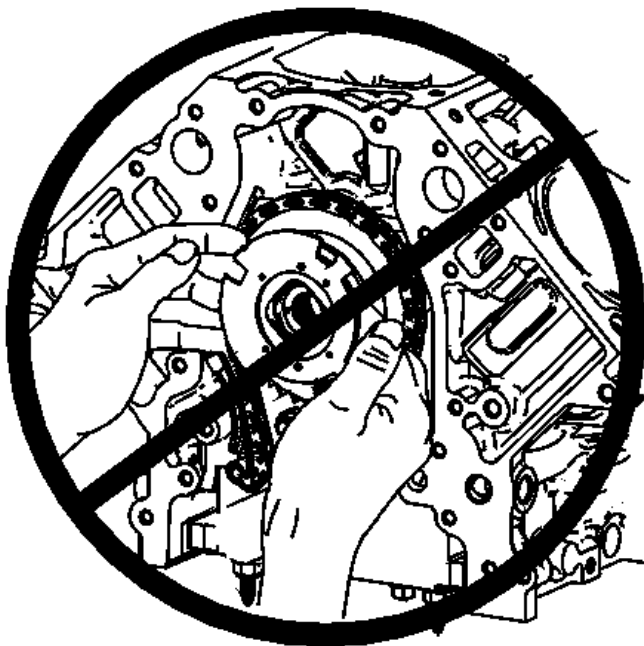
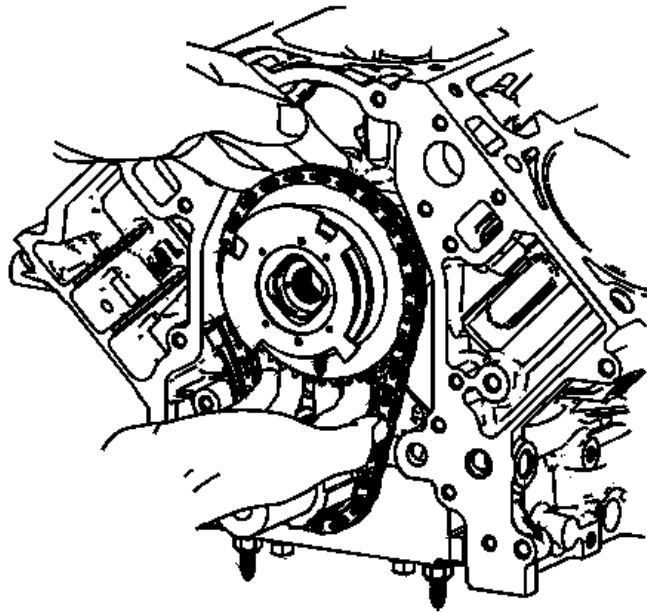


Fig. 358: View Of Proper CMP Actuator Removal
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

CAUTION: Do not push or pull on the reluctor wheel of the camshaft position (CMP) actuator during removal or installation. The reluctor wheel is retained to the front of the CMP actuator by 3 roll pins. Pushing or pulling on the wheel may dislodge the wheel from the front of the actuator. The actuator return spring is under tension and may rotate the dislodged reluctor wheel, causing personal injury.

3. Loosen and separate the CMP actuator and timing chain from the camshaft. Position your fingers behind the actuator sprocket and pull the actuator away from the front of the camshaft. Never pull on the reluctor wheel when attempting to remove the actuator.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

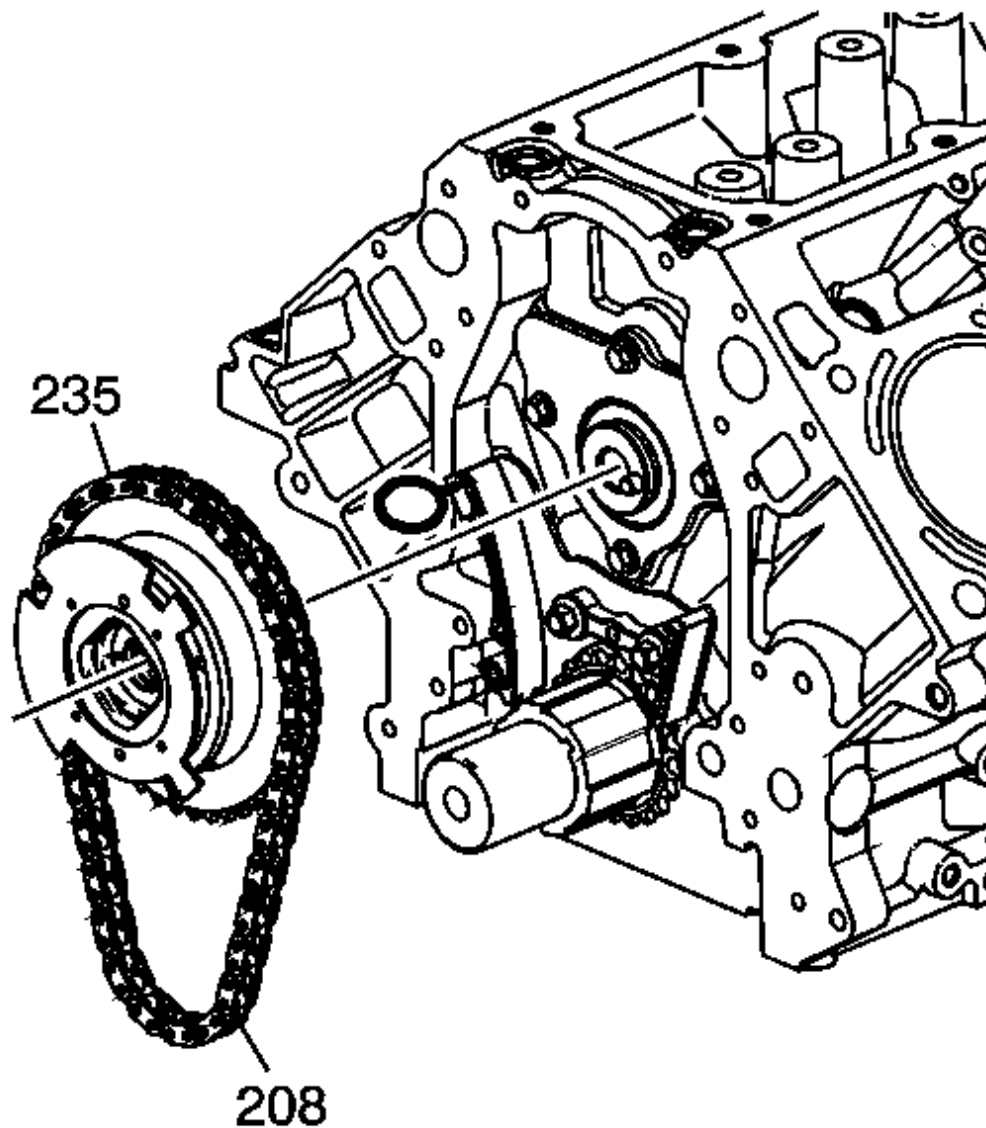


Fig. 359: View Of CMP Actuator & Timing Chain
Courtesy of GENERAL MOTORS CORP.

4. Remove the CMP actuator (235) and timing chain (208).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

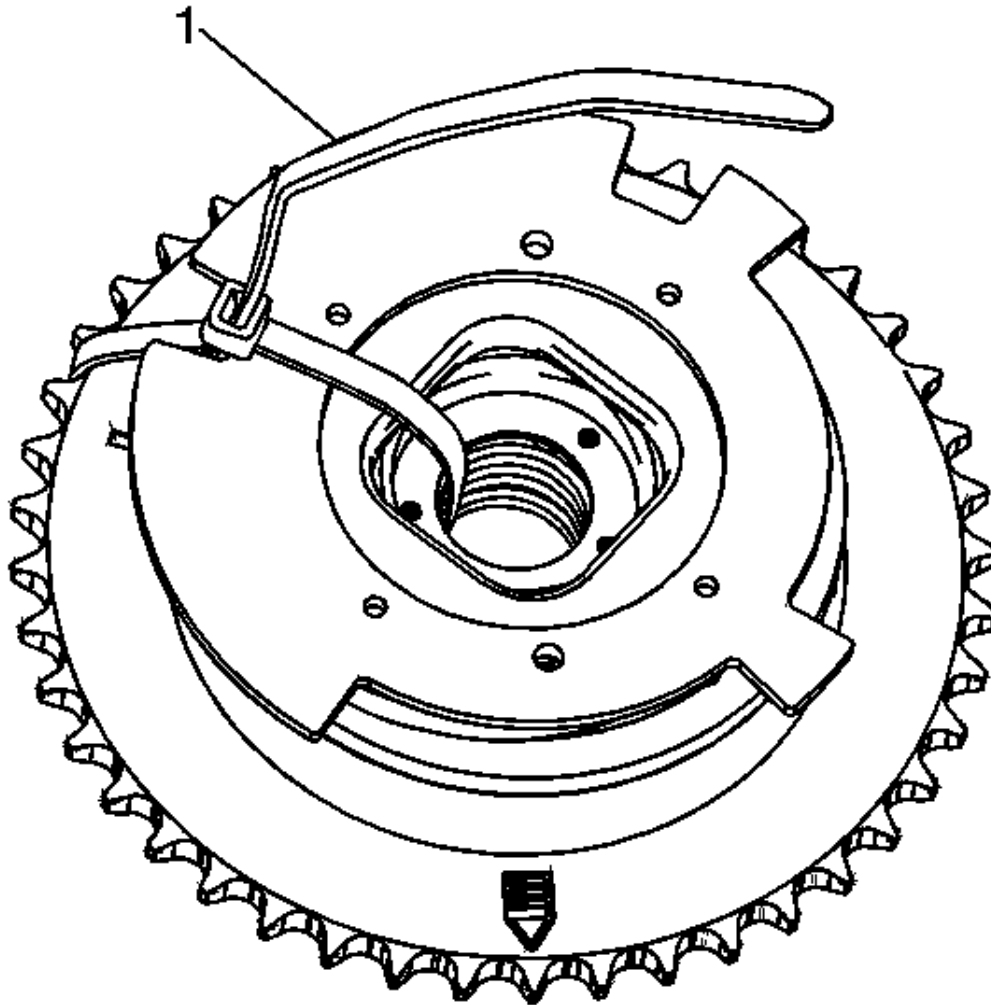


Fig. 360: View Of Tie Strap Through Center Of Actuator
Courtesy of GENERAL MOTORS CORP.

5. Insert and secure a tie strap (1) through the center of the actuator and over the reluctor wheel.

Installation Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

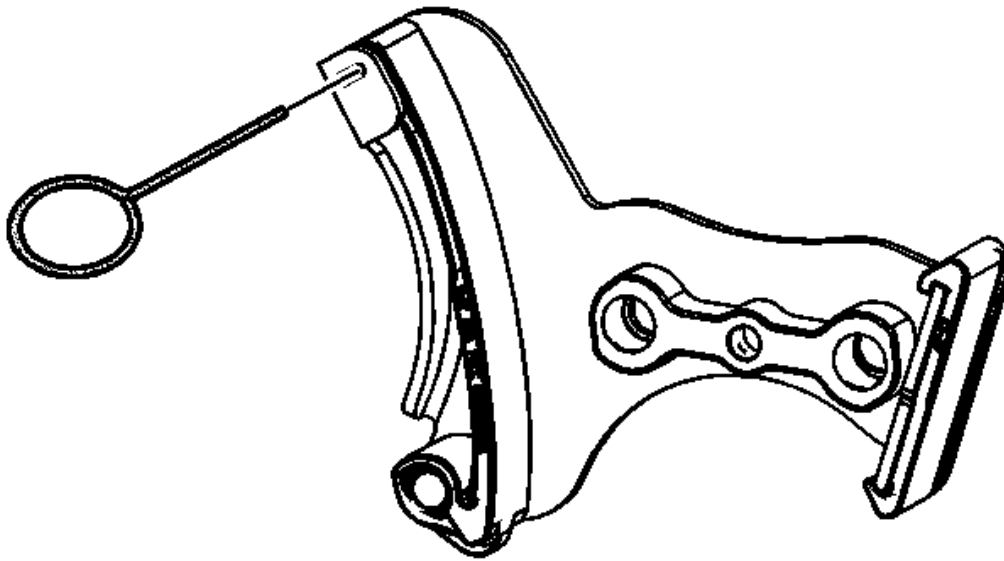


Fig. 361: View Of Compressed Tensioner
Courtesy of GENERAL MOTORS CORP.

1. Compress the timing chain tensioner guide and install the **EN 46330** . See **Special Tools** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

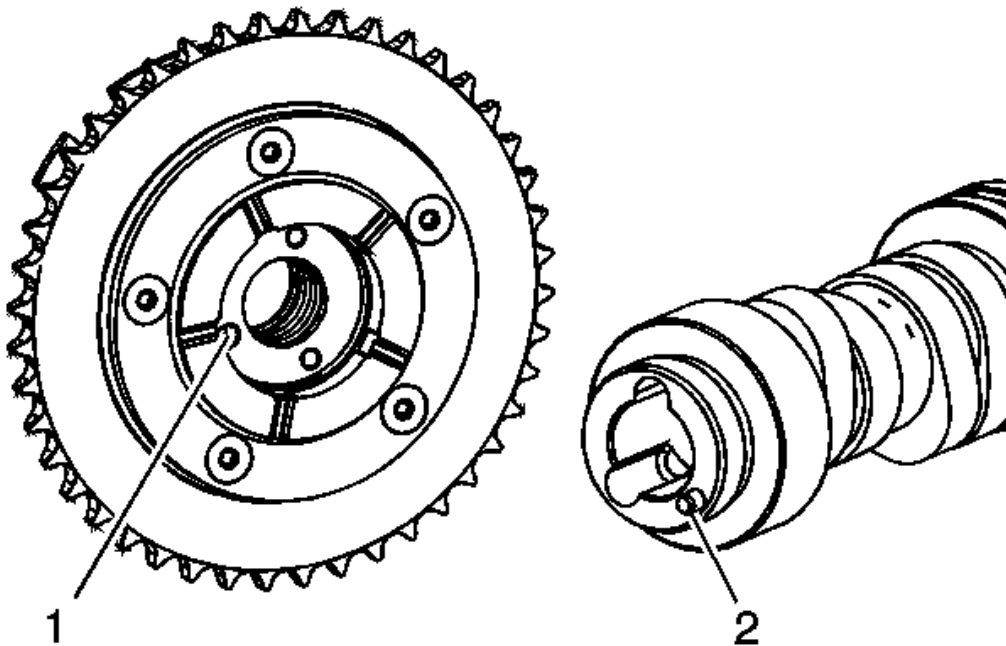


Fig. 362: Identifying Alignment Hole & Locating Pin
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- Properly locate the CMP actuator on the locating pin of the camshaft.
- The sprocket teeth and timing chain must mesh.
- The camshaft and the crankshaft sprocket alignment marks **MUST** be aligned properly.
- **DO NOT** use the CMP solenoid valve again. Install a **NEW** valve during assembly.

2. Identify the alignment hole (1) in the rear face of the CMP actuator and the locating pin (2) on the front face of the camshaft.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

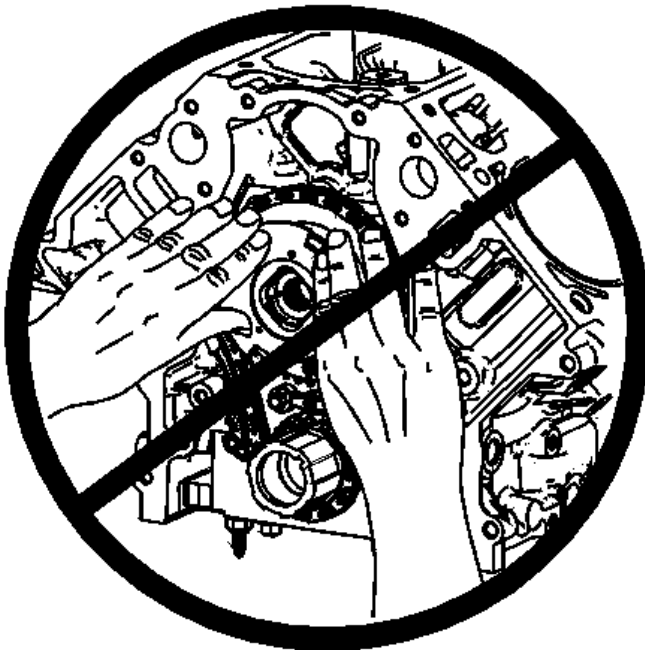
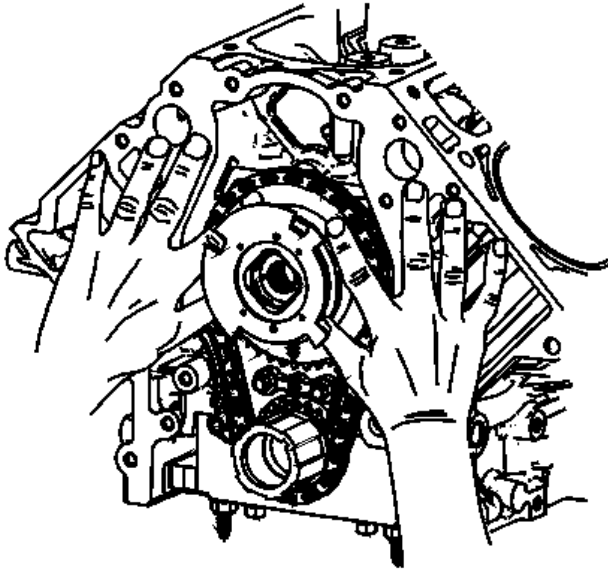


Fig. 363: Proper Installation Of CMP Actuator
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

CAUTION: Do not push or pull on the reluctor wheel of the camshaft position (CMP) actuator during removal or installation. The reluctor wheel is retained to the front of the CMP actuator by 3 roll pins. Pushing or pulling on the wheel may dislodge the wheel from the front of the actuator. The actuator return spring is under tension and may rotate the dislodged reluctor wheel, causing personal injury.

3. Install the CMP actuator and timing chain. Align the hole in the rear face of the CMP actuator with the locating pin on the front face of the camshaft. If necessary, rotate the camshaft or crankshaft sprockets in order to align the timing marks. Use care to install the actuator completely onto the front of the camshaft. Position your fingers onto the face of the actuator sprocket and push the actuator onto the front of the camshaft. Never push on the reluctor wheel when attempting to install the actuator.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

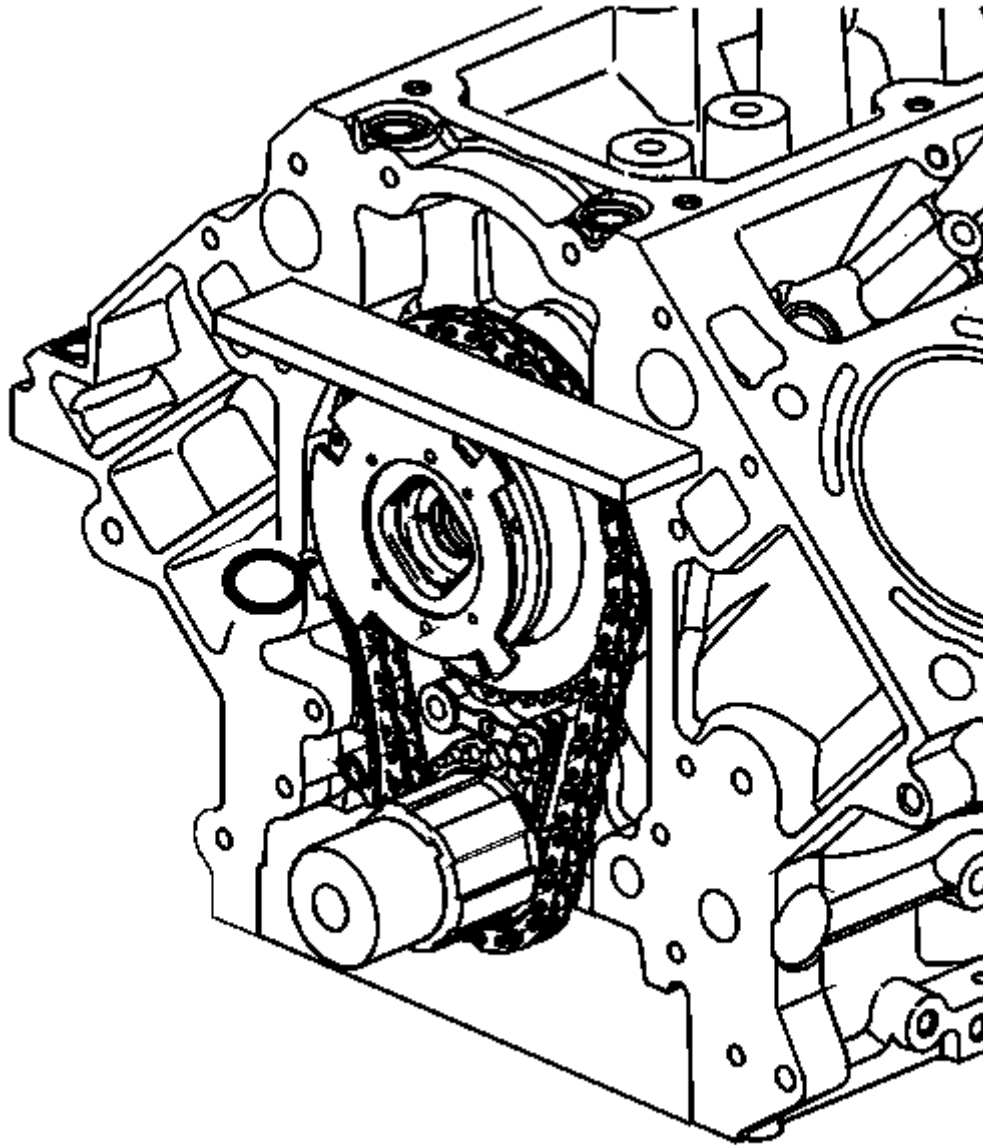


Fig. 364: Inspecting For Proper Installation Of CMP Actuator & Timing Chain
Courtesy of GENERAL MOTORS CORP.

4. Place a straight edge across the front face of the engine block and inspect for proper installation of the CMP actuator and timing chain. With the CMP actuator properly and completely installed onto the front of the camshaft, the timing chain will not protrude

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

beyond the front face of the engine block.

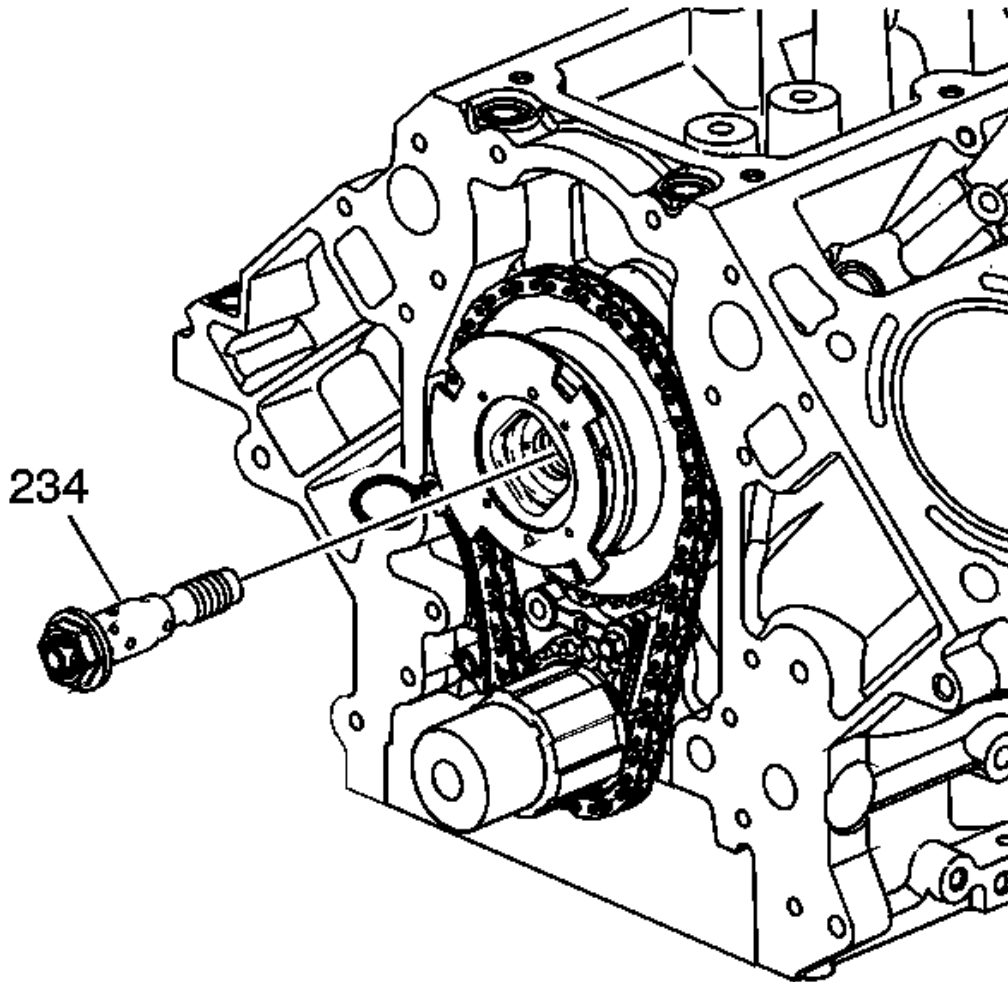


Fig. 365: View Of CMP Actuator Solenoid Valve
Courtesy of GENERAL MOTORS CORP.

5. Install a NEW CMP actuator solenoid valve (234). With the CMP actuator properly positioned onto the camshaft, the CMP actuator solenoid valve can be threaded completely into the camshaft using light hand pressure. Tighten by hand until snug.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

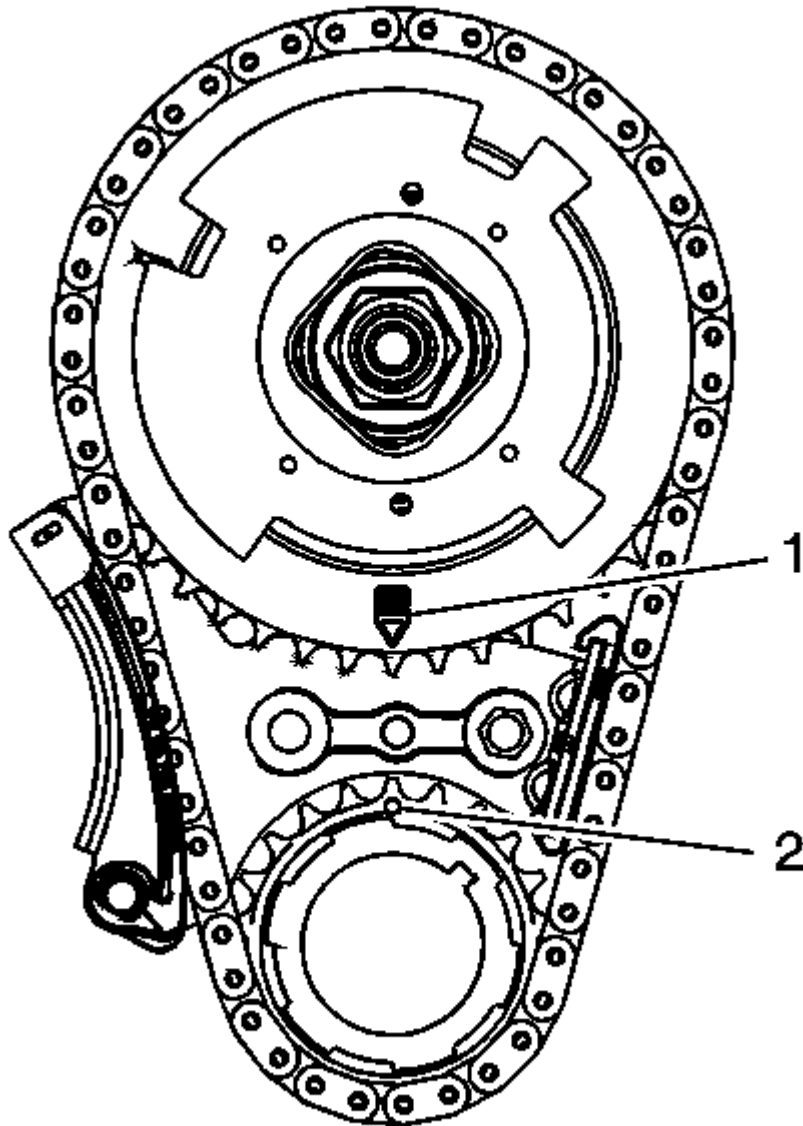


Fig. 366: View Of CMP Actuator Alignment Mark & Crankshaft Sprocket Alignment Mark

Courtesy of GENERAL MOTORS CORP.

6. Inspect the sprockets for proper alignment. The mark on the CMP actuator sprocket (1) should be located in the 6 o'clock position and the mark on the crankshaft sprocket (2)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

should be located in the 12 o'clock position.

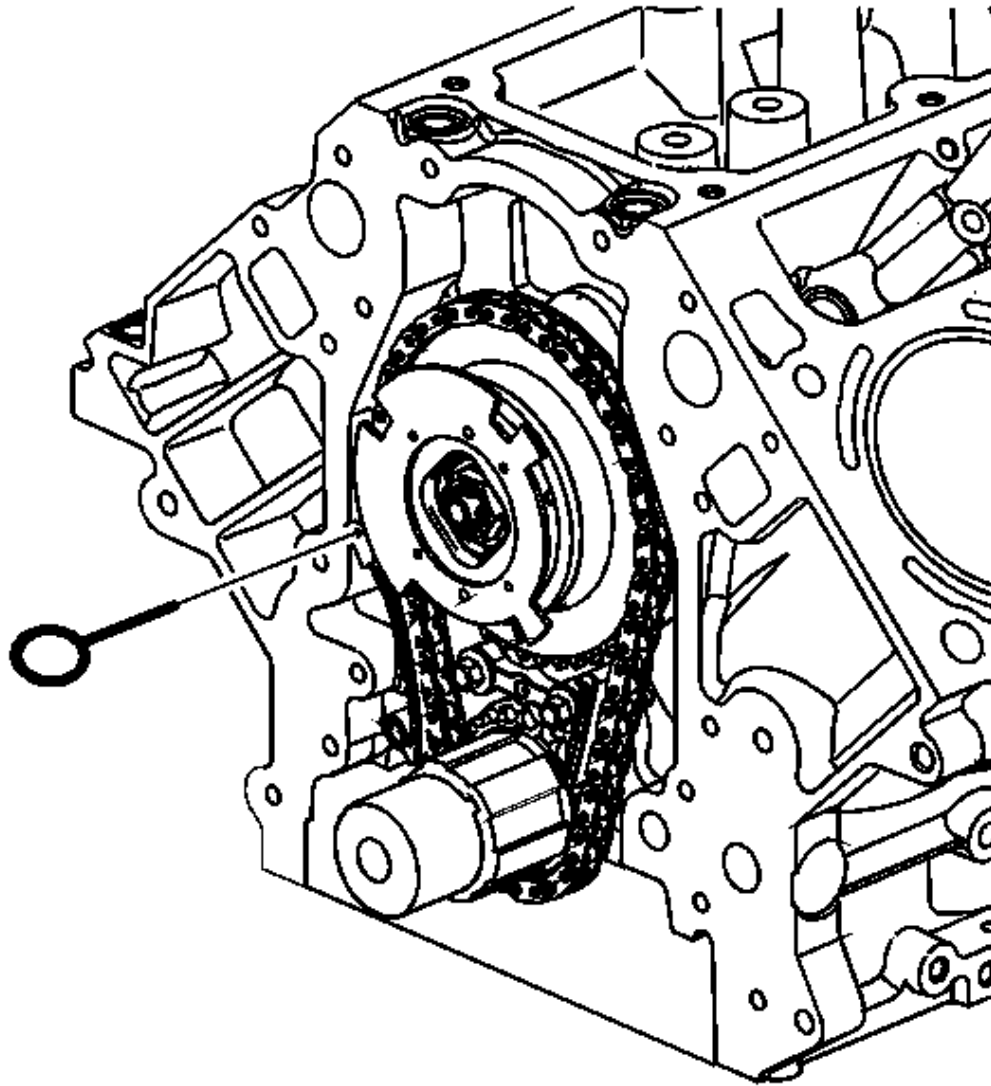


Fig. 367: View Of Special Tool EN 46330
Courtesy of GENERAL MOTORS CORP.

7. Remove the EN 46330 . See Special Tools .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

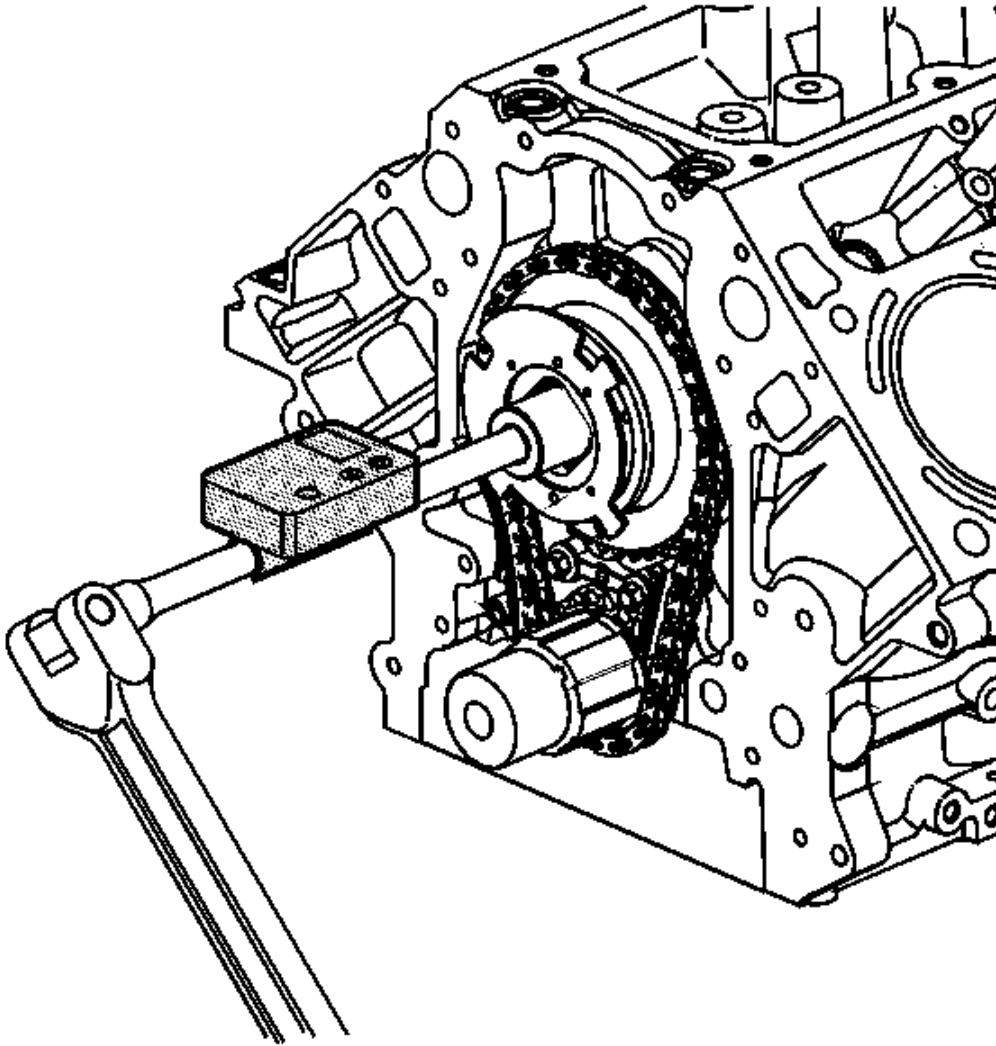


Fig. 368: Tightening CMP Actuator Solenoid Valve
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

8. Tighten the CMP actuator solenoid valve.

Tighten:

1. Tighten the valve a first pass to 65 N.m (48 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Tighten the valve a final pass and additional 90 degrees using **J 45059** .

9. Install the oil pump. Refer to **Oil Pump, Screen, and Crankshaft Oil Deflector Replacement (LY6, L76 and L92)** or **Oil Pump, Screen, and Crankshaft Oil Deflector Replacement (LH6, LMG, LY2 and LY5)** .

CRANKSHAFT REAR OIL SEAL REPLACEMENT

Tools Required

J 41479 Crankshaft Rear Oil Seal Installer. See **Special Tools** .

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

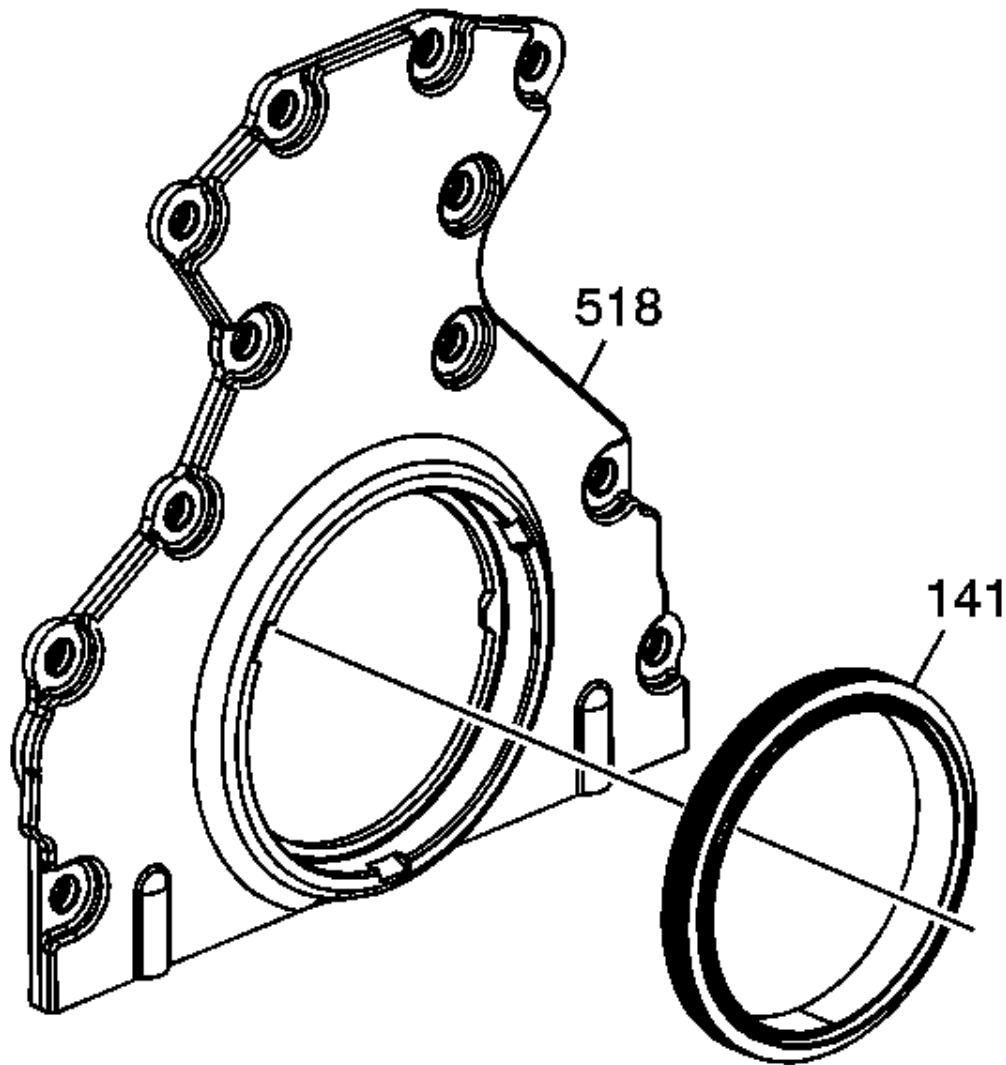


Fig. 369: Crankshaft Rear Oil Seal & Housing
Courtesy of GENERAL MOTORS CORP.

1. Remove the automatic transmission flexplate, refer to [Automatic Transmission Flex Plate Replacement](#) .
2. Remove and discard the crankshaft rear oil seal (141).

Installation Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

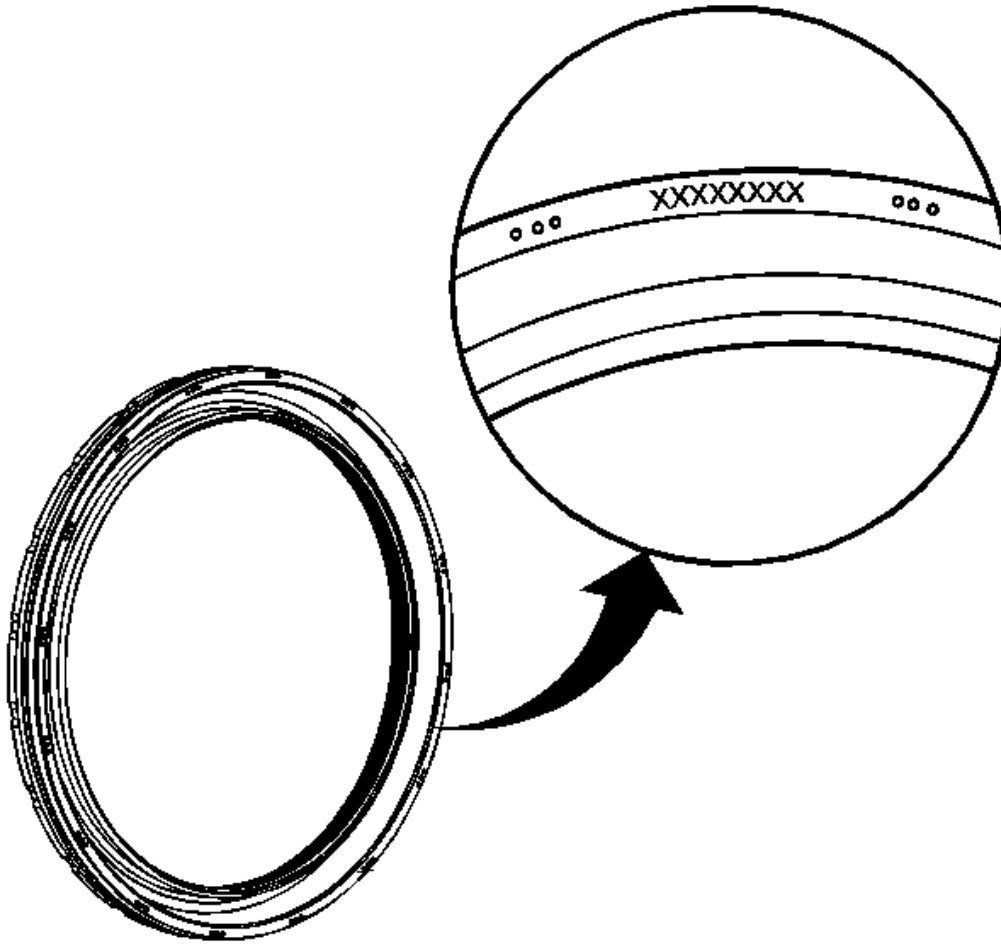


Fig. 370: Identifying Oil Seal
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: For proper orientation, note the installation direction of the oil seal. The oil seal is a reverse-lip design. The part number is applied to the outside face of the seal, as shown.

1. Inspect the seal and identify the part number markings for proper orientation.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

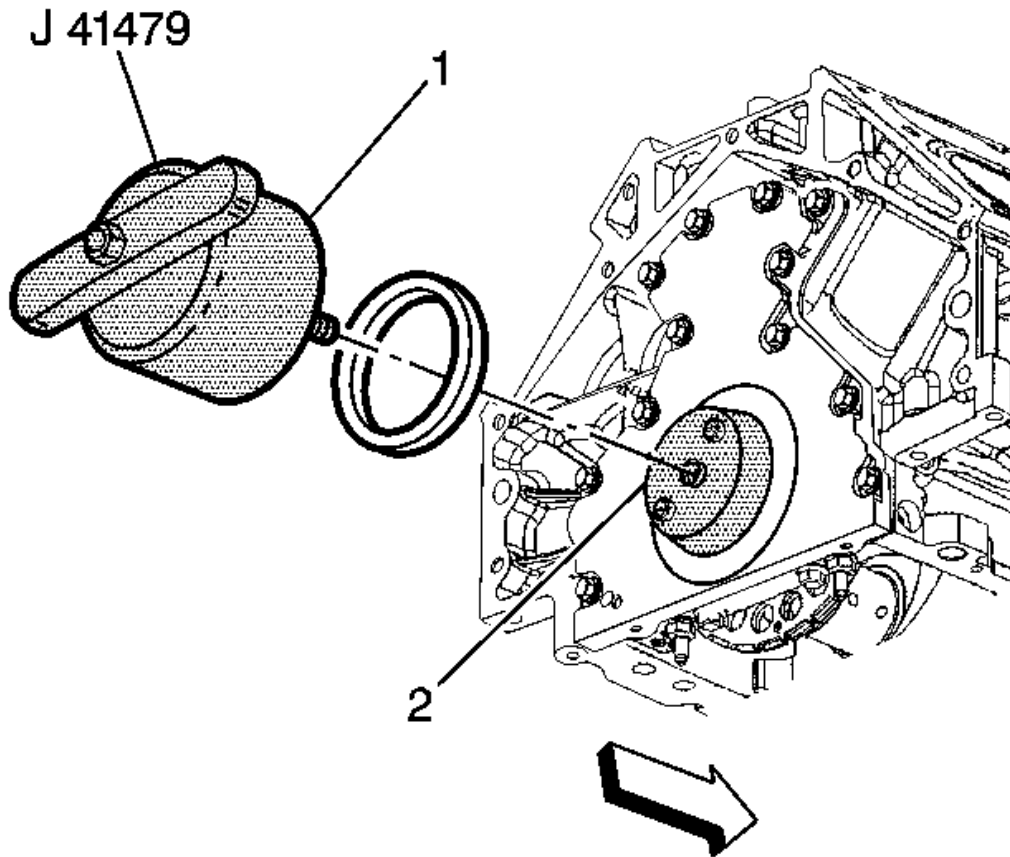


Fig. 371: Installing Crankshaft Rear Oil Seal Using J 41479
Courtesy of GENERAL MOTORS CORP.

2. Install the **J 41479** cone (2) and bolts onto the rear of the crankshaft. See **Special Tools** .
3. Tighten the bolts until snug. Do not overtighten.
4. Install the rear oil seal onto the tapered cone (2) and push the seal to the rear seal bore. Install the oil seal with the part number markings facing away from the engine.
5. Thread the **J 41479** threaded rod into the tapered cone until the tool (1) contacts the oil seal. See **Special Tools** .
6. Align the oil seal into the tool (1).
7. Rotate the handle of the tool (1) clockwise until the seal enters the rear cover and bottoms into the cover bore.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

8. Remove the **J 41479** . See **Special Tools** .
9. Install the automatic transmission flexplate, refer to **Automatic Transmission Flex Plate Replacement** .

ENGINE REAR COVER REPLACEMENT

Tools Required

J 41476 Front and Rear Cover Alignment Tool. See **Special Tools** .

Removal Procedure

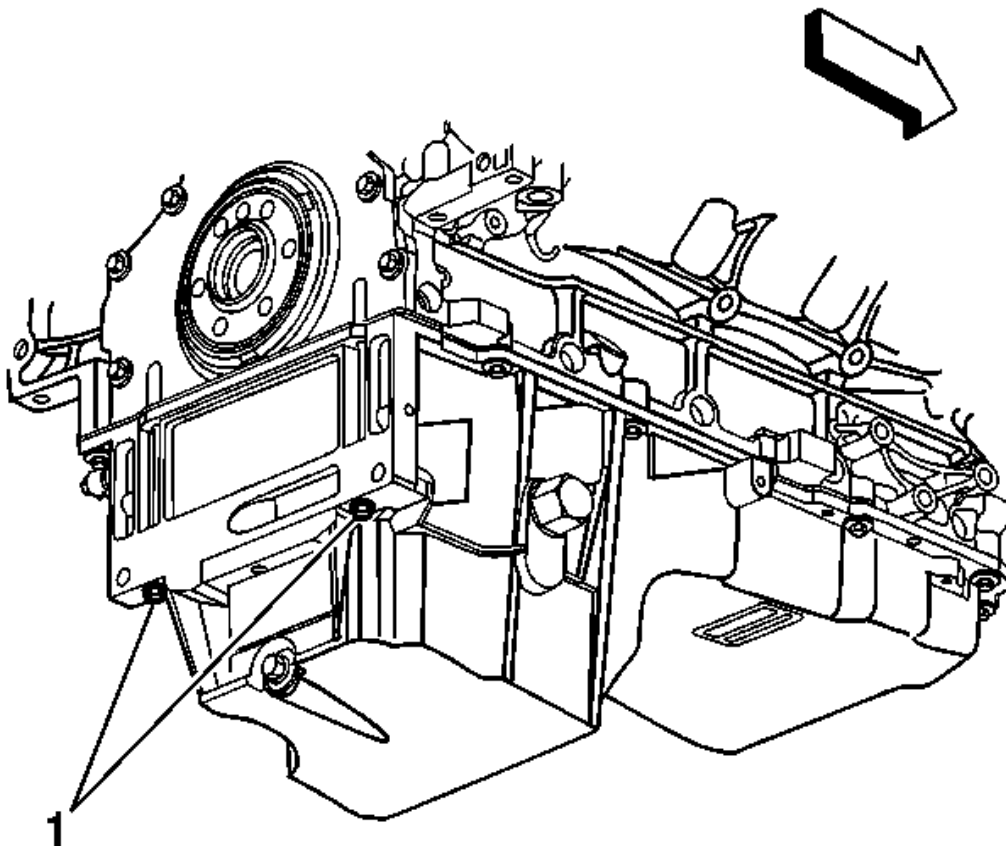


Fig. 372: View Of Oil Pan-To-Rear Cover Bolts
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Remove the automatic transmission flexplate, refer to [Automatic Transmission Flex Plate Replacement](#) .
2. Remove the oil pan-to-rear oil seal housing bolts (1).

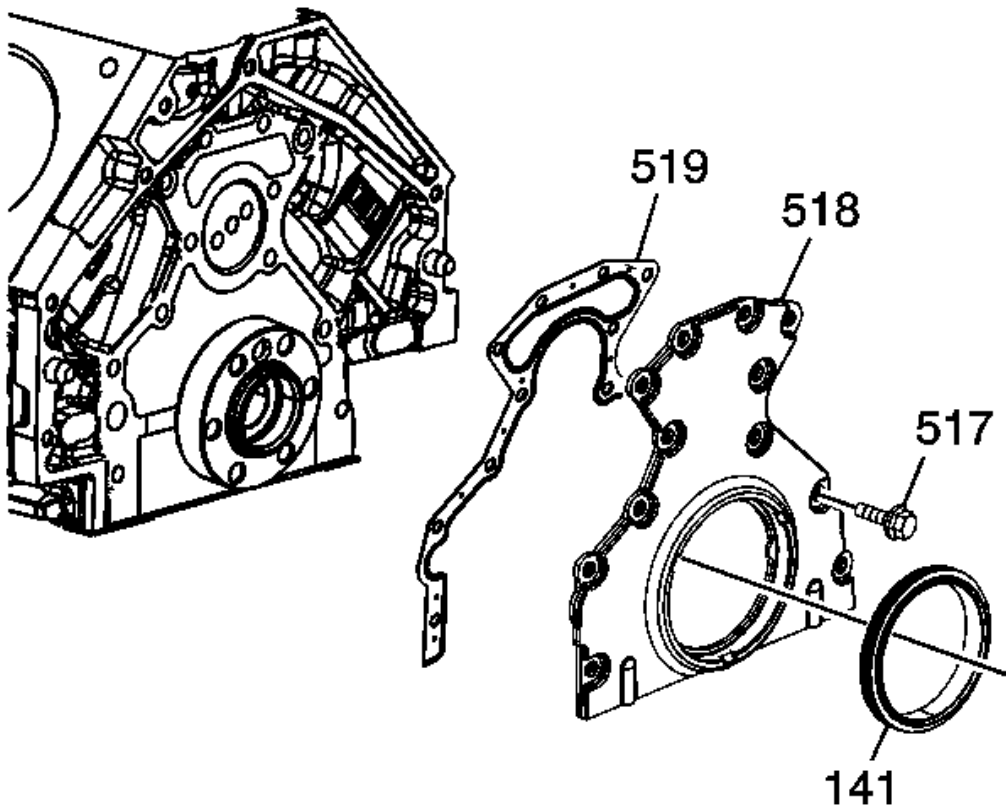


Fig. 373: View of Rear Housing, Gasket and Seal
Courtesy of GENERAL MOTORS CORP.

3. Remove the rear oil seal housing bolts (517).
4. Remove the rear oil seal housing (518) and gasket (519). Discard the gasket.
5. Remove and discard the rear oil seal (141).

Installation Procedure

IMPORTANT: • Do not reuse the crankshaft oil seal or rear cover gasket.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- **Do not apply any type of sealant to the rear cover gasket, unless specified.**
- **The special tool in this procedure is used to properly center the crankshaft rear oil seal.**
- **The crankshaft rear oil seal will be installed after the rear cover has been installed and aligned. Install the rear cover without the crankshaft oil seal.**
 - **All gasket surfaces should be free of oil or other foreign material during assembly.**
 - **The crankshaft rear oil seal MUST be centered in relation to the crankshaft.**
 - **An improperly aligned rear cover may cause premature rear oil seal wear and/or engine assembly oil leaks.**

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

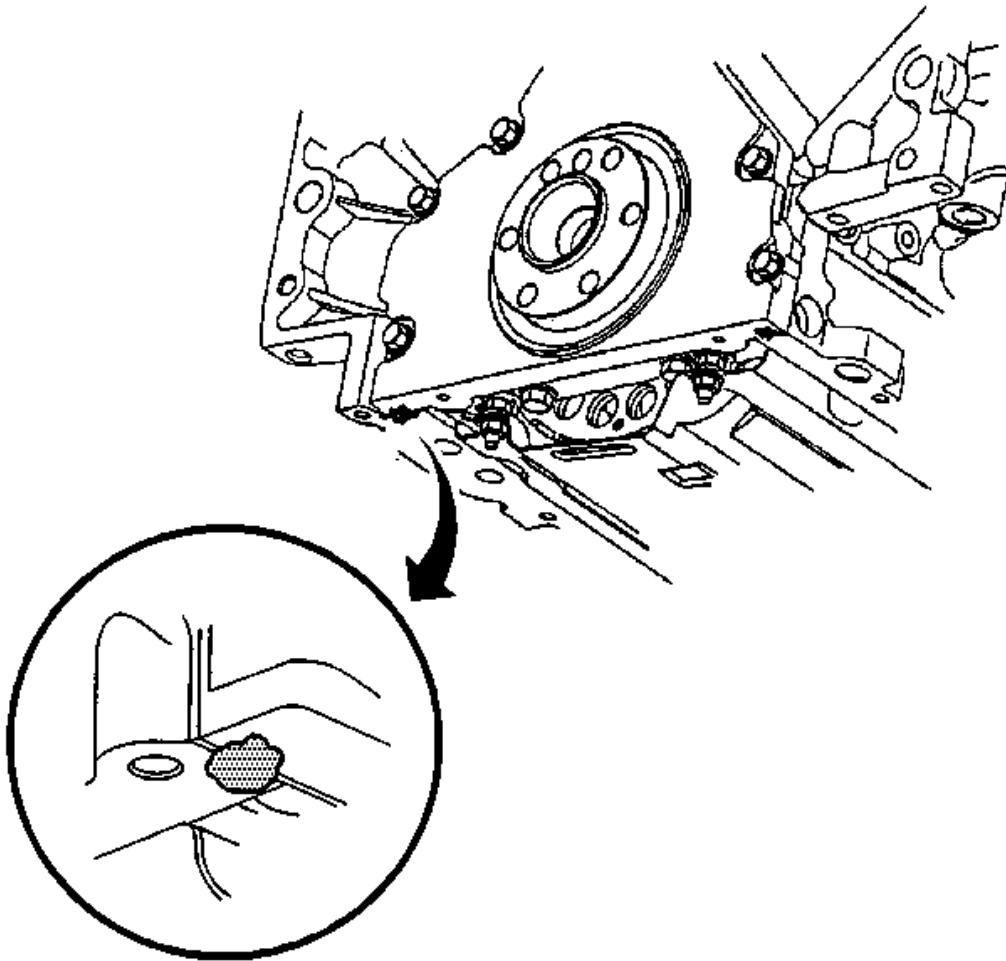


Fig. 374: View Of Sealant Applied To Rear Oil Pan-To-Engine Block Junction
Courtesy of GENERAL MOTORS CORP.

1. Apply a 5 mm (0.2 in) bead of sealant, 20 mm (0.8 in) long to the oil pan to engine block junction. Refer to **Sealers, Adhesives, and Lubricants** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

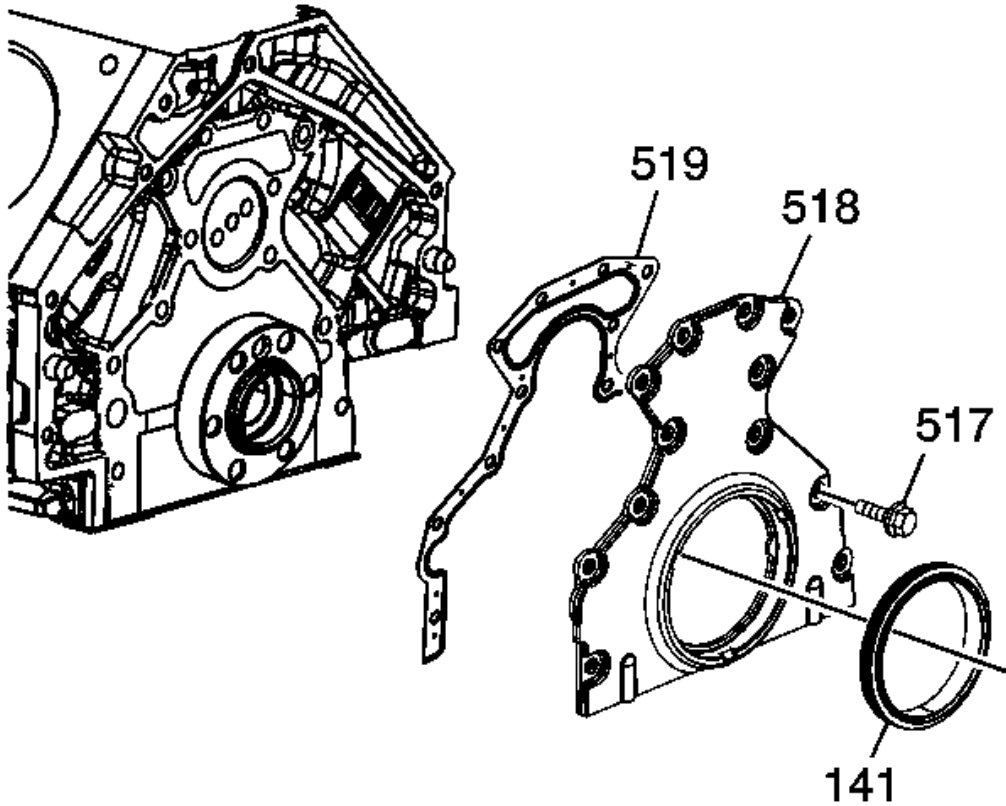


Fig. 375: View of Rear Housing, Gasket and Seal
Courtesy of GENERAL MOTORS CORP.

2. Position a NEW rear oil seal housing gasket (519) and the housing (518) to the engine.
3. Install the rear oil seal housing bolts until snug. Do not overtighten.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

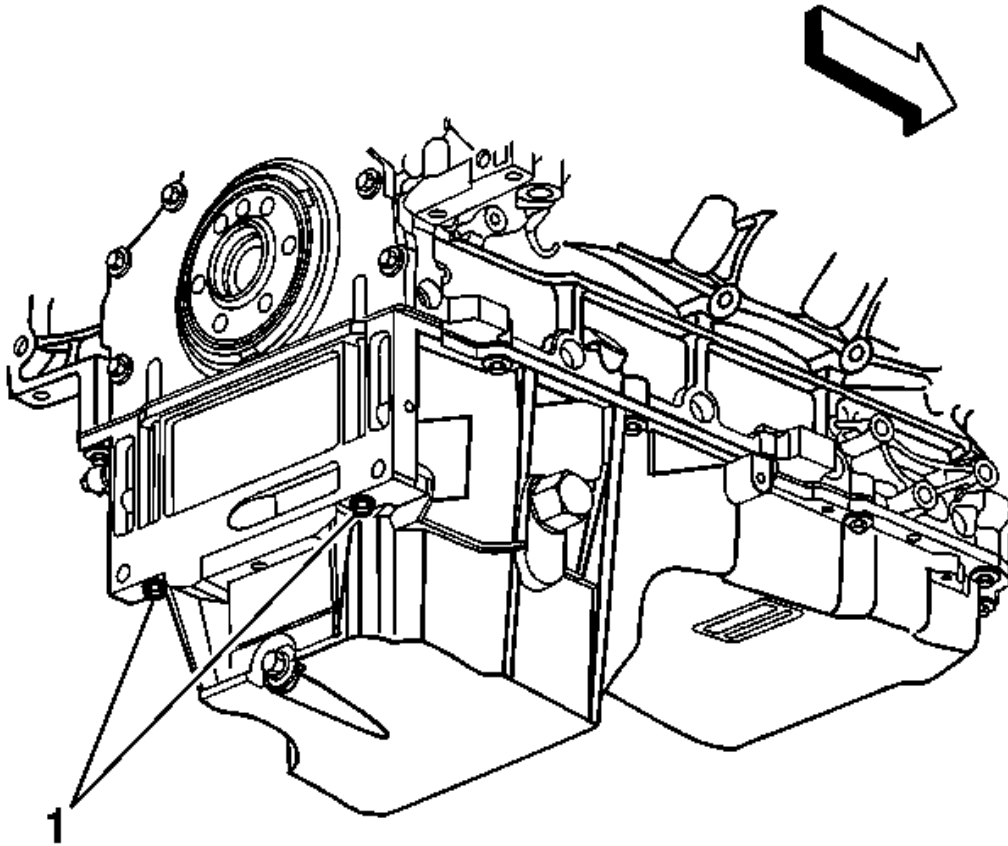


Fig. 376: View Of Oil Pan-To-Rear Cover Bolts
Courtesy of GENERAL MOTORS CORP.

4. Install the oil pan-to-rear oil seal housing bolts (1) until snug. Do not overtighten.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

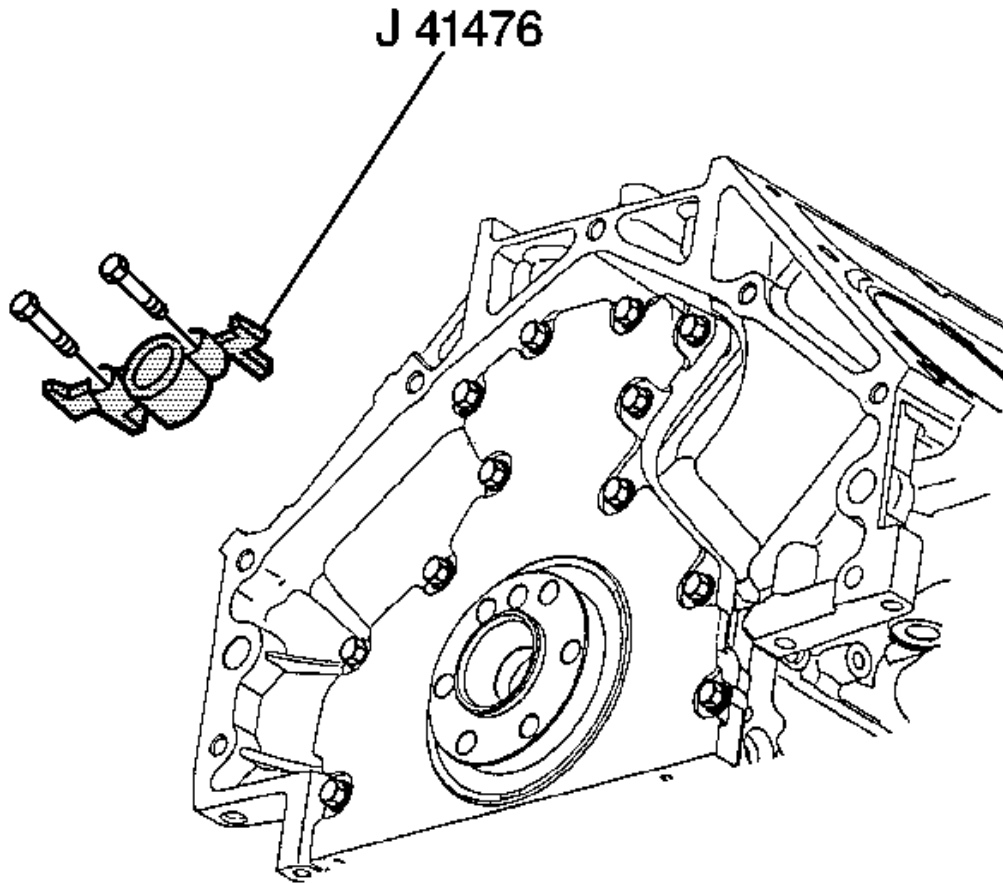


Fig. 377: View Of J 41476

Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The tapered legs of the alignment tool must enter the rear cover oil seal bore.

5. Rotate the crankshaft until 2 opposing flywheel bolt holes are parallel to the oil pan surface.
6. Install the **J 41476** and bolts onto the rear of the crankshaft. See **Special Tools** .

NOTE: Refer to **Fastener Notice** .

7. Tighten the **J 41476** bolts until snug. See **Special Tools** . Do not overtighten.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Tighten:

1. Tighten the oil pan-to-rear oil seal housing bolts to 12 N.m (106 lb in).
 2. Tighten the rear oil seal housing bolts to 30 N.m (22 lb ft).
8. Remove the **J 41476** . See **Special Tools** .
 9. Install a NEW crankshaft rear oil seal. Refer to **Crankshaft Rear Oil Seal Replacement**.
 10. Remove the automatic transmission flexplate, refer to **Automatic Transmission Flex Plate Replacement** .

OIL FILTER ADAPTER REPLACEMENT

Removal Procedure

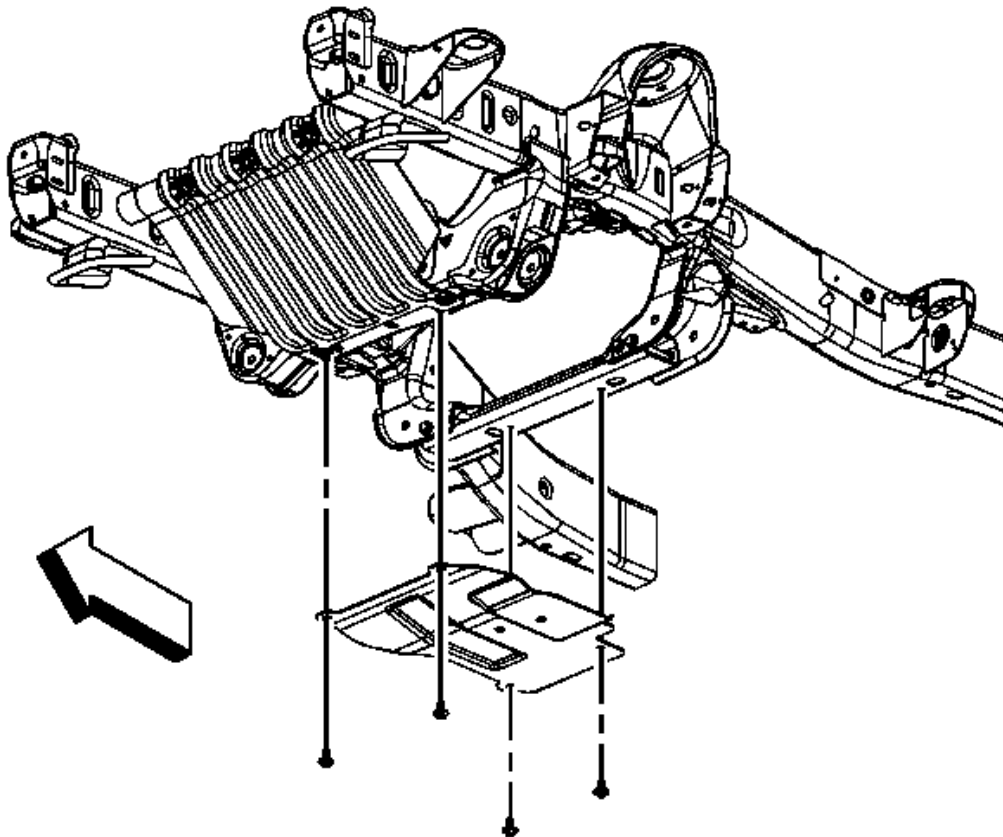


Fig. 378: View Of Oil Pan Skid Plate & Bolts

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Courtesy of GENERAL MOTORS CORP.

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle .
2. For 1500 series vehicles, remove the oil pan skid plate bolts and skid plate, if equipped.

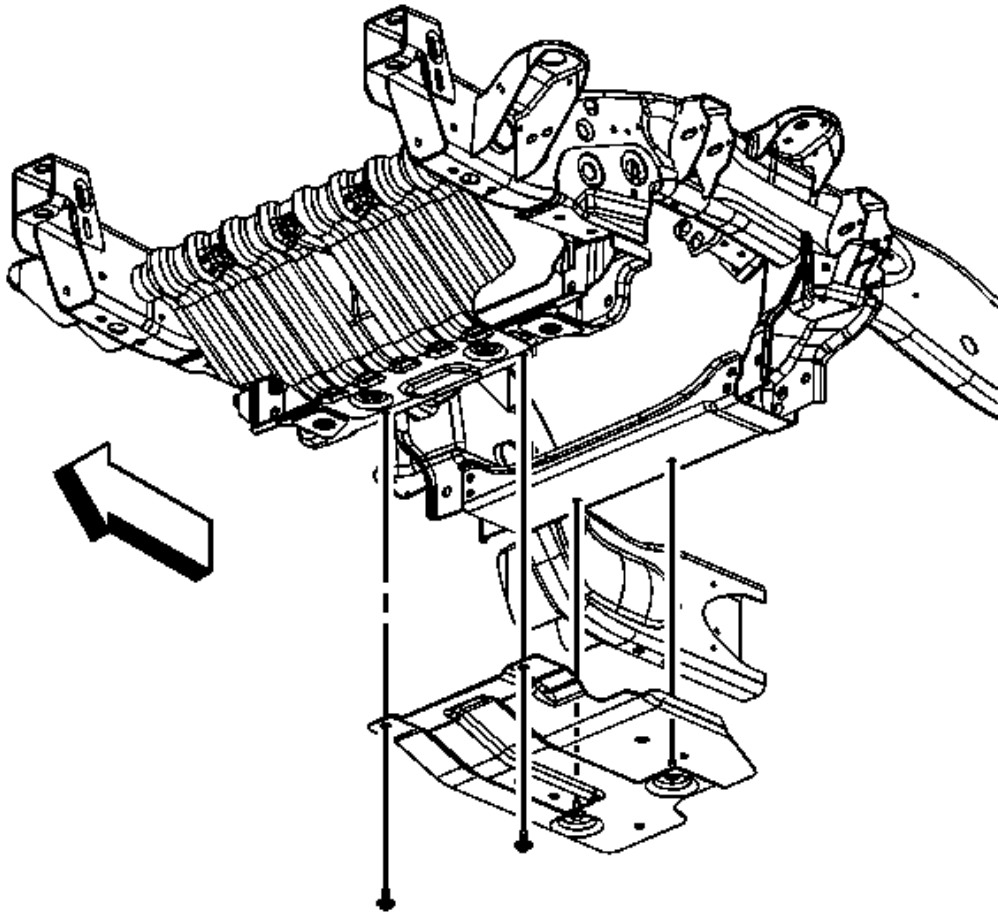


Fig. 379: View Of Oil Pan Skid Plate & Bolts
Courtesy of GENERAL MOTORS CORP.

3. For 2500 series vehicles, loosen the 2 rear oil pan skid plate bolts, remove the 2 front oil pan skid plate bolts and skid plate, if equipped.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

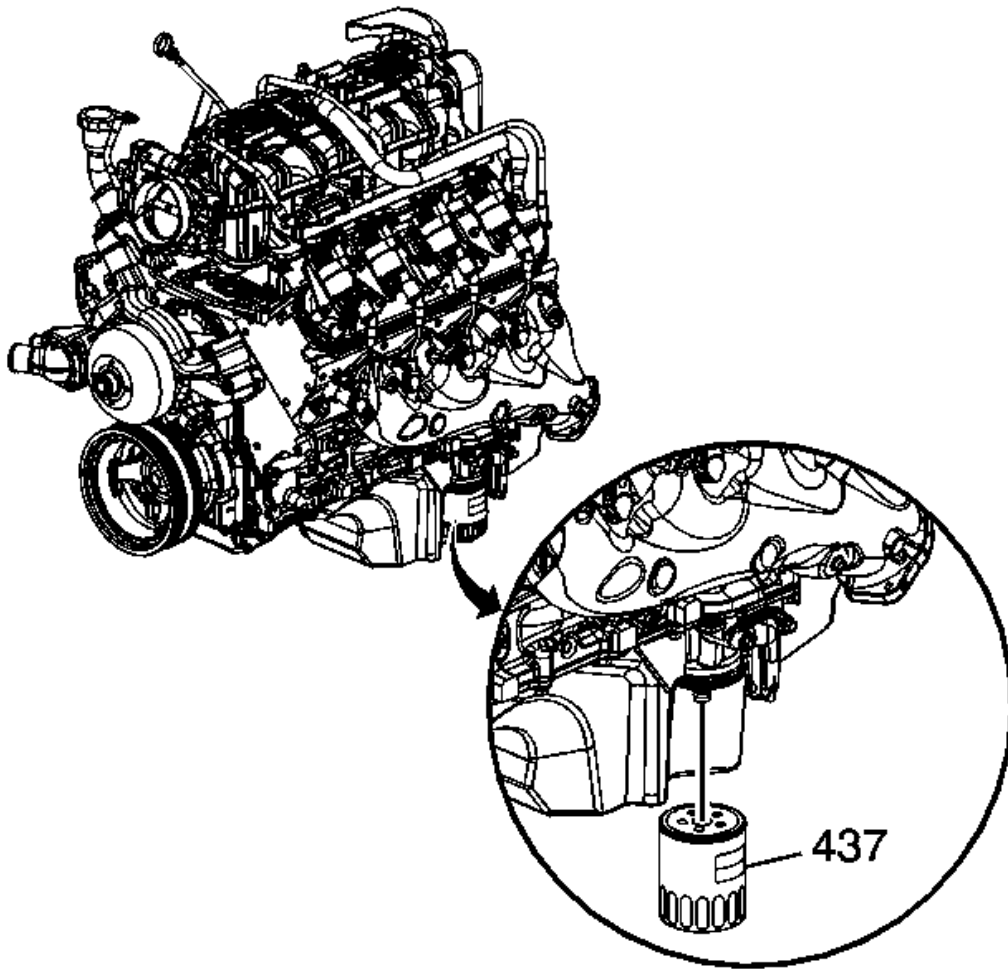


Fig. 380: View Of Engine Oil Filter
Courtesy of GENERAL MOTORS CORP.

4. Place a suitable drain pan under the oil filter.
5. Remove the oil filter (437).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

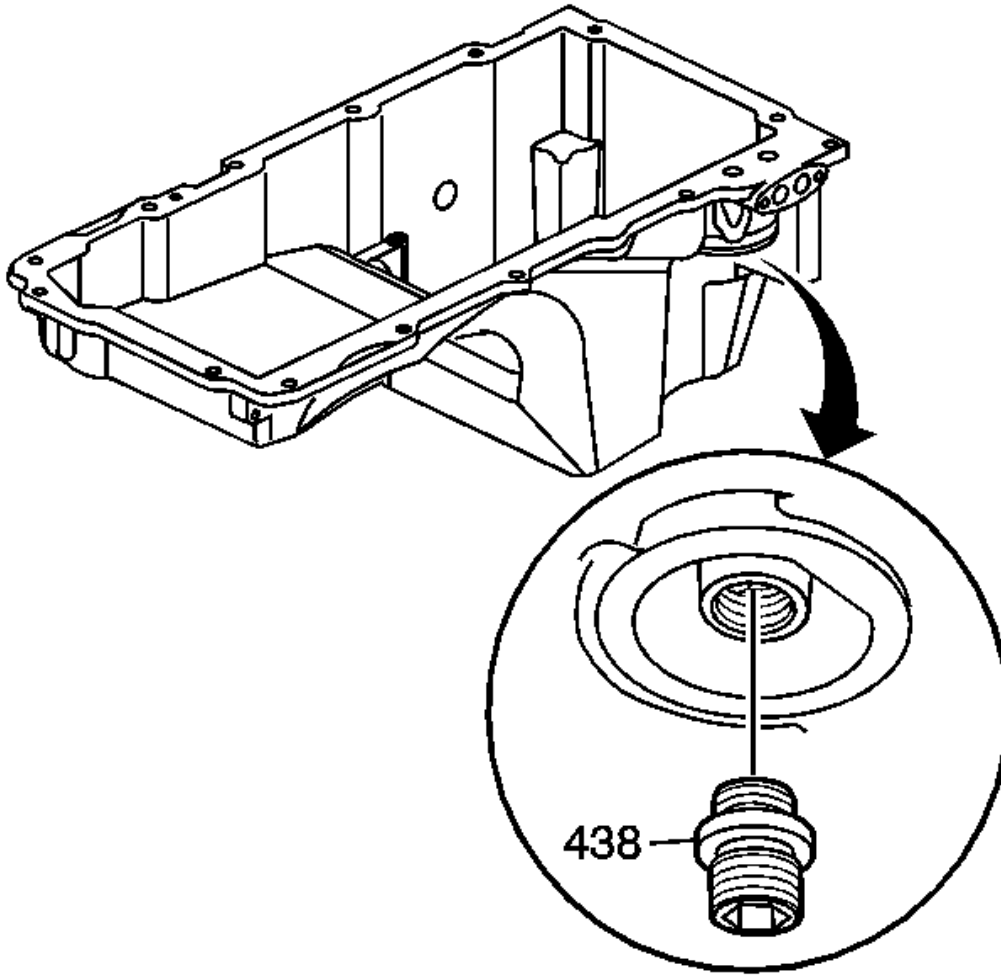


Fig. 381: View Of Oil Filter Fitting
Courtesy of GENERAL MOTORS CORP.

6. Remove the oil filter adapter (438).

Installation Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

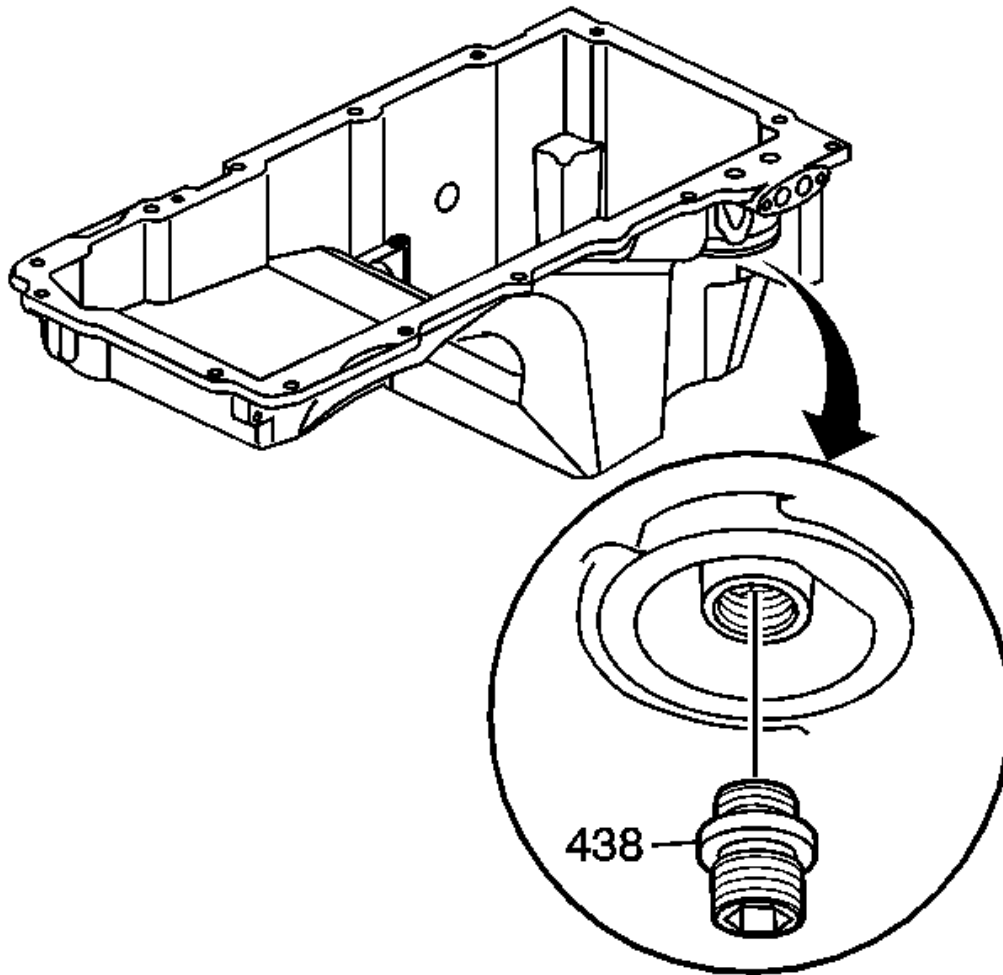


Fig. 382: View Of Oil Filter Fitting
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

1. Install the oil filter adapter (438).

Tighten: Tighten the adapter to 55 N.m (40 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

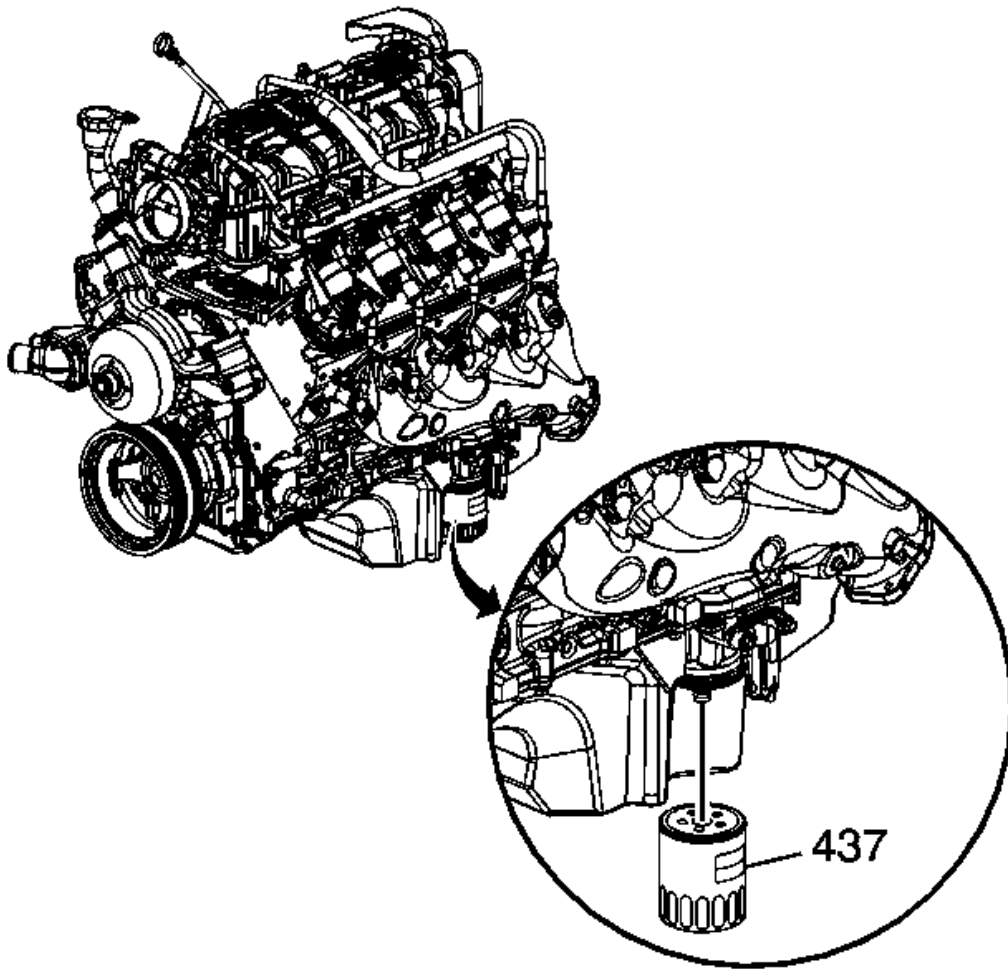


Fig. 383: View Of Engine Oil Filter
Courtesy of GENERAL MOTORS CORP.

2. Lubricate the oil filter seal with clean engine oil.
3. Install the oil filter (437).

Tighten: Tighten the filter to 30 N.m (22 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

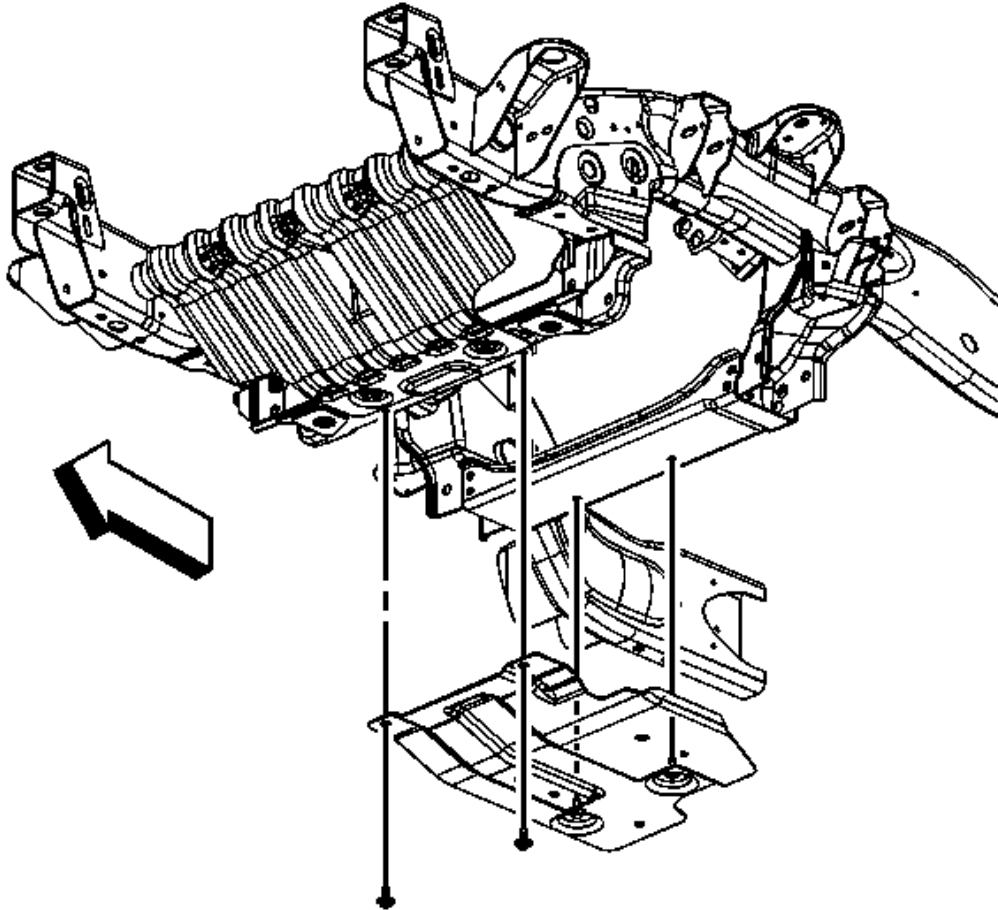


Fig. 384: View Of Oil Pan Skid Plate & Bolts
Courtesy of GENERAL MOTORS CORP.

4. For 2500 series vehicles, position the oil pan skid plate and tighten until snug the 2 rear oil pan skid plate bolts, install the 2 front oil pan skid plate bolts, if equipped.

Tighten: Tighten the bolts to 28 N.m (21 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

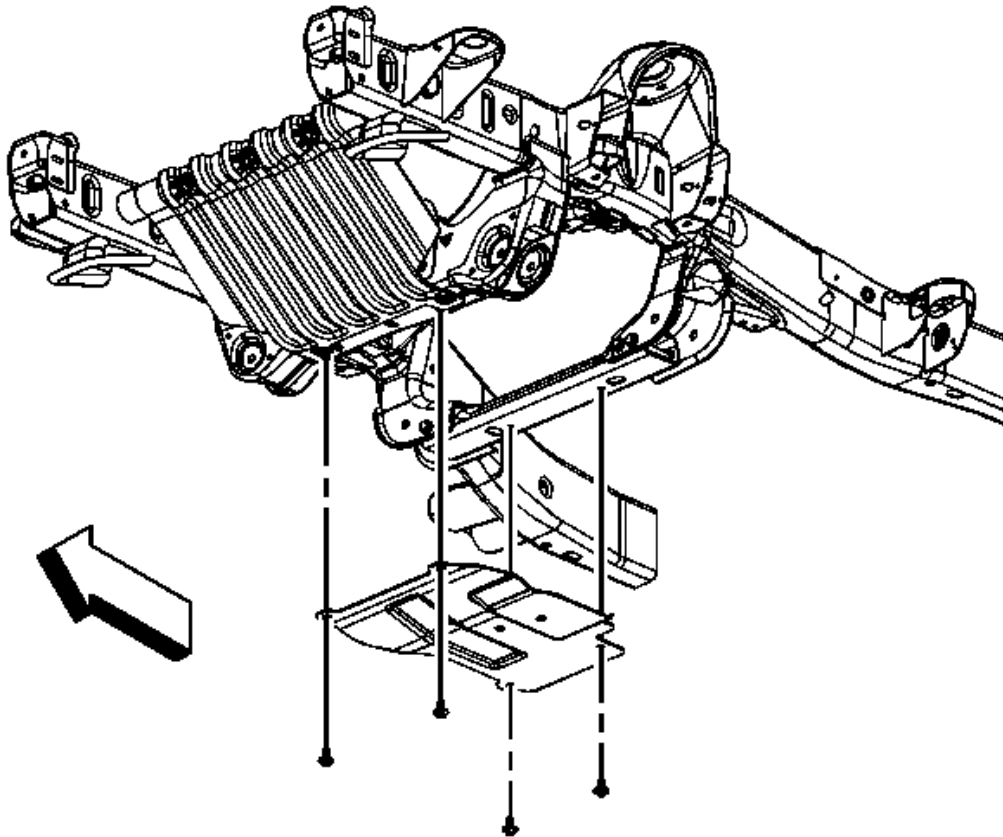


Fig. 385: View Of Oil Pan Skid Plate & Bolts
Courtesy of GENERAL MOTORS CORP.

5. For 1500 series vehicles, position the oil pan skid plate and install the oil pan skid plate bolts, if equipped.

Tighten: Tighten the bolts to 28 N.m (21 lb ft).

6. Lower the vehicle.
7. Refill the engine oil. Refer to **Approximate Fluid Capacities** and/or **Fluid and Lubricant Recommendations** .
8. Start the engine and inspect for leaks.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Removal Procedure

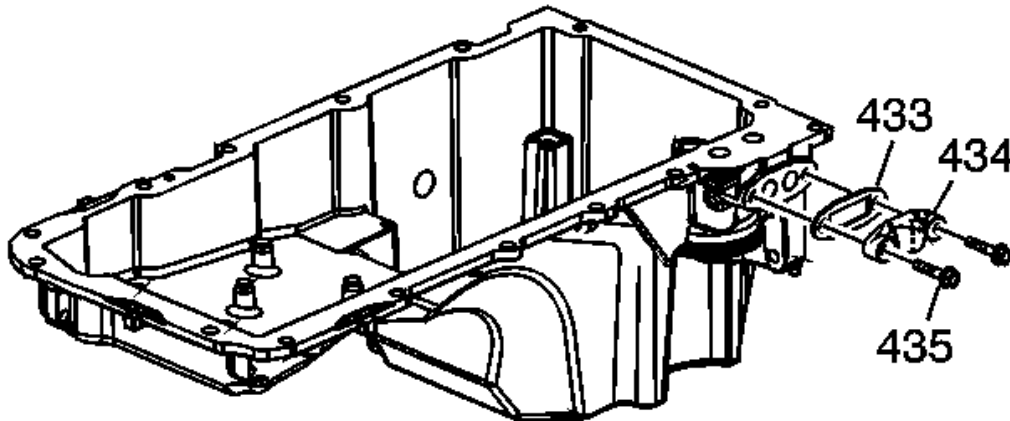


Fig. 386: View Of Oil Pan Cover, Bolts & Gasket
Courtesy of GENERAL MOTORS CORP.

1. Raise and suitably support the vehicle. Refer to **Lifting and Jacking the Vehicle** .
2. Remove the oil pan cover bolts (435), cover (434), and gasket (433). Discard the gasket.

Installation Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

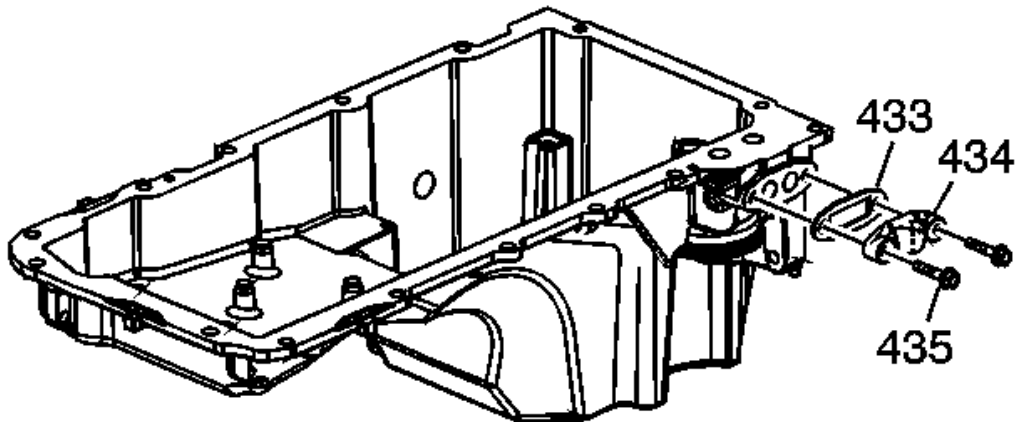


Fig. 387: View Of Oil Pan Cover, Bolts & Gasket
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

1. Position a NEW oil pan cover gasket (433) and the cover (434) to the oil pan and install the bolts (435).

Tighten: Tighten the bolts to 12 N.m (106 lb in).

2. Lower the vehicle.

OIL PAN REPLACEMENT (2WD)

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

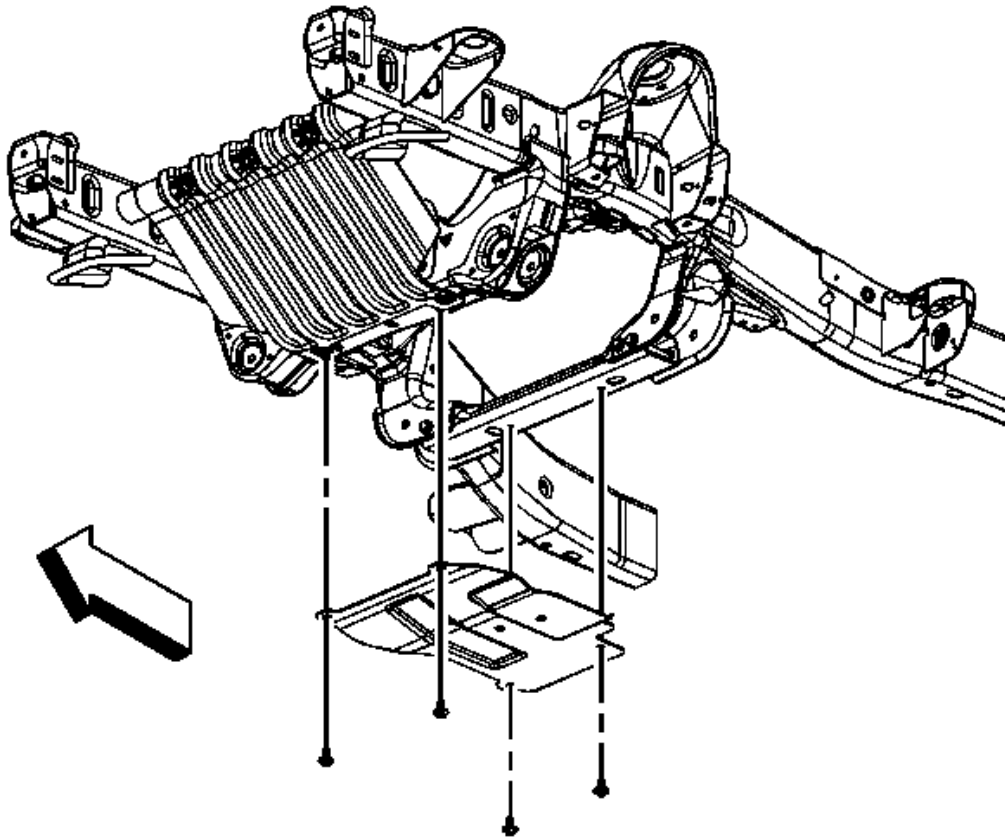


Fig. 388: View Of Oil Pan Skid Plate & Bolts
Courtesy of GENERAL MOTORS CORP.

1. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle** .
2. For 1500 series vehicles, remove the oil pan skid plate bolts and skid plate, if equipped.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

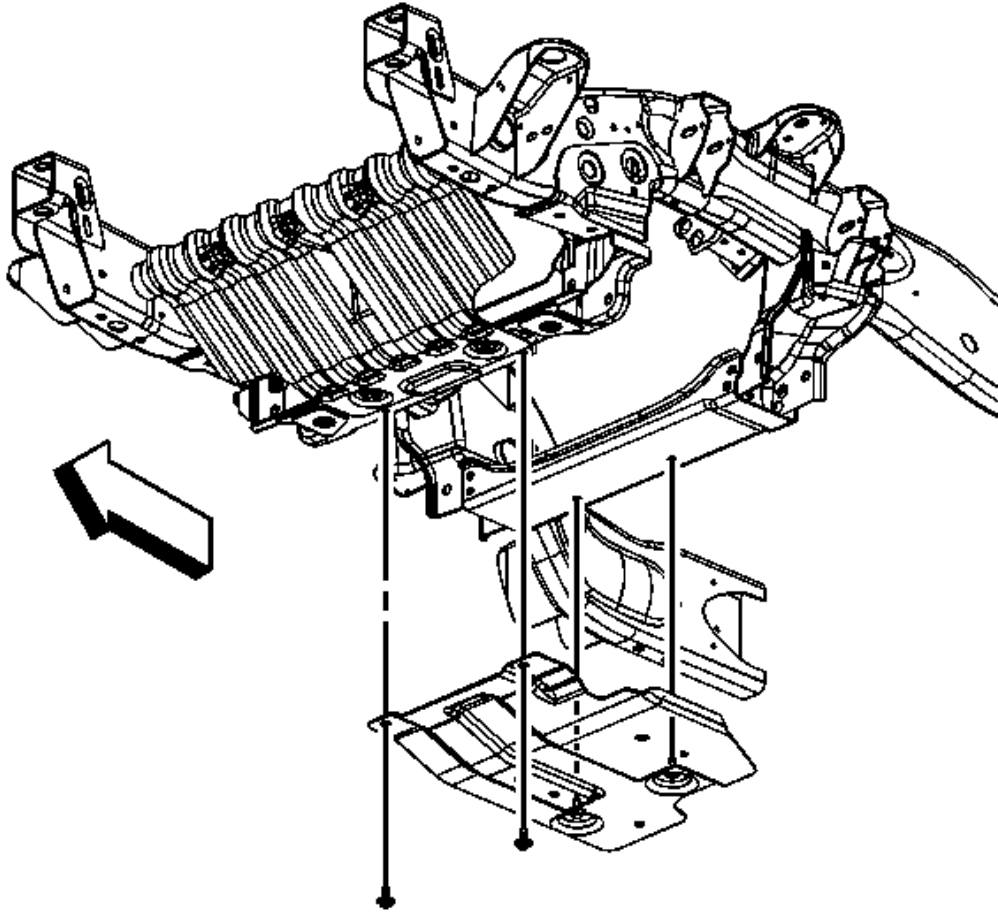


Fig. 389: View Of Oil Pan Skid Plate & Bolts
Courtesy of GENERAL MOTORS CORP.

3. For 2500 series vehicles, loosen the 2 rear oil pan skid plate bolts, remove the 2 front oil pan skid plate bolts and skid plate, if equipped.
4. Unbolt the steering rack and hang downward.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

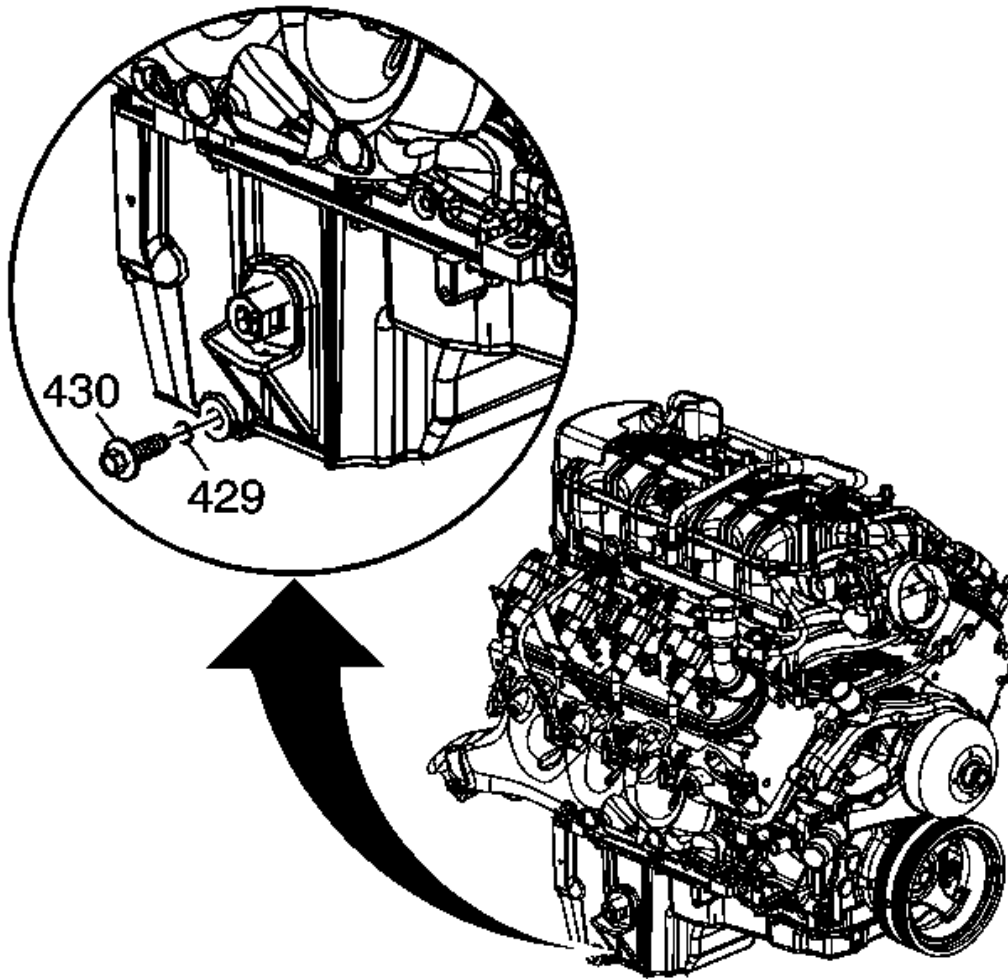


Fig. 390: View Of Oil Pan Drain Plug & Seal
Courtesy of GENERAL MOTORS CORP.

5. Place a suitable drain pan under the oil pan drain plug.
6. Remove the oil pan drain plug (430).
7. Allow the oil pan to drain completely.
8. Re-install the oil pan drain plug until snug.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

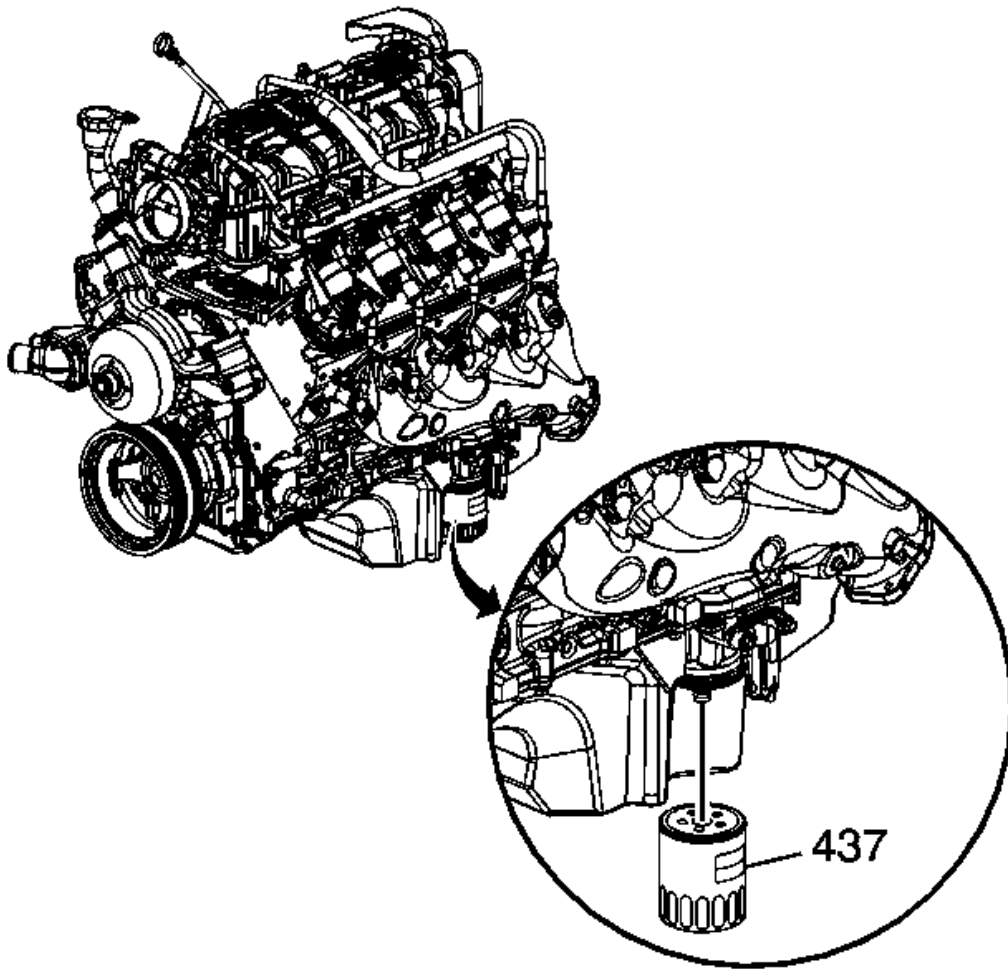


Fig. 391: View Of Engine Oil Filter
Courtesy of GENERAL MOTORS CORP.

9. Place the drain pan under the oil filter.
10. Remove the oil filter (437).
11. Allow the oil to drain completely.
12. Re-install the oil filter until snug.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

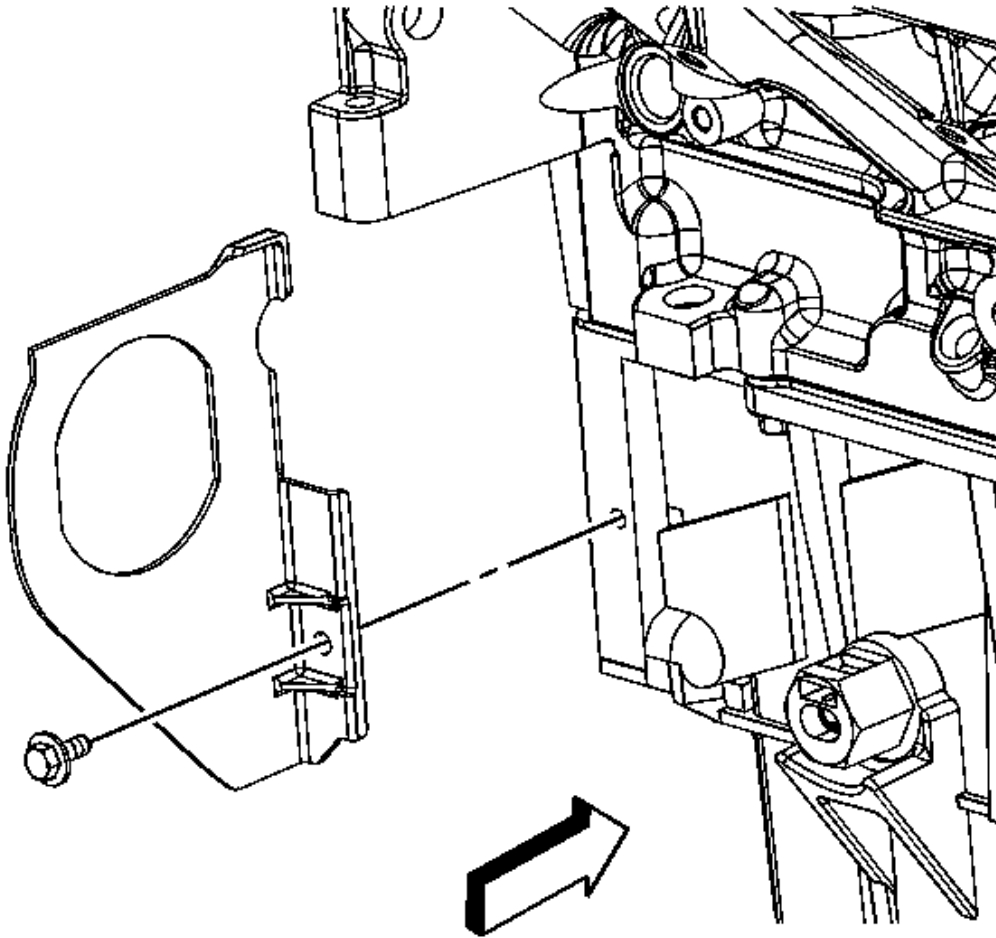


Fig. 392: View Of Right Side Transmission Cover Bolt
Courtesy of GENERAL MOTORS CORP.

13. Remove the right side transmission cover bolt.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

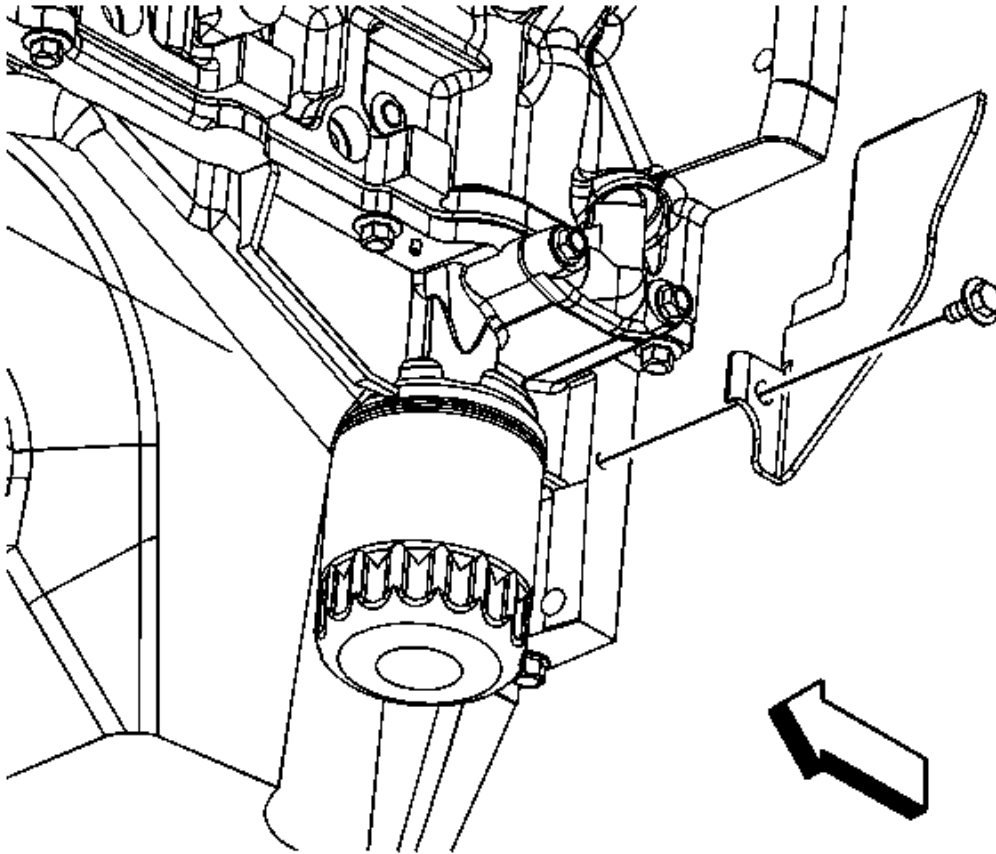


Fig. 393: View Of Left Side Transmission Cover Bolt
Courtesy of GENERAL MOTORS CORP.

14. Remove the left side transmission cover bolt and cover.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

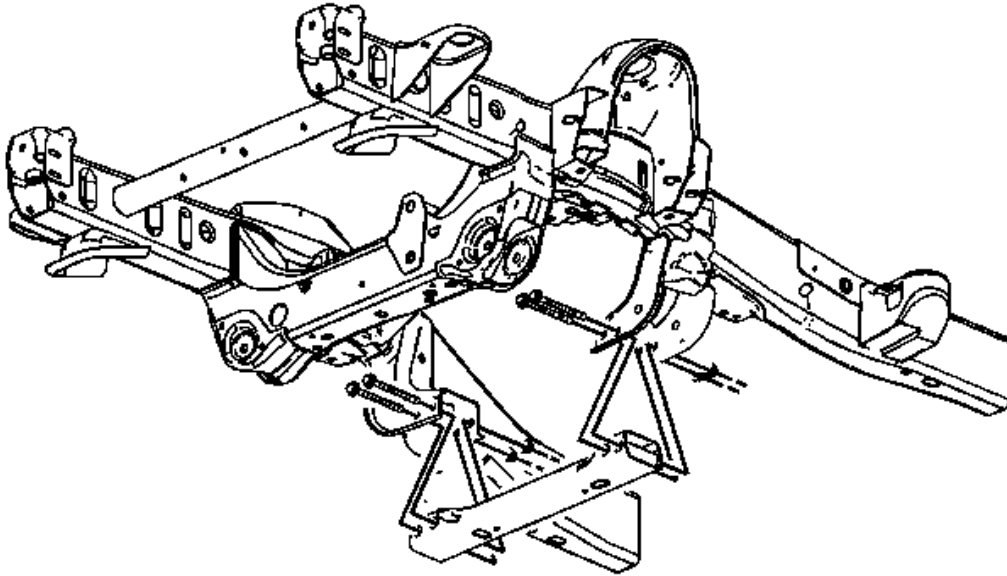


Fig. 394: View Of Vehicle Crossbar, Bolts & Nuts
Courtesy of GENERAL MOTORS CORP.

15. For 1500 series vehicles, remove the crossbar bolts/nuts and crossbar.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

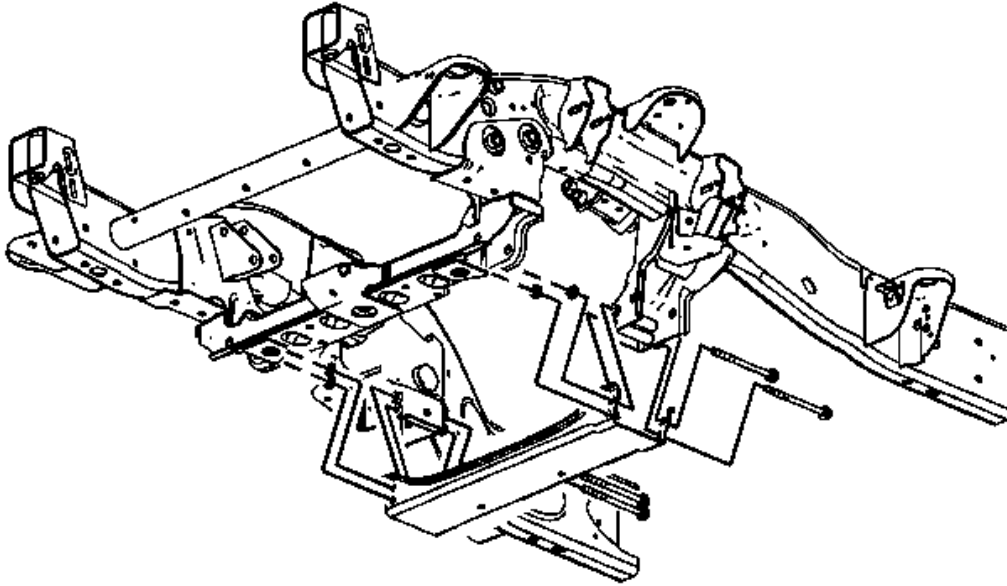


Fig. 395: View Of Vehicle Crossbar, Bolts & Nuts
Courtesy of GENERAL MOTORS CORP.

16. For 2500 series vehicles, remove the crossbar bolts/nuts and crossbar.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

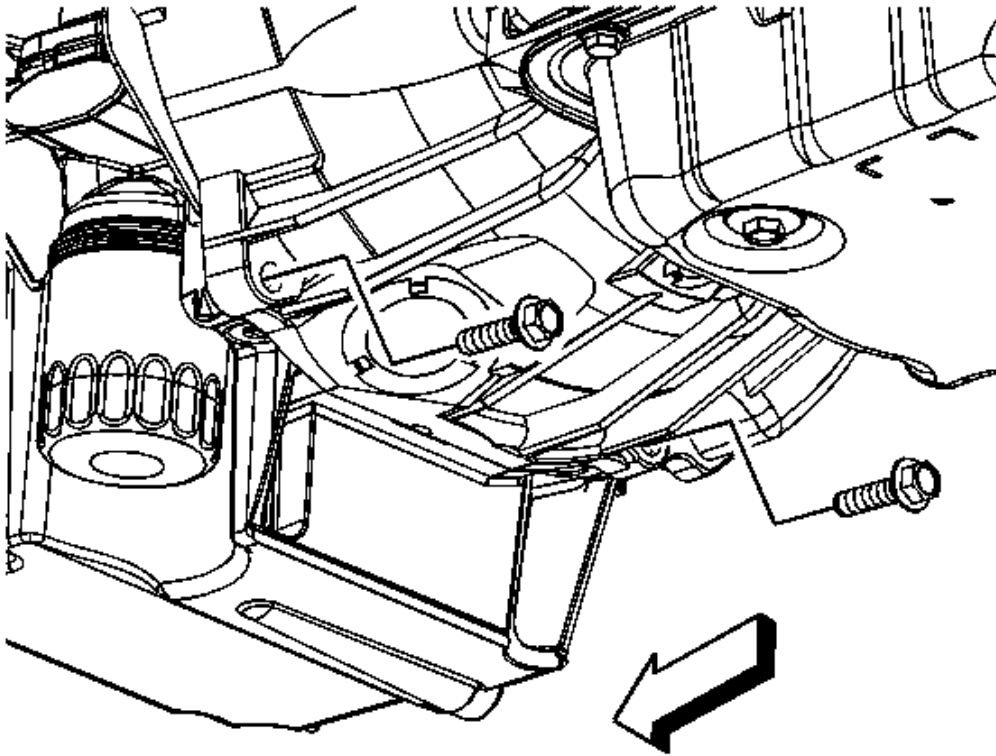


Fig. 396: View Of Lower Transmission Bolts
Courtesy of GENERAL MOTORS CORP.

17. For vehicles with a 4L60-E/4L70-E automatic transmission, remove the 2 lower transmission bolts.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

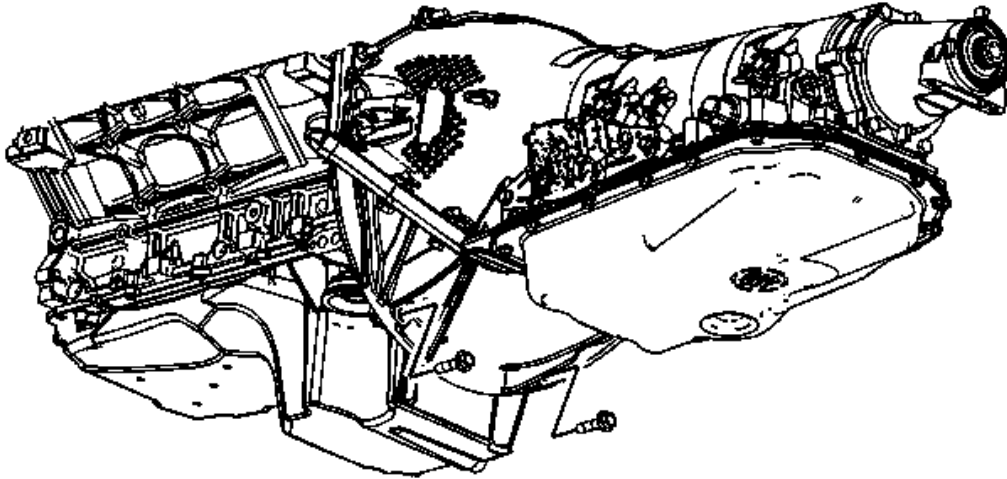


Fig. 397: View Of Lower Transmission Bolts
Courtesy of GENERAL MOTORS CORP.

18. For vehicles with a 4L80-E automatic transmission, remove the 2 lower transmission bolts.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

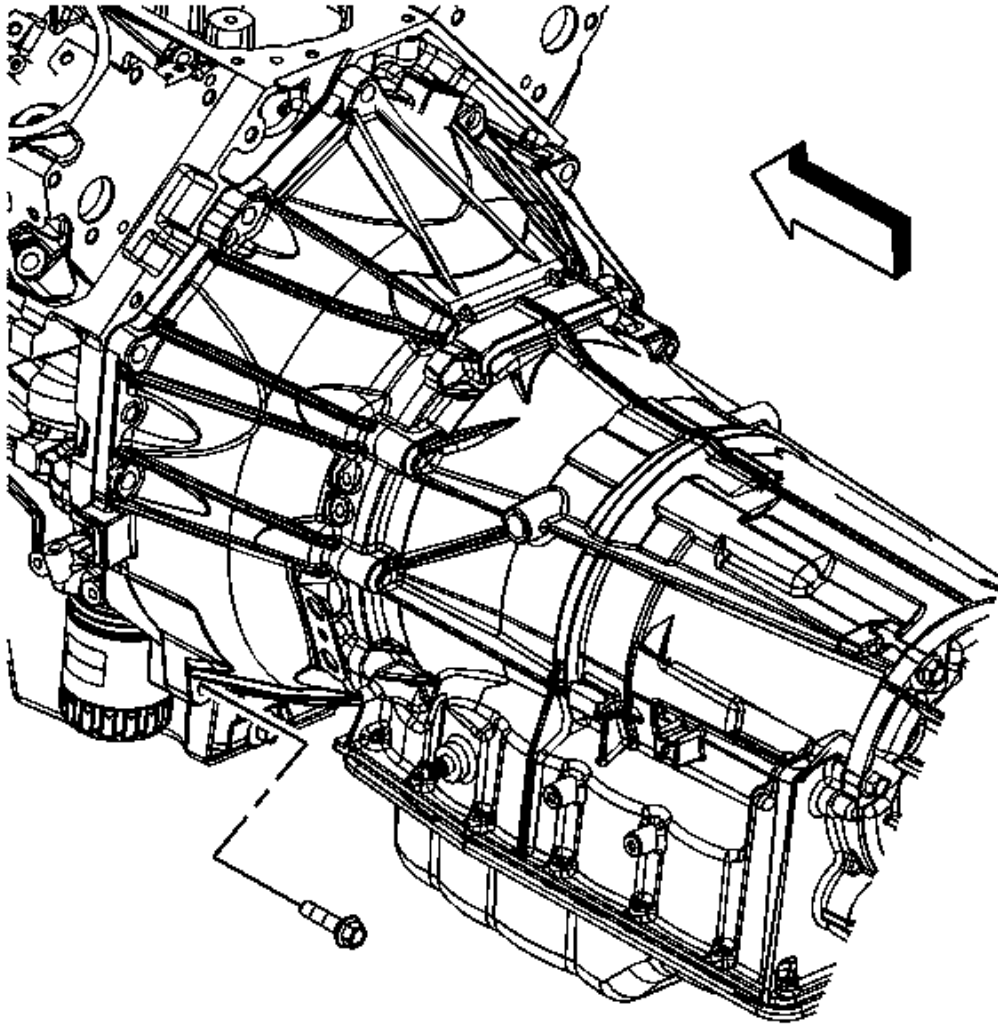


Fig. 398: View Of Lower Transmission Bolt
Courtesy of GENERAL MOTORS CORP.

19. For vehicles with a 6L80-E automatic transmission, remove the lower left transmission bolt.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

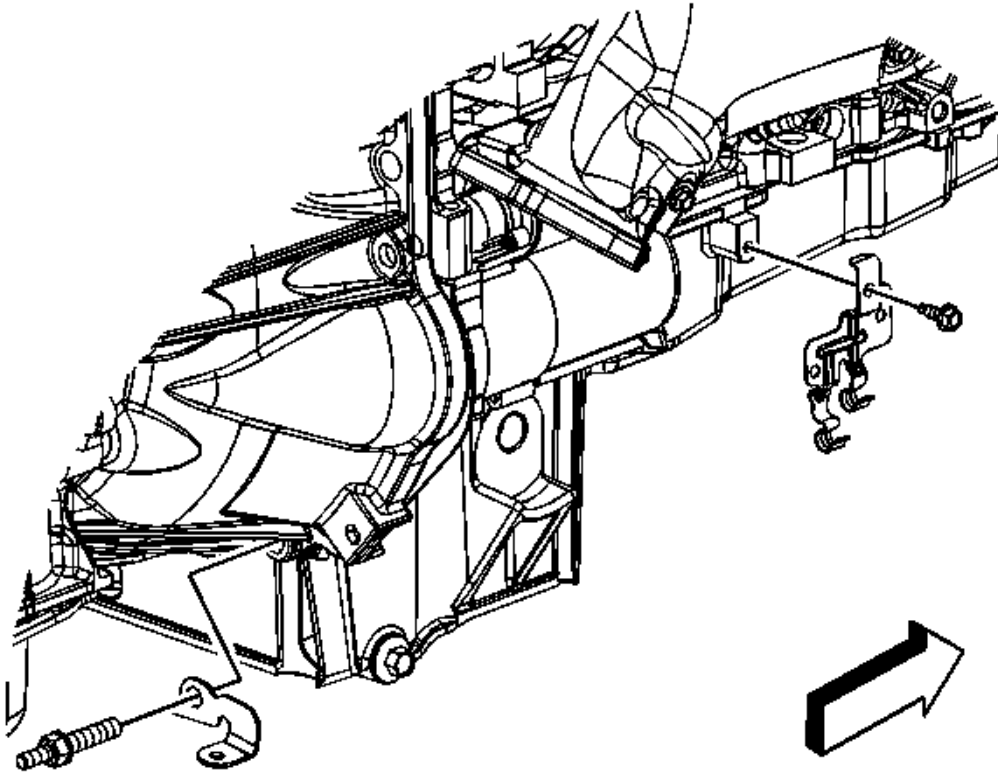


Fig. 399: View Of Lower Transmission Stud
Courtesy of GENERAL MOTORS CORP.

20. For vehicles with a 6L80-E automatic transmission, remove the lower right transmission stud.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

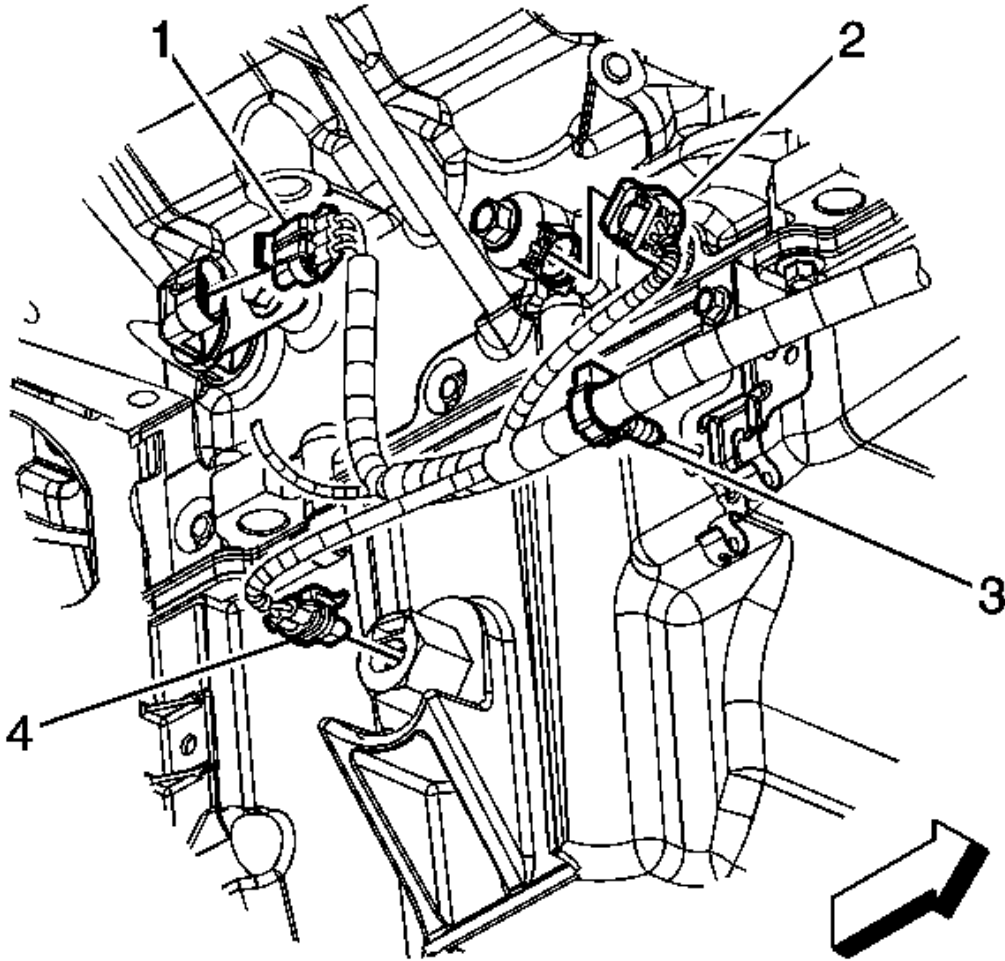


Fig. 400: View Of Electrical Connectors & Clips
Courtesy of GENERAL MOTORS CORP.

21. Disconnect the engine harness electrical connector (4) from the oil level sensor.
22. Remove the engine harness clip (3) from the transmission oil cooler line bracket.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

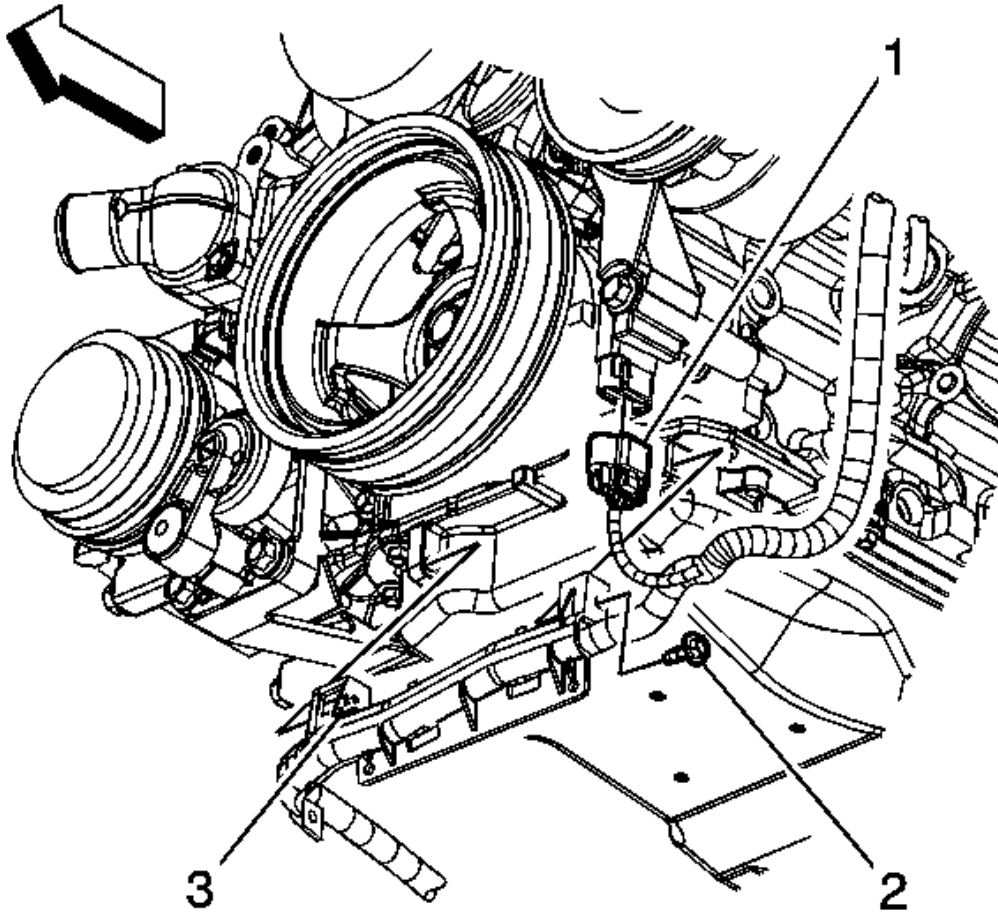


Fig. 401: View Of Electrical Connector, Cable Channel Bolt & Pin
Courtesy of GENERAL MOTORS CORP.

23. Remove the battery cable channel bolt (2).
24. Slide the channel pin (3) out of the oil pan tab.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

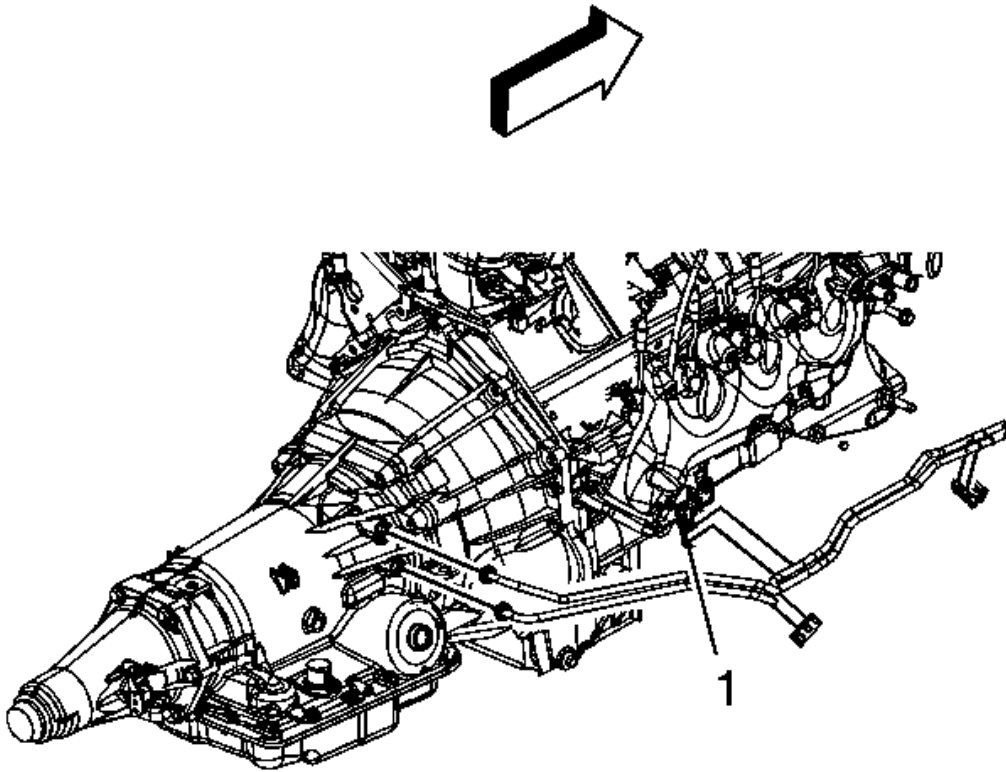


Fig. 402: View Of Oil Cooler Line Clip
Courtesy of GENERAL MOTORS CORP.

25. For vehicles with a 4L60-E/4L70-E automatic transmission, remove the oil cooler lines from the clip (1), if equipped.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

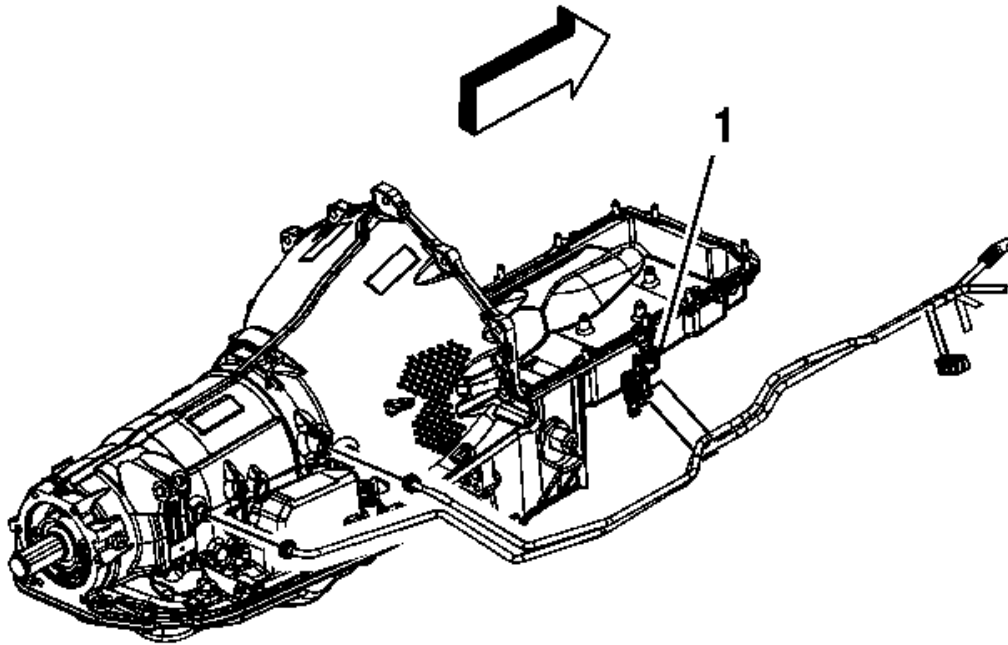


Fig. 403: View Of Oil Cooler Line Clip
Courtesy of GENERAL MOTORS CORP.

26. For vehicles with a 4L80-E automatic transmission, remove the oil cooler lines from the clip (1), if equipped.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

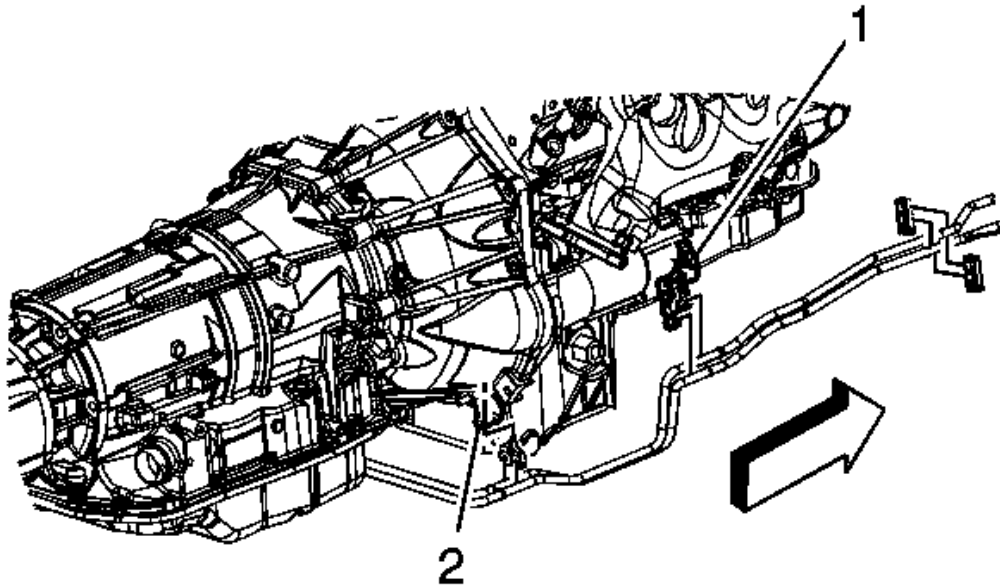


Fig. 404: View Of Oil Cooler Line Clip
Courtesy of GENERAL MOTORS CORP.

27. For vehicles with a 6L80-E automatic transmission, remove the oil cooler lines from the clip (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

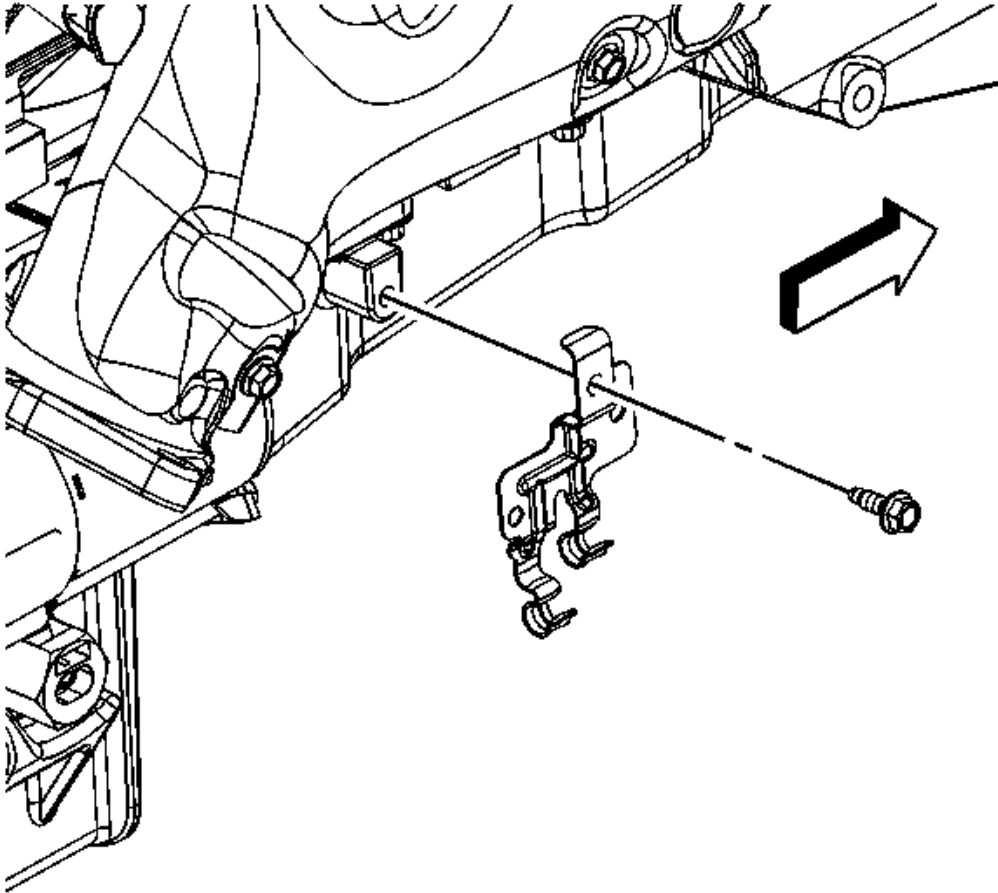


Fig. 405: View Of Oil Cooler Line Clip & Bolt
Courtesy of GENERAL MOTORS CORP.

28. Remove the transmission oil cooler line clip bolt and clip from the oil pan.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

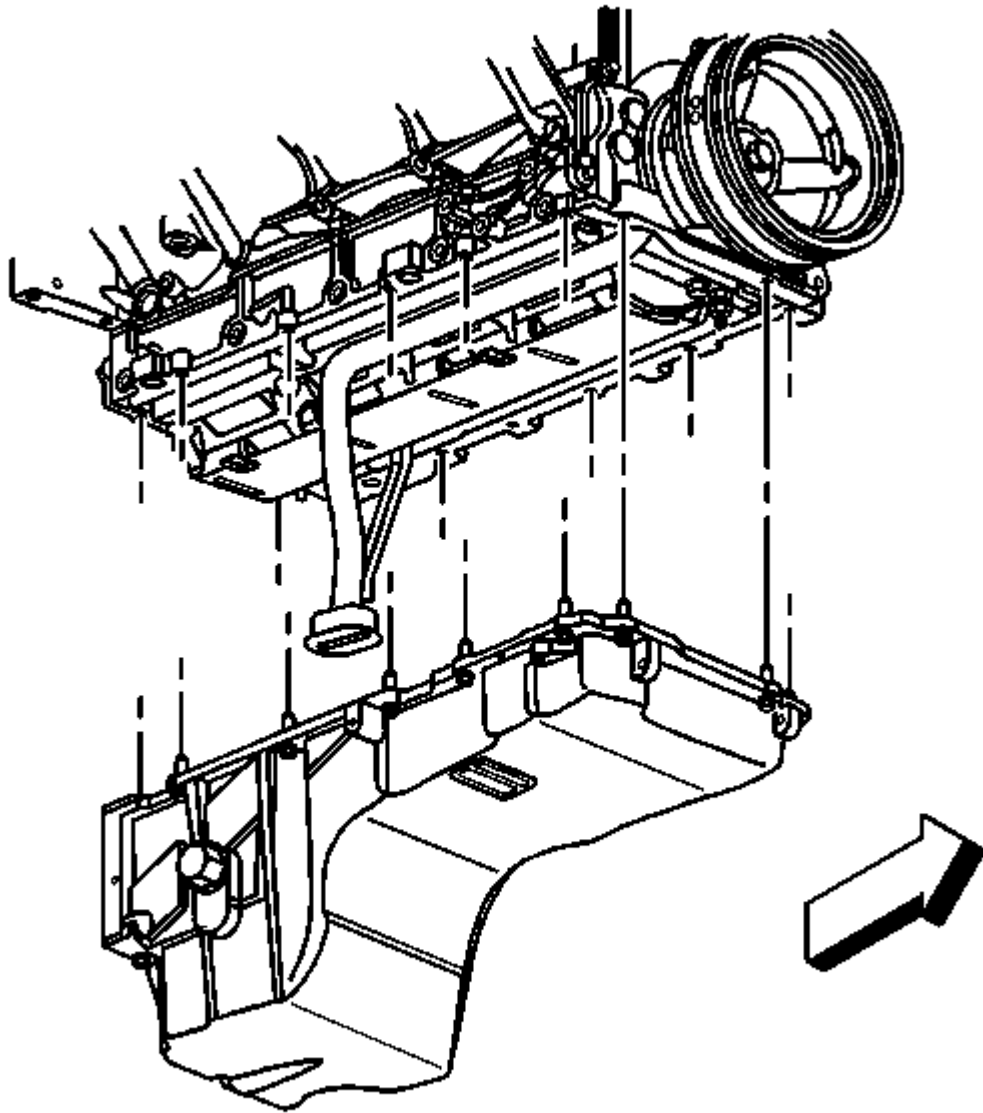


Fig. 406: View Of Oil Pan & Bolts
Courtesy of GENERAL MOTORS CORP.

29. Remove the oil pan bolts.
30. Remove the oil pan.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

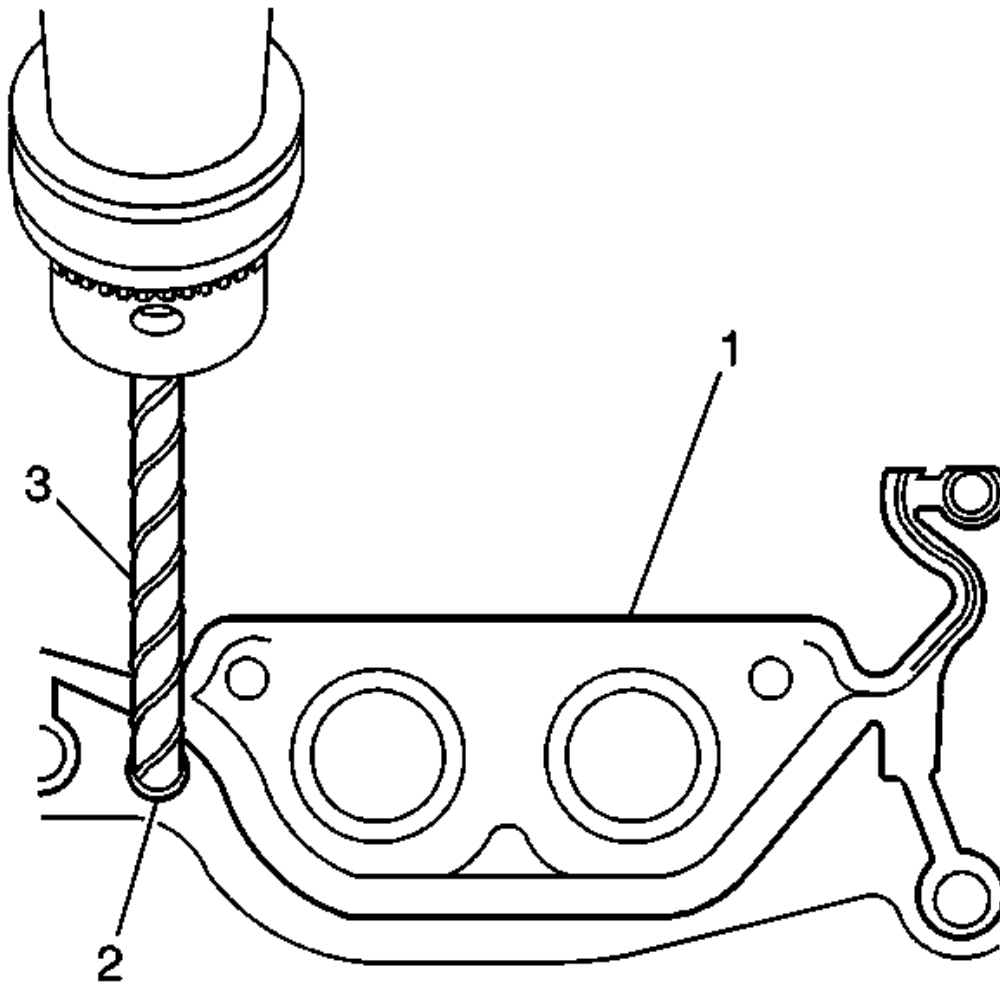


Fig. 407: Drilling Oil Pan Gasket Retaining Rivets
Courtesy of GENERAL MOTORS CORP.

31. If reusing the oil pan perform the following steps, otherwise proceed to step 3 of the installation procedure.

IMPORTANT: DO NOT allow foreign material to enter the oil passages of the oil pan, cap or cover the openings as required.

32. Drill out the oil pan gasket rivets (2), if necessary.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

33. Remove the oil pan gasket (1) from the pan.
34. Discard the oil pan gasket.
35. Discard the rivets, if necessary.

Installation Procedure

IMPORTANT:

- **The alignment of the structural oil pan is critical. The rear bolt hole locations of the oil pan provide mounting points for the transmission bellhousing. To ensure the rigidity of the powertrain and correct transmission alignment, it is important that the rear of the block and the rear of the oil pan must NEVER protrude beyond the engine block and transmission bellhousing plane.**
- **Do not reuse the oil pan gasket.**
- **It is not necessary to rivet the NEW gasket to the oil pan.**

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

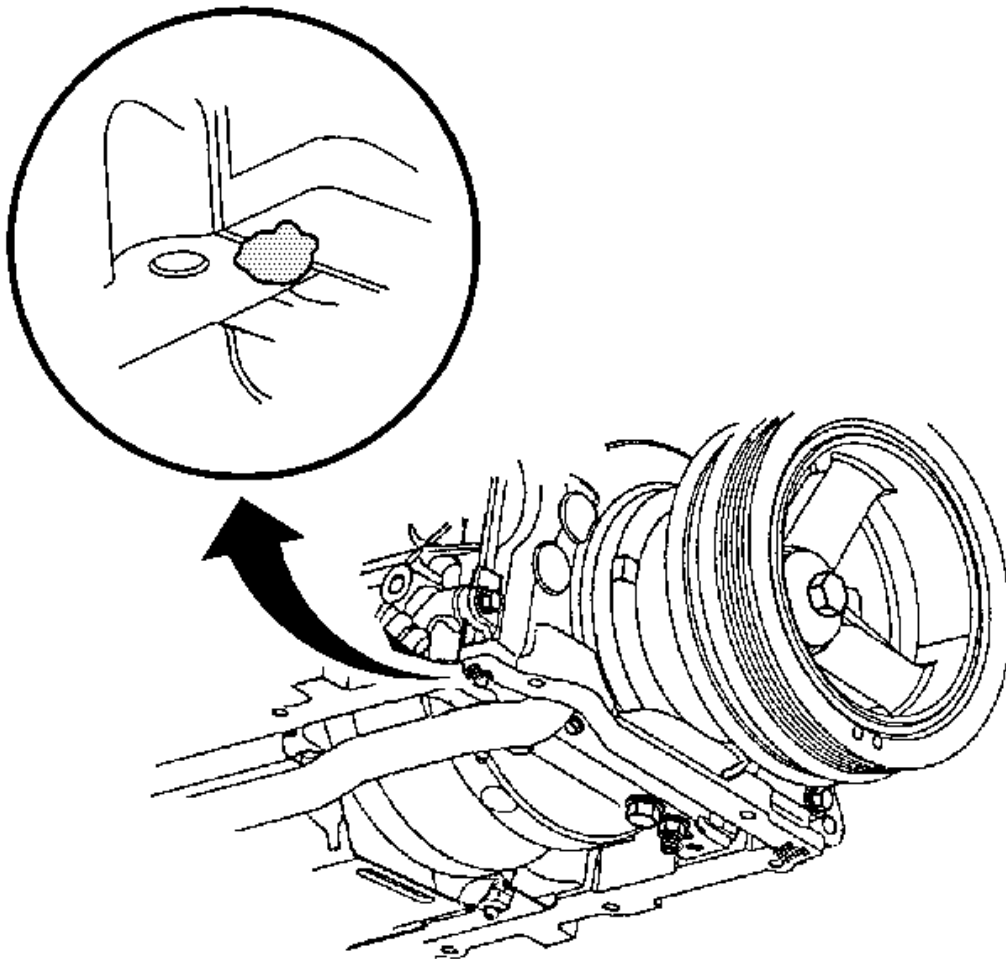


Fig. 408: View Of Sealant Applied To Front Oil Pan-To-Engine Block Junction
Courtesy of GENERAL MOTORS CORP.

1. If reusing the oil pan perform the following step, otherwise proceed to step 3.

IMPORTANT: Be sure to align the oil gallery passages in the oil pan and engine block properly with the oil pan gasket.

2. Place a NEW oil pan gasket onto the oil pan.
3. Apply a 5 mm (0.20 in) bead of sealant, 20 mm (0.80 in) long to the engine block. Apply the sealant directly onto the tabs of the front cover gasket that protrudes into the oil pan

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

surface. Refer to **Sealers, Adhesives, and Lubricants** .

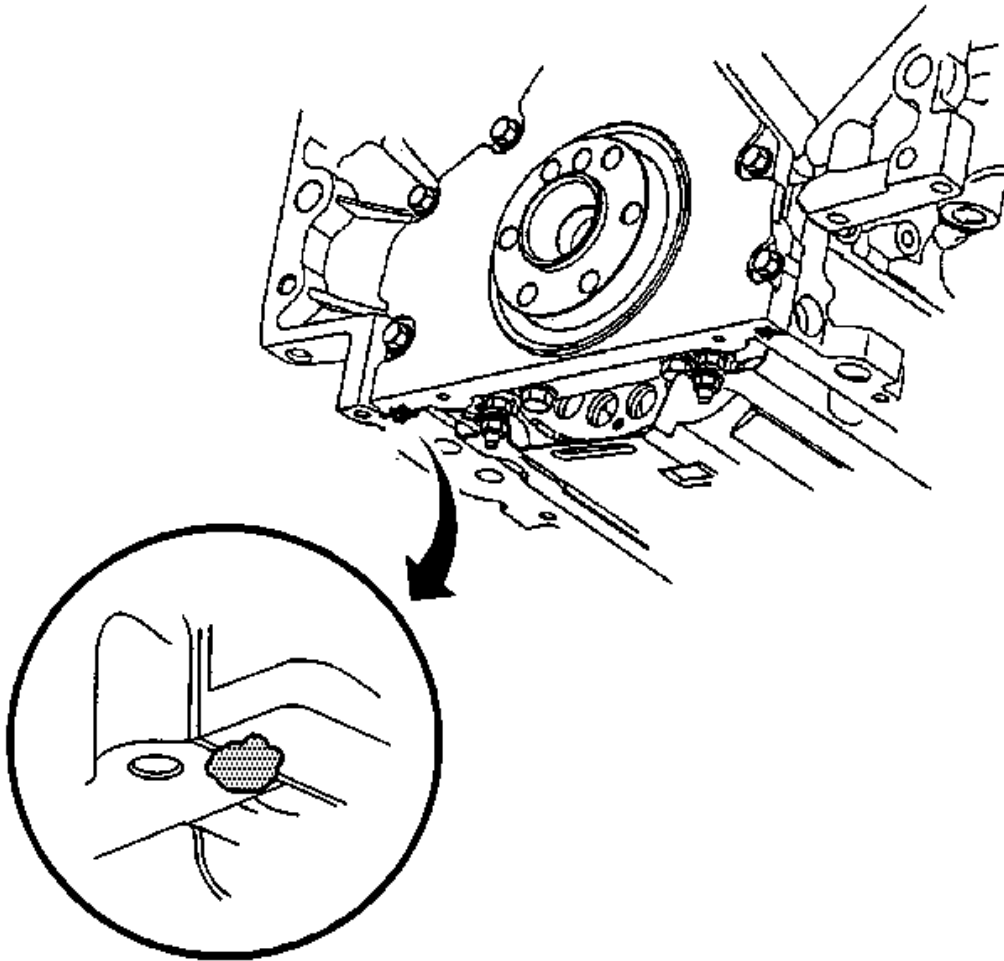


Fig. 409: View Of Sealant Applied To Rear Oil Pan-To-Engine Block Junction
Courtesy of GENERAL MOTORS CORP.

4. Apply a 5 mm (0.20 in) bead of sealant, 20 mm (0.8 in) long to the engine block. Apply the sealant directly onto the tabs of the rear cover gasket that protrudes into the oil pan surface. Refer to **Sealers, Adhesives, and Lubricants** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

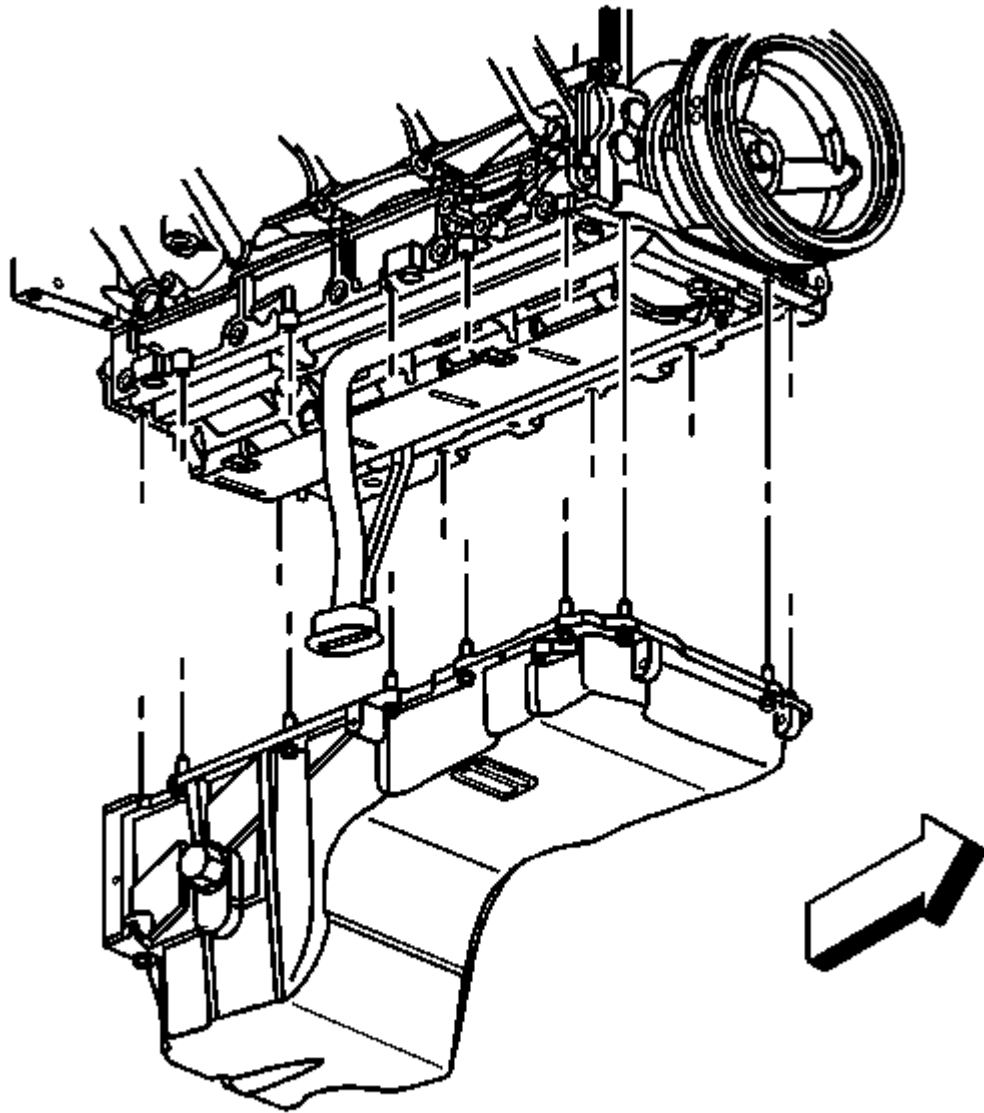


Fig. 410: View Of Oil Pan & Bolts
Courtesy of GENERAL MOTORS CORP.

5. Install 1 oil pan bolt into a oil pan bolt hole and up through the gasket.
6. Position and install the oil pan and the rest of the oil pan bolts.
7. Tighten the oil pan bolts until snug.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

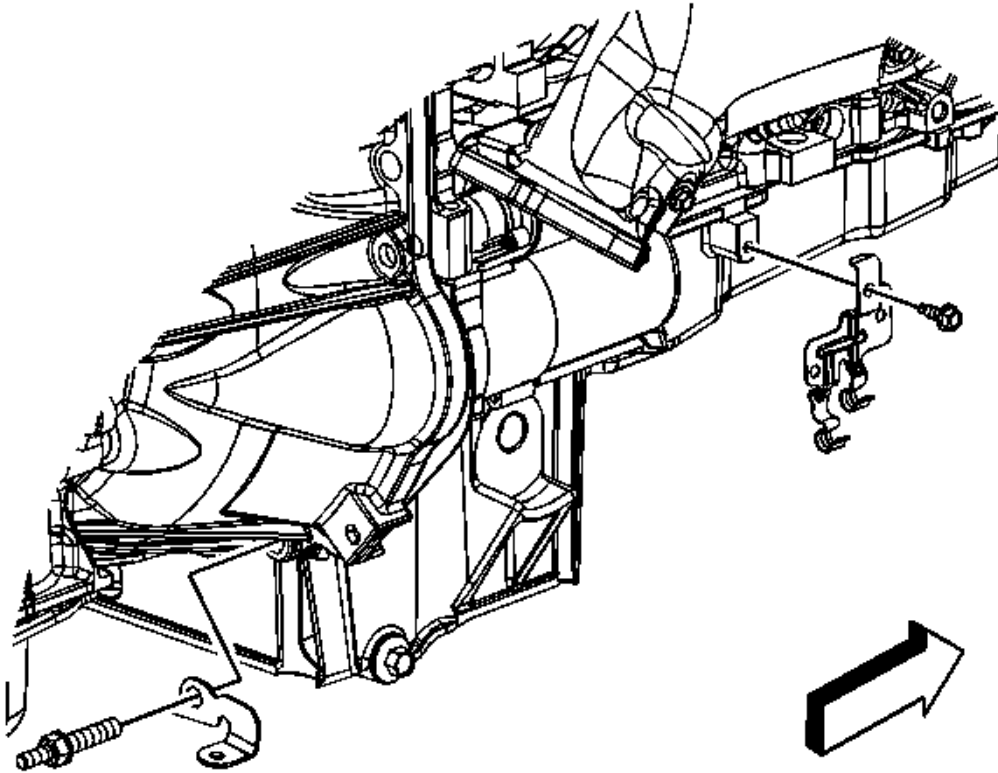


Fig. 411: View Of Lower Transmission Stud
Courtesy of GENERAL MOTORS CORP.

8. For vehicles with a 6L80-E automatic transmission, position the oil cooler bracket and install the lower right transmission stud until snug.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

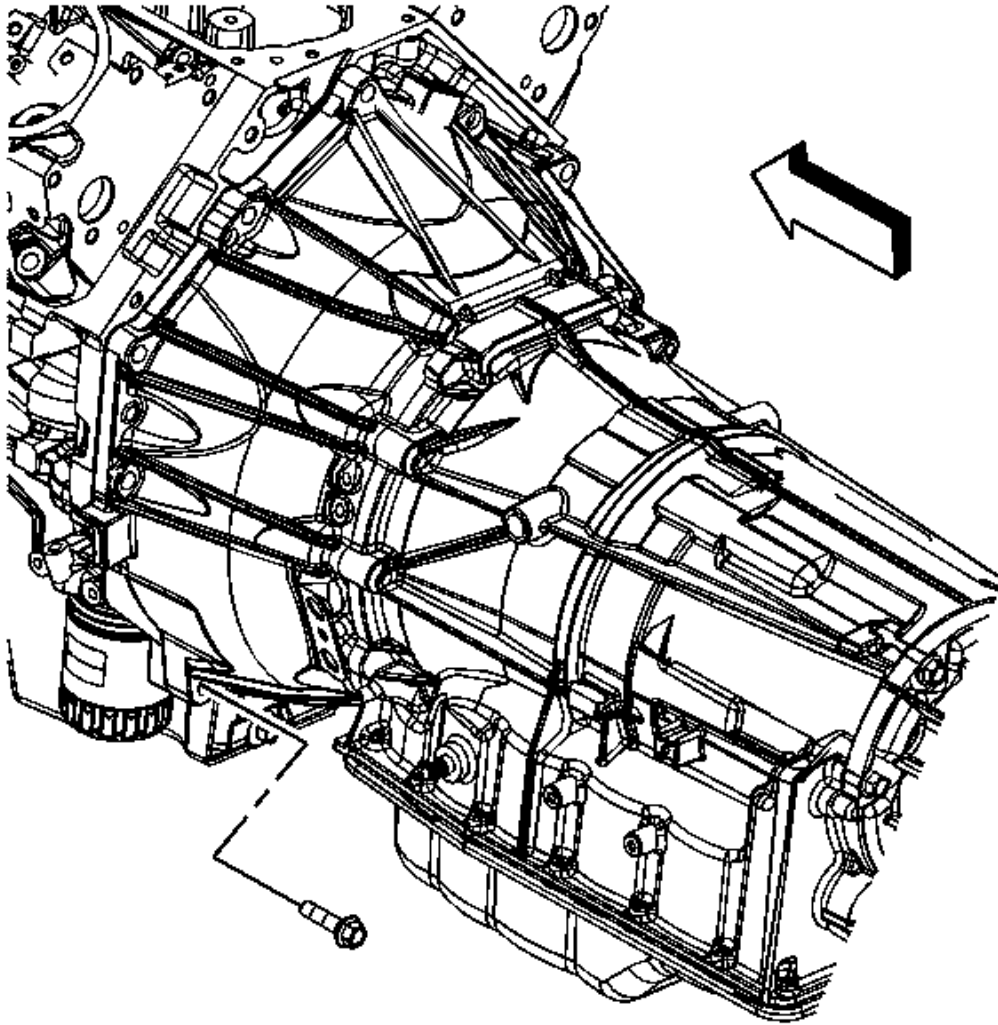


Fig. 412: View Of Lower Transmission Bolt
Courtesy of GENERAL MOTORS CORP.

9. For vehicles with a 6L80-E automatic transmission, install the lower left transmission bolt until snug.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

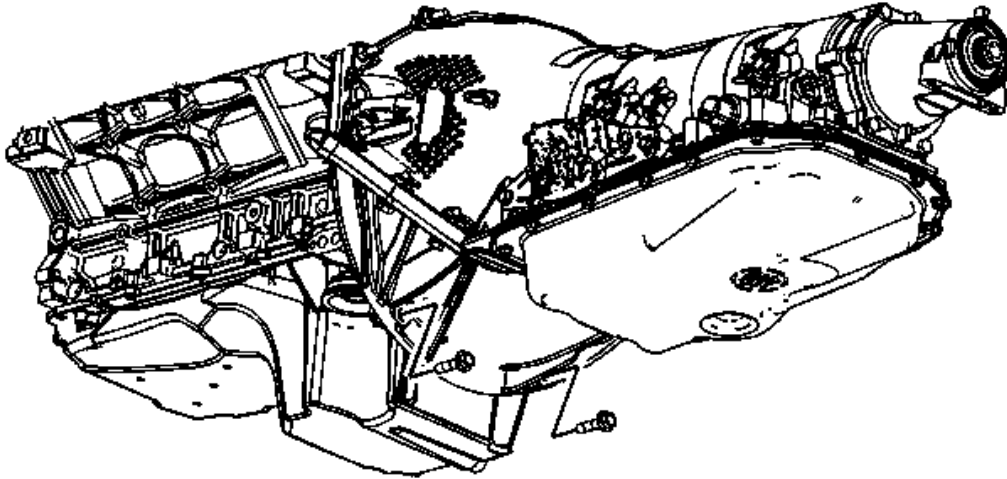


Fig. 413: View Of Lower Transmission Bolts
Courtesy of GENERAL MOTORS CORP.

10. For vehicles with a 4L80-E automatic transmission, install the 2 lower transmission bolts until snug.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

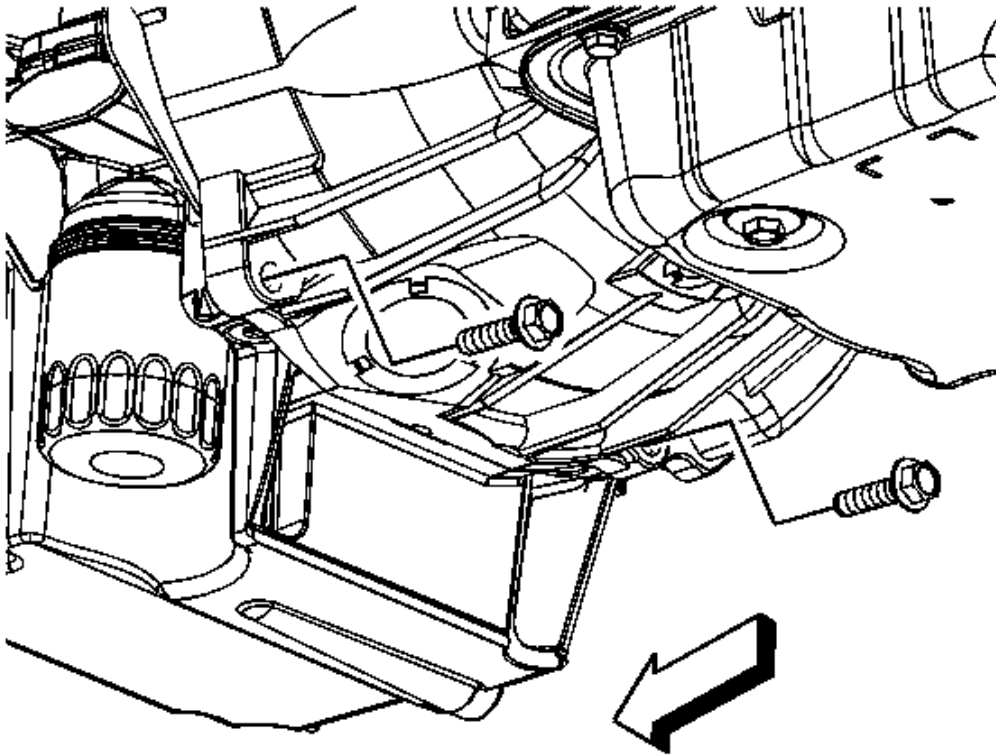


Fig. 414: View Of Lower Transmission Bolts
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

11. For vehicles with a 4L60-E/4L70-E automatic transmission, install the 2 lower transmission bolts until snug.

Tighten:

1. Tighten the oil pan and oil pan-to-oil pan front cover bolts to 25 N.m (18 lb ft).
2. Tighten the oil pan-to-rear cover bolts to 12 N.m (106 lb in).
3. Tighten the transmission bolts/stud to 50 N.m (37 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

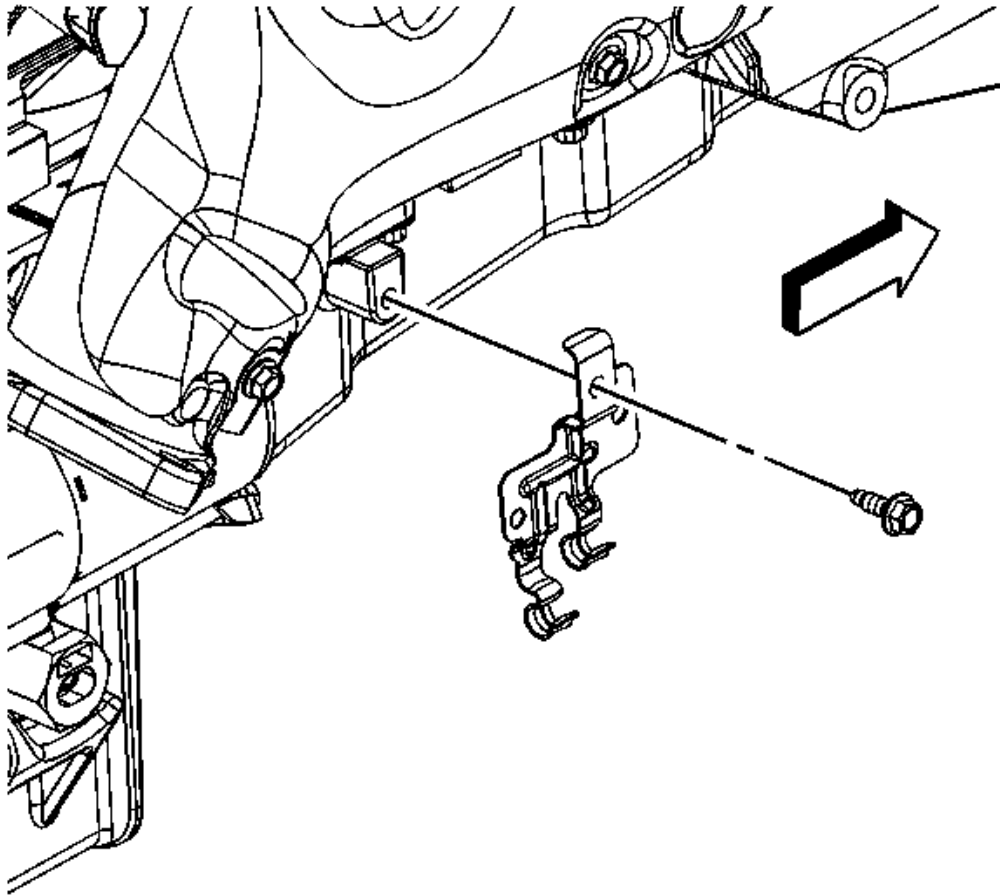


Fig. 415: View Of Oil Cooler Line Clip & Bolt
Courtesy of GENERAL MOTORS CORP.

12. Position the transmission oil cooler line clip and install the bolt to the oil pan.

Tighten: Tighten the bolt to 9 N.m (80 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

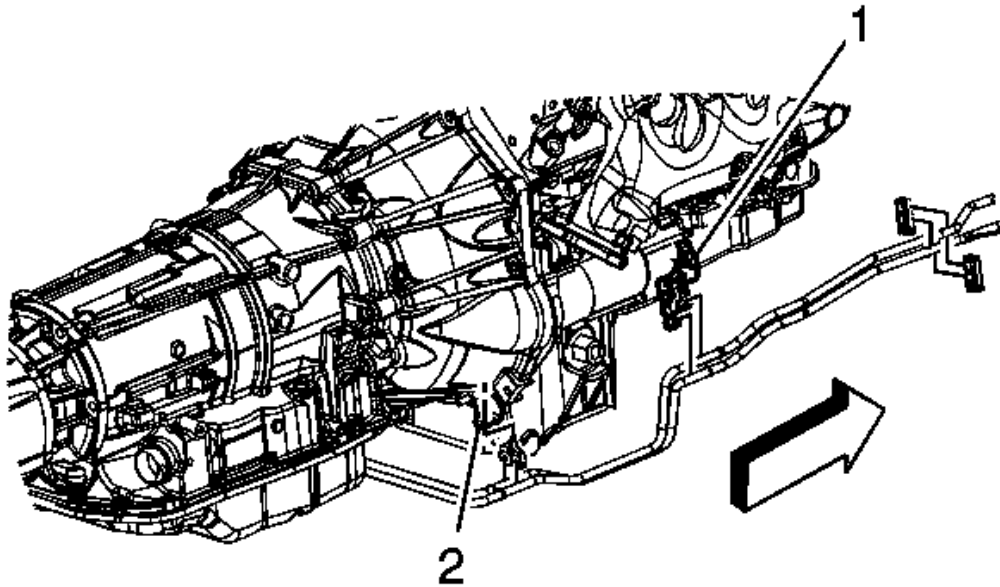


Fig. 416: View Of Oil Cooler Line Clip
Courtesy of GENERAL MOTORS CORP.

13. For vehicles with a 6L80-E automatic transmission, install the oil cooler lines to the clip (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

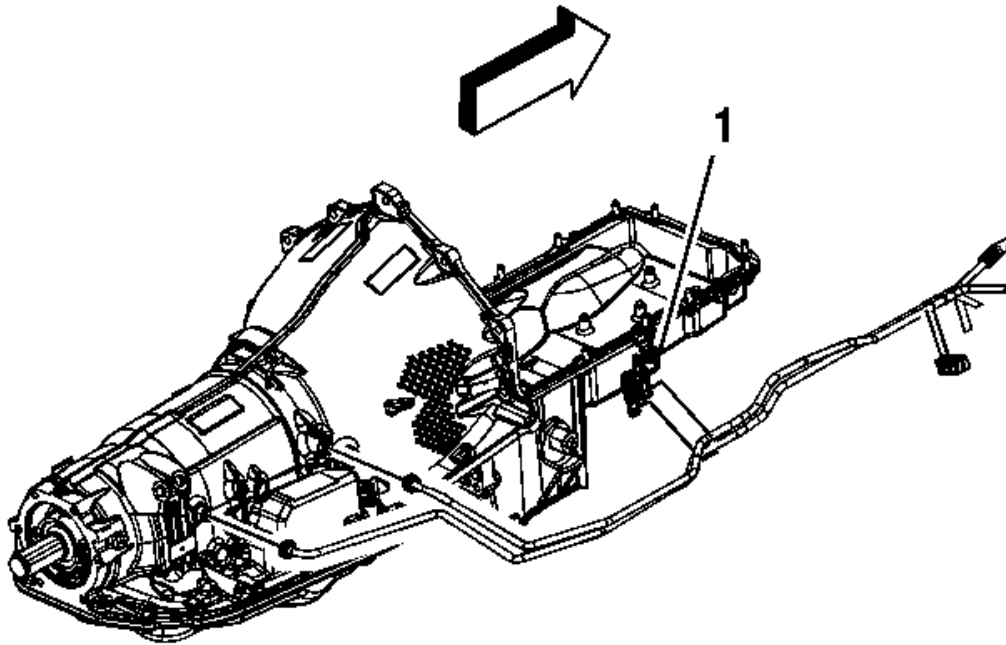


Fig. 417: View Of Oil Cooler Line Clip
Courtesy of GENERAL MOTORS CORP.

14. For vehicles with a 4L80-E automatic transmission, install the oil cooler lines to the clip (1), if equipped.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

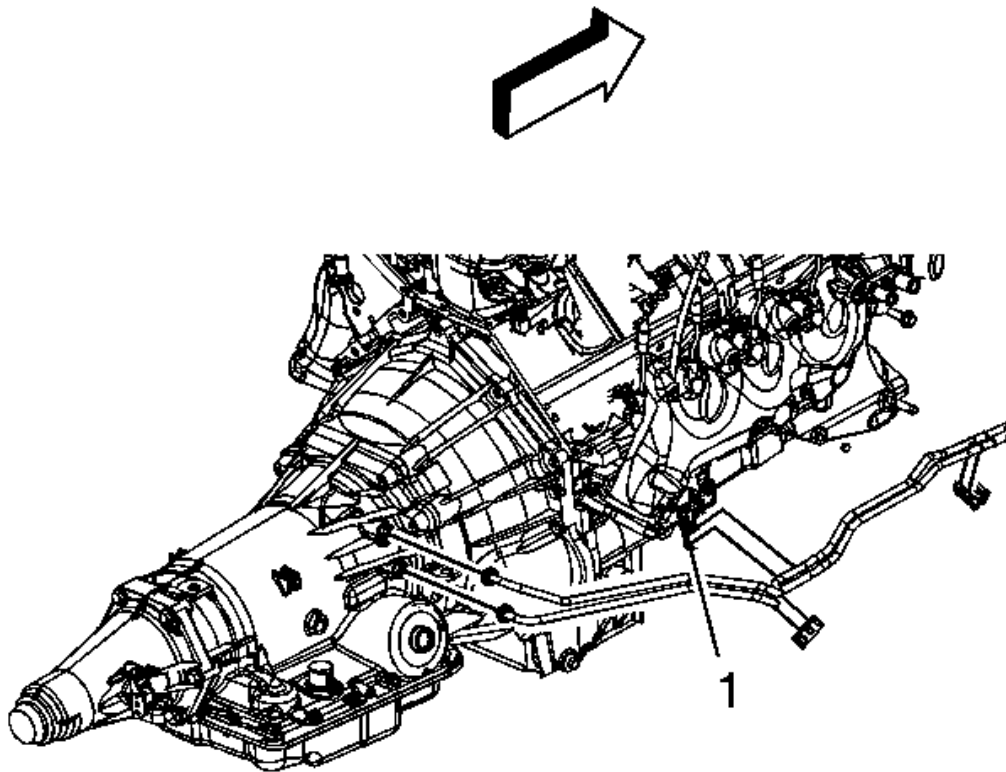


Fig. 418: View Of Oil Cooler Line Clip
Courtesy of GENERAL MOTORS CORP.

15. For vehicles with a 4L60-E/4L70-E automatic transmission, install the oil cooler lines to the clip (1), if equipped.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

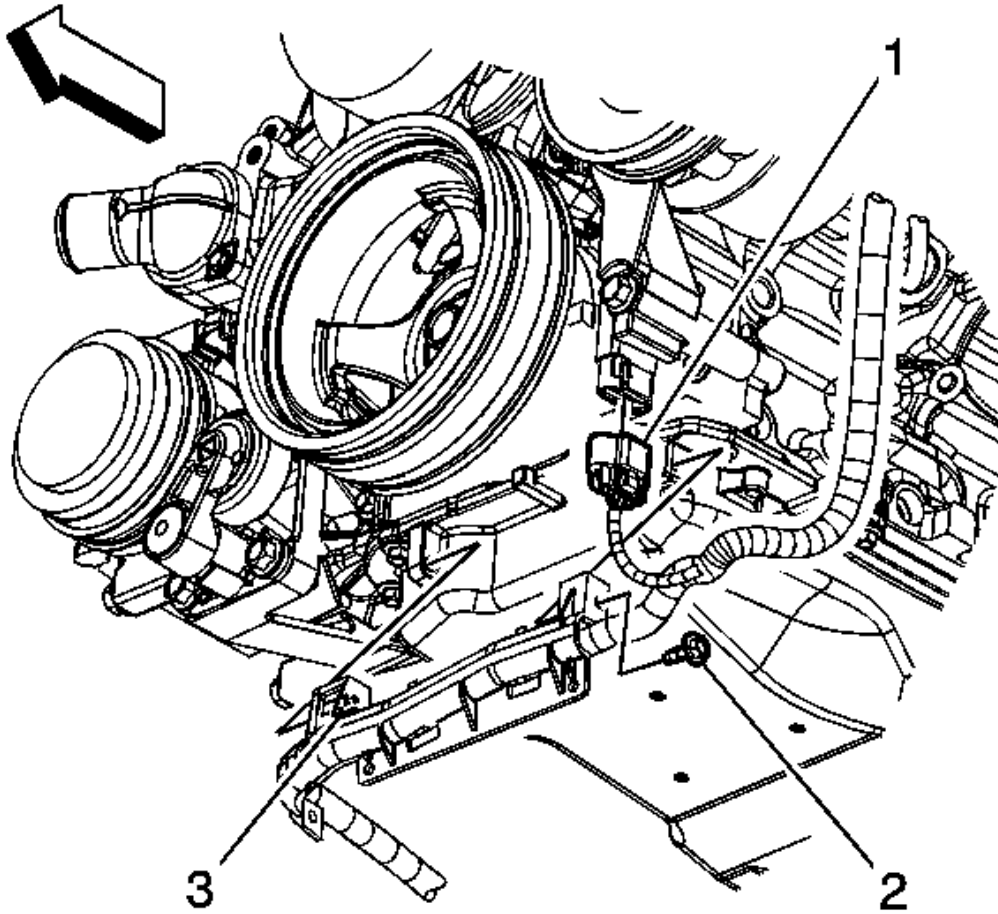


Fig. 419: View Of Electrical Connector, Cable Channel Bolt & Pin
Courtesy of GENERAL MOTORS CORP.

16. Position the channel and slide the channel pin (3) into the oil pan tab.
17. Install the battery cable channel bolt (2).

Tighten: Tighten the bolt to 12 N.m (106 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

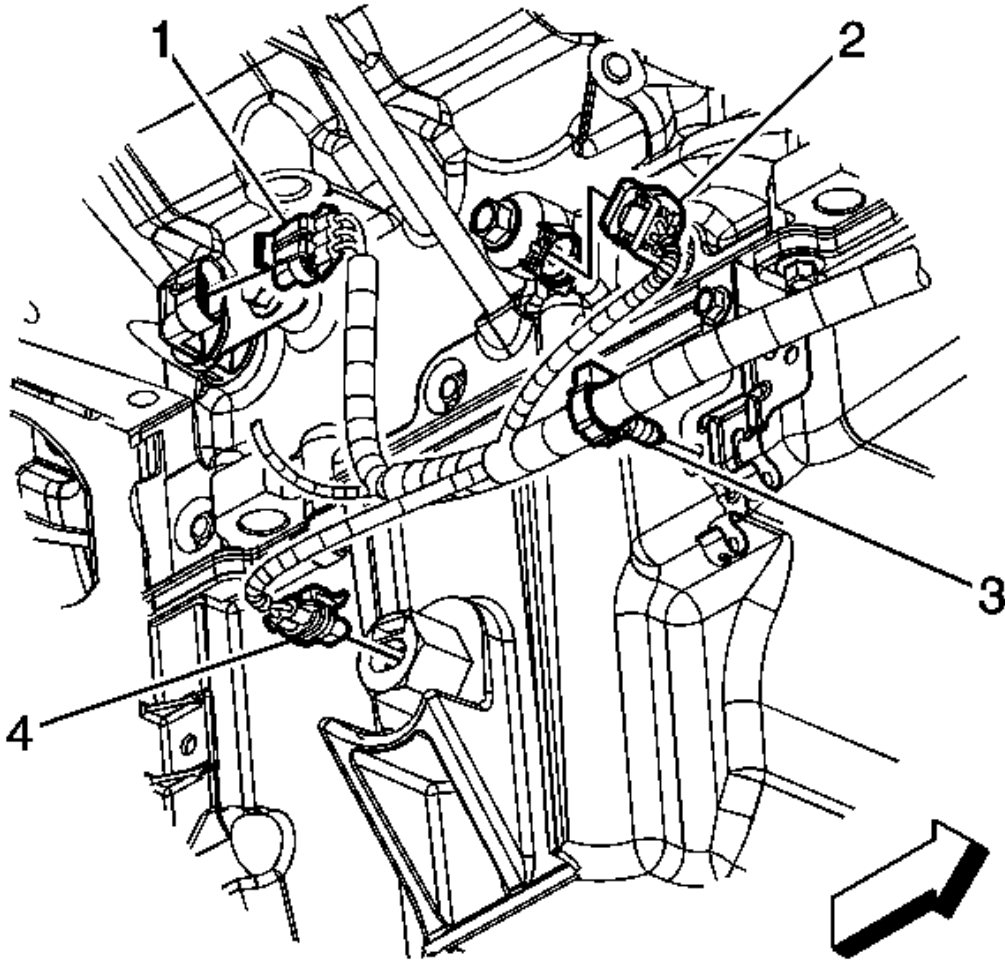


Fig. 420: View Of Electrical Connectors & Clips
Courtesy of GENERAL MOTORS CORP.

18. Connect the engine harness electrical connector (4) to the oil level sensor.
19. Install the engine harness clip (3) to the transmission oil cooler line bracket.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

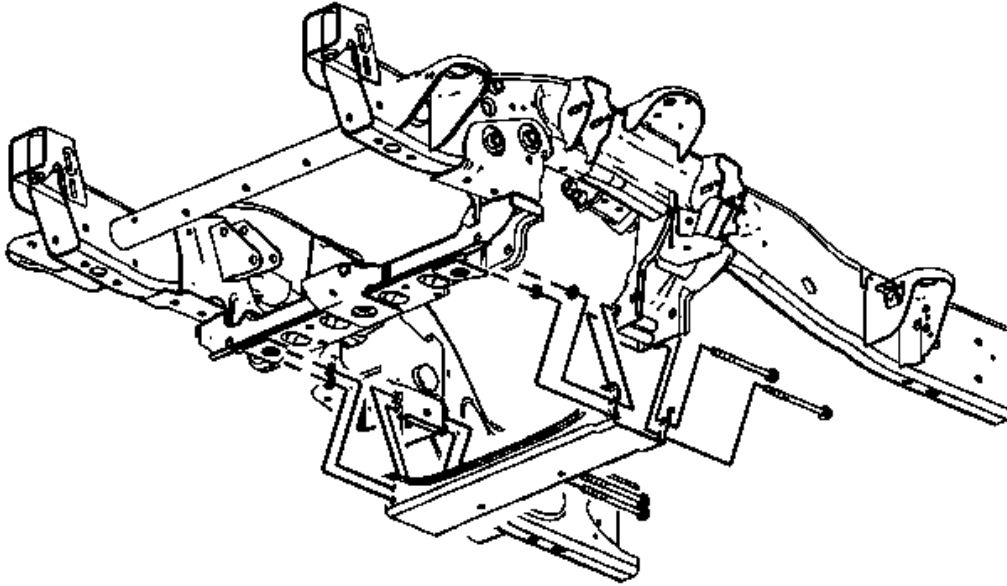


Fig. 421: View Of Vehicle Crossbar, Bolts & Nuts
Courtesy of GENERAL MOTORS CORP.

20. For both the 1500 and 2500 series, perform the following steps prior to installing the crossbar bolts.
 1. Remove all traces of the original adhesive patch.
 2. Clean the threads of the bolts with denatured alcohol or equivalent and allow to dry.
 3. Apply threadlock GM P/N 12345493 (Canadian P/N 10953488) or equivalent to the bolt threads.
21. For 2500 series vehicles, install the crossbar and crossbar bolts/nuts.

Tighten: Tighten the nuts to 120 N.m (89 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

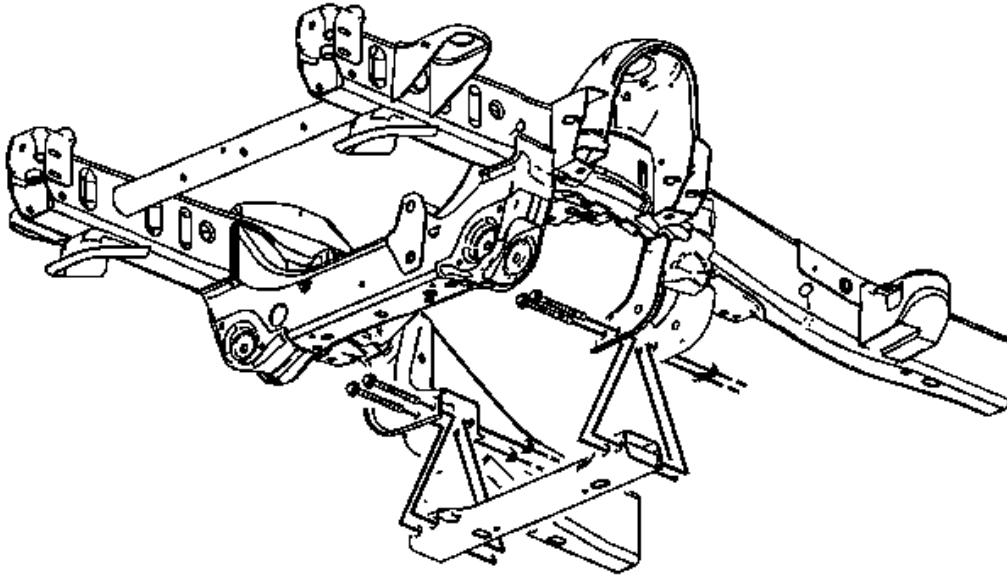


Fig. 422: View Of Vehicle Crossbar, Bolts & Nuts
Courtesy of GENERAL MOTORS CORP.

22. For 1500 series vehicles, install the crossbar and crossbar bolts/nuts.

Tighten: Tighten the nuts to 100 N.m (74 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

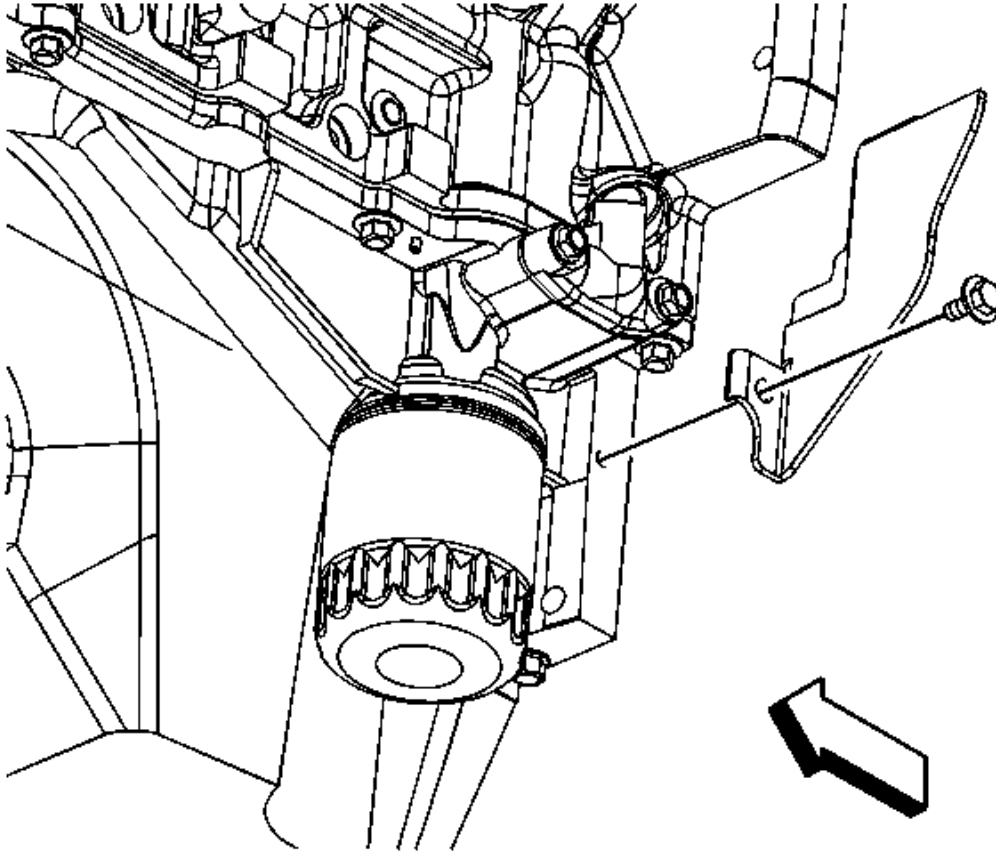


Fig. 423: View Of Left Side Transmission Cover Bolt
Courtesy of GENERAL MOTORS CORP.

23. Position the left side transmission cover and install the cover bolt.

Tighten: Tighten the bolt to 12 N.m (106 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

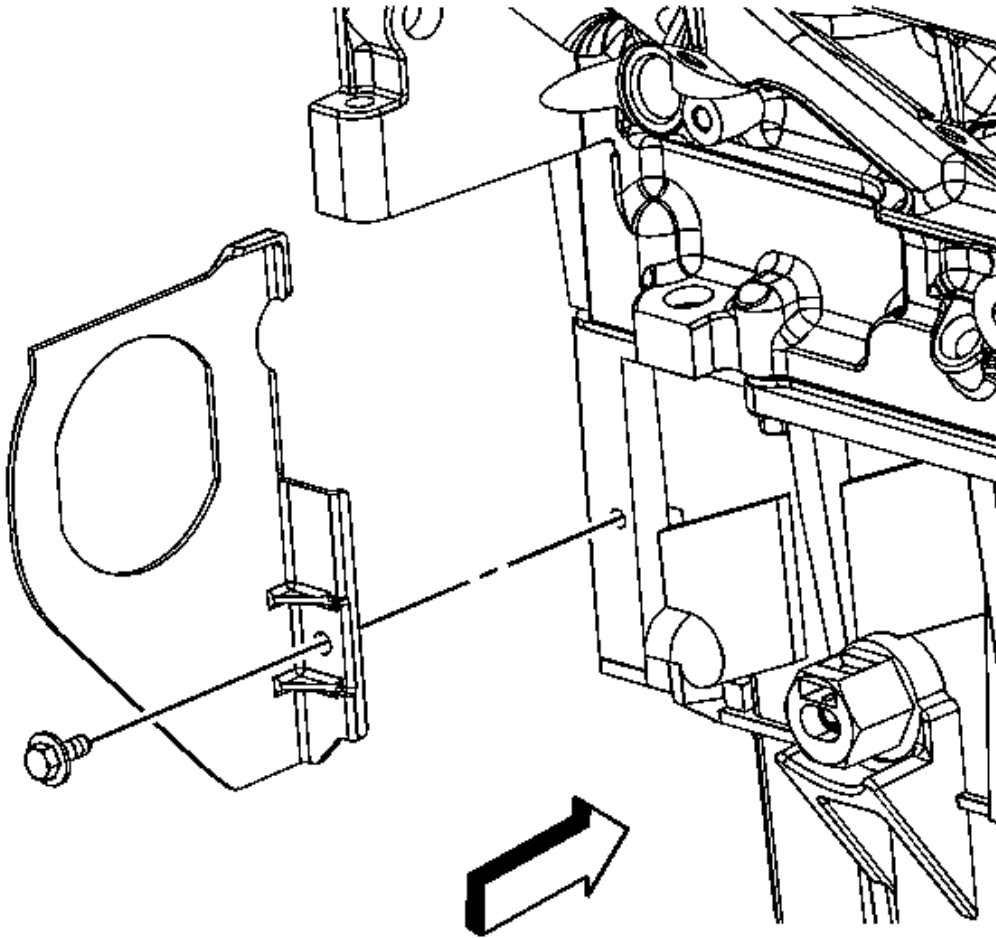


Fig. 424: View Of Right Side Transmission Cover Bolt
Courtesy of GENERAL MOTORS CORP.

24. Install the right side transmission cover bolt.

Tighten: Tighten the bolt to 12 N.m (106 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

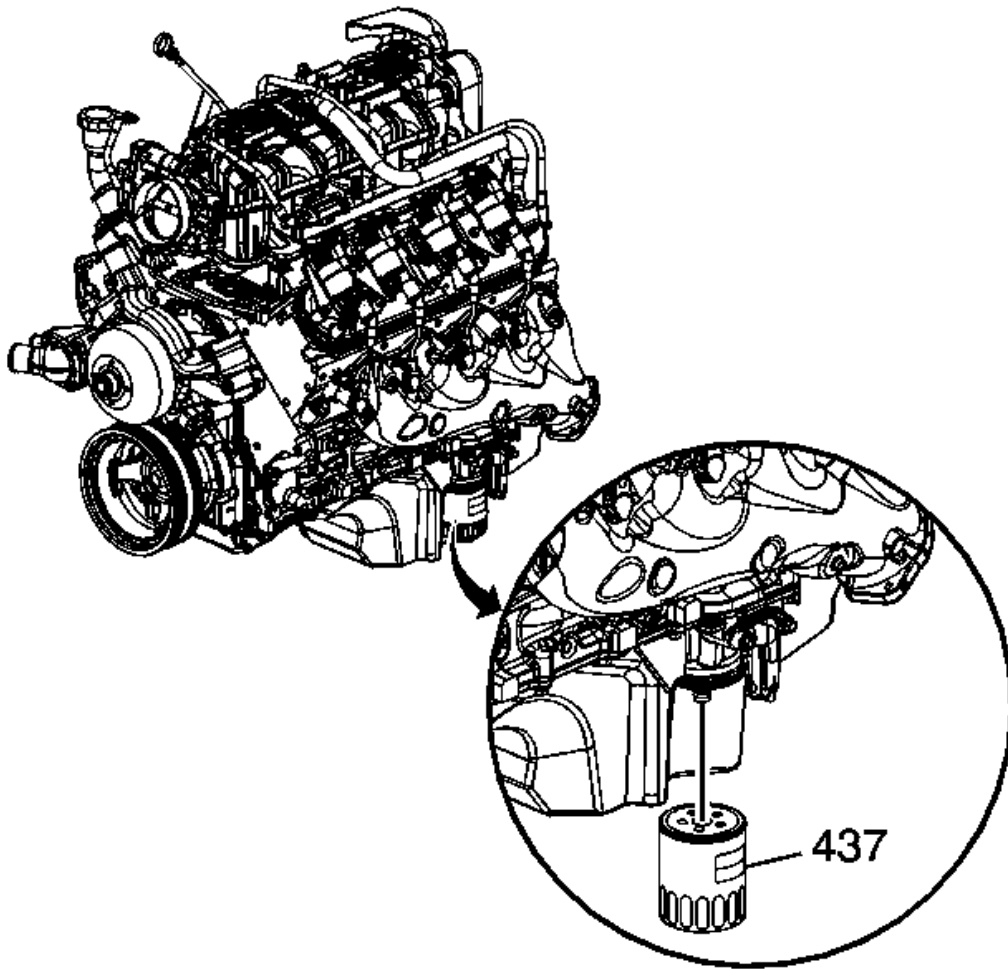


Fig. 425: View Of Engine Oil Filter
Courtesy of GENERAL MOTORS CORP.

25. If reusing the old oil pan remove the old oil filter and install a NEW oil filter.
26. Lubricate the NEW oil filter seal with clean engine oil.
27. Install the NEW oil filter (437).

Tighten: Tighten the oil filter to 30 N.m (22 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

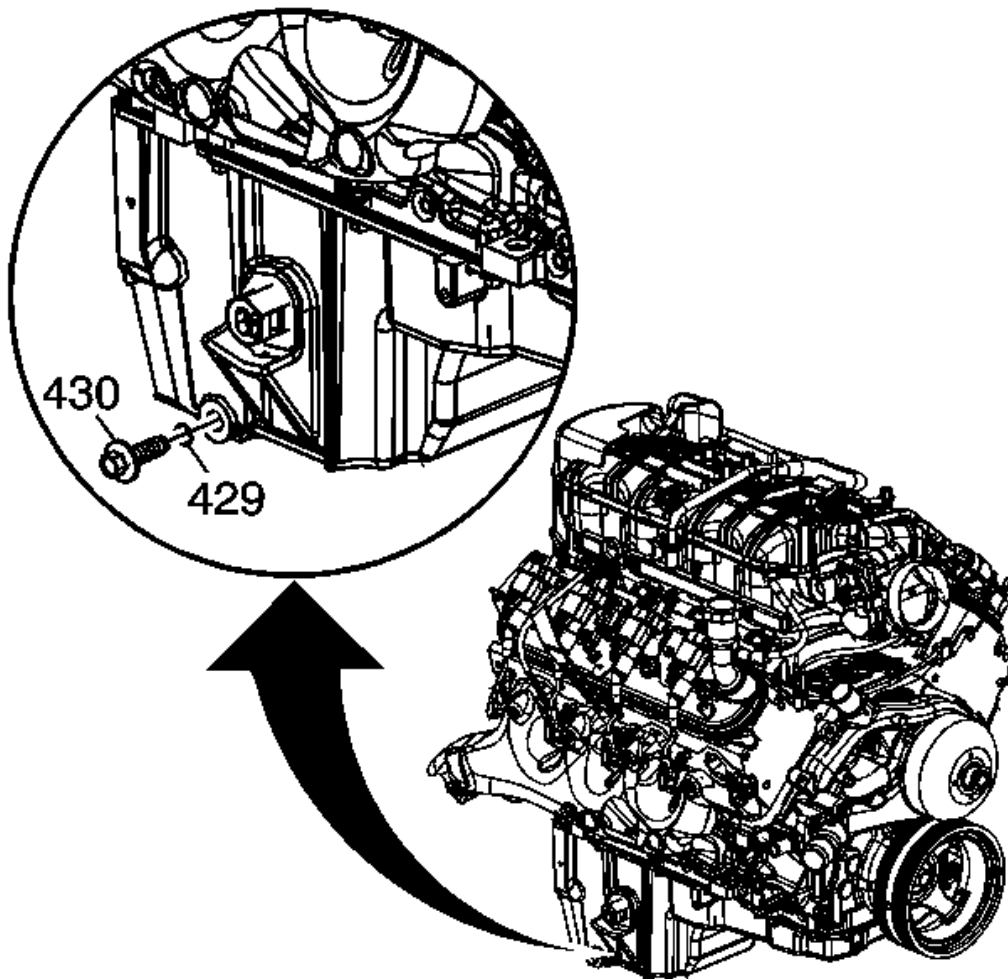


Fig. 426: View Of Oil Pan Drain Plug & Seal
Courtesy of GENERAL MOTORS CORP.

28. Ensure that the oil pan drain plug (430) is tight.

Tighten: Tighten the drain plug to 25 N.m (18 lb ft).

29. Raise the steering rack in place and install the steering rack bolts.

Tighten:

- Tighten the left side steering rack bolts to 200 N.m (148 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- Tighten the right side steering rack bolts to 100 N.m (74 lb ft).

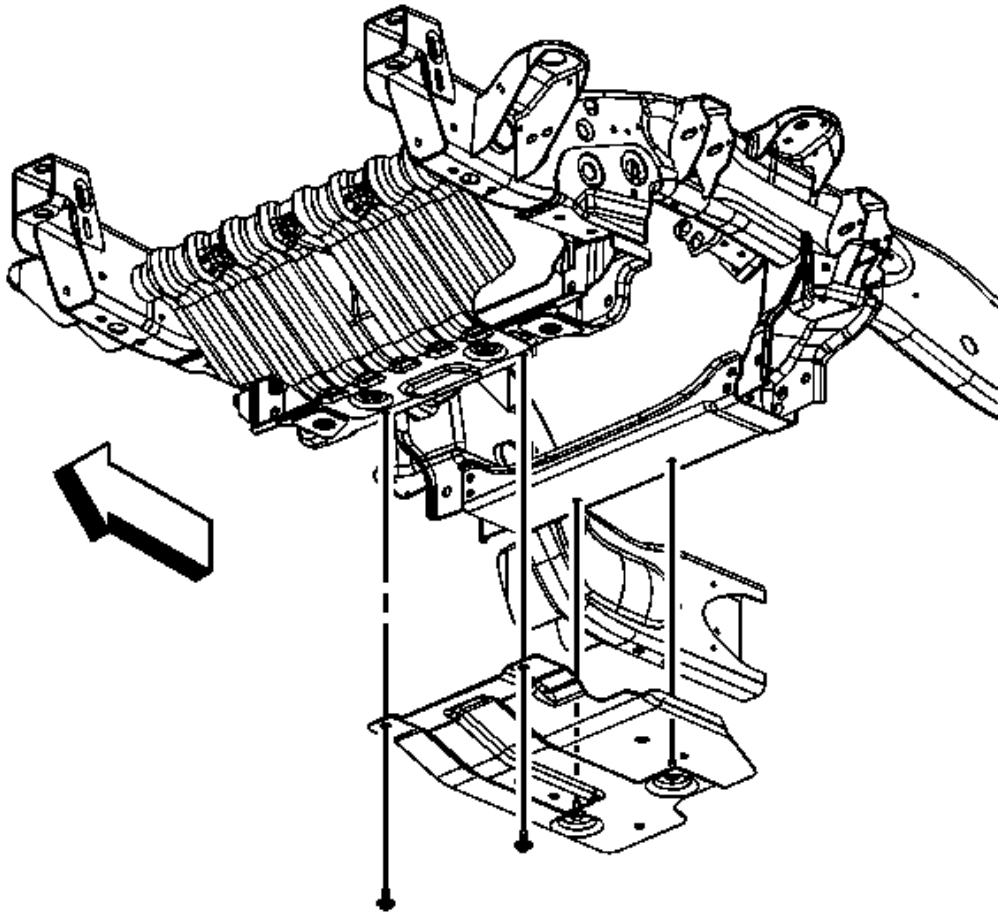


Fig. 427: View Of Oil Pan Skid Plate & Bolts
Courtesy of GENERAL MOTORS CORP.

30. For 2500 series vehicles, position the oil pan skid plate and tighten until snug the 2 rear oil pan skid plate bolts, install the 2 front oil pan skid plate bolts, if equipped.

Tighten: Tighten the bolts to 28 N.m (21 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

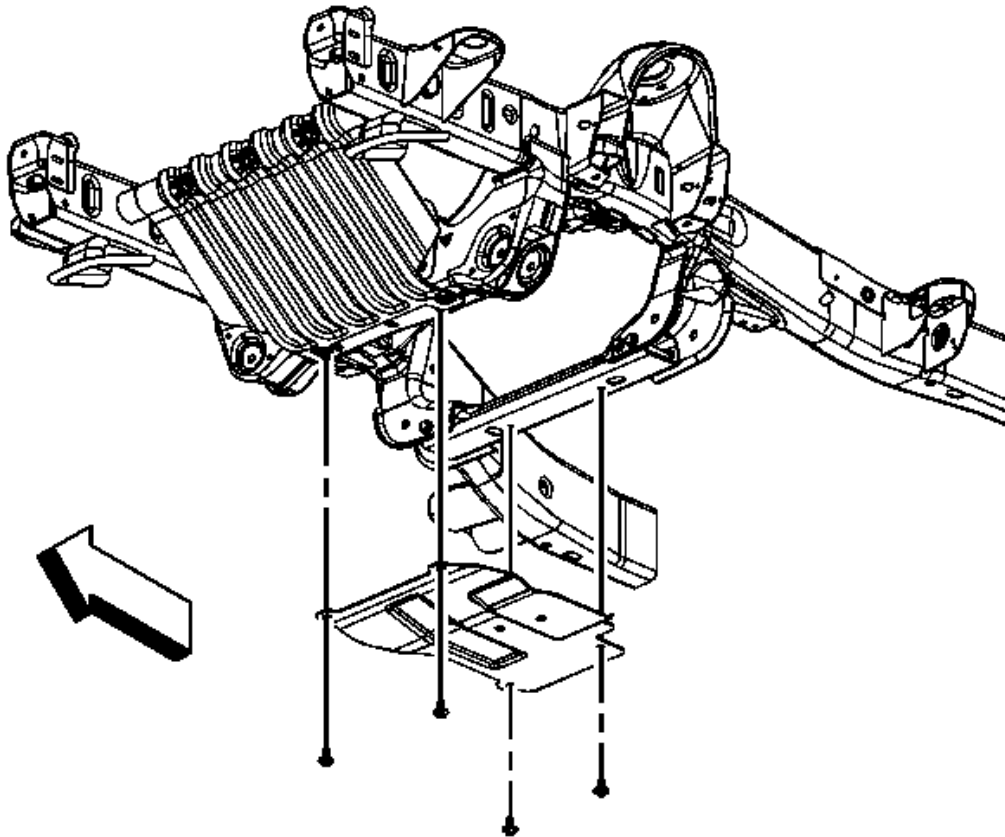


Fig. 428: View Of Oil Pan Skid Plate & Bolts
Courtesy of GENERAL MOTORS CORP.

31. For 1500 series vehicles, position the oil pan skid plate and install the oil pan skid plate bolts, if equipped.

Tighten: Tighten the bolts to 28 N.m (21 lb ft).

32. Lower the vehicle.
33. Fill the engine with NEW engine oil. Refer to **Fluid and Lubricant Recommendations** and **Approximate Fluid Capacities** .
34. Start the engine and inspect for leaks.

OIL PAN REPLACEMENT (4WD)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Removal Procedure

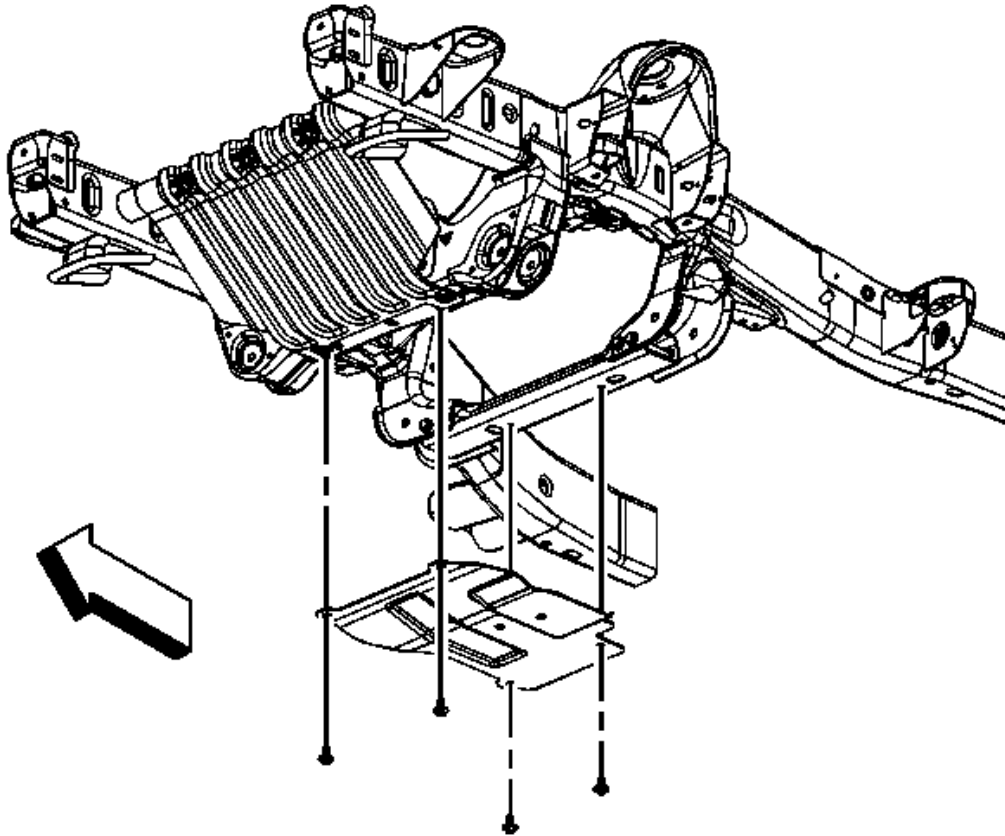


Fig. 429: View Of Oil Pan Skid Plate & Bolts
Courtesy of GENERAL MOTORS CORP.

1. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle** .
2. For 1500 series vehicles, remove the oil pan skid plate bolts and skid plate, if equipped.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

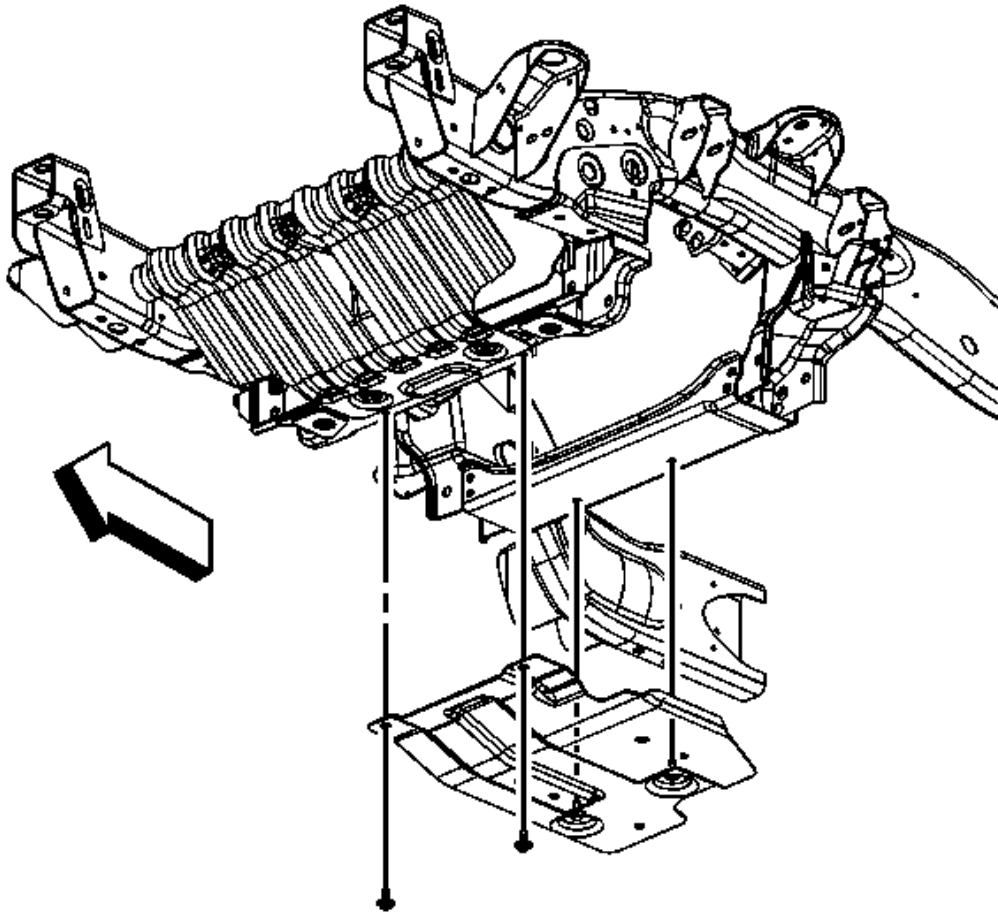


Fig. 430: View Of Oil Pan Skid Plate & Bolts
Courtesy of GENERAL MOTORS CORP.

3. For 2500 series vehicles, loosen the 2 rear oil pan skid plate bolts, remove the 2 front oil pan skid plate bolts and skid plate, if equipped.
4. Remove the front differential carrier. Refer to **Differential Carrier Assembly Replacement (1500 FWD)** or **Differential Carrier Assembly Replacement (2500 4WD)** .
5. Unbolt the steering rack and hang downward.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

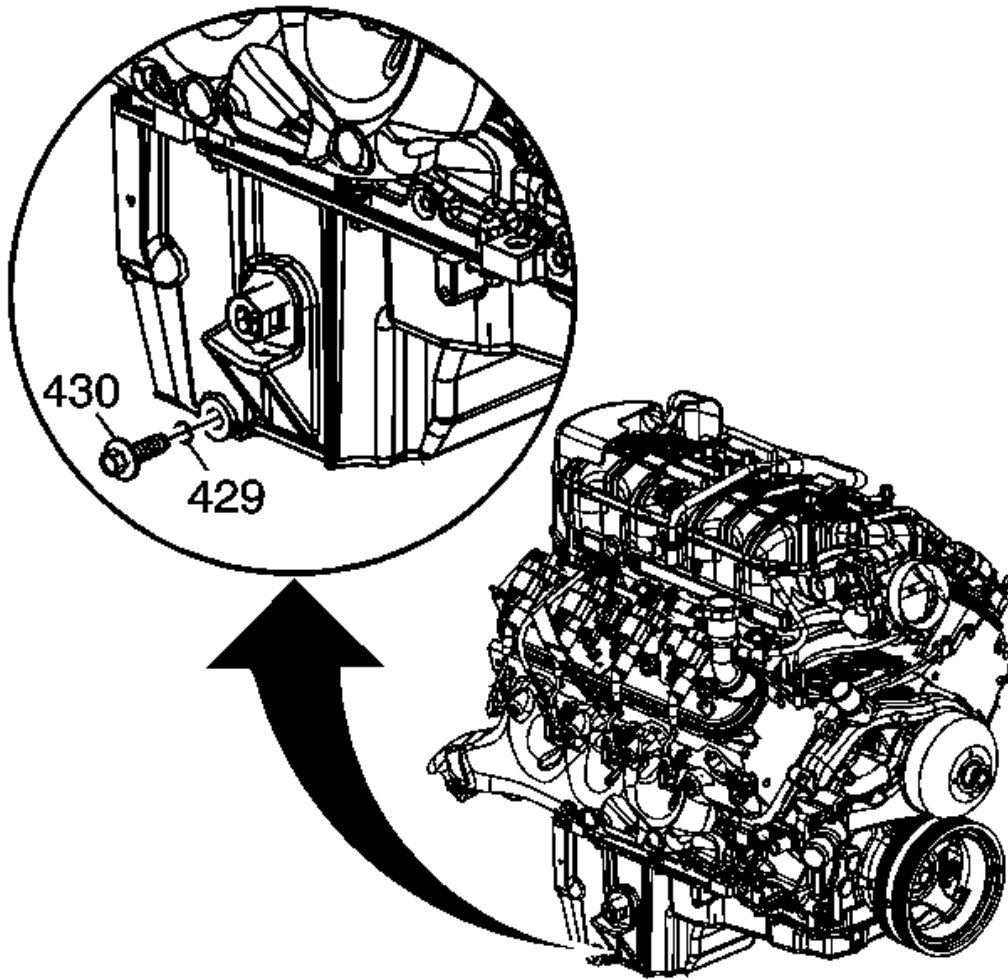


Fig. 431: View Of Oil Pan Drain Plug & Seal
Courtesy of GENERAL MOTORS CORP.

6. Place a suitable drain pan under the oil pan drain plug.
7. Remove the oil pan drain plug (430).
8. Allow the oil pan to drain completely.
9. Re-install the oil pan drain plug until snug.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

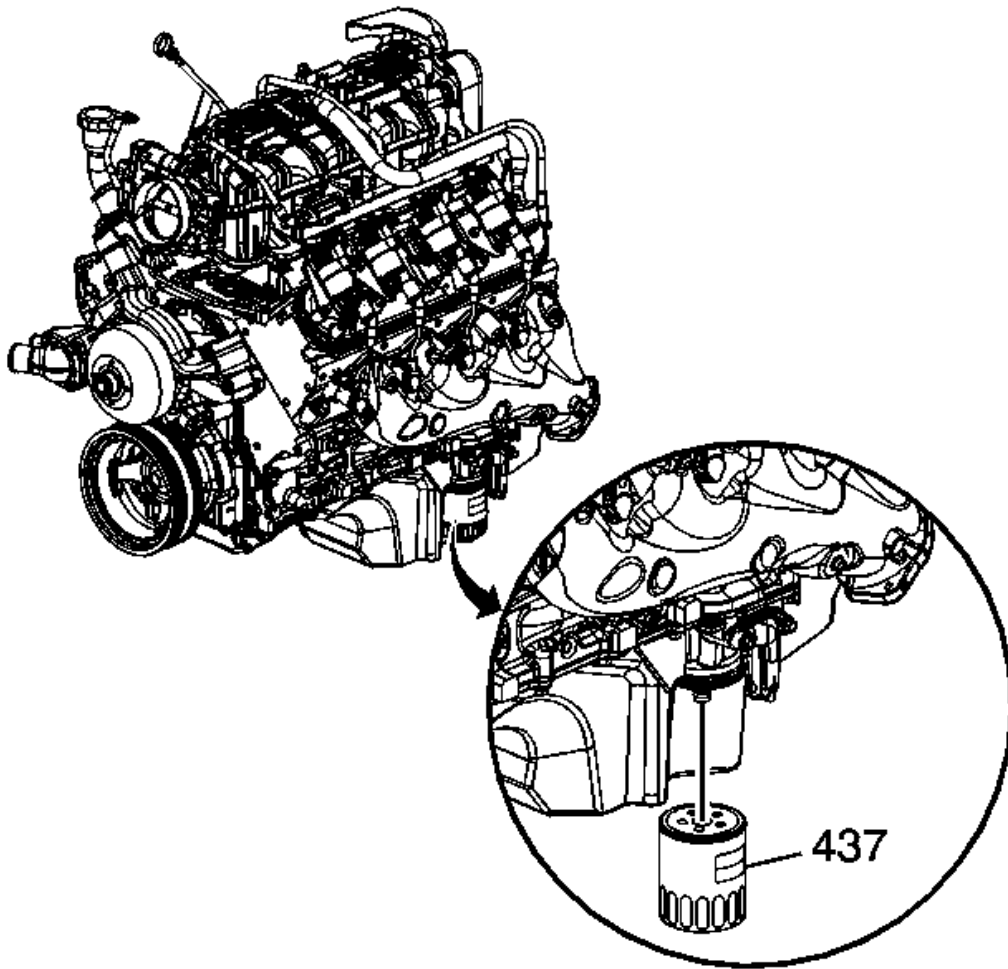


Fig. 432: View Of Engine Oil Filter
Courtesy of GENERAL MOTORS CORP.

10. Place the drain pan under the oil filter.
11. Remove the oil filter (437).
12. Allow the oil to drain completely.
13. Re-install the oil filter until snug.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

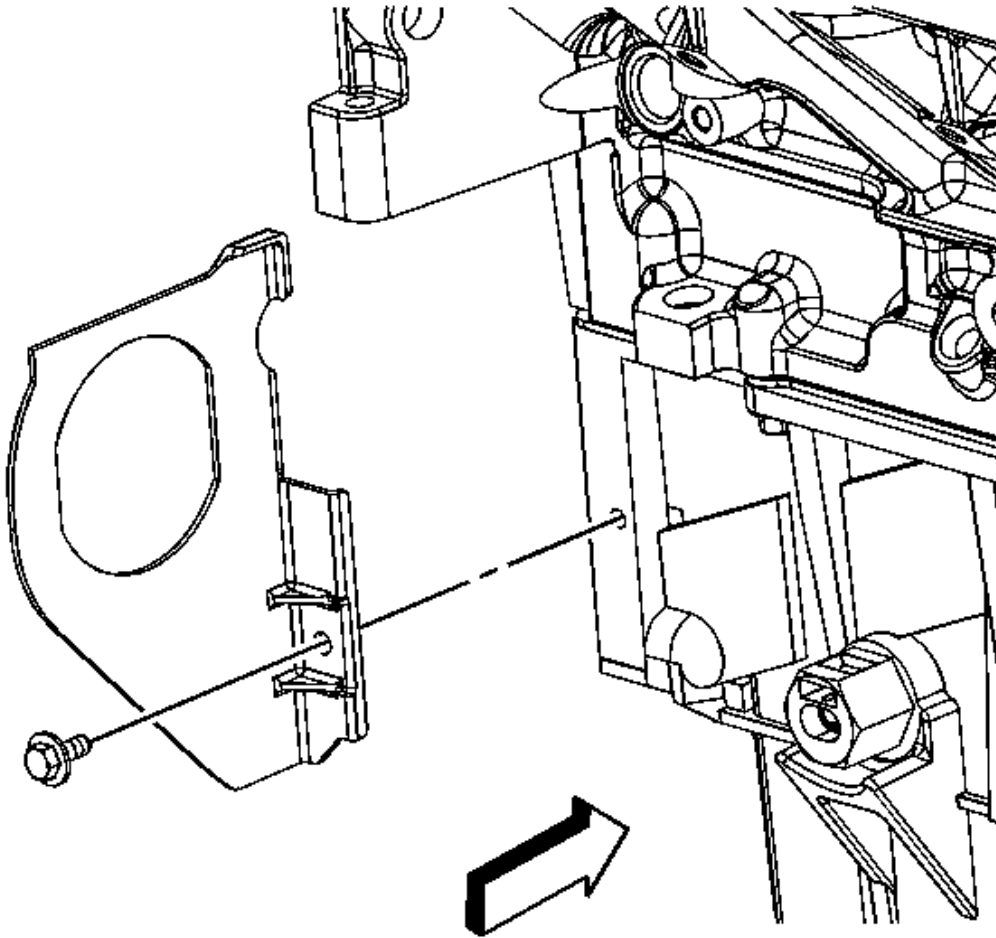


Fig. 433: View Of Right Side Transmission Cover Bolt
Courtesy of GENERAL MOTORS CORP.

14. Remove the right side transmission cover bolt.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

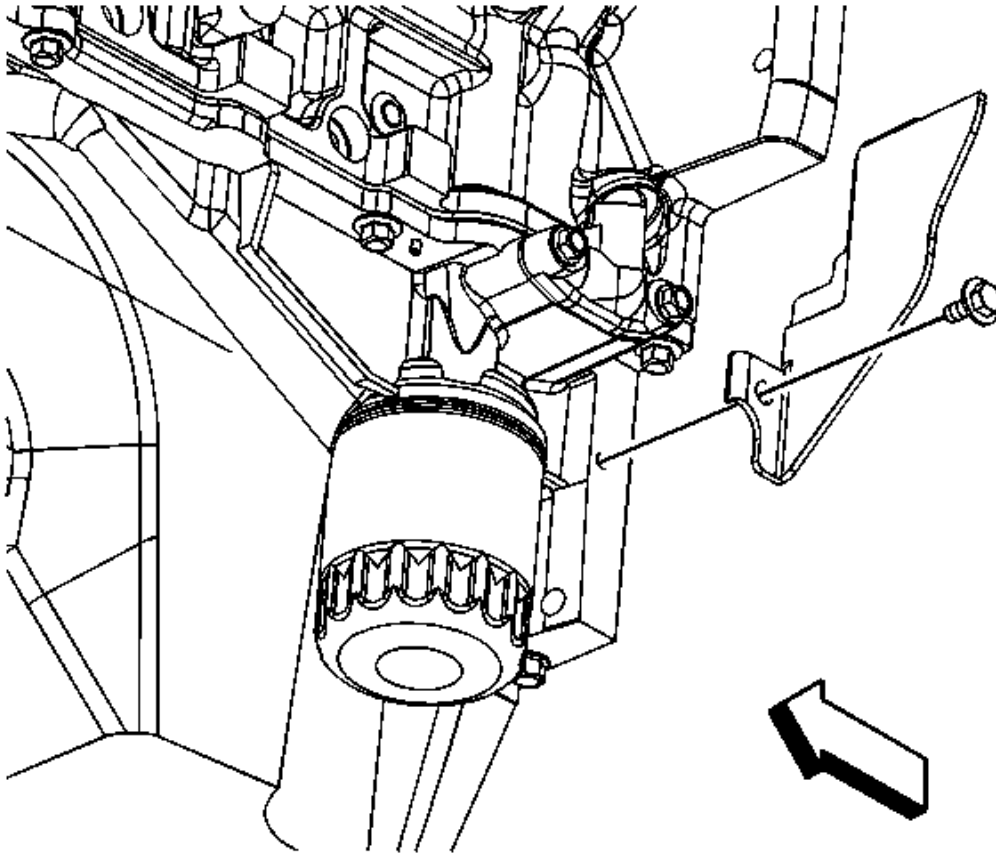


Fig. 434: View Of Left Side Transmission Cover Bolt
Courtesy of GENERAL MOTORS CORP.

15. Remove the left side transmission cover bolt and cover.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

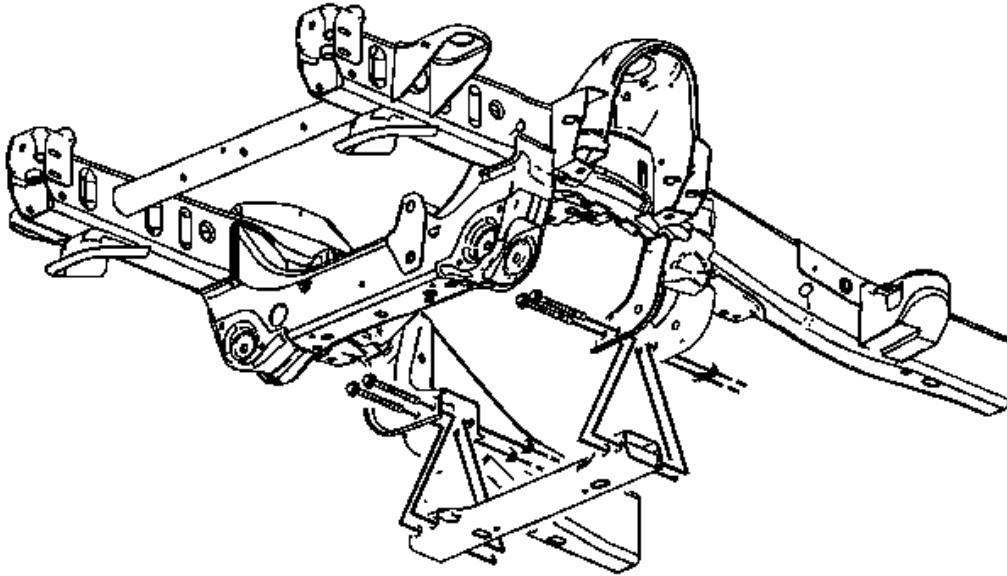


Fig. 435: View Of Vehicle Crossbar, Bolts & Nuts
Courtesy of GENERAL MOTORS CORP.

16. For 1500 series vehicles, remove the crossbar bolts/nuts and crossbar.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

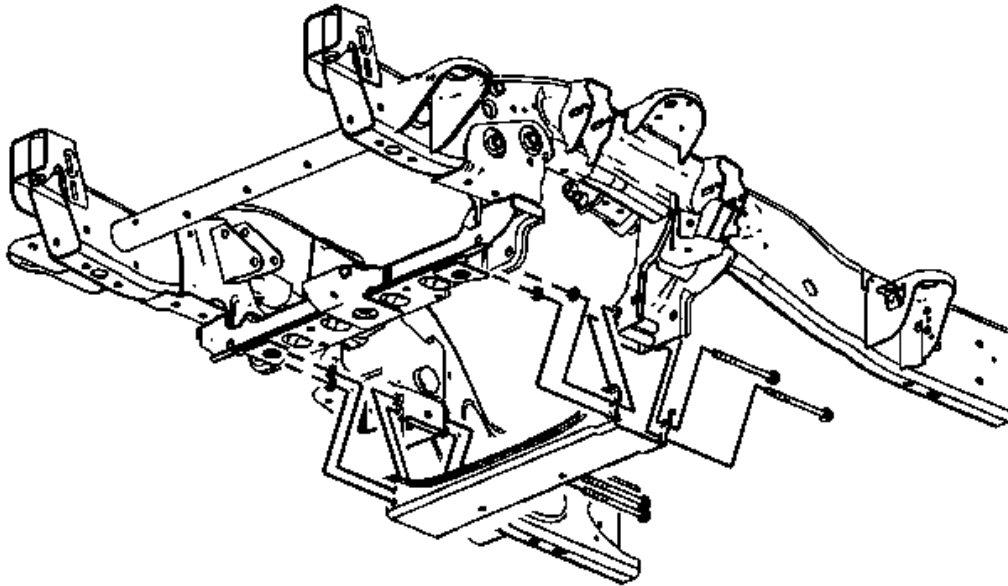


Fig. 436: View Of Vehicle Crossbar, Bolts & Nuts
Courtesy of GENERAL MOTORS CORP.

17. For 2500 series vehicles, remove the crossbar bolts/nuts and crossbar.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

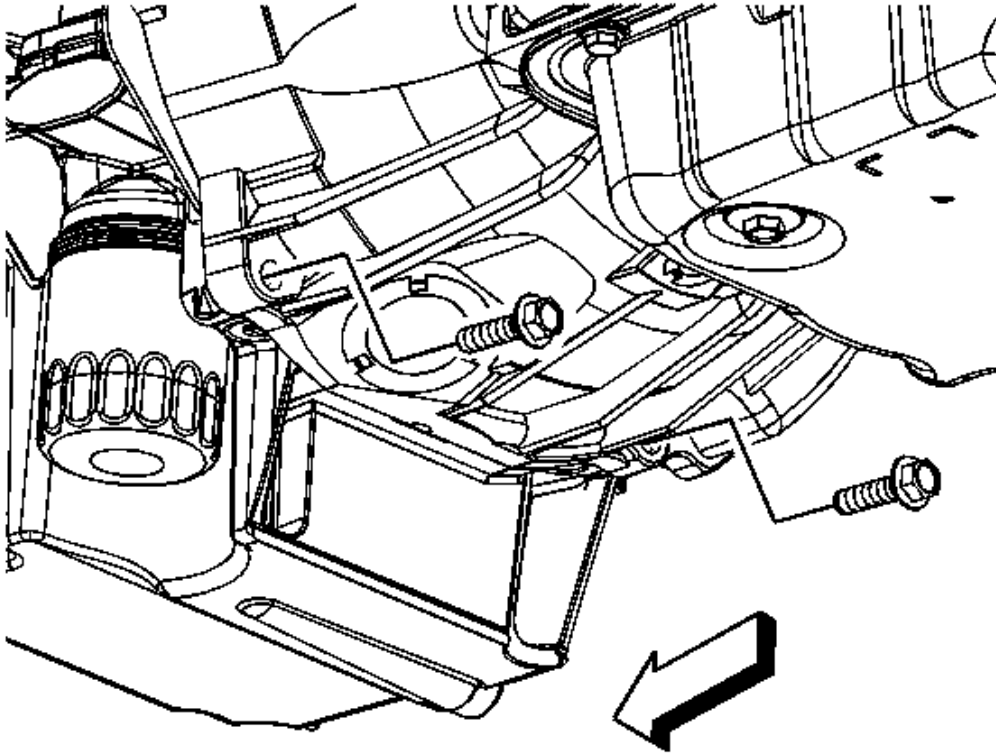


Fig. 437: View Of Lower Transmission Bolts
Courtesy of GENERAL MOTORS CORP.

18. For vehicles with a 4L60-E/4L70-E automatic transmission, remove the 2 lower transmission bolts.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

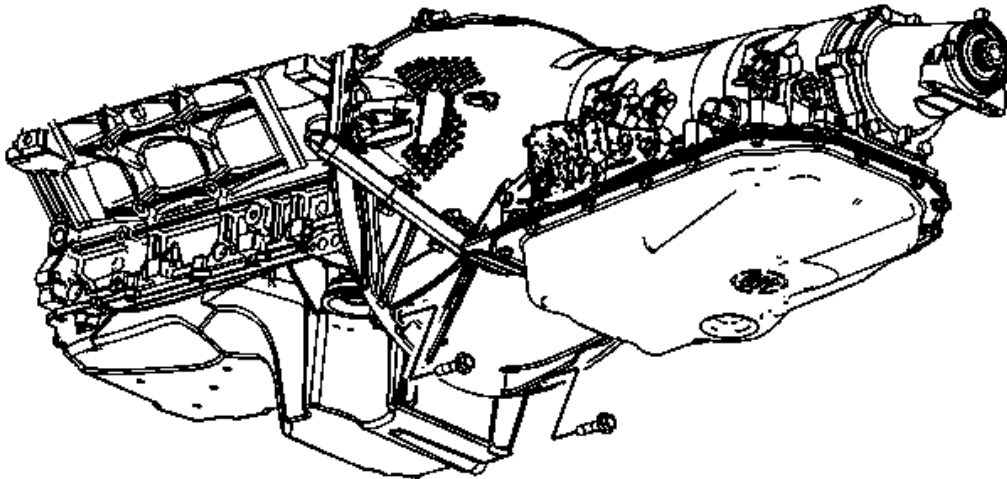


Fig. 438: View Of Lower Transmission Bolts
Courtesy of GENERAL MOTORS CORP.

19. For vehicles with a 4L80-E automatic transmission, remove the 2 lower transmission bolts.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

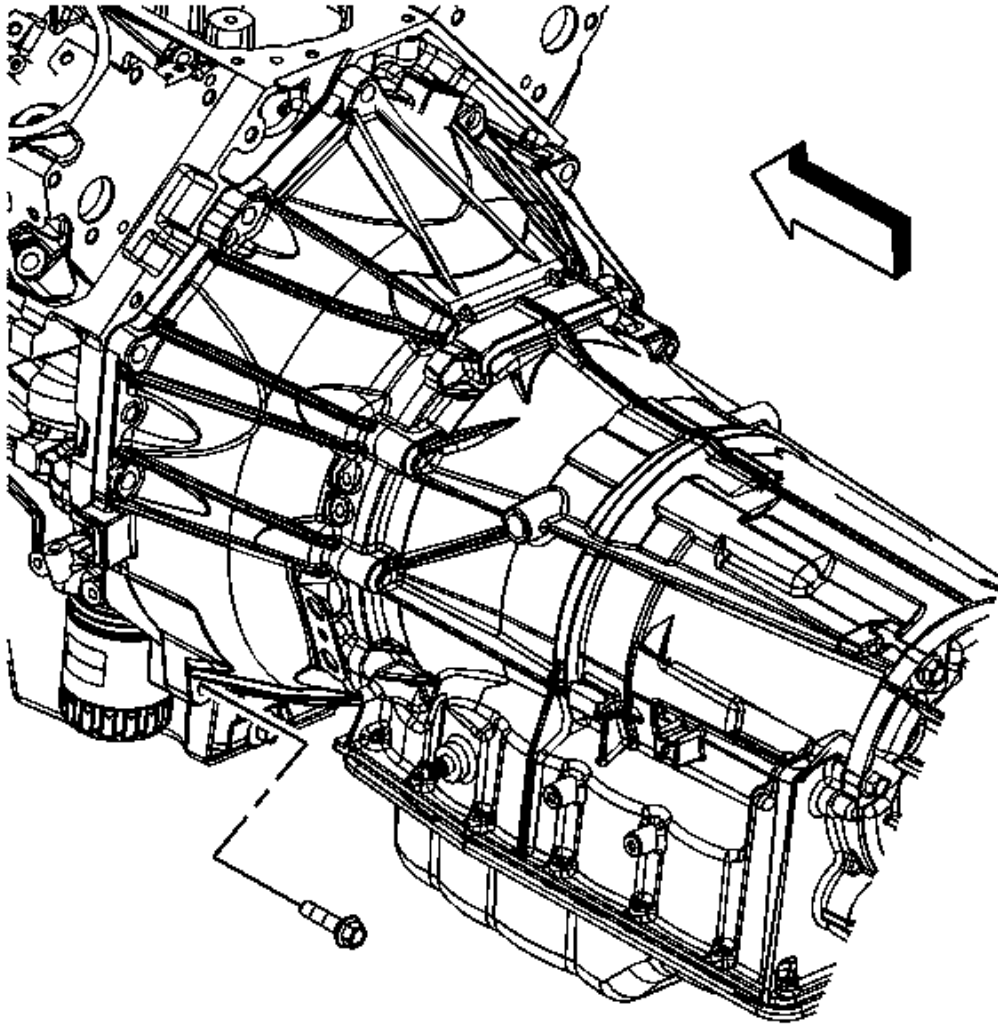


Fig. 439: View Of Lower Transmission Bolt
Courtesy of GENERAL MOTORS CORP.

20. For vehicles with a 6L80-E automatic transmission, remove the lower left transmission bolt.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

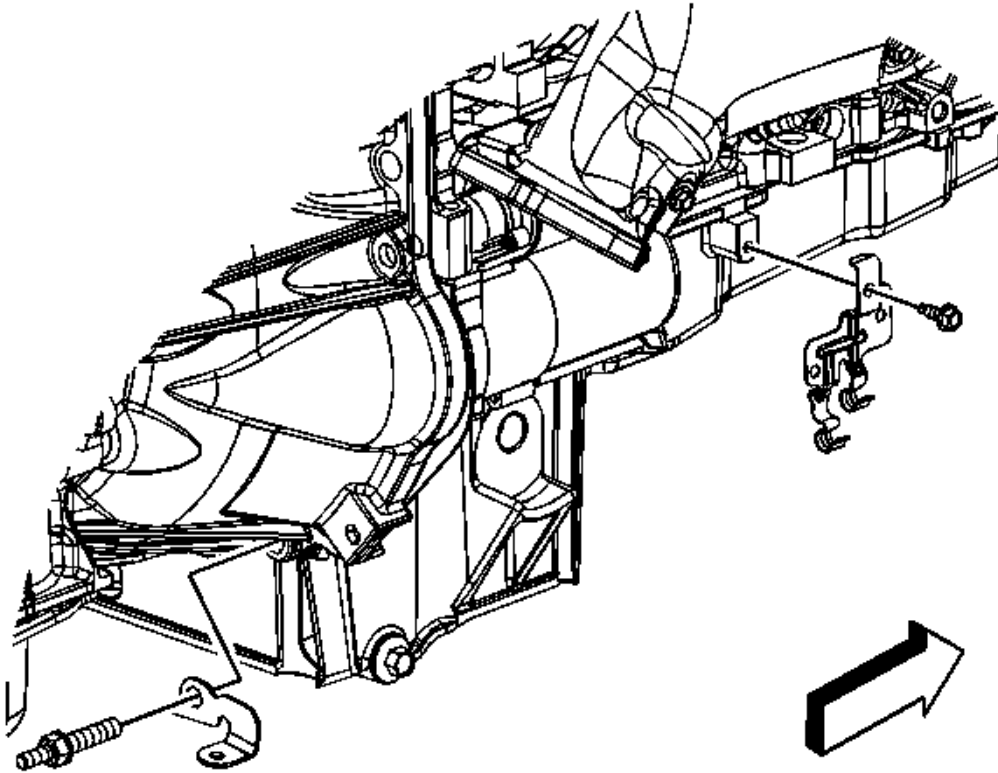


Fig. 440: View Of Lower Transmission Stud
Courtesy of GENERAL MOTORS CORP.

21. For vehicles with a 6L80-E automatic transmission, remove the lower right transmission stud.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

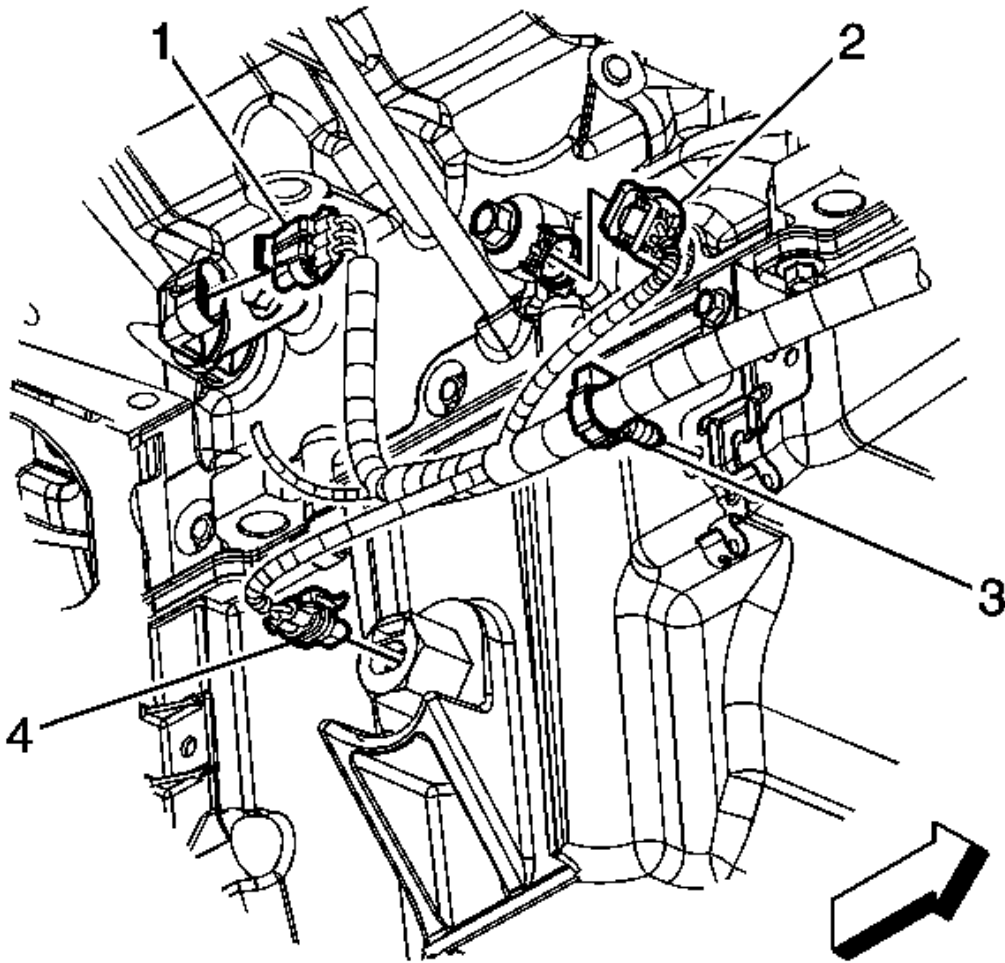


Fig. 441: View Of Electrical Connectors & Clips
Courtesy of GENERAL MOTORS CORP.

22. Disconnect the engine harness electrical connector (4) from the oil level sensor.
23. Remove the engine harness clip (3) from the transmission oil cooler line bracket.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

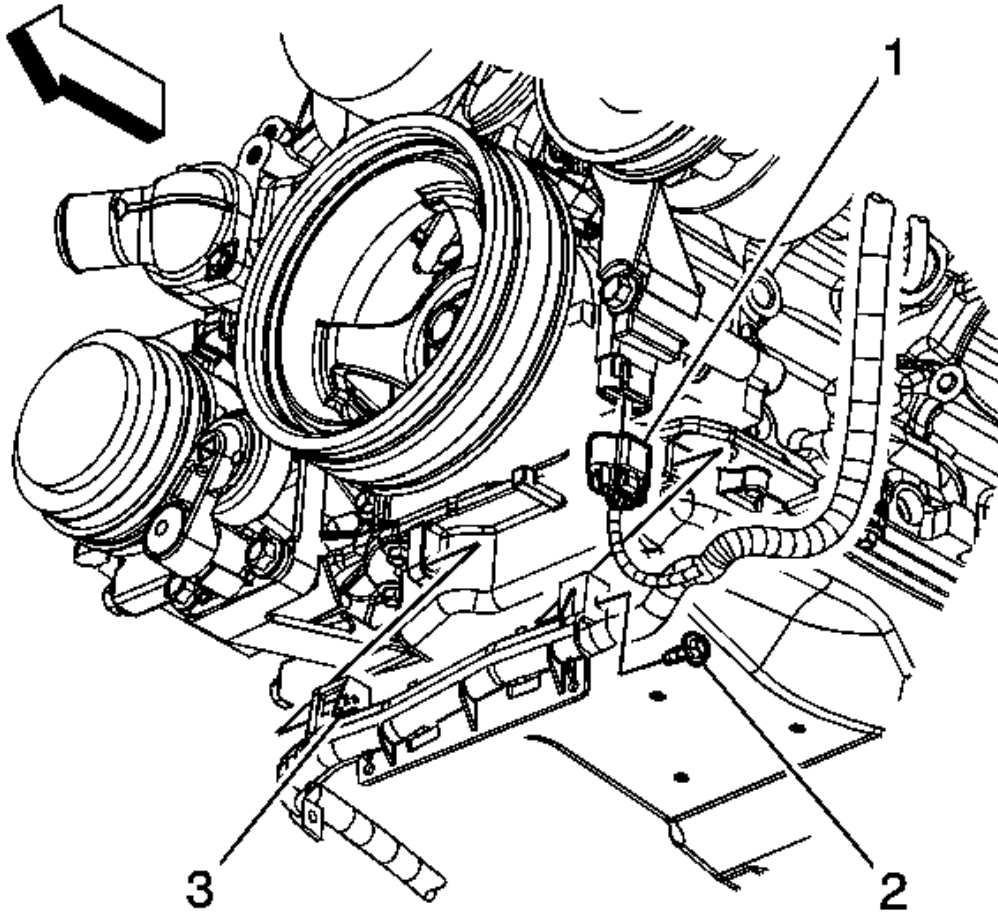


Fig. 442: View Of Electrical Connector, Cable Channel Bolt & Pin
Courtesy of GENERAL MOTORS CORP.

24. Remove the battery cable channel bolt (2).
25. Slide the channel pin (3) out of the oil pan tab.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

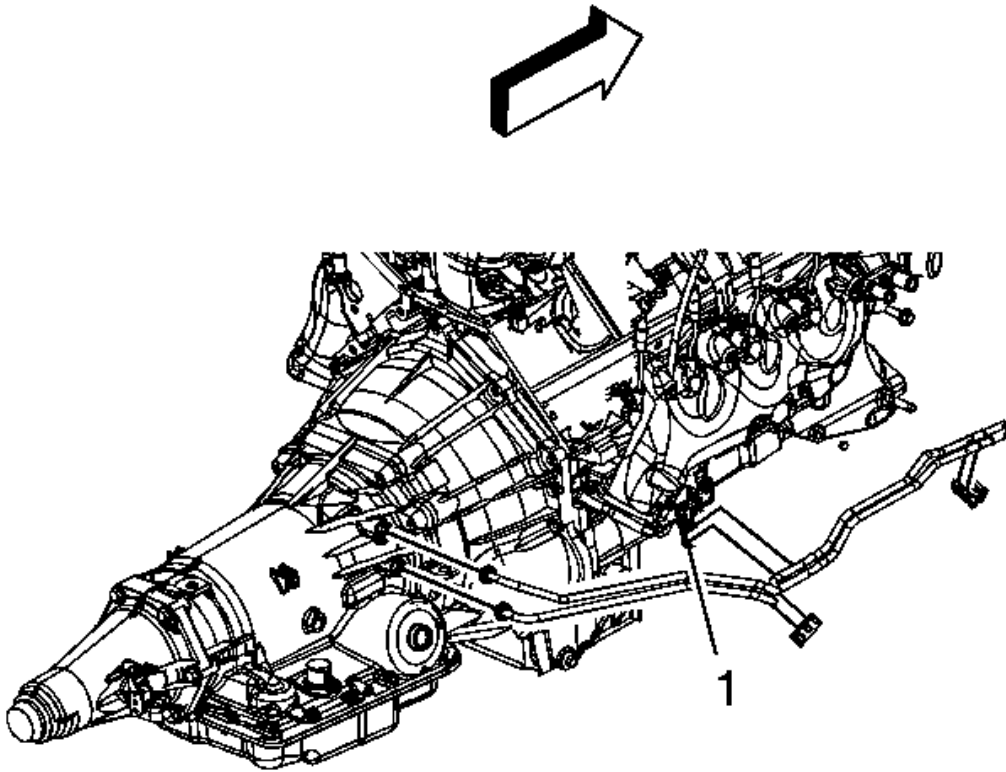


Fig. 443: View Of Oil Cooler Line Clip
Courtesy of GENERAL MOTORS CORP.

26. For vehicles with a 4L60-E/4L70-E automatic transmission, remove the oil cooler lines from the clip (1), if equipped.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

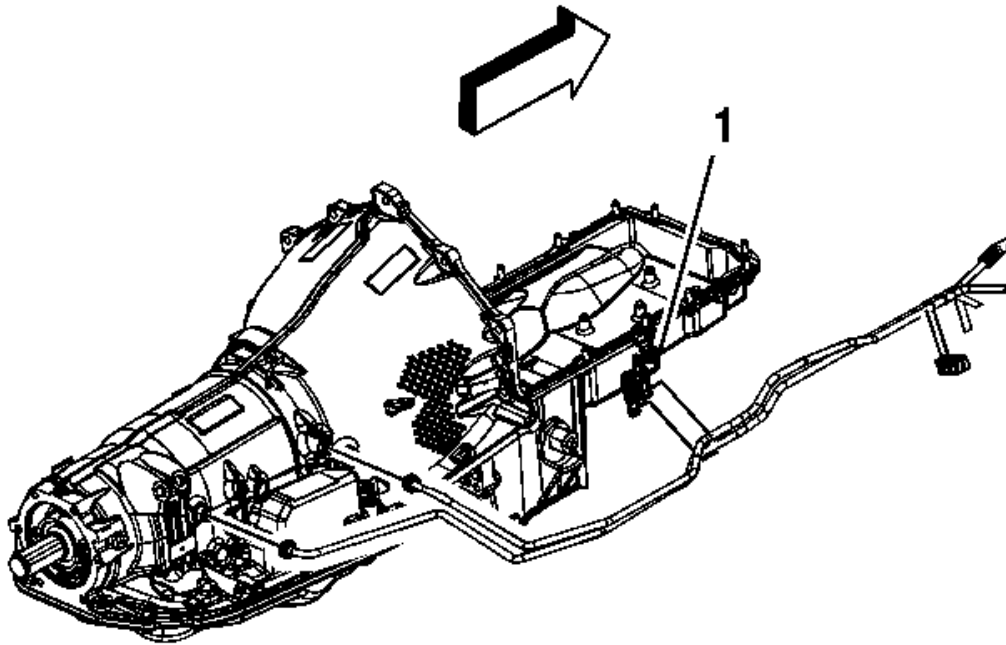


Fig. 444: View Of Oil Cooler Line Clip
Courtesy of GENERAL MOTORS CORP.

27. For vehicles with a 4L80-E automatic transmission, remove the oil cooler lines from the clip (1), if equipped.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

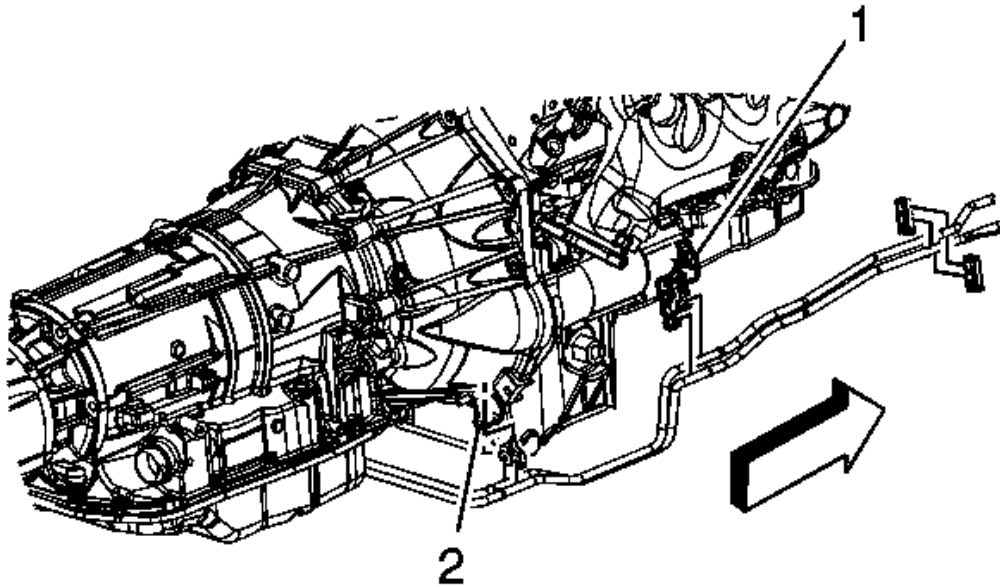


Fig. 445: View Of Oil Cooler Line Clip
Courtesy of GENERAL MOTORS CORP.

28. For vehicles with a 6L80-E automatic transmission, remove the oil cooler lines from the clip (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

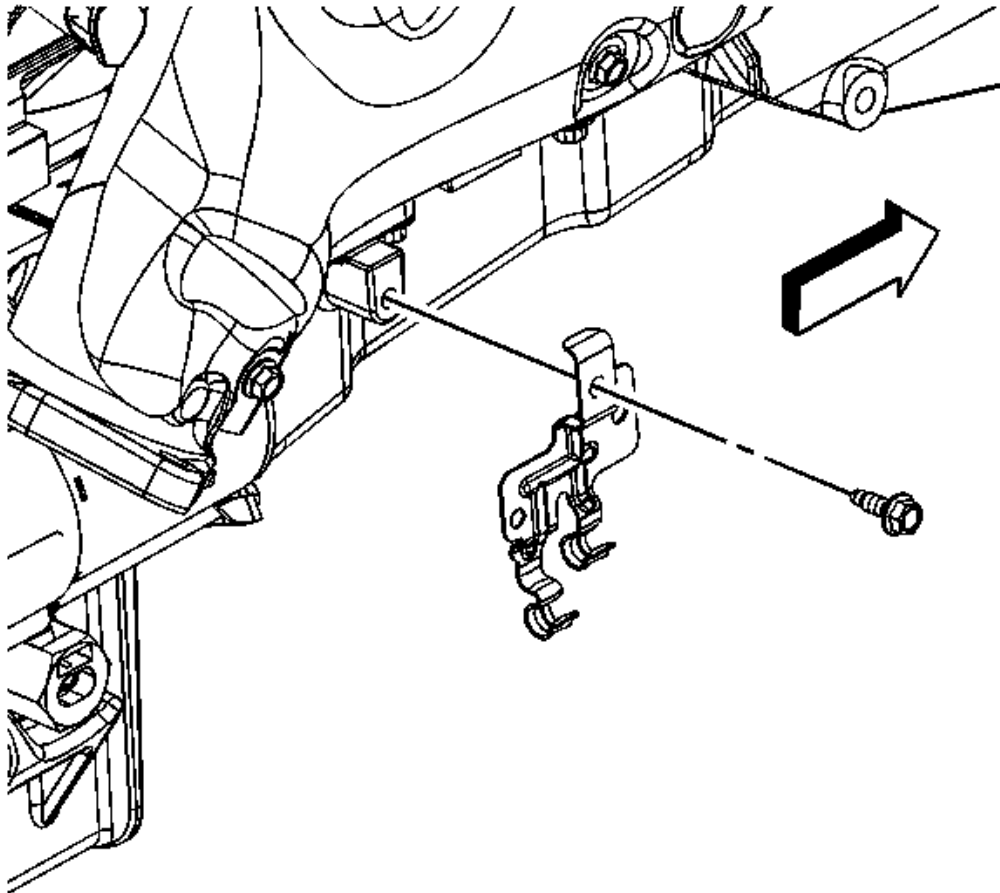


Fig. 446: View Of Oil Cooler Line Clip & Bolt
Courtesy of GENERAL MOTORS CORP.

29. Remove the transmission oil cooler line clip bolt and clip from the oil pan.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

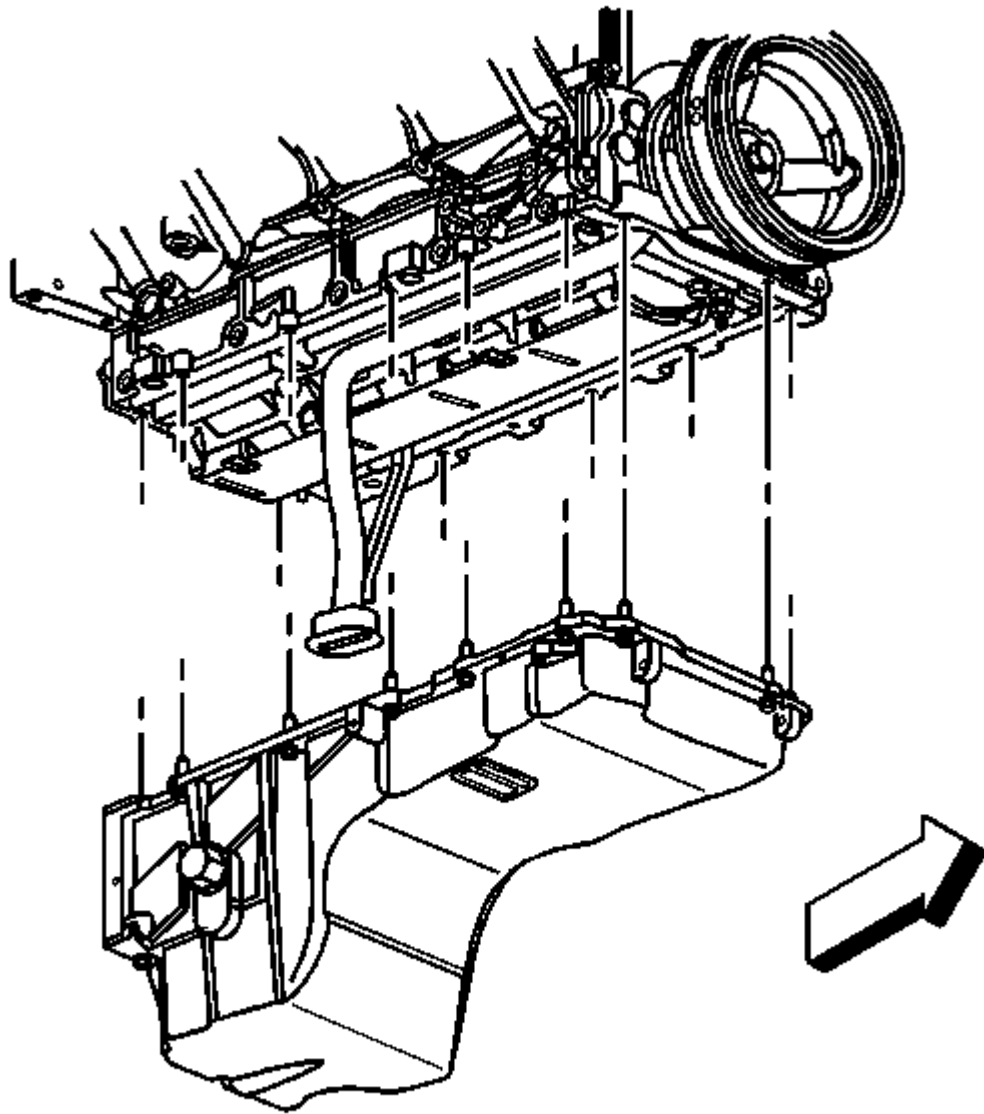


Fig. 447: View Of Oil Pan & Bolts
Courtesy of GENERAL MOTORS CORP.

30. Remove the oil pan bolts.
31. Remove the oil pan.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

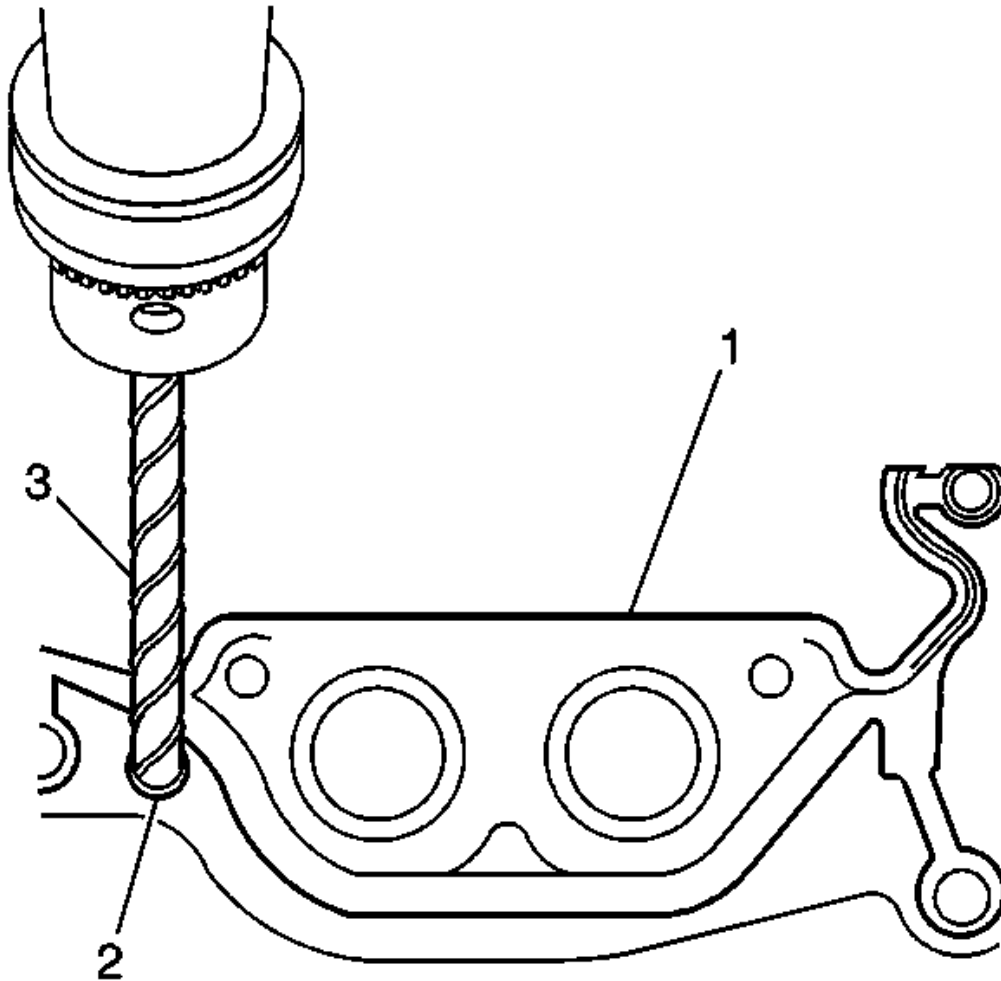


Fig. 448: Drilling Oil Pan Gasket Retaining Rivets
Courtesy of GENERAL MOTORS CORP.

32. If reusing the oil pan perform the following steps, otherwise proceed to step 3 of the installation procedure.

IMPORTANT: DO NOT allow foreign material to enter the oil passages of the oil pan, cap or cover the openings as required.

33. Drill out the oil pan gasket rivets (2), if necessary.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

34. Remove the oil pan gasket (1) from the pan.
35. Discard the oil pan gasket.
36. Discard the rivets, if necessary.

Installation Procedure

IMPORTANT:

- **The alignment of the structural oil pan is critical. The rear bolt hole locations of the oil pan provide mounting points for the transmission bellhousing. To ensure the rigidity of the powertrain and correct transmission alignment, it is important that the rear of the block and the rear of the oil pan must NEVER protrude beyond the engine block and transmission bellhousing plane.**
- **Do not reuse the oil pan gasket.**
- **It is not necessary to rivet the NEW gasket to the oil pan.**

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

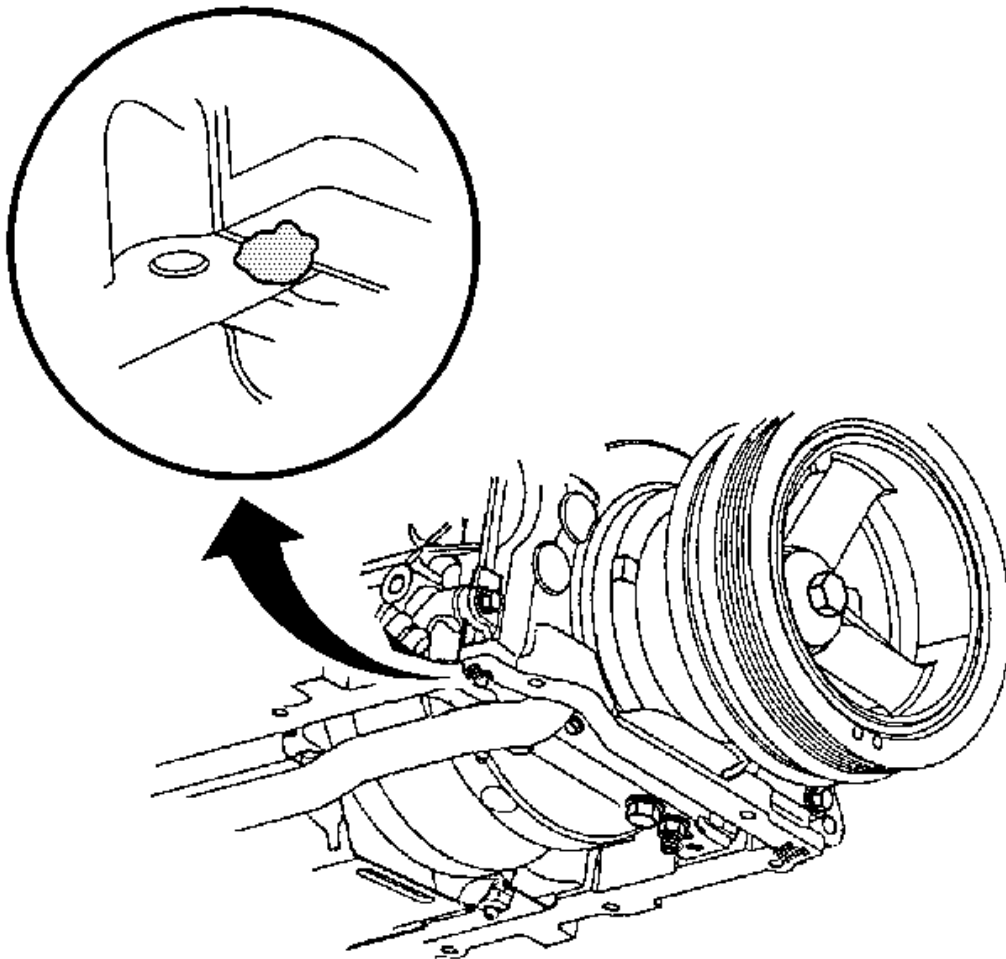


Fig. 449: View Of Sealant Applied To Front Oil Pan-To-Engine Block Junction
Courtesy of GENERAL MOTORS CORP.

1. If reusing the oil pan perform the following step, otherwise proceed to step 3.

IMPORTANT: Be sure to align the oil gallery passages in the oil pan and engine block properly with the oil pan gasket.

2. Place a NEW oil pan gasket onto the oil pan.
3. Apply a 5 mm (0.20 in) bead of sealant, 20 mm (0.80 in) long to the engine block. Apply the sealant directly onto the tabs of the front cover gasket that protrudes into the oil pan

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

surface. Refer to Sealers, Adhesives, and Lubricants .

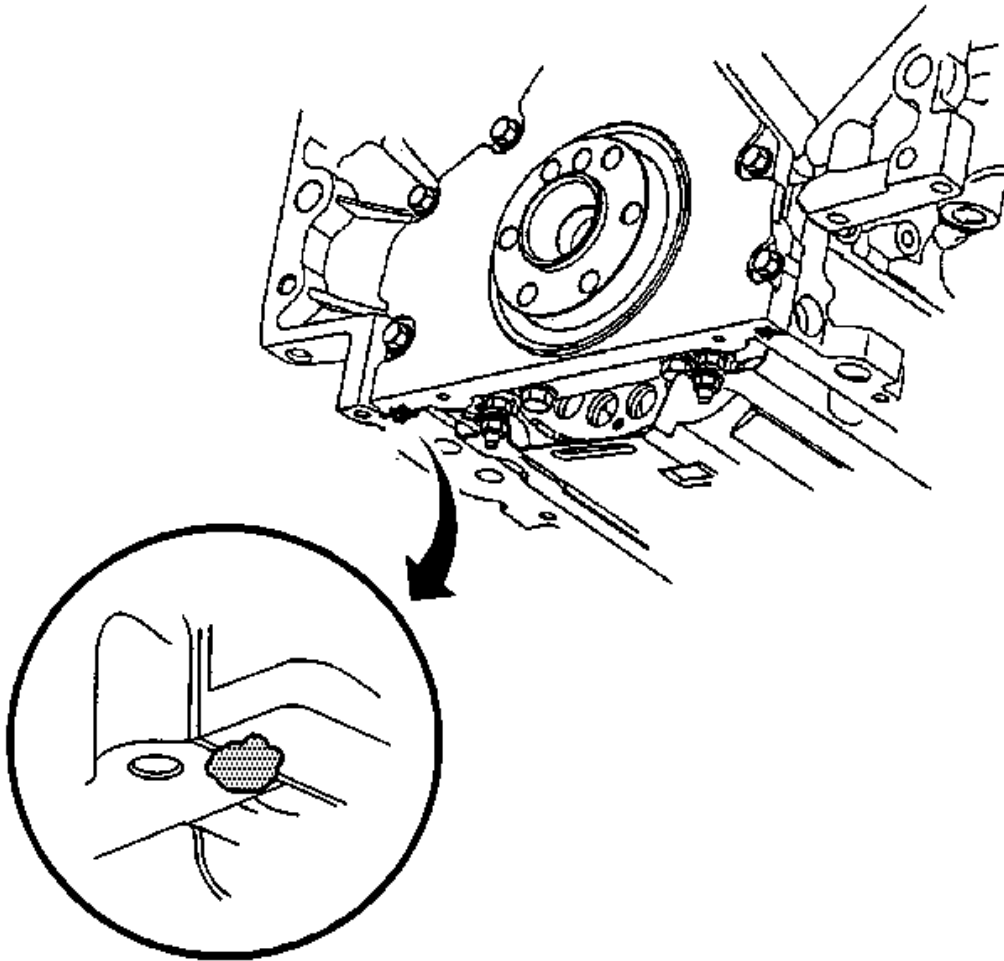


Fig. 450: View Of Sealant Applied To Rear Oil Pan-To-Engine Block Junction
Courtesy of GENERAL MOTORS CORP.

4. Apply a 5 mm (0.20 in) bead of sealant, 20 mm (0.8 in) long to the engine block. Apply the sealant directly onto the tabs of the rear cover gasket that protrudes into the oil pan surface. Refer to Sealers, Adhesives, and Lubricants .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

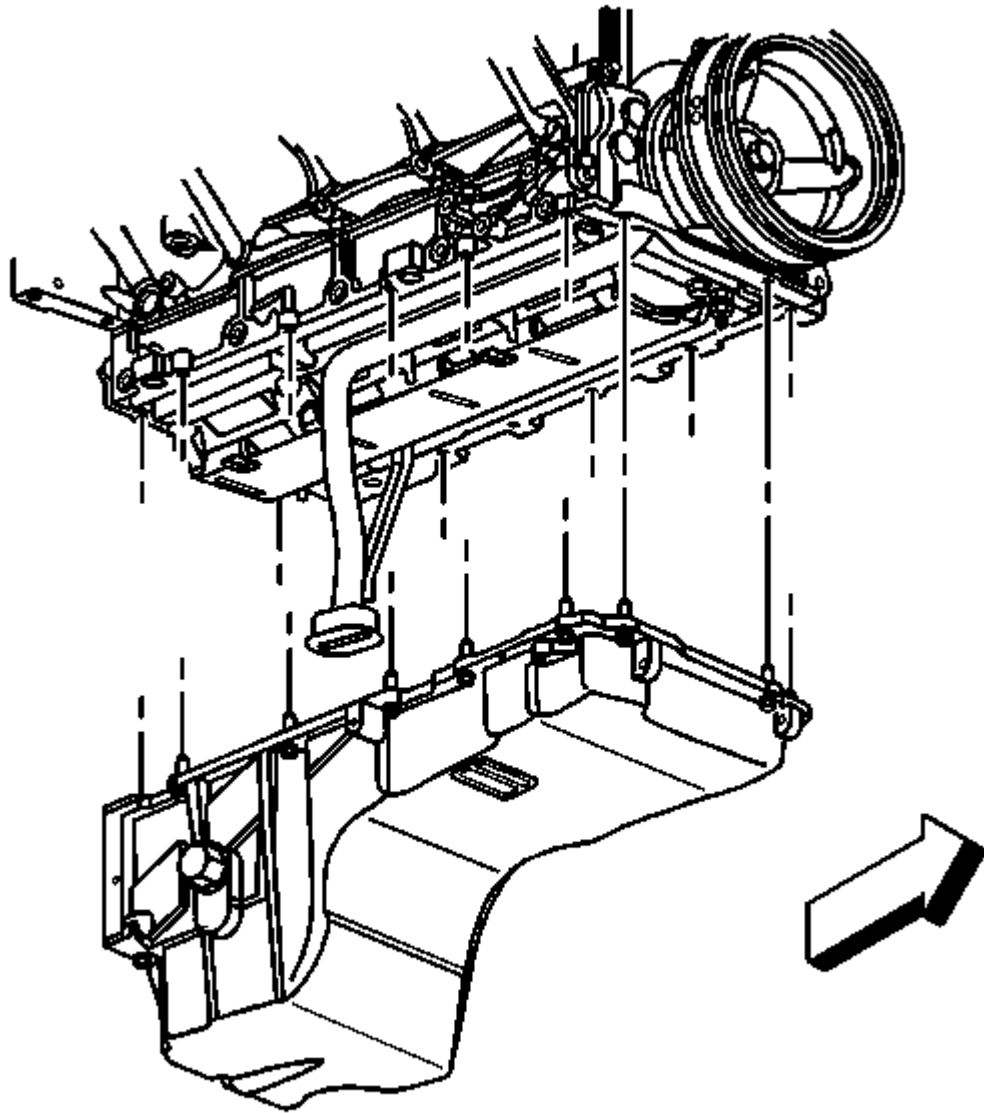


Fig. 451: View Of Oil Pan & Bolts
Courtesy of GENERAL MOTORS CORP.

5. Install 1 oil pan bolt into a oil pan bolt hole and up through the gasket.
6. Position and install the oil pan and the rest of the oil pan bolts.
7. Tighten the oil pan bolts until snug.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

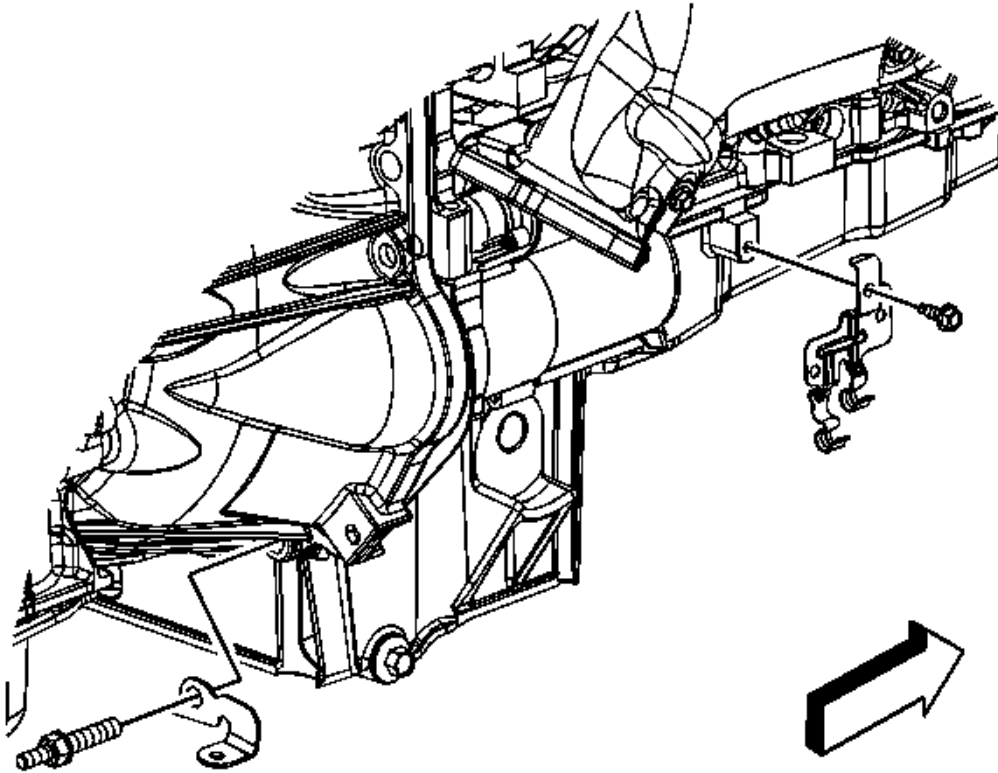


Fig. 452: View Of Lower Transmission Stud
Courtesy of GENERAL MOTORS CORP.

8. For vehicles with a 6L80-E automatic transmission, position the oil cooler bracket and install the lower right transmission stud until snug.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

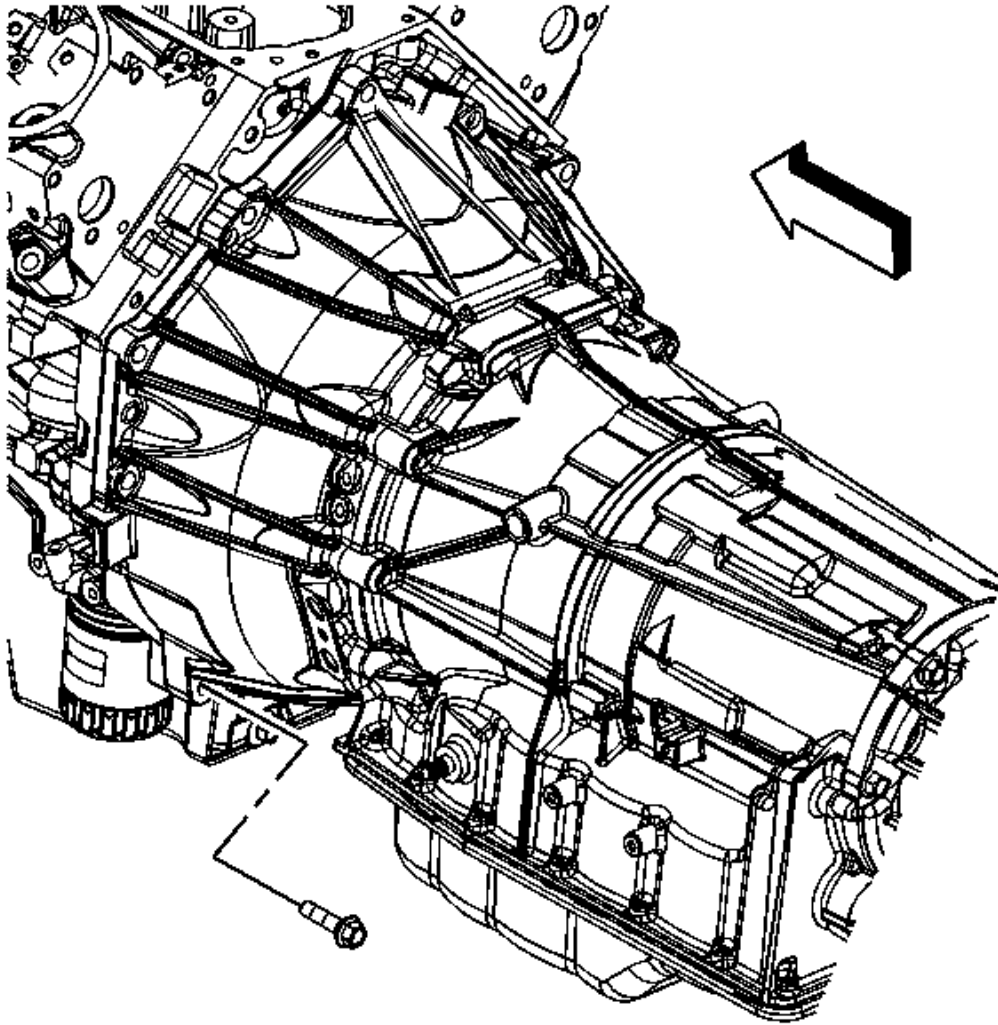


Fig. 453: View Of Lower Transmission Bolt
Courtesy of GENERAL MOTORS CORP.

9. For vehicles with a 6L80-E automatic transmission, install the lower left transmission bolt until snug.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

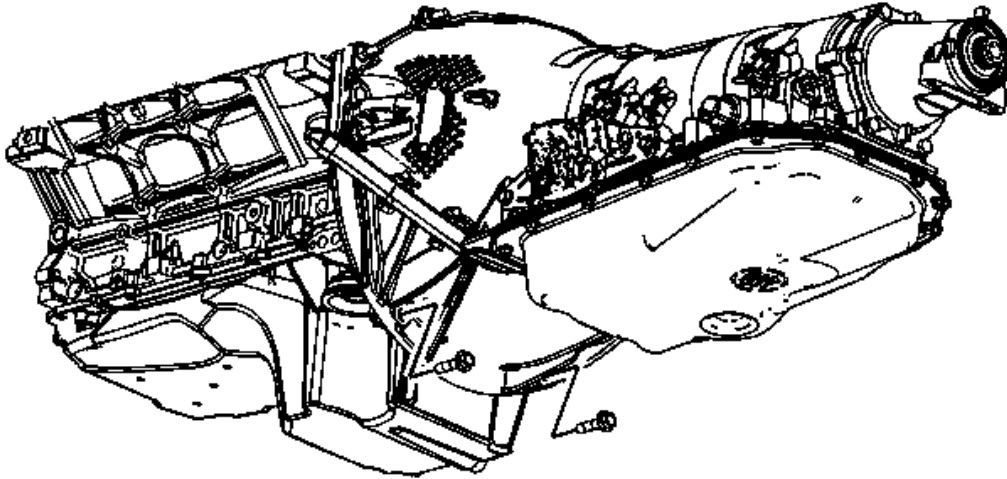


Fig. 454: View Of Lower Transmission Bolts
Courtesy of GENERAL MOTORS CORP.

10. For vehicles with a 4L80-E automatic transmission, install the 2 lower transmission bolts until snug.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

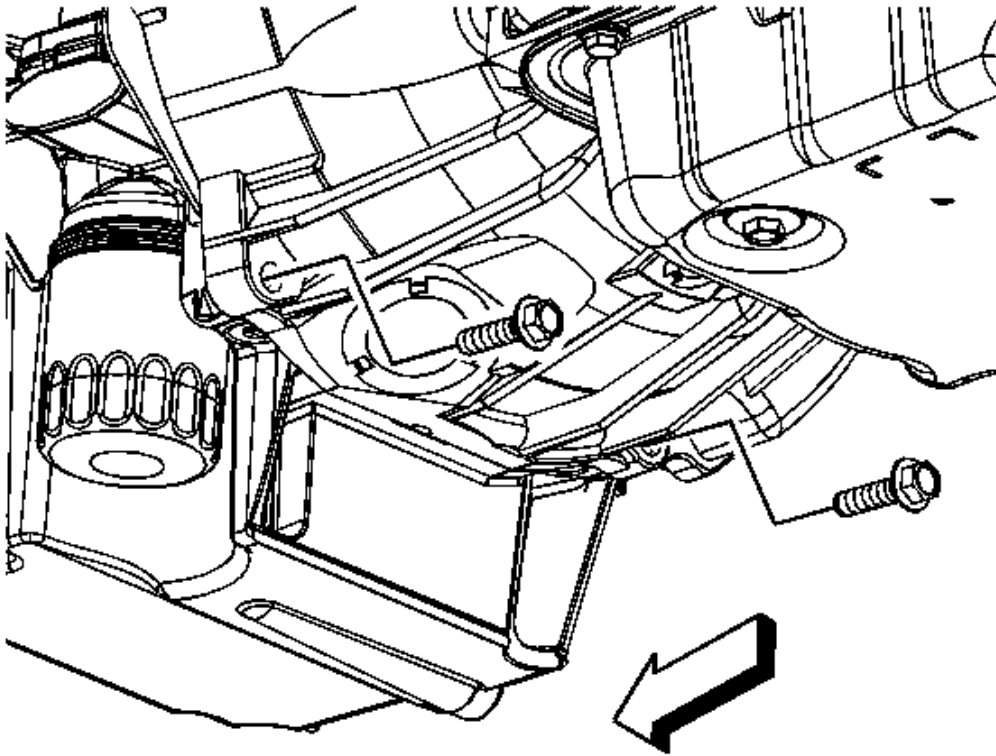


Fig. 455: View Of Lower Transmission Bolts
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

11. For vehicles with a 4L60-E/4L70-E automatic transmission, install the 2 lower transmission bolts until snug.

Tighten:

1. Tighten the oil pan and oil pan-to-oil pan front cover bolts to 25 N.m (18 lb ft).
2. Tighten the oil pan-to-rear cover bolts to 12 N.m (106 lb in).
3. Tighten the transmission bolts/stud to 50 N.m (37 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

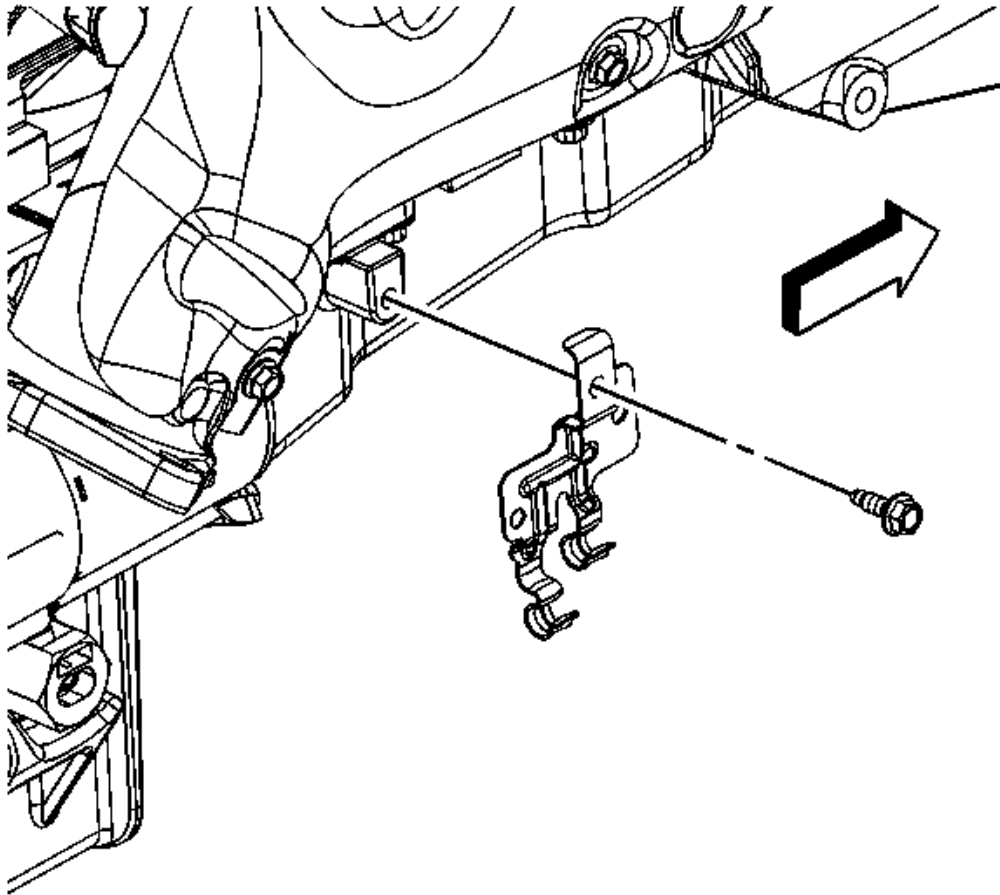


Fig. 456: View Of Oil Cooler Line Clip & Bolt
Courtesy of GENERAL MOTORS CORP.

12. Position the transmission oil cooler line clip and install the bolt to the oil pan.

Tighten: Tighten the bolt to 9 N.m (80 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

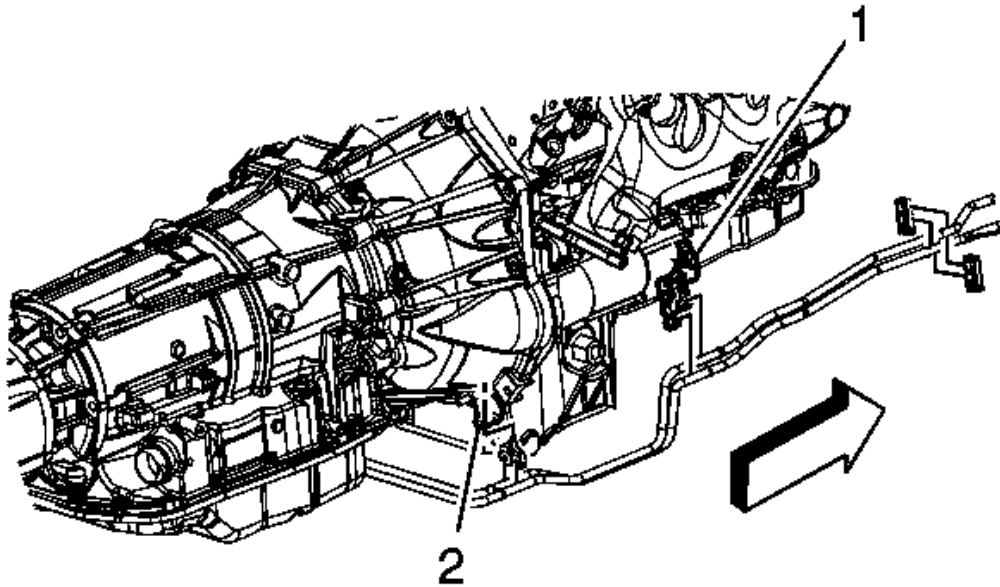


Fig. 457: View Of Oil Cooler Line Clip
Courtesy of GENERAL MOTORS CORP.

13. For vehicles with a 6L80-E automatic transmission, install the oil cooler lines to the clip (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

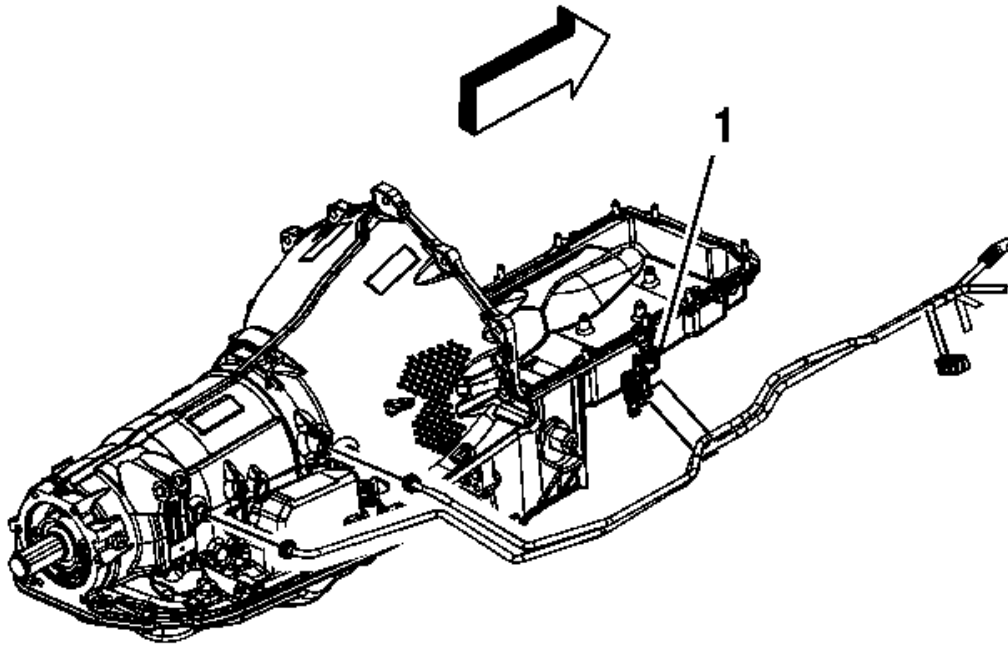


Fig. 458: View Of Oil Cooler Line Clip
Courtesy of GENERAL MOTORS CORP.

14. For vehicles with a 4L80-E automatic transmission, install the oil cooler lines to the clip (1), if equipped.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

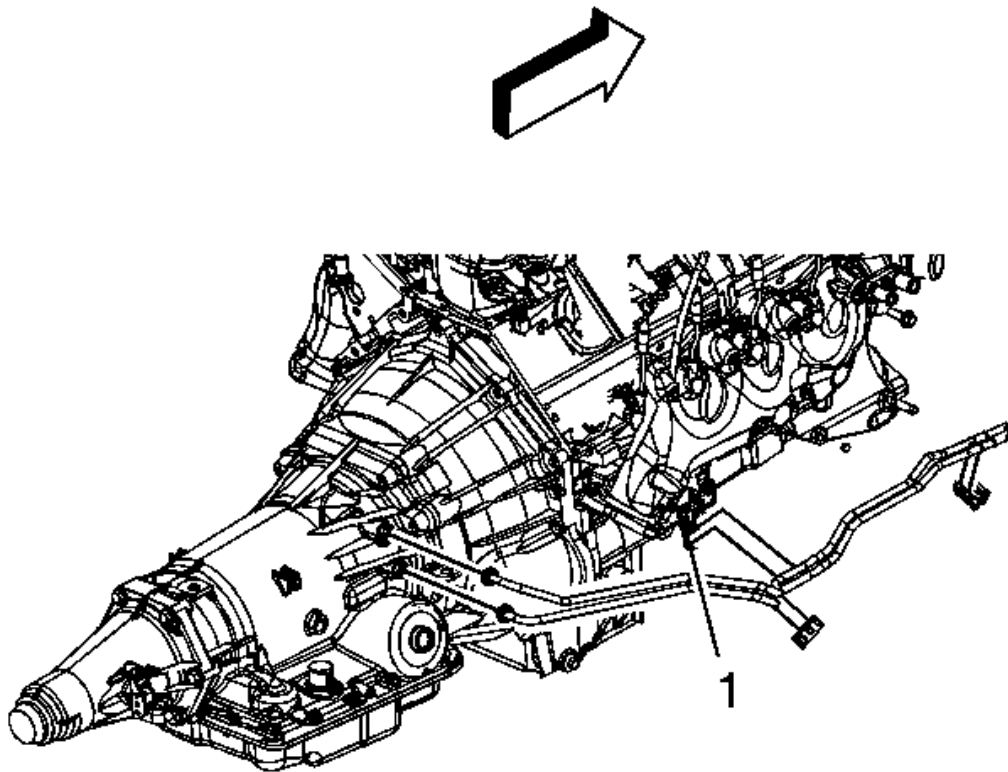


Fig. 459: View Of Oil Cooler Line Clip
Courtesy of GENERAL MOTORS CORP.

15. For vehicles with a 4L60-E/4L70-E automatic transmission, install the oil cooler lines to the clip (1), if equipped.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

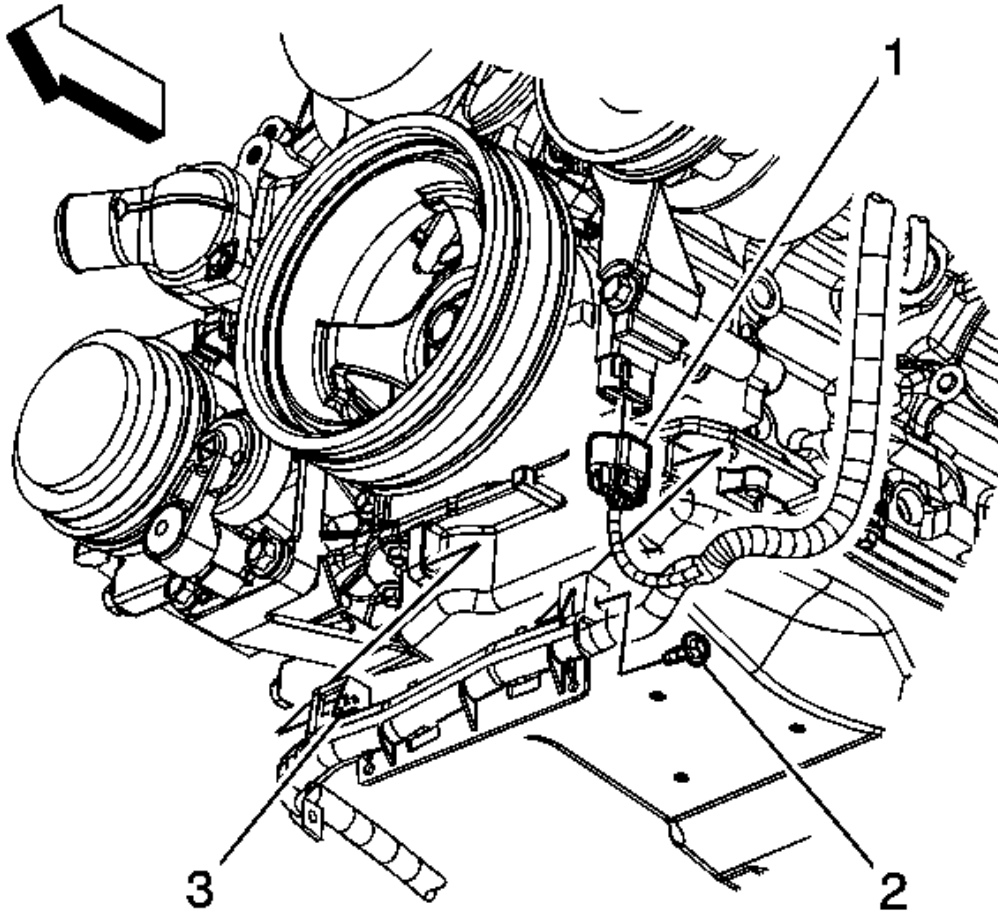


Fig. 460: View Of Electrical Connector, Cable Channel Bolt & Pin
Courtesy of GENERAL MOTORS CORP.

16. Position the channel and slide the channel pin (3) into the oil pan tab.
17. Install the battery cable channel bolt (2).

Tighten: Tighten the bolt to 12 N.m (106 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

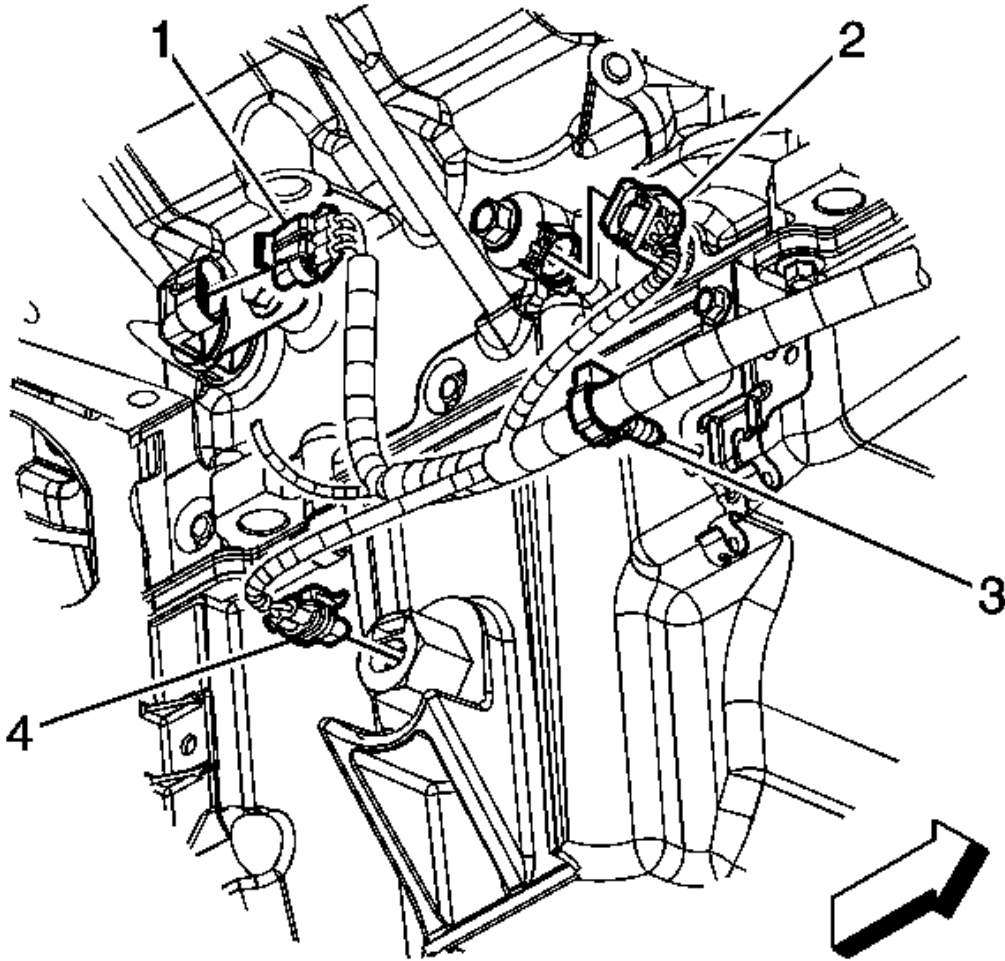


Fig. 461: View Of Electrical Connectors & Clips
Courtesy of GENERAL MOTORS CORP.

18. Connect the engine harness electrical connector (4) to the oil level sensor.
19. Install the engine harness clip (3) to the transmission oil cooler line bracket.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

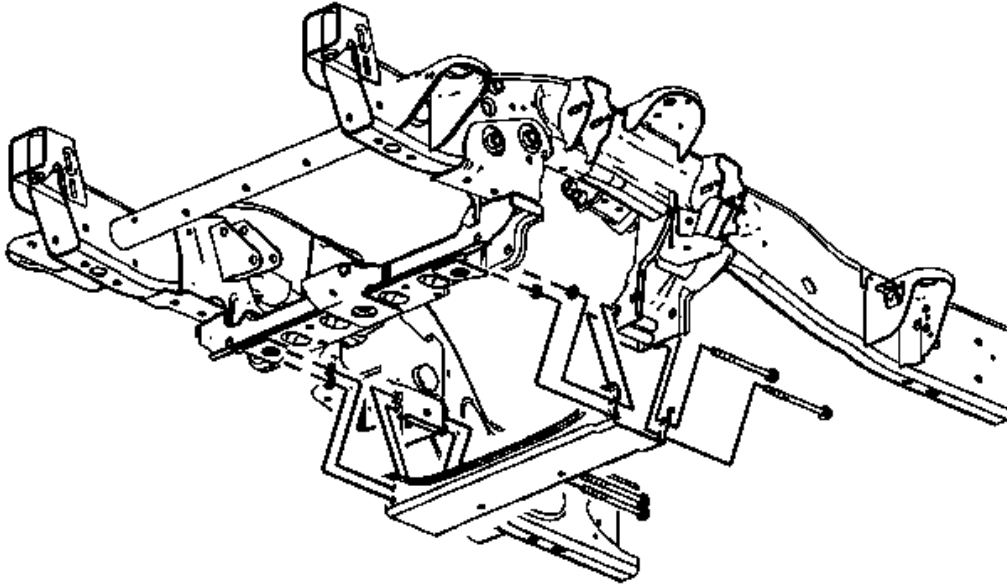


Fig. 462: View Of Vehicle Crossbar, Bolts & Nuts
Courtesy of GENERAL MOTORS CORP.

20. For both the 1500 and 2500 series, perform the following steps prior to installing the crossbar bolts.
 1. Remove all traces of the original adhesive patch.
 2. Clean the threads of the bolts with denatured alcohol or equivalent and allow to dry.
 3. Apply threadlock GM P/N 12345493 (Canadian P/N 10953488) or equivalent to the bolt threads.
21. For 2500 series vehicles, install the crossbar and crossbar bolts/nuts.

Tighten: Tighten the nuts to 120 N.m (89 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

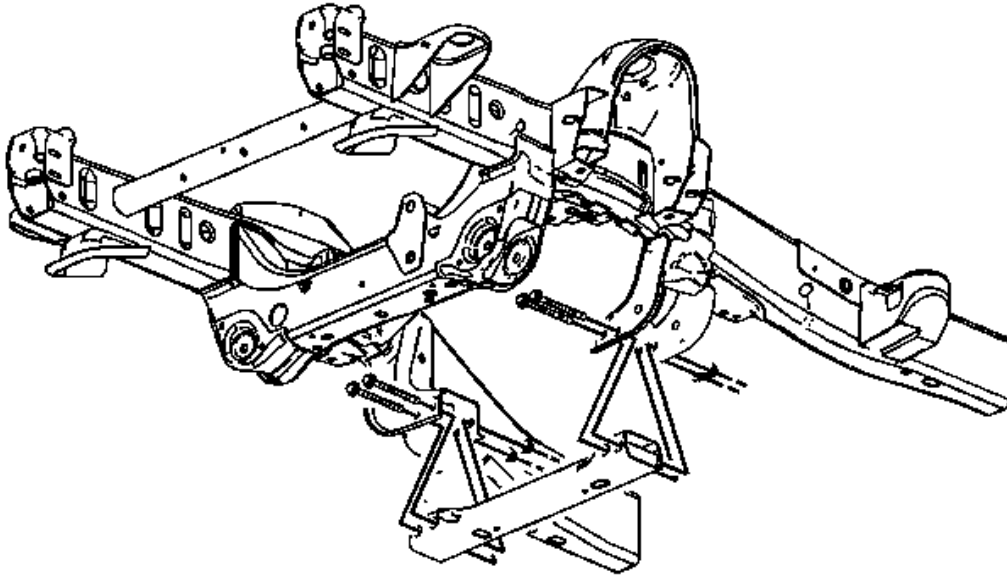


Fig. 463: View Of Vehicle Crossbar, Bolts & Nuts
Courtesy of GENERAL MOTORS CORP.

22. For 1500 series vehicles, install the crossbar and crossbar bolts/nuts.

Tighten: Tighten the nuts to 100 N.m (74 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

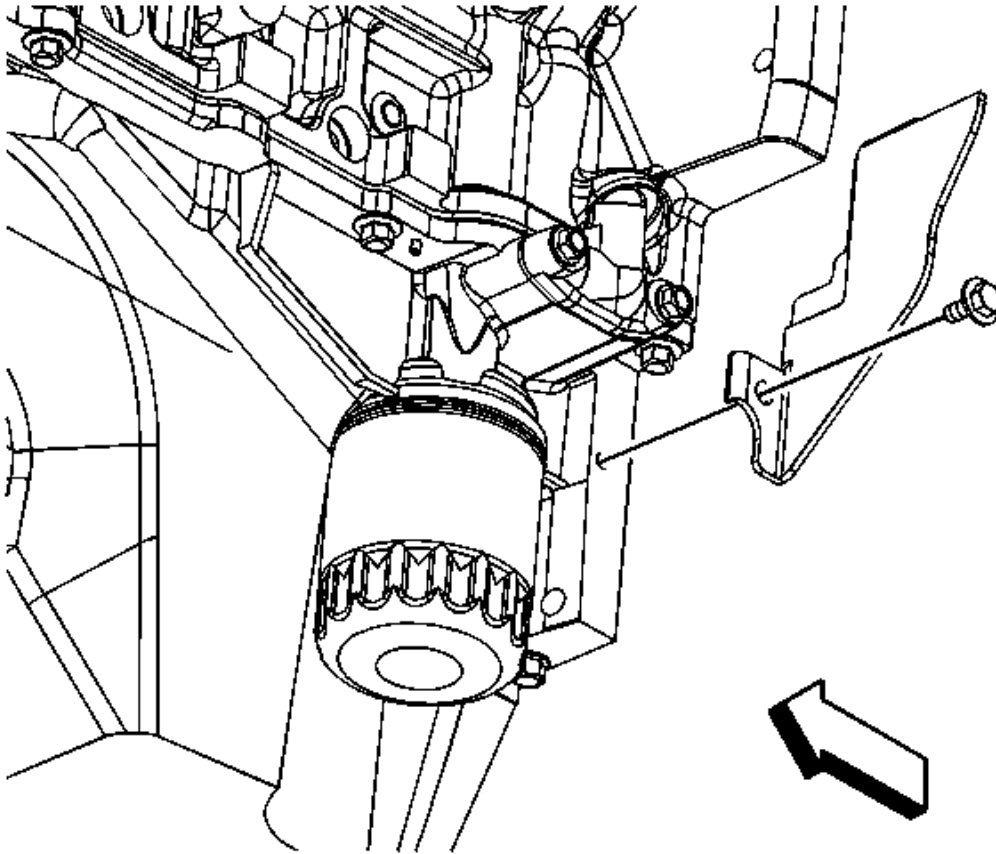


Fig. 464: View Of Left Side Transmission Cover Bolt
Courtesy of GENERAL MOTORS CORP.

23. Position the left side transmission cover and install the cover bolt.

Tighten: Tighten the bolt to 12 N.m (106 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

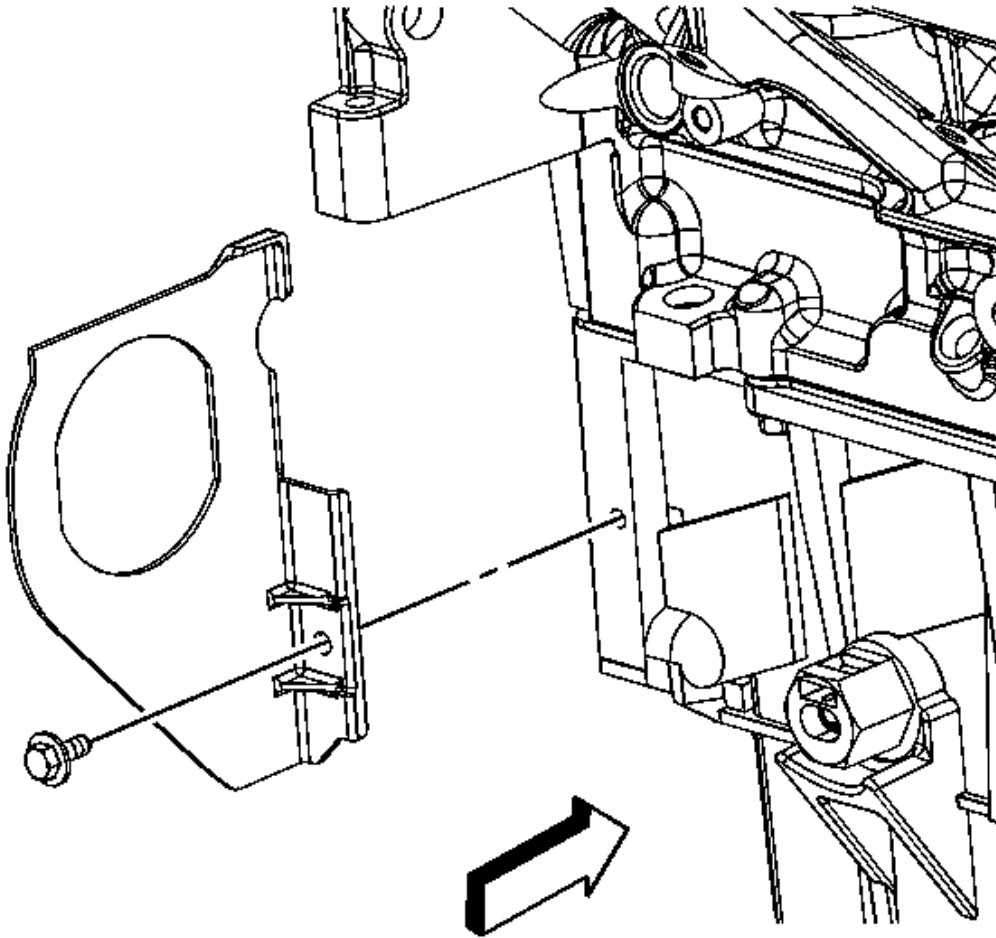


Fig. 465: View Of Right Side Transmission Cover Bolt
Courtesy of GENERAL MOTORS CORP.

24. Install the right side transmission cover bolt.

Tighten: Tighten the bolt to 12 N.m (106 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

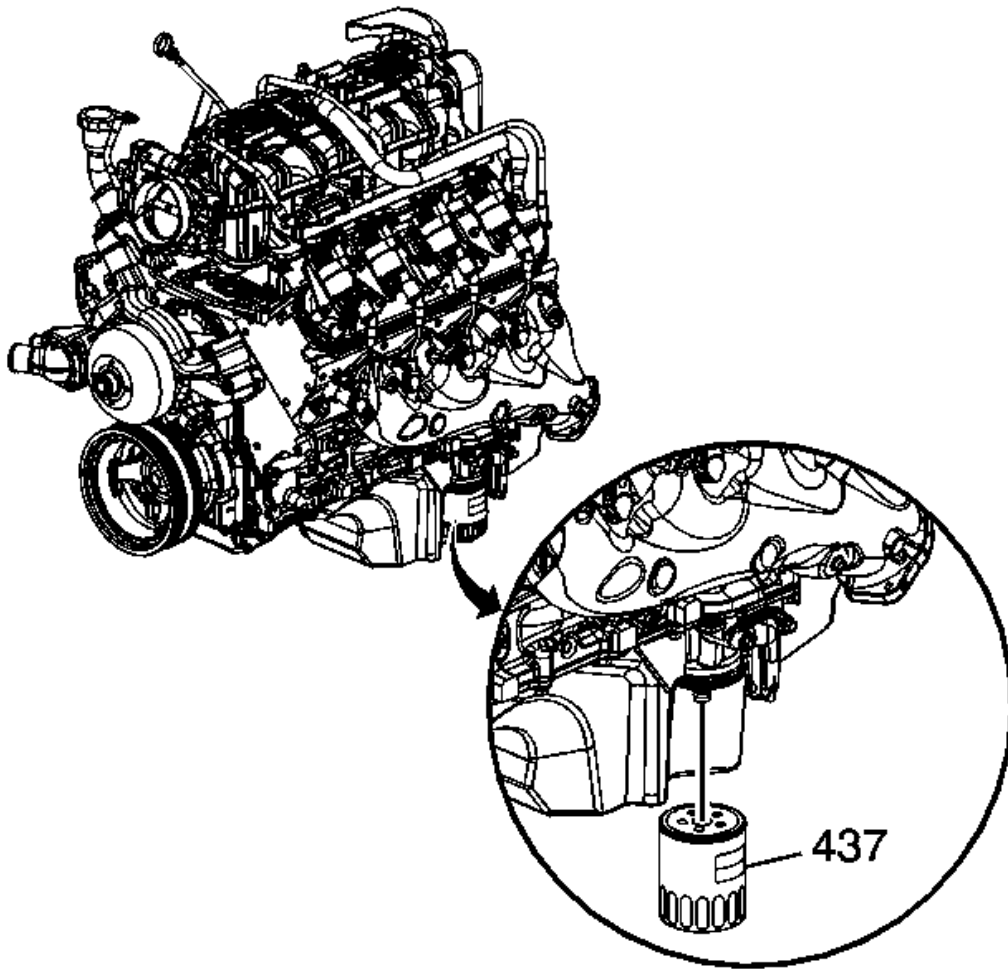


Fig. 466: View Of Engine Oil Filter
Courtesy of GENERAL MOTORS CORP.

25. If reusing the old oil pan remove the old oil filter and install a NEW oil filter.
26. Lubricate the NEW oil filter seal with clean engine oil.
27. Install the NEW oil filter (437).

Tighten: Tighten the oil filter to 30 N.m (22 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

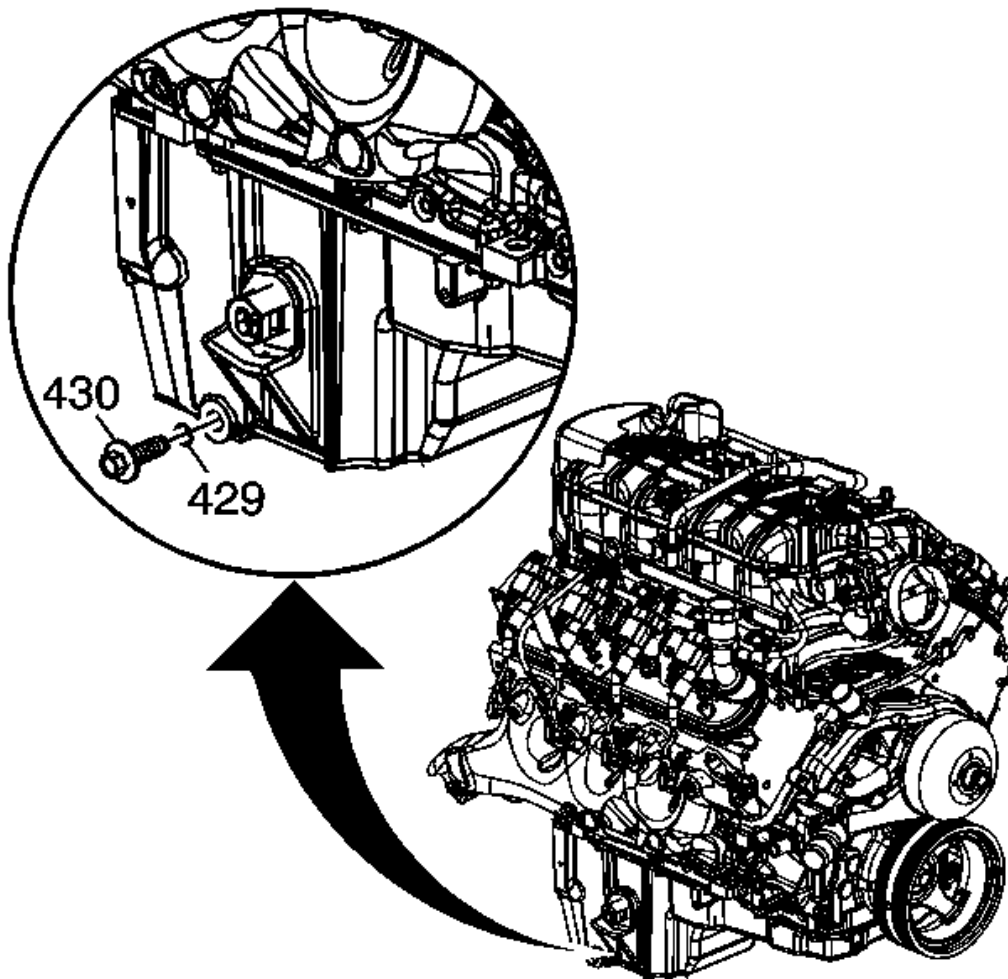


Fig. 467: View Of Oil Pan Drain Plug & Seal
Courtesy of GENERAL MOTORS CORP.

28. Ensure that the oil pan drain plug (430) is tight.

Tighten: Tighten the drain plug to 25 N.m (18 lb ft).

29. Install the front differential carrier. Refer to **Differential Carrier Assembly Replacement (1500 FWD)** or **Differential Carrier Assembly Replacement (2500 4WD)** .

30. Raise the steering rack in place and install the steering rack bolts.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Tighten:

- Tighten the left side steering rack bolts to 200 N.m (148 lb ft).
- Tighten the right side steering rack bolts to 100 N.m (74 lb ft).

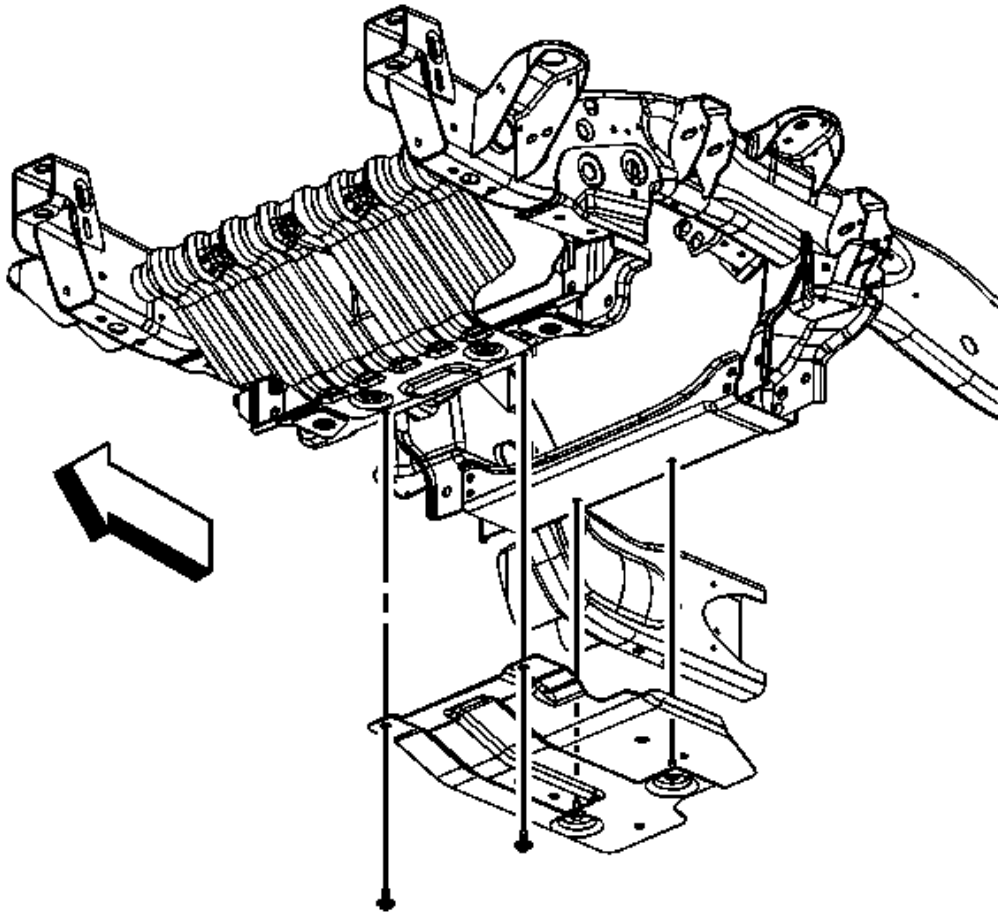


Fig. 468: View Of Oil Pan Skid Plate & Bolts
Courtesy of GENERAL MOTORS CORP.

31. For 2500 series vehicles, position the oil pan skid plate and tighten until snug the 2 rear oil pan skid plate bolts, install the 2 front oil pan skid plate bolts, if equipped.

Tighten: Tighten the bolts to 28 N.m (21 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

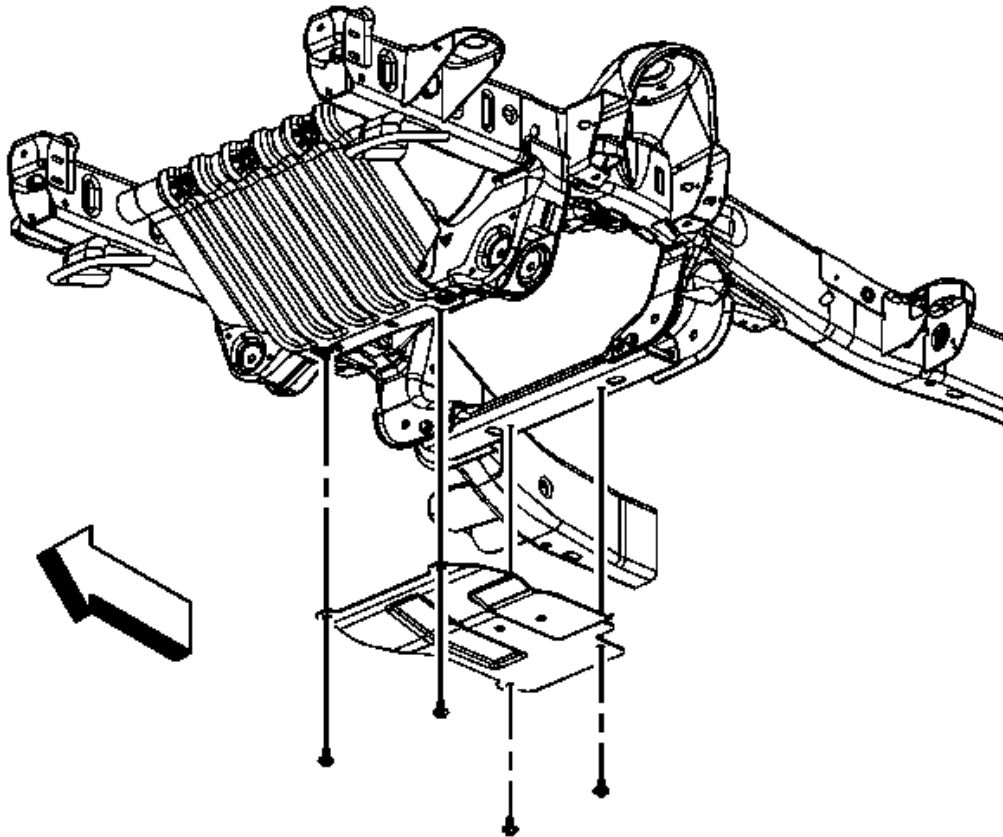


Fig. 469: View Of Oil Pan Skid Plate & Bolts
Courtesy of GENERAL MOTORS CORP.

32. For 1500 series vehicles, position the oil pan skid plate and install the oil pan skid plate bolts, if equipped.

Tighten: Tighten the bolts to 28 N.m (21 lb ft).

33. Lower the vehicle.
34. Fill the engine with NEW engine oil. Refer to **Fluid and Lubricant Recommendations** and **Approximate Fluid Capacities** .
35. Start the engine and inspect for leaks.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Removal Procedure

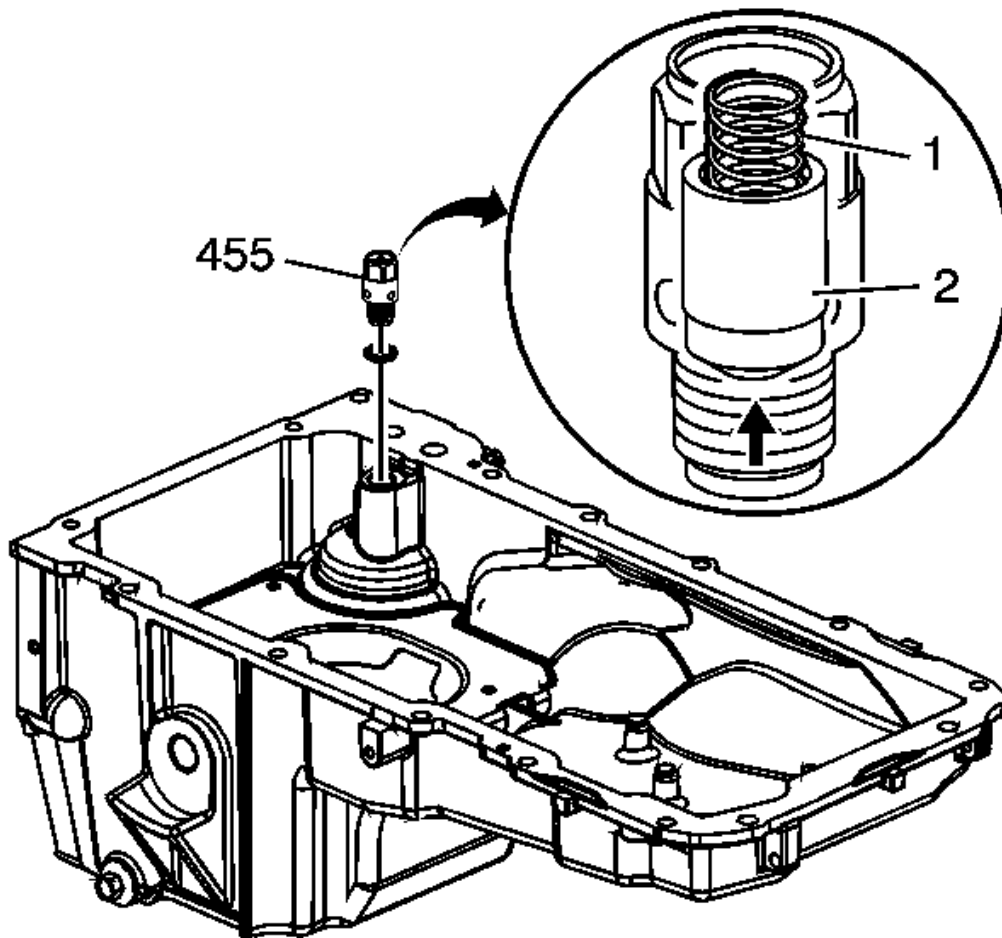


Fig. 470: View Of Oil Pressure Relief Valve Components
Courtesy of GENERAL MOTORS CORP.

1. Remove the oil pan. Refer to [Oil Pan Replacement \(2WD\)](#) or [Oil Pan Replacement \(4WD\)](#).
2. Place the oil pan on a clean work surface.
3. Remove the oil pressure relief valve (455) and washer.

Installation Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

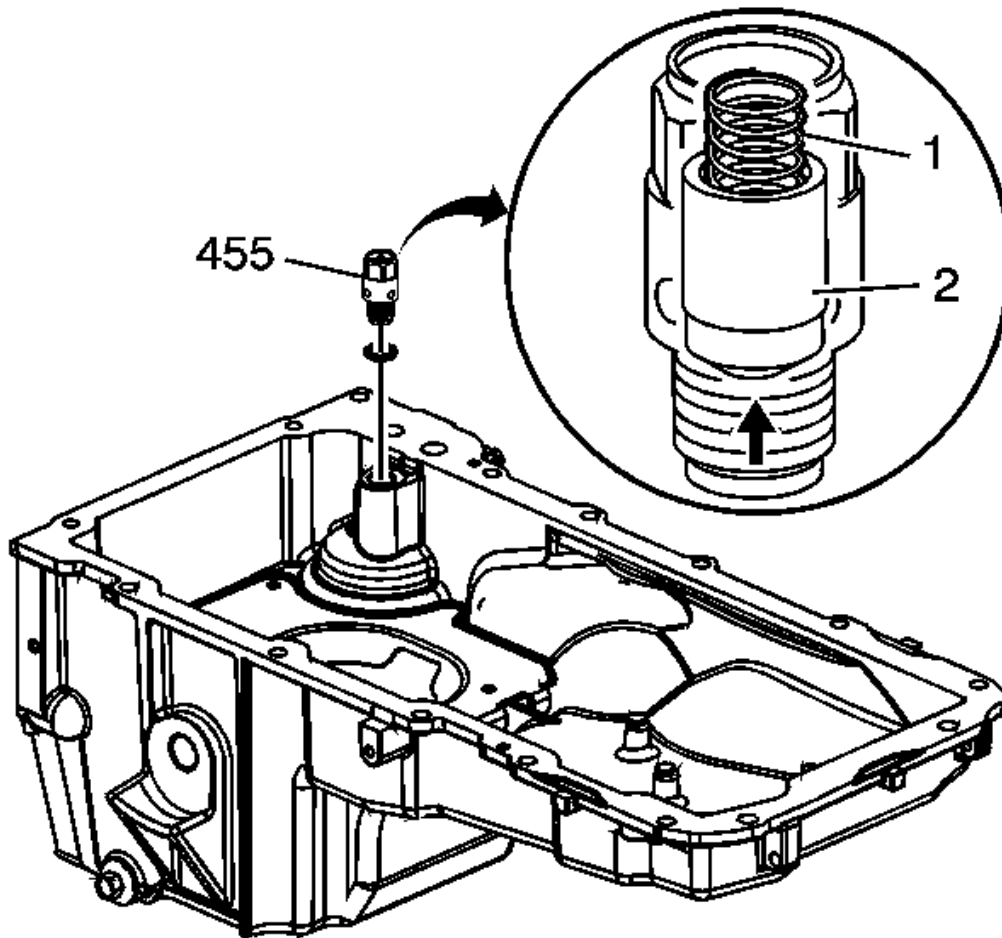


Fig. 471: View Of Oil Pressure Relief Valve Components
Courtesy of GENERAL MOTORS CORP.

1. Inspect the NEW oil pressure relief valve for proper operation. Lightly depress the ball (2). The valve spring (1) should seat the ball to the proper closed position.
2. Install the NEW oil pressure relief valve (455) and washer.
3. Install the oil pan. Refer to **Oil Pan Replacement (2WD)** or **Oil Pan Replacement (4WD)**.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2008 ENGINE

Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

ON-VEHICLE REPAIR INFORMATION (CONT.)

NOTE: Data below continues coverage of ON-VEHICLE repair information from previous article. For off vehicle repair information see OFF-VEHICLE REPAIR INFORMATION.

ENGINE OIL PRESSURE SENSOR AND/OR SWITCH REPLACEMENT

Tools Required

J 41712 Oil Pressure Switch Socket

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

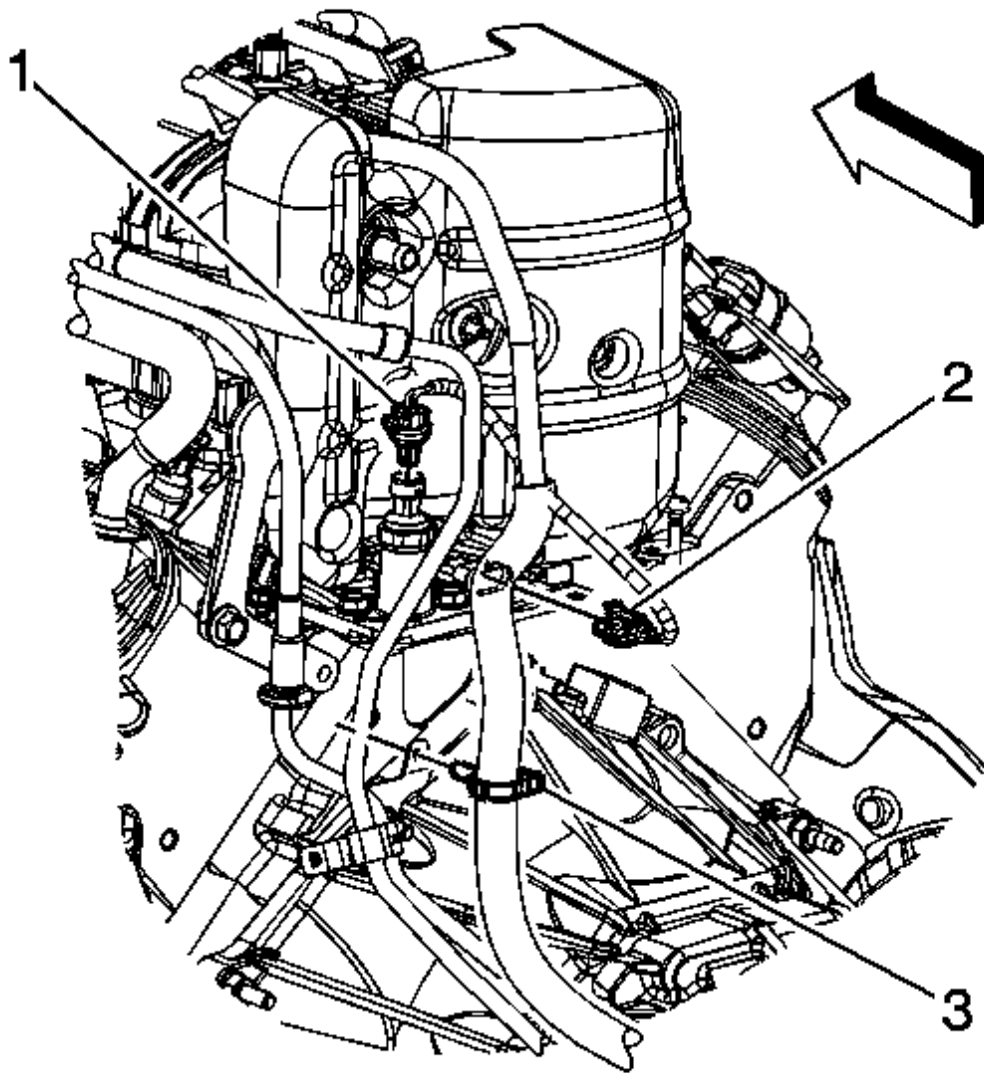


Fig. 1: View Of Engine Harness Electrical Connectors & Inlet Hose Clamp
Courtesy of GENERAL MOTORS CORP.

1. Remove the intake manifold. Refer to **Intake Manifold Replacement (L92 - First Design)** or **Intake Manifold Replacement (L92 - Second Design)** or **Intake Manifold Replacement (LY2 and LY6)** or **Intake Manifold Replacement (LH6, LMG, LY5 and L76)** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Disconnect the engine harness electrical connector (1) from the oil pressure sensor.

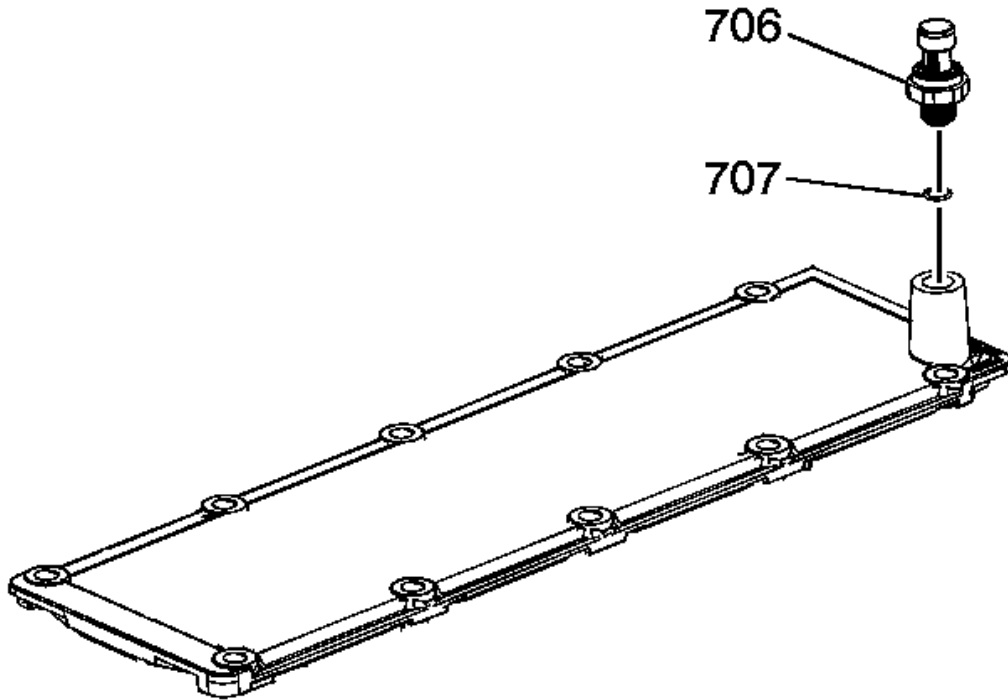


Fig. 2: Removing/Installing Oil Pressure Sensor & Washer
Courtesy of GENERAL MOTORS CORP.

3. If not equipped with active fuel management perform the following step, using **J 41712** or equivalent, remove the oil pressure sensor (706) and washer (707).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

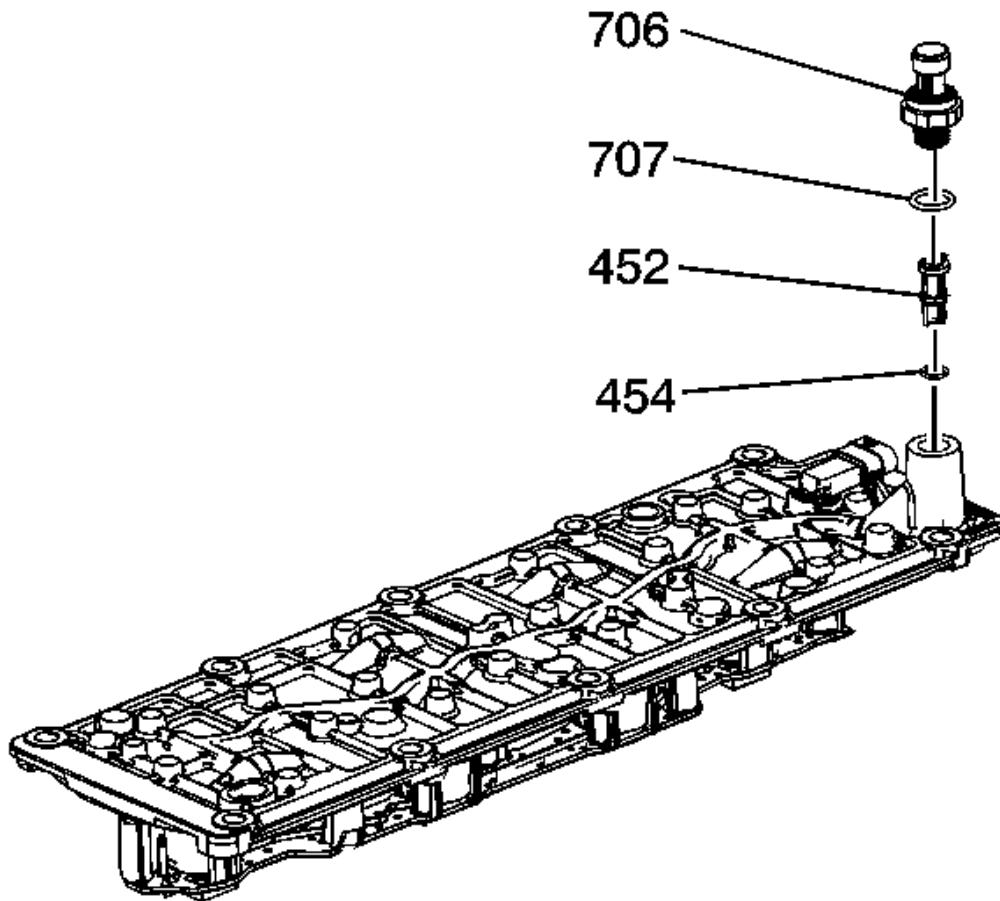


Fig. 3: View Of Oil Pressure Sensor, Washer And Valve Lifter Oil Filter
Courtesy of GENERAL MOTORS CORP.

4. If equipped with active fuel management perform the following step, using **J 41712** or equivalent, remove the oil pressure sensor (706) and washer (707).

Installation Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

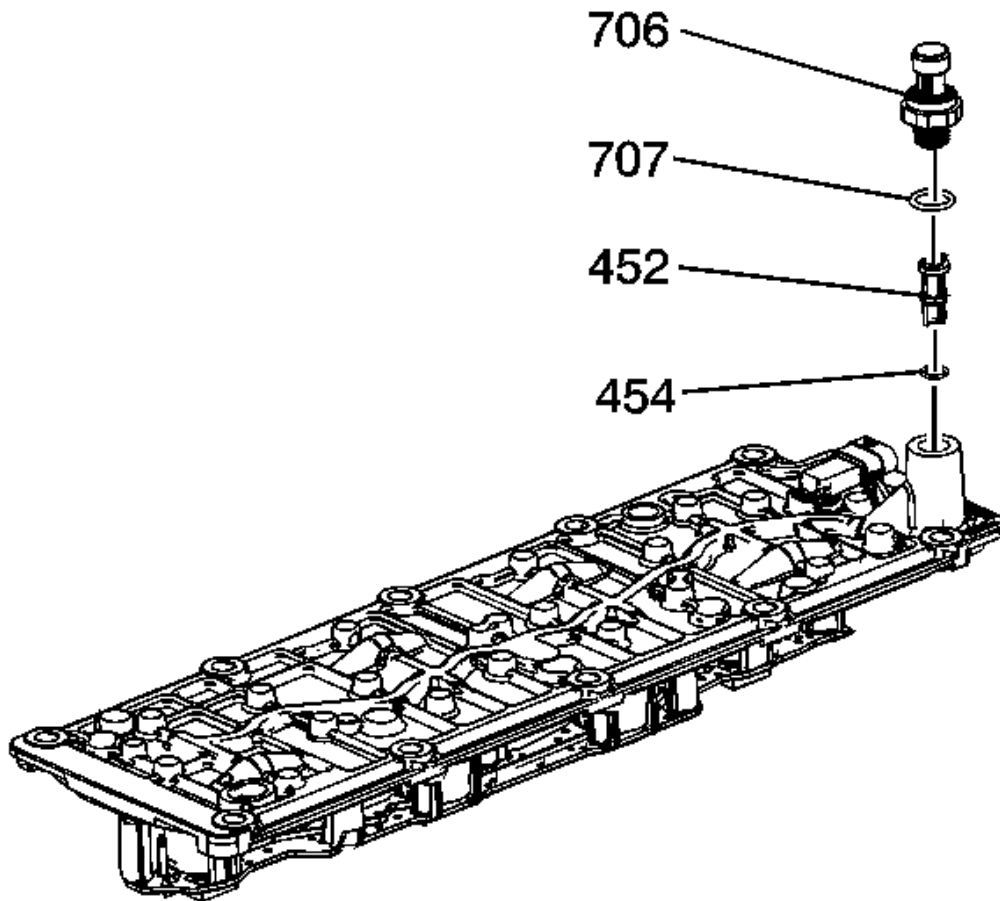


Fig. 4: View Of Oil Pressure Sensor, Washer And Valve Lifter Oil Filter
Courtesy of GENERAL MOTORS CORP.

1. Apply sealant to the threads of the NEW oil pressure sensor. Refer to **Sealers, Adhesives, and Lubricants** .

NOTE: Refer to **Fastener Notice** .

2. If equipped with active fuel management perform the following step, using **J 41712** or equivalent. Install the oil pressure sensor (706) and washer (707).

Tighten: Tighten the sensor to 35 N.m (26 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

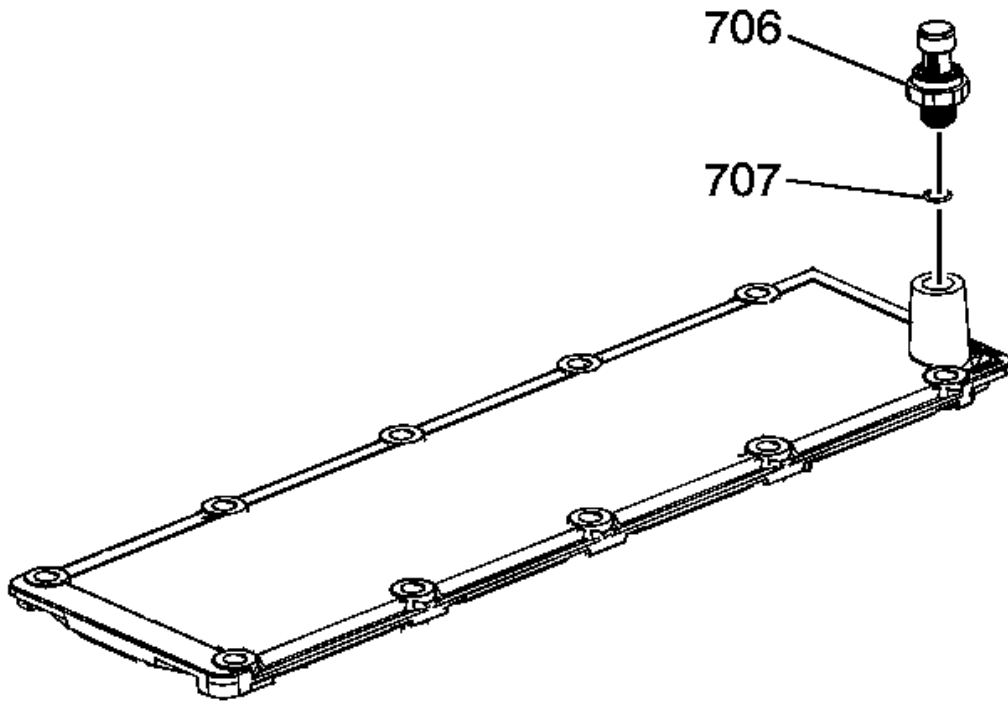


Fig. 5: Removing/Installing Oil Pressure Sensor & Washer
Courtesy of GENERAL MOTORS CORP.

3. If not equipped with active fuel management, perform the following step, using **J 41712** or equivalent. Install the oil pressure sensor (706) and washer (707).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

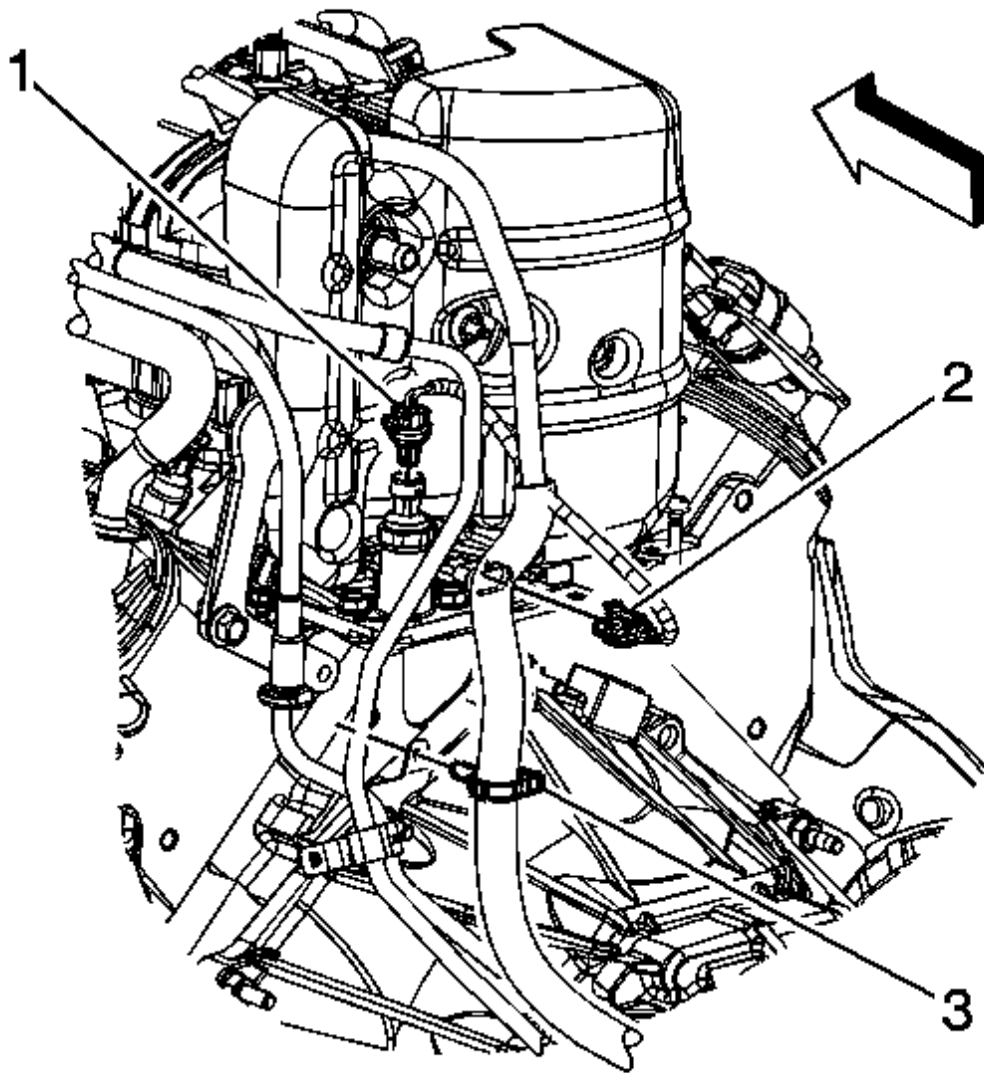


Fig. 6: View Of Engine Harness Electrical Connectors & Inlet Hose Clamp
Courtesy of GENERAL MOTORS CORP.

4. Connect the engine harness electrical connector (1) to the oil pressure sensor.

Tighten: Tighten the sensor to 35 N.m (26 lb ft).

5. Install the intake manifold. Refer to **Intake Manifold Replacement (L92 - First Design)**

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

or Intake Manifold Replacement (L92 - Second Design) or Intake Manifold Replacement (LY2 and LY6) or Intake Manifold Replacement (LH6, LMG, LY5 and L76) .

ENGINE OIL LEVEL SENSOR AND/OR SWITCH REPLACEMENT

Removal Procedure

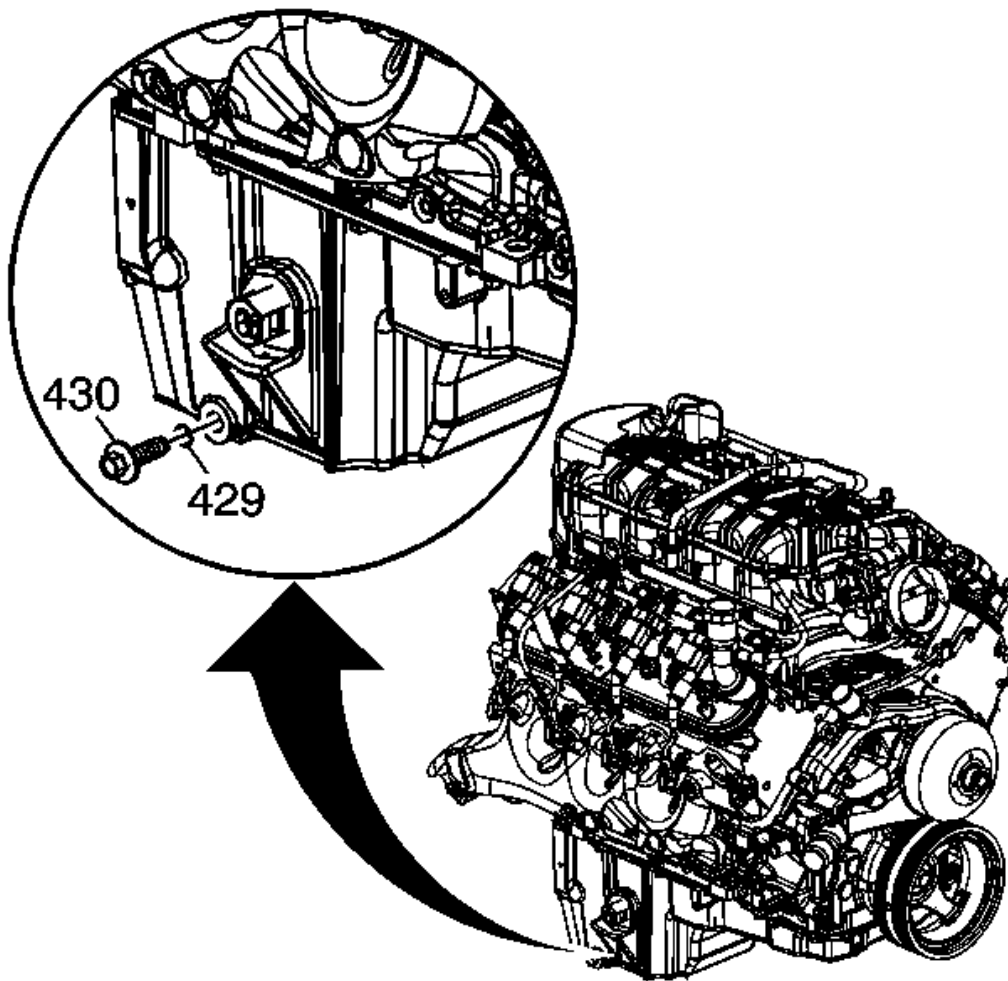


Fig. 7: View Of Oil Pan Drain Plug & Seal
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle** .
2. Place a suitable drain pan under the oil pan drain plug.
3. Remove the oil pan drain plug (430).
4. Allow the oil pan to drain completely.
5. Re-install the oil pan drain plug until snug.
6. Remove the drain pan from under the vehicle.

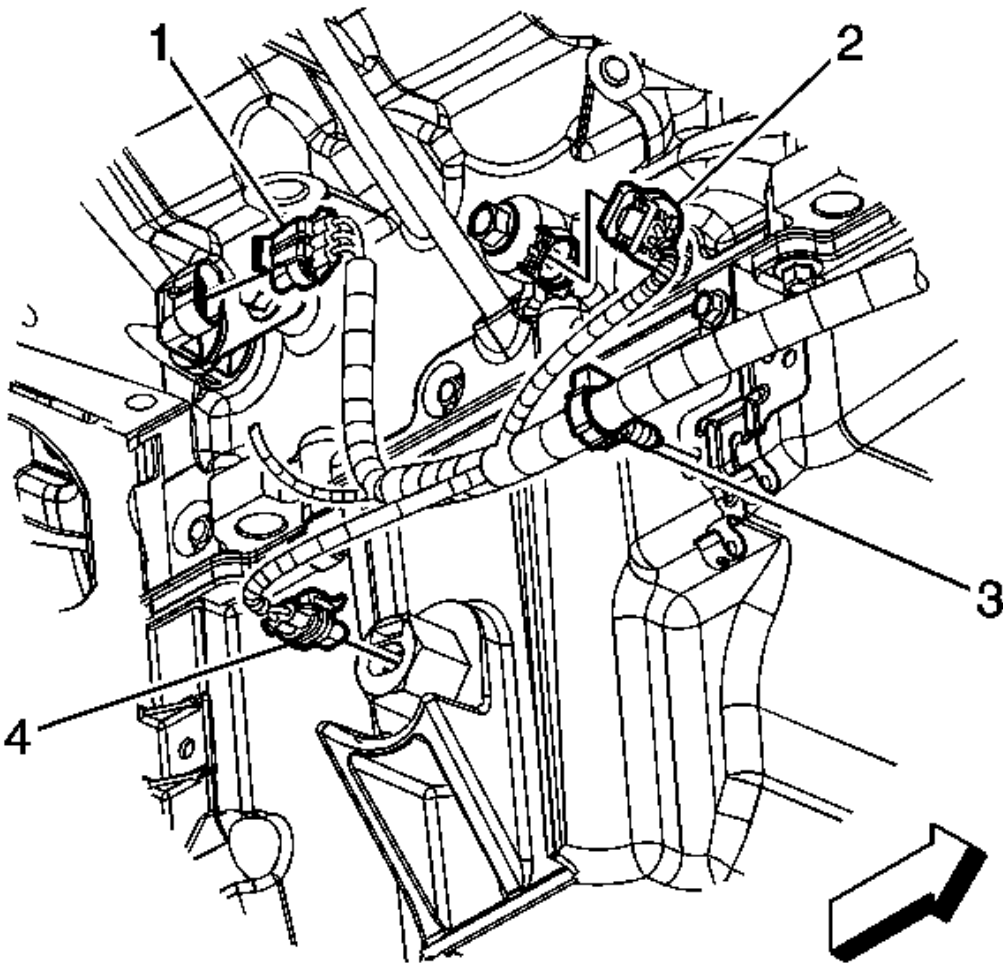


Fig. 8: View Of Electrical Connectors & Clips
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

7. Disconnect the engine harness electrical connector (4) from the oil level sensor.

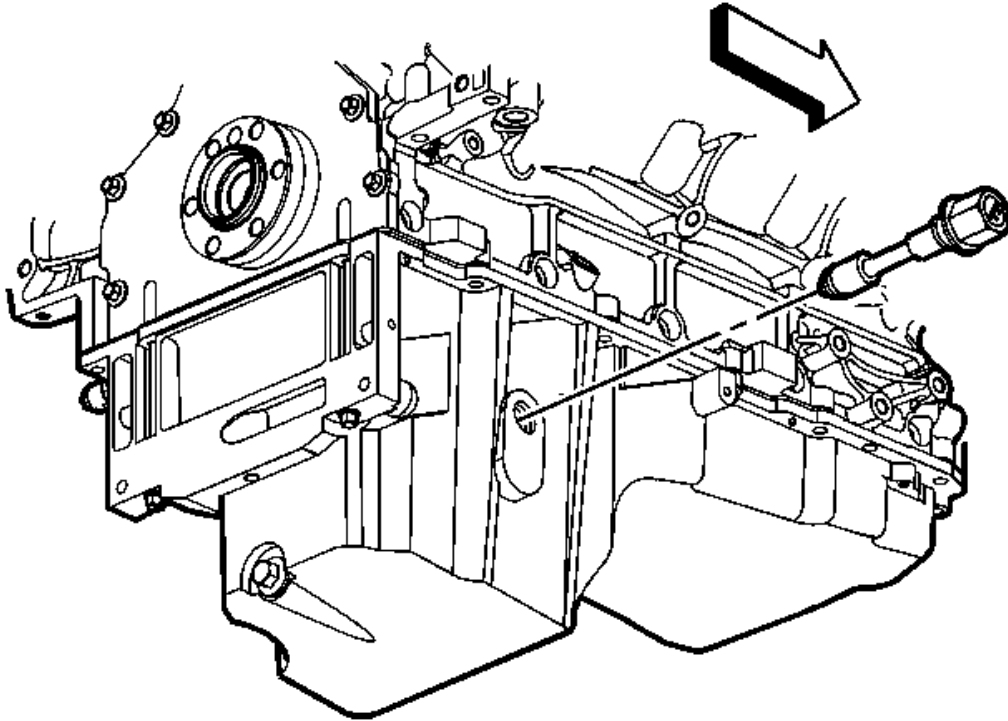


Fig. 9: View Of Oil Level Sensor
Courtesy of GENERAL MOTORS CORP.

8. Remove the oil level sensor from the oil pan.

Installation Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

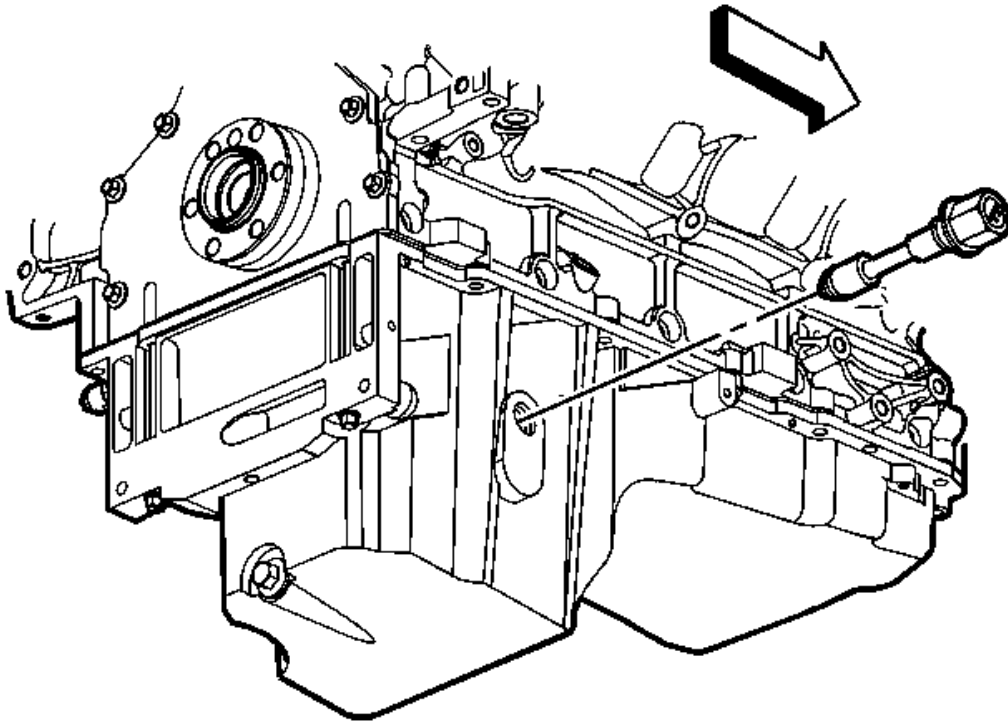


Fig. 10: View Of Oil Level Sensor
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

1. Install the oil level sensor to the oil pan.

Tighten: Tighten the sensor to 20 N.m (15 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

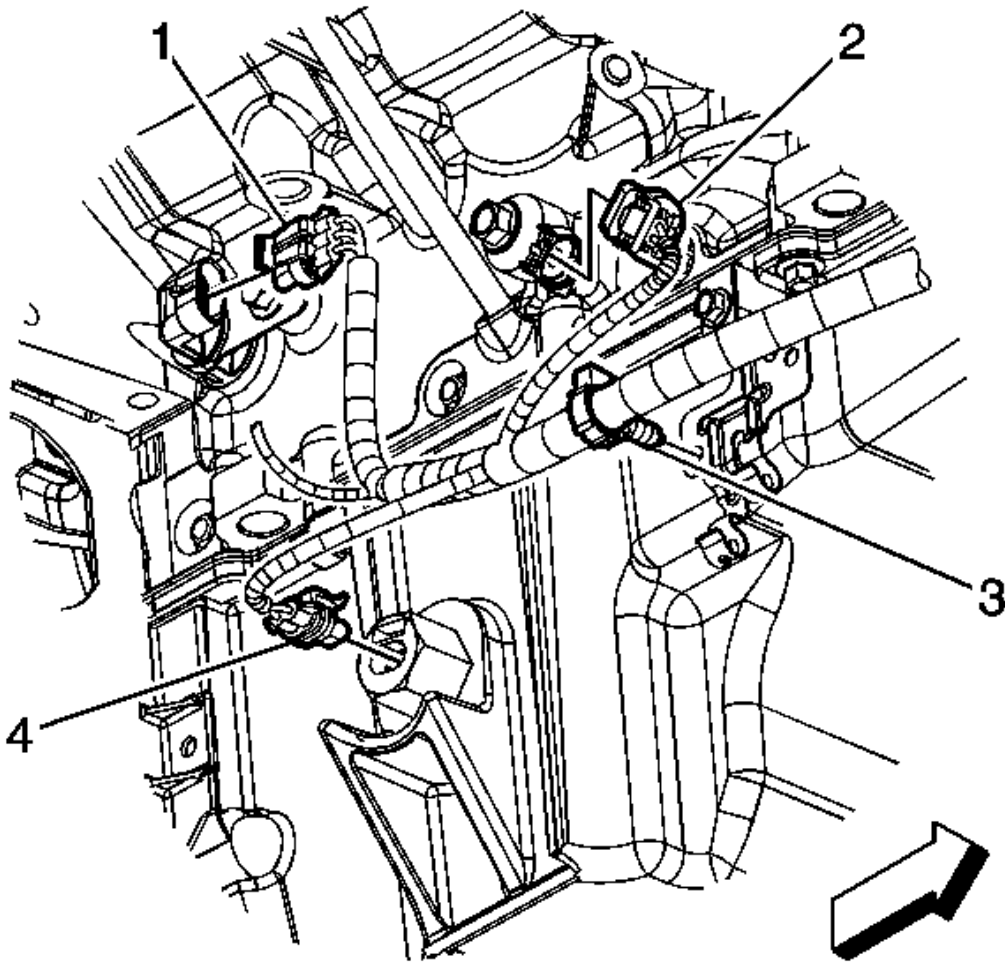


Fig. 11: View Of Electrical Connectors & Clips
Courtesy of GENERAL MOTORS CORP.

2. Connect the engine harness electrical connector (4) to the oil level sensor.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

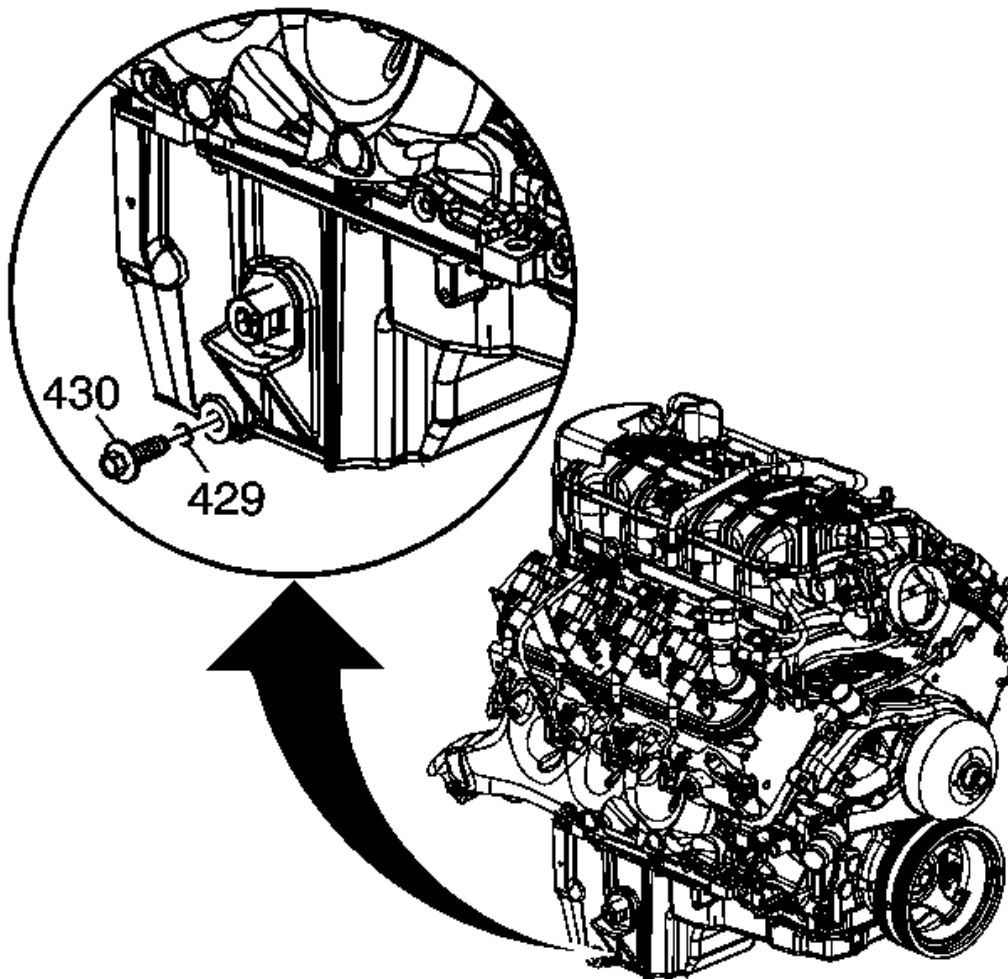


Fig. 12: View Of Oil Pan Drain Plug & Seal
Courtesy of GENERAL MOTORS CORP.

3. Ensure that the oil pan drain plug is tight.

Tighten: Tighten the drain plug to 25 N.m (18 lb ft).

4. Lower the vehicle.
5. Fill the engine with NEW engine oil. Refer to **Fluid and Lubricant Recommendations** and **Approximate Fluid Capacities** .
6. Start the engine and inspect for leaks.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

OIL PUMP, SCREEN, AND CRANKSHAFT OIL DEFLECTOR REPLACEMENT (LY6, L76 AND L92)

Removal Procedure

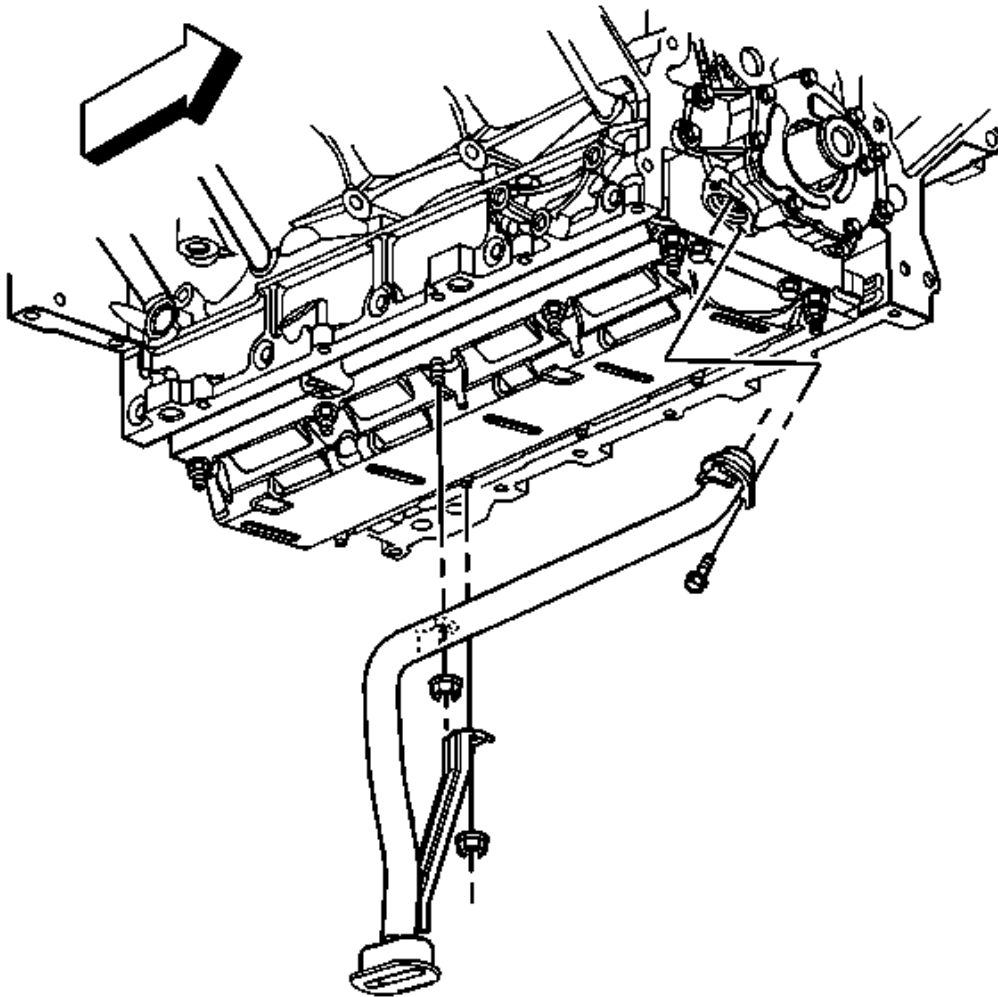


Fig. 13: View Of Oil Pump Screen & O-Ring Seal
Courtesy of GENERAL MOTORS CORP.

1. Remove the oil pan. Refer to [Oil Pan Replacement \(2WD\)](#) or [Oil Pan Replacement \(4WD\)](#) .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Remove the engine front cover. Refer to **Engine Front Cover Replacement (LC9, LH6, LMG, LY2 and LY5)** or **Engine Front Cover Replacement (LY6, L76 and L92)** .
3. Remove the oil pump screen bolt and nuts.
4. Remove the oil pump screen with O-ring seal.
5. Remove the O-ring seal from the pump screen.
6. Discard the O-ring seal.

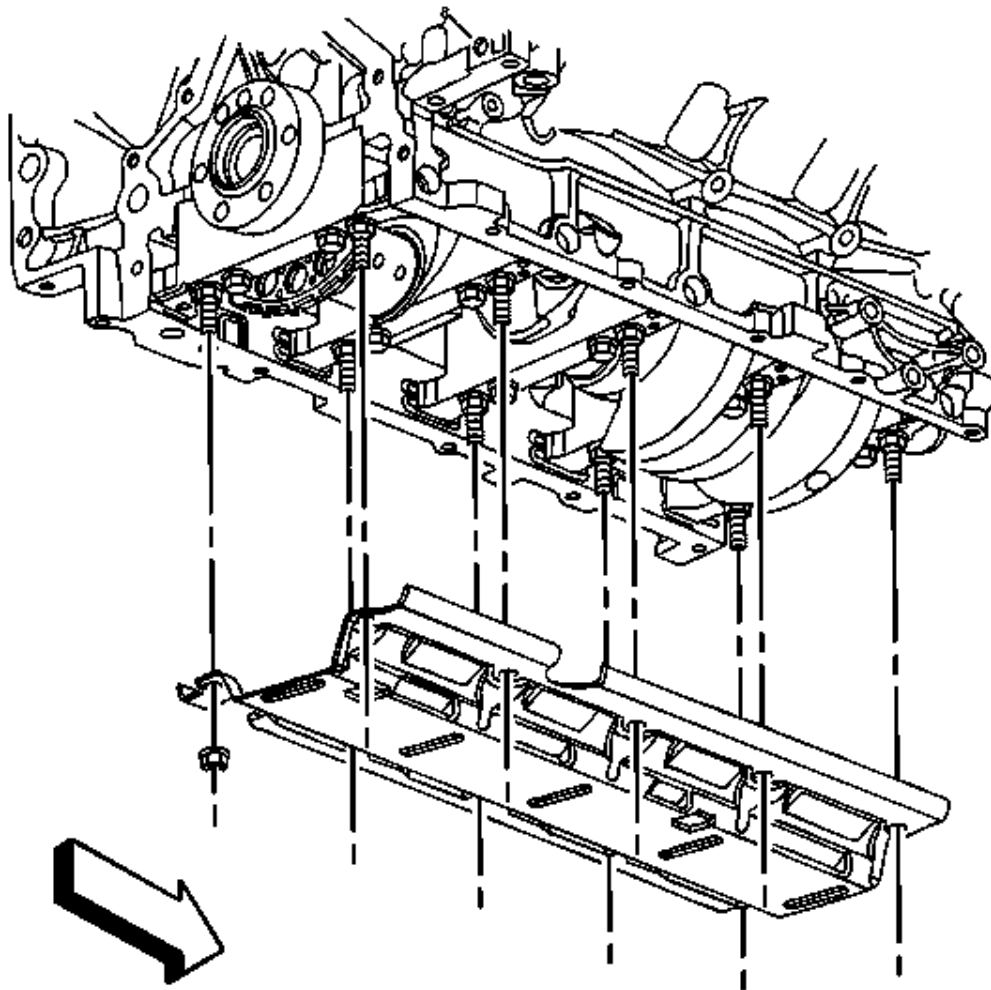


Fig. 14: View Of Crankshaft Oil Deflector & Nuts
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

7. Remove the remaining crankshaft oil deflector nuts.
8. Remove the crankshaft oil deflector.

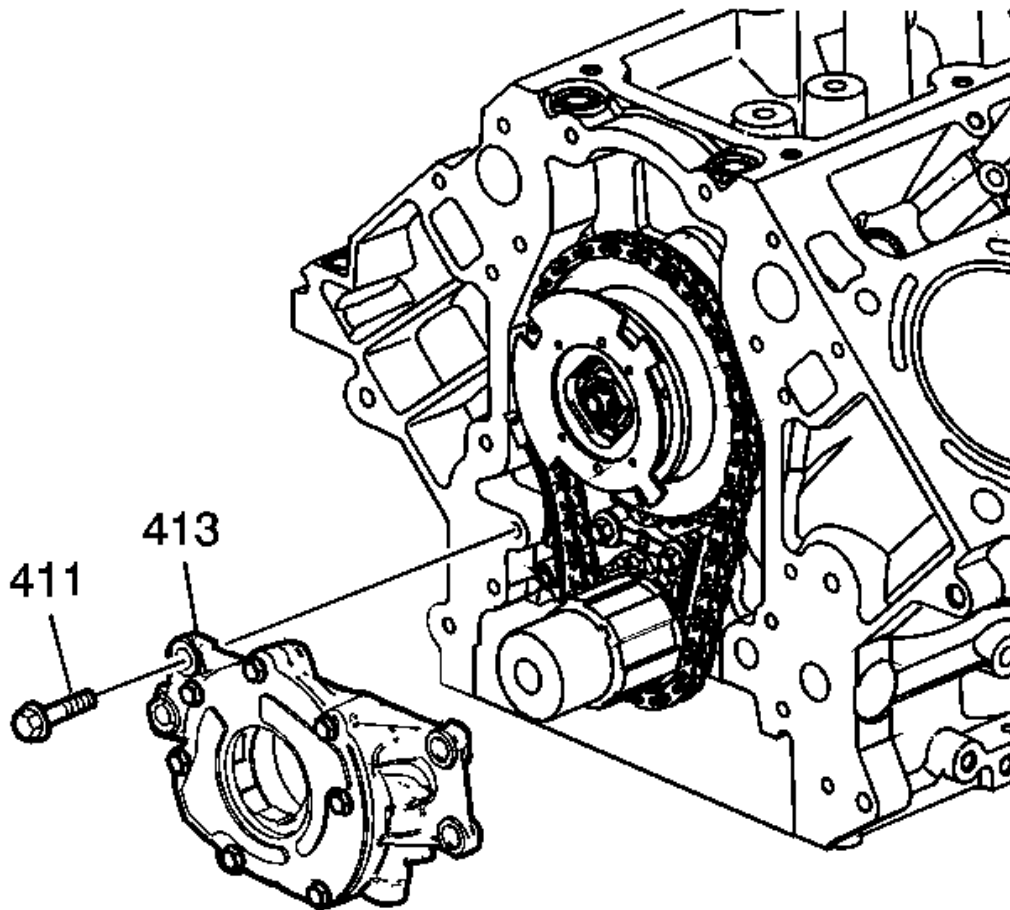


Fig. 15: View Of Oil Pump & Bolts
Courtesy of GENERAL MOTORS CORP.

9. Remove the oil pump bolts (411).

IMPORTANT: Do not allow dirt or debris to enter the oil pump assembly, cap end as necessary.

10. Remove the oil pump (413)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Installation Procedure

IMPORTANT: Inspect the engine block oil galley passages. These areas must be free and clear of debris or restrictions.

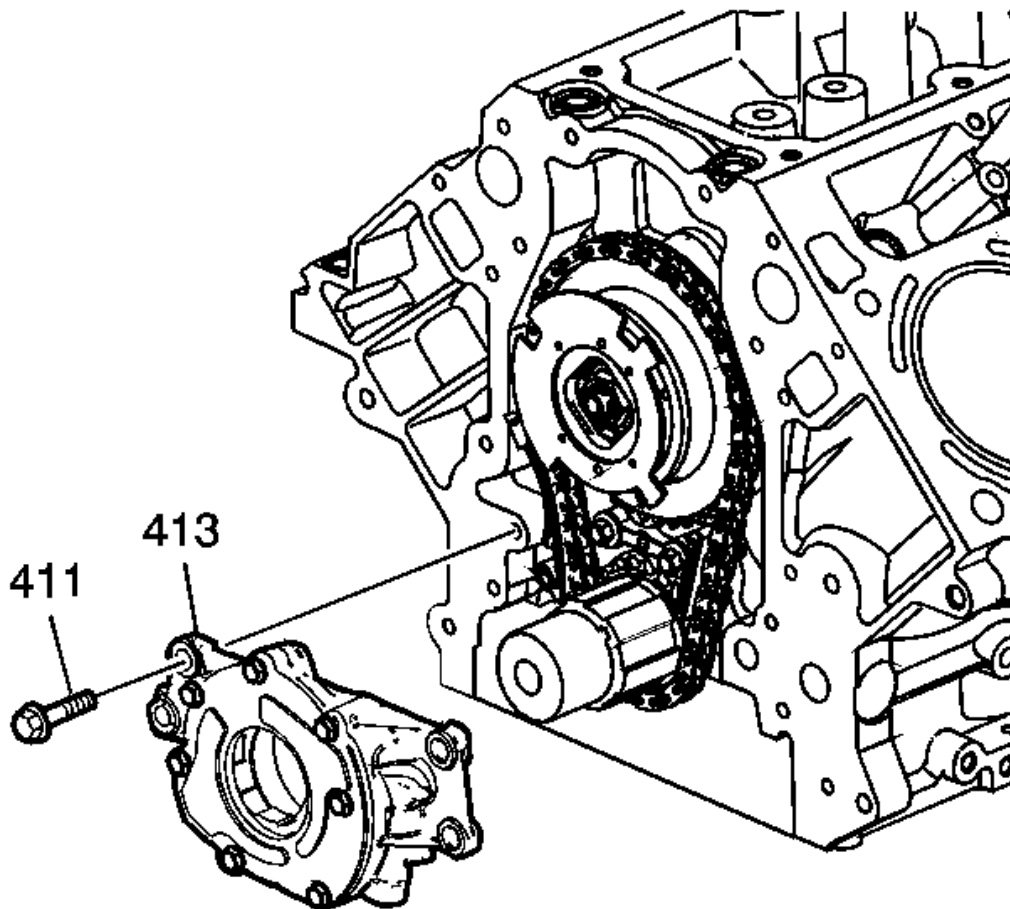


Fig. 16: View Of Oil Pump & Bolts
Courtesy of GENERAL MOTORS CORP.

1. Align the splined surfaces of the crankshaft sprocket and the oil pump drive gear and install the oil pump (413).
2. Install the oil pump (413) onto the crankshaft sprocket until the pump housing contacts the face of the engine block.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

NOTE: Refer to Fastener Notice .

3. Install the oil pump bolts (411).

Tighten: Tighten the bolts to 25 N.m (18 lb ft).

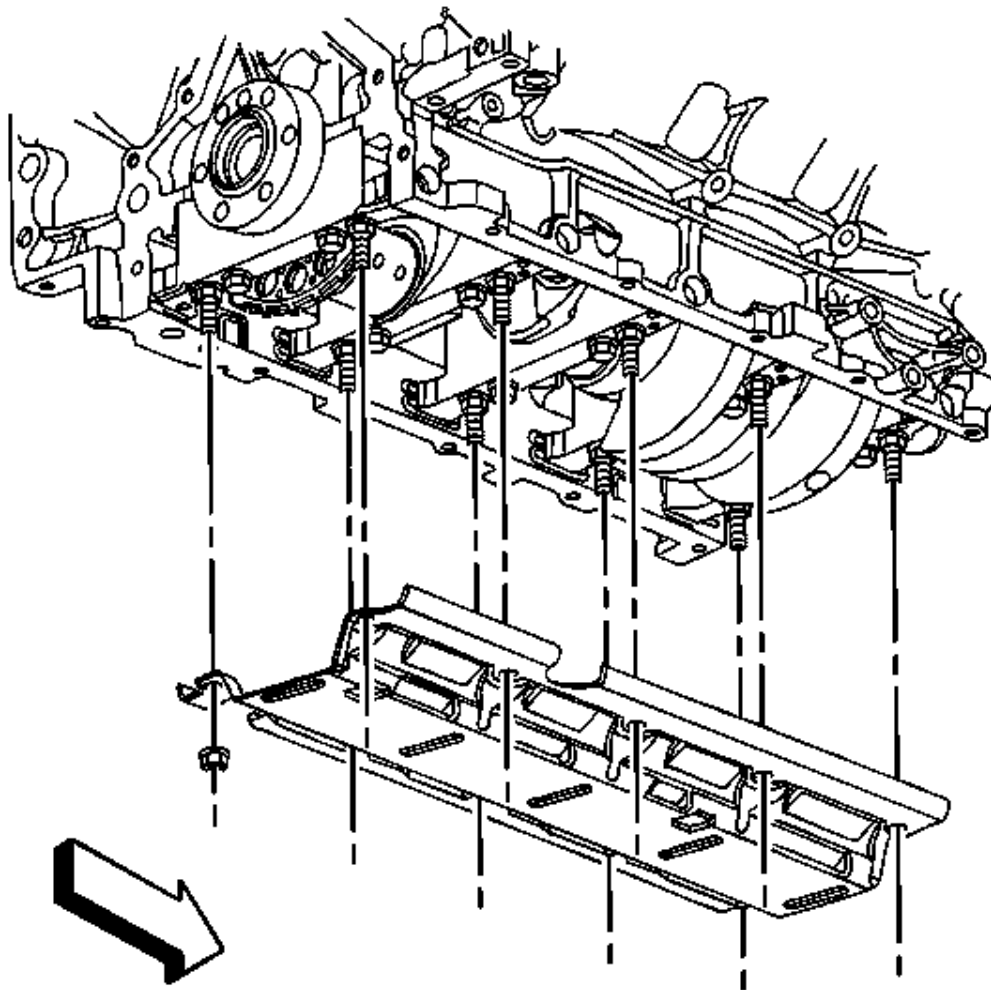


Fig. 17: View Of Crankshaft Oil Deflector & Nuts
Courtesy of GENERAL MOTORS CORP.

4. Position the crankshaft oil deflector and install the nuts until snug.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

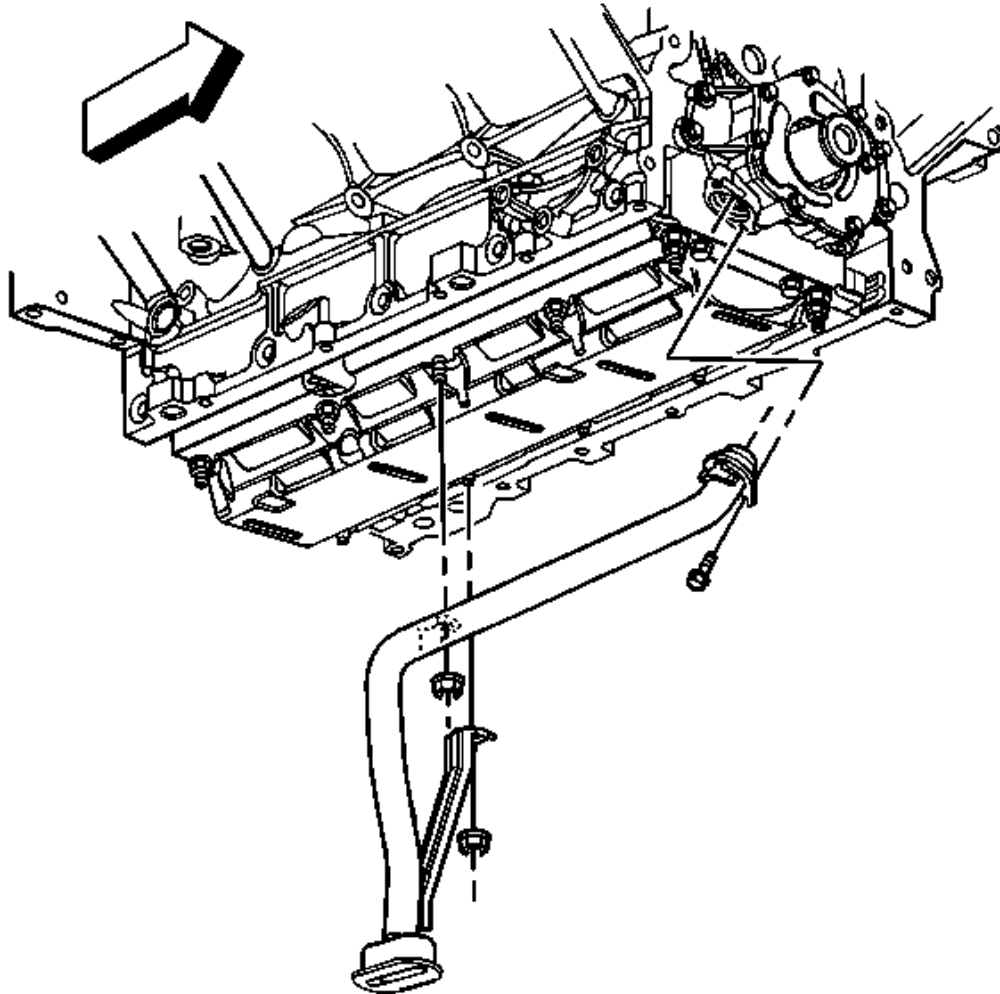


Fig. 18: View Of Oil Pump Screen & O-Ring Seal
Courtesy of GENERAL MOTORS CORP.

5. Lubricate a NEW oil pump screen O-ring seal with clean engine oil.
6. Install the NEW O-ring seal onto the oil pump screen.

IMPORTANT: Push the oil pump screen tube completely into the oil pump prior to tightening the bolt. Do not allow the bolt to pull the tube into the pump.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

7. Align the oil pump screen mounting brackets with the correct crankshaft bearing cap studs.
8. Install the oil pump screen.
9. Install the oil pump screen bolt and nuts.

Tighten:

1. Tighten the bolt to 12 N.m (106 lb in).
 2. Tighten the nuts to 25 N.m (18 lb ft).
10. Install the engine front cover. Refer to **Engine Front Cover Replacement (LC9, LH6, LMG, LY2 and LY5)** or **Engine Front Cover Replacement (LY6, L76 and L92)** .
 11. Install the oil pan. Refer to **Oil Pan Replacement (2WD)** or **Oil Pan Replacement (4WD)** .

OIL PUMP, SCREEN, AND CRANKSHAFT OIL DEFLECTOR REPLACEMENT (LH6, LMG, LY2 LY2 AND LY5)

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

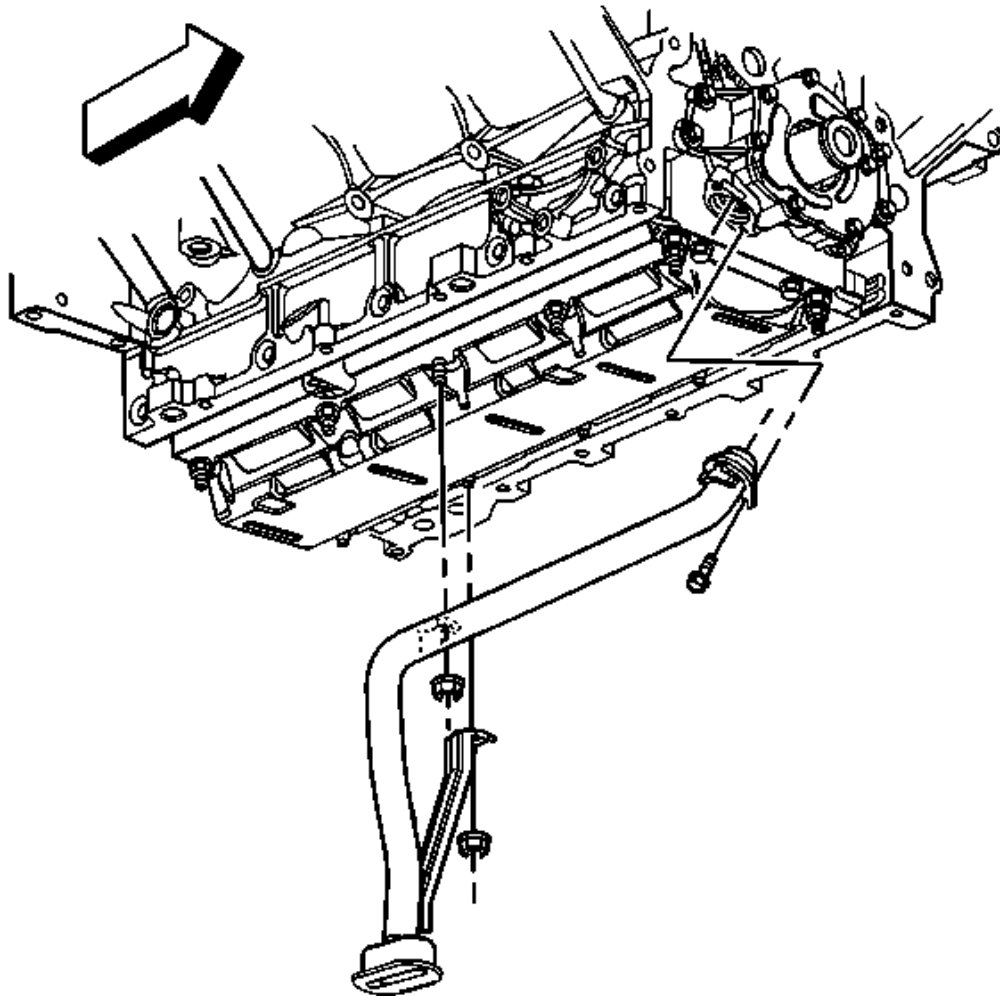


Fig. 19: View Of Oil Pump Screen & O-Ring Seal
Courtesy of GENERAL MOTORS CORP.

1. Remove the oil pan. Refer to **Oil Pan Replacement (2WD)** or **Oil Pan Replacement (4WD)** .
2. Remove the engine front cover. Refer to **Engine Front Cover Replacement (LC9, LH6, LMG, LY2 and LY5)** or **Engine Front Cover Replacement (LY6, L76 and L92)** .
3. Remove the oil pump screen bolt and nuts.
4. Remove the oil pump screen with O-ring seal.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

5. Remove the O-ring seal from the pump screen.
6. Discard the O-ring seal.

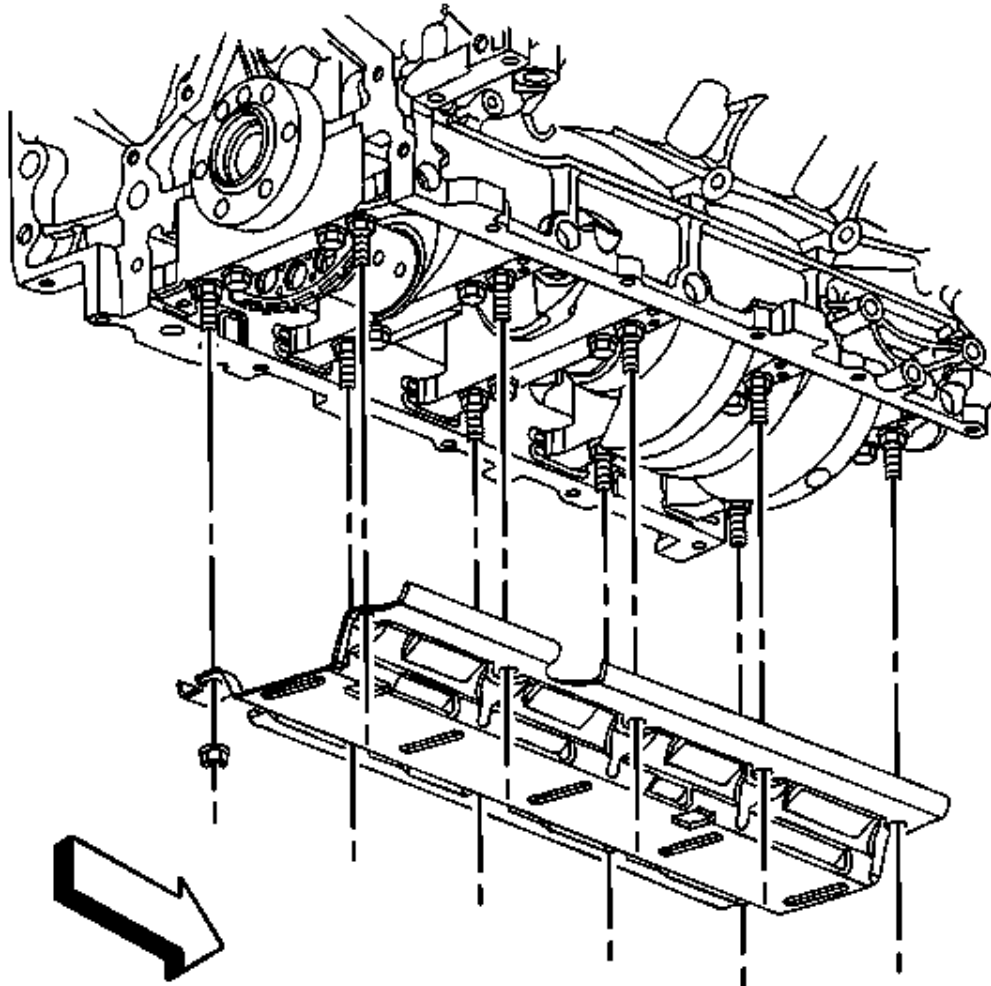


Fig. 20: View Of Crankshaft Oil Deflector & Nuts
Courtesy of GENERAL MOTORS CORP.

7. Remove the remaining crankshaft oil deflector nuts.
8. Remove the crankshaft oil deflector.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

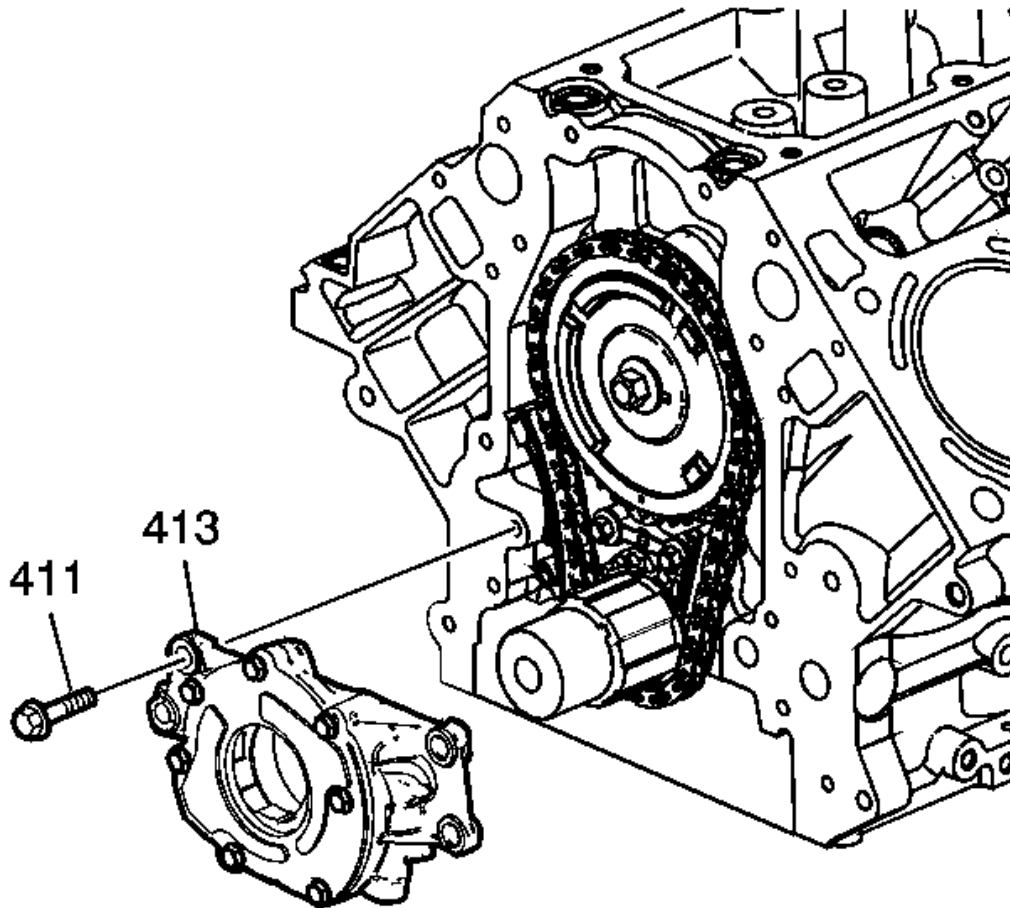


Fig. 21: View Of Oil Pump & Bolts
Courtesy of GENERAL MOTORS CORP.

9. Remove the oil pump bolts (411).

IMPORTANT: Do not allow dirt or debris to enter the oil pump assembly, cap end as necessary.

10. Remove the oil pump (413).

Installation Procedure

IMPORTANT: Inspect the engine block oil galley passages. These areas must

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

be free and clear of debris or restrictions.

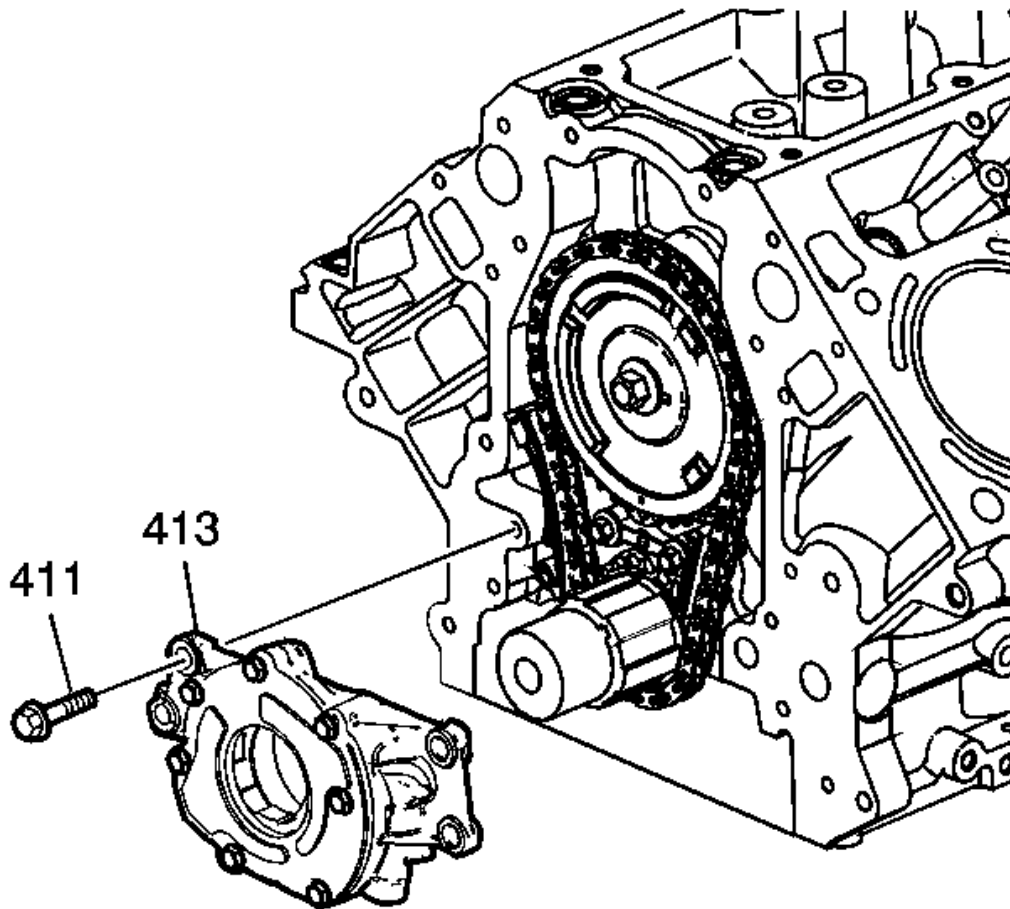


Fig. 22: View Of Oil Pump & Bolts
Courtesy of GENERAL MOTORS CORP.

1. Align the splined surfaces of the crankshaft sprocket and the oil pump drive gear and install the oil pump (413).
2. Install the oil pump (413) onto the crankshaft sprocket until the pump housing contacts the face of the engine block.

NOTE: Refer to Fastener Notice .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

3. Install the oil pump bolts (411).

Tighten: Tighten the bolts to 25 N.m (18 lb ft).

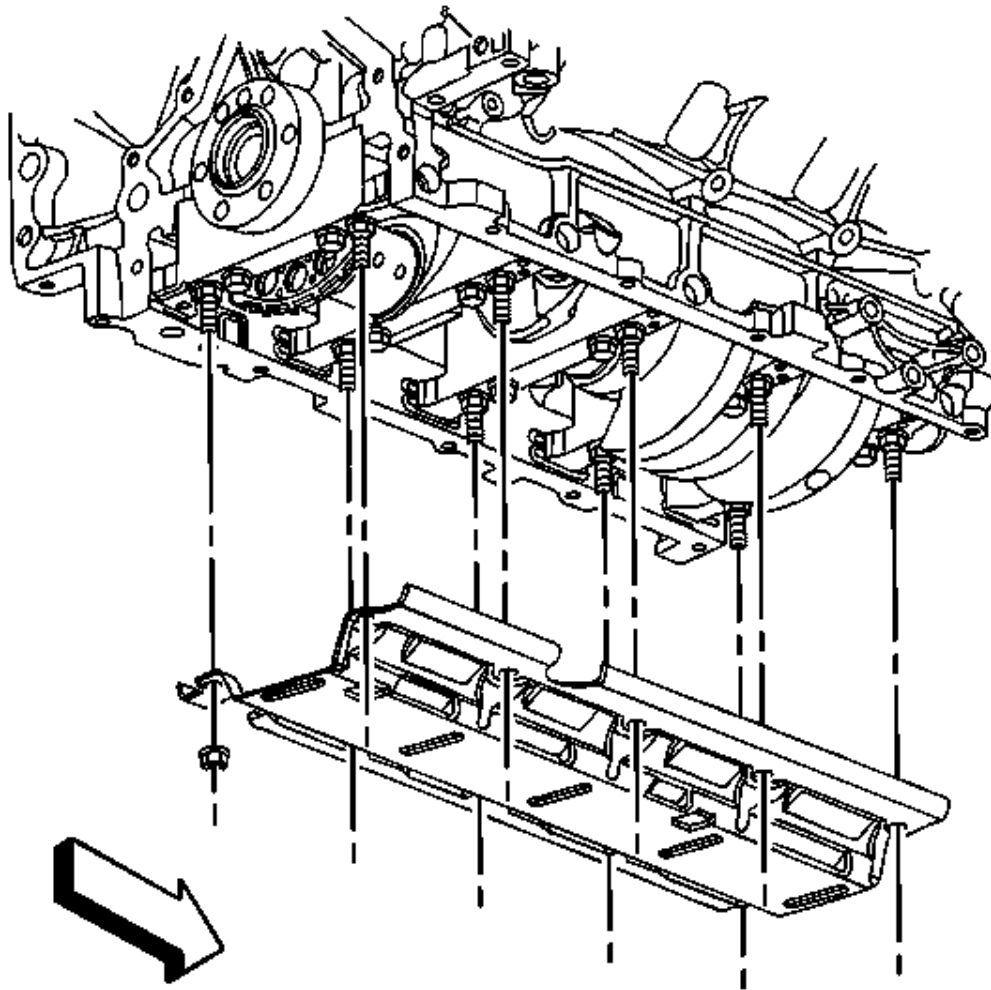


Fig. 23: View Of Crankshaft Oil Deflector & Nuts
Courtesy of GENERAL MOTORS CORP.

4. Position the crankshaft oil deflector and install the nuts until snug.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

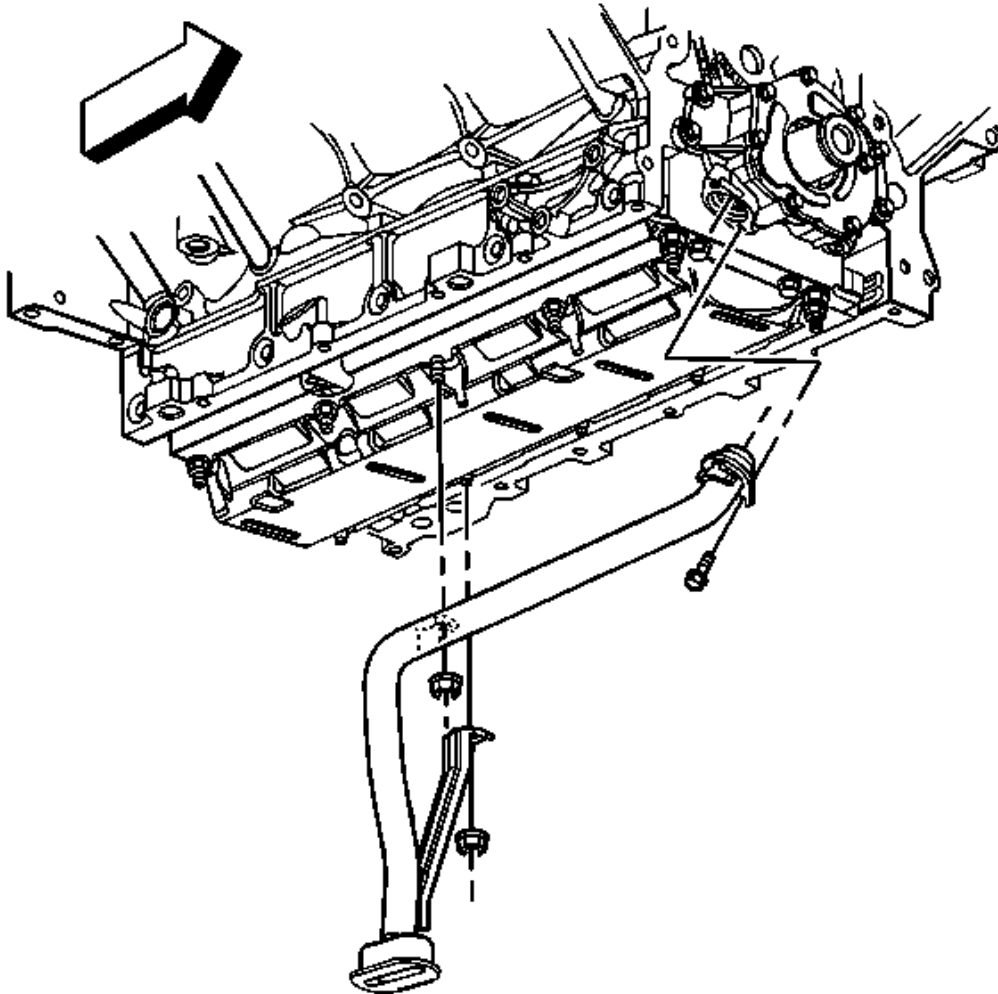


Fig. 24: View Of Oil Pump Screen & O-Ring Seal
Courtesy of GENERAL MOTORS CORP.

5. Lubricate a NEW oil pump screen O-ring seal with clean engine oil.
6. Install the NEW O-ring seal onto the oil pump screen.

IMPORTANT: Push the oil pump screen tube completely into the oil pump prior to tightening the bolt. Do not allow the bolt to pull the tube into the pump.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

7. Align the oil pump screen mounting brackets with the correct crankshaft bearing cap studs.
8. Install the oil pump screen.
9. Install the oil pump screen bolt and nuts.

Tighten:

1. Tighten the bolt to 12 N.m (106 lb in).
 2. Tighten the nuts to 25 N.m (18 lb ft).
10. Install the engine front cover. Refer to **Engine Front Cover Replacement (LC9, LH6, LMG, LY2 and LY5)** or **Engine Front Cover Replacement (LY6, L76 and L92)** .
 11. Install the oil pan. Refer to **Oil Pan Replacement (2WD)** or **Oil Pan Replacement (4WD)** .

TIMING CHAIN, CRANKSHAFT SPROCKET, CAMSHAFT POSITION ACTUATOR AND SOLENOID VALVE REPLACEMENT

Special Tools

- **EN 46330** Timing Chain Tensioner Retaining Pin. See **Special Tools** .
- **J 8433** Puller Bar. See **Special Tools** .
- **J 41478** Crankshaft Front Oil Seal Installer. See **Special Tools** .
- **J 41558** Crankshaft Sprocket Remover. See **Special Tools** .
- **J 41665** Crankshaft Balancer and Sprocket Installer. See **Special Tools** .
- **J 41816-2** Crankshaft End Protector. See **Special Tools** .
- **J 42386-A** Flywheel Holding Tool. See **Special Tools** .
- **J 45059** Angle Meter

Removal Procedure

1. Remove the oil pump. Refer to **Oil Pump, Screen, and Crankshaft Oil Deflector Replacement (LY6, L76 and L92)** or **Oil Pump, Screen, and Crankshaft Oil Deflector Replacement (LH6, LMG, LY2 and LY5)**.
2. Remove the starter motor. Refer to **Starter Motor Replacement (4.3L)** or **Starter Motor Replacement (4.8L, 5.3L, 6.0L, and 6.2L)** or **Starter Motor Replacement (6.6L)** .

NOTE: Refer to **Fastener Notice** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

IMPORTANT: Ensure that the teeth of the J 42386-A mesh with the teeth of the engine flywheel. See Special Tools .

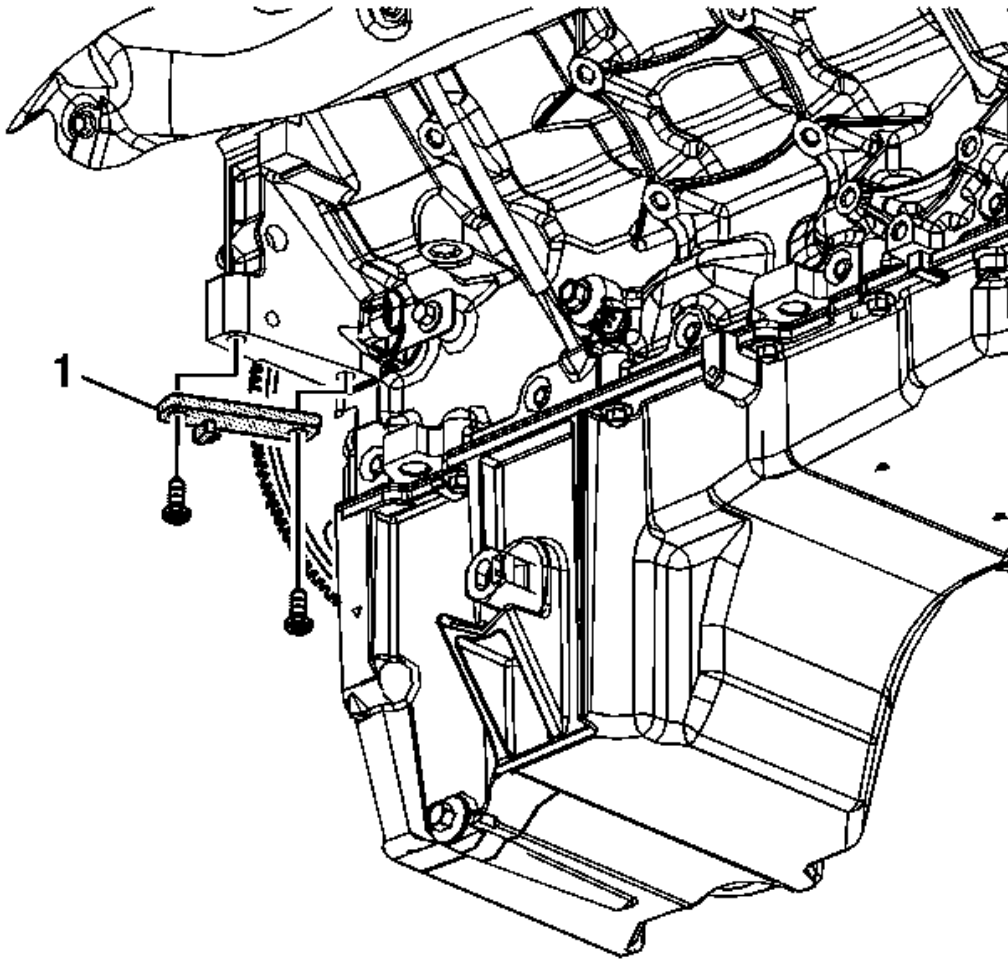


Fig. 25: View Of Special Tool & Bolts
Courtesy of GENERAL MOTORS CORP.

3. Install the **J 42386-A** (1) and bolts. See Special Tools . Use one M10-1.5 x 120 mm and one M10-1.5 x 45 mm bolt for proper tool operation.

Tighten: Tighten the **J 42386-A** bolts to 50 N. See Special Tools .m (37 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

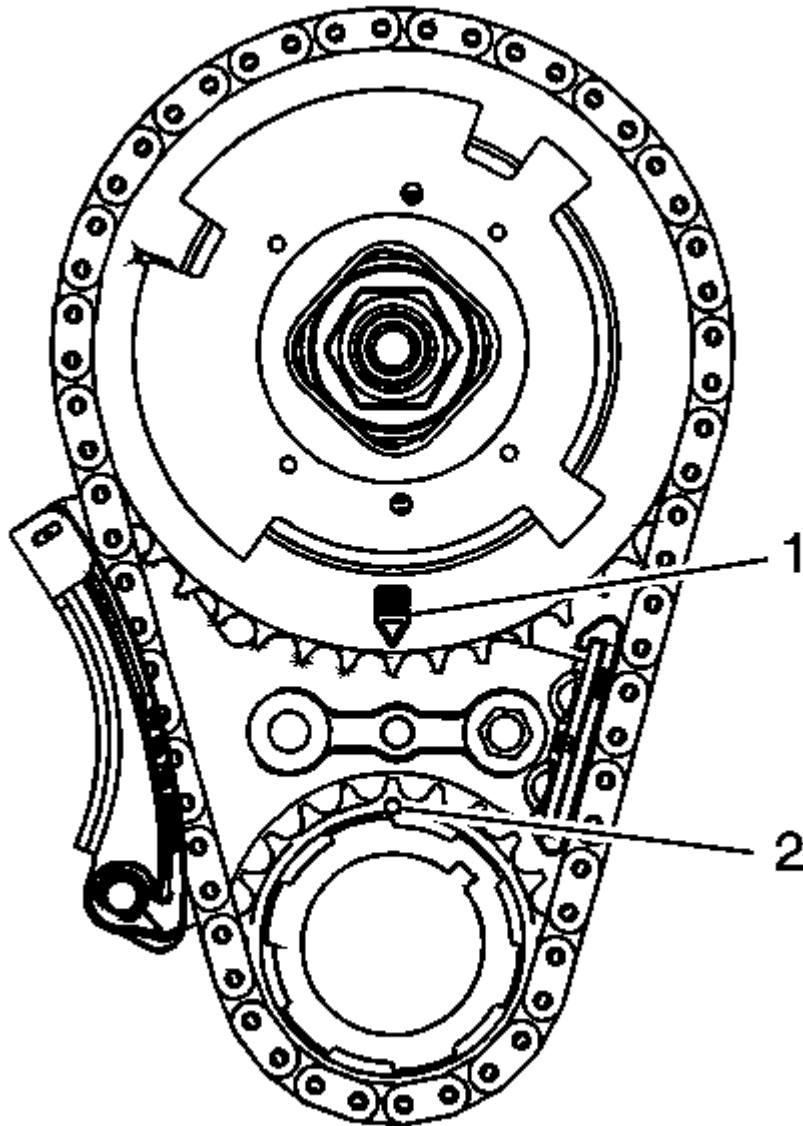


Fig. 26: View Of CMP Actuator Alignment Mark & Crankshaft Sprocket Alignment Mark

Courtesy of GENERAL MOTORS CORP.

4. Rotate the crankshaft sprocket until the camshaft position (CMP) actuator alignment mark (1) and the crankshaft sprocket alignment mark (2) are aligned.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

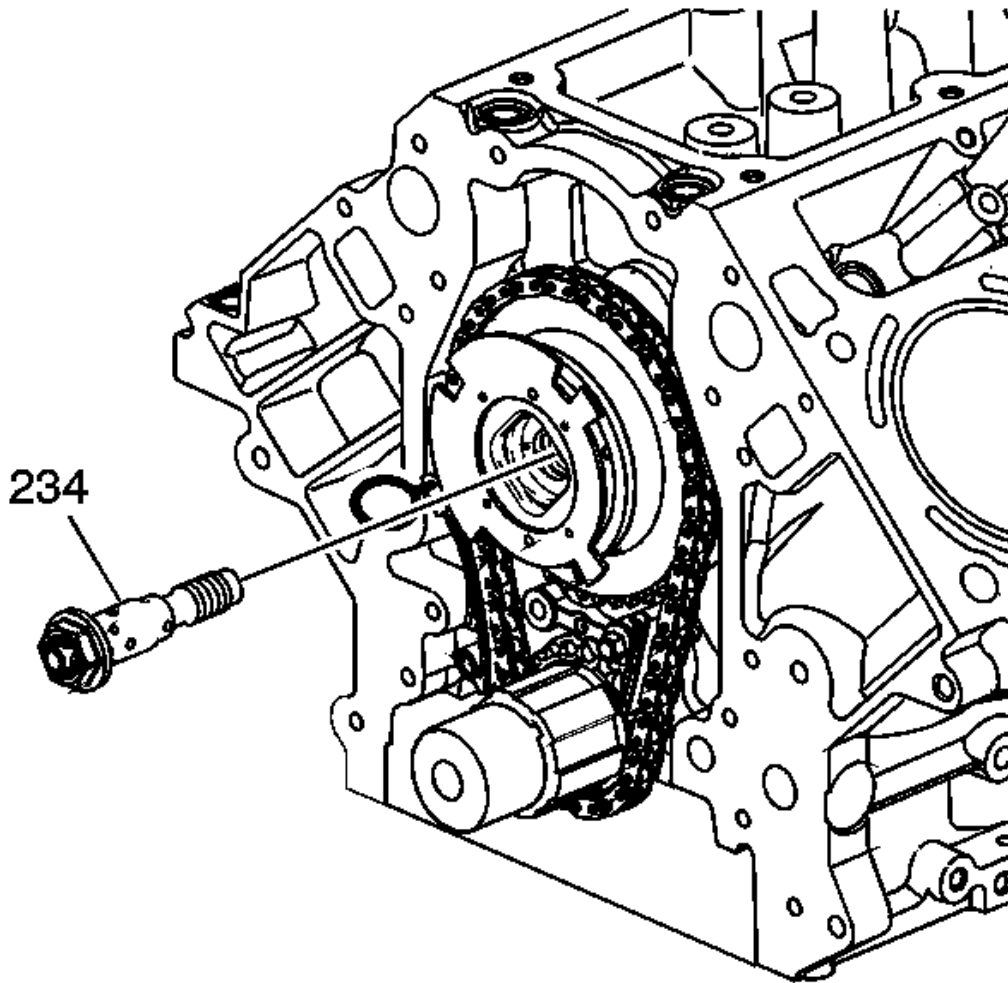


Fig. 27: View Of CMP Actuator Solenoid Valve
Courtesy of GENERAL MOTORS CORP.

5. Remove and discard the CMP actuator solenoid valve (234).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

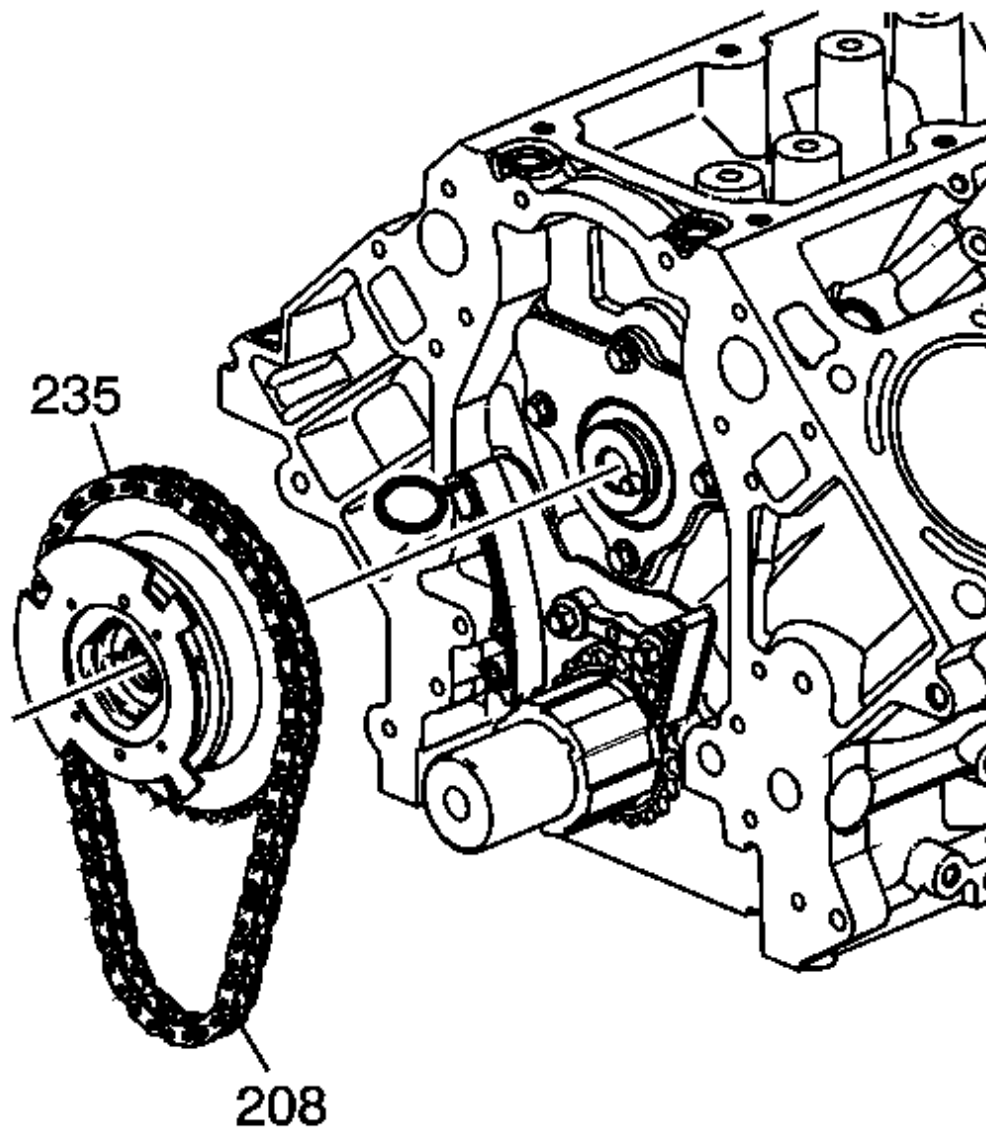


Fig. 28: View Of CMP Actuator & Timing Chain
Courtesy of GENERAL MOTORS CORP.

NOTE: Do not turn the crankshaft assembly after the timing chain has been removed in order to prevent damage to the piston assemblies or the valves.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

6. Remove the CMP actuator (235) and timing chain (208).

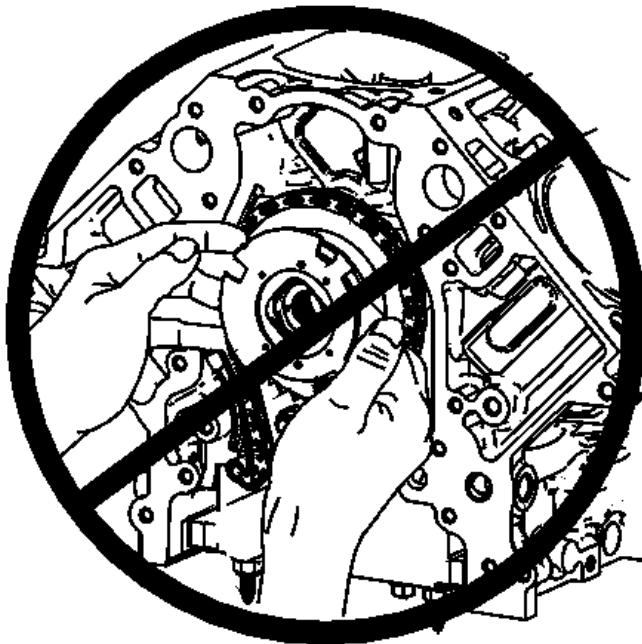
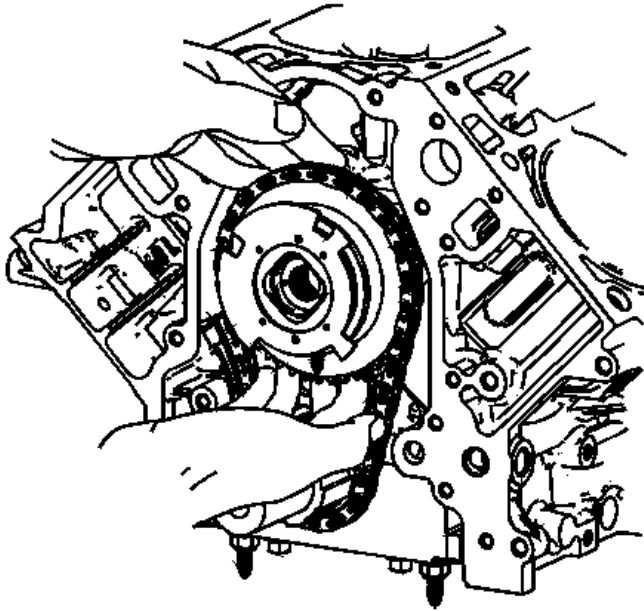


Fig. 29: View Of Proper CMP Actuator Removal

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Courtesy of GENERAL MOTORS CORP.

CAUTION: Do not push or pull on the reluctor wheel of the camshaft position (CMP) actuator during removal or installation. The reluctor wheel is retained to the front of the CMP actuator by 3 roll pins. Pushing or pulling on the wheel may dislodge the wheel from the front of the actuator. The actuator return spring is under tension and may rotate the dislodged reluctor wheel, causing personal injury.

7. Loosen and separate the CMP actuator and timing chain from the camshaft. Position your fingers behind the actuator sprocket and pull the actuator away from the front of the camshaft. Never pull on the reluctor wheel when attempting to remove the actuator.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

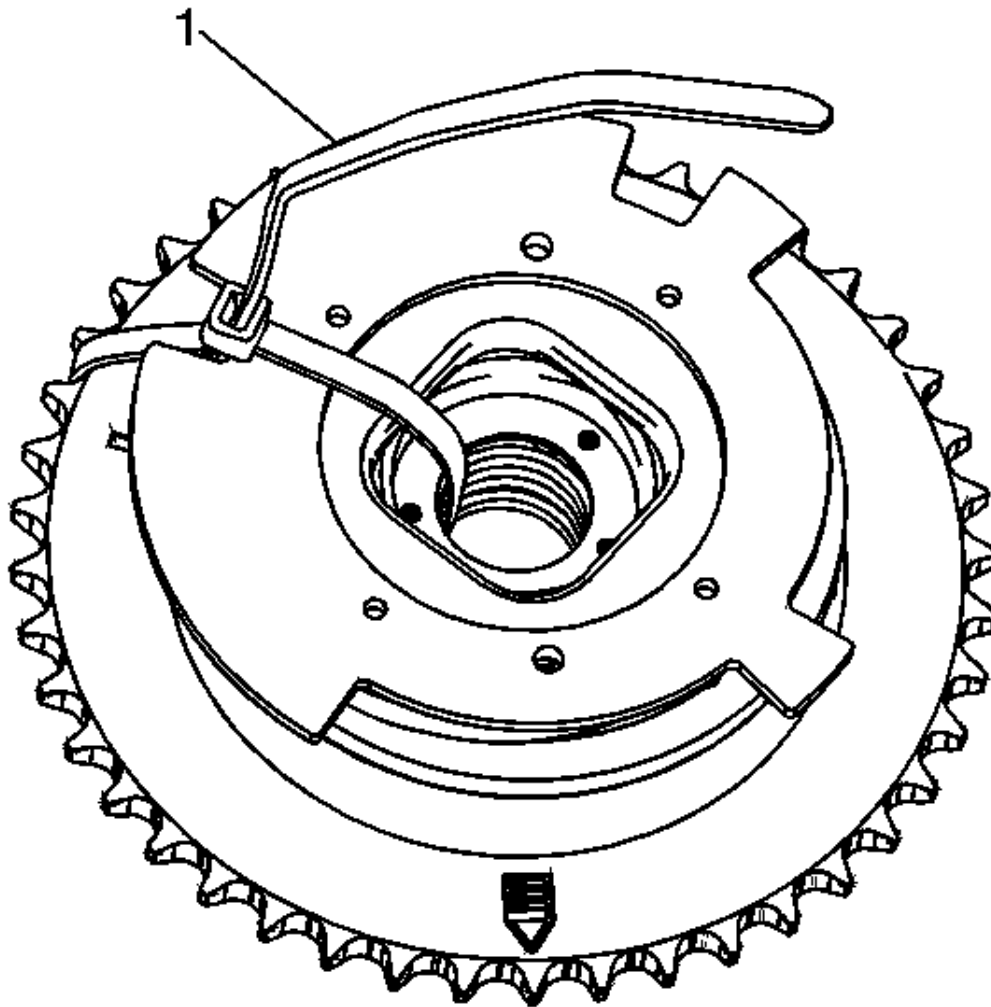


Fig. 30: View Of Tie Strap Through Center Of Actuator
Courtesy of GENERAL MOTORS CORP.

8. Insert and secure a tie strap (1) through the center of the actuator and over the retractor wheel.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

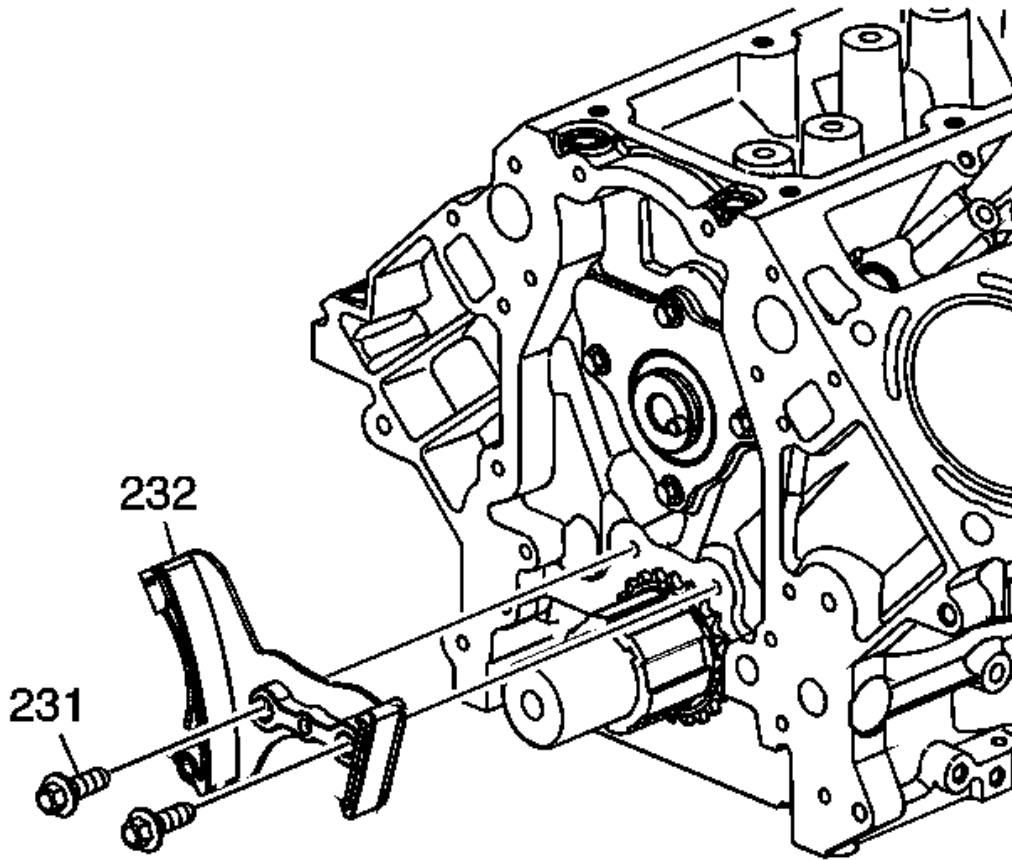


Fig. 31: View Of Timing Chain Tensioner & Bolts
Courtesy of GENERAL MOTORS CORP.

9. Remove the timing chain tension bolts (231) and tensioner (232).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

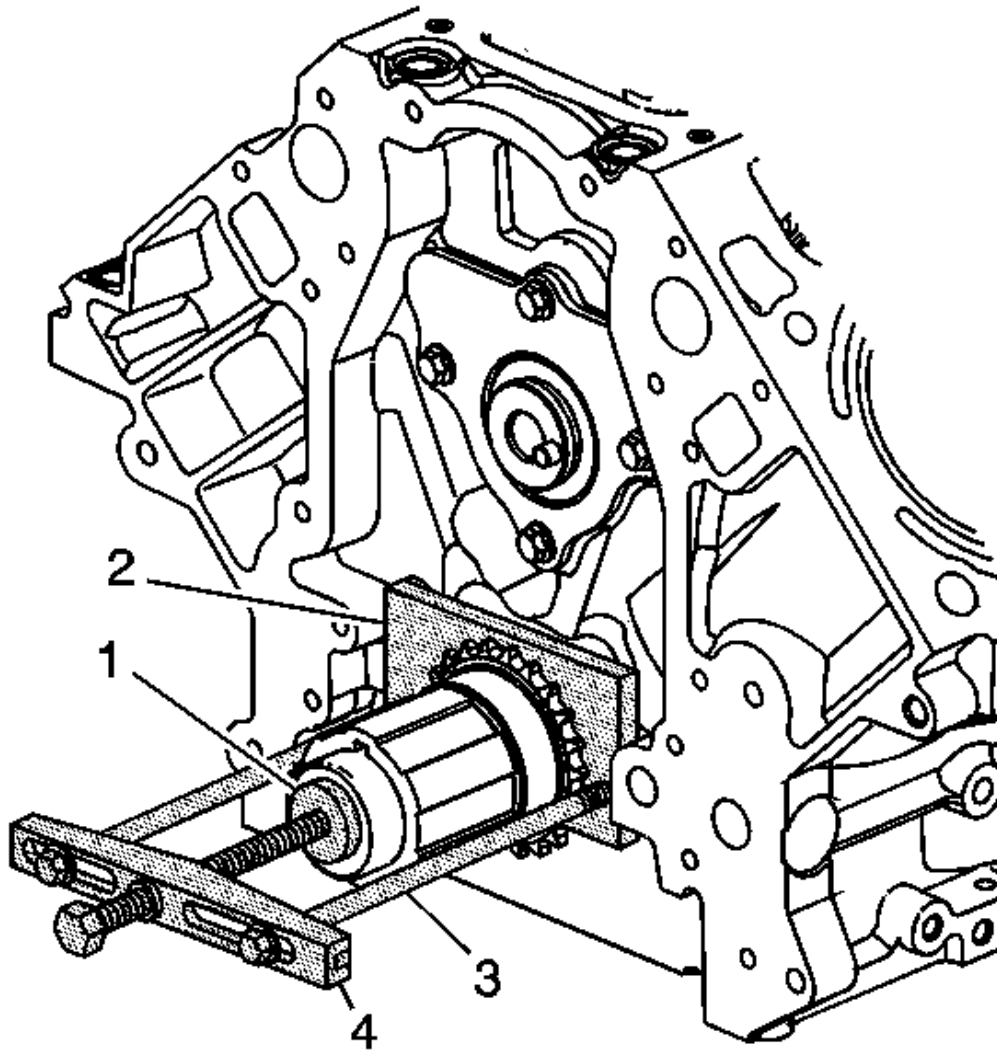


Fig. 32: View Of Crankshaft Sprocket Special Tools
Courtesy of GENERAL MOTORS CORP.

10. Using the **J 41816-2** (1), the **J 41558** (2), bolts (3) and the **J 8433** (4) in order to remove the crankshaft sprocket. See **Special Tools** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

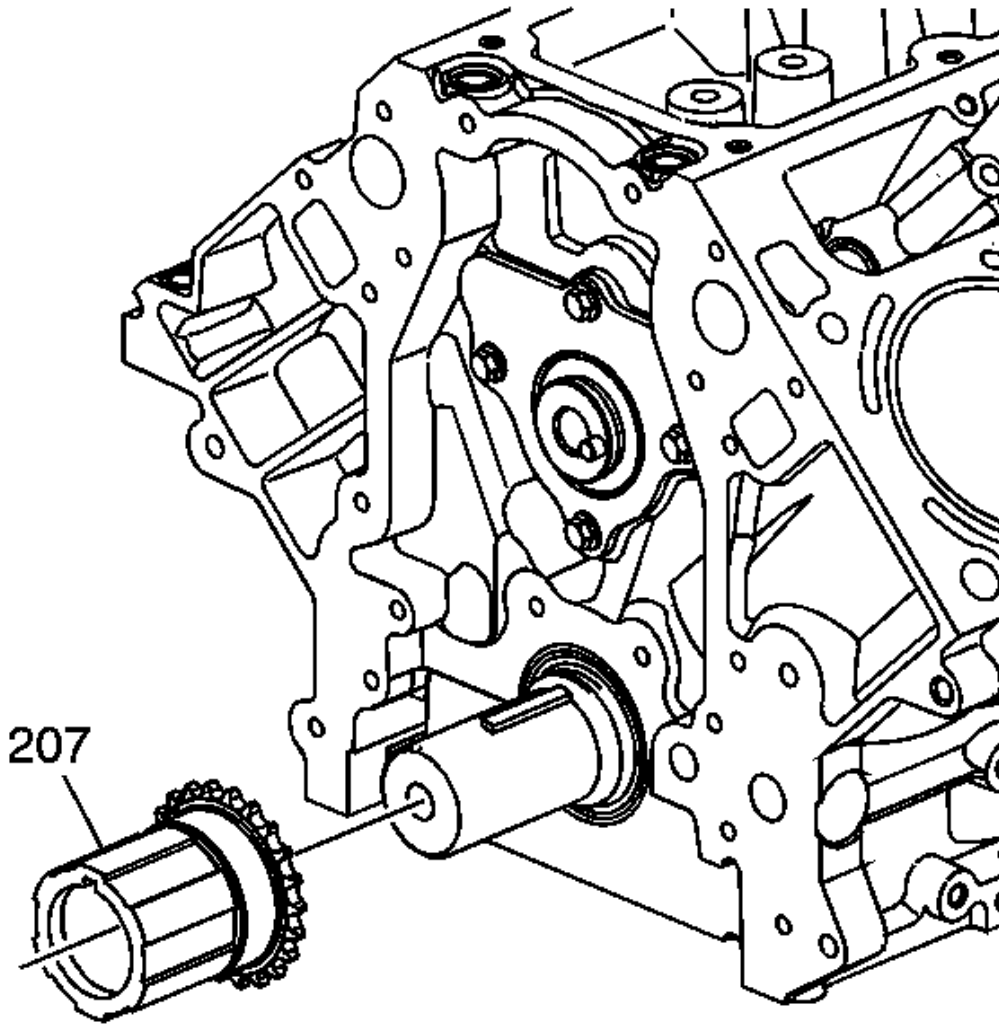


Fig. 33: View Of Crankshaft Sprocket
Courtesy of GENERAL MOTORS CORP.

11. Remove the crankshaft sprocket (207).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

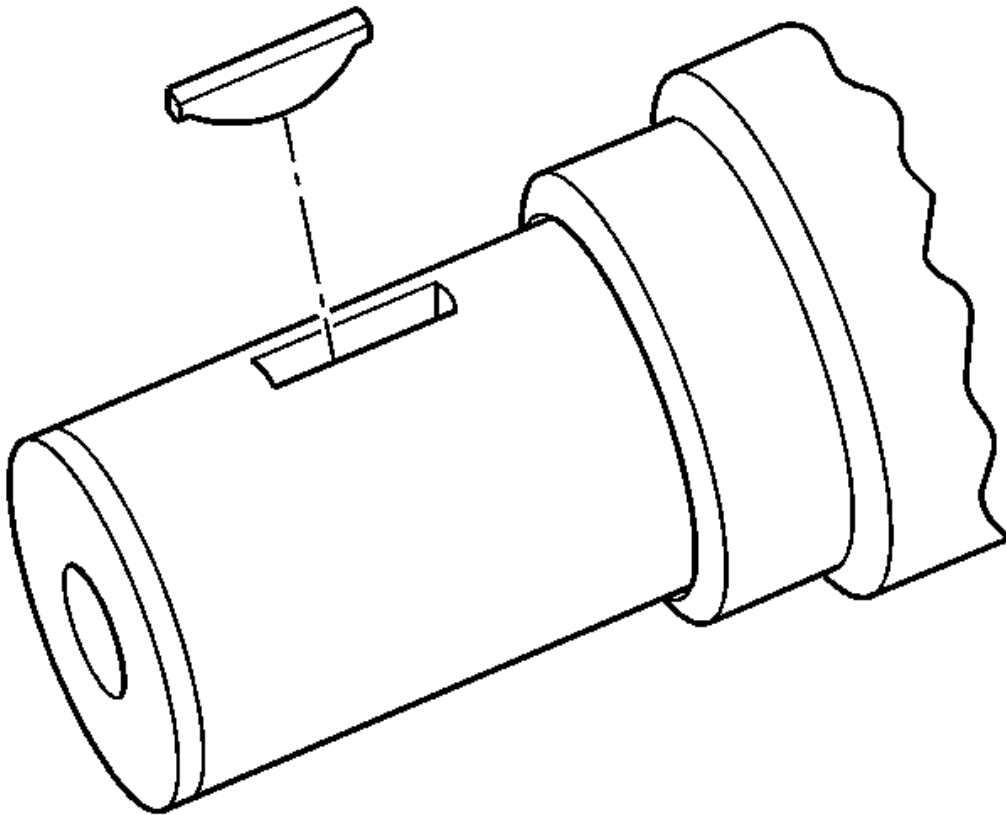


Fig. 34: View Of Crankshaft Key & Keyway
Courtesy of GENERAL MOTORS CORP.

12. Remove the crankshaft sprocket key, if required.

Installation Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

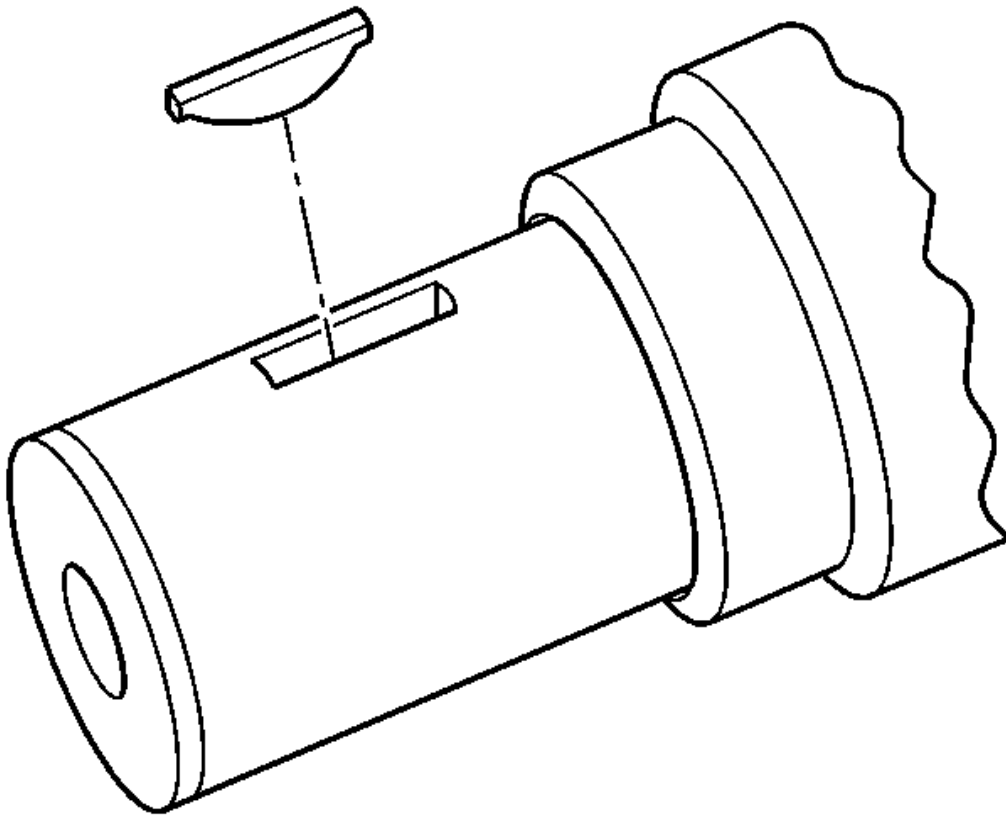


Fig. 35: View Of Crankshaft Key & Keyway
Courtesy of GENERAL MOTORS CORP.

1. Install the key into the crankshaft keyway, if previously removed.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

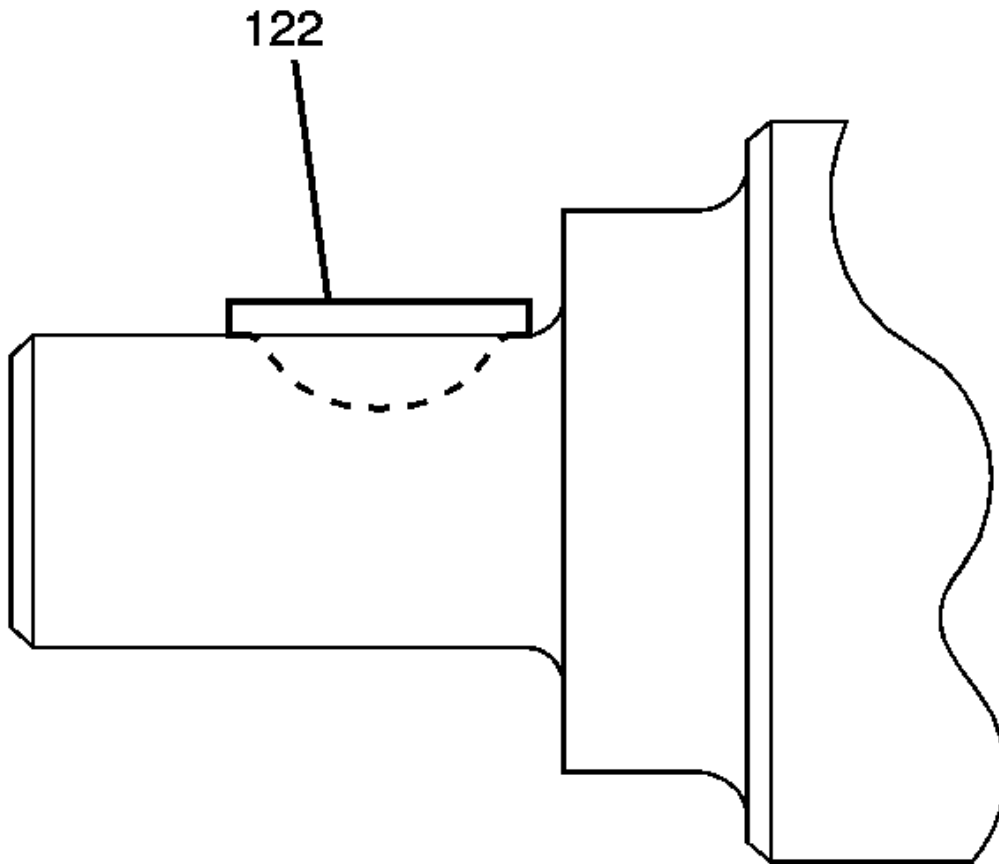


Fig. 36: View Of Installed Crankshaft Key
Courtesy of GENERAL MOTORS CORP.

2. Tap the key (122) into the keyway until both ends of the key bottom onto the crankshaft.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

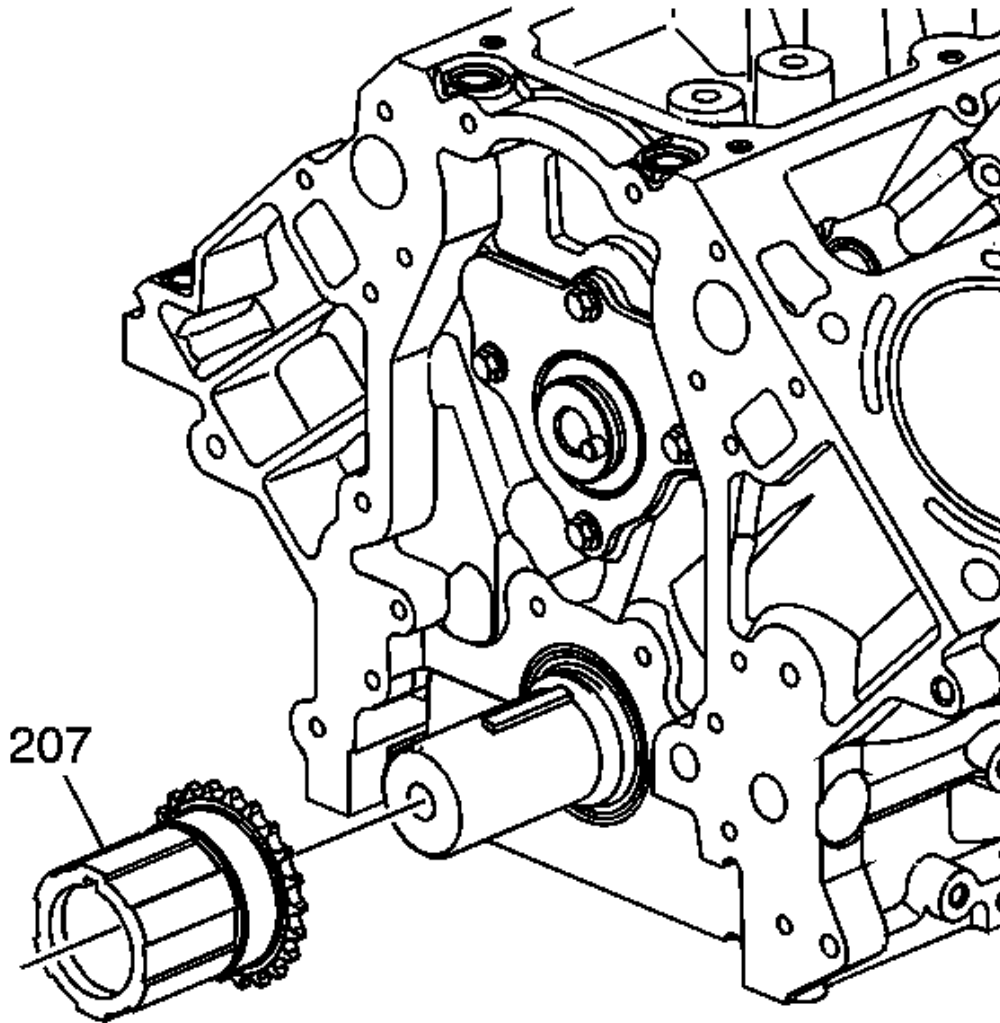


Fig. 37: View Of Crankshaft Sprocket
Courtesy of GENERAL MOTORS CORP.

3. Install the crankshaft sprocket (207) onto the front of the crankshaft. Align the crankshaft key with the crankshaft sprocket keyway.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

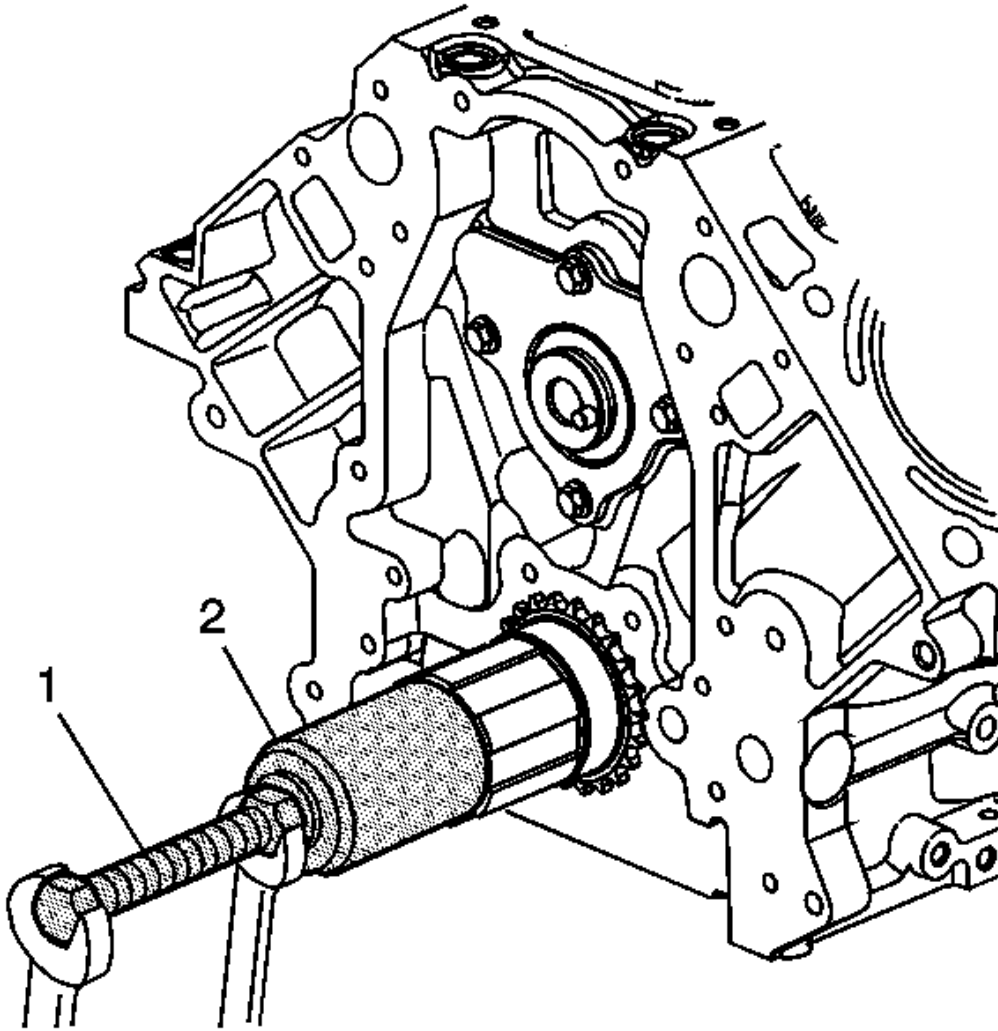


Fig. 38: View Of Crankshaft Sprocket & Installer
Courtesy of GENERAL MOTORS CORP.

4. Use the **J 41478** (1) and the **J 41665** (2) in order to install the crankshaft sprocket. See **Special Tools** . Install the sprocket onto the crankshaft until fully seated against the crankshaft flange.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

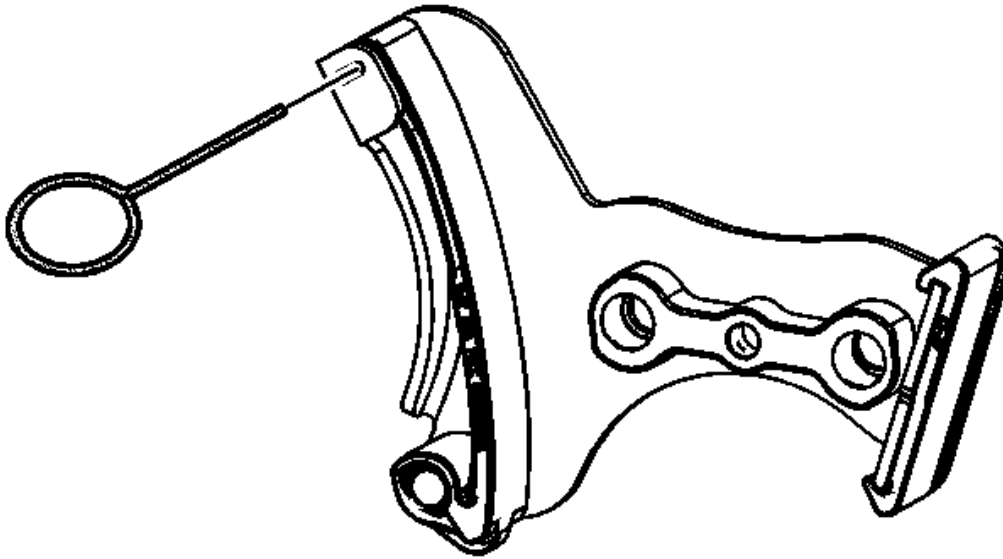


Fig. 39: View Of Compressed Tensioner
Courtesy of GENERAL MOTORS CORP.

5. Compress the timing chain tensioner guide and install the **EN 46330** . See **Special Tools** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

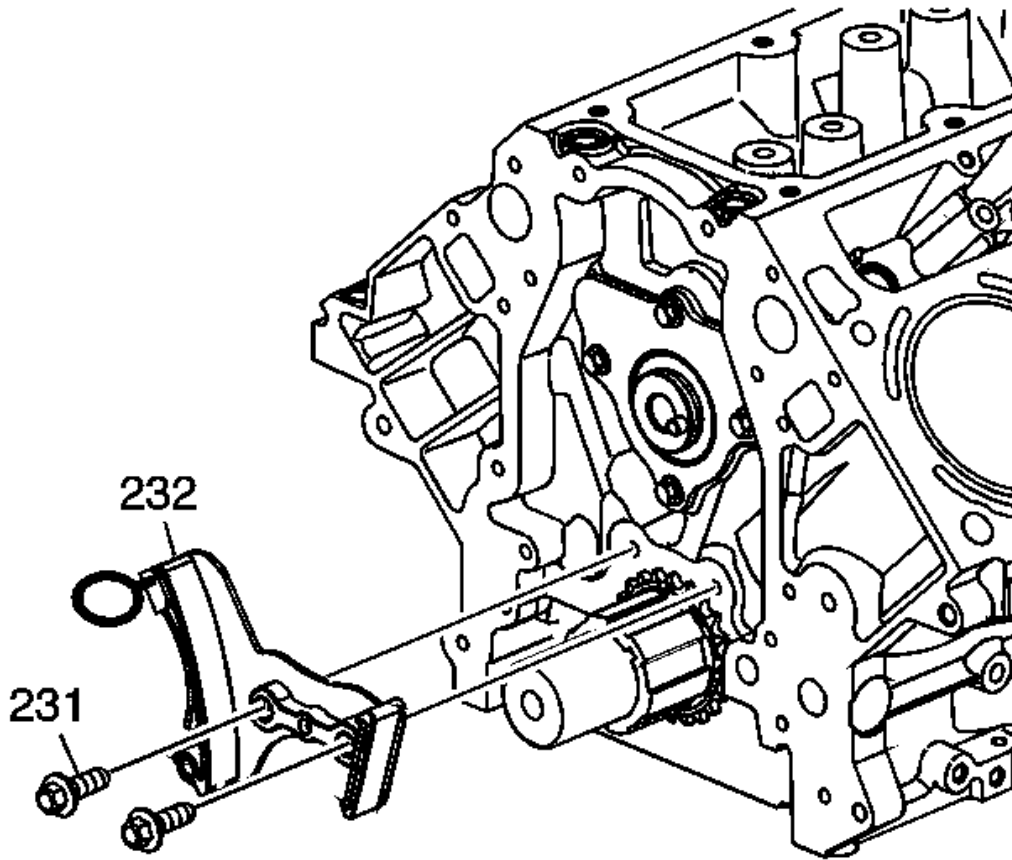


Fig. 40: View Of Timing Chain Tensioner
Courtesy of GENERAL MOTORS CORP.

6. Install the timing chain tensioner (232) and bolts (231).

Tighten: Tighten the bolts to 25 N.m (18 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

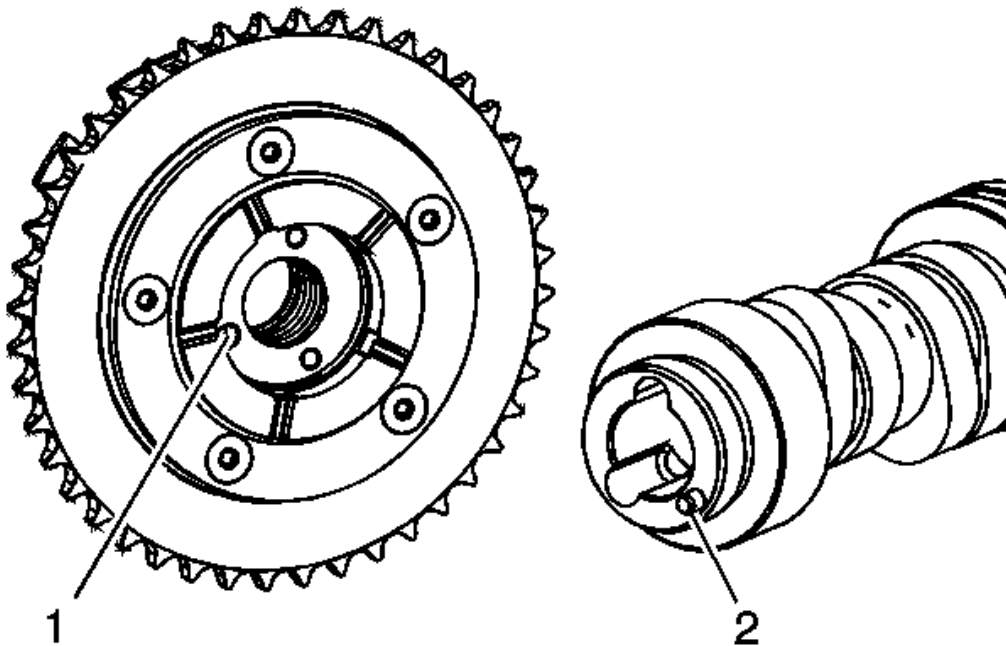


Fig. 41: Identifying Alignment Hole & Locating Pin
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- Properly locate the CMP actuator onto the locating pin of the camshaft.
- The sprocket teeth and timing chain teeth must mesh.
- The camshaft and the crankshaft sprocket alignment **MUST** be aligned properly.
- Do not use the CMP solenoid valve again. Install a **NEW** CMP valve during assembly.

7. Identify the alignment hole (1) in the rear face of the CMP actuator and the locating pin (2) on the front face of the camshaft.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

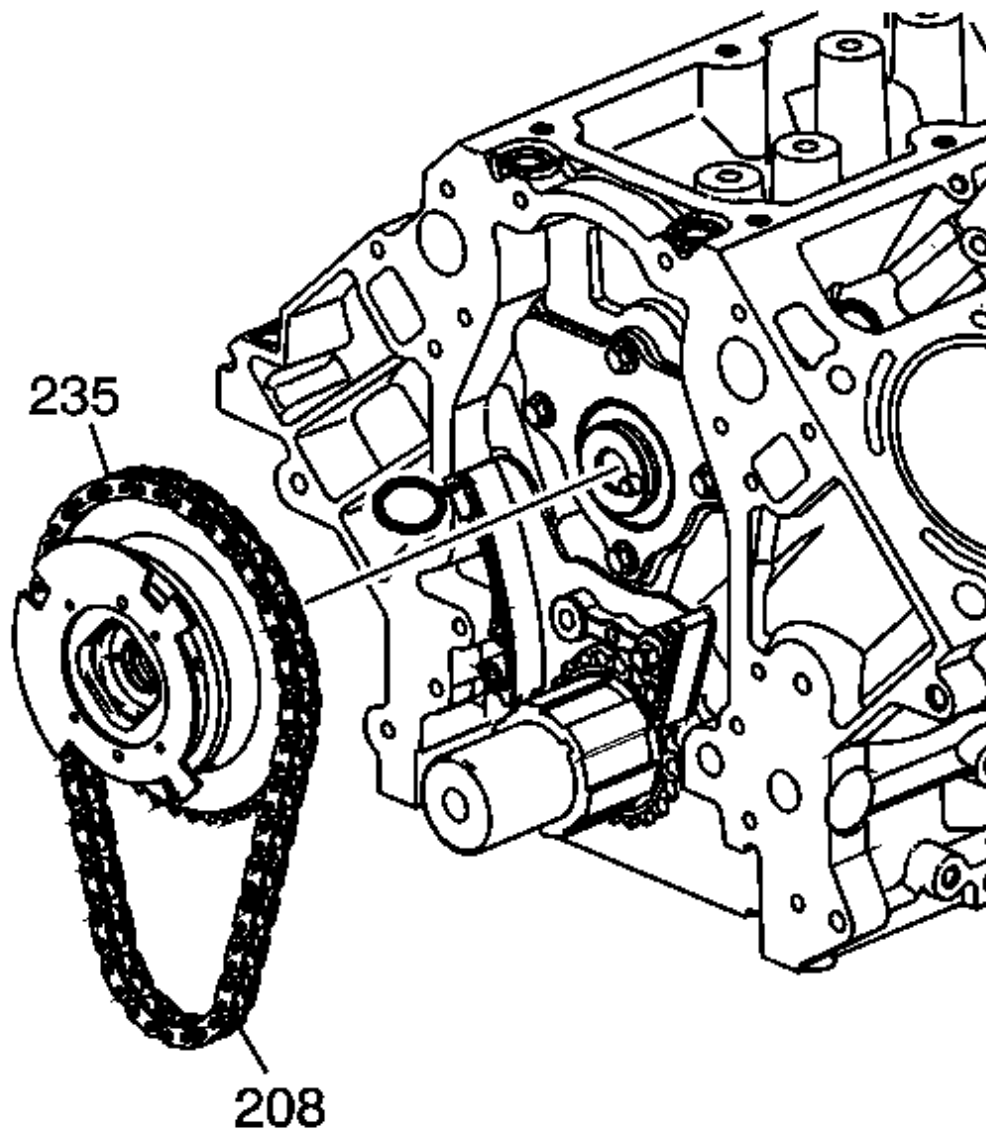


Fig. 42: View Of CMP Actuator & Timing Chain
Courtesy of GENERAL MOTORS CORP.

8. Align the CMP actuator so the timing mark is in the 6 o'clock position.
9. Install the CMP actuator (235) and timing chain (208). Align the hole in the face of the CMP actuator with the locating pin on the front face of the camshaft.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

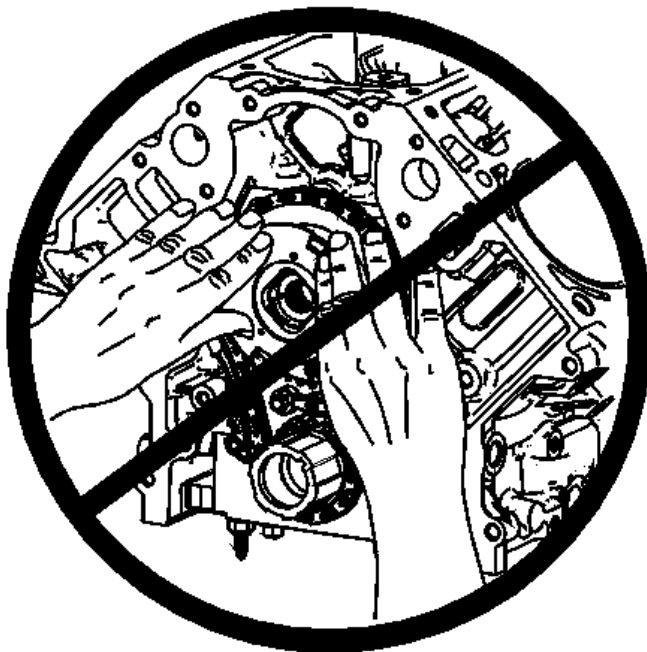
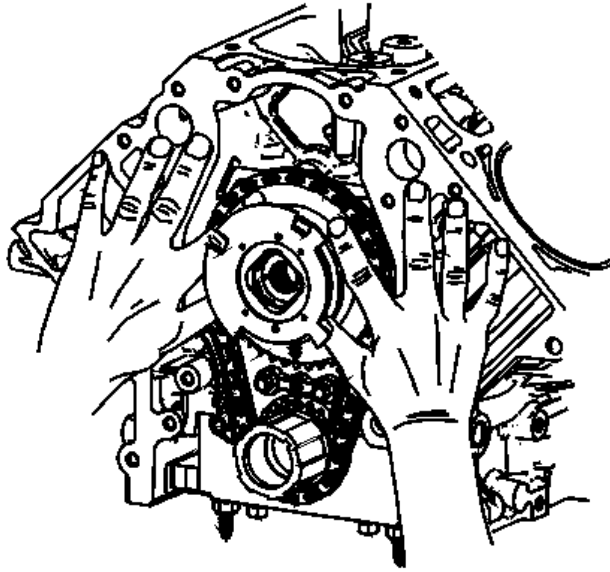


Fig. 43: Proper Installation Of CMP Actuator
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

CAUTION: Do not push or pull on the reluctor wheel of the camshaft position (CMP) actuator during removal or installation. The reluctor wheel is retained to the front of the CMP actuator by 3 roll pins. Pushing or pulling on the wheel may dislodge the wheel from the front of the actuator. The actuator return spring is under tension and may rotate the dislodged reluctor wheel, causing personal injury.

10. Use care to install the actuator completely onto the front of the camshaft. Position your fingers onto the face of the actuator sprocket and push the actuator onto the front of the camshaft. Never push on the reluctor wheel when attempting to install the actuator.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

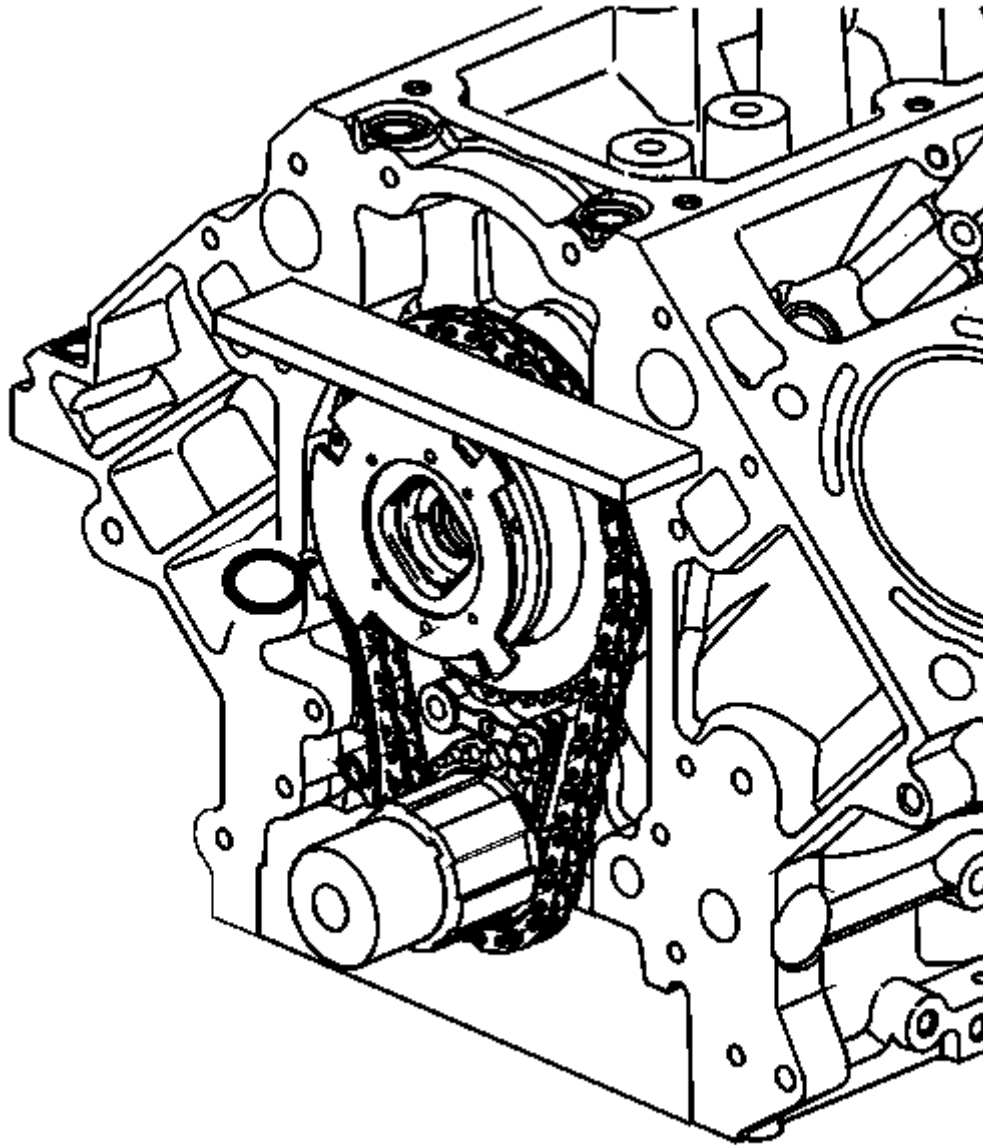


Fig. 44: Inspecting For Proper Installation Of CMP Actuator & Timing Chain
Courtesy of GENERAL MOTORS CORP.

11. Place a straight edge across the front face of the engine block and inspect for proper installation of the CMP actuator and timing chain. With the CMP actuator properly and completely installed onto the front of the camshaft, the timing chain will not protrude

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

beyond the front face of the engine block.

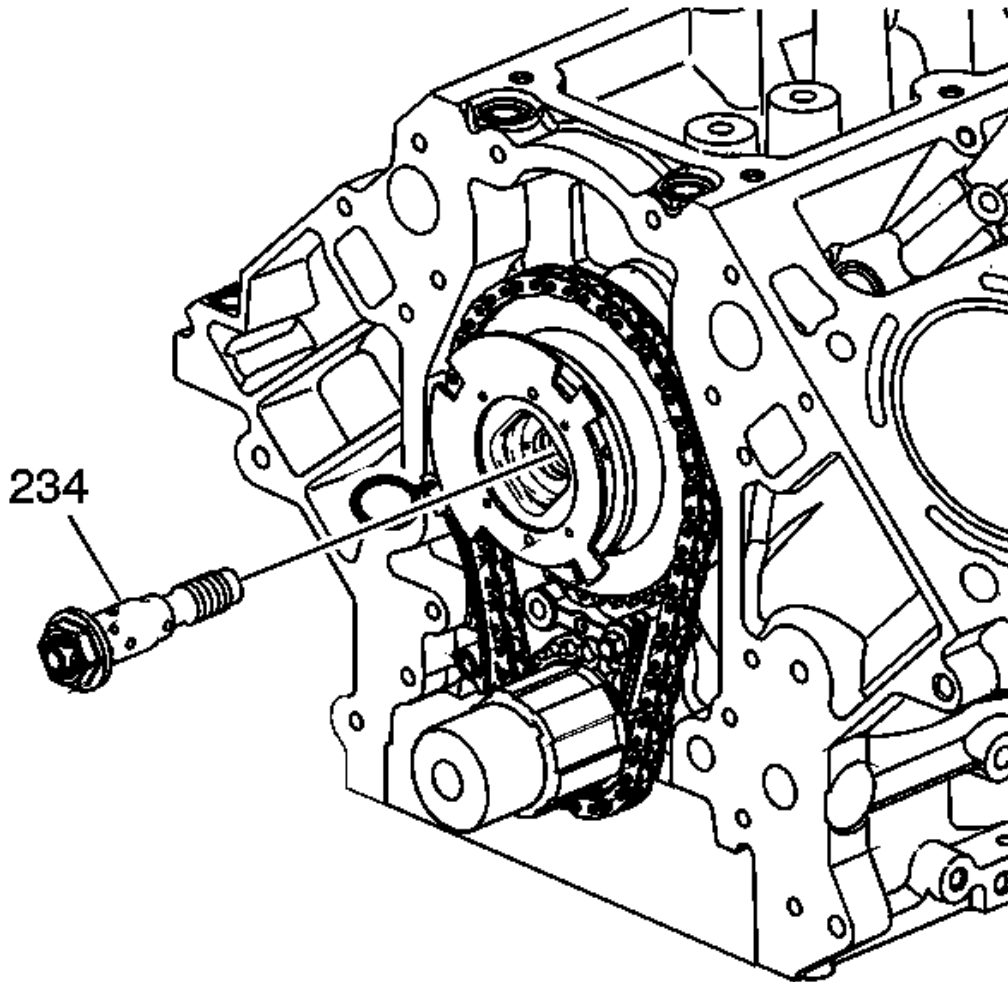


Fig. 45: View Of CMP Actuator Solenoid Valve
Courtesy of GENERAL MOTORS CORP.

12. Install a NEW CMP actuator valve (234). With the CMP actuator properly positioned onto the camshaft, the CMP actuator solenoid valve can be threaded completely into the camshaft using light hand pressure. Tighten by hand until snug.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

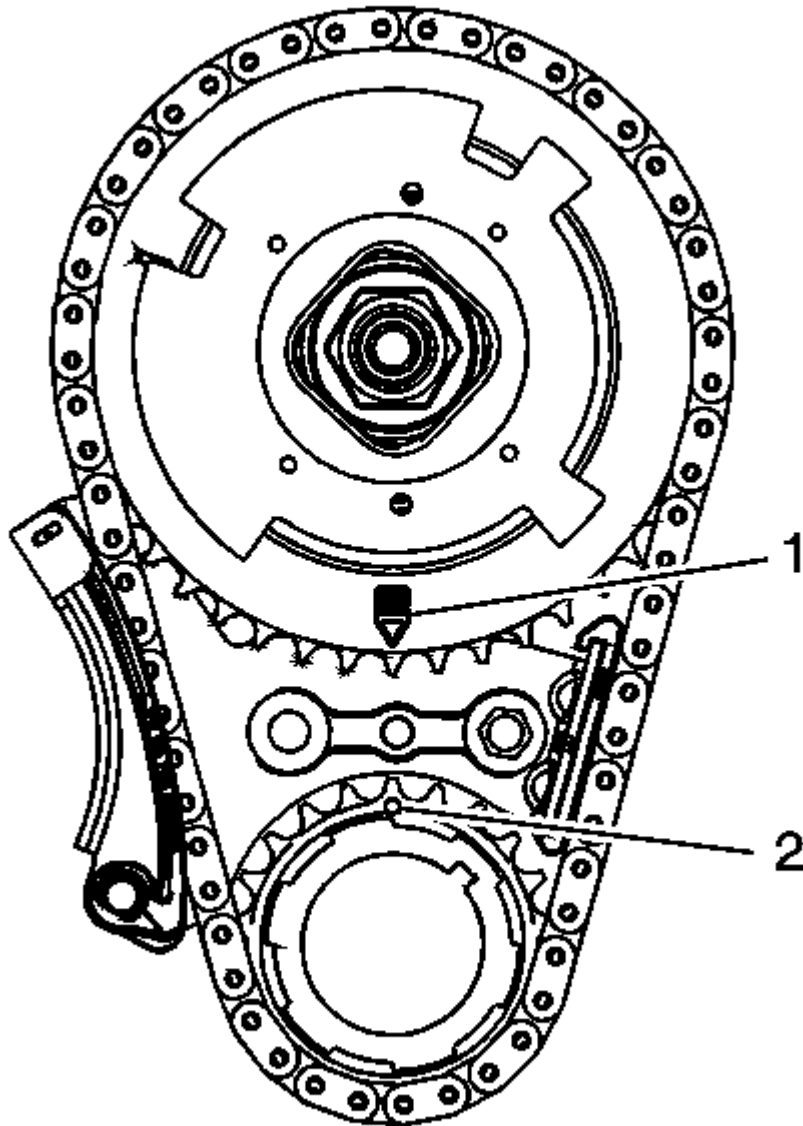


Fig. 46: View Of CMP Actuator Alignment Mark & Crankshaft Sprocket Alignment Mark

Courtesy of GENERAL MOTORS CORP.

13. Inspect the sprockets for proper alignment. The mark on the CMP (1) actuator sprocket should be located in the 6 o'clock position and the mark on the crankshaft sprocket (2)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

should be located in the 12 o'clock position.

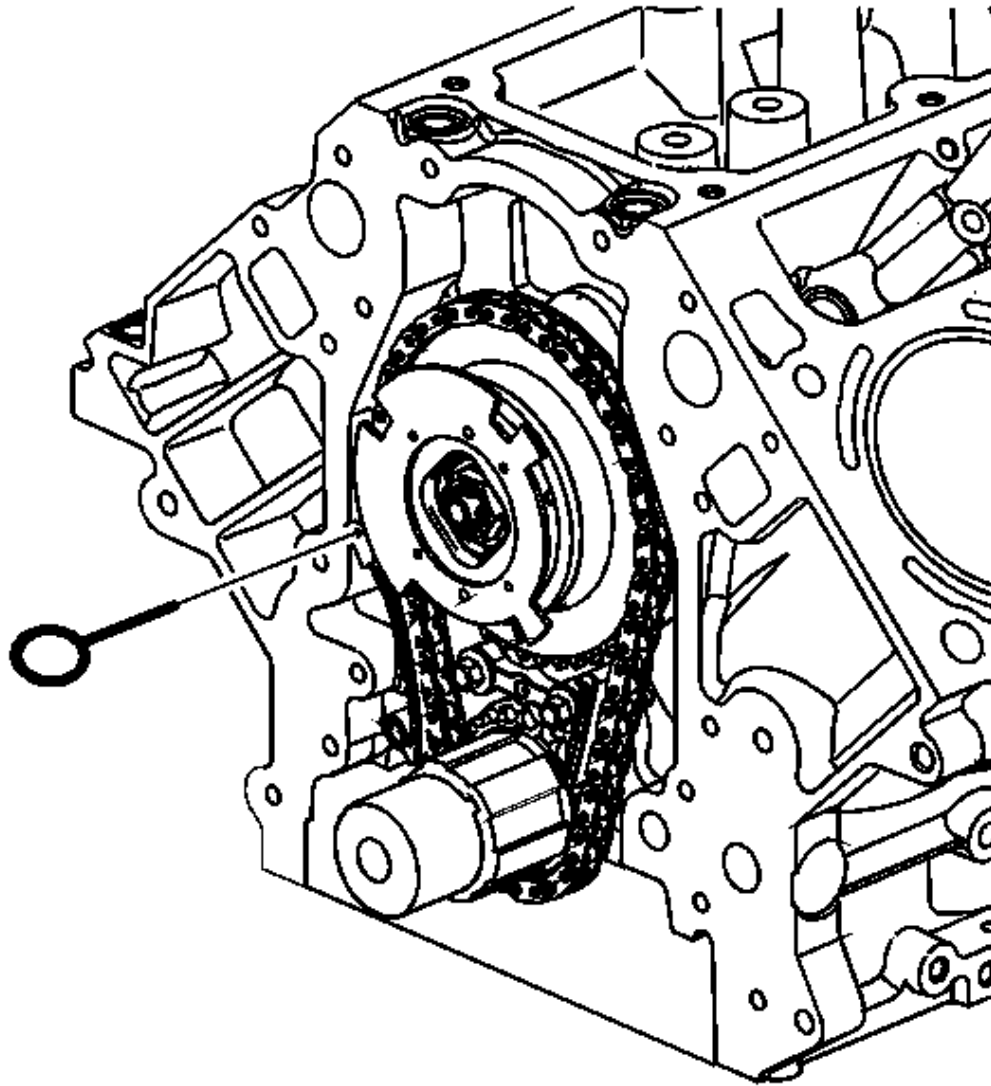


Fig. 47: View Of Special Tool EN 46330
Courtesy of GENERAL MOTORS CORP.

14. Remove the EN 46330 . See Special Tools .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

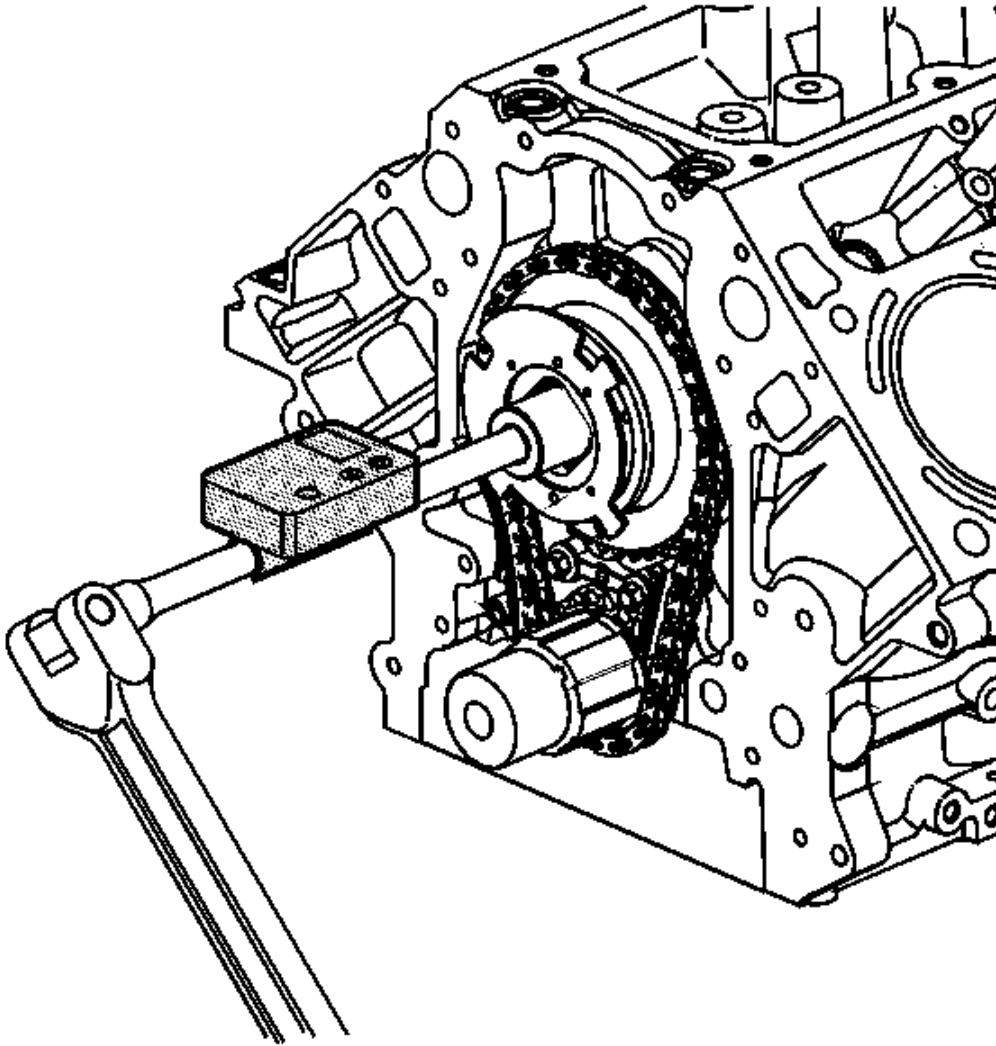


Fig. 48: Tightening The CMP Actuator Solenoid Valve
Courtesy of GENERAL MOTORS CORP.

15. Tighten the CMP actuator solenoid valve.

Tighten:

1. Tighten the bolt a first pass to 65 N.m (48 lb ft).
2. Tighten the bolt a final pass an additional 90 degrees using **J 45059** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

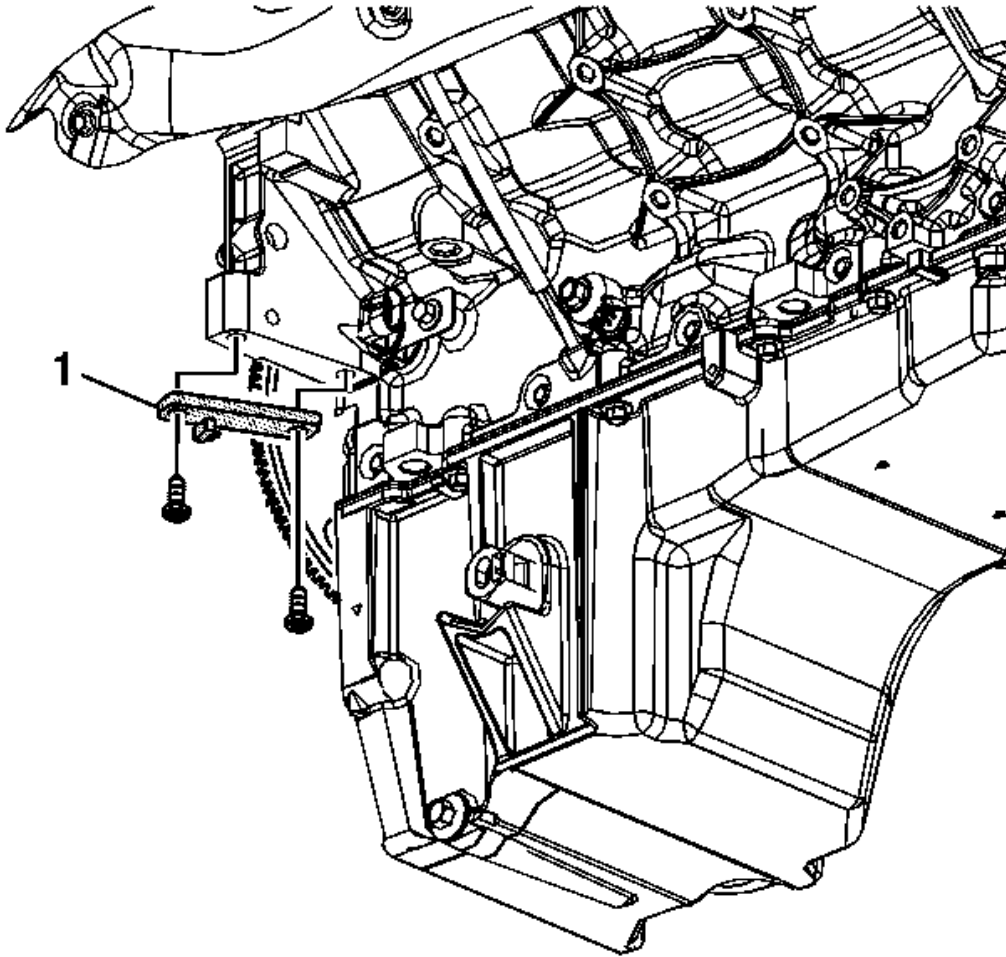


Fig. 49: View Of Special Tool & Bolts
Courtesy of GENERAL MOTORS CORP.

16. Remove the **J 42386-A (1)** and bolts. See **Special Tools** .
17. Install the starter motor. Refer to **Starter Motor Replacement (4.3L)** or **Starter Motor Replacement (4.8L, 5.3L, 6.0L, and 6.2L)** or **Starter Motor Replacement (6.6L)** .
18. Install the oil pump. Refer to **Oil Pump, Screen, and Crankshaft Oil Deflector Replacement (LY6, L76 and L92)** or **Oil Pump, Screen, and Crankshaft Oil Deflector Replacement (LH6, LMG, LY2 and LY5)**.

TIMING CHAIN AND SPROCKET REPLACEMENT (LH6, LMG, LY2 AND LY5)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Tools Required

- **EN 46330** Timing Chain Tensioner Retaining Pin. See **Special Tools** .
- **J 8433** Puller Bar. See **Special Tools** .
- **J 41478** Crankshaft Front Oil Seal Installer. See **Special Tools** .
- **J 41558** Crankshaft Sprocket Remover. See **Special Tools** .
- **J 41665** Crankshaft Balancer and Sprocket Installer. See **Special Tools** .
- **J 41816-2** Crankshaft End Protector. See **Special Tools** .
- **J 42386-A** Flywheel Holding Tool. See **Special Tools** .
- **J 45059** Angle Meter

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

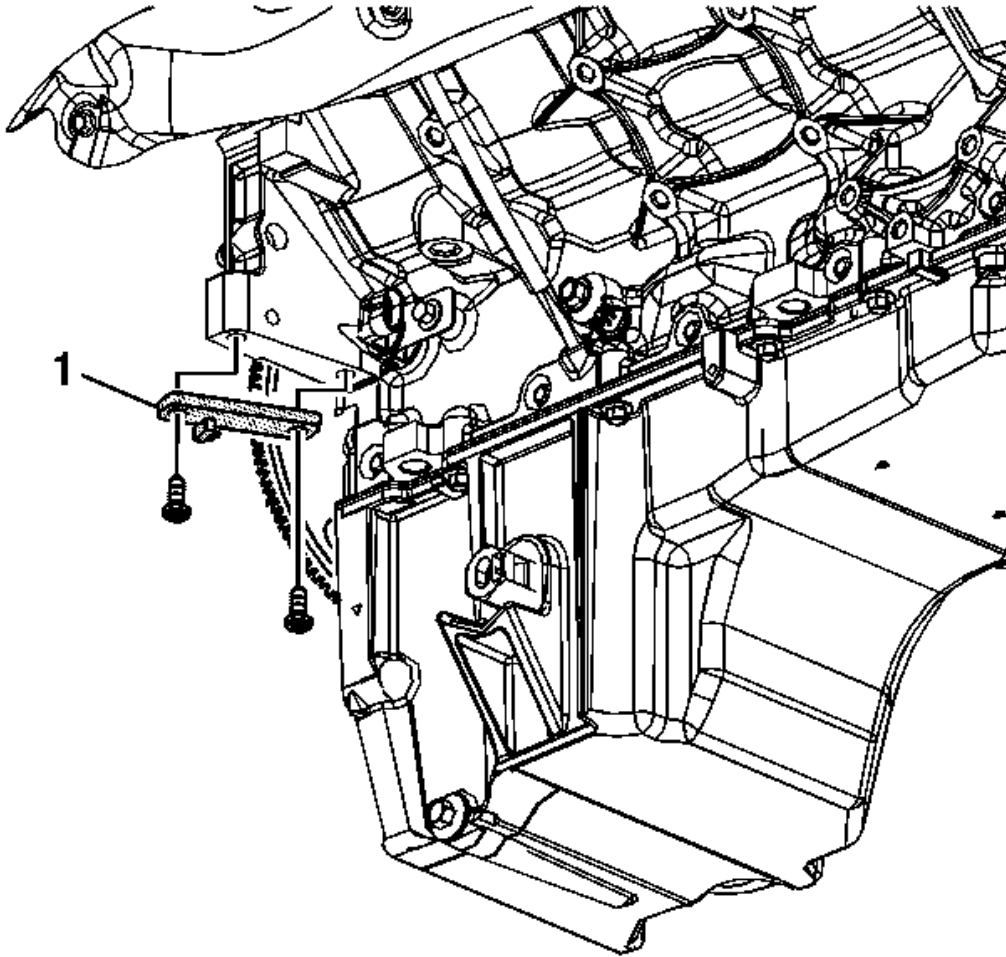


Fig. 50: View Of Special Tool & Bolts
Courtesy of GENERAL MOTORS CORP.

1. Remove the oil pump. Refer to **Oil Pump, Screen, and Crankshaft Oil Deflector Replacement (LY6, L76 and L92)** or **Oil Pump, Screen, and Crankshaft Oil Deflector Replacement (LH6, LMG, LY2 and LY5)**.
2. Remove the starter motor. Refer to **Starter Motor Replacement (4.3L)** or **Starter Motor Replacement (4.8L, 5.3L, 6.0L, and 6.2L)** or **Starter Motor Replacement (6.6L)** .

NOTE: Refer to **Fastener Notice** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

IMPORTANT: Ensure that the teeth of the J 42386-A mesh with the teeth of the engine flywheel. See Special Tools .

3. Install the J 42386-A (1) and bolts. See Special Tools . Use one M10-1.5 x 120 mm and one M10-1.5 x 45 mm bolt for proper tool operation.

Tighten: Tighten the J 42386-A bolts to 50 N. See Special Tools .m (37 lb ft).

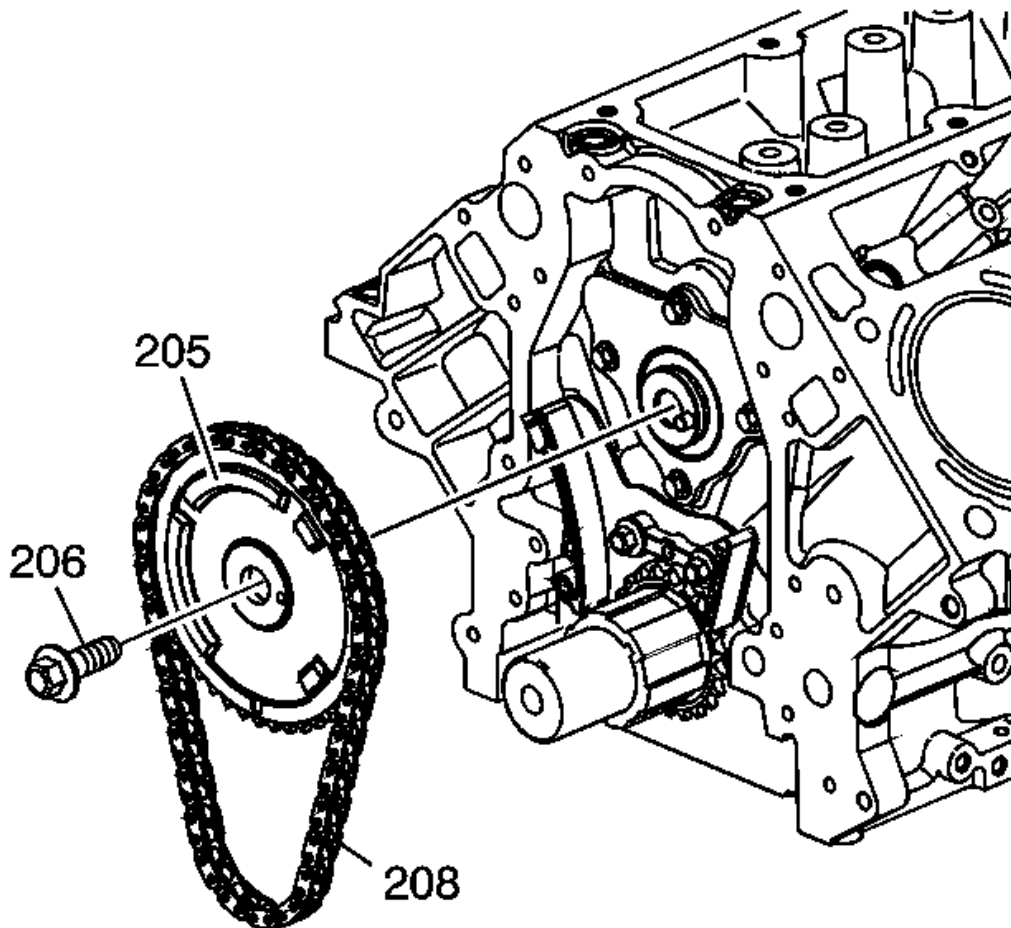


Fig. 51: View Of Camshaft Sprocket, Timing Chain & Sprocket Bolt
Courtesy of GENERAL MOTORS CORP.

NOTE: Do not turn the crankshaft assembly after the timing chain has

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

been removed in order to prevent damage to the piston assemblies or the valves.

4. Rotate the crankshaft until the timing marks on the crankshaft and the camshaft sprockets are aligned.
5. Remove the camshaft sprocket bolt (206).
6. Remove the camshaft sprocket (205) and timing chain (208).

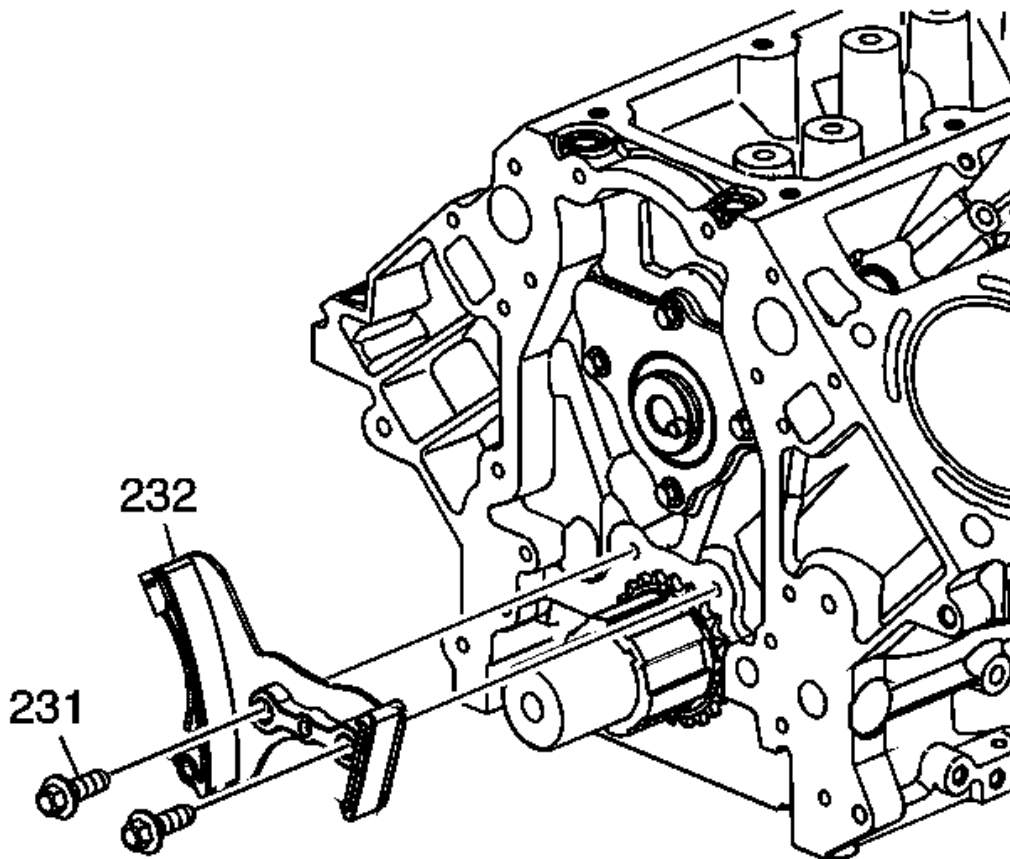


Fig. 52: View Of Timing Chain Tensioner & Bolts
Courtesy of GENERAL MOTORS CORP.

7. Remove the timing chain tension bolts (231) and tensioner (232).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

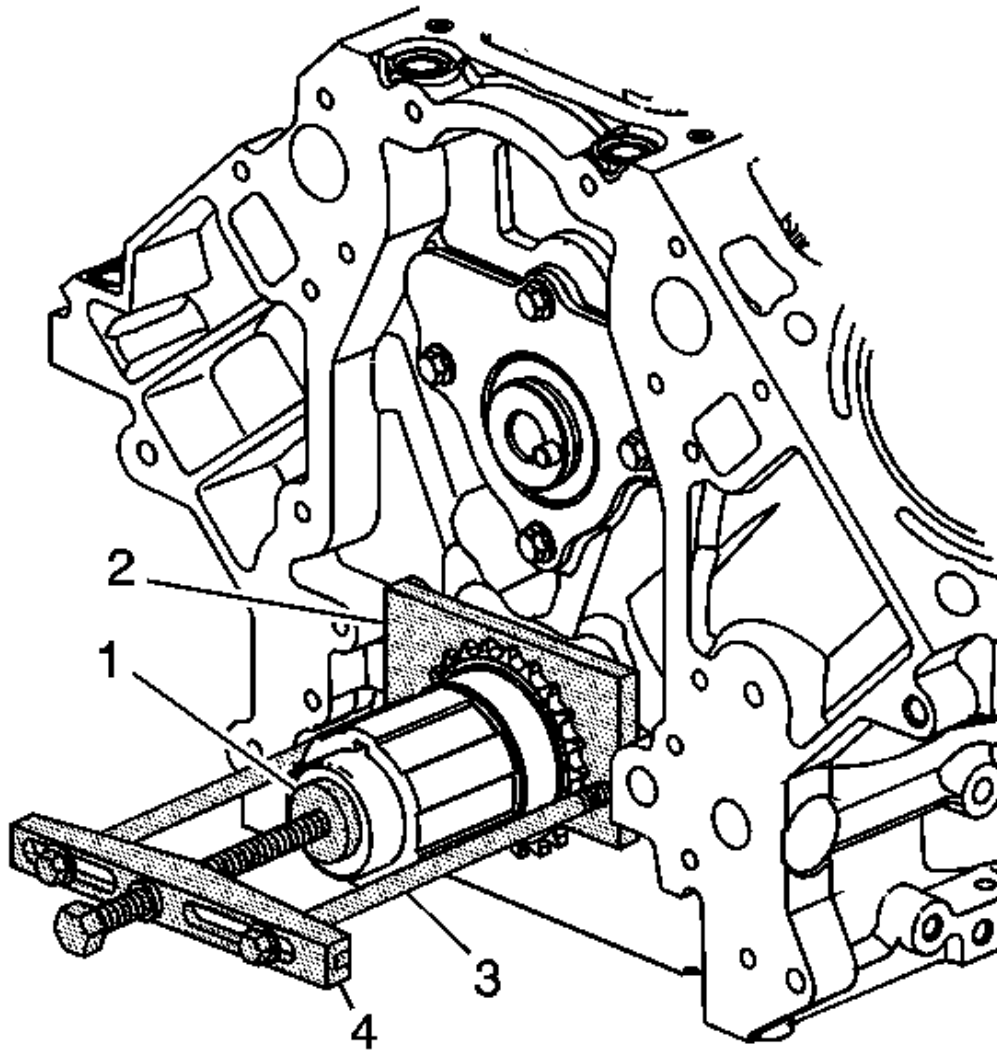


Fig. 53: View Of Crankshaft Sprocket Special Tools
Courtesy of GENERAL MOTORS CORP.

8. Using the **J 41816-2** (1), the **J 41558** (2), bolts (3) and the **J 8433** (4) in order to remove the crankshaft sprocket. See **Special Tools** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

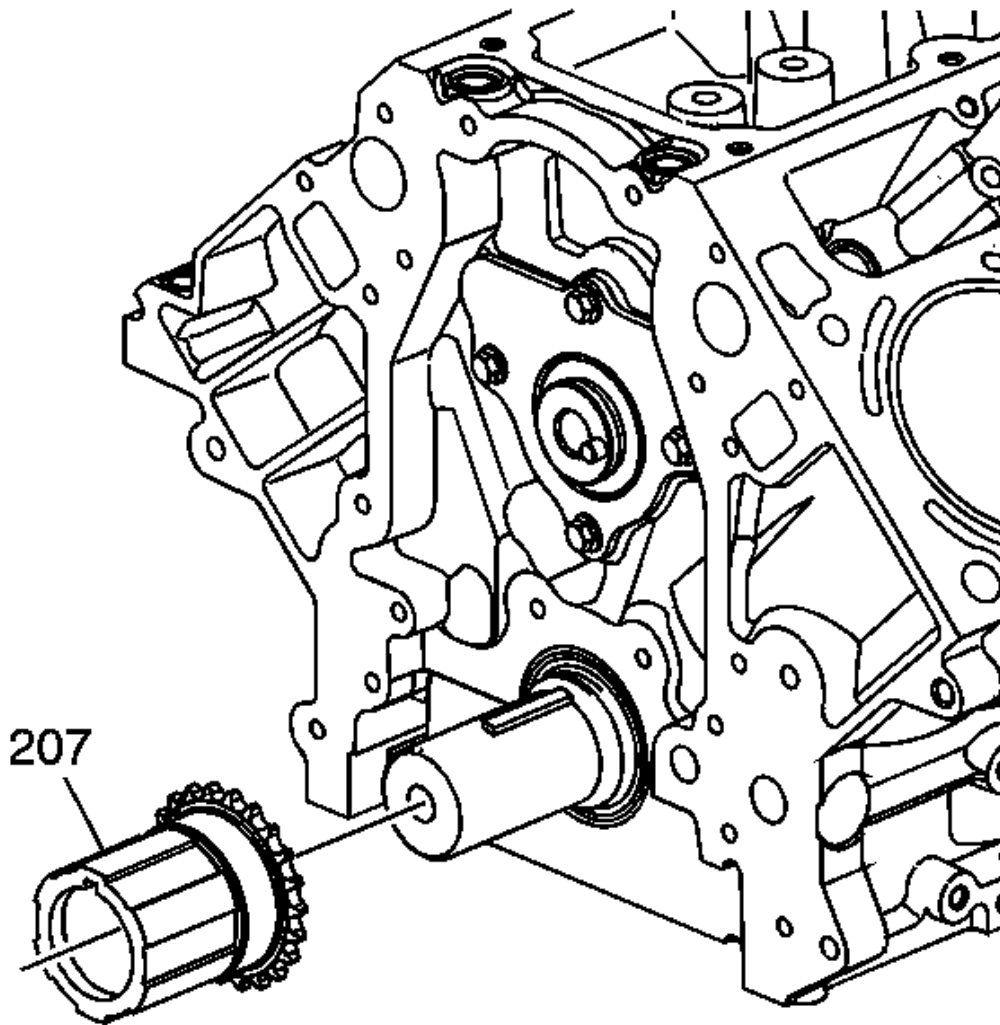


Fig. 54: View Of Crankshaft Sprocket
Courtesy of GENERAL MOTORS CORP.

9. Remove the crankshaft sprocket (207).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

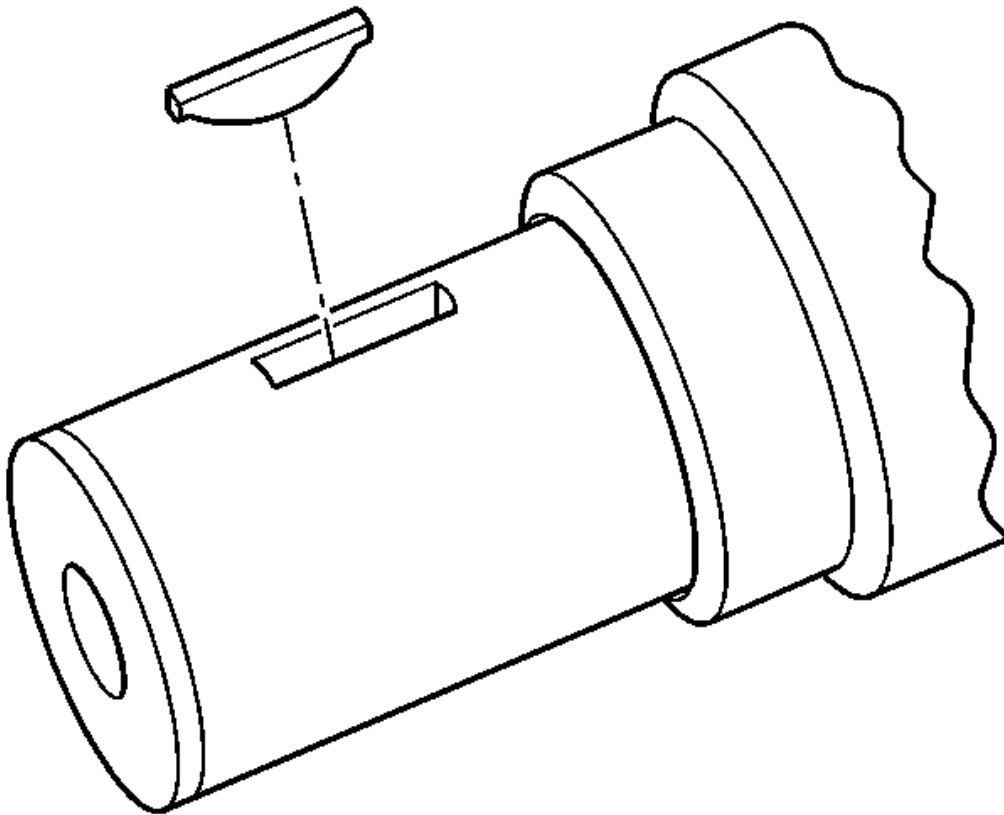


Fig. 55: View Of Crankshaft Key & Keyway
Courtesy of GENERAL MOTORS CORP.

10. Remove the crankshaft sprocket key, if required.

Installation Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

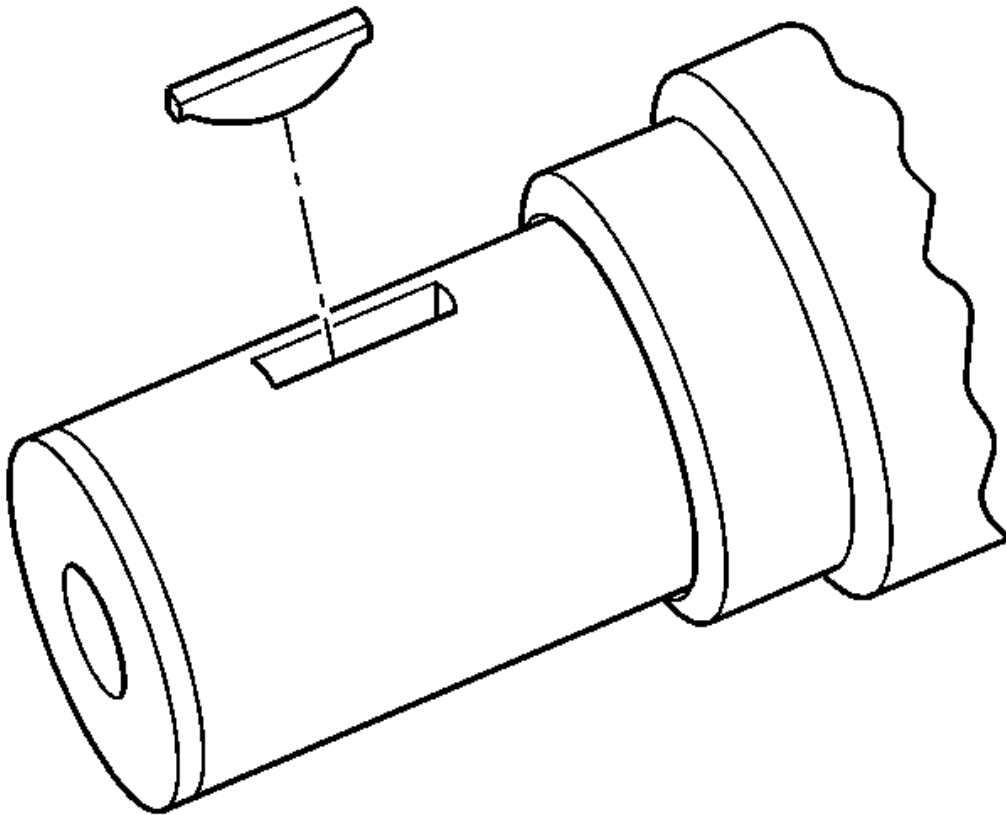


Fig. 56: View Of Crankshaft Key & Keyway
Courtesy of GENERAL MOTORS CORP.

1. Install the key into the crankshaft keyway, if previously removed.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

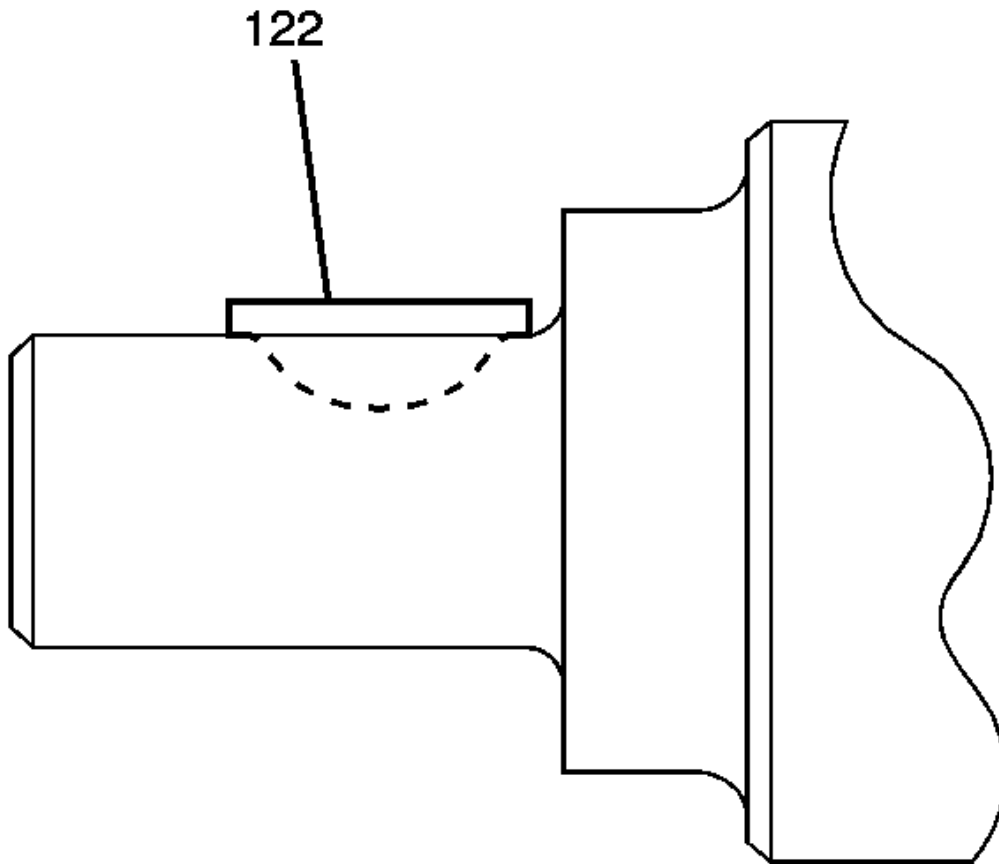


Fig. 57: View Of Installed Crankshaft Key
Courtesy of GENERAL MOTORS CORP.

2. Tap the key (122) into the keyway until both ends of the key bottom onto the crankshaft.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

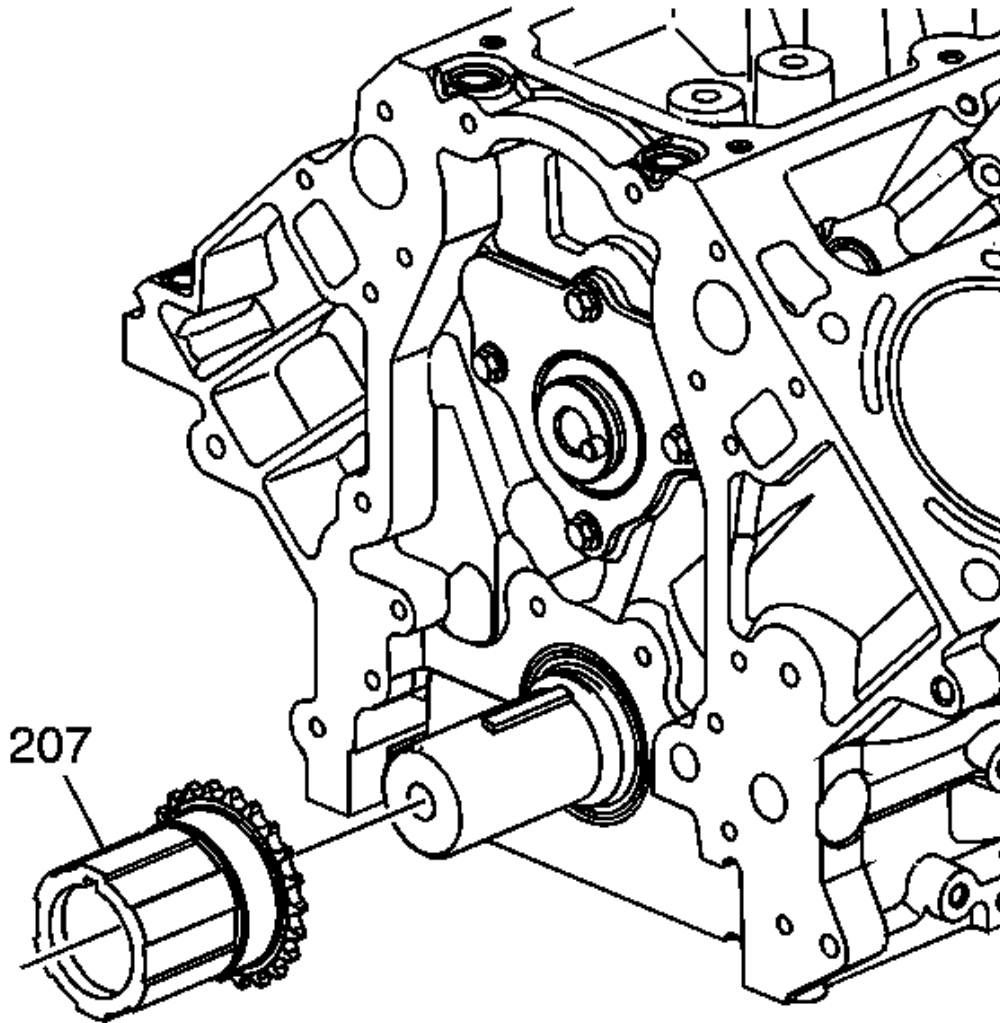


Fig. 58: View Of Crankshaft Sprocket
Courtesy of GENERAL MOTORS CORP.

3. Install the crankshaft sprocket (207) onto the front of the crankshaft. Align the crankshaft key with the crankshaft sprocket keyway.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

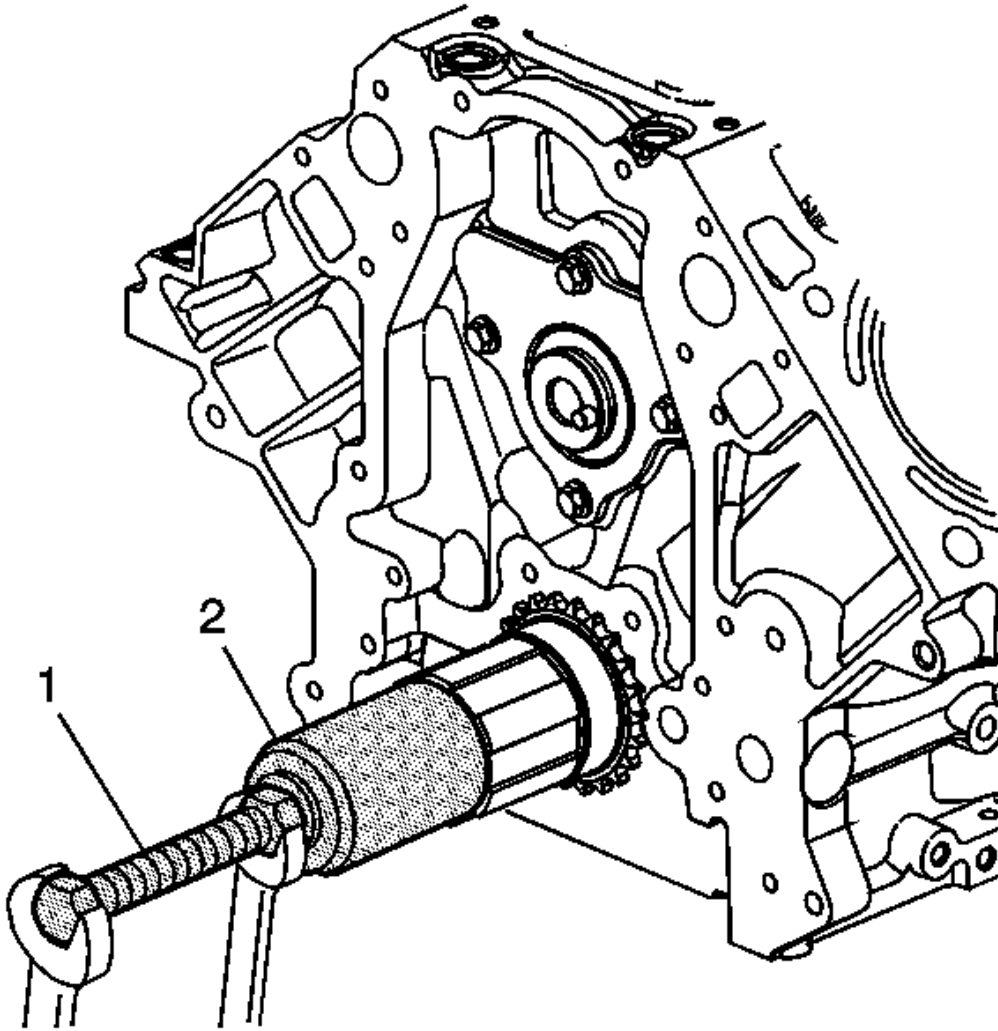


Fig. 59: View Of Crankshaft Sprocket & Installer
Courtesy of GENERAL MOTORS CORP.

4. Use the **J 41478** (1) and the **J 41665** (2) in order to install the crankshaft sprocket. See **Special Tools** . Install the sprocket onto the crankshaft until fully seated against the crankshaft flange.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

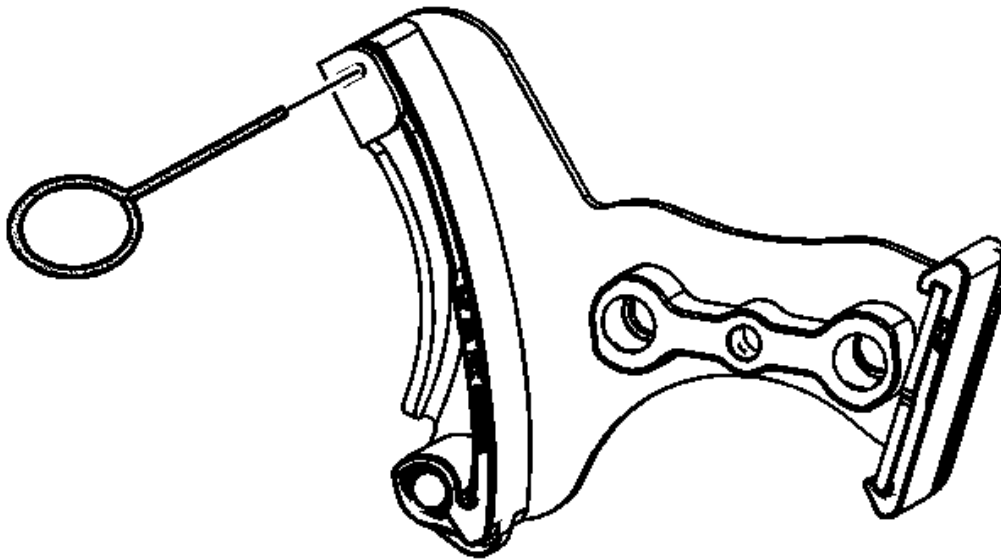


Fig. 60: View Of Compressed Tensioner
Courtesy of GENERAL MOTORS CORP.

5. Compress the timing chain tensioner guide and install the **EN 46330** . See **Special Tools** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

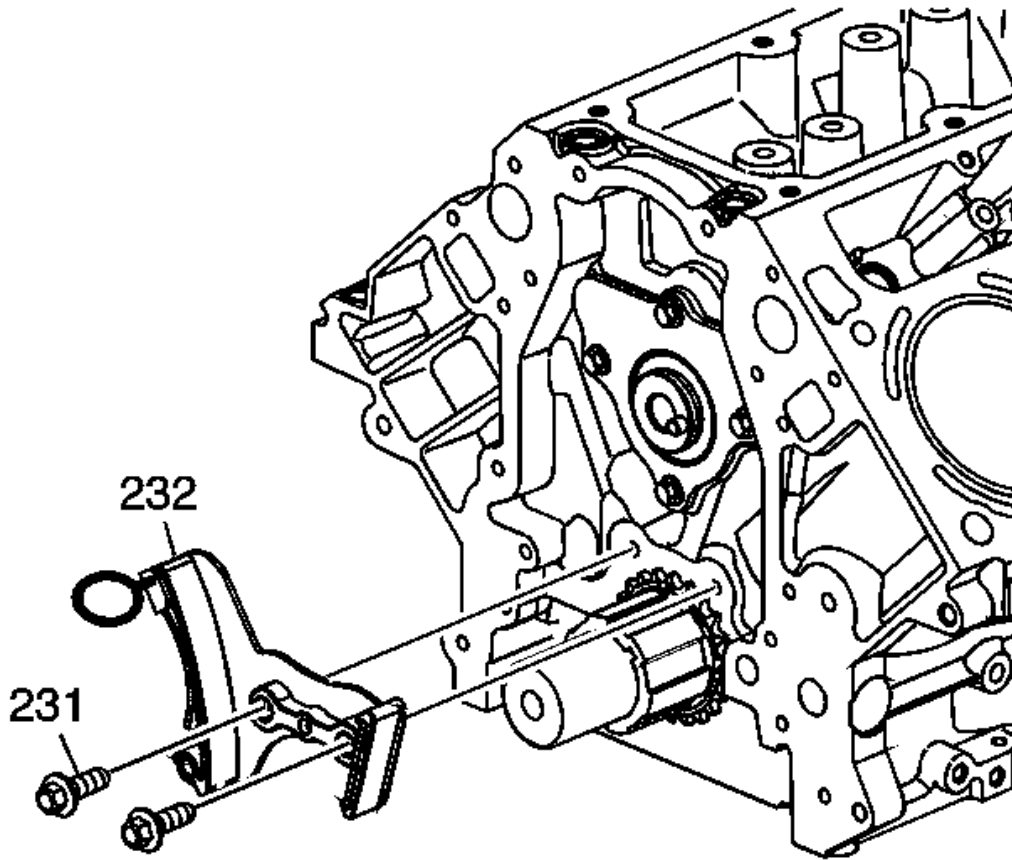


Fig. 61: View Of Timing Chain Tensioner
Courtesy of GENERAL MOTORS CORP.

6. Install the timing chain tensioner (232) and bolts (231).

Tighten: Tighten the bolts to 25 N.m (18 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

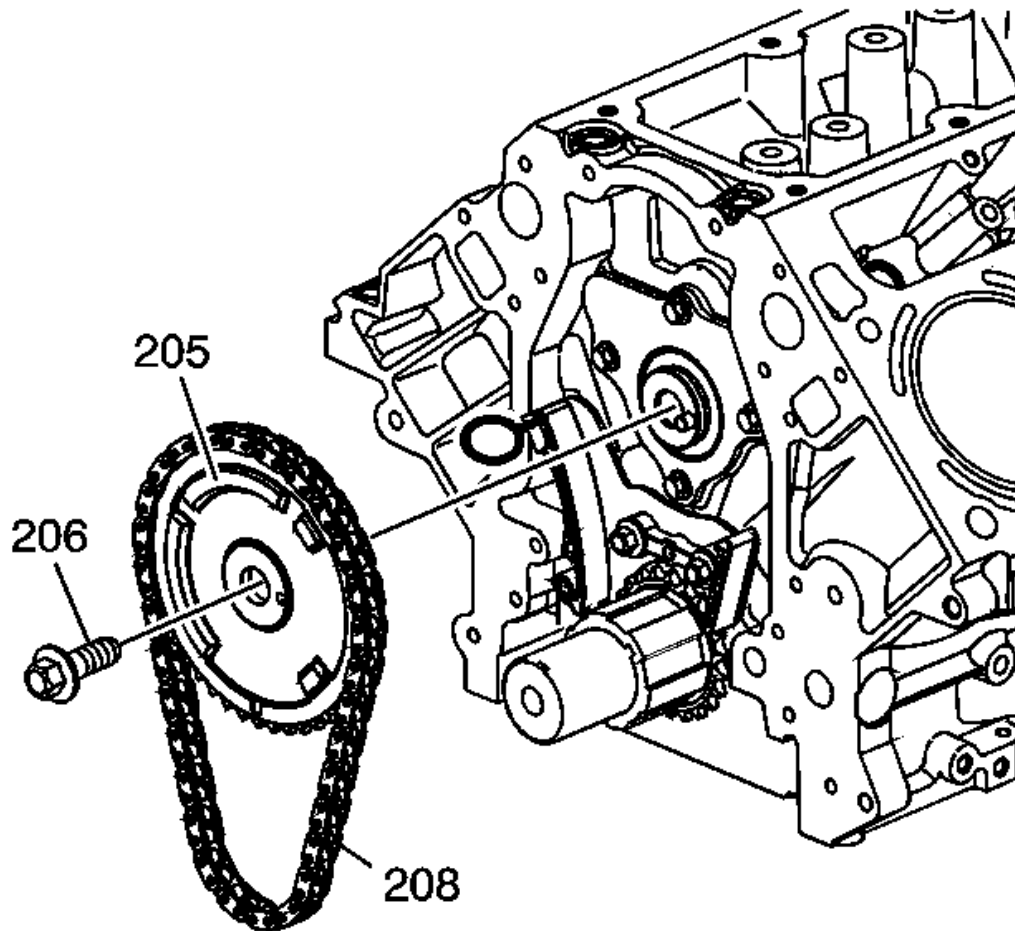


Fig. 62: View Of Camshaft Sprocket & Timing Chain
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- The sprocket teeth and timing chain must mesh.
- The camshaft and the crankshaft sprocket alignment marks **MUST** be aligned properly.

7. Position the camshaft sprocket (205) so the timing mark is in the 6 o'clock position.
8. Install the camshaft sprocket (205), timing chain (208), and bolt (206).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

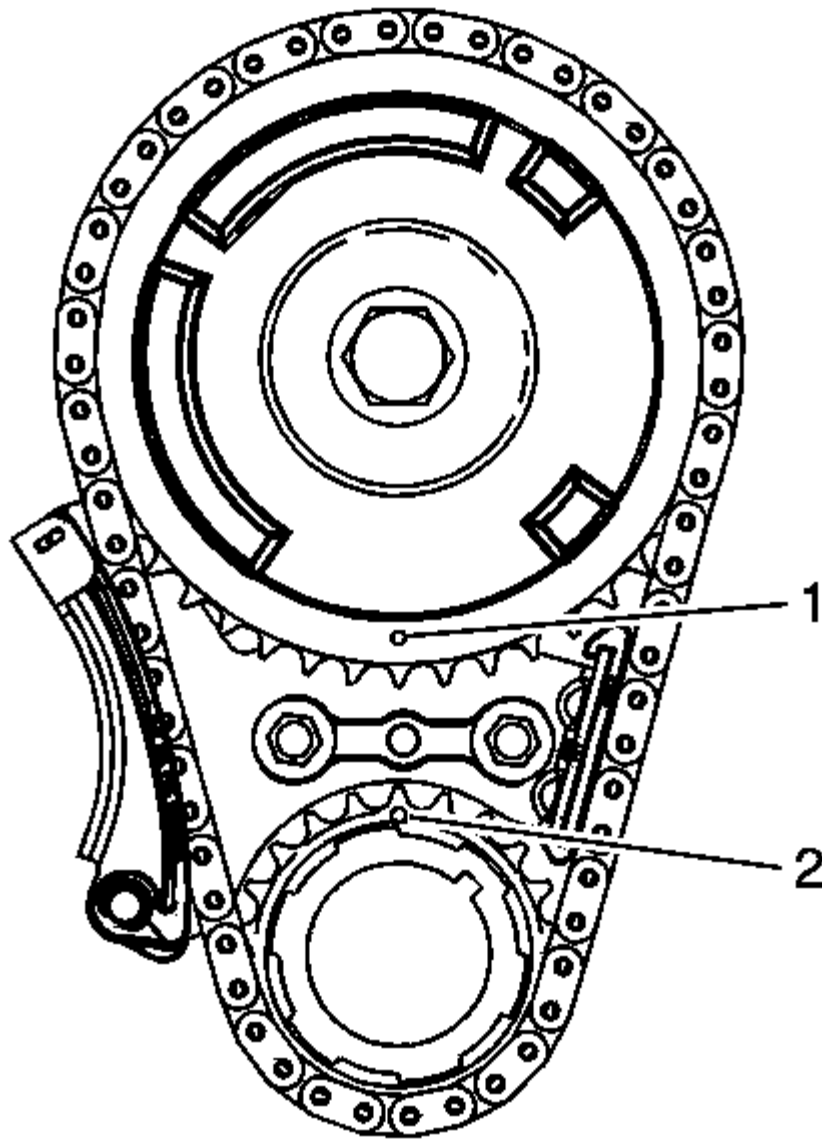


Fig. 63: Identifying Camshaft & Crankshaft Marks
Courtesy of GENERAL MOTORS CORP.

9. Inspect the sprockets for proper alignment. The mark on the camshaft sprocket (1) should be located in the 6 o'clock position and the mark on the crankshaft sprocket (2) should be located in the 12 o'clock position.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

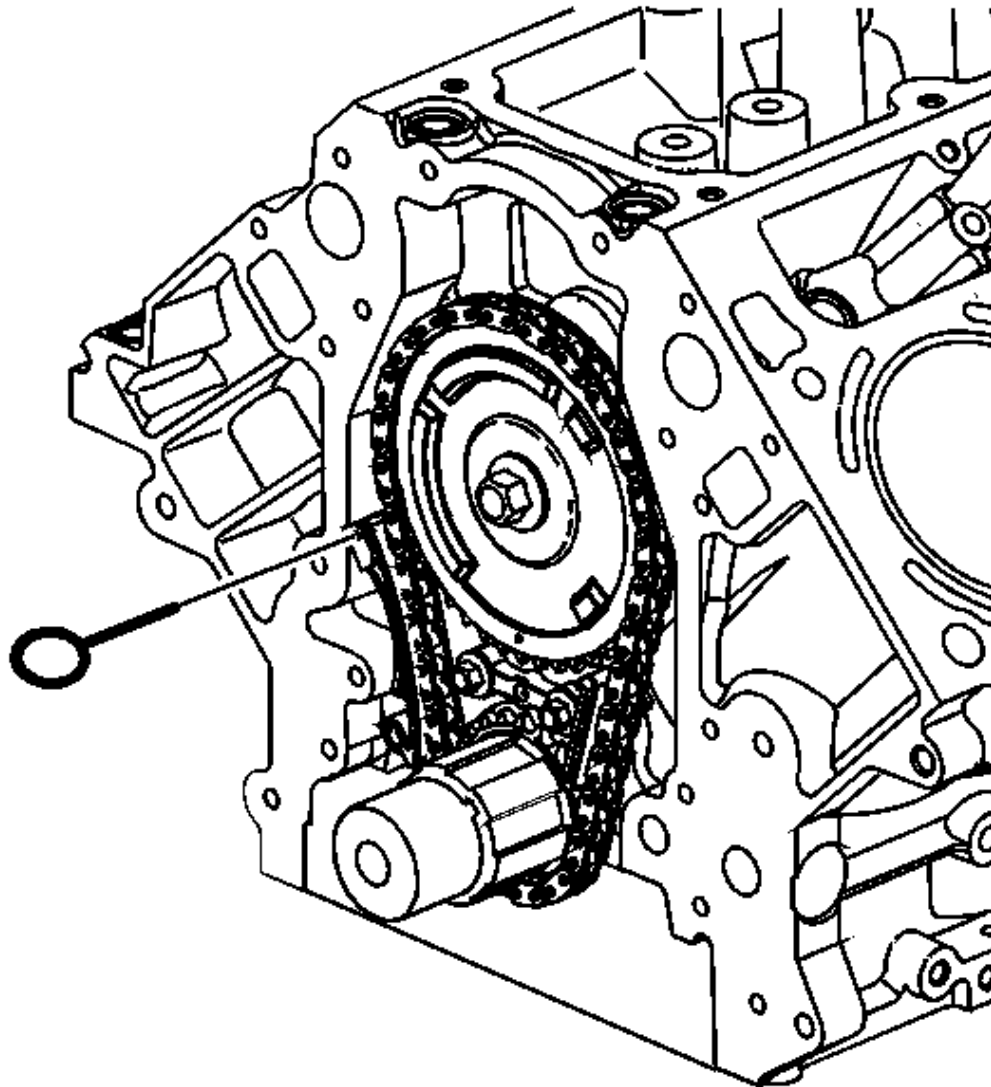


Fig. 64: Locating Tensioner Pin
Courtesy of GENERAL MOTORS CORP.

10. Remove the EN 46330 . See Special Tools .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

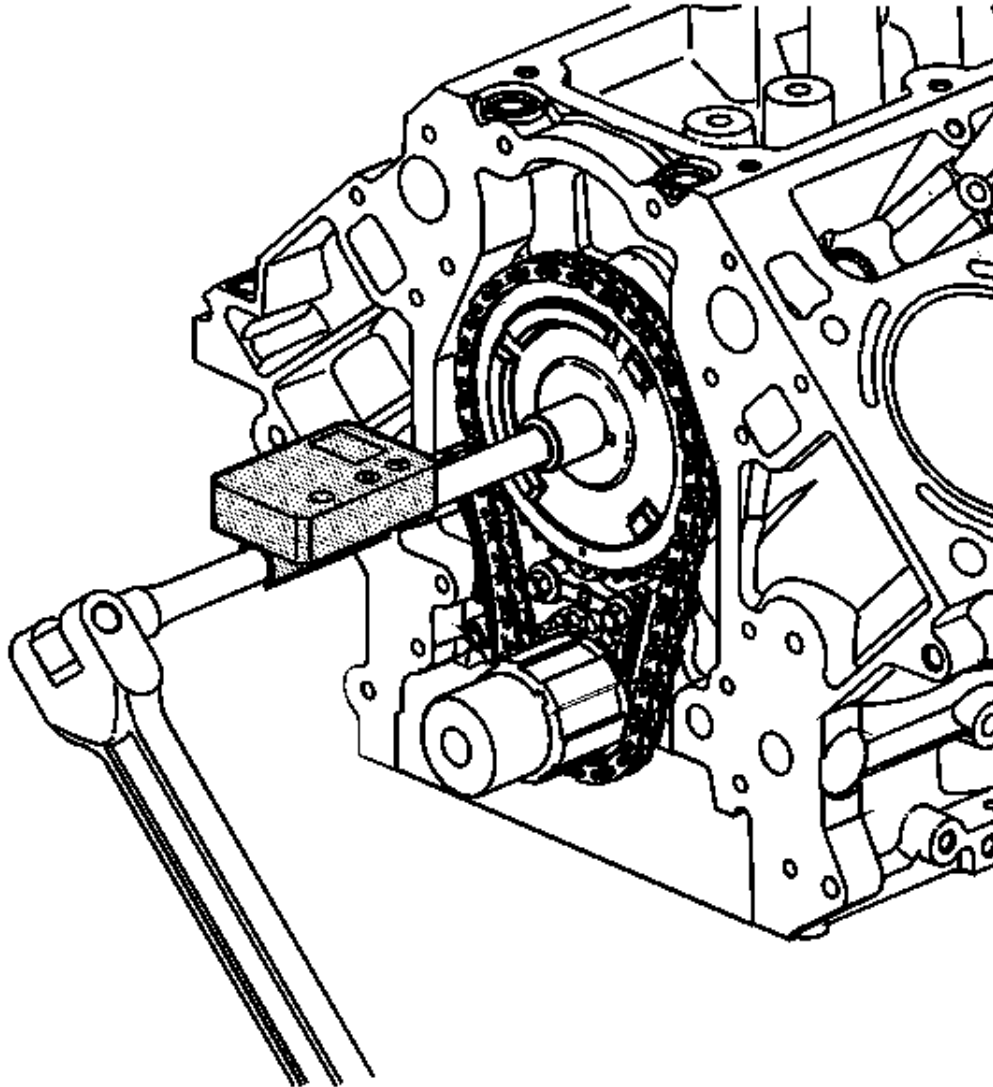


Fig. 65: Identifying Camshaft Sprocket Bolt Tightening Sequence
Courtesy of GENERAL MOTORS CORP.

11. Tighten the camshaft sprocket bolt

Tighten:

1. Tighten the bolt a first pass to 75 N.m (55 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Tighten the bolt a final pass an additional 50 degrees using **J 45059** .

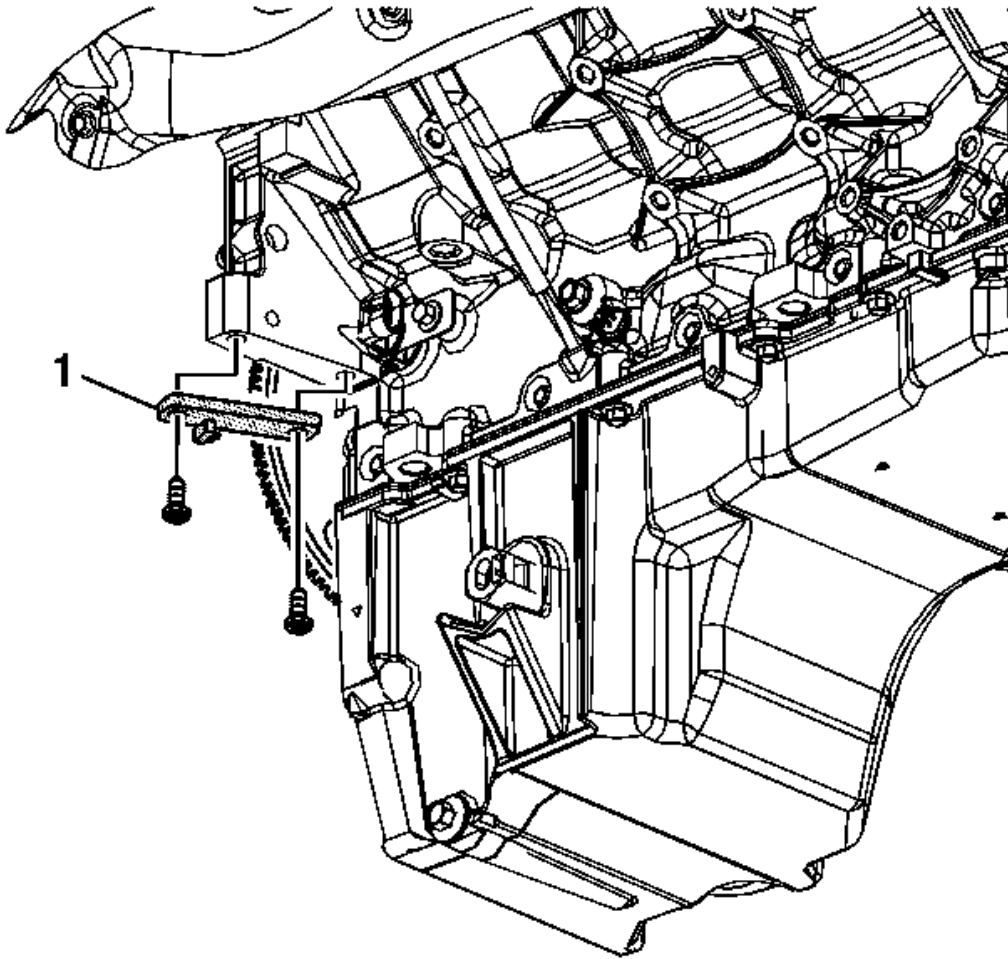


Fig. 66: View Of Special Tool & Bolts
Courtesy of GENERAL MOTORS CORP.

12. Remove the **J 42386-A** (1) and bolts. See **Special Tools** .
13. Install the starter motor. Refer to **Starter Motor Replacement (4.3L)** or **Starter Motor Replacement (4.8L, 5.3L, 6.0L, and 6.2L)** or **Starter Motor Replacement (6.6L)** .
14. Install the oil pump. Refer to **Oil Pump, Screen, and Crankshaft Oil Deflector Replacement (LY6, L76 and L92)** or **Oil Pump, Screen, and Crankshaft Oil Deflector Replacement (LH6, LMG, LY2 and LY5)**.

2008 Chevrolet Silverado 1500

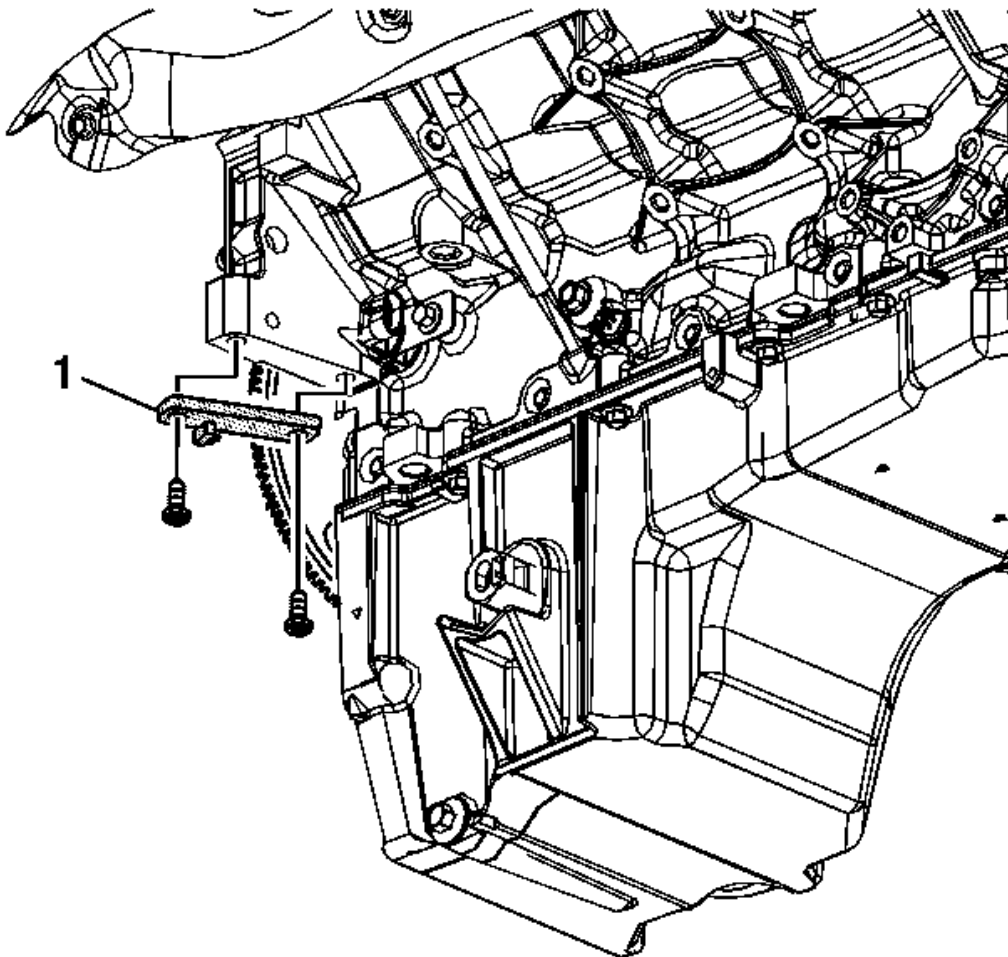
2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

CAMSHAFT REPLACEMENT (LH6, LMG, LY2 AND LY5)

- **EN 46330** Timing Belt Tensioner Retaining Pin. See **Special Tools** .
- **J 42386-A** Flywheel Holding Tool. See **Special Tools** .
- **J 45059** Angle Meter

Removal Procedure

IMPORTANT: If camshaft replacement is required, the valve lifters must also be replaced.



2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Fig. 67: View Of Special Tool & Bolts **Courtesy of GENERAL MOTORS CORP.**

1. Remove the radiator support. Refer to **Radiator Support Replacement** .
2. Remove the valve lifters. Refer to **Valve Lifter Replacement (L92 - First Design)** or **Valve Lifter Replacement (L92 - Second Design)** or **Valve Lifter Replacement (LY2 and LY6)** or **Valve Lifter Replacement (LH6, LMG, LY5 and L76)** .
3. Remove the engine front cover. Refer to **Engine Front Cover Replacement (LC9, LH6, LMG, LY2 and LY5)** or **Engine Front Cover Replacement (LY6, L76 and L92)** .
4. Remove the starter motor. Refer to **Starter Motor Replacement (4.3L)** or **Starter Motor Replacement (4.8L, 5.3L, 6.0L, and 6.2L)** or **Starter Motor Replacement (6.6L)** .

NOTE: Refer to **Fastener Notice** .

IMPORTANT: Ensure that the teeth of the J 42386-A mesh with the teeth of the engine flywheel. See **Special Tools** .

5. Install the J 42386-A (1) and bolts. See **Special Tools** . Use one M10-1.5 x 120 mm and one M10-1.5 x 45 mm bolt for proper tool operation.

Tighten: Tighten the J 42386-A bolts to 50 N. See **Special Tools** .m (37 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

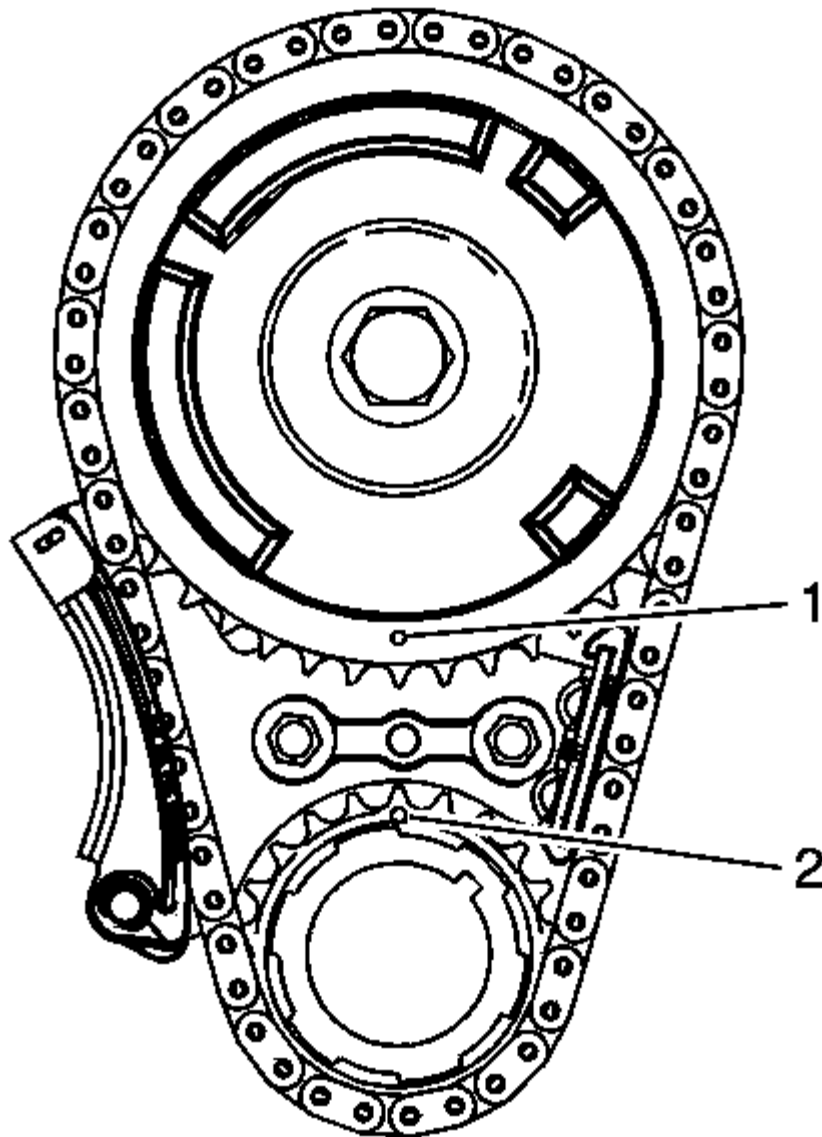


Fig. 68: Identifying Camshaft & Crankshaft Marks
Courtesy of GENERAL MOTORS CORP.

6. Rotate the crankshaft sprocket until the camshaft sprocket alignment mark (1) and the crankshaft sprocket alignment mark (2) are aligned.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

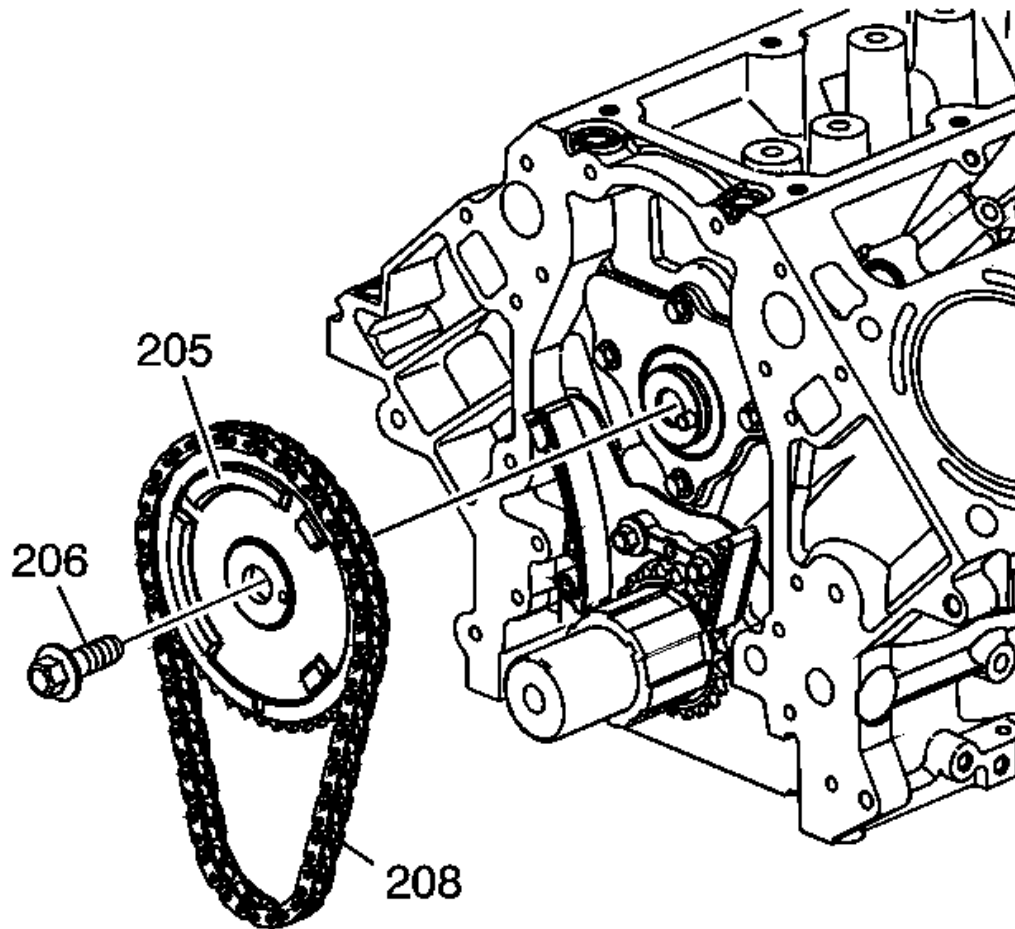


Fig. 69: View Of Camshaft Sprocket, Timing Chain & Sprocket Bolt
Courtesy of GENERAL MOTORS CORP.

NOTE: Do not turn the crankshaft assembly after the timing chain has been removed in order to prevent damage to the piston assemblies or the valves.

7. Remove the camshaft sprocket bolt (206).
8. Remove the camshaft sprocket (205) and timing chain (208).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

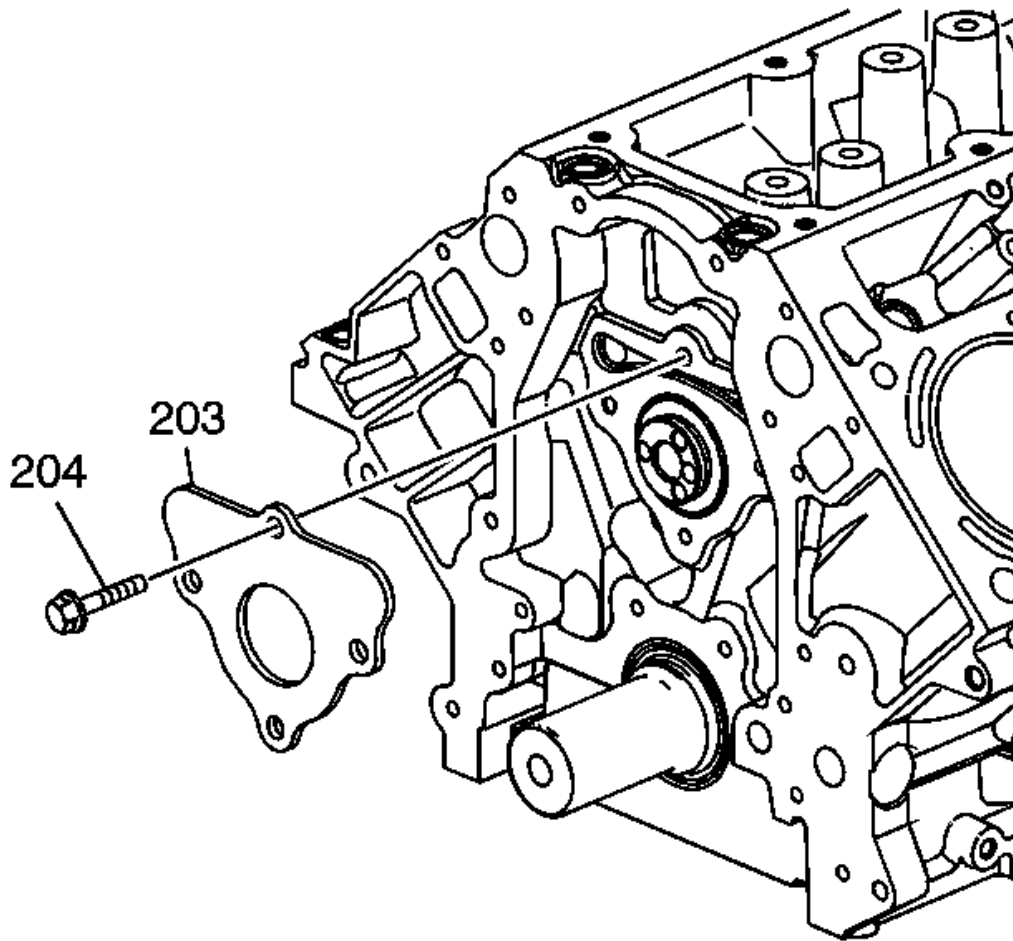


Fig. 70: Camshaft Retainer & Bolts
Courtesy of GENERAL MOTORS CORP.

9. Remove the camshaft retainer bolts (204) and retainer (203).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

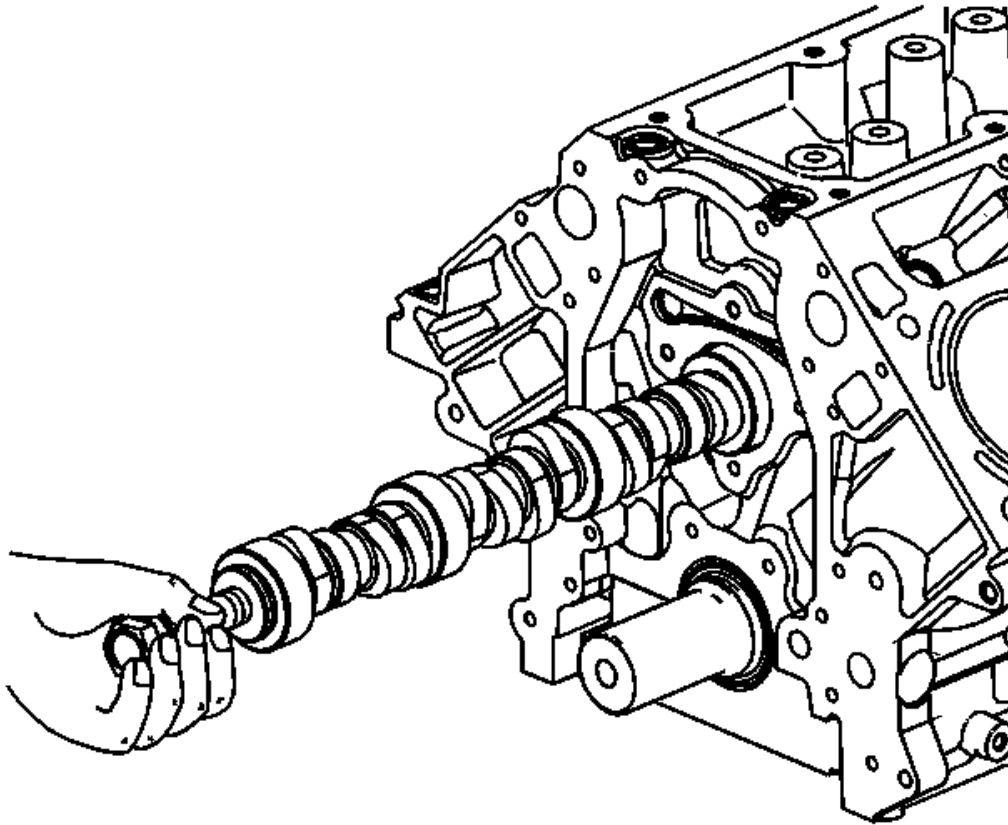


Fig. 71: View Of Camshaft

Courtesy of GENERAL MOTORS CORP.

NOTE: All camshaft journals are the same diameter, so care must be used in removing or installing the camshaft to avoid damage to the camshaft bearings.

10. Install the camshaft sprocket bolt into the camshaft front bolt hole.
11. Using the bolt as a handle, carefully rotate and remove the camshaft from the engine block.
12. Remove the bolt from the camshaft.

Installation Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

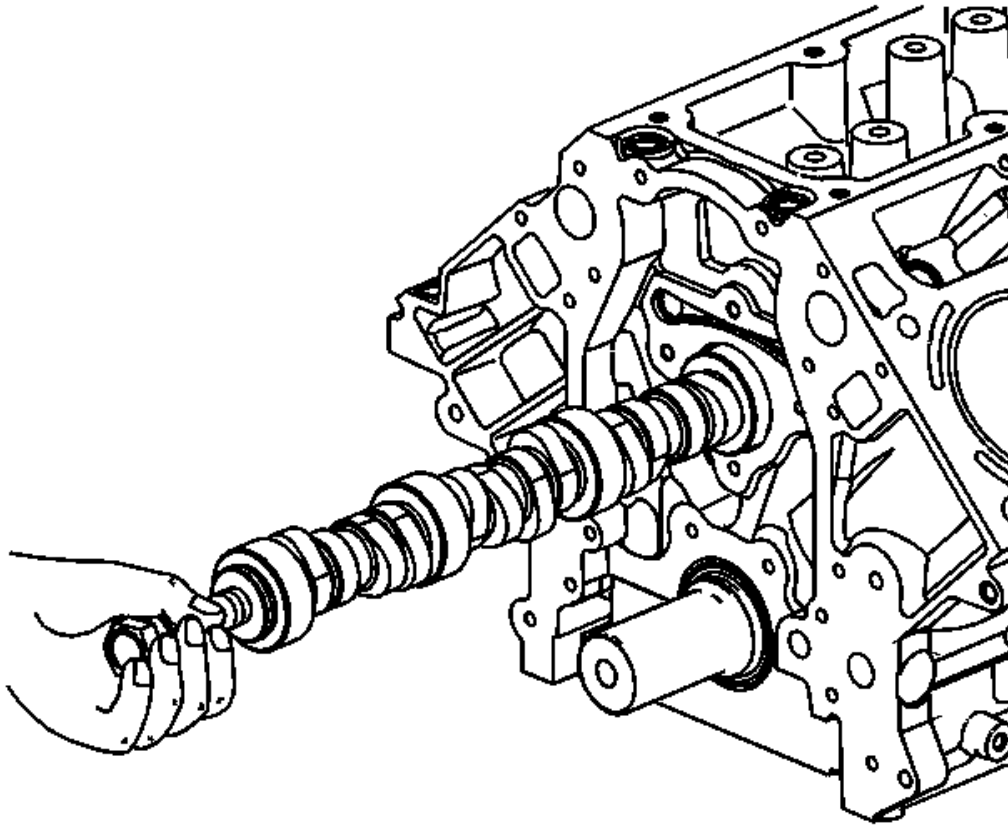


Fig. 72: View Of Camshaft

Courtesy of GENERAL MOTORS CORP.

1. Lubricate the camshaft journals and the bearings with clean engine oil.
2. Install the camshaft sprocket bolt into the camshaft front bolt hole.

NOTE: All camshaft journals are the same diameter, so care must be used in removing or installing the camshaft to avoid damage to the camshaft bearings.

3. Using the bolt as a handle, carefully install the camshaft into the engine block.
4. Remove the bolt from the front of the camshaft.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

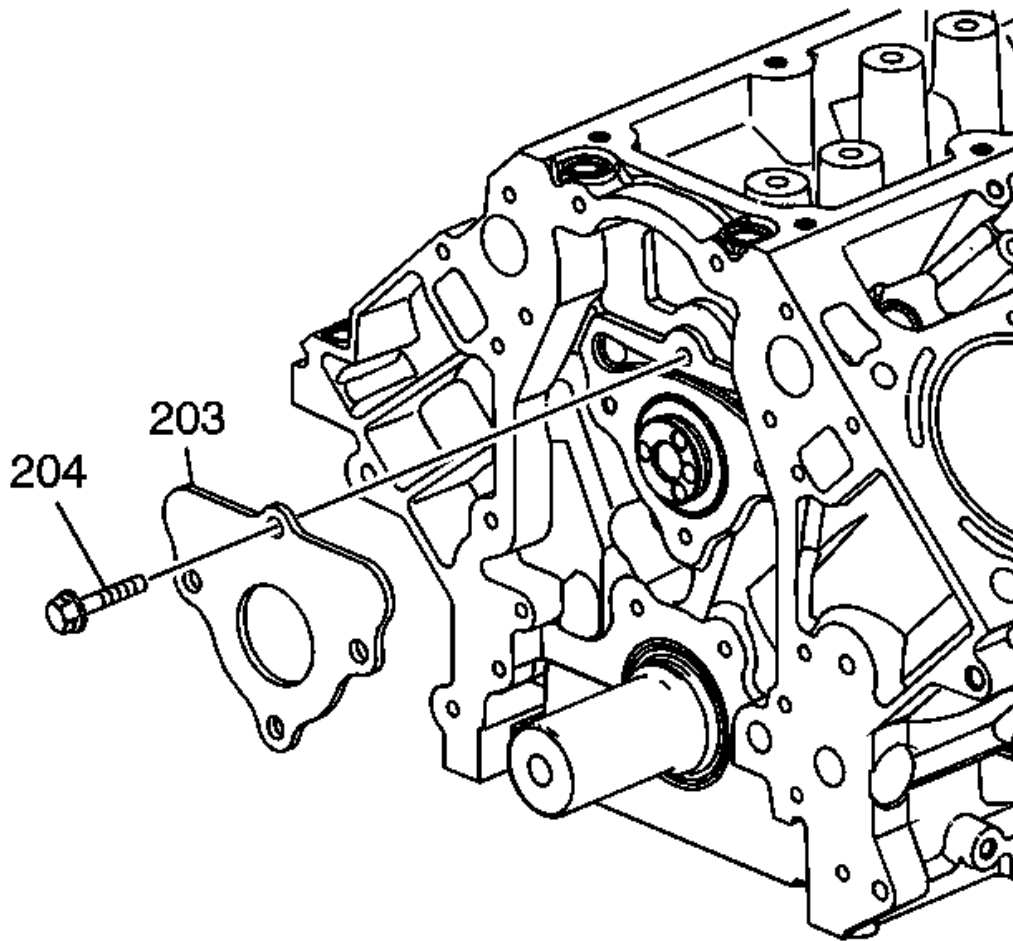


Fig. 73: Camshaft Retainer & Bolts

Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The gasket surface on the engine block should be clean and free of dirt and/or debris.

5. Install the camshaft retainer (203) and bolts (204). Install the retainer with the sealing gasket facing the engine block.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

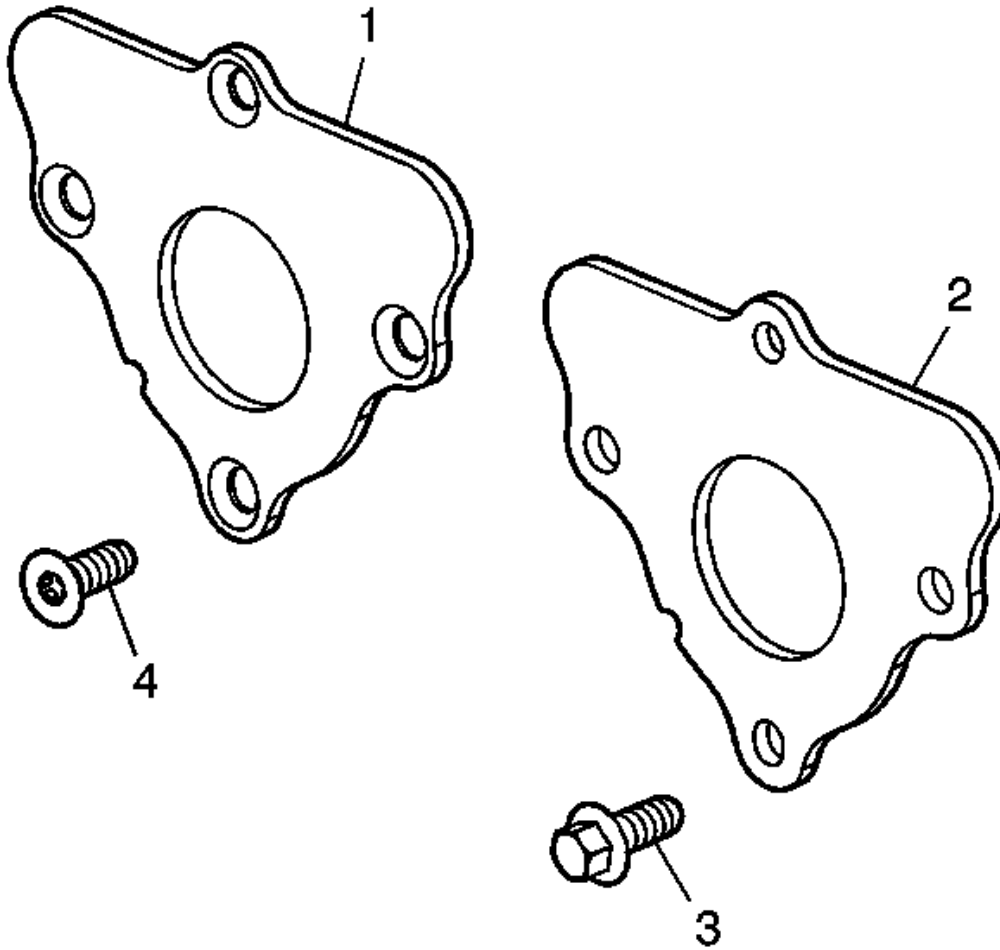


Fig. 74: Identifying Camshaft Retainer Bolts
Courtesy of GENERAL MOTORS CORP.

6. Tighten the camshaft retainer bolts.

Tighten:

- Tighten the first design hex head bolts (3) to 25 N.m (18 lb ft).
- Tighten the second design TORX® head bolts (4) to 15 N.m (11 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

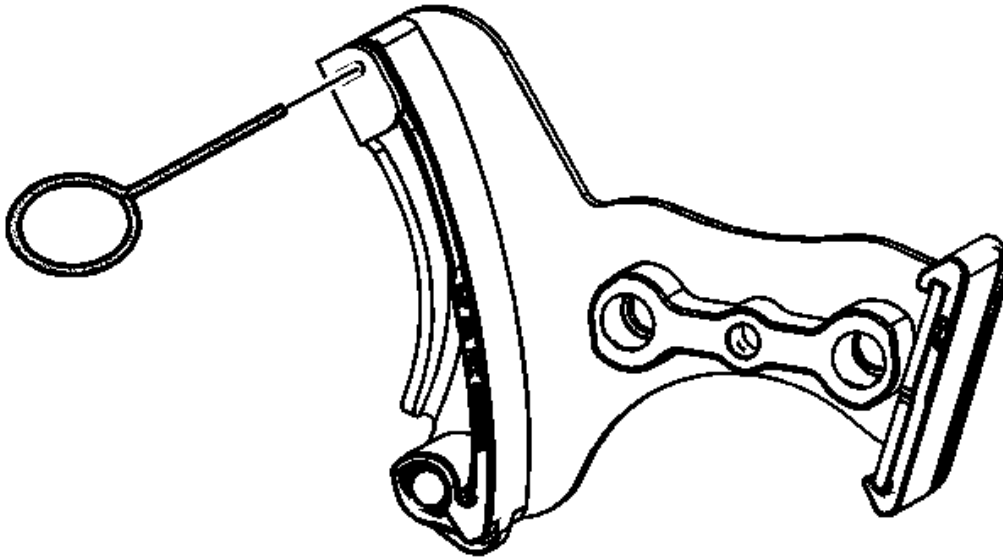


Fig. 75: View Of Compressed Tensioner
Courtesy of GENERAL MOTORS CORP.

7. Compress the timing chain tensioner guide and install the **EN 46330** . See **Special Tools** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

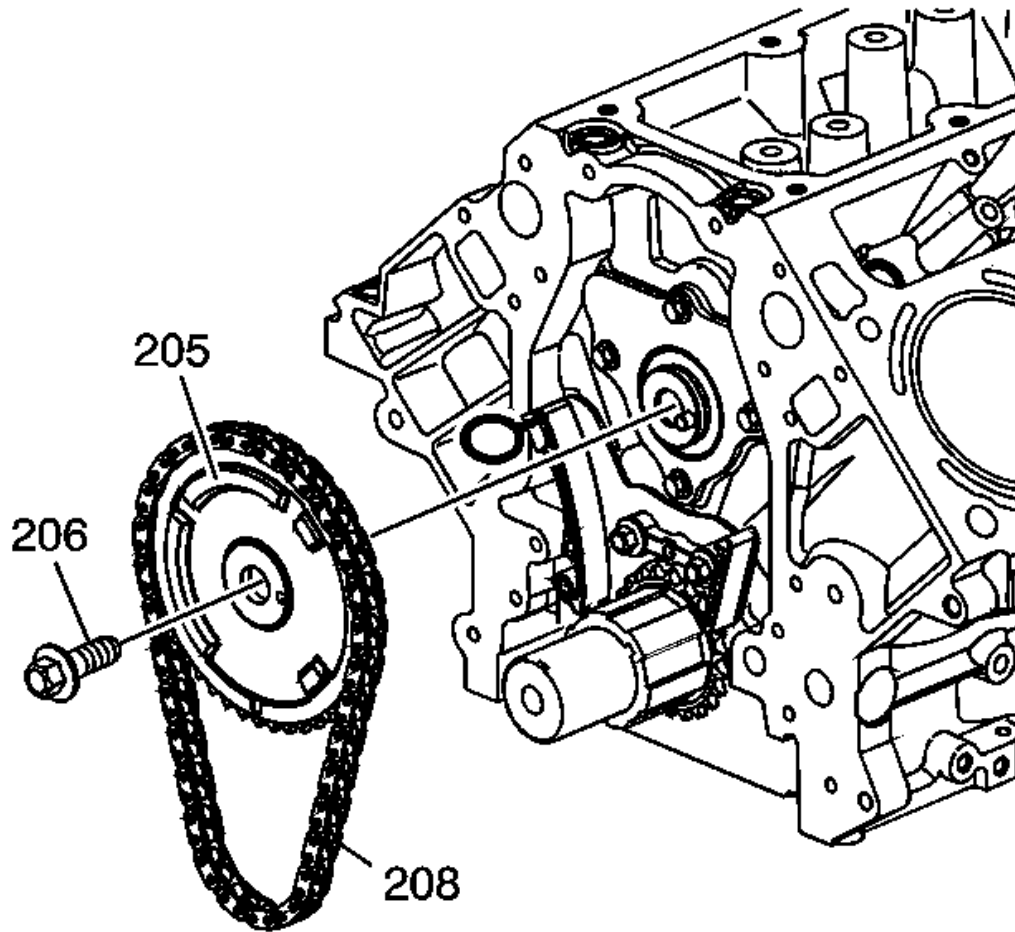


Fig. 76: View Of Camshaft Sprocket & Timing Chain
Courtesy of GENERAL MOTORS CORP.

8. Align the camshaft sprocket so the timing mark is in the 6 o'clock position.
9. Install the camshaft sprocket (205), timing chain (208), and bolt (206).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

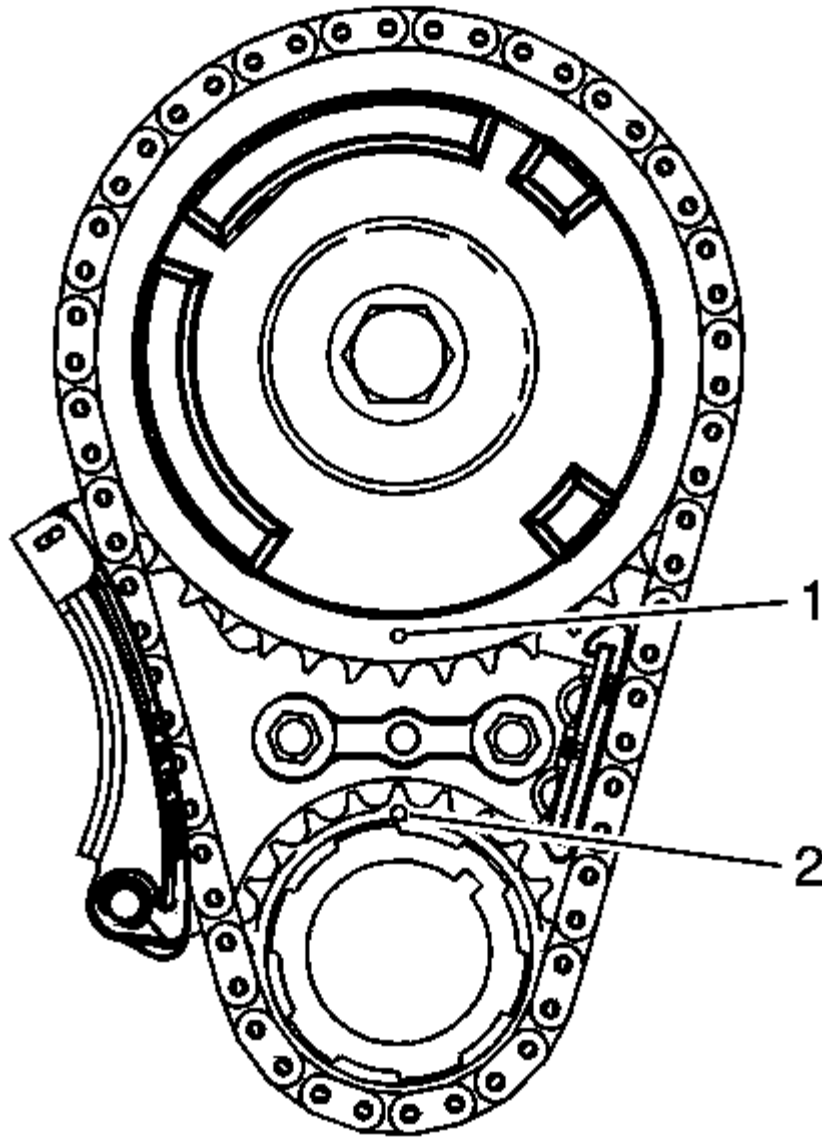


Fig. 77: Identifying Camshaft & Crankshaft Marks
Courtesy of GENERAL MOTORS CORP.

10. Inspect the sprockets for proper alignment. The marks on the camshaft sprocket (1) should be located in the 6 o'clock position and the mark on the crankshaft sprocket (2) should be located in the 12 o'clock position.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

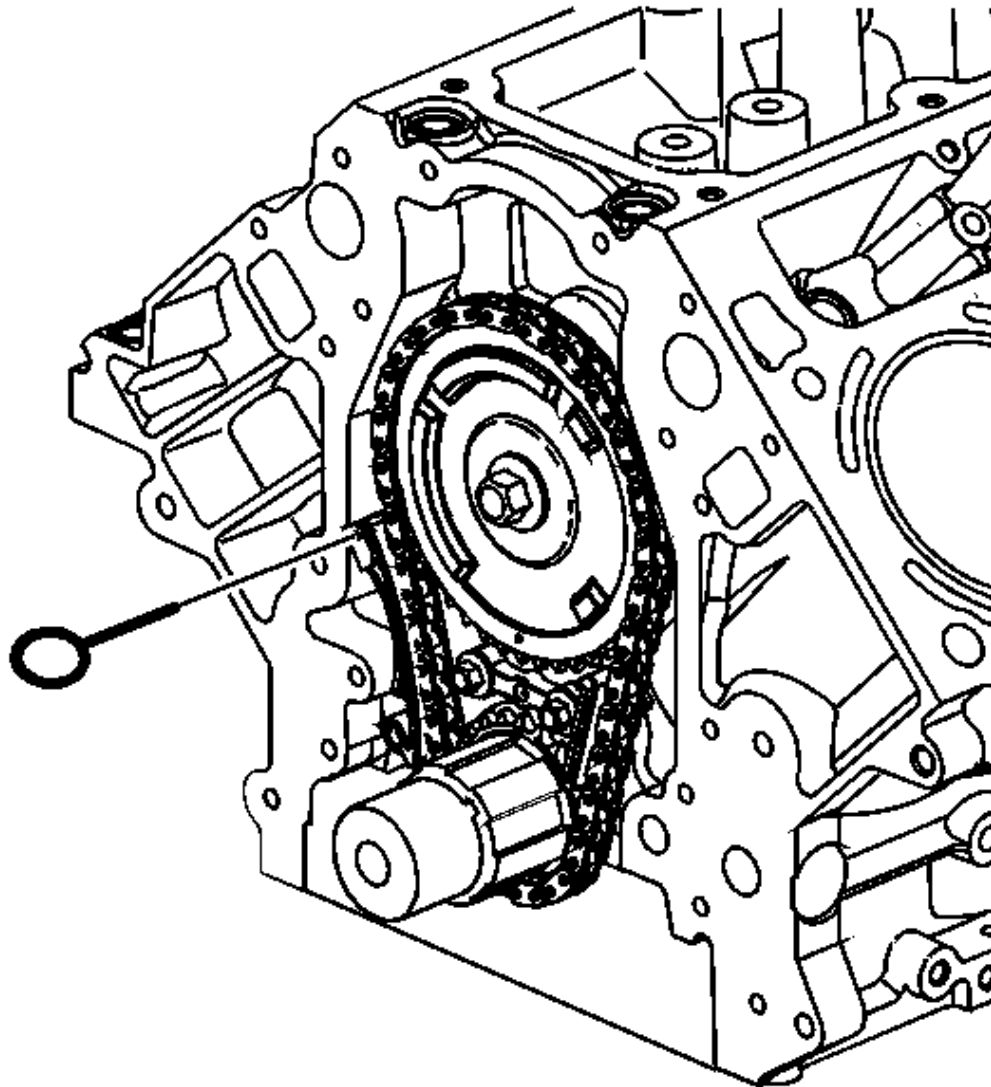


Fig. 78: Locating Tensioner Pin
Courtesy of GENERAL MOTORS CORP.

11. Remove the EN 46330 . See Special Tools .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

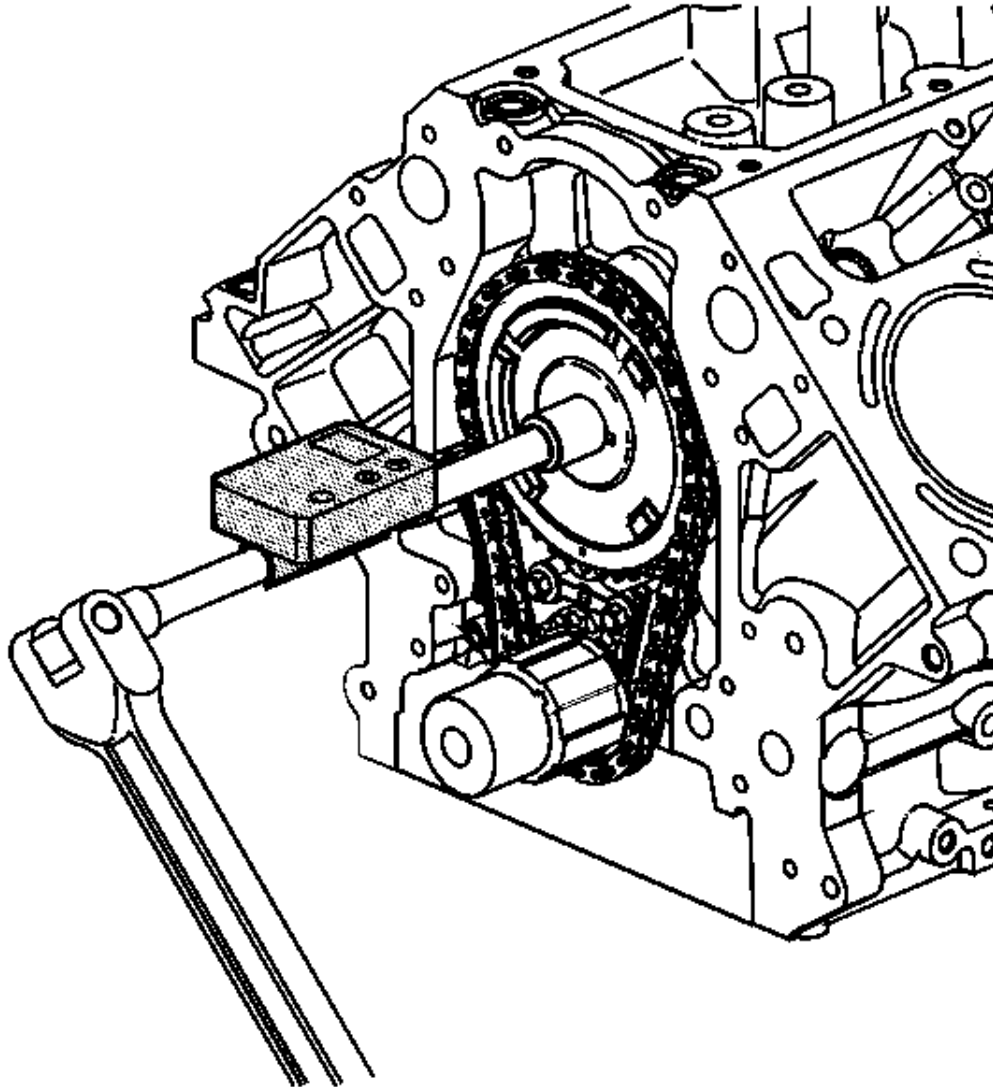


Fig. 79: Identifying Camshaft Sprocket Bolt Tightening Sequence
Courtesy of GENERAL MOTORS CORP.

12. Tighten the camshaft sprocket bolt.

Tighten:

1. Tighten the bolt a first pass to 90 N.m (66 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Tighten the bolt a final pass to 40 degrees using **J 45059** .

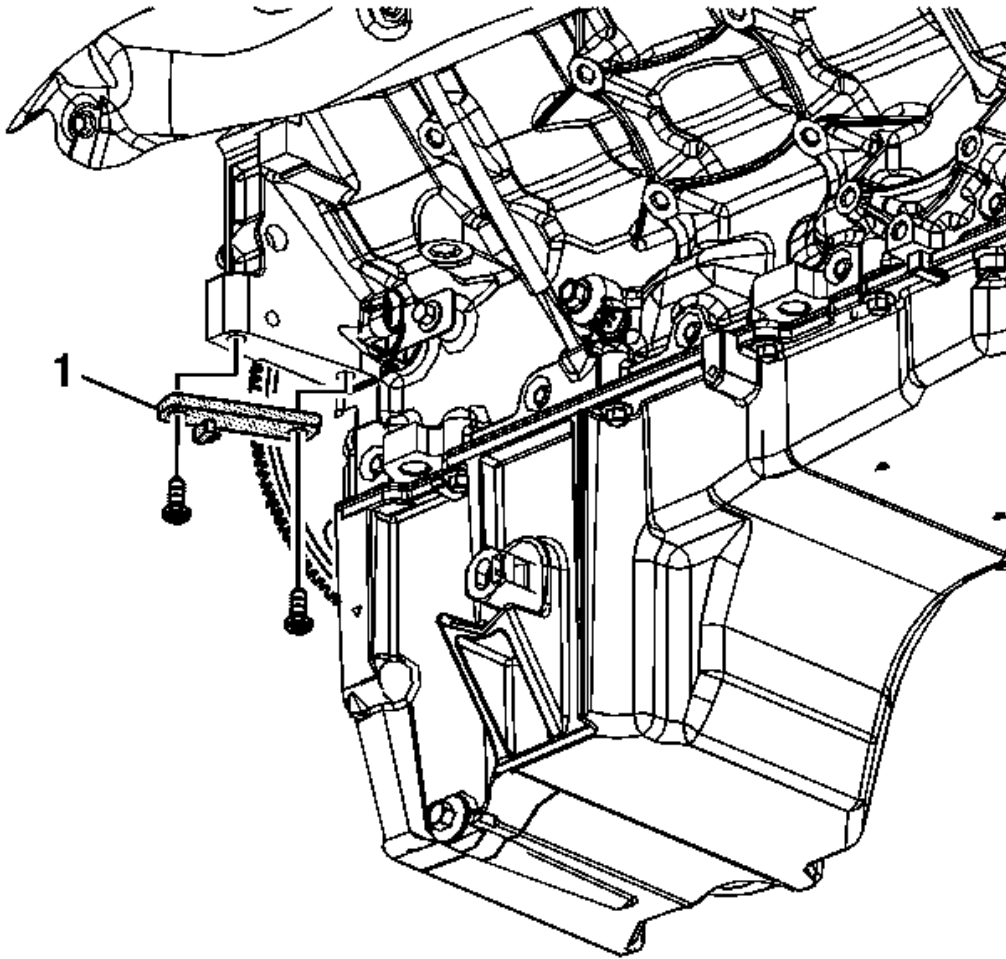


Fig. 80: View Of Special Tool & Bolts
Courtesy of GENERAL MOTORS CORP.

13. Remove the **J 42386-A** (1) and bolts. See Special Tools .
14. Install the starter motor. Refer to Starter Motor Replacement (4.3L) or Starter Motor Replacement (4.8L, 5.3L, 6.0L, and 6.2L) or Starter Motor Replacement (6.6L) .
15. Install the engine front cover. Refer to Engine Front Cover Replacement (LC9, LH6, LMG, LY2 and LY5) or Engine Front Cover Replacement (LY6, L76 and L92) .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

16. Install the valve lifters. Refer to **Valve Lifter Replacement (L92 - First Design)** or **Valve Lifter Replacement (L92 - Second Design)** or **Valve Lifter Replacement (LY2 and LY6)** or **Valve Lifter Replacement (LH6, LMG, LY5 and L76)** .
17. Install the radiator support. Refer to **Radiator Support Replacement** .

CAMSHAFT REPLACEMENT (LY6, L76 AND L92)

Tools Required

- **EN 46330** Timing Belt Tensioner Retaining Pin. See **Special Tools** .
- **J 42386-A** Flywheel Holding Tool. See **Special Tools** .
- **J 45059** Angle Meter

Removal Procedure

IMPORTANT: If camshaft replacement is required, the valve lifters must also be replaced.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

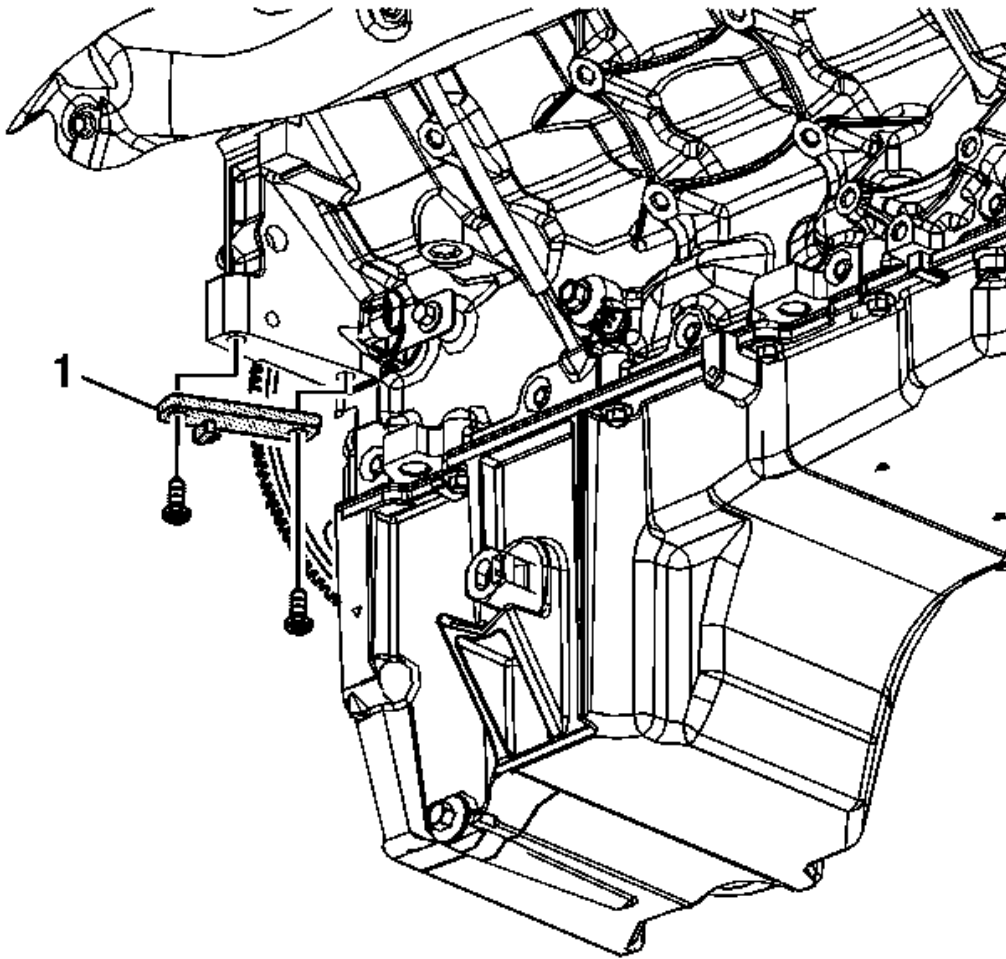


Fig. 81: View Of Special Tool & Bolts
Courtesy of GENERAL MOTORS CORP.

1. Remove the radiator support. Refer to **Radiator Support Replacement** .
2. Remove the valve lifters. Refer to **Valve Lifter Replacement (L92 - First Design)** or **Valve Lifter Replacement (L92 - Second Design)** or **Valve Lifter Replacement (LY2 and LY6)** or **Valve Lifter Replacement (LH6, LMG, LY5 and L76)** .
3. Remove the engine front cover. Refer to **Engine Front Cover Replacement (LC9, LH6, LMG, LY2 and LY5)** or **Engine Front Cover Replacement (LY6, L76 and L92)** .
4. Remove the starter motor. Refer to **Starter Motor Replacement (4.3L)** or **Starter Motor Replacement (4.8L, 5.3L, 6.0L, and 6.2L)** or **Starter Motor Replacement (6.6L)** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

NOTE: Refer to Fastener Notice .

IMPORTANT: Ensure that the teeth of the J 42386-A mesh with the teeth of the engine flywheel. See Special Tools .

5. Install the J 42386-A (1) and bolts. See Special Tools . Use one M10-1.5 x 120 mm and one M10-1.5 x 45 mm bolt for proper tool operation.

Tighten: Tighten the J 42386-A bolts to 50 N. See Special Tools .m (37 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

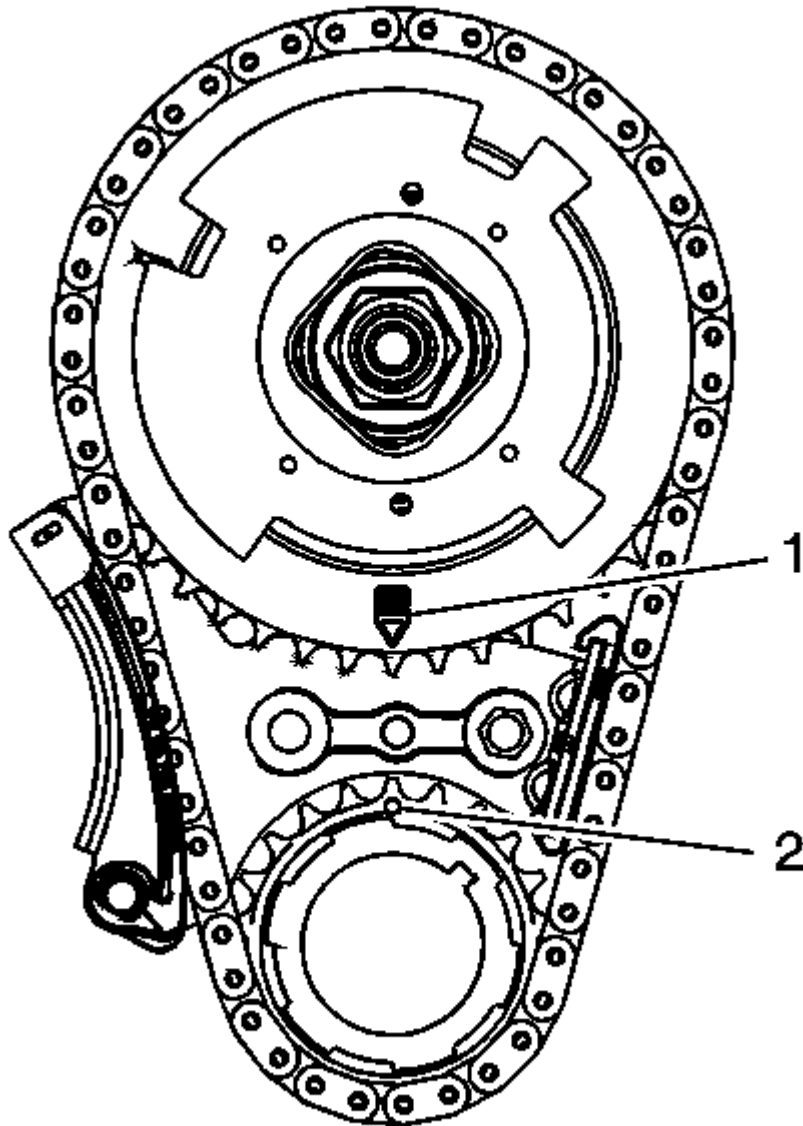


Fig. 82: View Of CMP Actuator Alignment Mark & Crankshaft Sprocket Alignment Mark

Courtesy of GENERAL MOTORS CORP.

6. Rotate the crankshaft sprocket until the camshaft position (CMP) actuator alignment mark (1) and the crankshaft sprocket alignment mark (2) are aligned.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

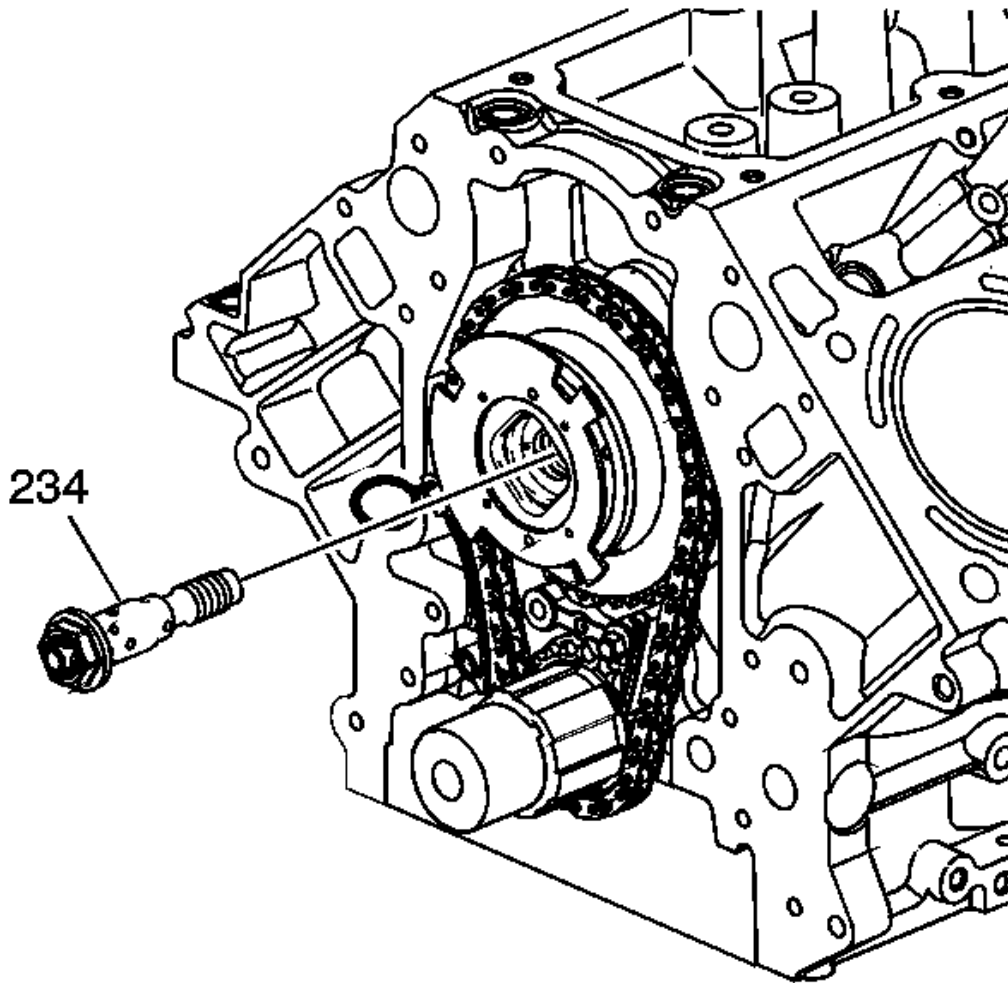


Fig. 83: View Of CMP Actuator Solenoid Valve
Courtesy of GENERAL MOTORS CORP.

7. Remove and discard the CMP actuator solenoid valve (234).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

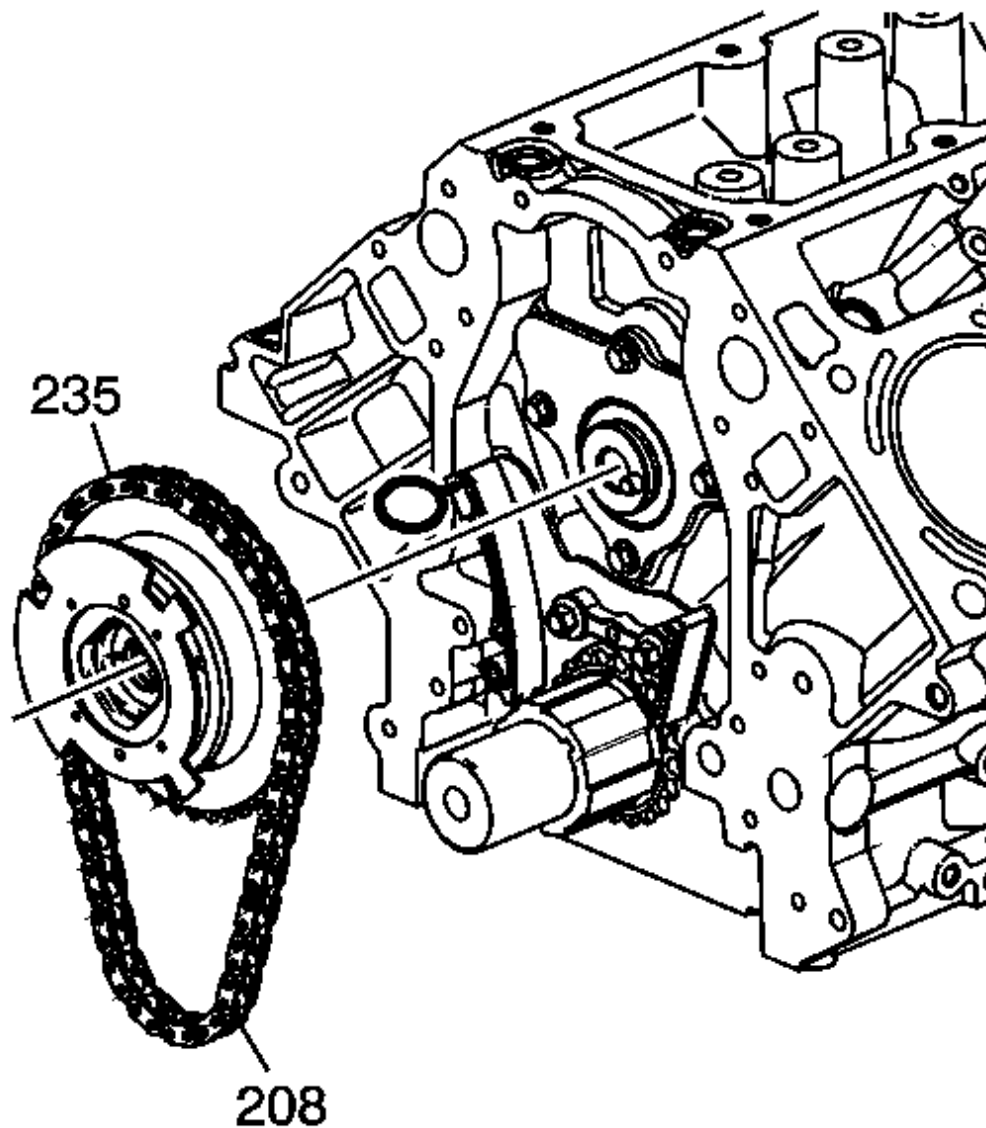


Fig. 84: View Of CMP Actuator & Timing Chain
Courtesy of GENERAL MOTORS CORP.

NOTE: Do not turn the crankshaft assembly after the timing chain has been removed in order to prevent damage to the piston assemblies or the valves.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

8. Remove the CMP actuator (235) and timing chain (208).

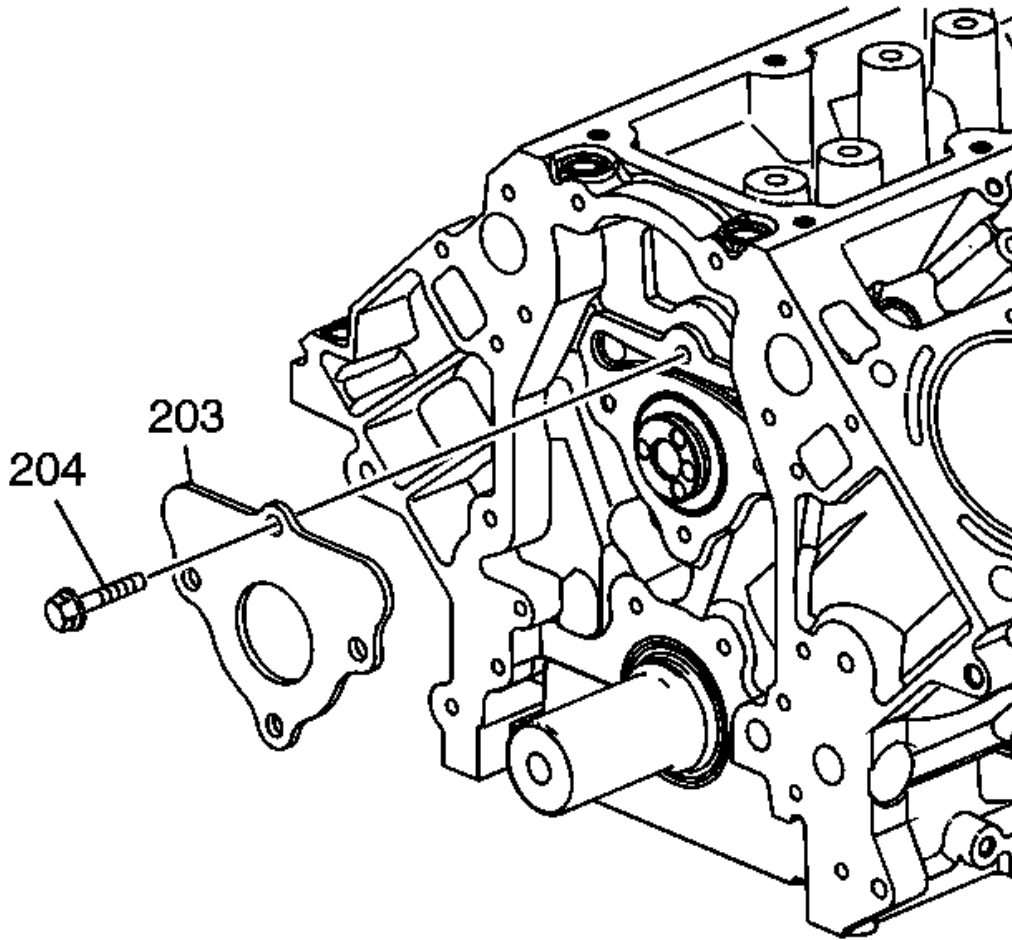


Fig. 85: Camshaft Retainer & Bolts
Courtesy of GENERAL MOTORS CORP.

9. Remove the camshaft retainer bolts (204) and retainer (203).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

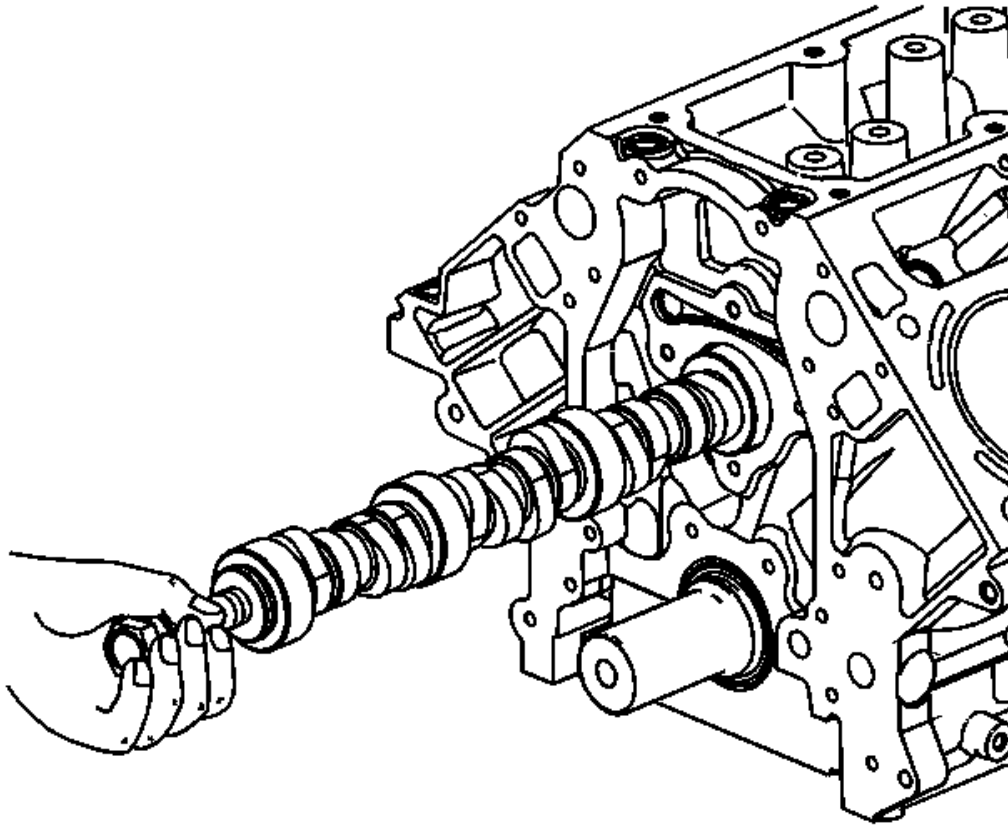


Fig. 86: View Of Camshaft

Courtesy of GENERAL MOTORS CORP.

NOTE: All camshaft journals are the same diameter, so care must be used in removing or installing the camshaft to avoid damage to the camshaft bearings.

10. Install the camshaft sprocket bolt into the camshaft front bolt hole.
11. Using the bolt as a handle, carefully rotate and remove the camshaft from the engine block.
12. Remove the bolt from the camshaft.

Installation Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

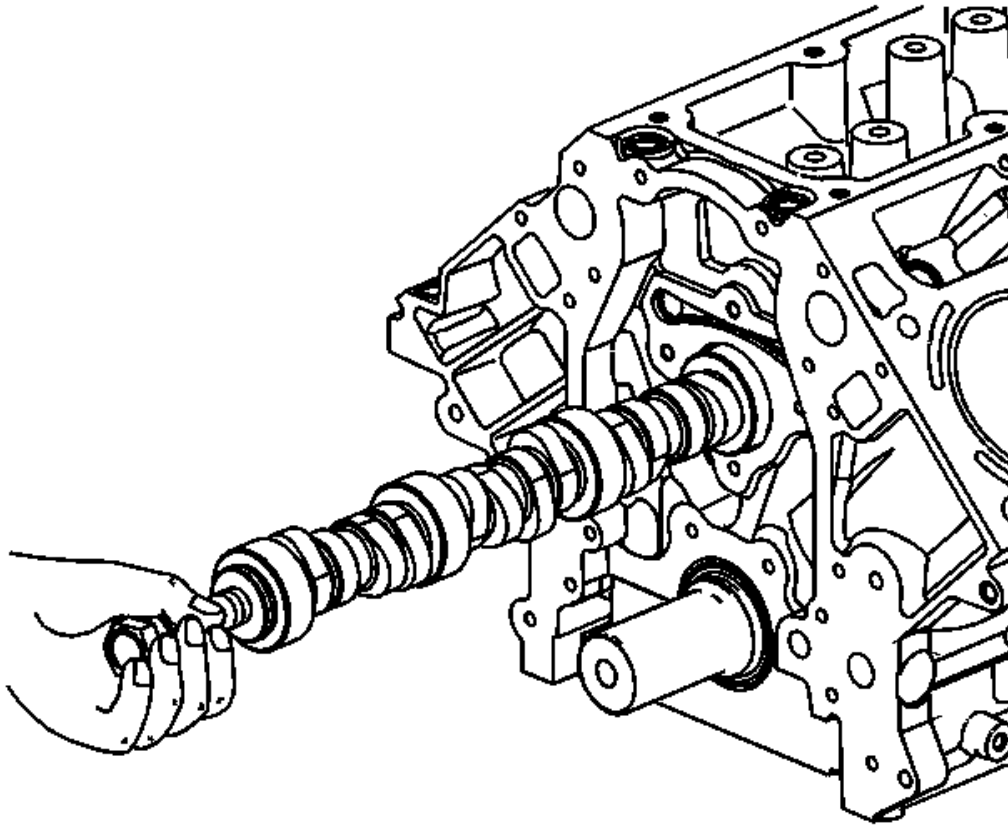


Fig. 87: View Of Camshaft
Courtesy of GENERAL MOTORS CORP.

1. Lubricate the camshaft journals and the bearings with clean engine oil.
2. Install the camshaft sprocket bolt into the camshaft front bolt hole.

NOTE: All camshaft journals are the same diameter, so care must be used in removing or installing the camshaft to avoid damage to the camshaft bearings.

3. Using the bolt as a handle, carefully install the camshaft into the engine block.
4. Remove the bolt from the front of the camshaft.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

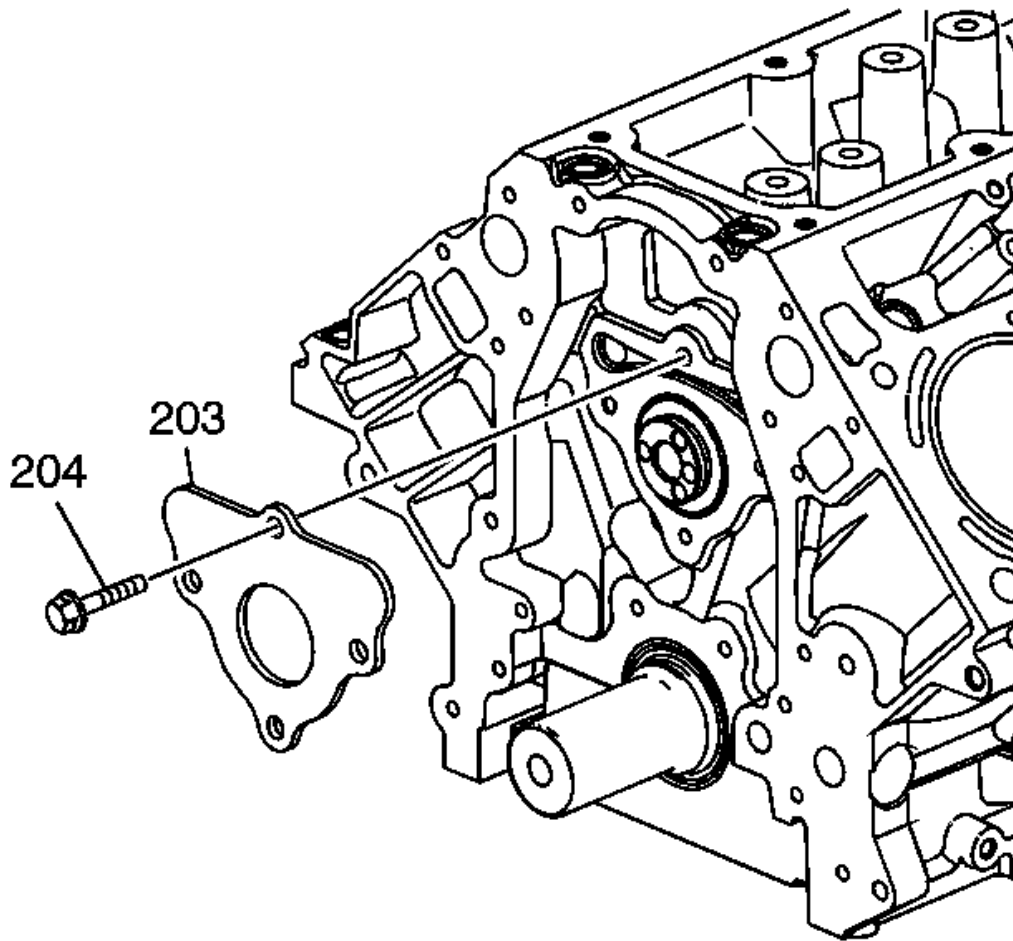


Fig. 88: Camshaft Retainer & Bolts

Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The gasket surface on the engine block should be clean and free of dirt and/or debris.

5. Install the camshaft retainer (203) and bolts (204). Install the retainer with the sealing gasket facing the engine block.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

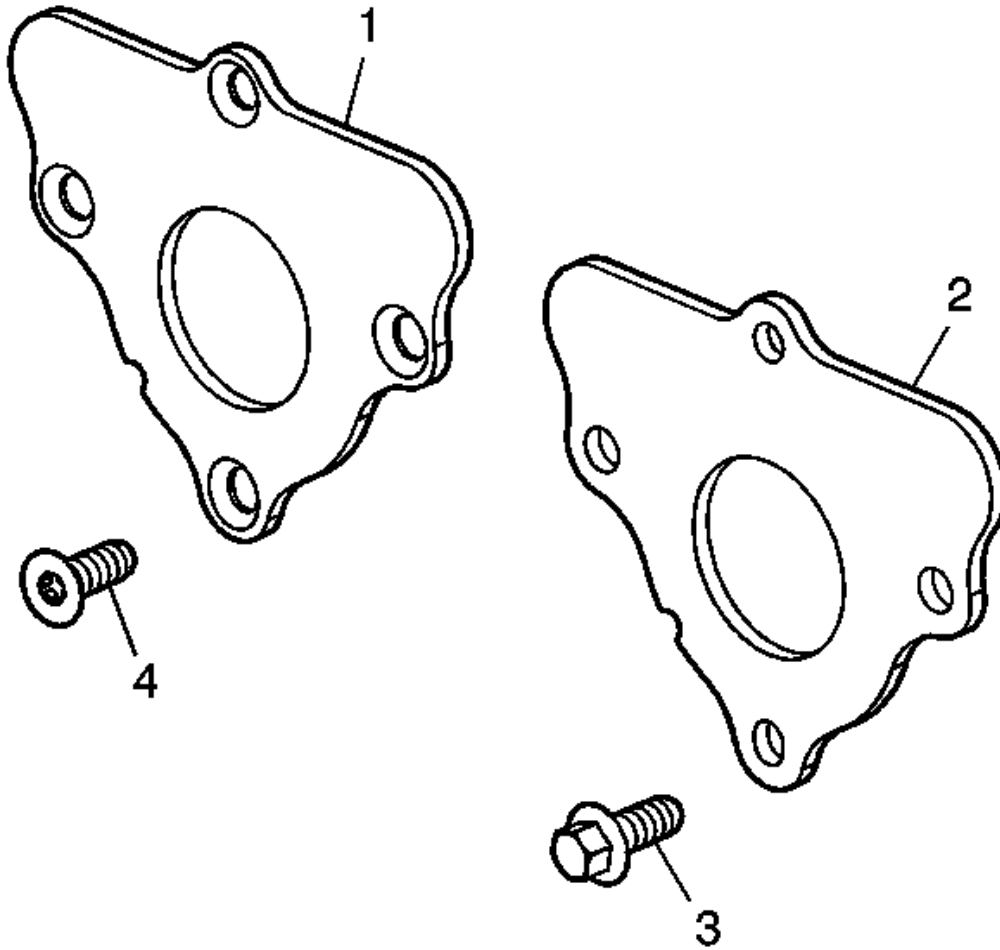


Fig. 89: Identifying Camshaft Retainer Bolts
Courtesy of GENERAL MOTORS CORP.

6. Tighten the camshaft retainer bolts.

Tighten:

- Tighten the first design hex head bolts (3) to 25 N.m (18 lb ft).
- Tighten the second design TORX® head bolts (4) to 15 N.m (11 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

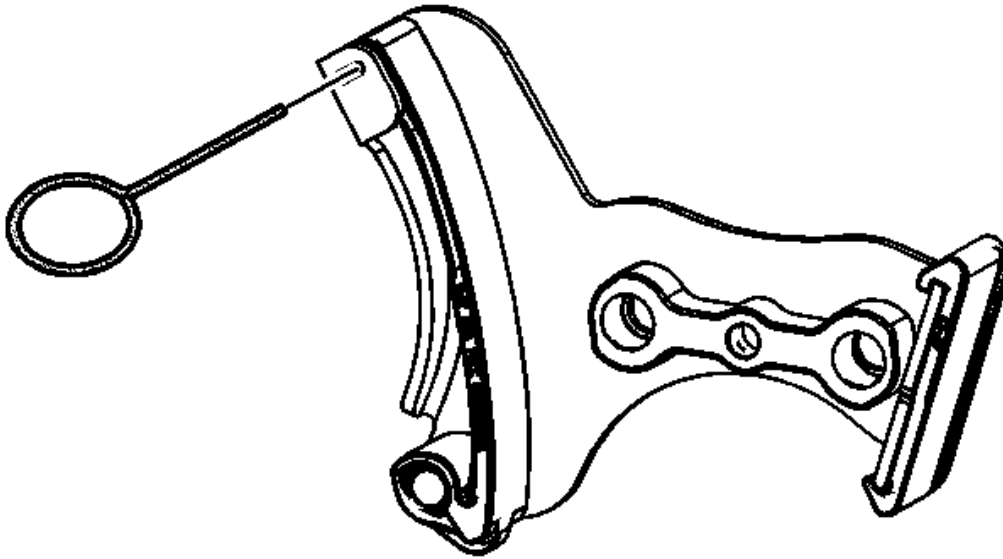


Fig. 90: View Of Compressed Tensioner
Courtesy of GENERAL MOTORS CORP.

7. Compress the timing chain tensioner guide and install the **EN 46330** . See **Special Tools** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

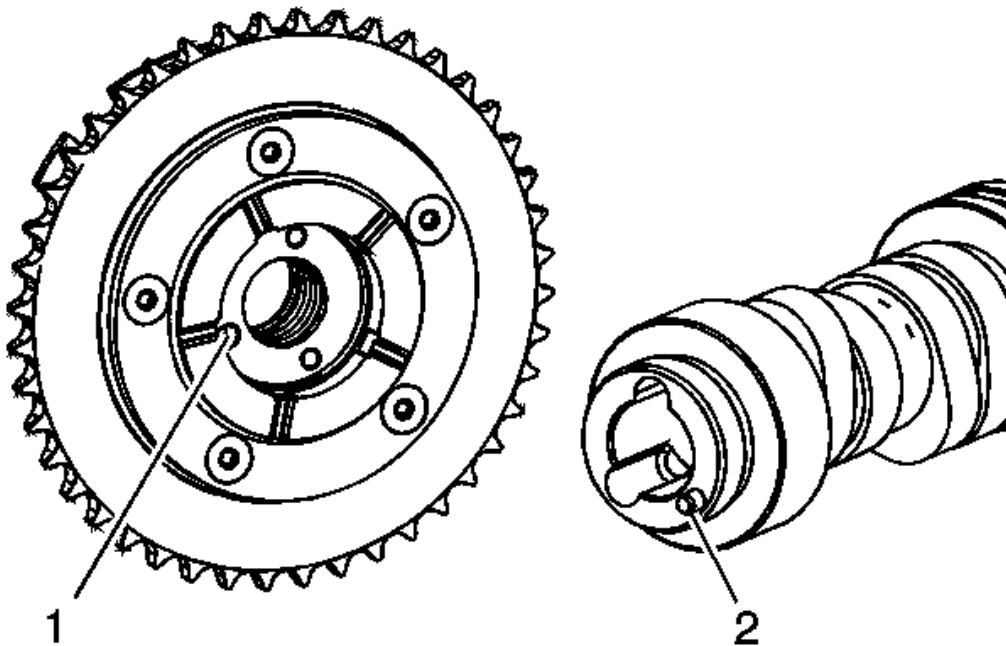


Fig. 91: Identifying Alignment Hole & Locating Pin
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- Properly locate the CMP actuator onto the locating pin of the camshaft.
- The sprocket teeth and timing chain teeth must mesh.
- The camshaft and the crankshaft sprocket alignment mark **MUST** be aligned properly.
- Do not use the CMP solenoid valve again. Install a **NEW** valve during assembly.

8. Identify the alignment hole (1) in the rear face of the CMP actuator and the locating pin (2) on the front face of the camshaft.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

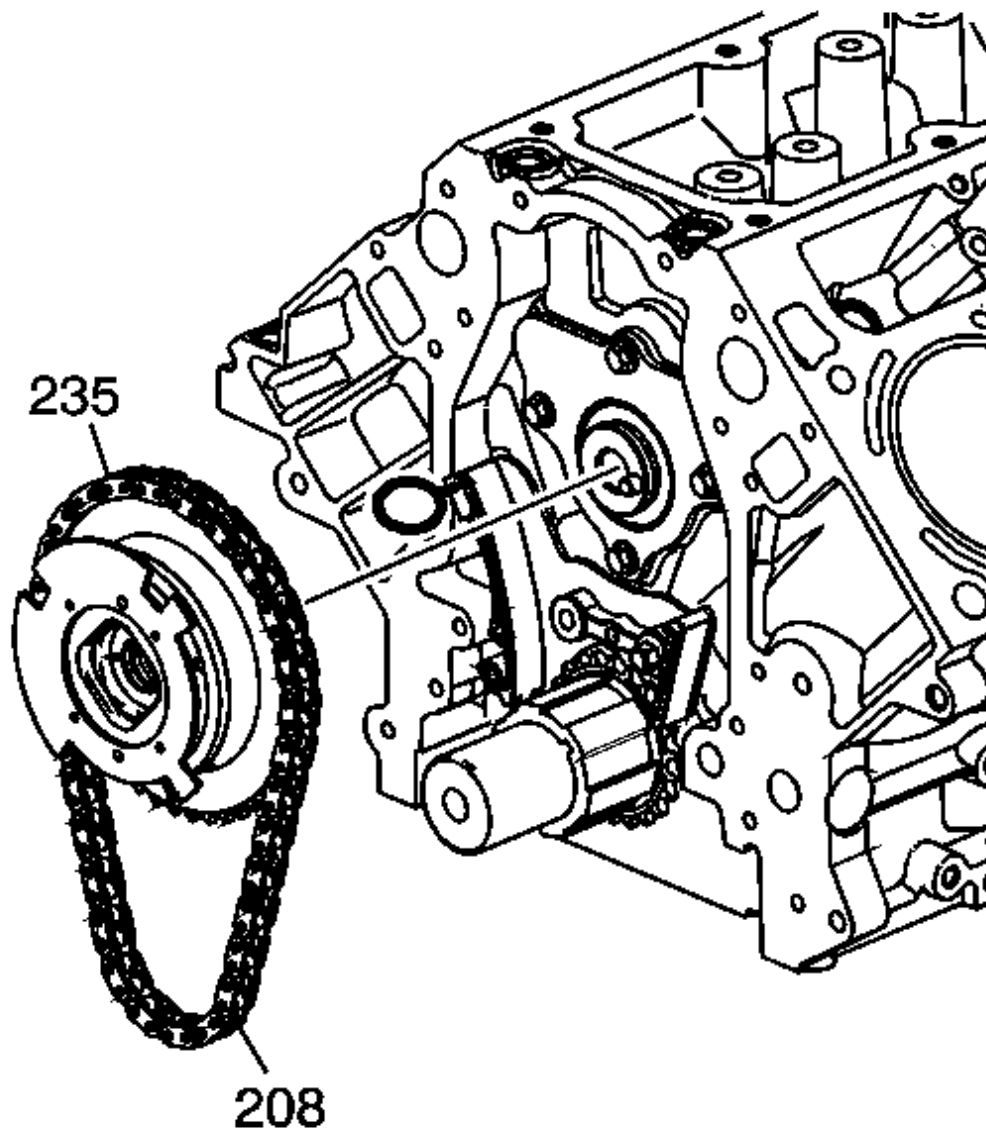


Fig. 92: View Of CMP Actuator & Timing Chain
Courtesy of GENERAL MOTORS CORP.

9. Align the CMP actuator so the timing mark is in the 6 o'clock position.
10. Install the CMP actuator (235) and timing chain (208). Align the hole in the face of the CMP actuator with the locating pin on the front face of the camshaft.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

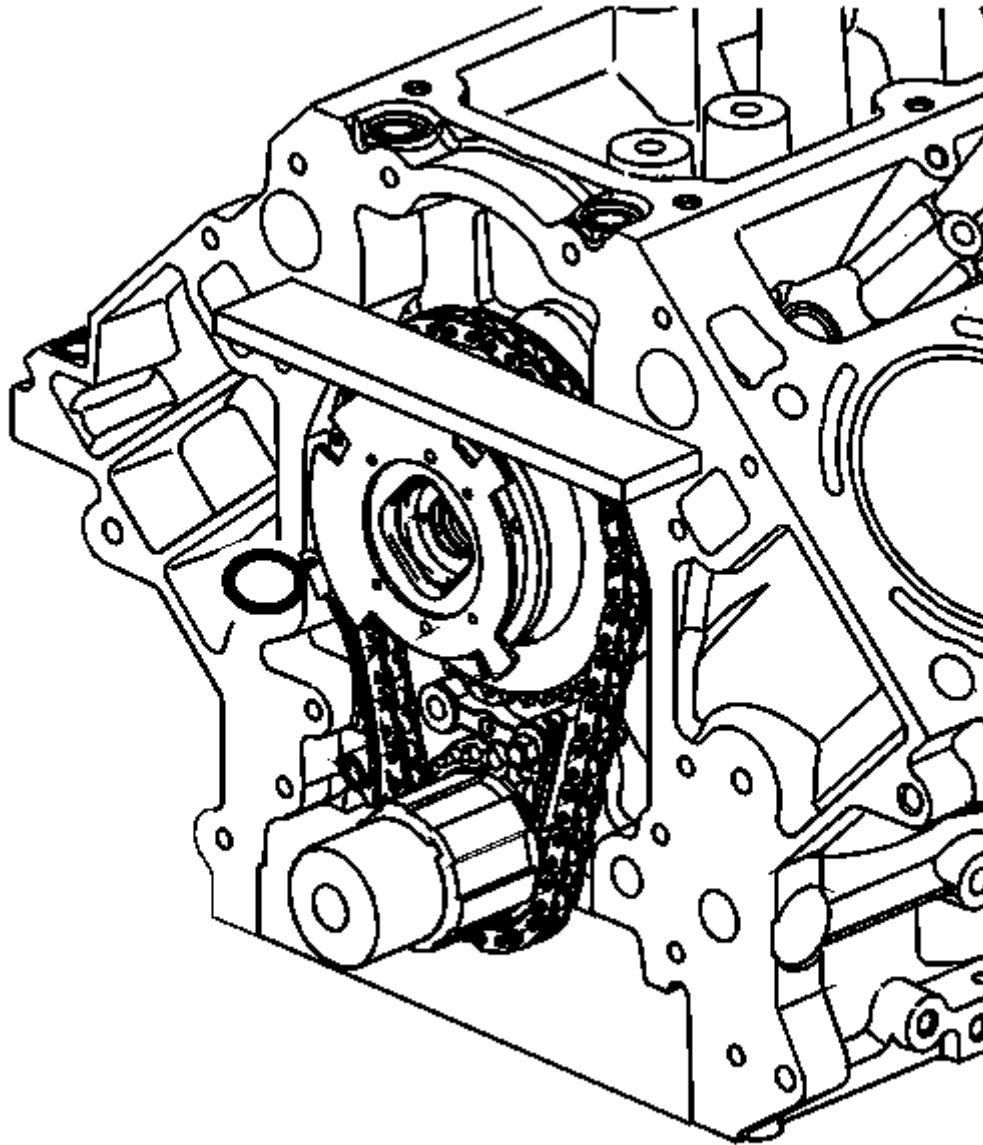


Fig. 93: Inspecting For Proper Installation Of CMP Actuator & Timing Chain
Courtesy of GENERAL MOTORS CORP.

11. Place a straight edge across the front face of the engine block and inspect for proper installation of the CMP actuator and timing chain. With the CMP actuator properly and completely installed onto the front of the camshaft, the timing chain will not protrude

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

beyond the front face of the engine block.

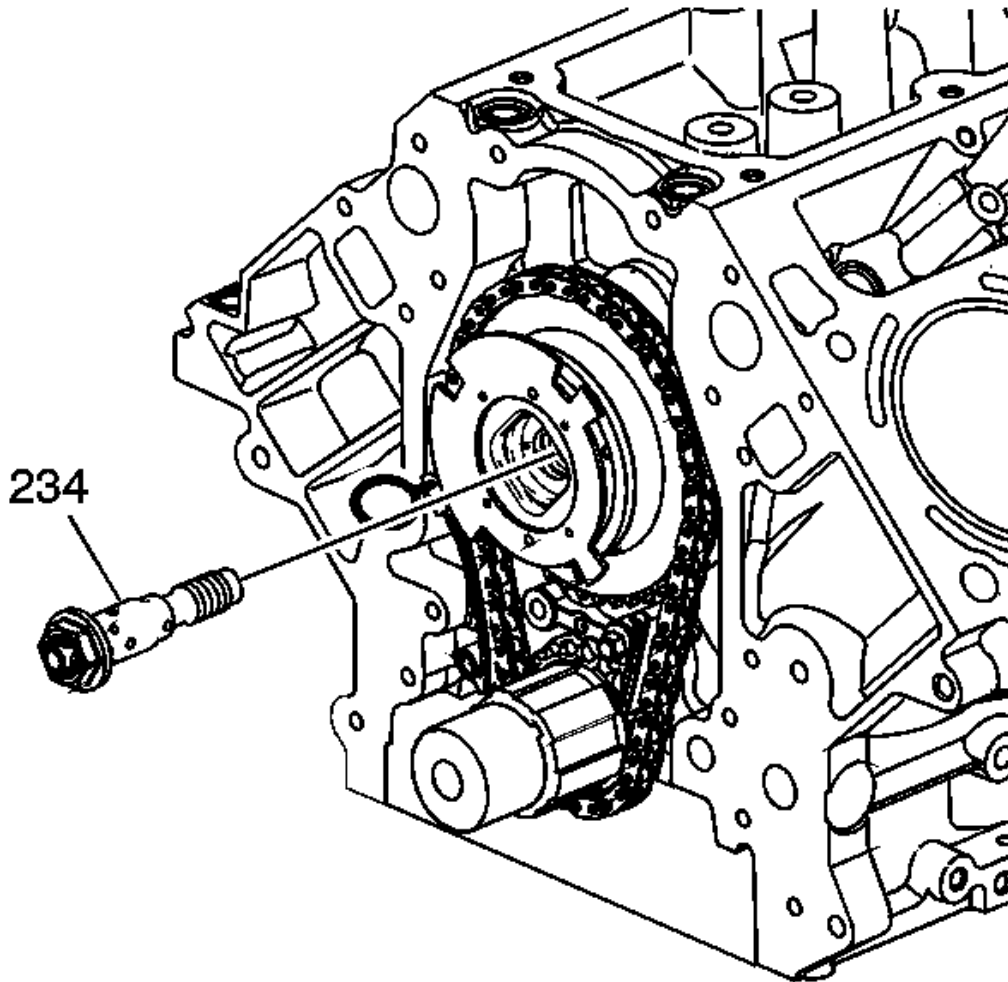


Fig. 94: View Of CMP Actuator Solenoid Valve
Courtesy of GENERAL MOTORS CORP.

12. Install a NEW CMP actuator solenoid valve (234). With the CMP actuator properly positioned onto the camshaft, the CMP actuator solenoid valve can be threaded completely into the camshaft using light hand pressure. Tighten by hand until snug.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

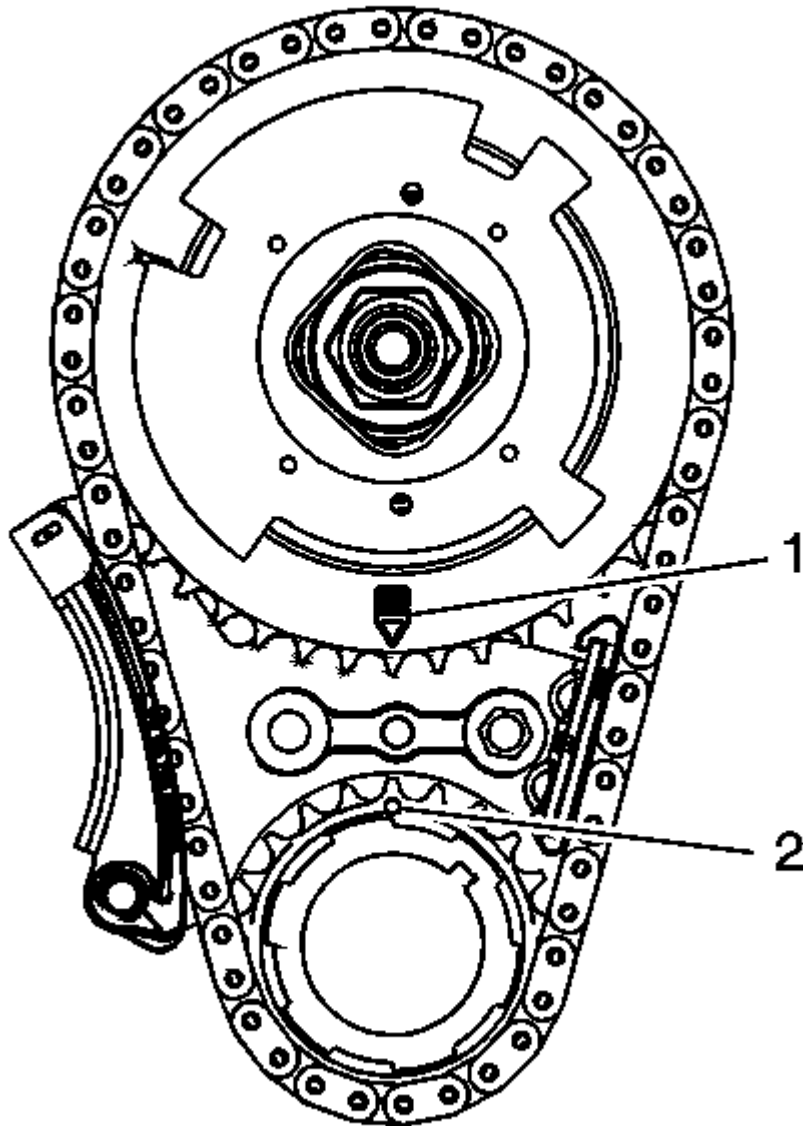


Fig. 95: View Of CMP Actuator Alignment Mark & Crankshaft Sprocket Alignment Mark

Courtesy of GENERAL MOTORS CORP.

13. Inspect the sprockets for proper alignment. The mark on the CMP actuator sprocket (1) should be located in the 6 o'clock position and the mark on the crankshaft sprocket (2)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

should be located in the 12 o'clock position.

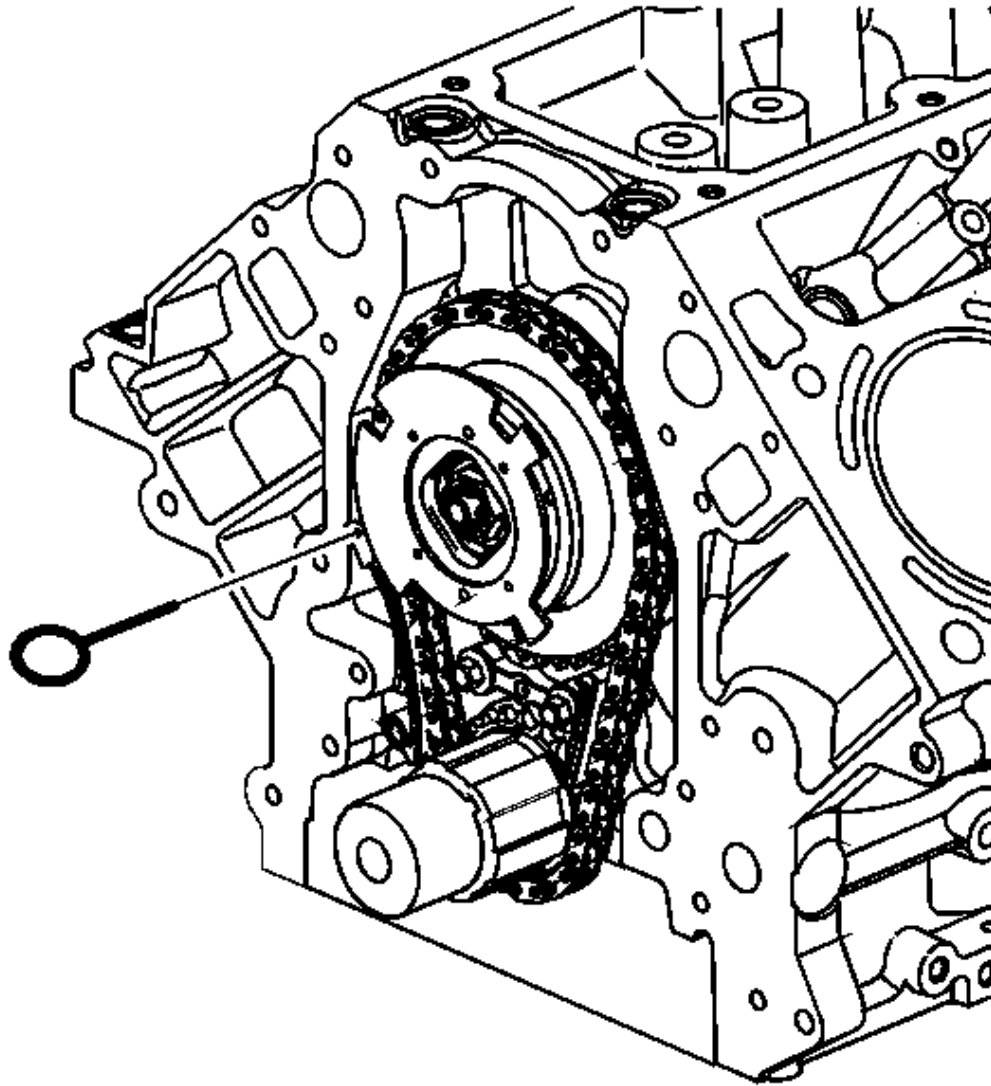


Fig. 96: View Of Special Tool EN 46330
Courtesy of GENERAL MOTORS CORP.

14. Remove the EN 46330 . See Special Tools .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

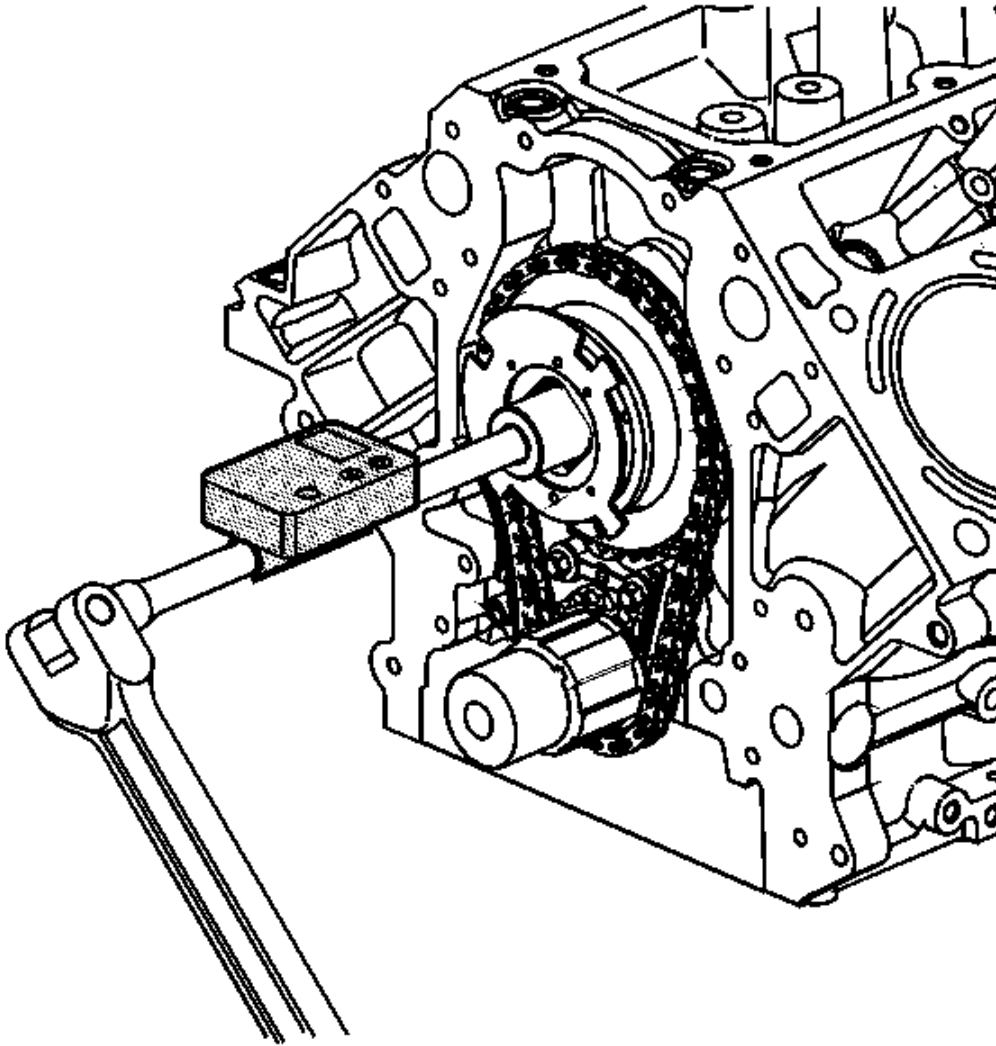


Fig. 97: Tightening The CMP Actuator Solenoid Valve
Courtesy of GENERAL MOTORS CORP.

15. Tighten the CMP actuator solenoid valve.

Tighten:

1. Tighten the valve a first pass to 65 N.m (48 lb ft).
2. Tighten the valve a final pass to 90 degrees using **J 45059** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

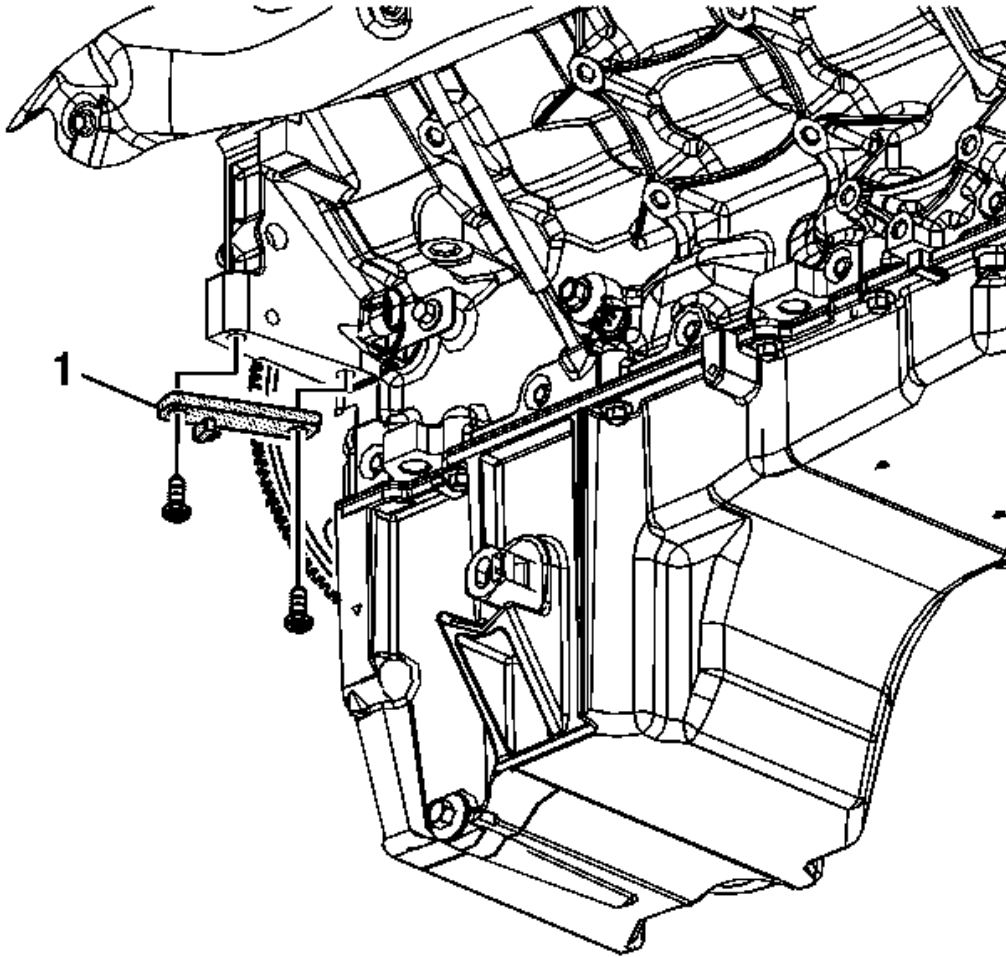


Fig. 98: View Of Special Tool & Bolts
Courtesy of GENERAL MOTORS CORP.

16. Remove the **J 42386-A** (1) and bolts. See **Special Tools** .
17. Install the starter motor. Refer to **Starter Motor Replacement (4.3L)** or **Starter Motor Replacement (4.8L, 5.3L, 6.0L, and 6.2L)** or **Starter Motor Replacement (6.6L)** .
18. Install the engine front cover. Refer to **Engine Front Cover Replacement (LC9, LH6, LMG, LY2 and LY5)** or **Engine Front Cover Replacement (LY6, L76 and L92)** .
19. Install the valve lifters. Refer to **Valve Lifter Replacement (L92 - First Design)** or **Valve Lifter Replacement (L92 - Second Design)** or **Valve Lifter Replacement (LY2 and LY6)** or **Valve Lifter Replacement (LH6, LMG, LY5 and L76)** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

20. Install the radiator support. Refer to [Radiator Support Replacement](#) .

AUTOMATIC TRANSMISSION FLEX PLATE REPLACEMENT

Removal Procedure

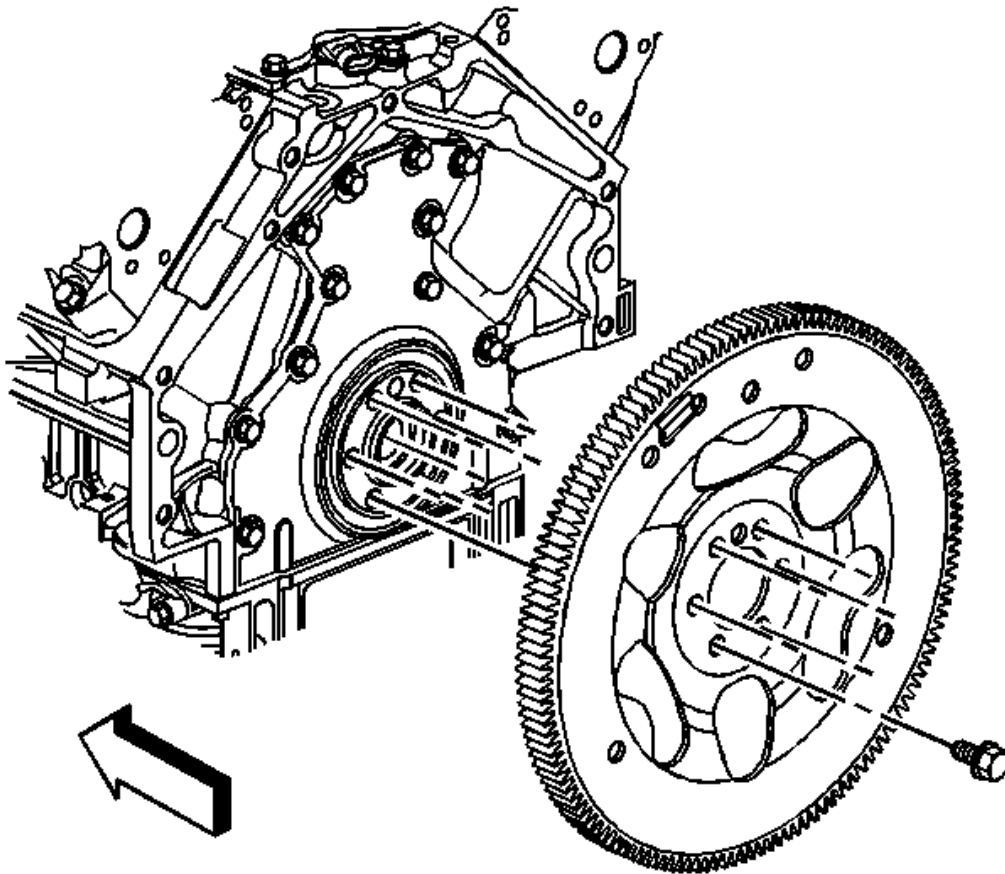


Fig. 99: View Of Engine Flywheel & Bolts
Courtesy of GENERAL MOTORS CORP.

1. Remove the automatic transmission. Refer to [Transmission Replacement](#) for the 4L60-E.

IMPORTANT: Note the position and direction of the engine flywheel before removal.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Remove the flywheel bolts.
3. Remove the flywheel.

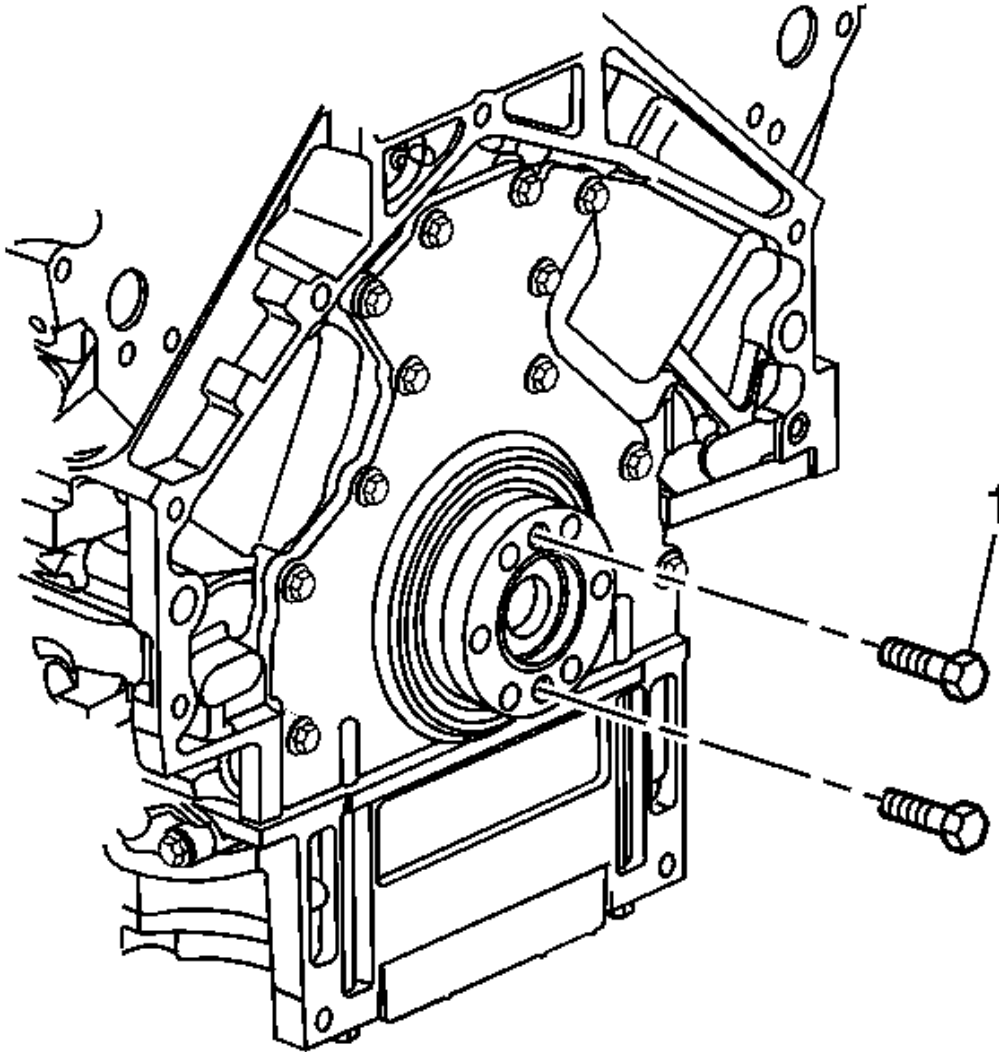


Fig. 100: View Of Bolts & Spacer
Courtesy of GENERAL MOTORS CORP.

4. Install two M11x1.5 mm bolts (1) to the threaded holes of the spacer, if applicable.
5. Rotate the bolts clockwise to remove the spacer.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

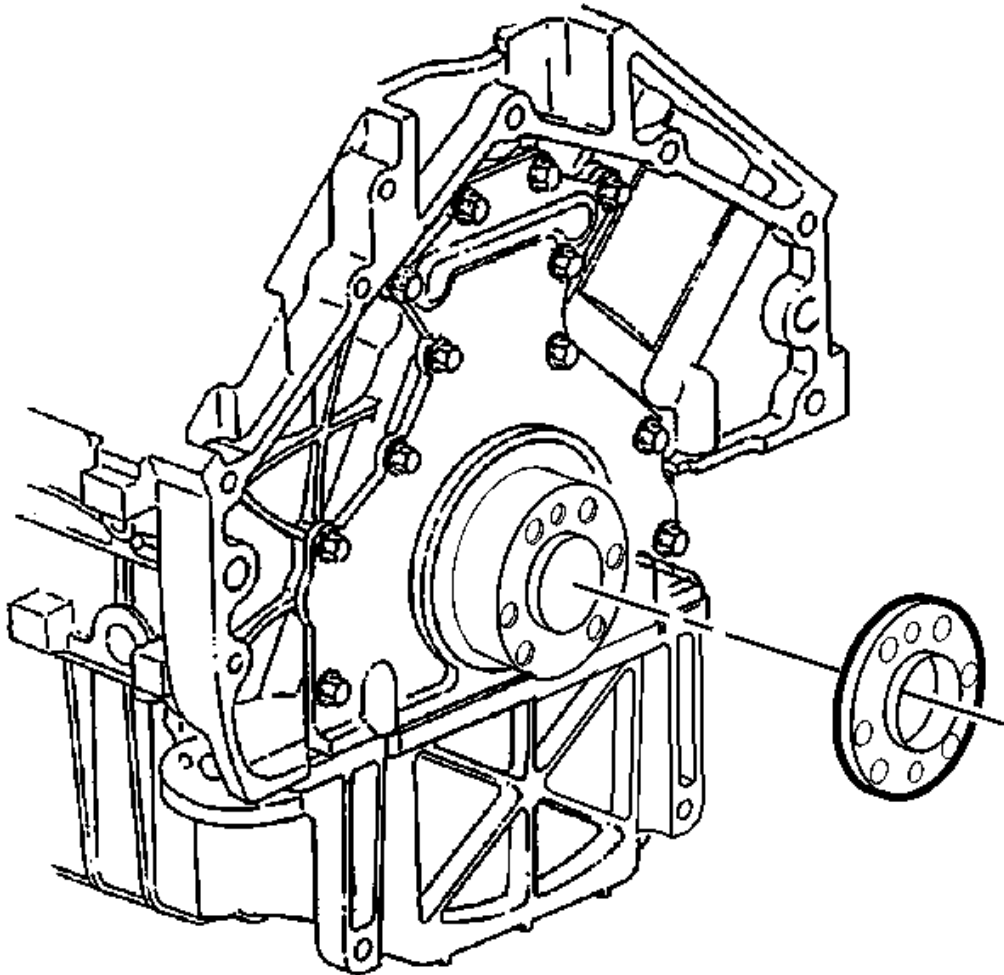


Fig. 101: View Of Spacer & Crankshaft Rear
Courtesy of GENERAL MOTORS CORP.

6. Remove the spacer from the rear of the crankshaft, if applicable.

Installation Procedure

- IMPORTANT:**
- The flywheel does not use a locating pin for alignment and will not initially seat against the crankshaft flange or spacer, if applicable, but will be pulled onto the crankshaft by the engine flywheel bolts. This procedure requires a three stage

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

tightening process.

- Certain applications (6.0L) require a spacer and longer bolts for proper flywheel position.

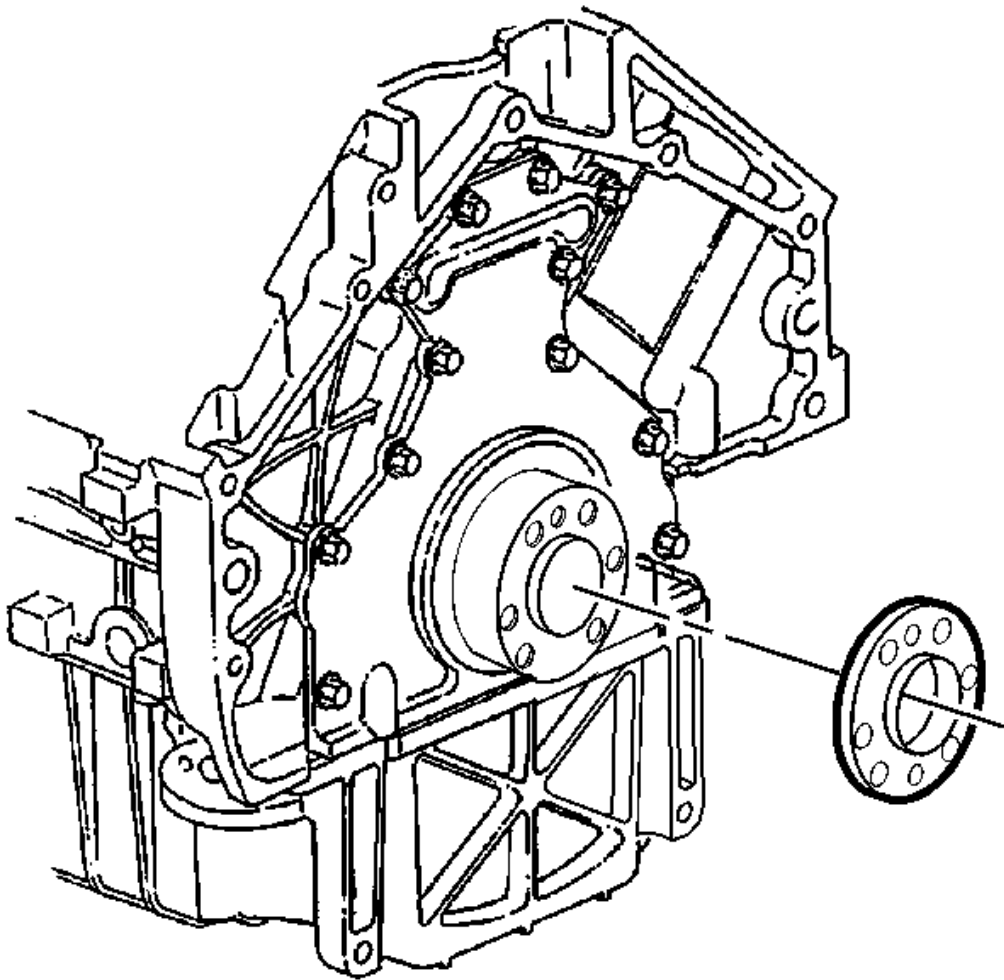


Fig. 102: View Of Spacer & Crankshaft Rear
Courtesy of GENERAL MOTORS CORP.

1. Install the spacer, if applicable, onto the rear of the crankshaft.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

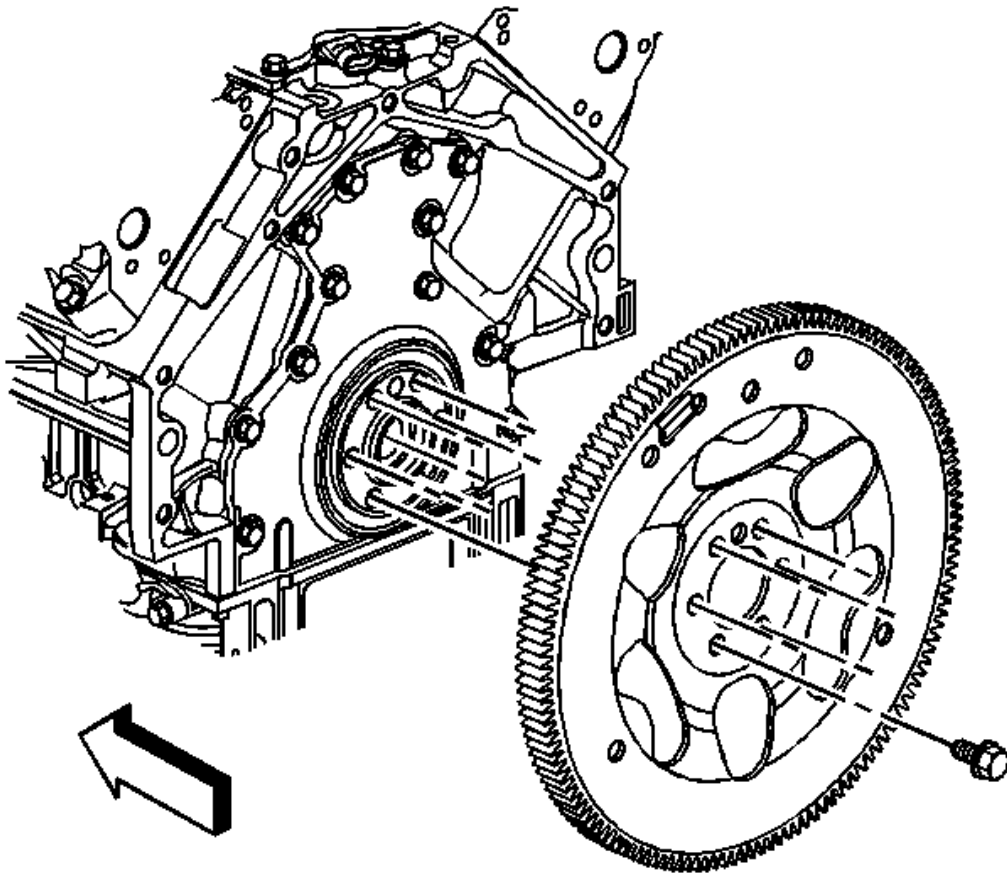


Fig. 103: View Of Engine Flywheel & Bolts
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Longer flywheel bolts must be used on applications using a flywheel spacer.

2. Install the flywheel and bolts to the crankshaft.
3. Apply threadlock to the threads of the flywheel bolts. Refer to **Sealers, Adhesives, and Lubricants** for the correct part number.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

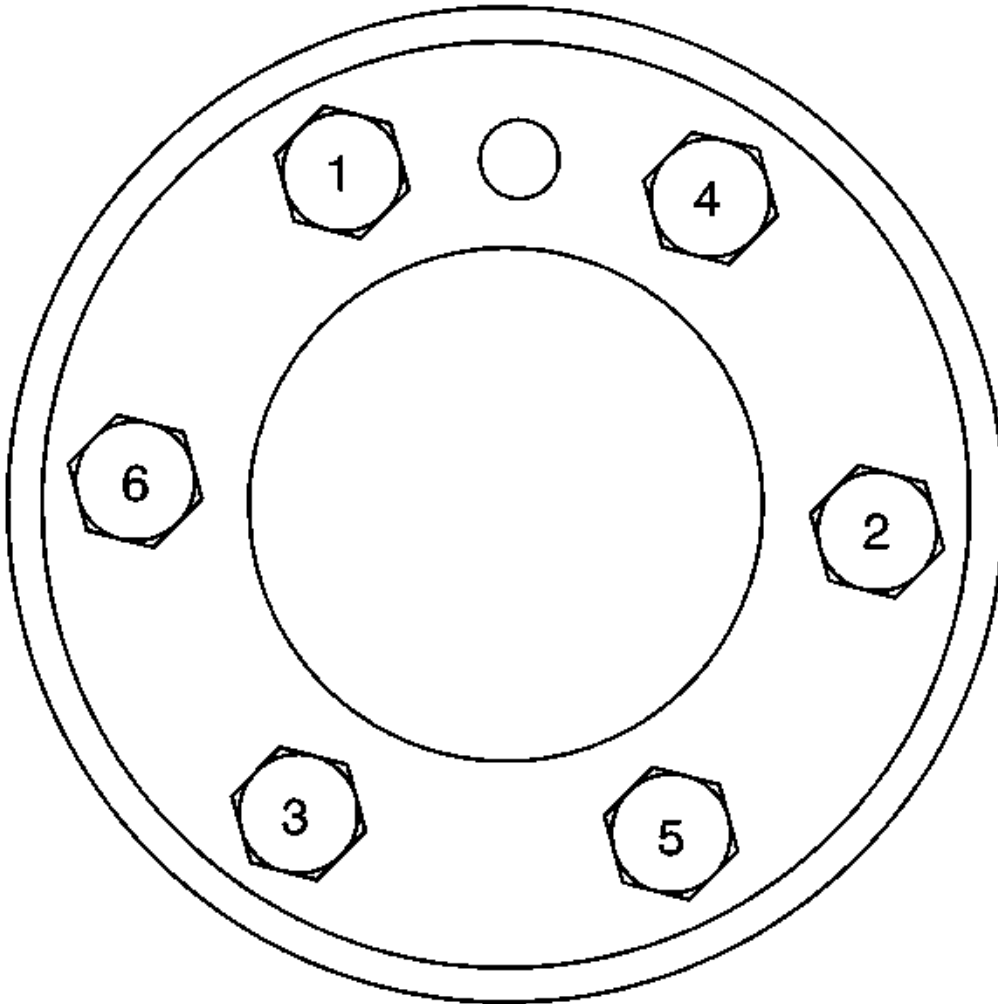


Fig. 104: Identifying Flywheel Bolt Tightening Sequence
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

4. Tighten the flywheel bolts.

Tighten:

1. Tighten the bolts (1-6) a first pass in sequence to 20 N.m (15 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

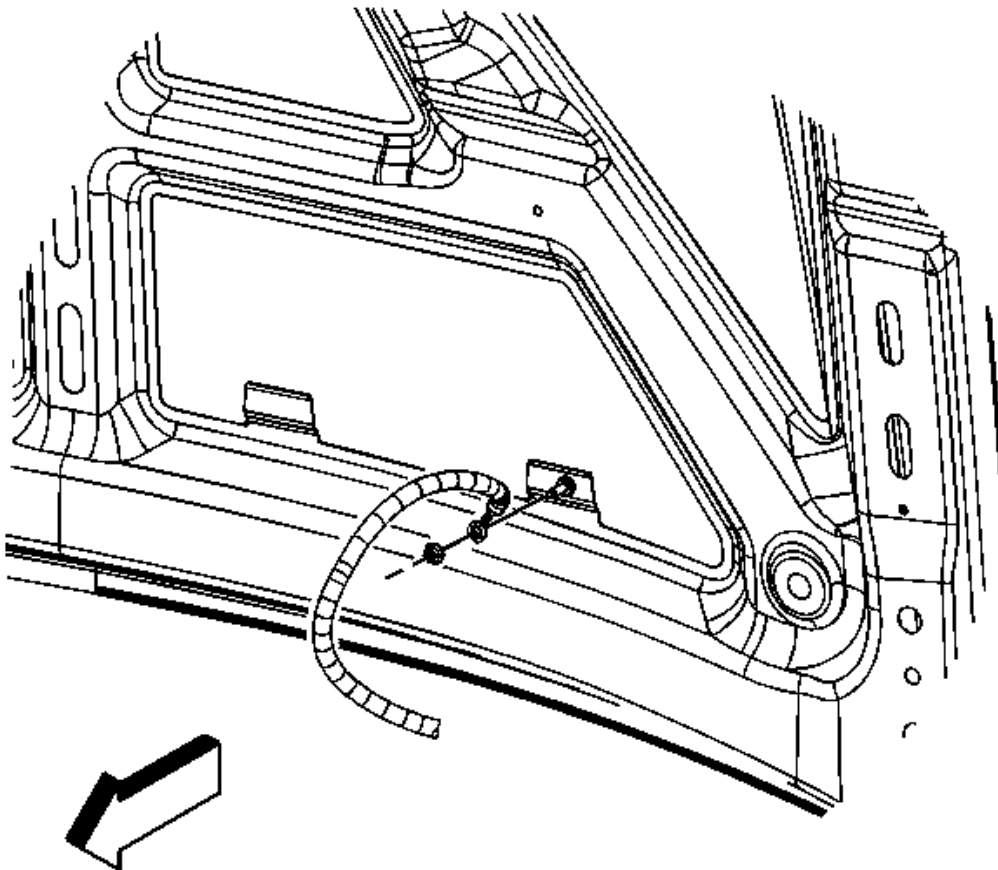
2. Tighten the bolts (1-6) a second pass in sequence to 50 N.m (37 lb ft).
 3. Tighten the bolts (1-6) a final pass in sequence to 100 N.m (74 lb ft).
5. Install the automatic transmission. Refer to **Transmission Replacement** for the 4L60-E.

ENGINE REPLACEMENT

Tools Required

- **J 21366** Converter Holding Strap. See **Special Tools** .
- **J 41798** Engine Lifting Brackets. See **Special Tools** .

Removal Procedure



2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Fig. 105: View Of Ground Strap & Nut
Courtesy of GENERAL MOTORS CORP.

1. Open the hood.
2. Remove the ground strap nut at the hood stud.
3. Remove the ground strap from the stud.

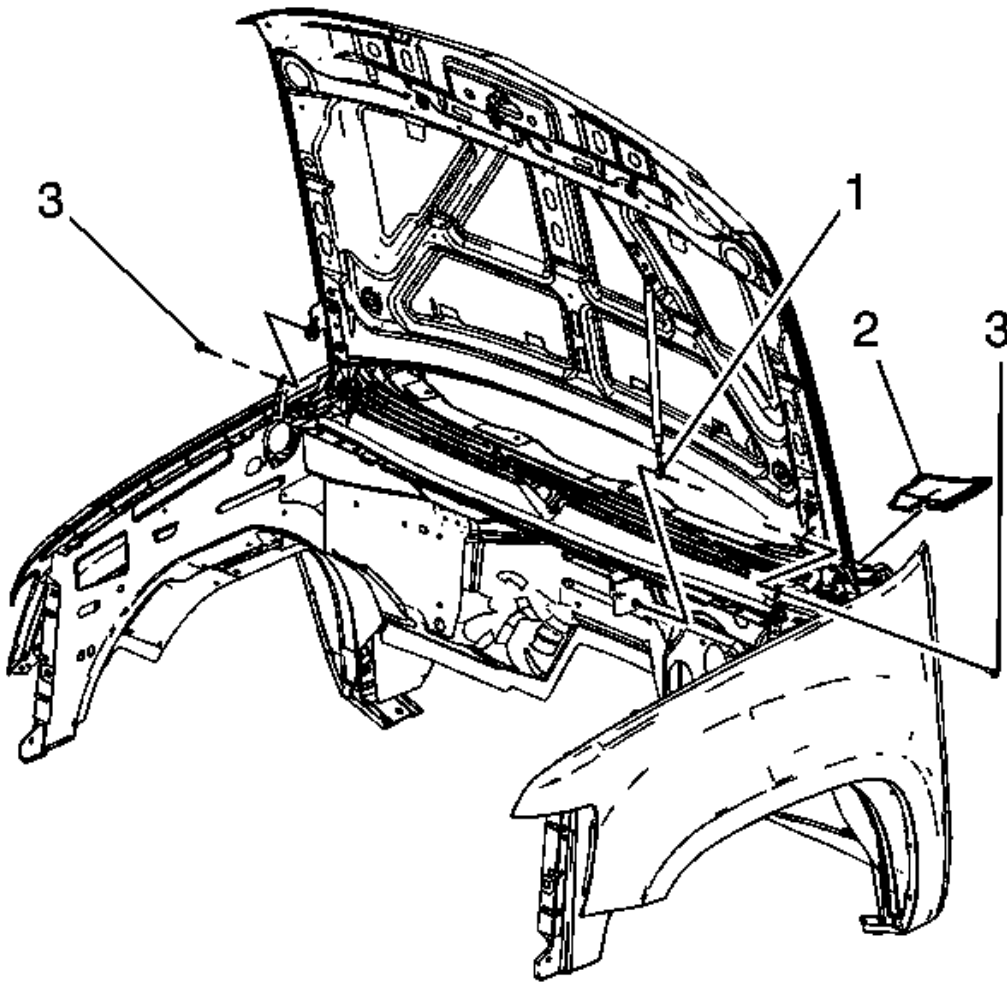


Fig. 106: View Of Hood Strut Rod, Grille End Caps & Hood Hinge Bolts
Courtesy of GENERAL MOTORS CORP.

4. Assemble 2 sets of the following: an M6 bolt, 2 each 19.05 mm (0.75 in) flat washers and an

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

M6 nut.

5. Release the retainer securing the hood strut rod to the hood strut bracket stud.
6. Remove the hood strut rod (1) from the stud.
7. Remove the air inlet grille end caps (2), lift the end cap up in order to disengage the retainers. (left side shown, right side similar).
8. Have an assistant support the hood.
9. Remove the hood hinge bolts (3) and set aside.

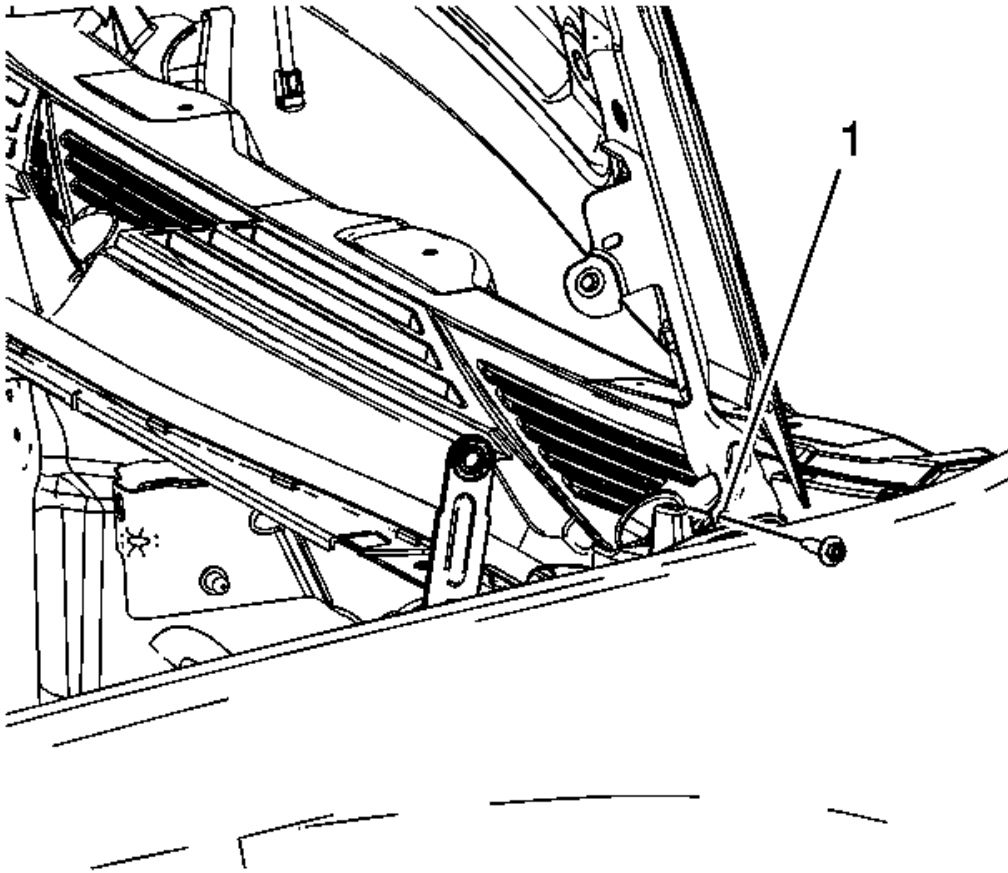


Fig. 107: View Of Service Piston Notch
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: There is a positive stop which limits the hood from being

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

opened too far.

10. Raise the hood until the service position notch (1) in the upper hinge is reached.
11. Install the 2 sets of the M6 bolts to both the left and right side service notches and tighten finger tight.

NOTE: Refer to **Fastener Notice** .

12. Lower the hood until the bolts rest against the lower hinge, tighten the bolts to secure the hood.

Tighten: Tighten the bolts to 20 N.m (15 lb ft).

13. The hood is now set in the service position.
14. Remove the hood latch. Refer to **Hood Primary and Secondary Latch Replacement** .
15. Remove the front end upper tie bar. Refer to **Front End Upper Tie Bar Replacement** .
16. Remove the intake manifold. Refer to **Intake Manifold Replacement (L92 - First Design)** or **Intake Manifold Replacement (L92 - Second Design)** or **Intake Manifold Replacement (LY2 and LY6)** or **Intake Manifold Replacement (LH6, LMG, LY5 and L76)** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

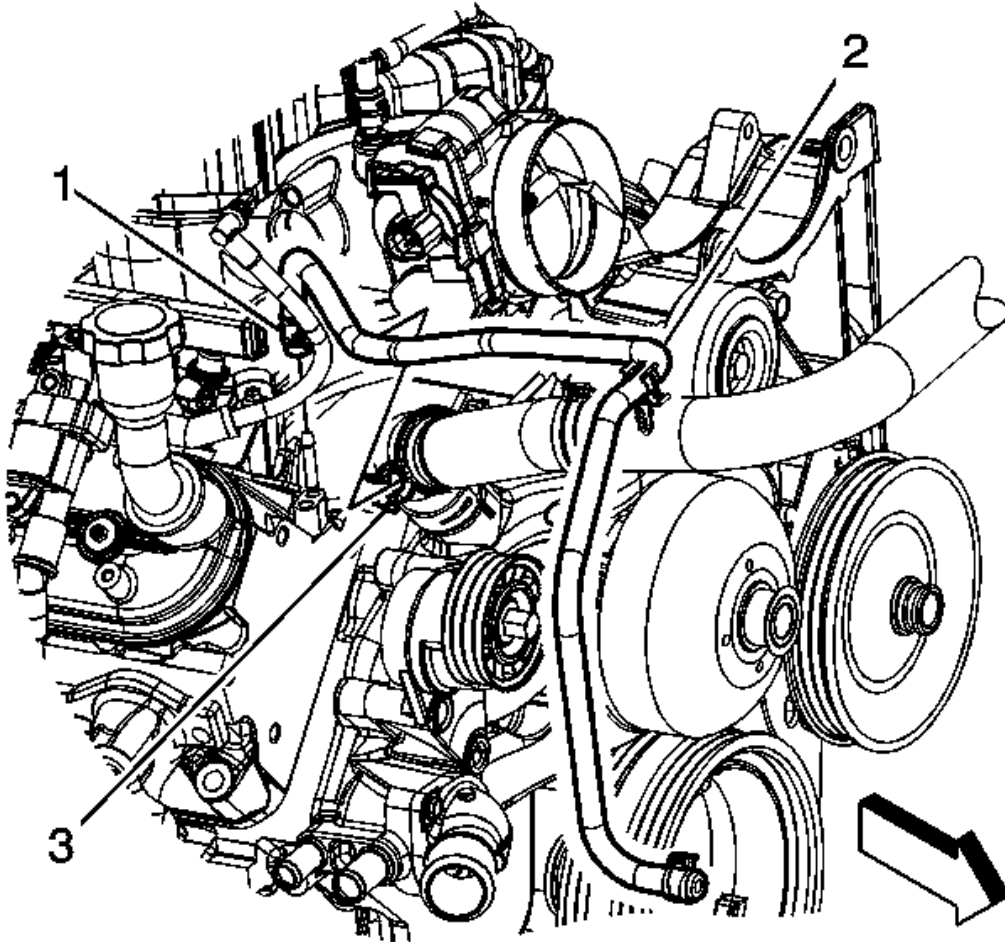


Fig. 108: View Of Radiator Vent Inlet Hose & Clamps
Courtesy of GENERAL MOTORS CORP.

17. Remove the radiator vent inlet hose (2) from the radiator inlet hose clip (3).
18. Reposition the radiator vent inlet hose clamp (1) at the air bleed pipe.
19. Remove the radiator vent inlet hose (2) from the air bleed pipe and reposition.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

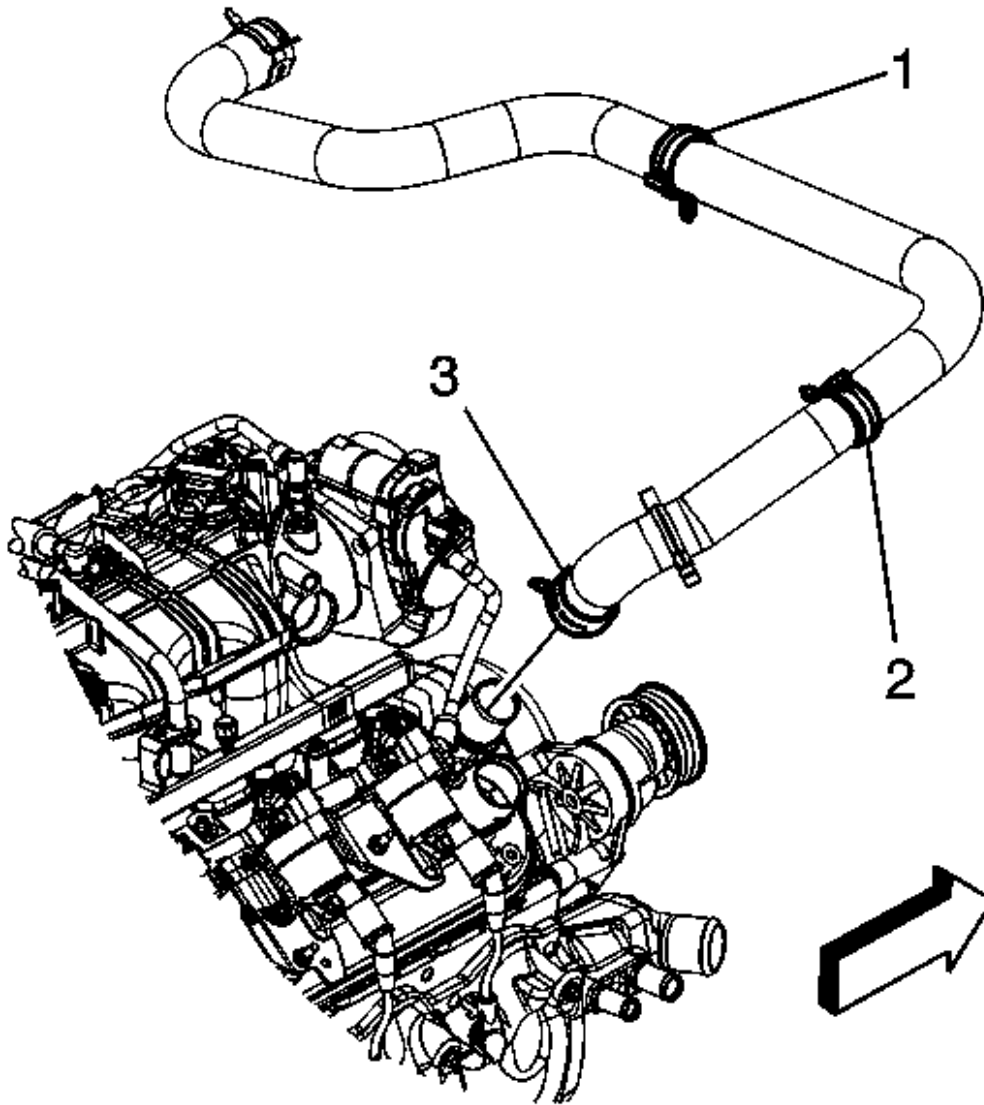


Fig. 109: View Of Radiator Vent Inlet Hose Clamp At Water Pump
Courtesy of GENERAL MOTORS CORP.

20. Reposition the radiator inlet hose clamp (3) at the water pump.
21. Remove the radiator inlet hose from the water pump.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

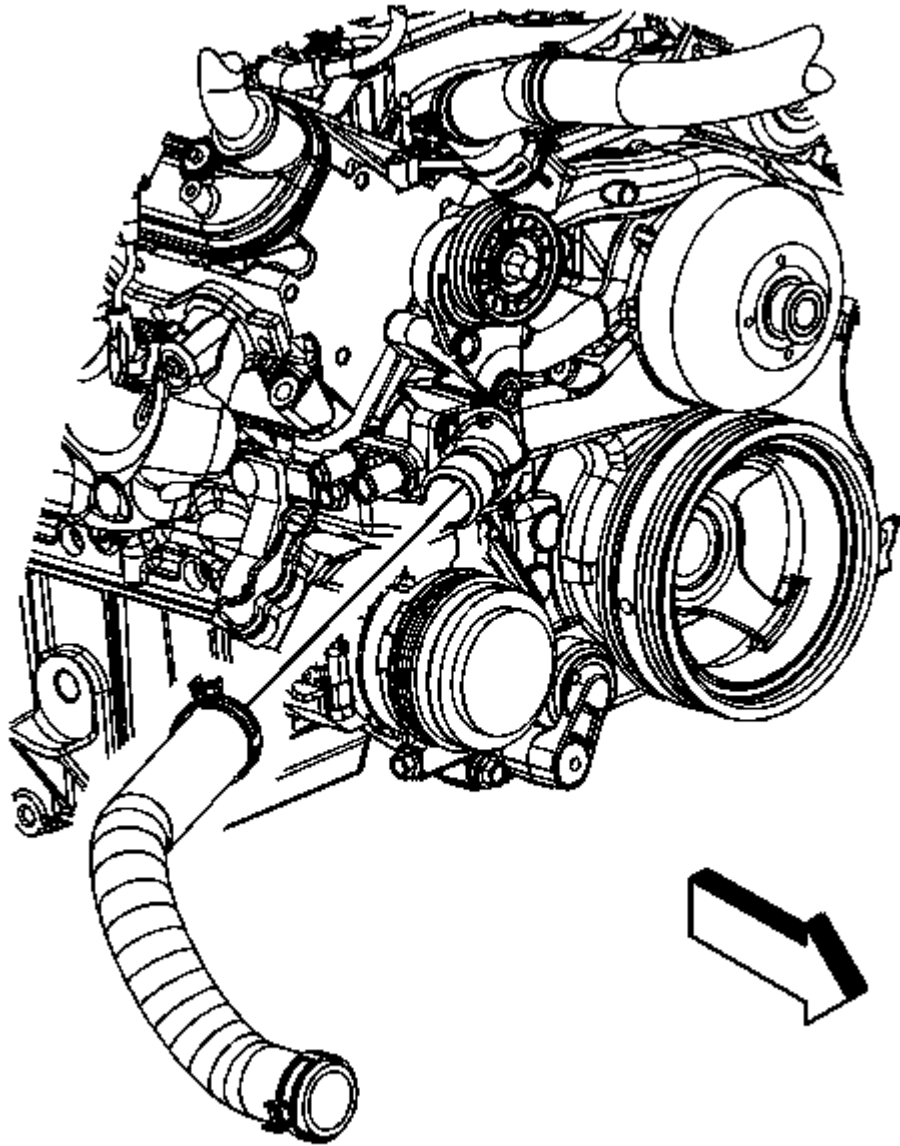


Fig. 110: View Of Radiator Outlet Hose
Courtesy of GENERAL MOTORS CORP.

22. Reposition the radiator outlet hose clamp at the water pump.
23. Remove the radiator outlet hose from the water pump.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

24. Remove the heater hoses. Refer to **Heater Inlet Hose Replacement (Non-HP2)** and **Heater Outlet Hose Replacement** .

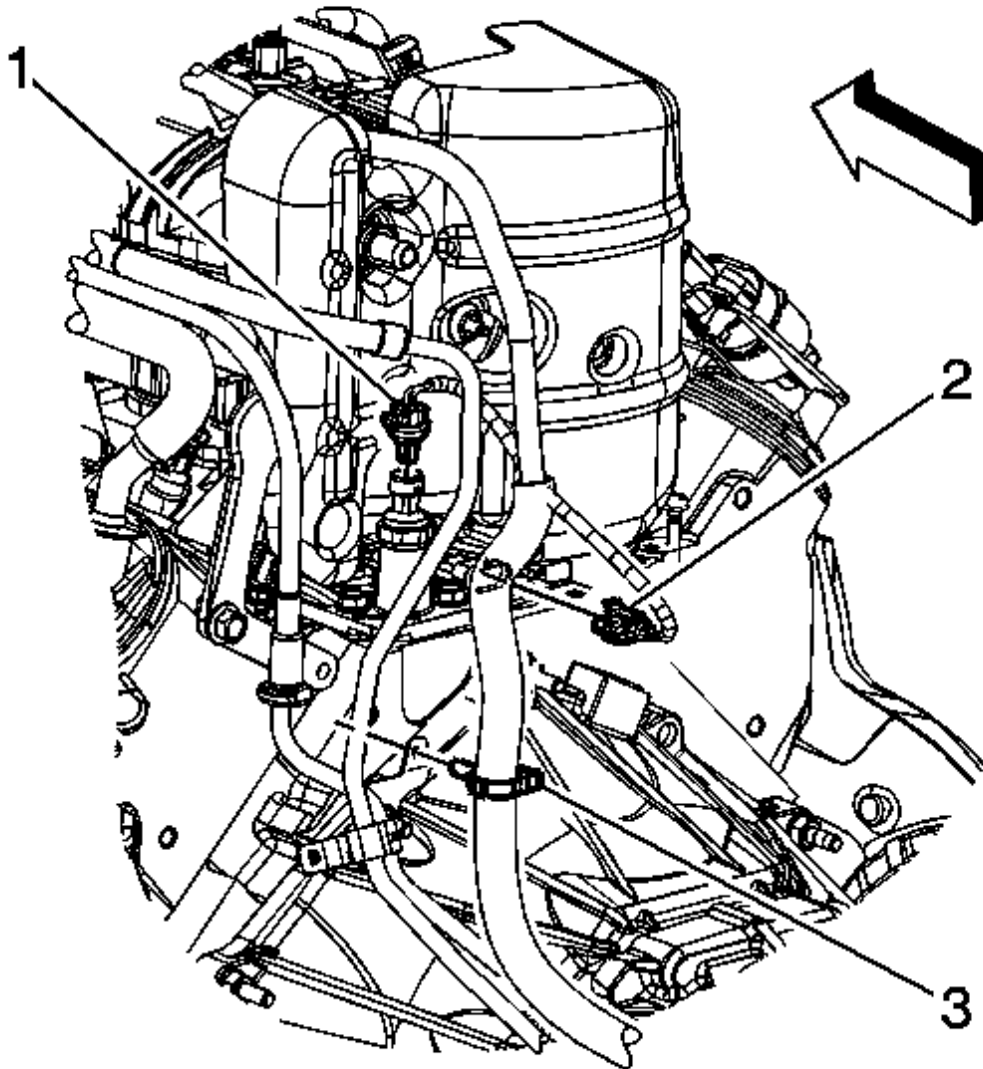


Fig. 111: View Of Engine Harness Electrical Connectors & Inlet Hose Clamp
Courtesy of GENERAL MOTORS CORP.

25. Disconnect the engine harness electrical connector (1) from the oil pressure sensor.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

26. Disconnect the engine harness electrical connector (2) from the lifter oil manifold.

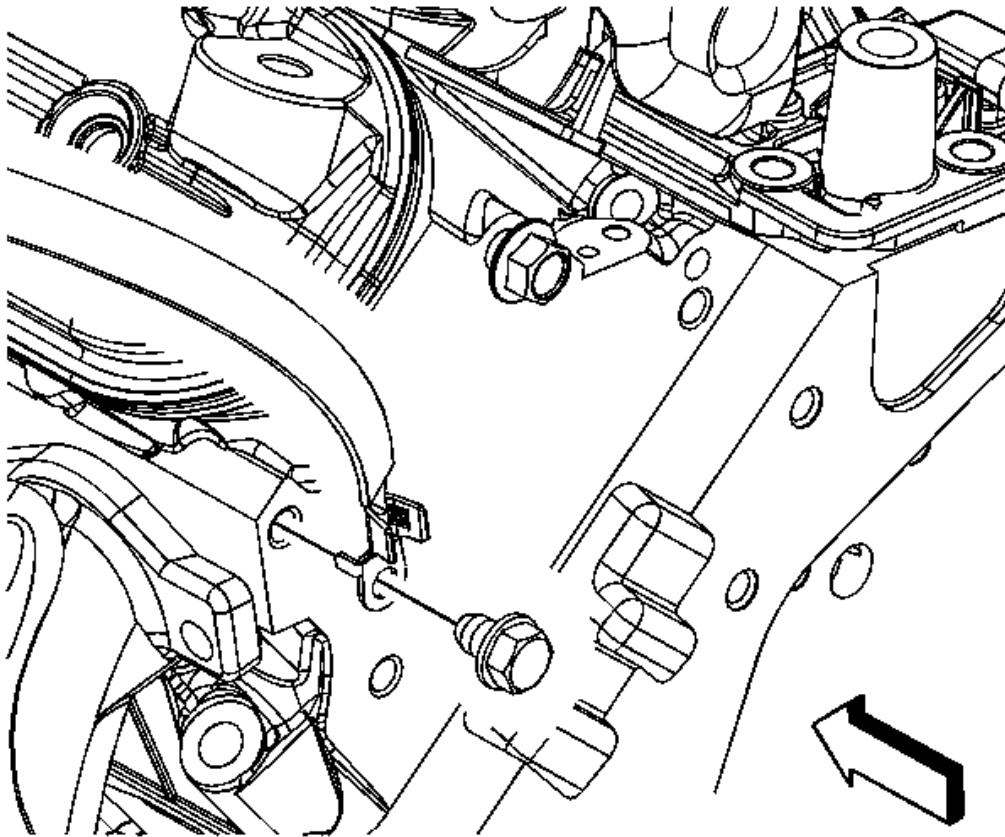


Fig. 112: View Of Engine Ground Strap & Bolt
Courtesy of GENERAL MOTORS CORP.

27. Remove the engine ground strap bolt from the rear of the left cylinder head and cowl and reposition.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

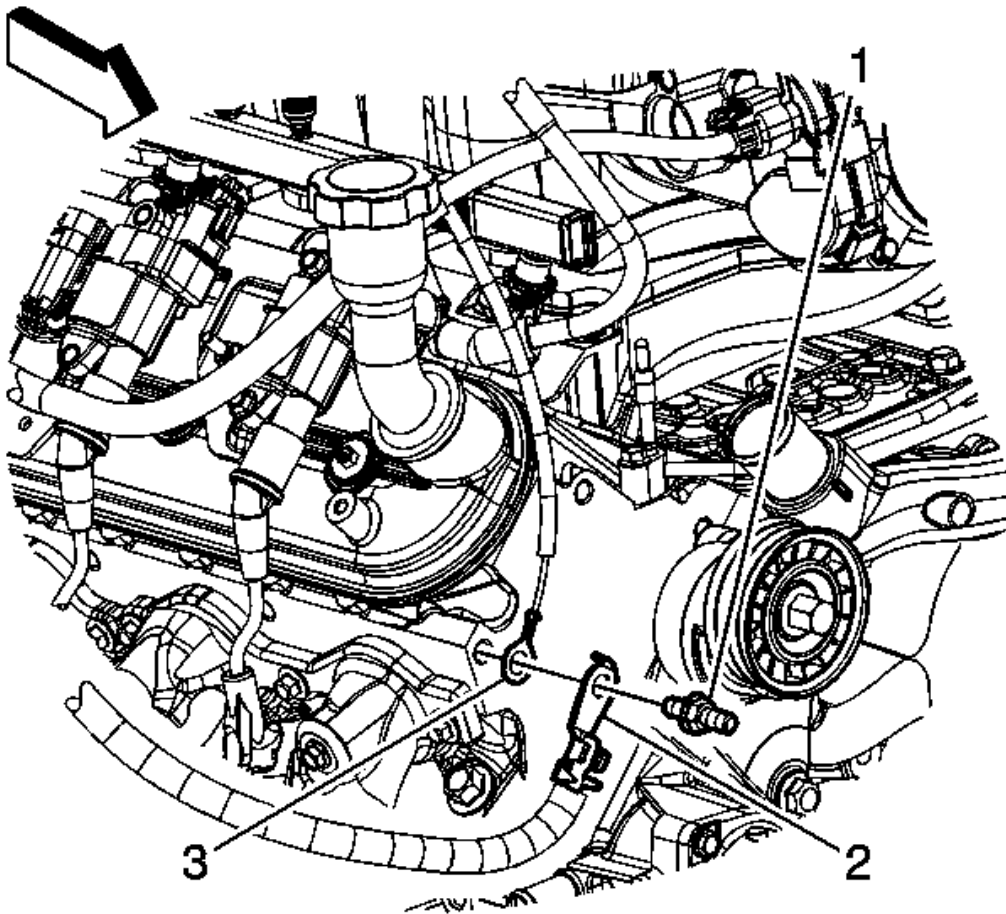


Fig. 113: View Of Battery Cable Terminals & Stud
Courtesy of GENERAL MOTORS CORP.

28. Remove the negative battery cable stud (1) from the right cylinder head.
29. Remove the negative battery cable terminal (2) and the engine harness ground (3) from the right cylinder head.
30. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

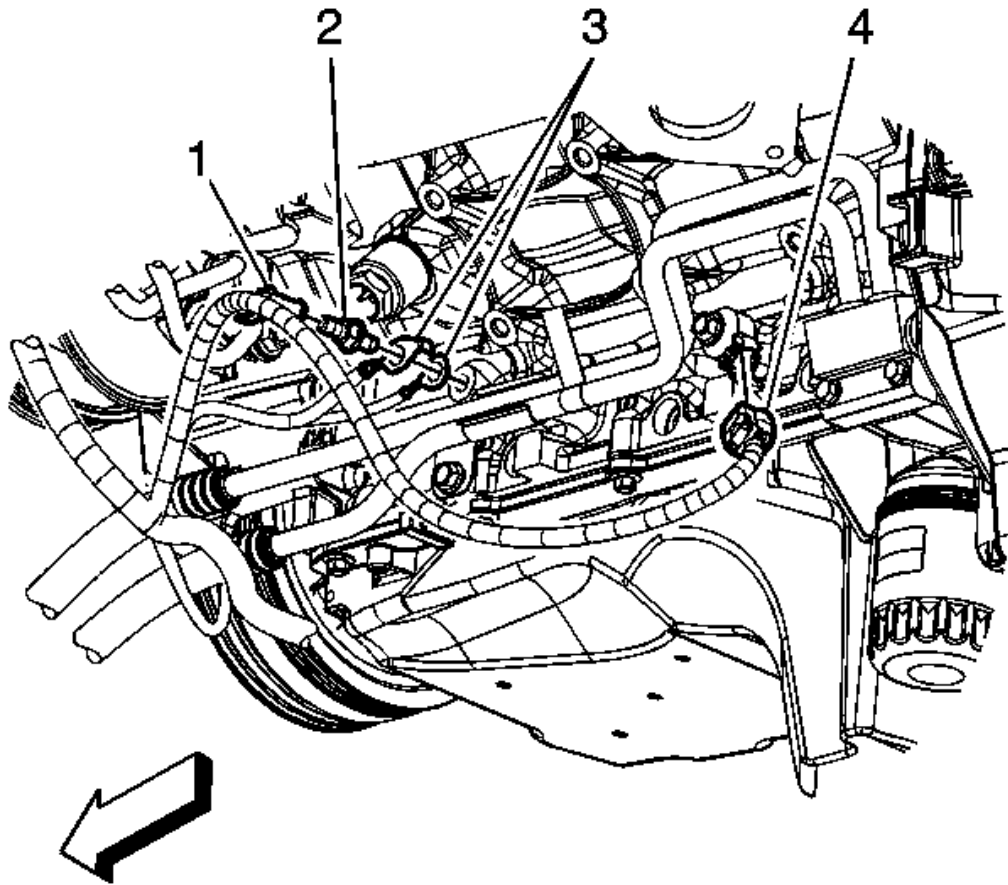


Fig. 114: View Of Engine Harness Components
Courtesy of GENERAL MOTORS CORP.

31. Remove the engine harness clip (1) from the ground stud.
32. Remove the engine harness ground stud (2) from the engine block.
33. Remove the engine harness grounds (3) from the engine block.
34. Disconnect the engine harness electrical connector (4) from the knock sensor.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

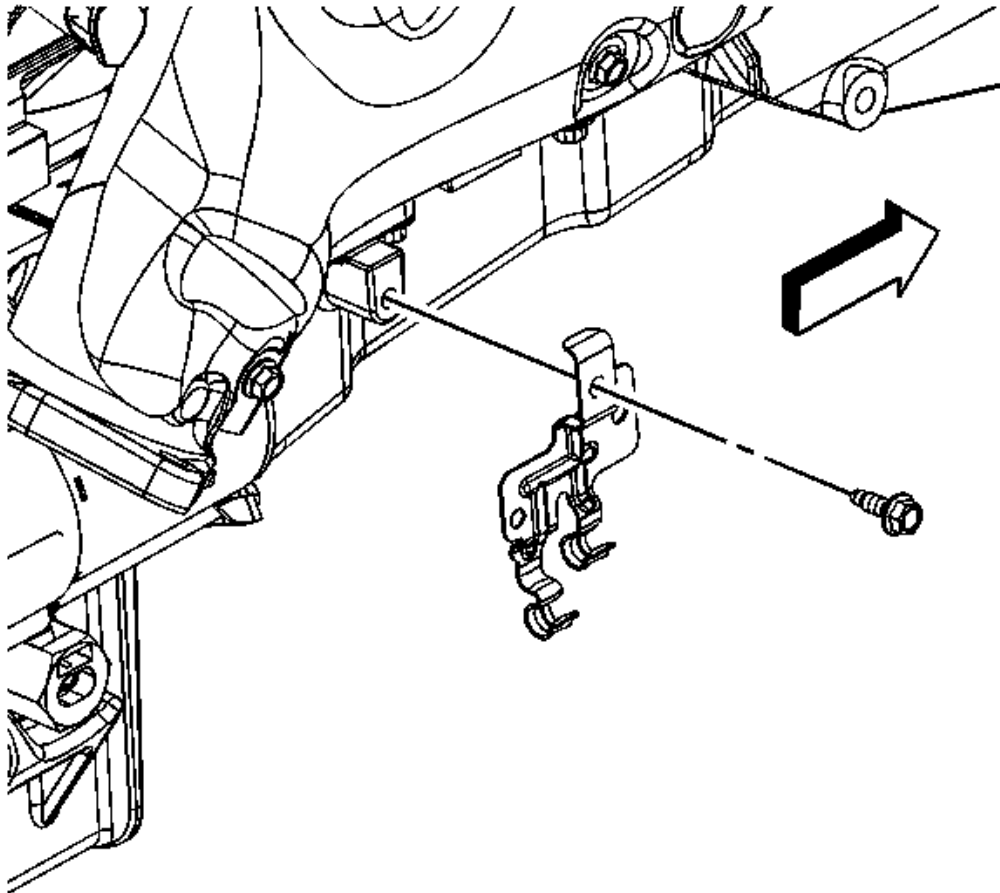


Fig. 115: View Of Oil Cooler Line Clip & Bolt
Courtesy of GENERAL MOTORS CORP.

35. Remove the transmission oil cooler line clip bolt from the oil pan, if equipped.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

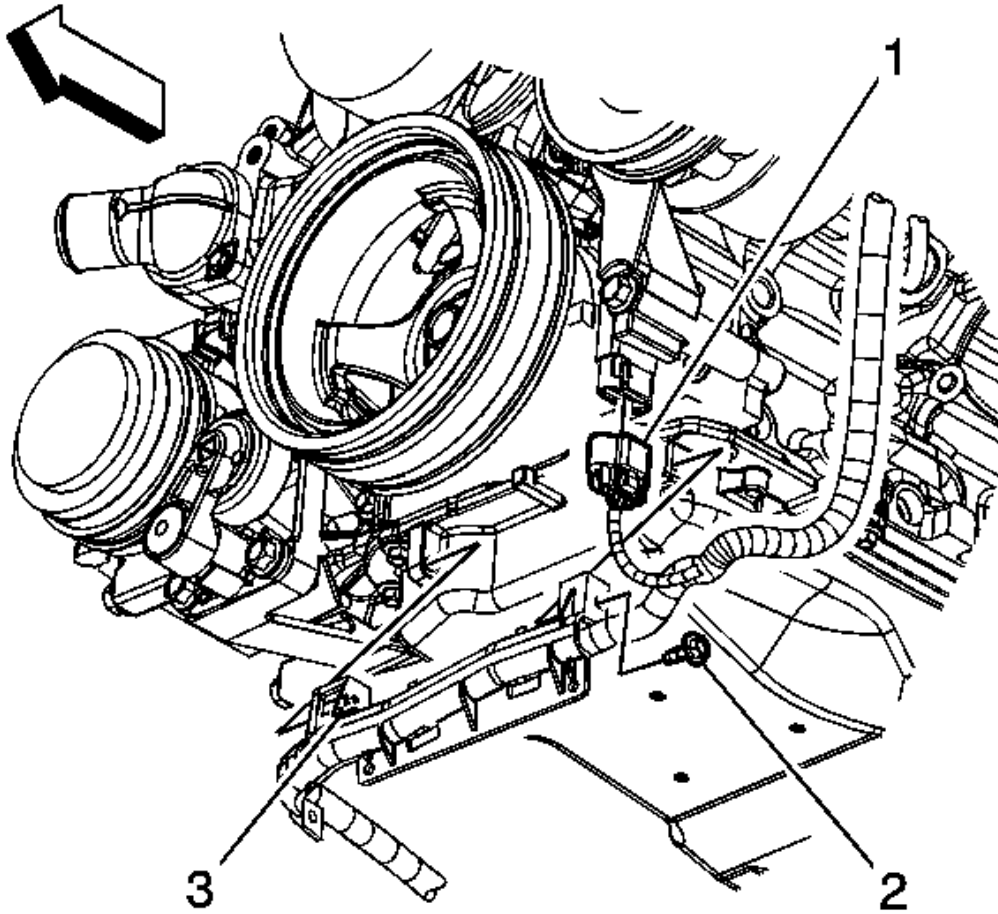


Fig. 116: View Of Electrical Connector, Cable Channel Bolt & Pin
Courtesy of GENERAL MOTORS CORP.

36. Disconnect the engine harness electrical connector (1) from the camshaft position (CMP) sensor wire harness.
37. Remove the battery cable channel bolt (2).
38. Slide the channel pin (3) out of the oil pan tab.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

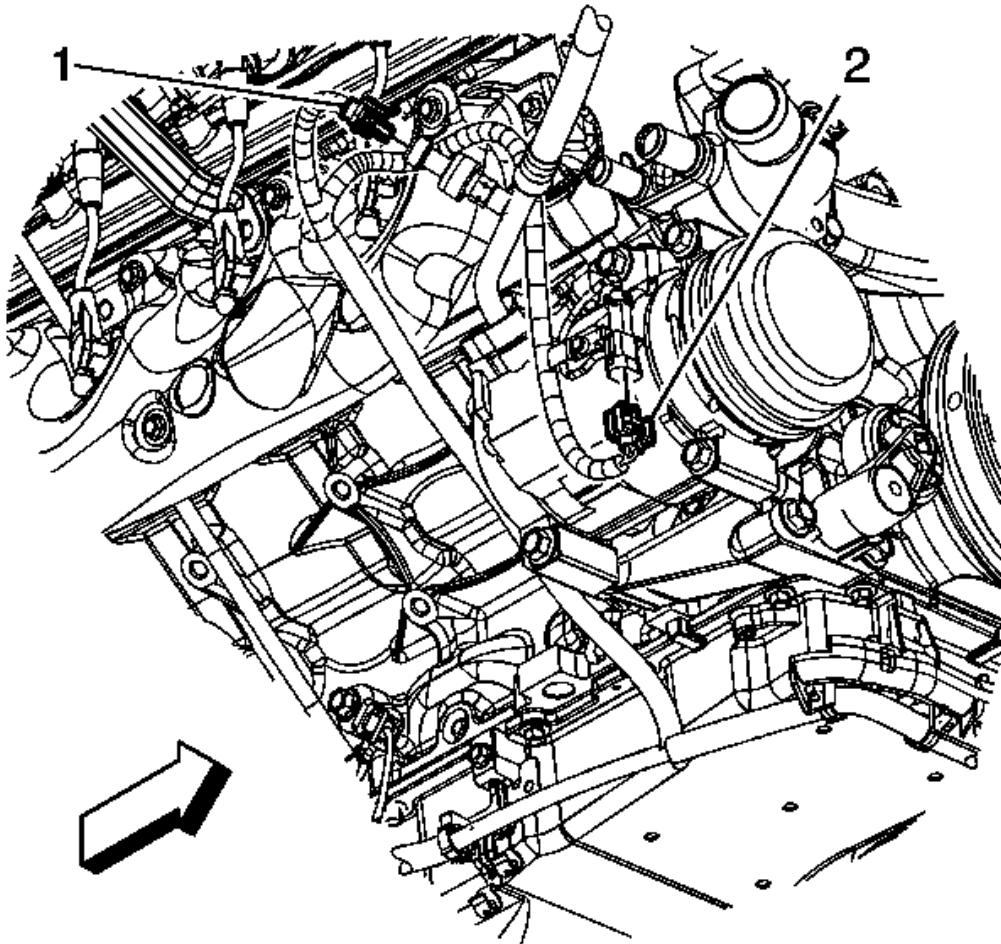


Fig. 117: View Of Electrical Connectors
Courtesy of GENERAL MOTORS CORP.

39. Disconnect the engine harness electrical connector (1) from the A/C refrigerant pressure sensor.
40. Remove the starter motor. Refer to **Starter Motor Replacement (4.3L)** or **Starter Motor Replacement (4.8L, 5.3L, 6.0L, and 6.2L)** or **Starter Motor Replacement (6.6L)** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

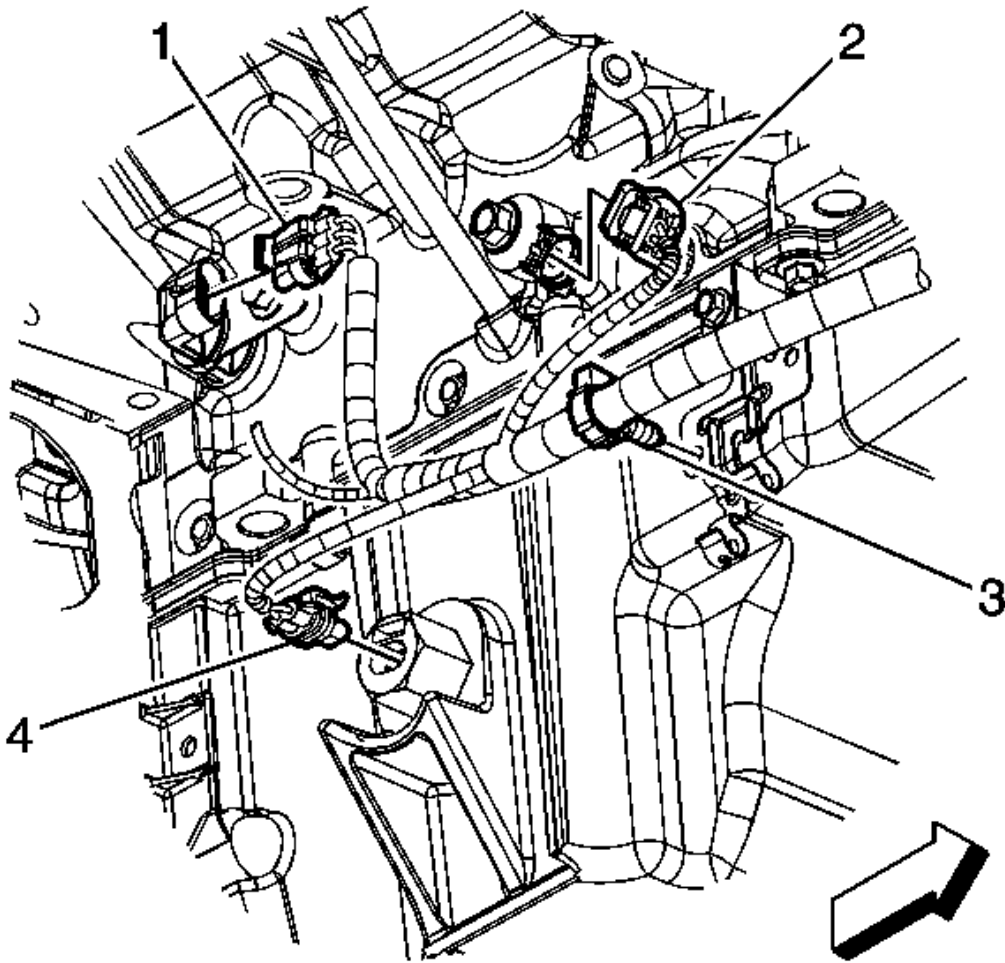


Fig. 118: View Of Electrical Connectors & Clips
Courtesy of GENERAL MOTORS CORP.

41. Disconnect the engine harness electrical connector (1) from the crankshaft position (CKP) sensor.
42. Disconnect the engine harness electrical connector (2) from the knock sensor.
43. Disconnect the engine harness electrical connector (4) from the oil level sensor.
44. Remove the engine harness clip (3) from the transmission oil cooler line bracket.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

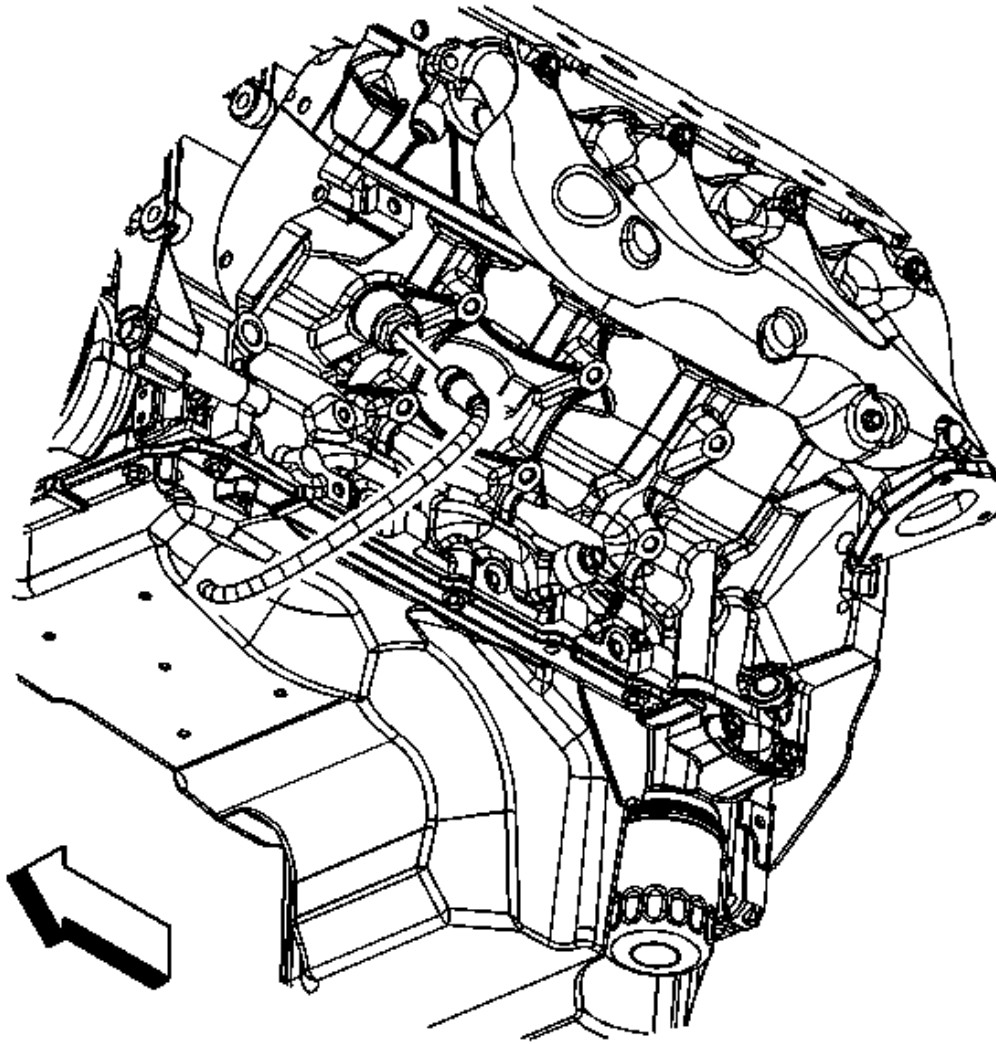


Fig. 119: View Of Coolant Heater Cord
Courtesy of GENERAL MOTORS CORP.

45. Disconnect the coolant heater cord from the coolant heater, if equipped.
46. Lower the vehicle.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

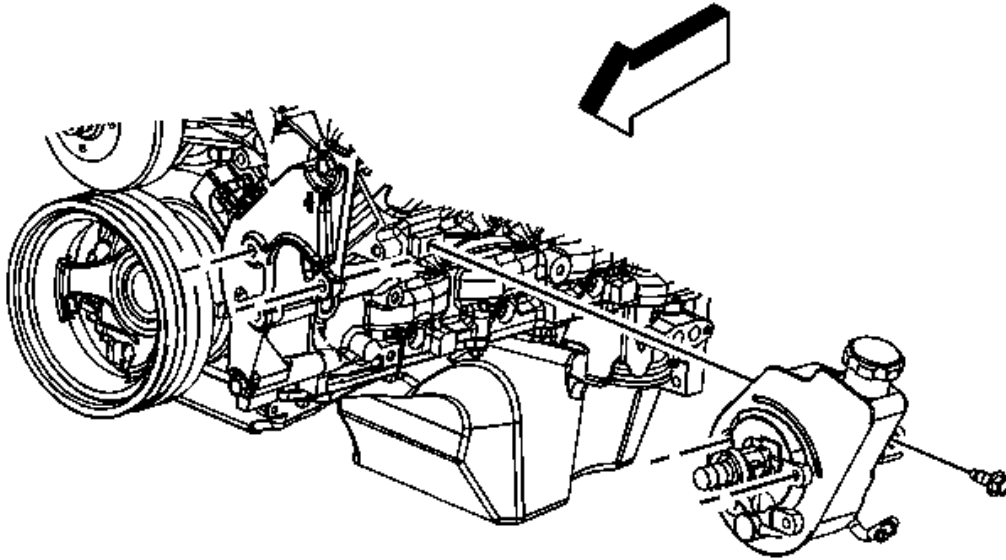


Fig. 120: View Of Power Steering Pump-To-Engine Block Bolt
Courtesy of GENERAL MOTORS CORP.

47. Remove the rear power steering pump-to-engine block bolt (1500 series shown, 2500 series similar).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

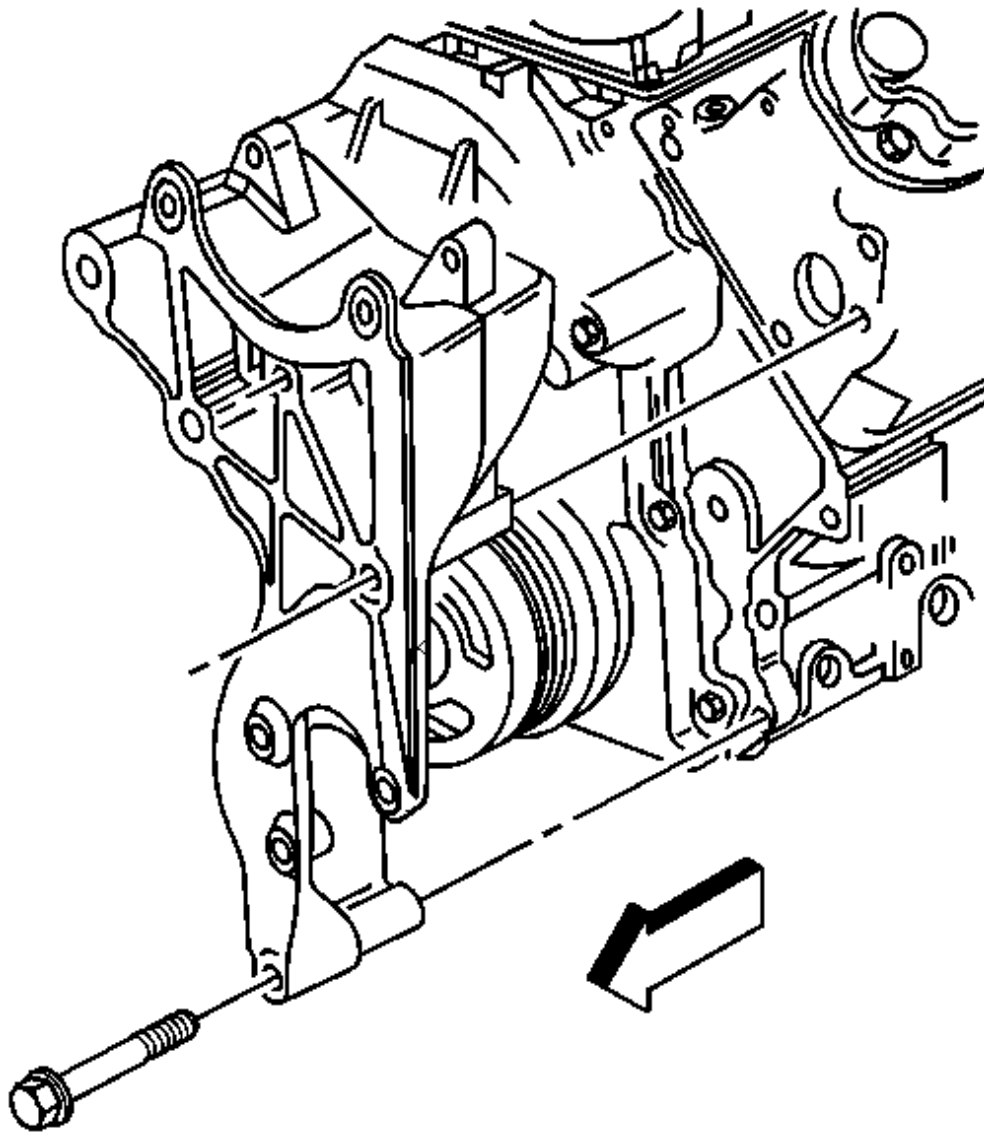


Fig. 121: View Of Generator Bracket & Bolts
Courtesy of GENERAL MOTORS CORP.

48. Remove the generator bracket bolts.
49. Position the generator bracket (with power steering pump) aside.
50. Remove the ignition coil, as required for the proper fit of the **J 41798** before lifting the

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

engine. See Special Tools . Refer to Ignition Coil Replacement .

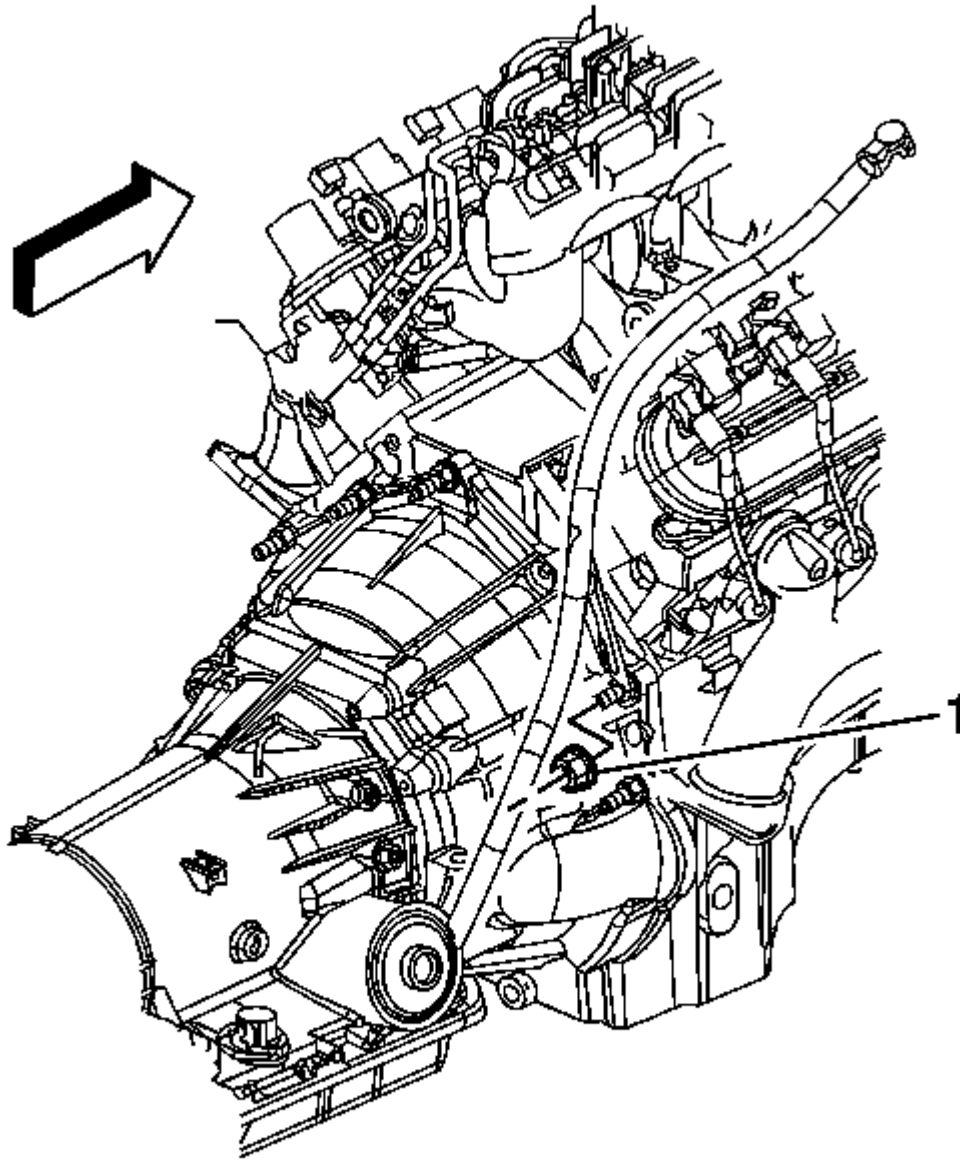


Fig. 122: View Of Transmission Oil Level Indicator Tube Nut
Courtesy of GENERAL MOTORS CORP.

51. Remove the transmission oil level indicator tube nut (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

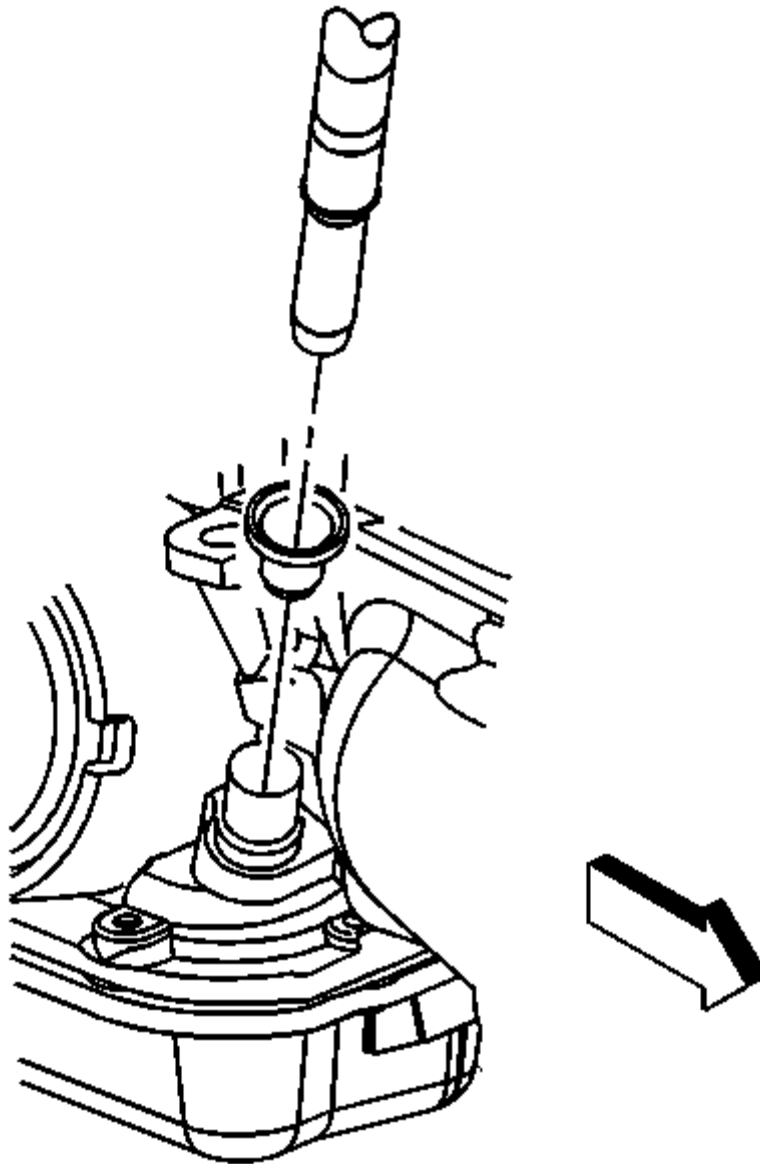


Fig. 123: View Of Oil Level Indicator Tube & Seal
Courtesy of GENERAL MOTORS CORP.

52. Remove the transmission oil level indicator tube.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

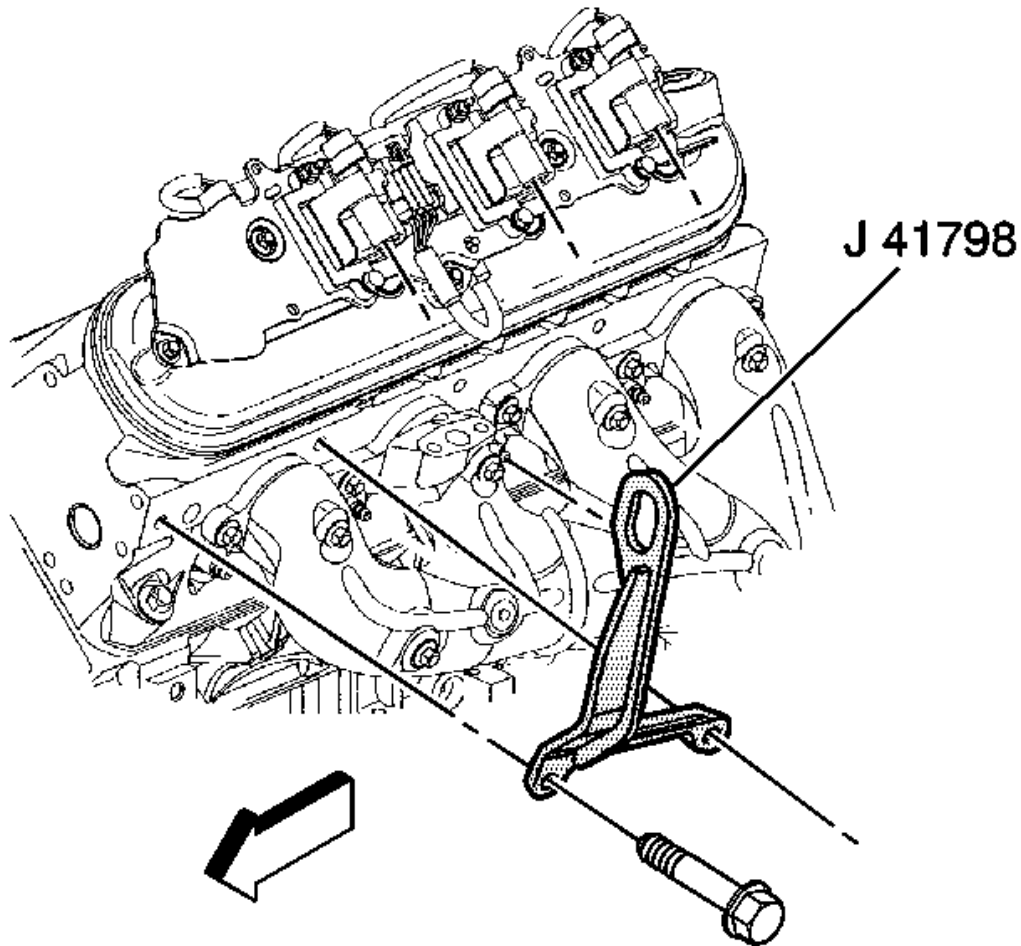


Fig. 124: View Of J 41798

Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

53. Install the **J 41798** to the cylinder heads. See Special Tools .

Tighten:

- Tighten the M8 engine lift bracket bolts to 25 N.m (18 lb ft).
- Tighten the M10 engine lift bracket bolts to 50 N.m (37 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

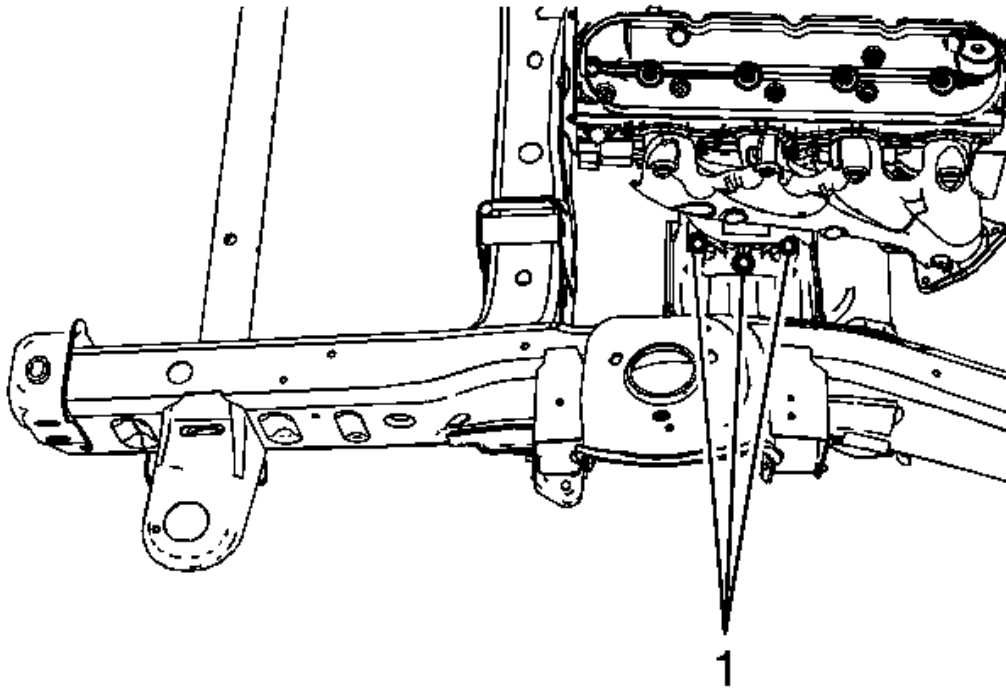


Fig. 125: View Of Engine Mount To Frame Bolts
Courtesy of GENERAL MOTORS CORP.

54. For 1500 series vehicles with a 4.8L engine, remove the left and right engine mount to frame bolts (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

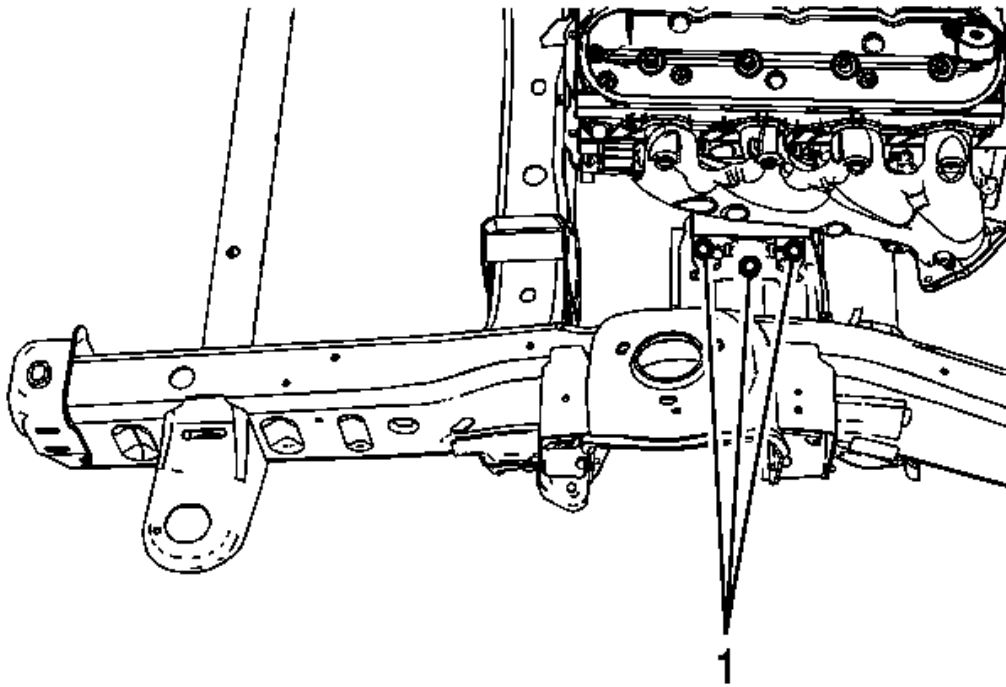


Fig. 126: View Of Engine Mount To Frame Bolts
Courtesy of GENERAL MOTORS CORP.

55. For 1500 series vehicles with a 5.3L, 6.0L, or 6.2L engines, remove the left and right engine mount to frame bolts (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

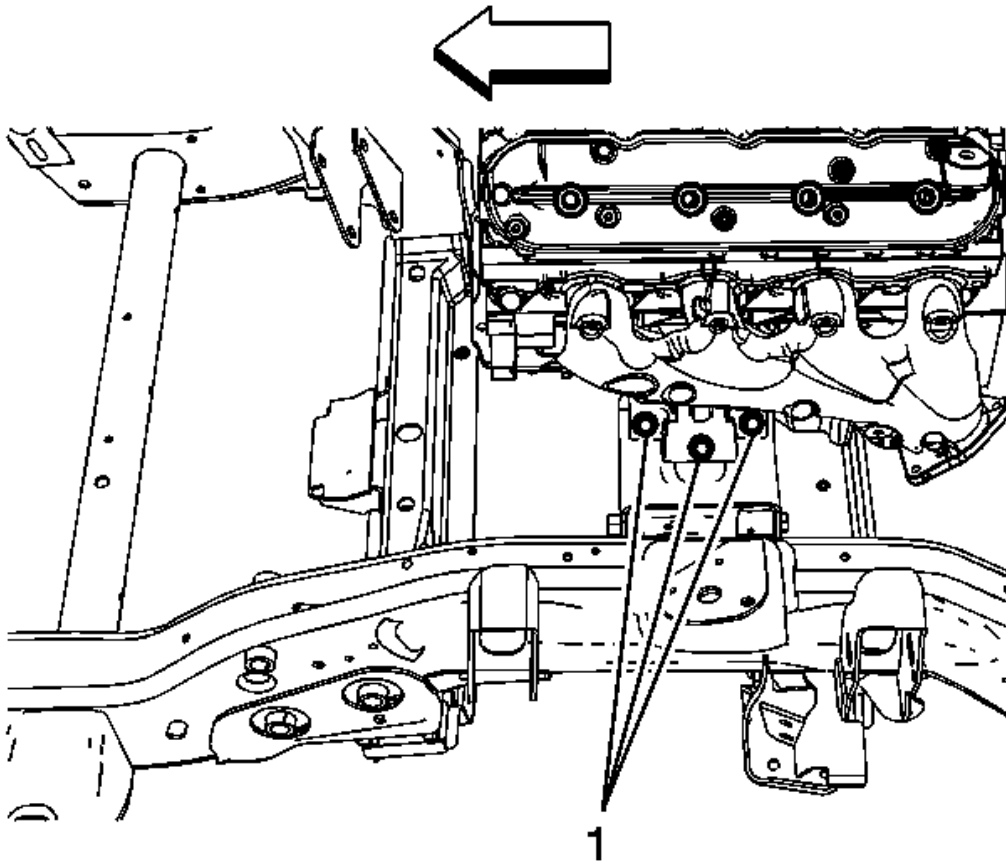


Fig. 127: View Of Engine Mount Bracket Bolts
Courtesy of GENERAL MOTORS CORP.

56. For 2500 series vehicles with a 5.3L, 6.0L, or 6.2L engines, remove the left and right engine mount to engine mount bracket bolts (1).
57. Raise the vehicle.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

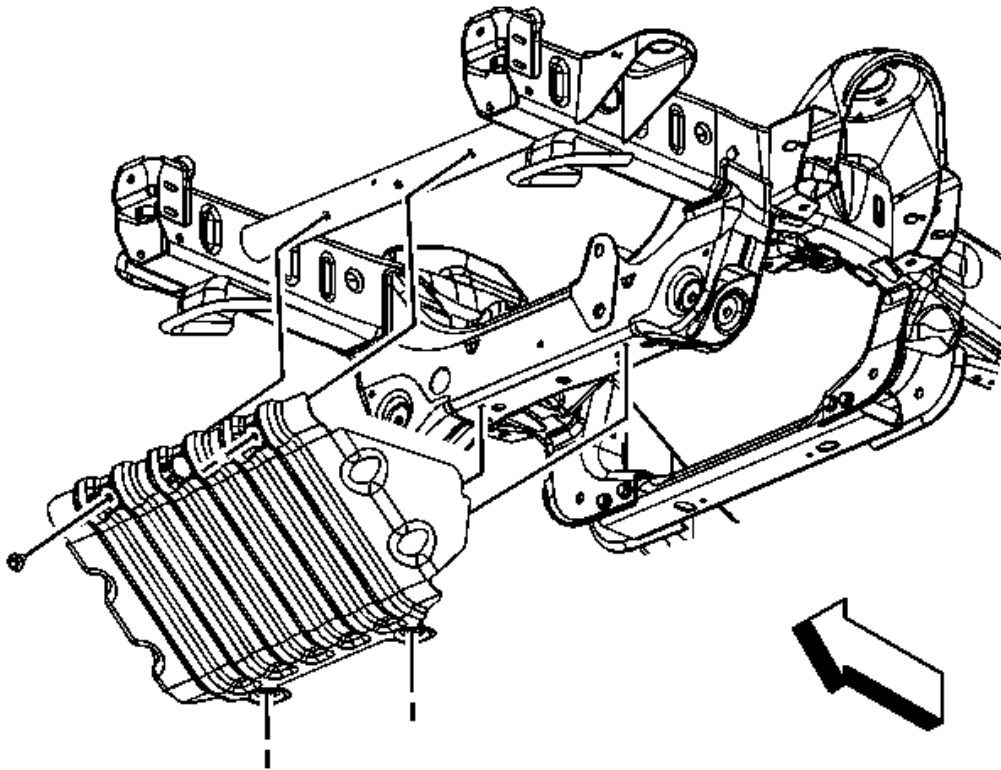


Fig. 128: View Of Engine Shield & Bolts
Courtesy of GENERAL MOTORS CORP.

58. Remove the engine shield bolts and shield.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

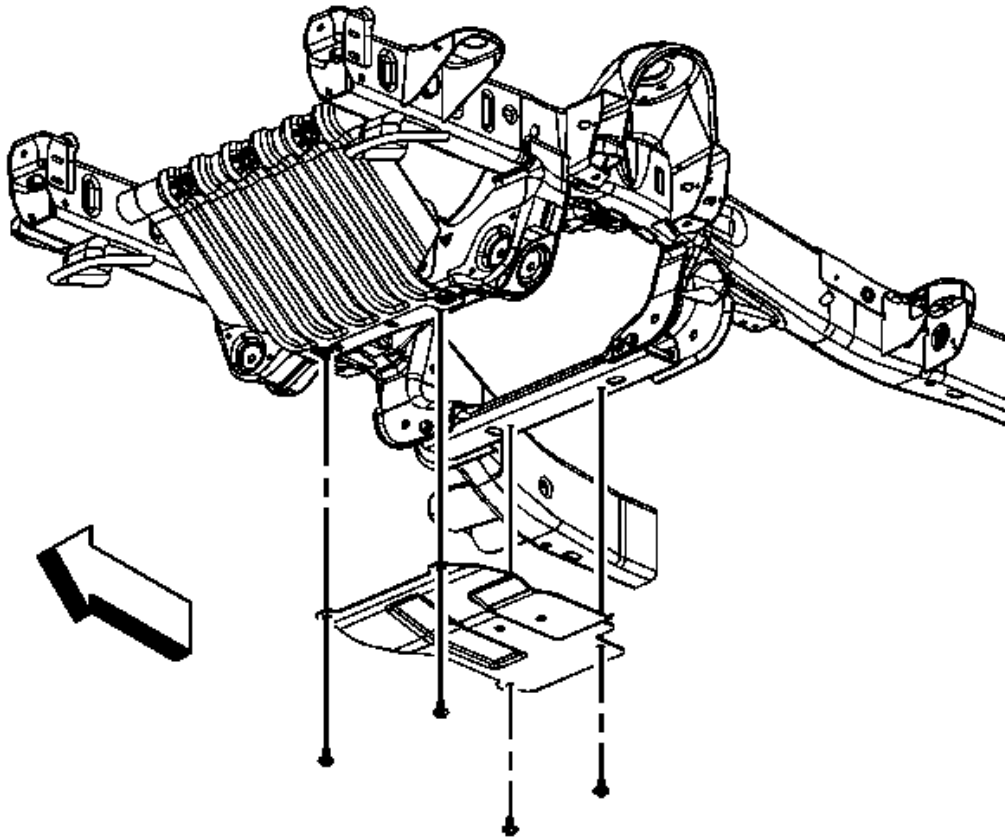


Fig. 129: View Of Oil Pan Skid Plate & Bolts
Courtesy of GENERAL MOTORS CORP.

59. For 1500 series vehicles, remove the oil pan skid plate bolts and plate, if equipped.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

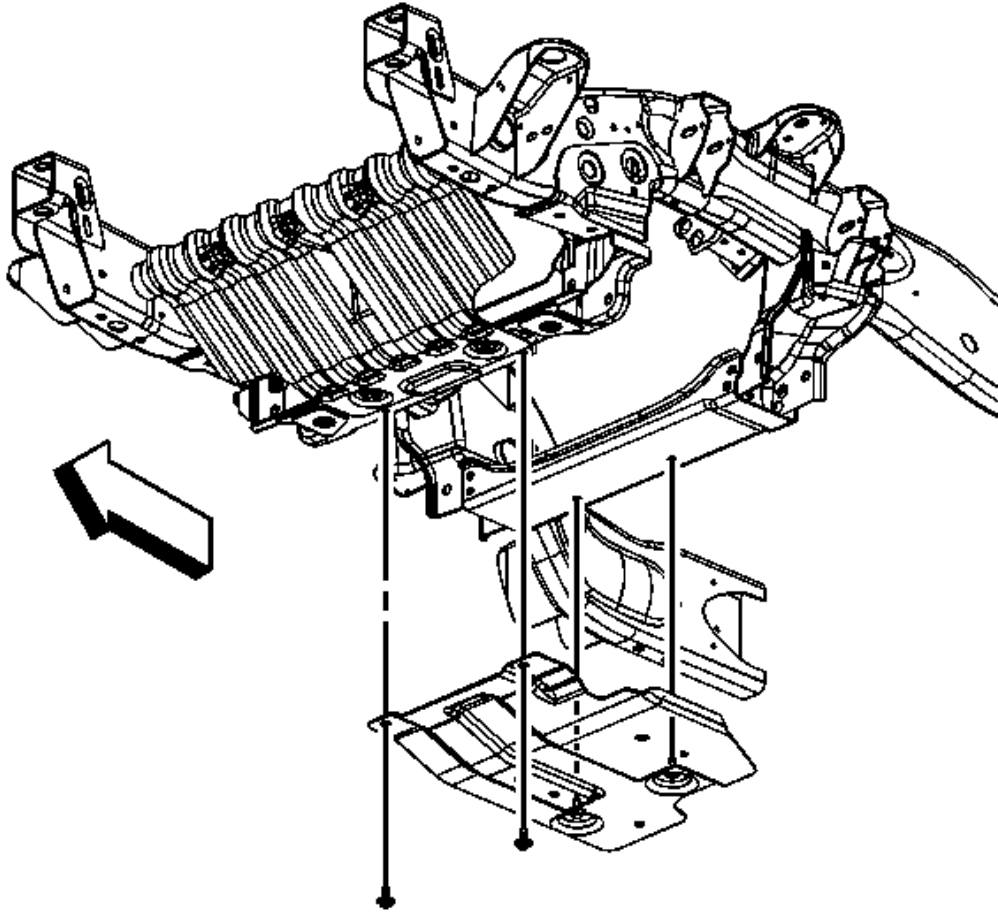


Fig. 130: View Of Oil Pan Skid Plate & Bolts
Courtesy of GENERAL MOTORS CORP.

60. For 2500 series vehicles, remove the oil pan skid plate bolts and plate, if equipped.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

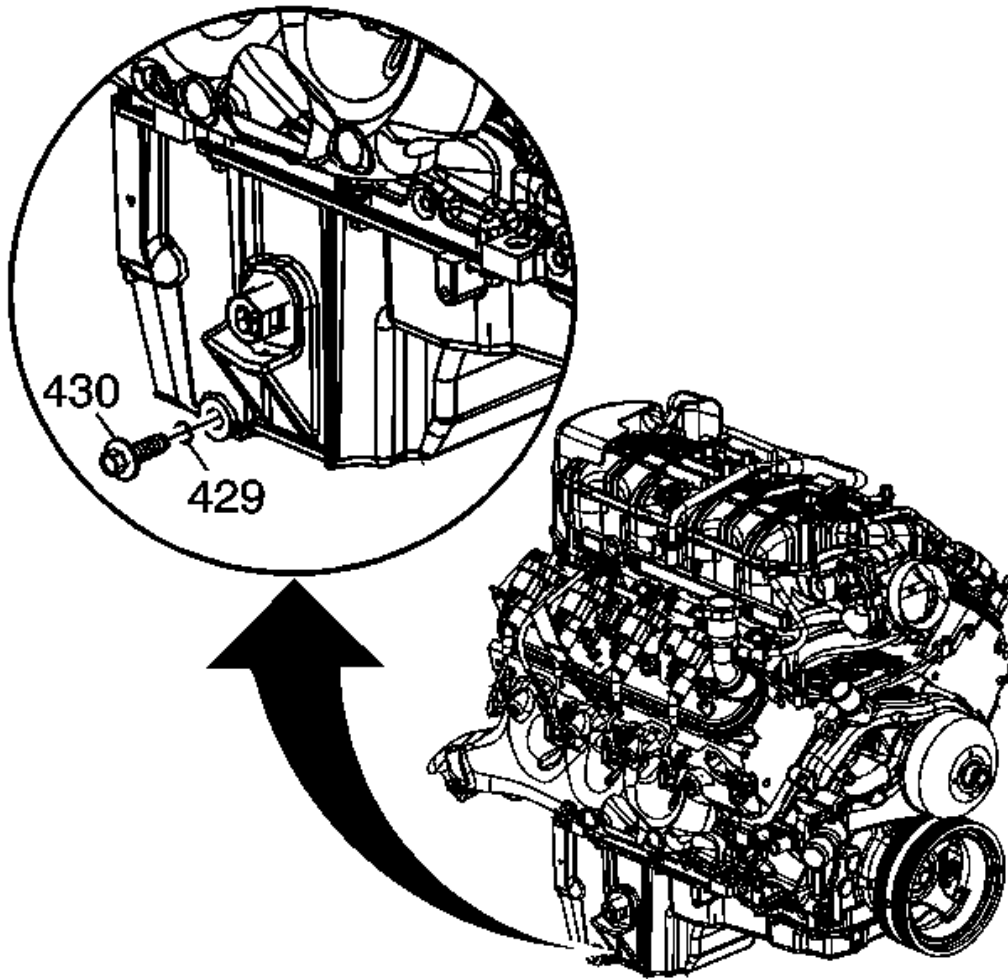


Fig. 131: View Of Oil Pan Drain Plug & Seal
Courtesy of GENERAL MOTORS CORP.

61. Place a suitable drain pan under the oil pan drain plug.
62. Remove the oil pan drain plug (430).
63. Allow the oil to drain completely.
64. Reinstall and tighten the oil pan drain plug.

Tighten: Tighten the drain plug to 25 N.m (18 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

65. Remove the catalytic converter. Refer to one of the following procedures:

- **Catalytic Converter Replacement (4.3L)** or **Catalytic Converter Replacement (4.8L, 5.3L, 6.0L, 6.2L)** or **Catalytic Converter Replacement (6.6L)** for 1500 series
- **Catalytic Converter Replacement - Left Side (6.0L - Cab/Chassis)** for the 2500 series
- **Exhaust Manifold Pipe Replacement (6.0L - Cab/Chassis)** for the 2500 series

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

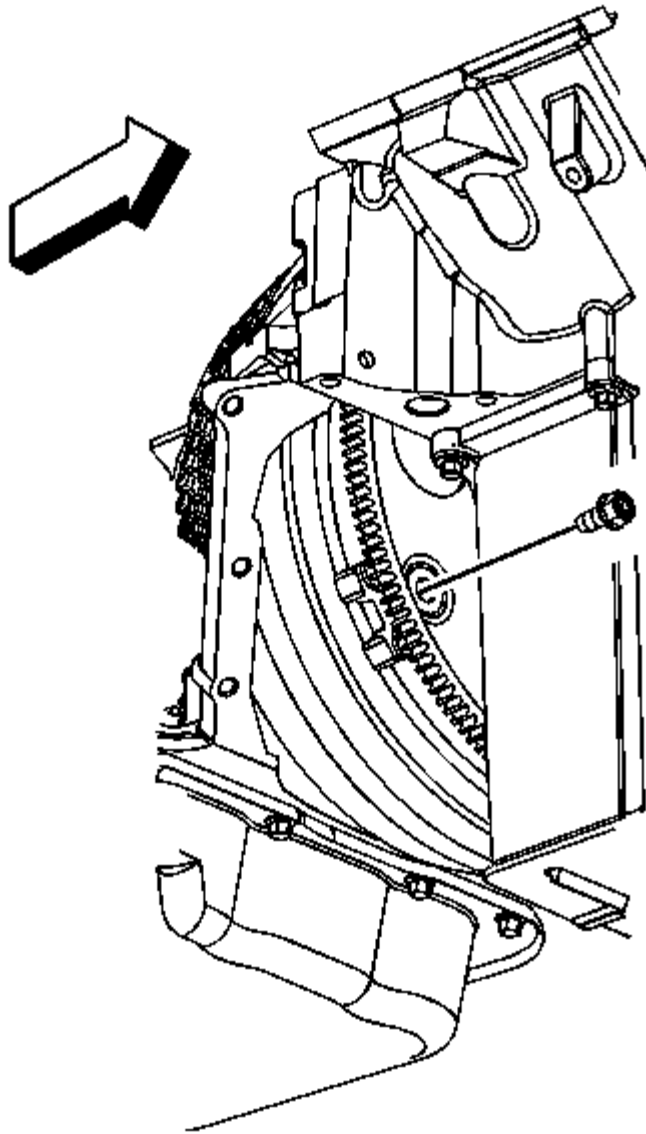


Fig. 132: View Of Flywheel To Torque Converter Bolts
Courtesy of GENERAL MOTORS CORP.

66. Remove the flywheel to torque converter bolts.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

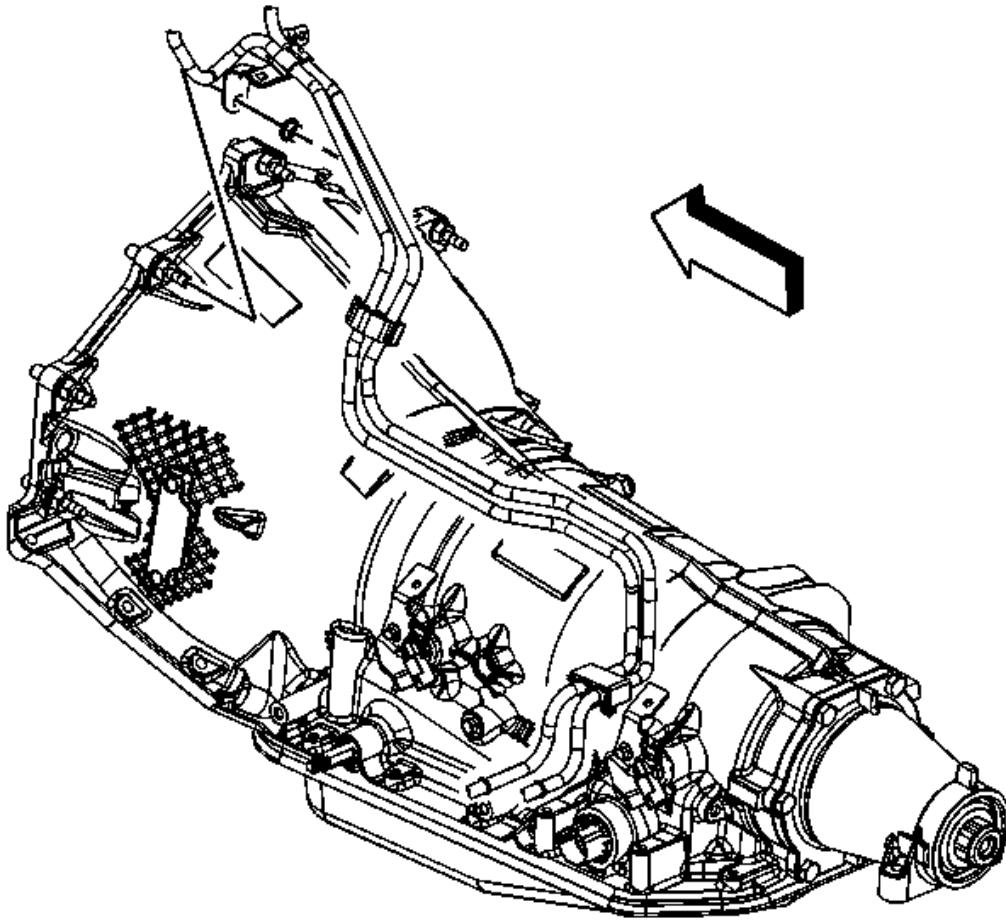


Fig. 133: View Of Fuel/Evaporative Emission Pipe & Bracket
Courtesy of GENERAL MOTORS CORP.

67. Remove the fuel/evaporative emission (EVAP) pipe bracket nut from the transmission stud (typical installation shown).
68. Remove the fuel/EVAP pipe bracket from the stud. Reposition the bracket out of the way.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

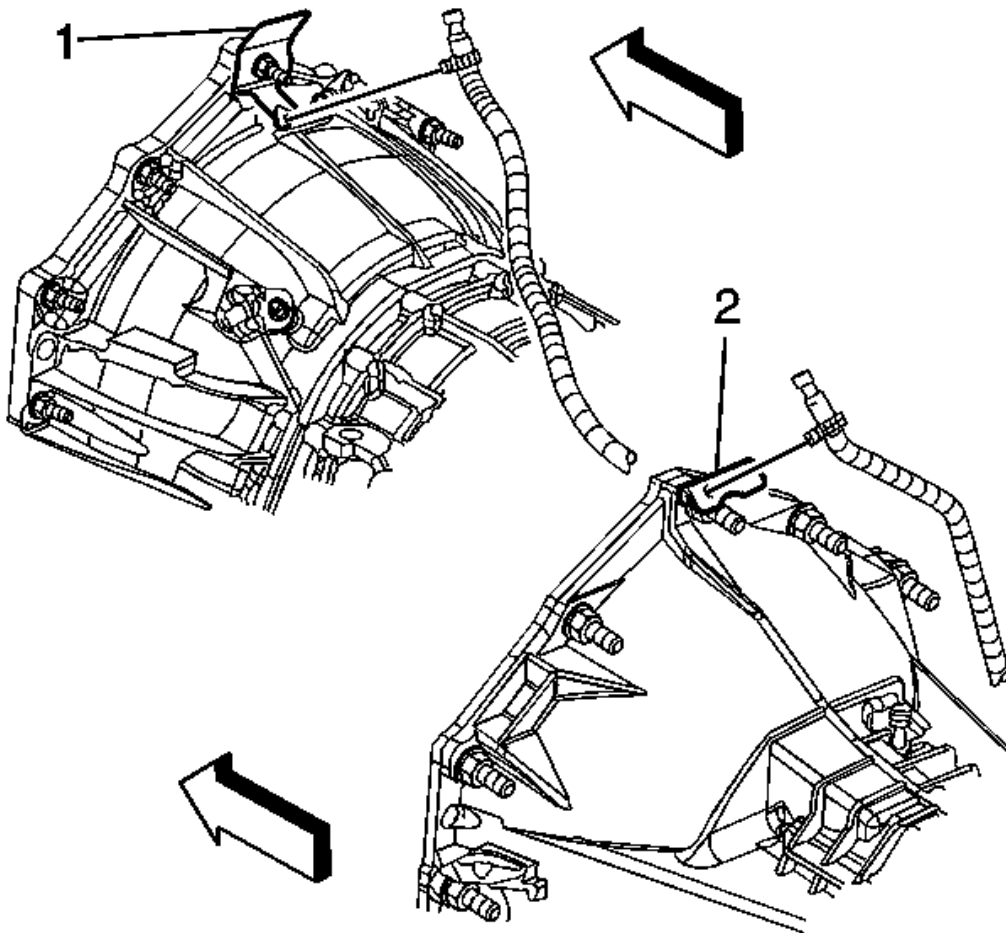


Fig. 134: View Of Transfer Case Vent Hose Bracket & Nut
Courtesy of GENERAL MOTORS CORP.

69. For the 4L80-E automatic transmission, remove the transfer case vent hose bracket (1) nut from the stud, if equipped.
70. For the 4L60-E/4L70-E/6L80-E automatic transmission, remove the transfer case vent hose bracket (2) nut from the stud, if equipped.
71. Reposition the transfer case vent hose bracket and hose out of the way, if equipped.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

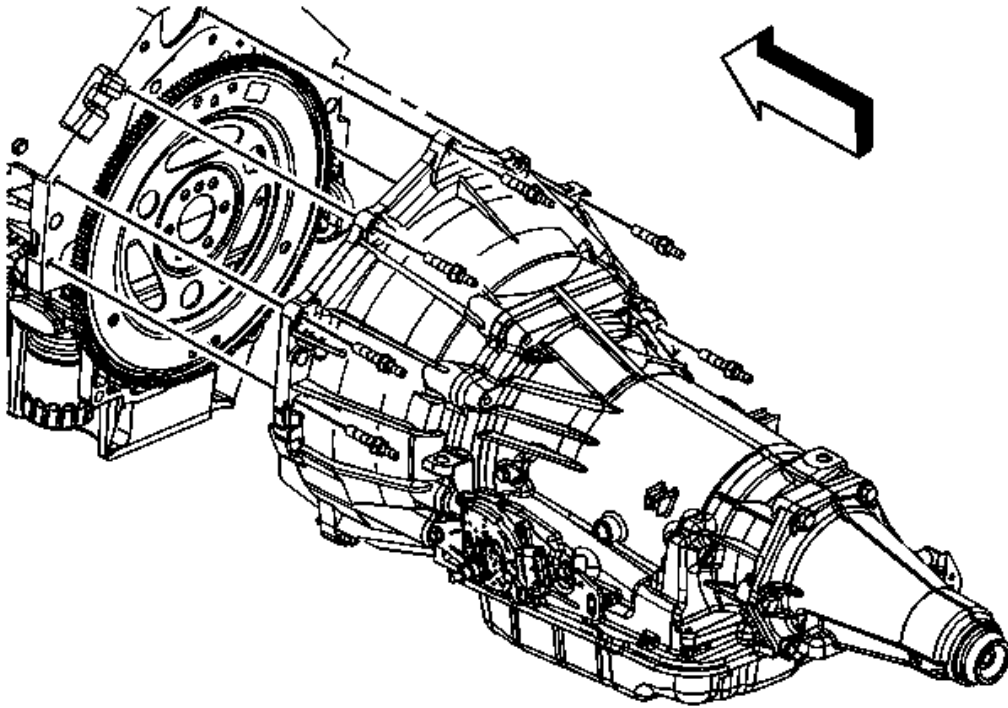


Fig. 135: View Of Transmission Bolts/Studs
Courtesy of GENERAL MOTORS CORP.

72. If equipped with the 4L60-E/4L70-E automatic transmission, remove the transmission bolts/studs.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

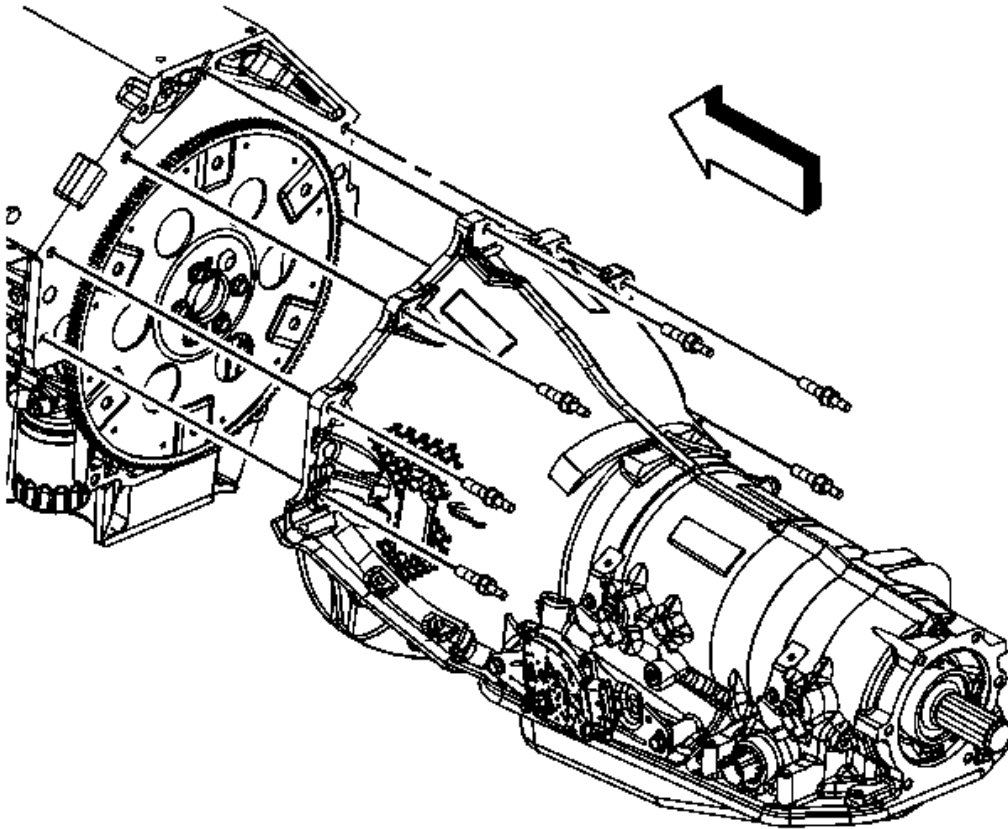


Fig. 136: View Of Transmission Bolts/Studs
Courtesy of GENERAL MOTORS CORP.

73. If equipped with the 4L80-E automatic transmission, remove the transmission bolts/studs.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

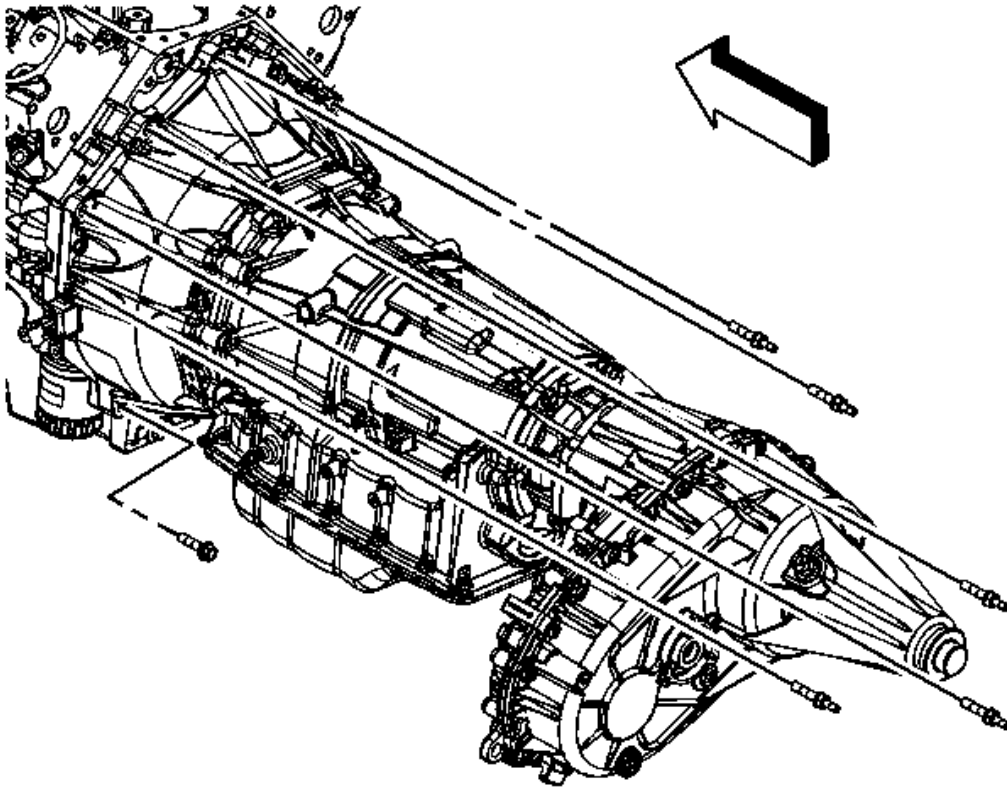


Fig. 137: View Of Transmission Bolts/Studs
Courtesy of GENERAL MOTORS CORP.

74. If equipped with the 6L80-E automatic transmission, remove the transmission bolts/studs.
75. Lower the vehicle.
76. Position and install an engine hoist to the **J 41798** . See **Special Tools** .
77. Install a floor jack under the transmission for support.
78. Remove the engine from the vehicle.
79. Install the **J 21366** to the transmission in order to hold the torque converter. See **Special Tools** .
80. Position and install the engine onto an engine stand.
81. Remove the engine hoist. from the **J 41798** . See **Special Tools** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

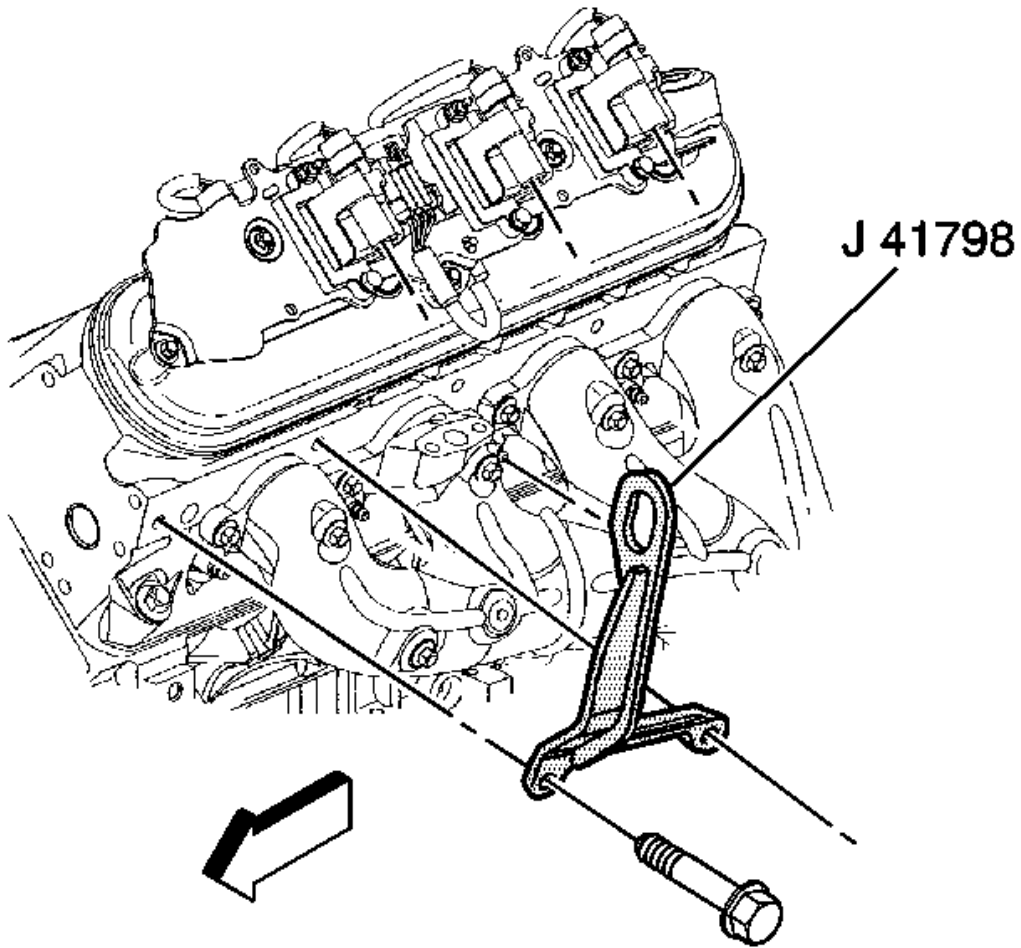


Fig. 138: View Of J 41798
Courtesy of GENERAL MOTORS CORP.

82. Remove the **J 41798** from the engine. See Special Tools .

Installation Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

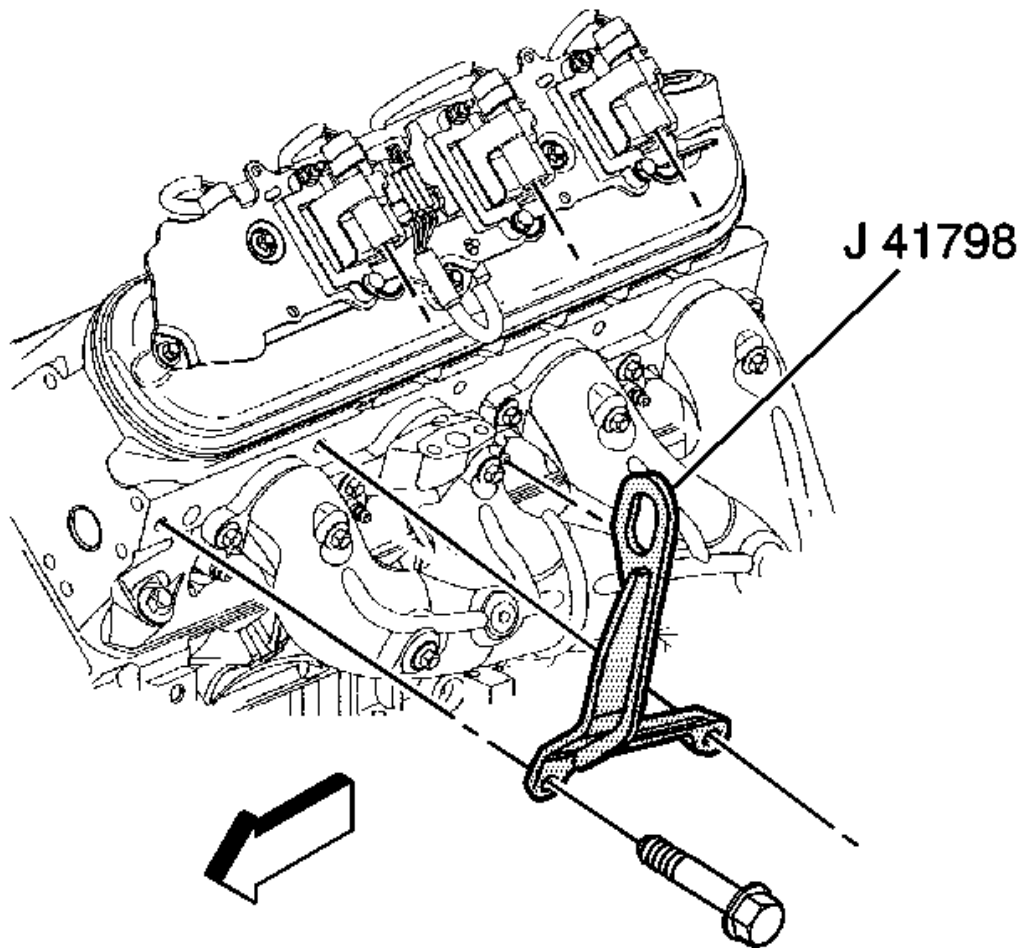


Fig. 139: View Of J 41798

Courtesy of GENERAL MOTORS CORP.

1. Install the **J 41798** to the engine. See **Special Tools** .

Tighten:

- Tighten the M8 engine lift bracket bolts to 25 N.m (18 lb ft).
- Tighten the M10 engine lift bracket bolts to 50 N.m (37 lb ft).

2. Position and install the engine hoist to the **J 41798** . See **Special Tools** .
3. Remove the engine from the engine stand.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

4. Remove the **J 21366** from the transmission. See **Special Tools** .
5. Install the engine to the vehicle.
6. Align and install the engine to the transmission. Raise or lower the transmission as required using the floor jack.
7. Once aligned and mated together completely lower and remove the engine hoist.

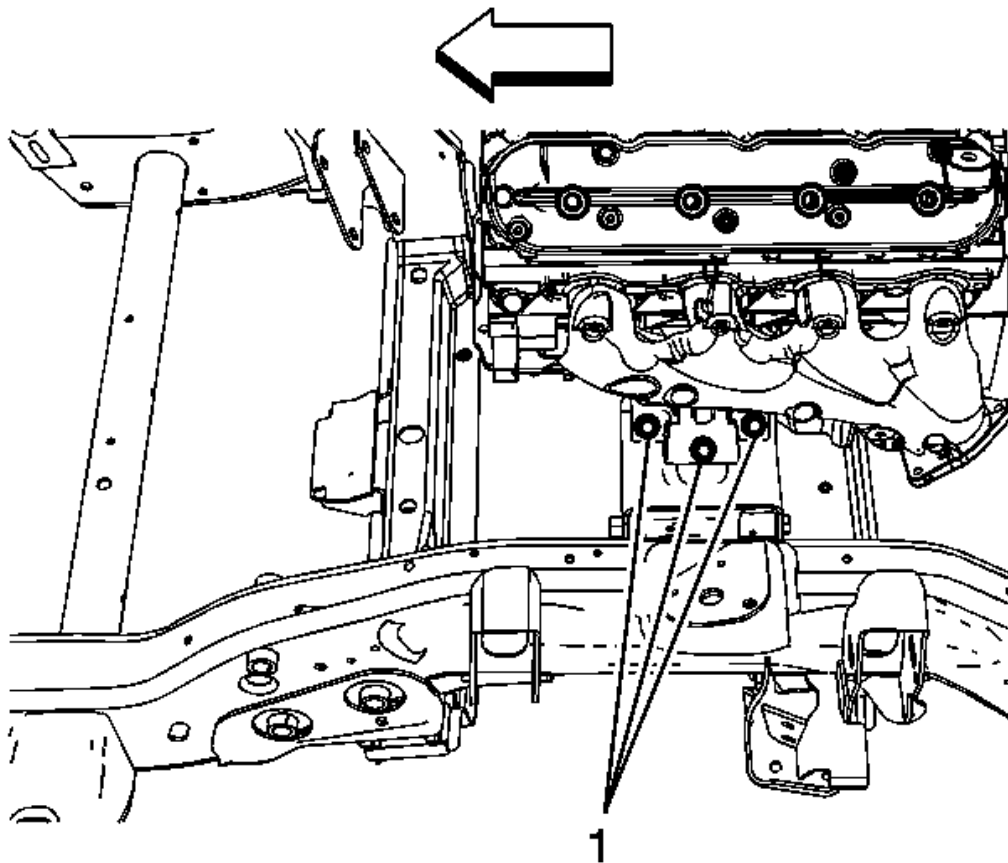


Fig. 140: View Of Engine Mount Bracket Bolts
Courtesy of GENERAL MOTORS CORP.

8. For 2500 series vehicles with a 5.3L, 6.0L, or 6.2L engine, install the left and right engine mount to engine mount bracket bolts (1).

Tighten: Tighten the bolts to 65 N.m (48 lb ft) starting with the middle bolt then either side

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

bolt.

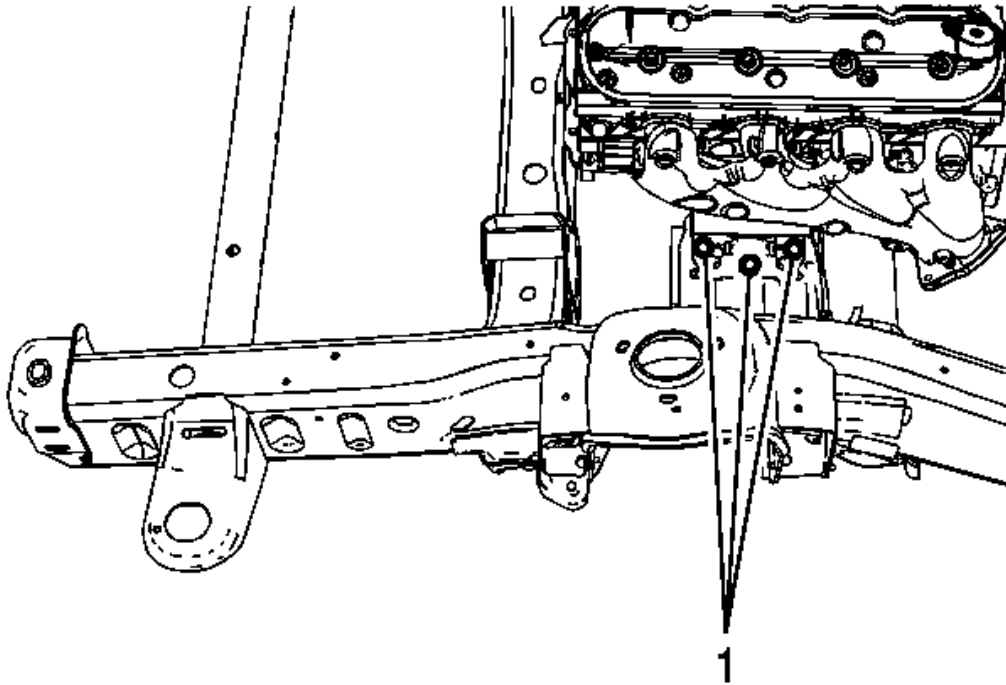


Fig. 141: View Of Engine Mount To Frame Bolts
Courtesy of GENERAL MOTORS CORP.

9. For 1500 series vehicles with a 5.3L, 6.0L, or 6.2L engine, install the left and right engine mount to frame bolts (1).

Tighten: Tighten the bolts to 65 N.m (48 lb ft) starting with the middle bolt then either side bolt.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

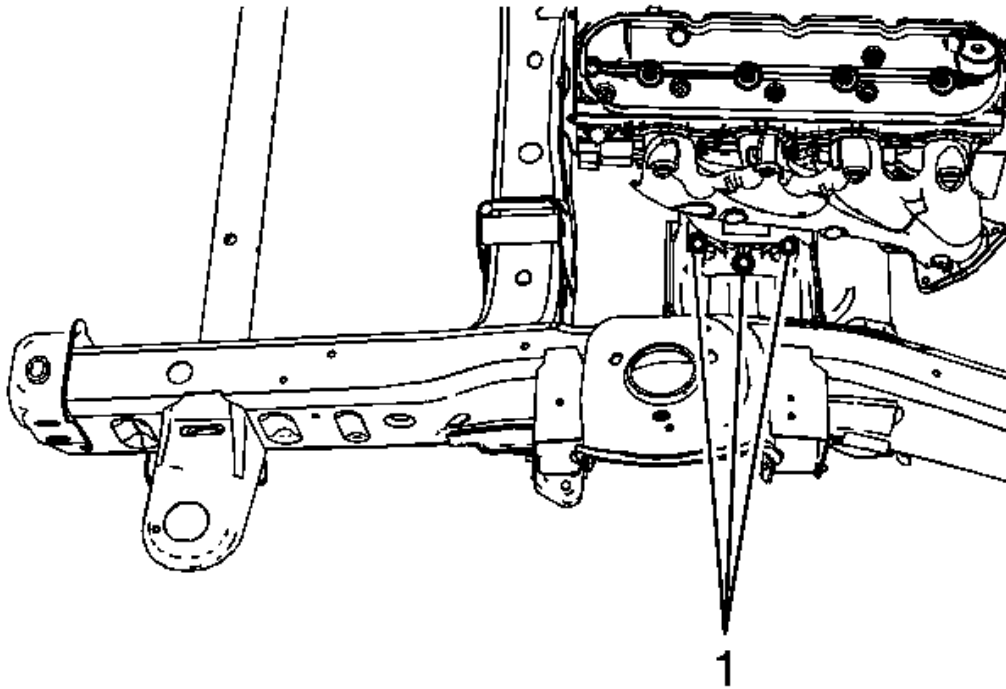


Fig. 142: View Of Engine Mount To Frame Bolts
Courtesy of GENERAL MOTORS CORP.

10. For 1500 series vehicles with a 4.8L engine, install the left and right engine mount to frame bolts (1).
Tighten: Tighten the bolts to 65 N.m (48 lb ft) starting with the middle bolt then either side bolt.
11. Remove the floor jack from under the transmission.
12. Raise the vehicle.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

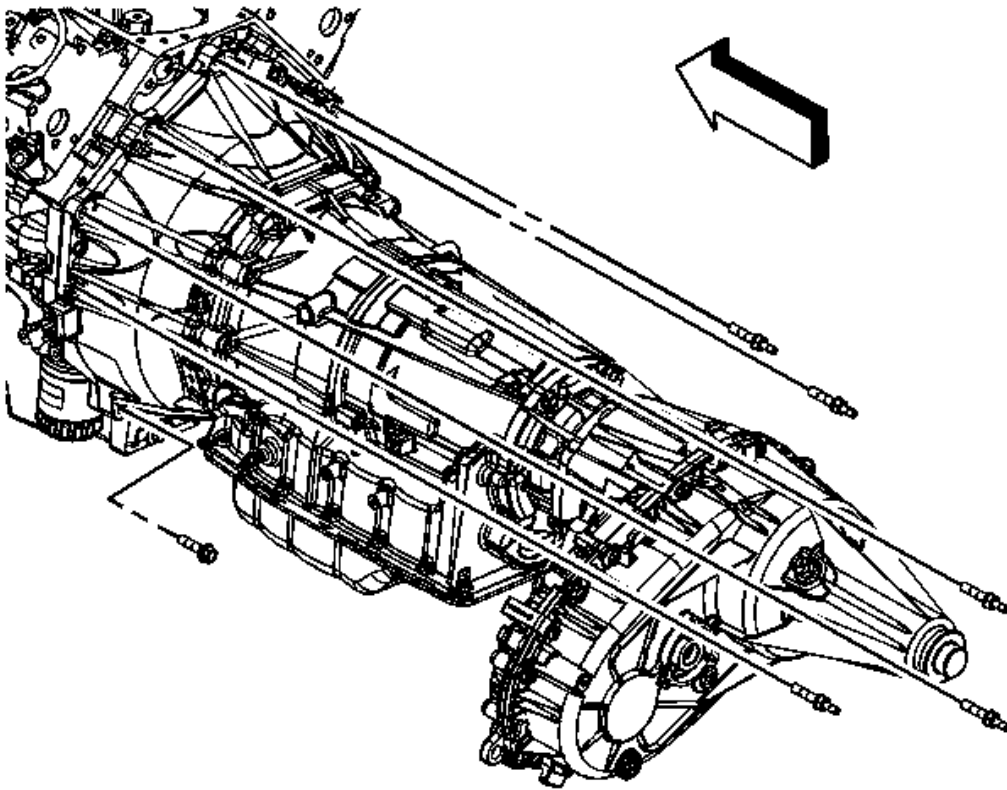


Fig. 143: View Of Transmission Bolts/Studs
Courtesy of GENERAL MOTORS CORP.

13. If equipped with the 6L80-E automatic transmission, install the transmission bolts/studs.

Tighten: Tighten the bolts/studs to 50 N.m (37 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

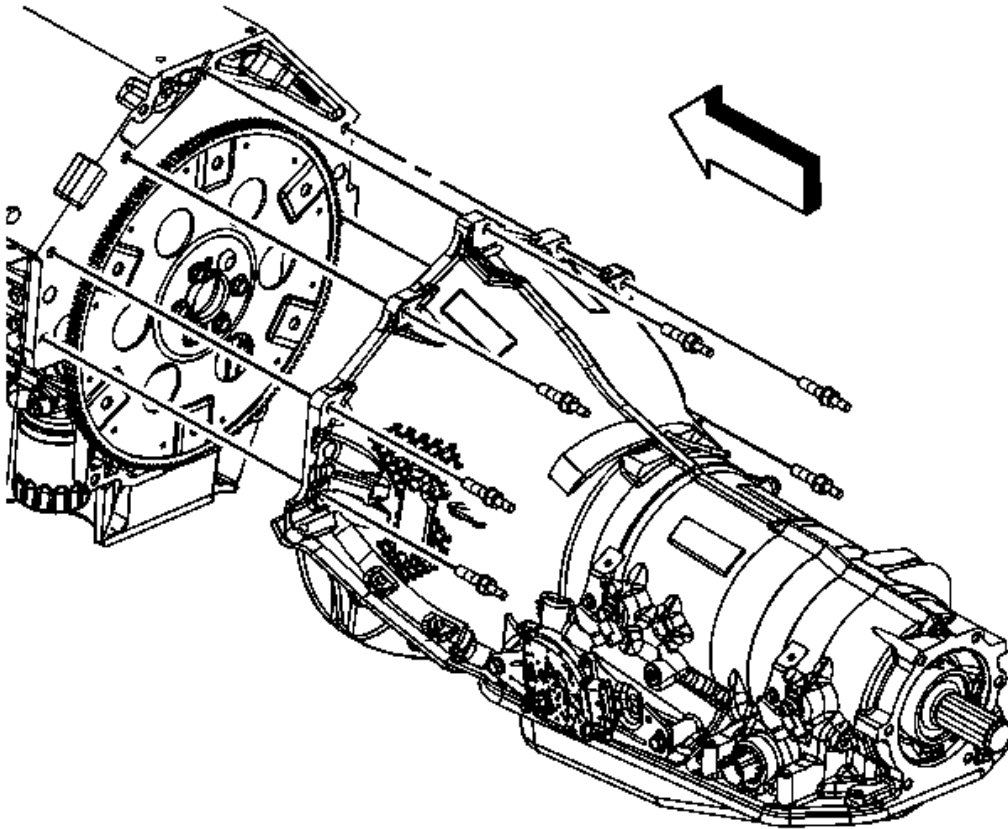


Fig. 144: View Of Transmission Bolts/Studs
Courtesy of GENERAL MOTORS CORP.

14. If equipped with the 4L80-E automatic transmission, install the transmission bolts/studs.

Tighten: Tighten the bolts/studs to 50 N.m (37 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

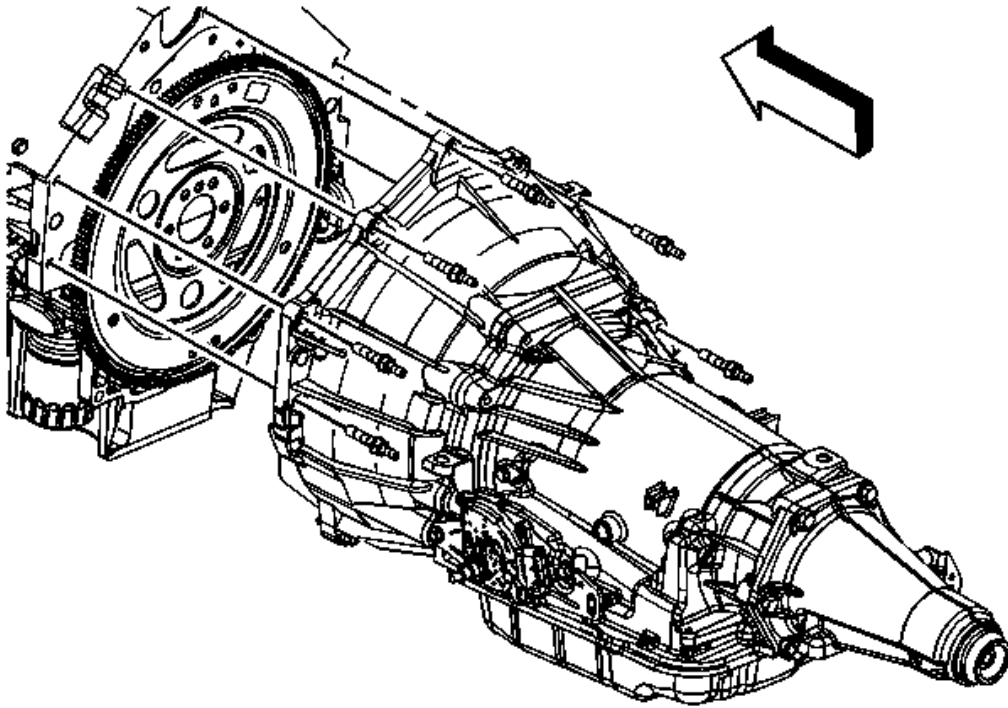


Fig. 145: View Of Transmission Bolts/Studs
Courtesy of GENERAL MOTORS CORP.

15. If equipped with the 4L60-E/4L70-E automatic transmission, install the transmission bolts/studs.

Tighten: Tighten the bolts/studs to 50 N.m (37 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

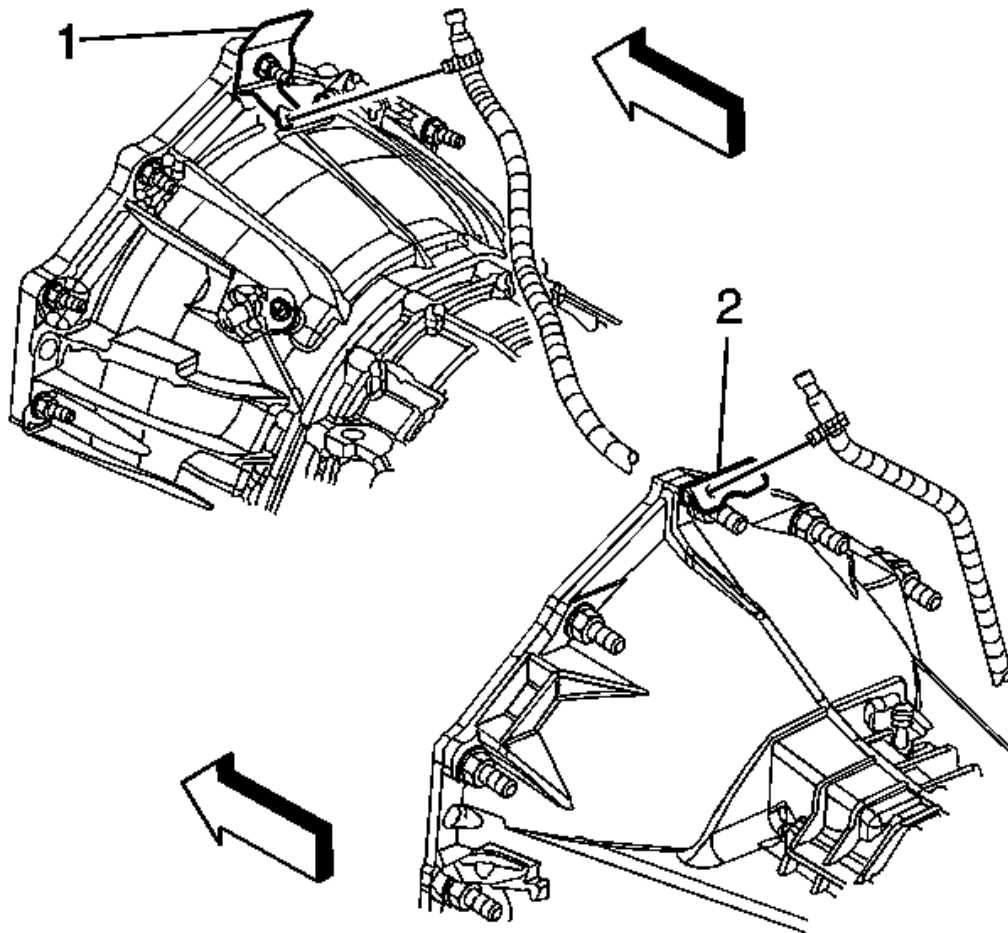


Fig. 146: View Of Transfer Case Vent Hose Bracket & Nut
Courtesy of GENERAL MOTORS CORP.

16. Position the transfer case vent hose bracket and hose and install the bracket to the stud, if equipped.
17. For the 4L60-E/4L70-E/6L80-E automatic transmission, install the transfer case vent hose bracket (2) nut to the stud, if equipped.

Tighten: Tighten the nut to 20 N.m (15 lb ft).

18. For the 4L80-E automatic transmission, install the transfer case vent hose bracket (1) nut to the stud, if equipped.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Tighten: Tighten the nut to 20 N.m (15 lb ft).

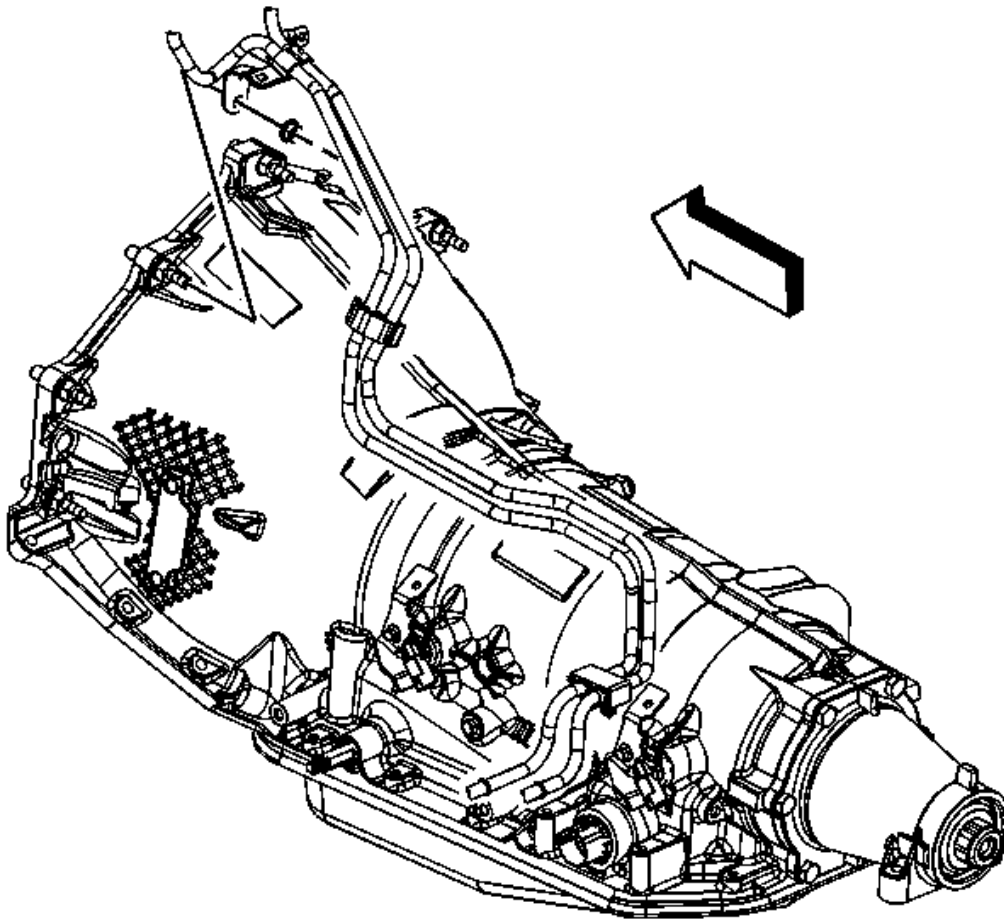


Fig. 147: View Of Fuel/Evaporative Emission Pipe & Bracket
Courtesy of GENERAL MOTORS CORP.

19. Position the fuel/EVAP pipe bracket and install the bracket to the stud. (typical installation shown).
20. Install the fuel/EVAP pipe bracket nut to the transmission stud

Tighten: Tighten the nut to 20 N.m (15 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

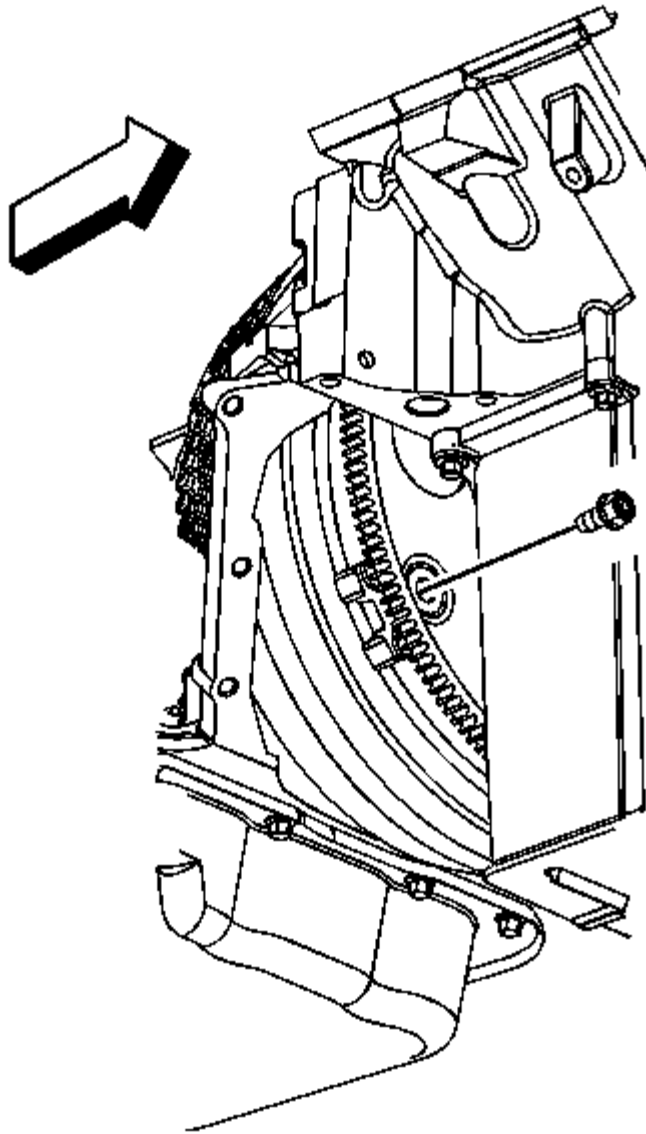


Fig. 148: View Of Flywheel To Torque Converter Bolts
Courtesy of GENERAL MOTORS CORP.

21. Align the torque converter bolt holes to the flywheel bolt holes.
22. Install the flywheel to torque converter bolts.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Tighten:

- For the 4L60-E/4L70-E/6L80-E automatic transmission, tighten the bolts to 63 N.m (47 lb ft).
- For the 4L80-E automatic transmission, tighten the bolts to 60 N.m (44 lb ft).

23. Install the catalytic converter. Refer to one of the following procedures:

- **Catalytic Converter Replacement (4.3L)** or **Catalytic Converter Replacement (4.8L, 5.3L, 6.0L, 6.2L)** or **Catalytic Converter Replacement (6.6L)** for 1500 series
- **Catalytic Converter Replacement - Left Side (6.0L - Cab/Chassis)** for the 2500 series
- **Exhaust Manifold Pipe Replacement (6.0L - Cab/Chassis)** for the 2500 series

24. Lower the vehicle.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

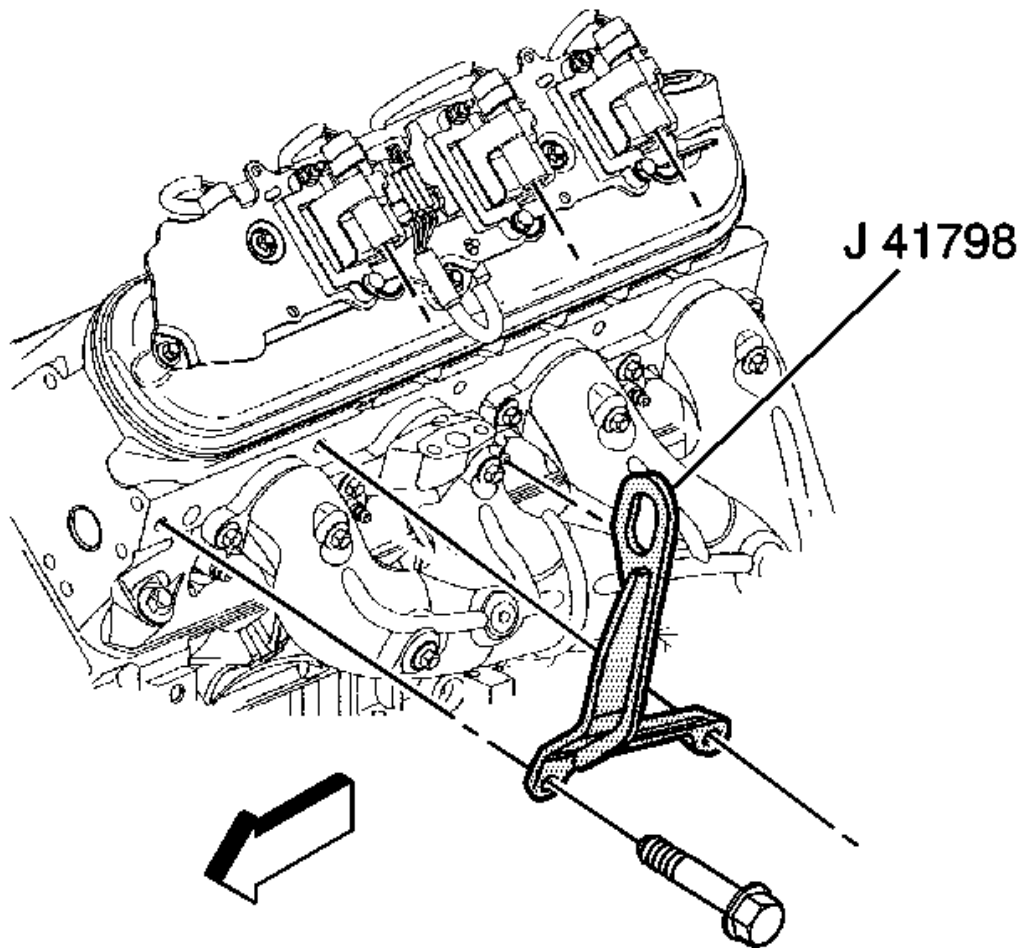


Fig. 149: View Of J 41798
Courtesy of GENERAL MOTORS CORP.

25. Remove the **J 41798** from the cylinder heads. See **Special Tools** .
26. Install the ignition coil(s) and spark plug wire(s), as required. Refer to **Ignition Coil Replacement** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

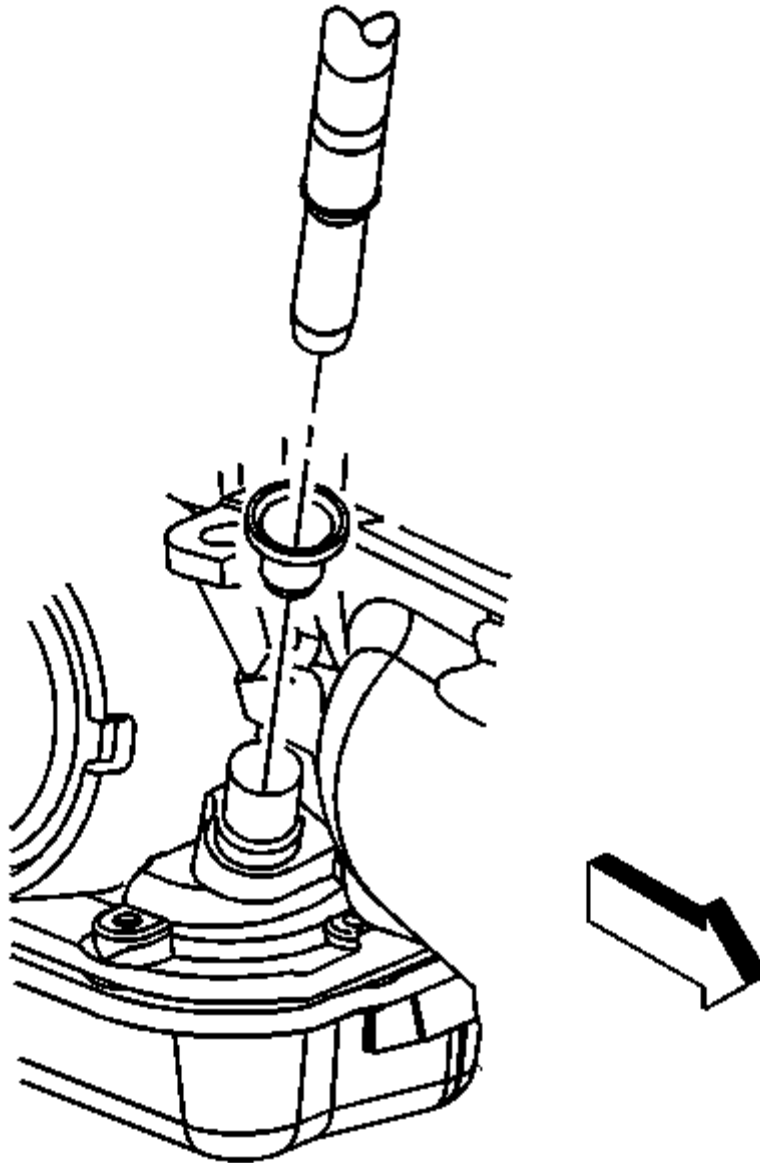


Fig. 150: View Of Oil Level Indicator Tube & Seal
Courtesy of GENERAL MOTORS CORP.

27. Install the transmission oil level indicator tube.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

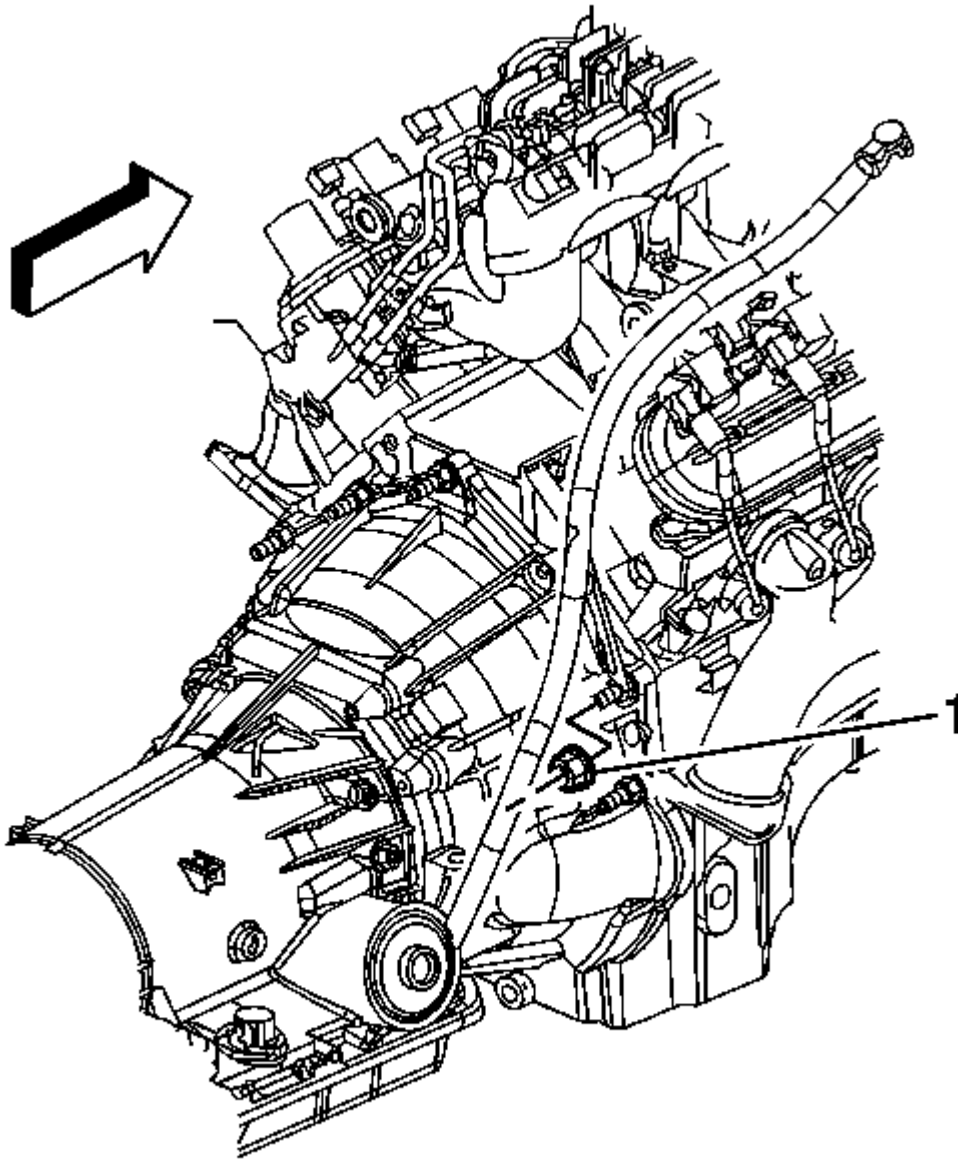


Fig. 151: View Of Transmission Oil Level Indicator Tube Nut
Courtesy of GENERAL MOTORS CORP.

28. Install the transmission oil level indicator tube nut (1).

Tighten: Tighten the nut to 18 N.m (13 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

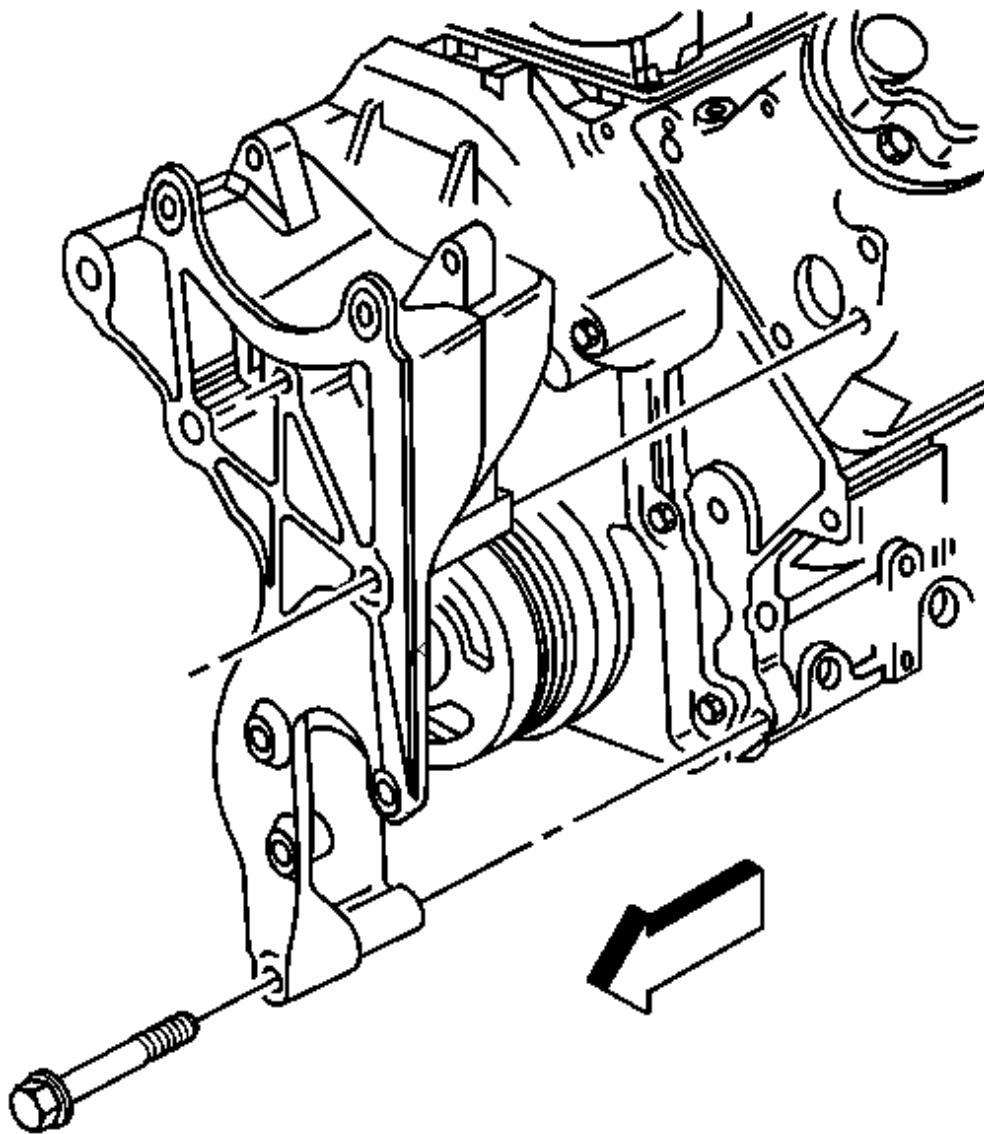


Fig. 152: View Of Generator Bracket & Bolts
Courtesy of GENERAL MOTORS CORP.

29. Position the generator bracket (with power steering pump) to the engine.
30. Install the generator bracket bolts.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Tighten: Tighten the bolts to 50 N.m (37 lb ft).

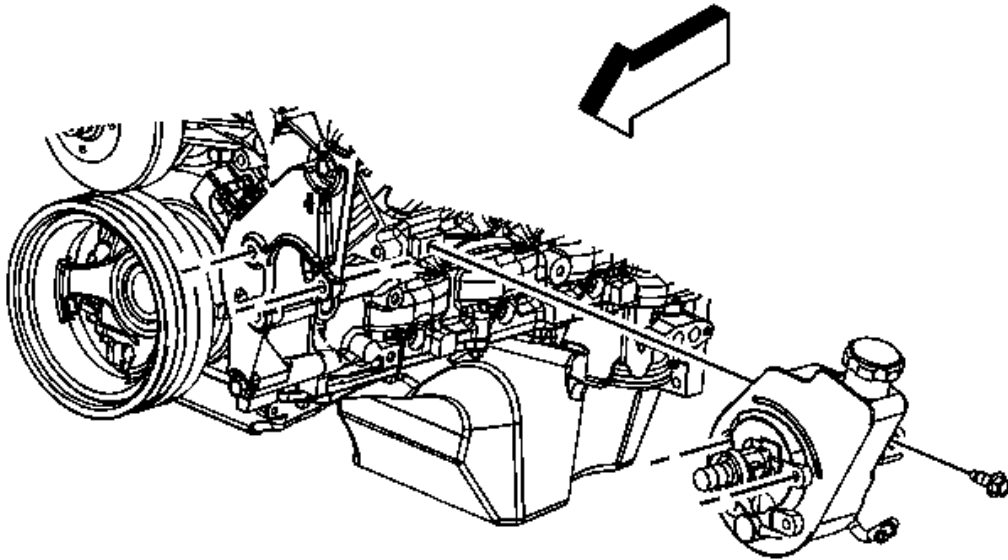


Fig. 153: View Of Power Steering Pump-To-Engine Block Bolt
Courtesy of GENERAL MOTORS CORP.

31. Install the rear power steering pump-to-engine block bolt (1500 series shown, 2500 series similar).

Tighten: Tighten the bolt to 50 N.m (37 lb ft).

32. Raise the vehicle.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

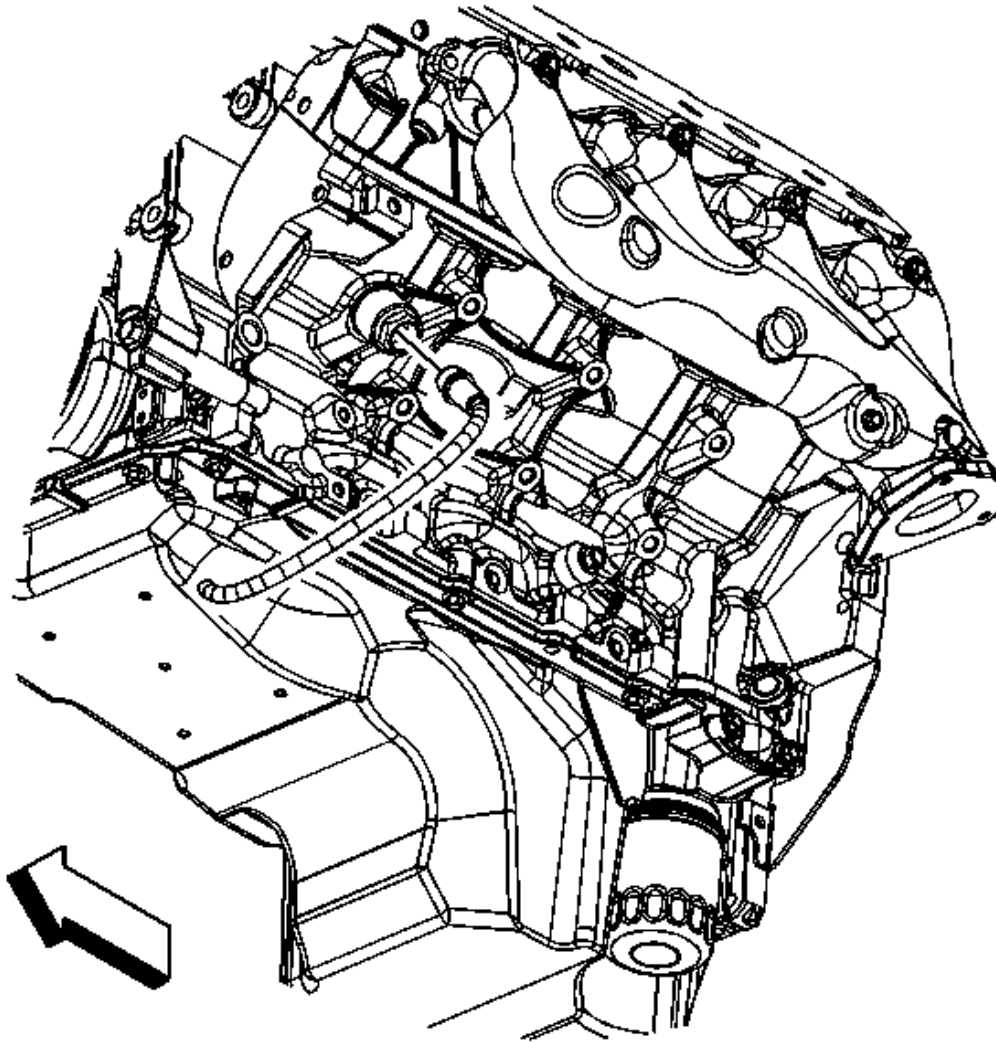


Fig. 154: View Of Coolant Heater Cord
Courtesy of GENERAL MOTORS CORP.

33. Connect the coolant heater cord to the coolant heater, if equipped.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

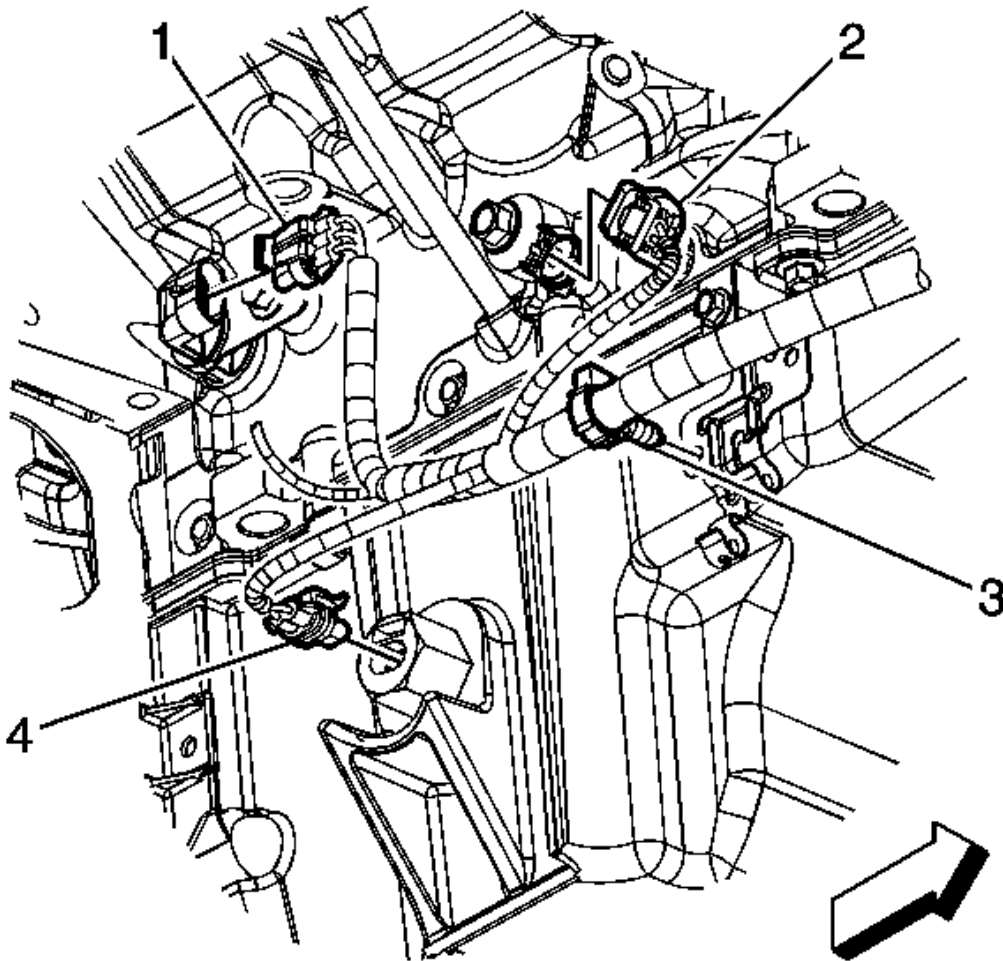


Fig. 155: View Of Electrical Connectors & Clips
Courtesy of GENERAL MOTORS CORP.

34. Connect the engine harness electrical connector (1) to the CKP sensor.
35. Connect the engine harness electrical connector (2) to the knock sensor.
36. Connect the engine harness electrical connector (4) to the oil level sensor.
37. Install the engine harness clip (3) to the transmission oil cooler line bracket.
38. Install the starter motor. Refer to **Starter Motor Replacement (4.3L)** or **Starter Motor Replacement (4.8L, 5.3L, 6.0L, and 6.2L)** or **Starter Motor Replacement (6.6L)** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

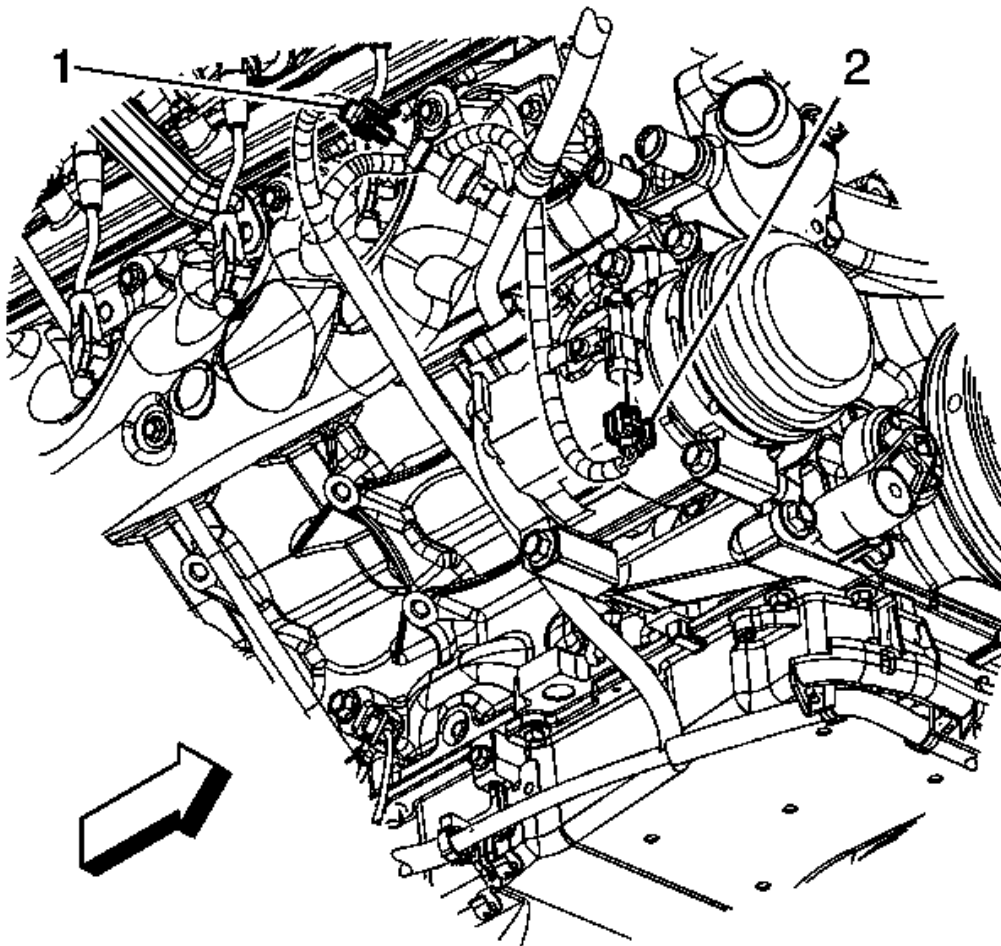


Fig. 156: View Of Electrical Connectors
Courtesy of GENERAL MOTORS CORP.

39. Connect the engine harness electrical connector (1) to the A/C refrigerant pressure sensor.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

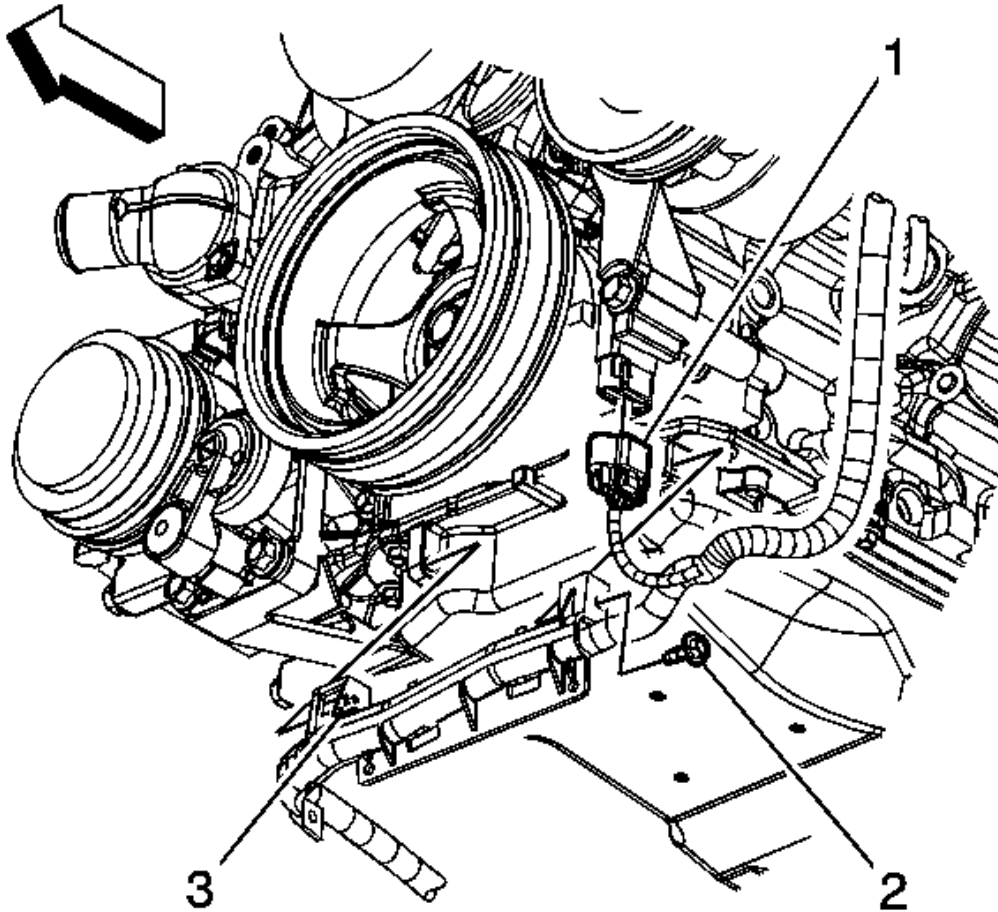


Fig. 157: View Of Electrical Connector, Cable Channel Bolt & Pin
Courtesy of GENERAL MOTORS CORP.

40. Slide the channel pin (3) into the oil pan tab.
41. Install the battery cable channel bolt (2).

Tighten: Tighten the bolt to 12 N.m (106 lb in).

42. Connect the engine harness electrical connector (1) to the CMP sensor wire harness.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

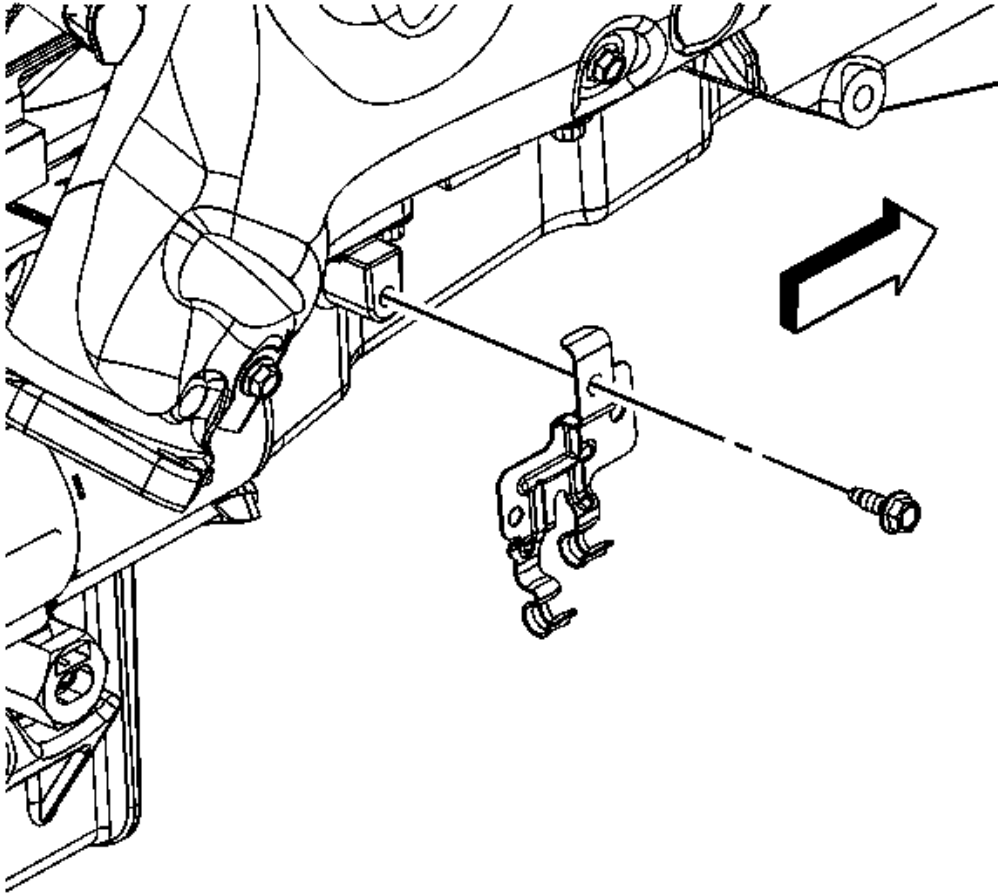


Fig. 158: View Of Oil Cooler Line Clip & Bolt
Courtesy of GENERAL MOTORS CORP.

43. Position the transmission oil cooler line clip to the oil pan and install the bolt, if equipped.

Tighten: Tighten the bolt to 9 N.m (80 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

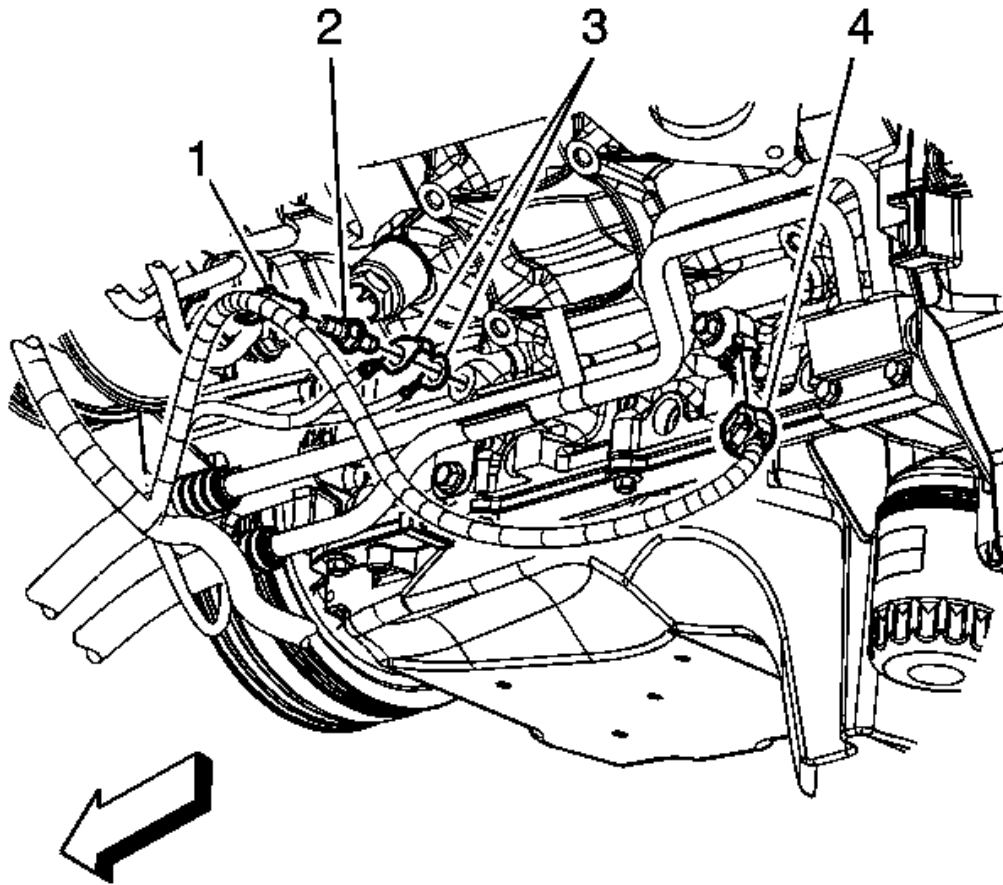


Fig. 159: View Of Engine Harness Components
Courtesy of GENERAL MOTORS CORP.

44. Connect the engine harness electrical connector (4) to the knock sensor.
45. Position the engine harness grounds (3) to the engine block.
46. Install the engine harness ground stud (2) to the engine block.

Tighten: Tighten the stud to 16 N.m (12 lb ft).

47. Install the engine harness clip (1) to the ground stud.
48. Lower the vehicle.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

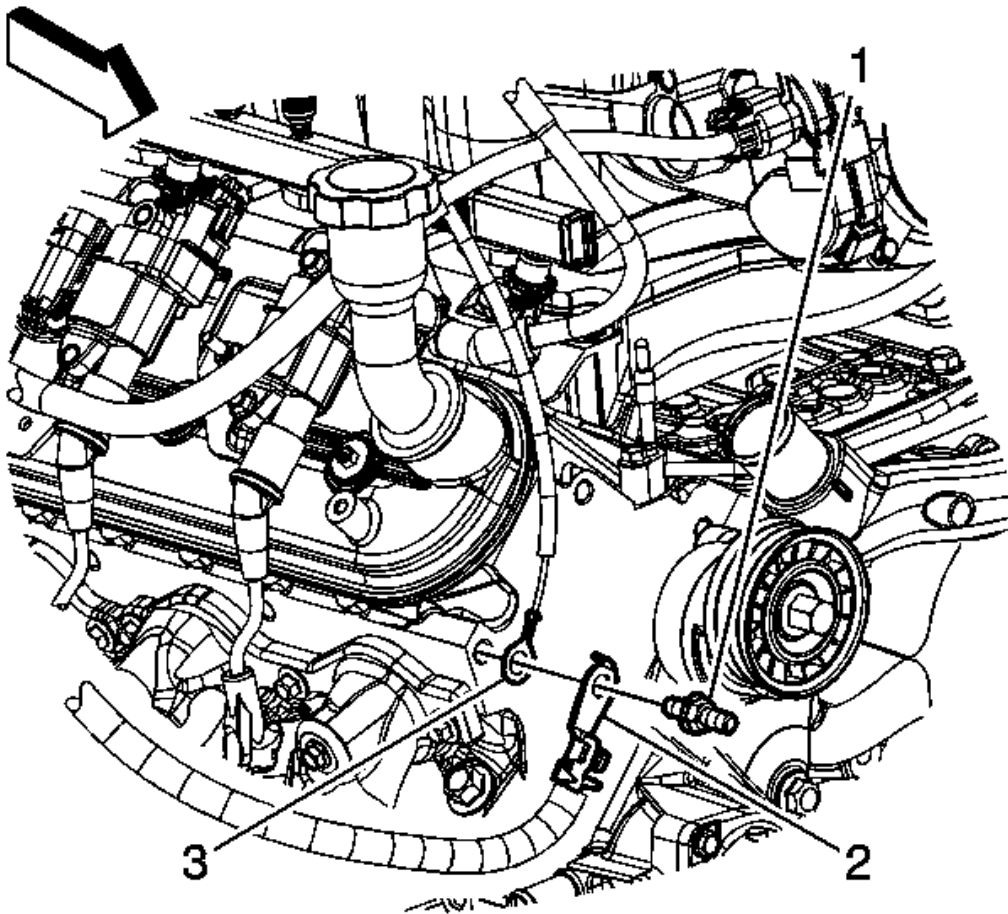


Fig. 160: View Of Battery Cable Terminals & Stud
Courtesy of GENERAL MOTORS CORP.

49. Position the negative battery cable terminal (2) and the engine harness ground (3) to the right cylinder head.
50. Install the negative battery cable stud (1) to the right cylinder head.

Tighten: Tighten the stud to 25 N.m (18 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

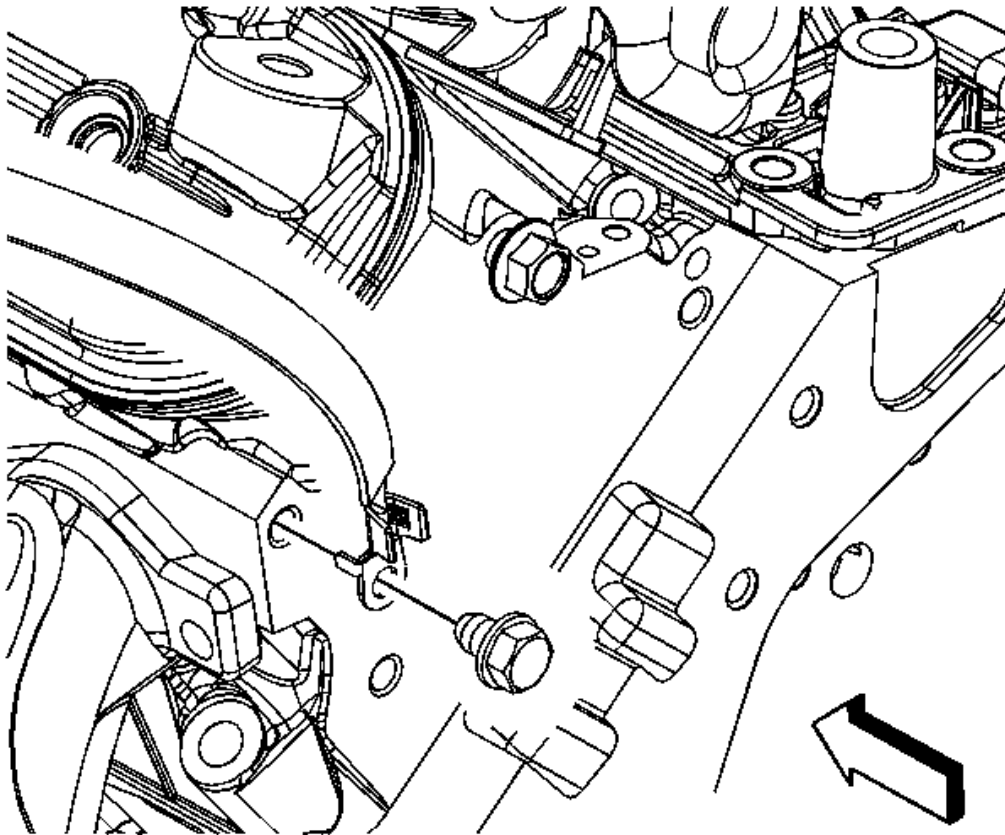


Fig. 161: View Of Engine Ground Strap & Bolt
Courtesy of GENERAL MOTORS CORP.

51. Position the engine ground strap to the cylinder head and cowl.
52. Install the engine ground strap bolt to the rear of the left cylinder head and cowl.

Tighten: Tighten the bolt to 16 N.m (12 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

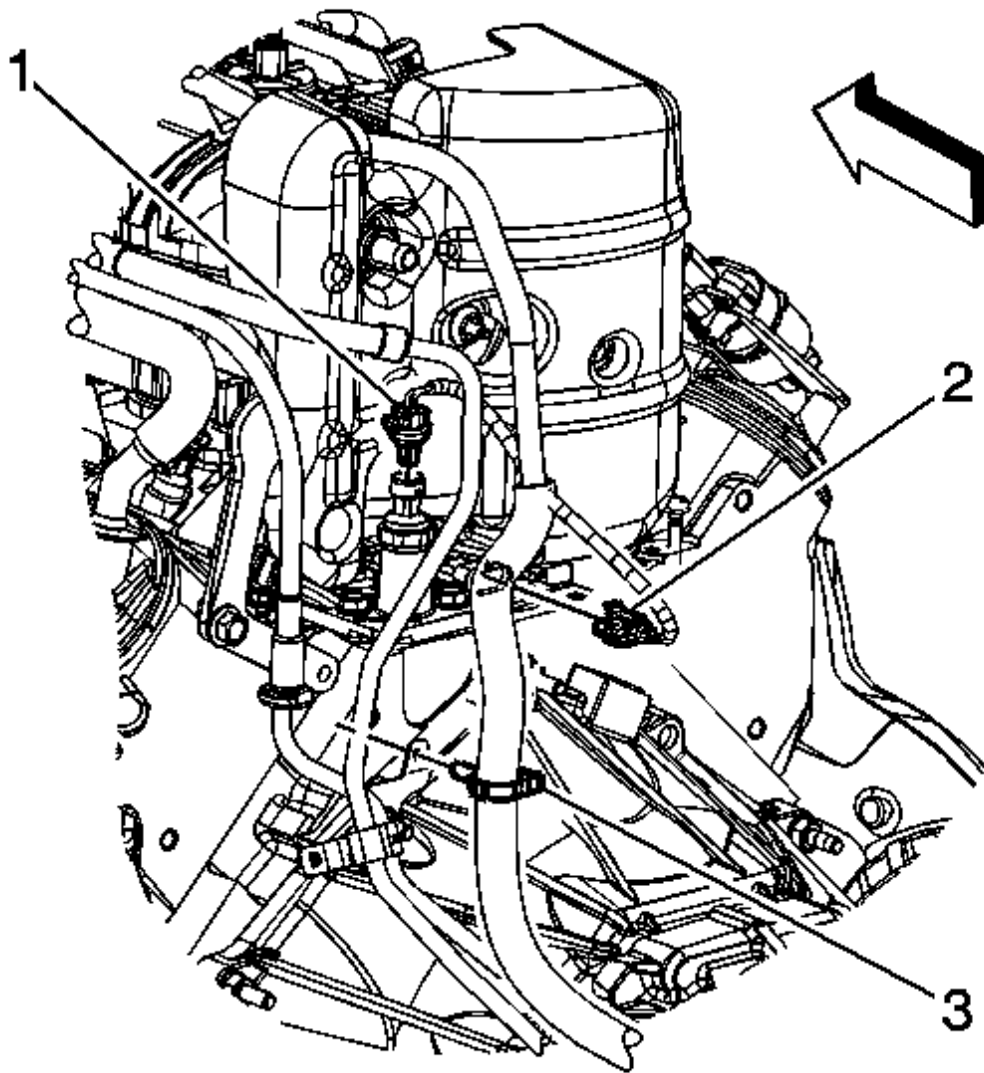


Fig. 162: View Of Engine Harness Electrical Connectors & Inlet Hose Clamp
Courtesy of GENERAL MOTORS CORP.

53. Connect the engine harness electrical connector (1) to the oil pressure sensor.
54. Connect the engine harness electrical connector (2) to the lifter oil manifold.
55. Install the heater hoses. Refer to **Heater Inlet Hose Replacement (Non-HP2)** and **Heater Outlet Hose Replacement** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

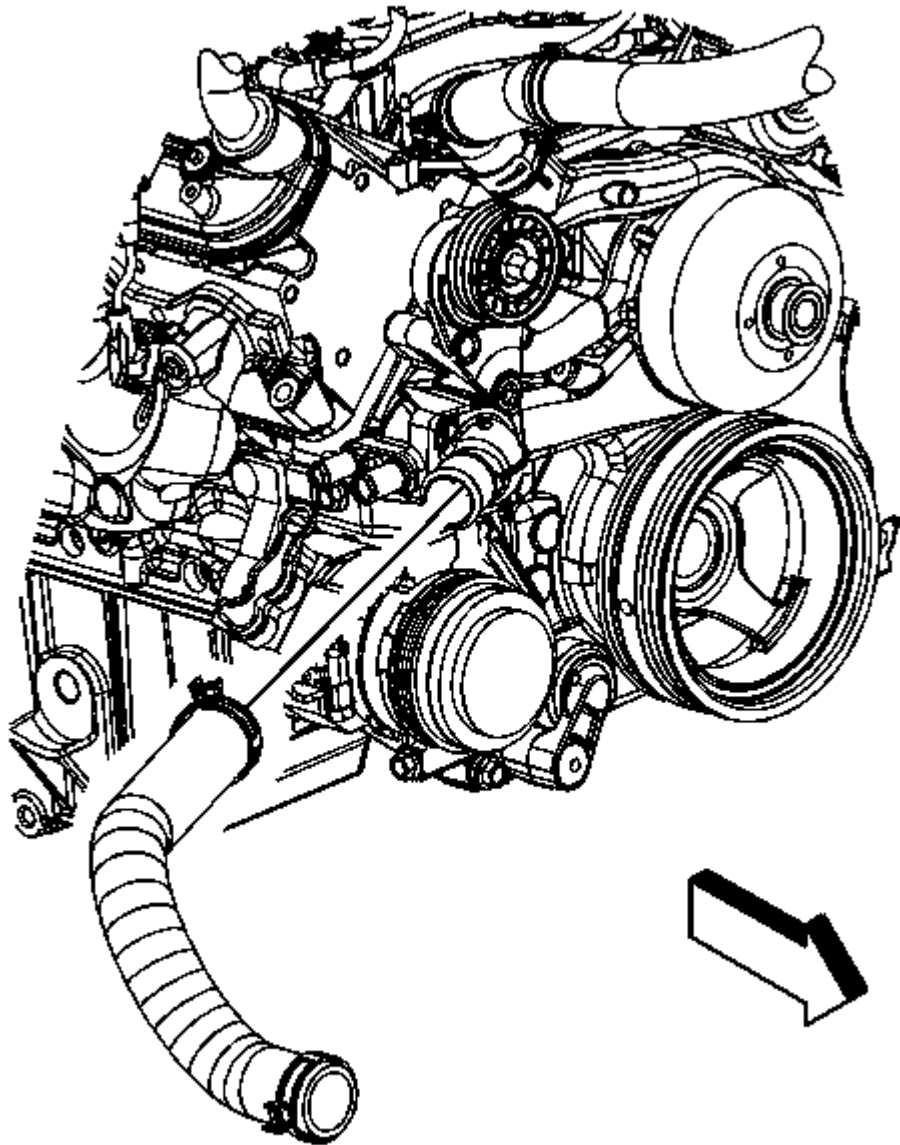


Fig. 163: View Of Radiator Outlet Hose
Courtesy of GENERAL MOTORS CORP.

56. Install the radiator outlet hose to the water pump.
57. Position the radiator outlet hose clamp at the water pump.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

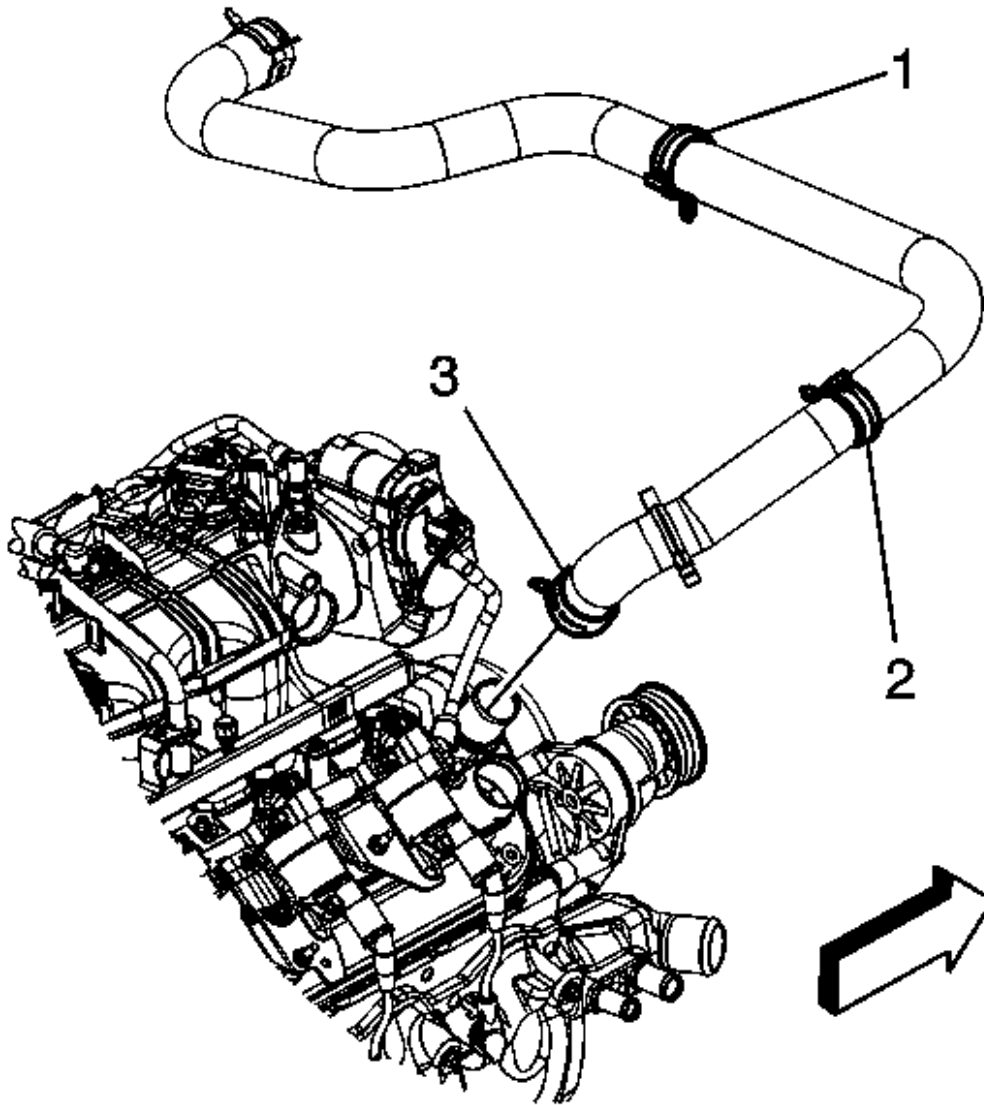


Fig. 164: View Of Radiator Vent Inlet Hose Clamp At Water Pump
Courtesy of GENERAL MOTORS CORP.

- 58. Install the radiator inlet hose to the water pump.
- 59. Position the radiator inlet hose clamp (3) at the water pump.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

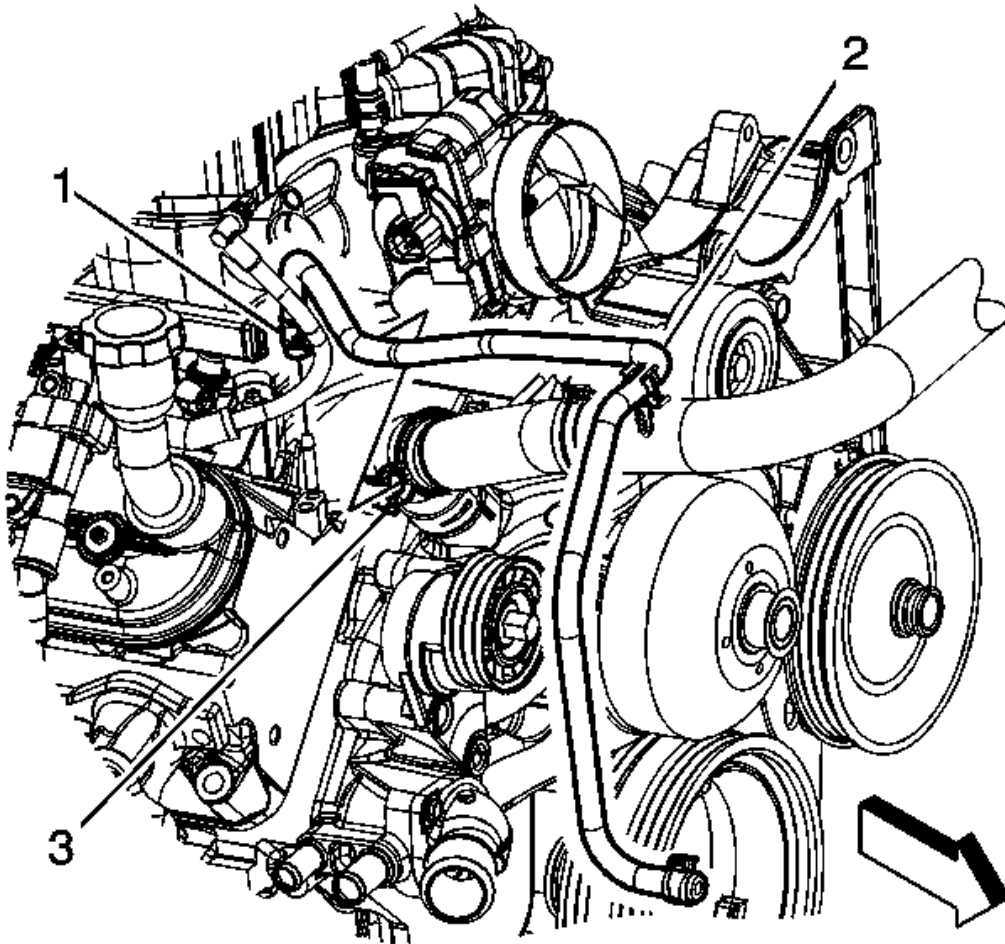


Fig. 165: View Of Radiator Vent Inlet Hose & Clamps
Courtesy of GENERAL MOTORS CORP.

60. Position and install the radiator vent inlet hose (2) to the air bleed pipe.
61. Position the radiator vent inlet hose clamp (1) at the air bleed pipe.
62. Install the radiator vent inlet hose (2) to the radiator inlet hose clip (3).
63. Position the generator battery jumper to the engine.
64. Install the intake manifold. Refer to **Intake Manifold Replacement (L92 - First Design)** or **Intake Manifold Replacement (L92 - Second Design)** or **Intake Manifold Replacement (LY2 and LY6)** or **Intake Manifold Replacement (LH6, LMG, LY5 and L76)** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

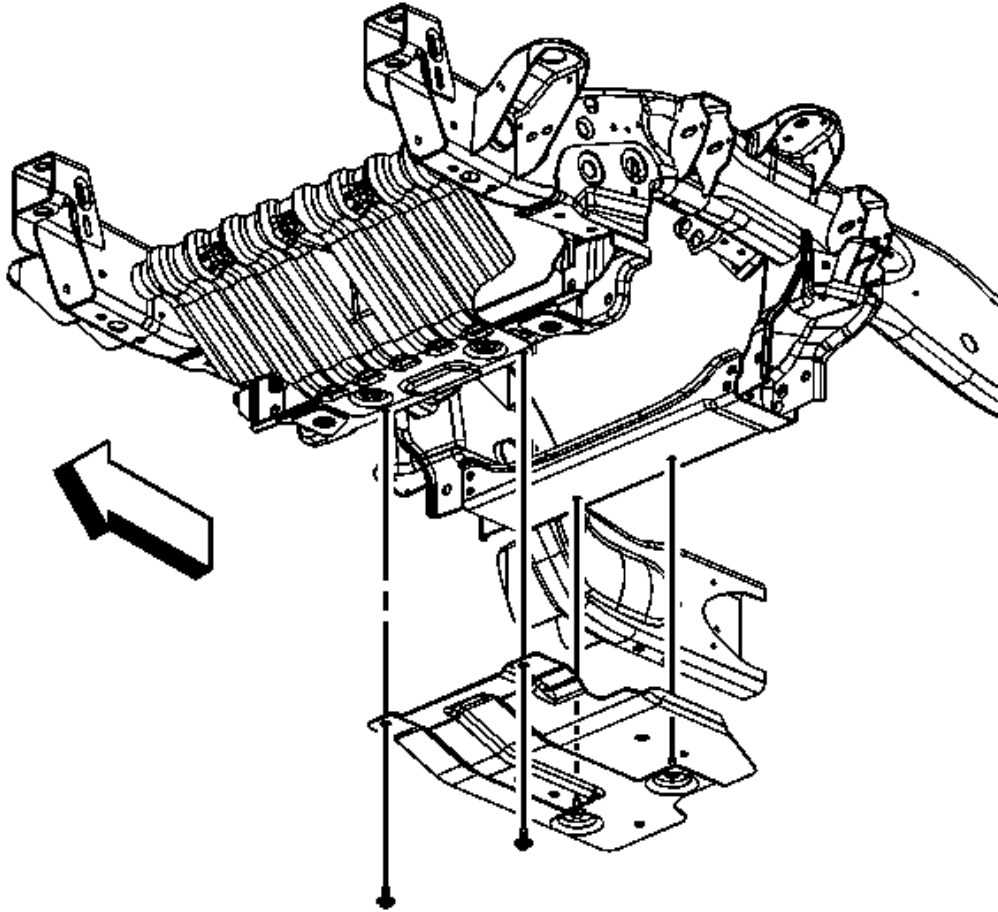


Fig. 166: View Of Oil Pan Skid Plate & Bolts
Courtesy of GENERAL MOTORS CORP.

65. For 2500 series vehicles, install the oil pan skid plate and bolts, if equipped.

Tighten: Tighten the bolts to 28 N.m (21 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

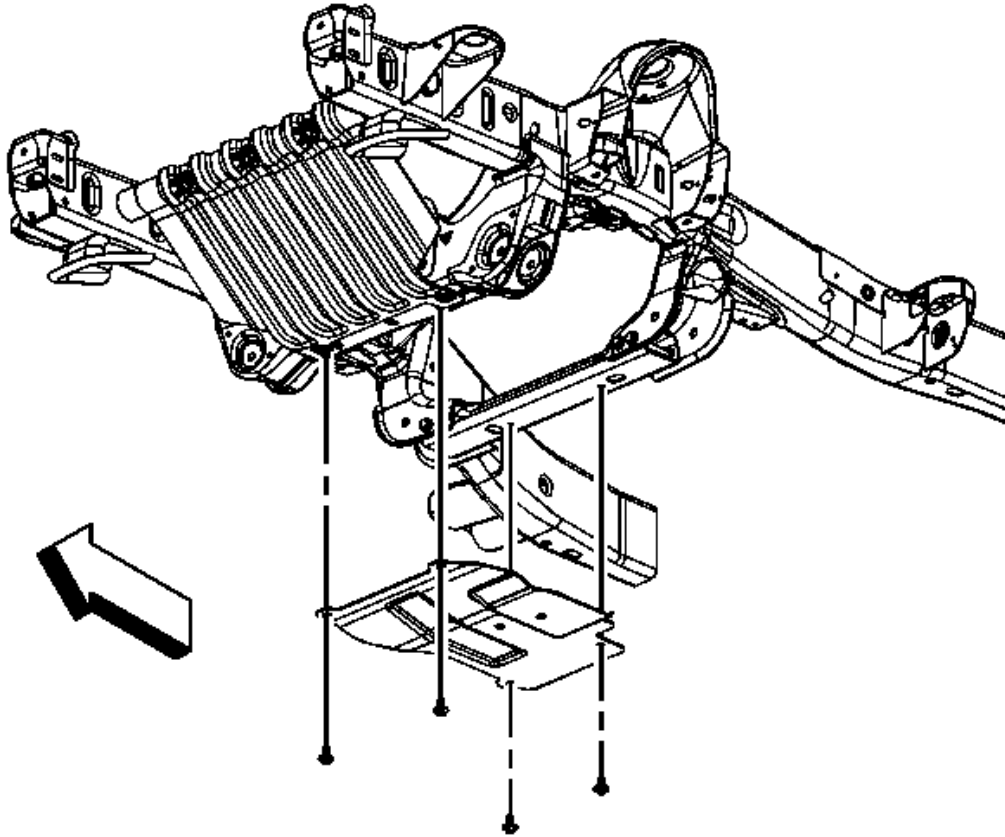


Fig. 167: View Of Oil Pan Skid Plate & Bolts
Courtesy of GENERAL MOTORS CORP.

66. For 1500 series vehicles, install the oil pan skid plate and bolts, if equipped.

Tighten: Tighten the bolts to 28 N.m (21 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

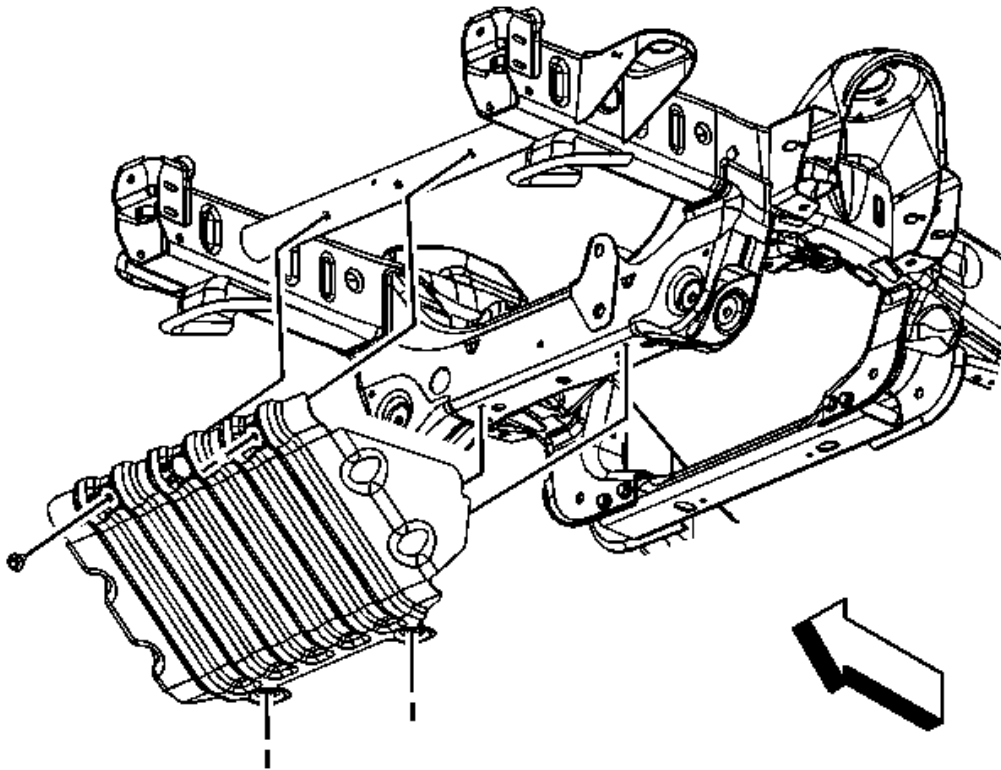


Fig. 168: View Of Engine Shield & Bolts
Courtesy of GENERAL MOTORS CORP.

67. Install the engine shield and bolts.

Tighten: Tighten the bolts to 20 N.m (15 lb ft).

68. Lower the vehicle.

69. Install the front end upper tie bar. Refer to **Front End Upper Tie Bar Replacement** .

70. Install the hood latch. Refer to **Hood Primary and Secondary Latch Replacement** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

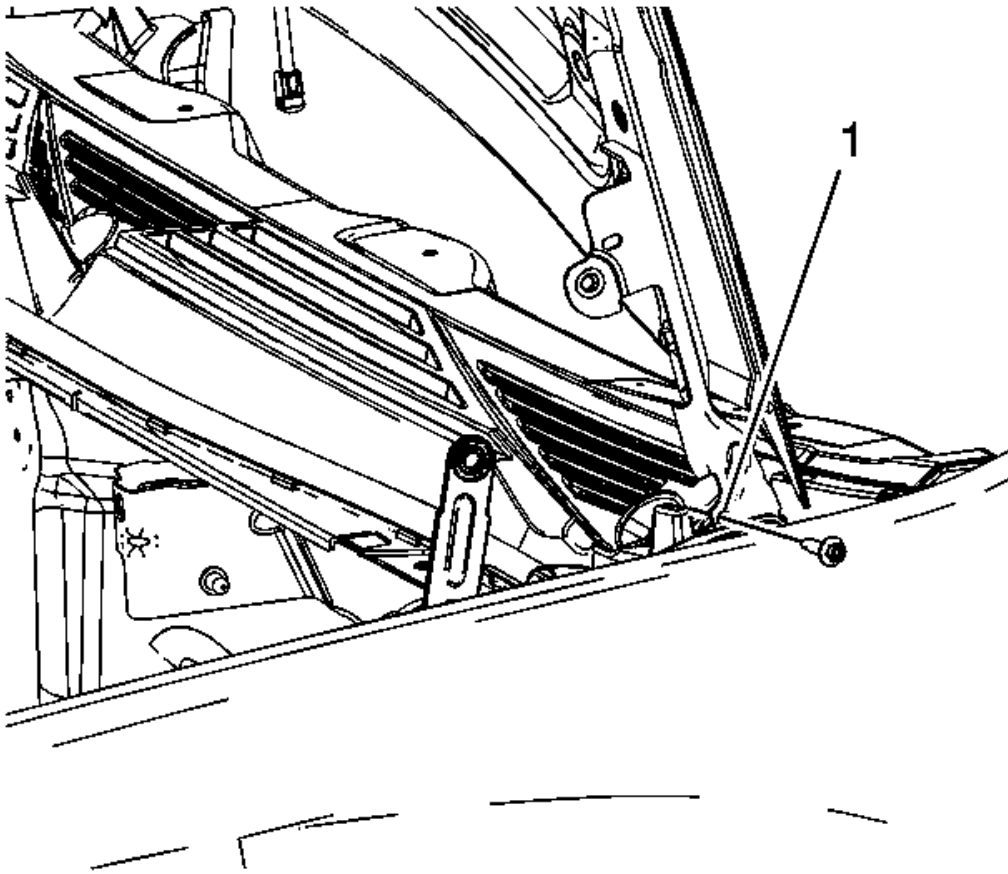


Fig. 169: View Of Service Piston Notch
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: There is a positive stop which limits the hood from being opened too far.

71. With the aid of the assistant raise the hood slightly until the hood hinge bolts can be removed from the service position notch (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

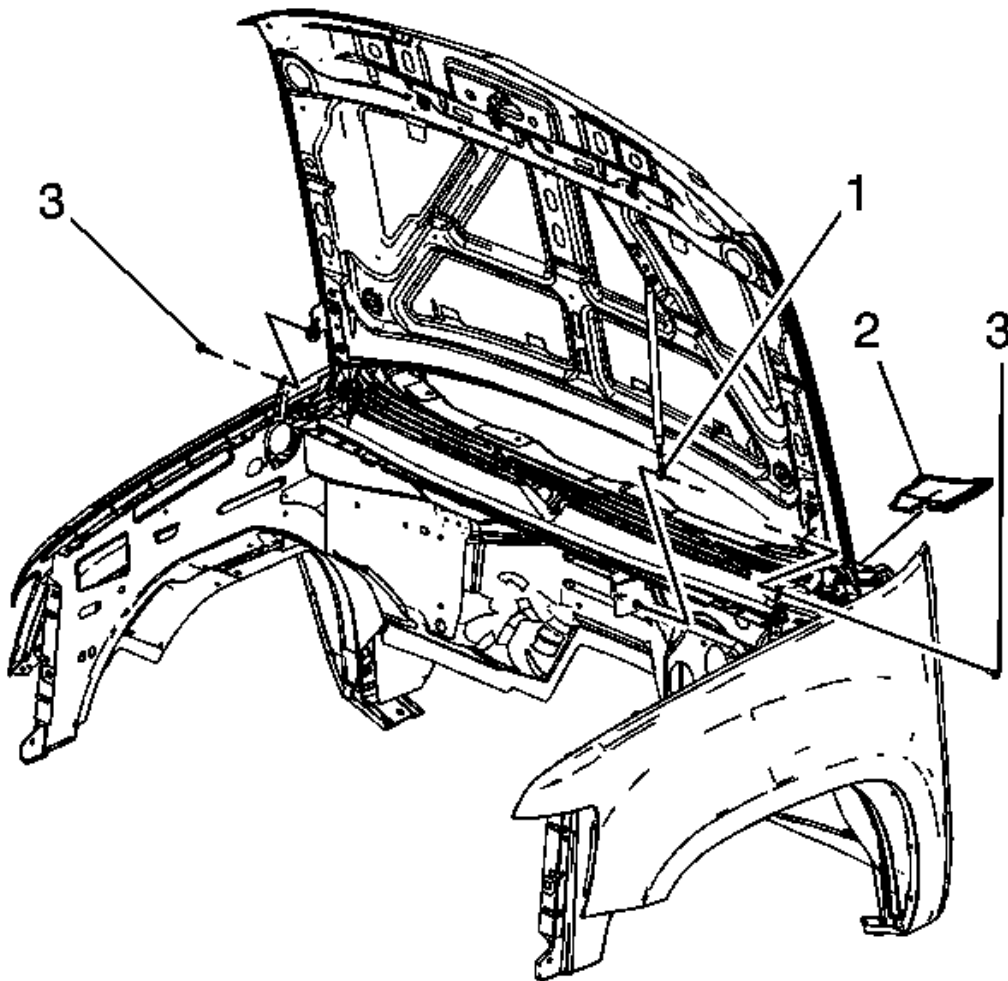


Fig. 170: View Of Hood Strut Rod, Grille End Caps & Hood Hinge Bolts
Courtesy of GENERAL MOTORS CORP.

72. With the aid of an assistant lower the hood and install the hood hinge bolts (3) to the hood hinges.

Tighten: Tighten the bolts to 25 N.m (18 lb ft).

73. Install the hood strut rod (1) to the hood strut bracket stud.
74. Install the air inlet grille end caps (2), push down the end cap in order to engage the retainers. (left side shown, right side similar).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

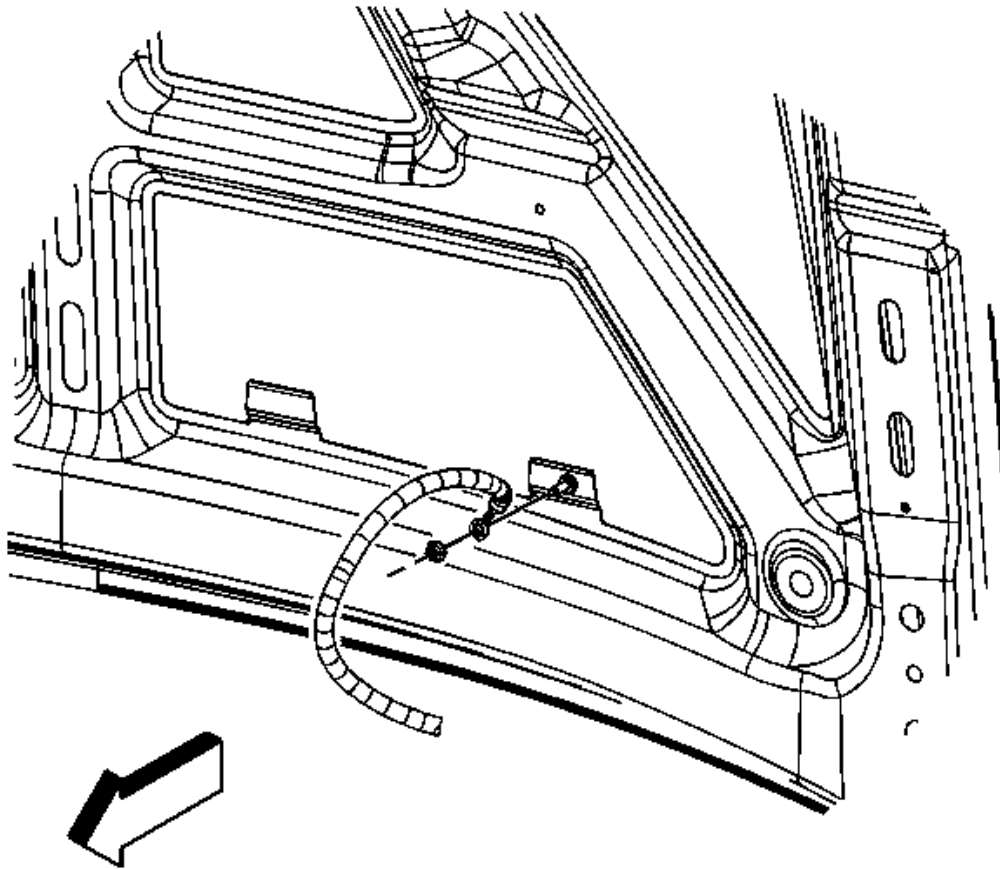


Fig. 171: View Of Ground Strap & Nut
Courtesy of GENERAL MOTORS CORP.

75. Install the ground strap to the hood stud.
76. Install the ground strap nut at the hood stud.

Tighten: Tighten the nut to 9 N.m (80 lb in).

77. Prelube the engine. Refer to **Engine Prelubing** .
78. Perform the CKP system variation learn procedure. Refer to **Crankshaft Position System Variation Learn** .

IMPORTANT: After an overhaul the engine should be tested. Use the

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

following procedure after the engine is installed in the vehicle.

- Disable the ignition system.
- Crank the engine several times. Listen for any unusual noises or evidence that parts are binding.
- Enable the ignition system.
- Start the engine and listen for unusual noises.
- Check the vehicle oil pressure gauge or light and confirm that the engine has acceptable oil pressure.
- Run the engine speed at about 1,000 RPM until the engine has reached normal operating temperature.
- Listen for sticking lifters or other unusual noises.
- Inspect for fuel, oil and/or coolant leaks while the engine is running.
- Perform a final inspection for the proper oil and coolant levels.

79. Close the hood.

ENGINE OIL AND OIL FILTER REPLACEMENT

Removal Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

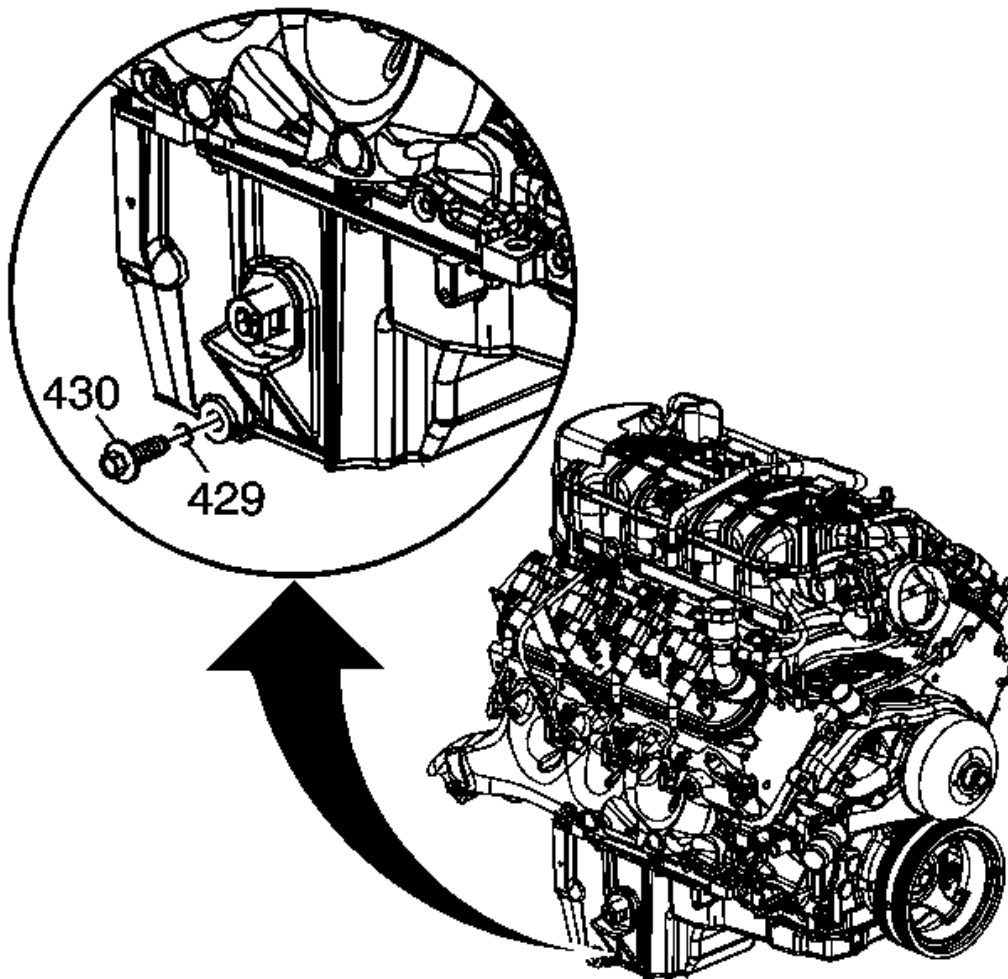


Fig. 172: View Of Oil Pan Drain Plug & Seal
Courtesy of GENERAL MOTORS CORP.

1. Open the hood.
2. Remove the oil fill cap.
3. Raise and suitably support the vehicle. Refer to **Lifting and Jacking the Vehicle** .
4. Place a oil drain pan under the oil pan drain plug.
5. Remove the oil pan drain plug (430).
6. Allow the oil to drain completely.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

7. Clean and inspect the oil pan drain plug, replace if necessary.
8. Clean and inspect the oil pan sealing surface, replace the oil pan if necessary.
9. Wipe any remaining oil from the drain plug hole and reinstall the oil pan drain plug until snug.

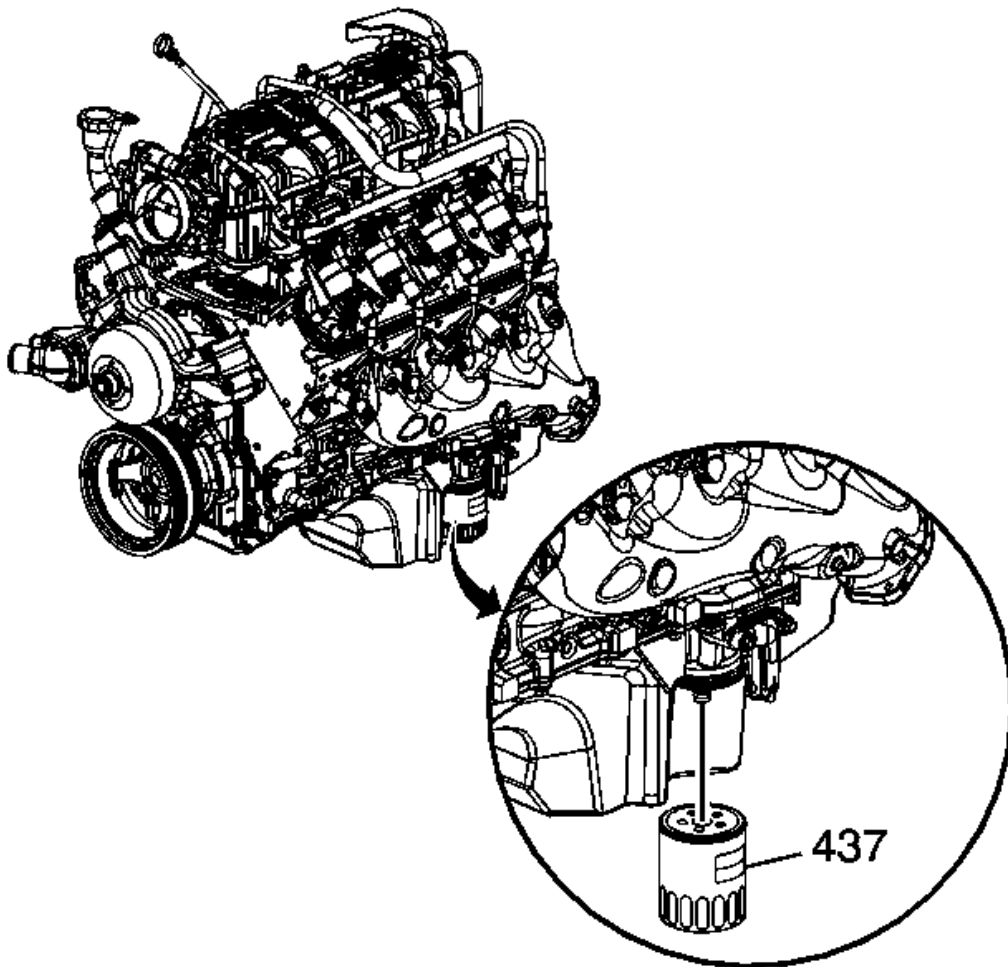


Fig. 173: View Of Engine Oil Filter
Courtesy of GENERAL MOTORS CORP.

10. Position the drain pan under the oil filter.
11. Remove the oil filter.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

12. Ensure that the oil filter gasket is still on the old filter if not, remove the oil filter gasket from the oil pan.

Installation Procedure

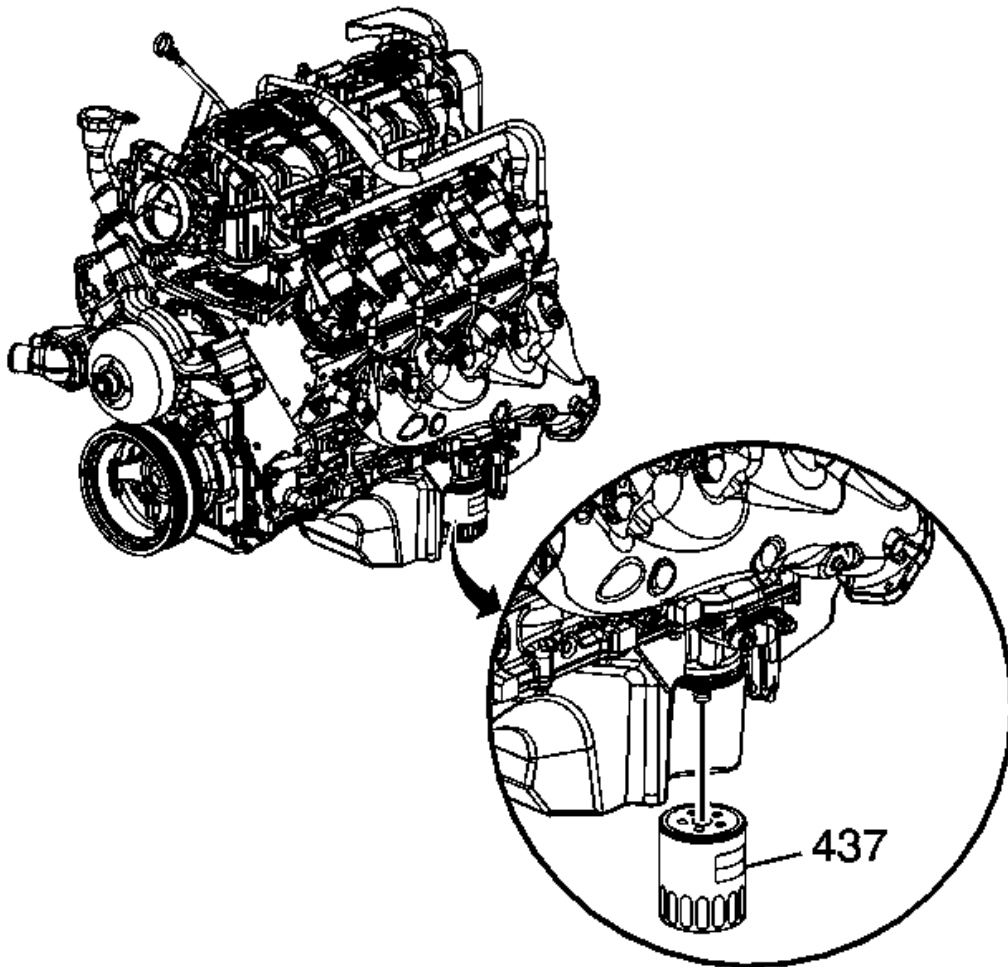


Fig. 174: View Of Engine Oil Filter
Courtesy of GENERAL MOTORS CORP.

1. Apply clean engine oil to the NEW oil filter seal.

NOTE: Refer to Fastener Notice .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Install the NEW oil filter.

Tighten: Tighten the oil filter to 30 N.m (22 lb ft).

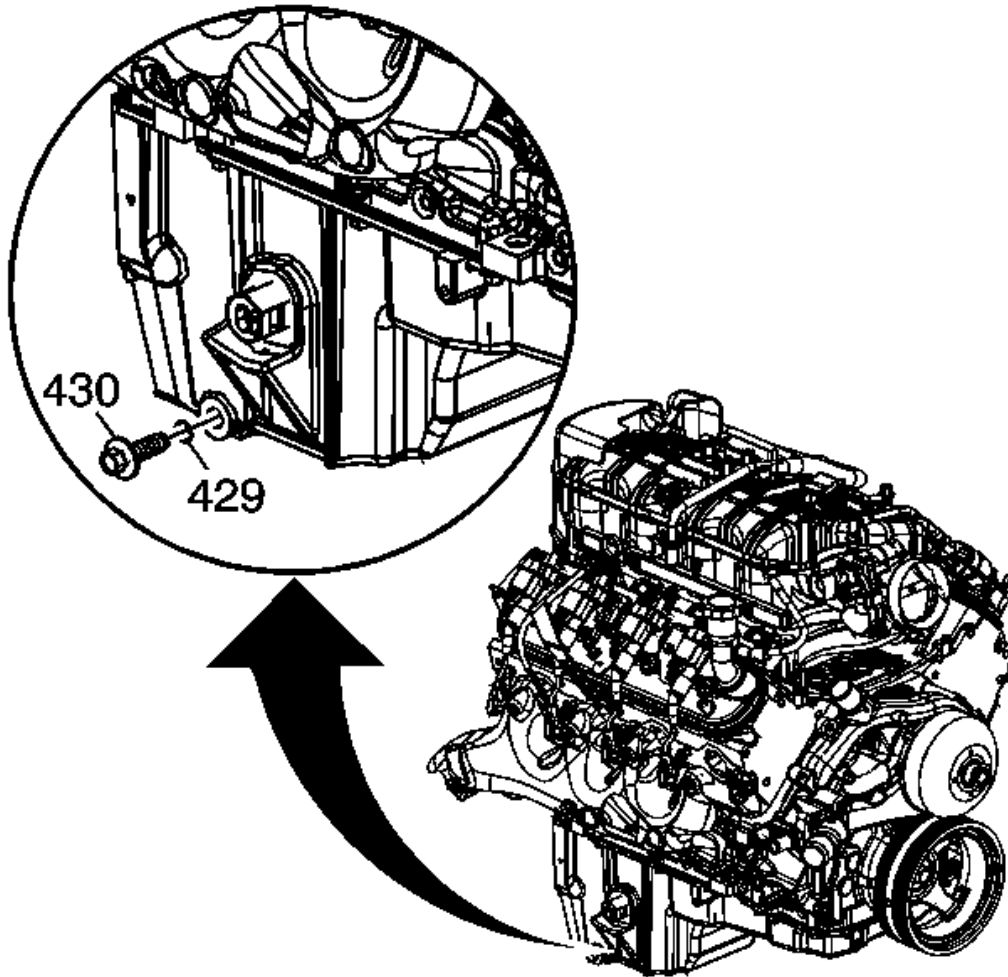


Fig. 175: View Of Oil Pan Drain Plug & Seal
Courtesy of GENERAL MOTORS CORP.

3. Tighten the oil pan drain plug.

Tighten: Tighten the drain plug to 25 N.m (18 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

4. Remove the oil drain pan from under the vehicle.
5. Lower the vehicle.
6. Fill the engine with new engine oil. Refer to **Approximate Fluid Capacities** and **Fluid and Lubricant Recommendations** .
7. Start the engine.
8. Inspect for oil leaks after engine start up.
9. Turn off the engine and allow the oil a few minutes to drain back into the oil pan.
10. Remove the oil level indicator from the indicator tube.
11. Clean off the indicator end of the oil level indicator with a clean paper towel or cloth.
12. Install the oil level indicator into the oil level indicator tube until the oil level indicator handle contacts the top of the oil level indicator tube.
13. Again, remove the oil level indicator from the oil level indicator tube keeping the tip of the oil level indicator down.
14. Check the level of the engine oil on the oil level indicator.
15. If necessary, adjust the oil level by adding or draining oil.
16. Check for oil leaks.
17. Close the hood.

OFF-VEHICLE REPAIR INFORMATION

NOTE: For **ON-VEHICLE** repair information, see **ON-VEHICLE REPAIR INFORMATION** . **OFF-VEHICLE** repair information is covered below, and will carry over into the articles following this one.

DRAINING FLUIDS AND OIL FILTER REMOVAL

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

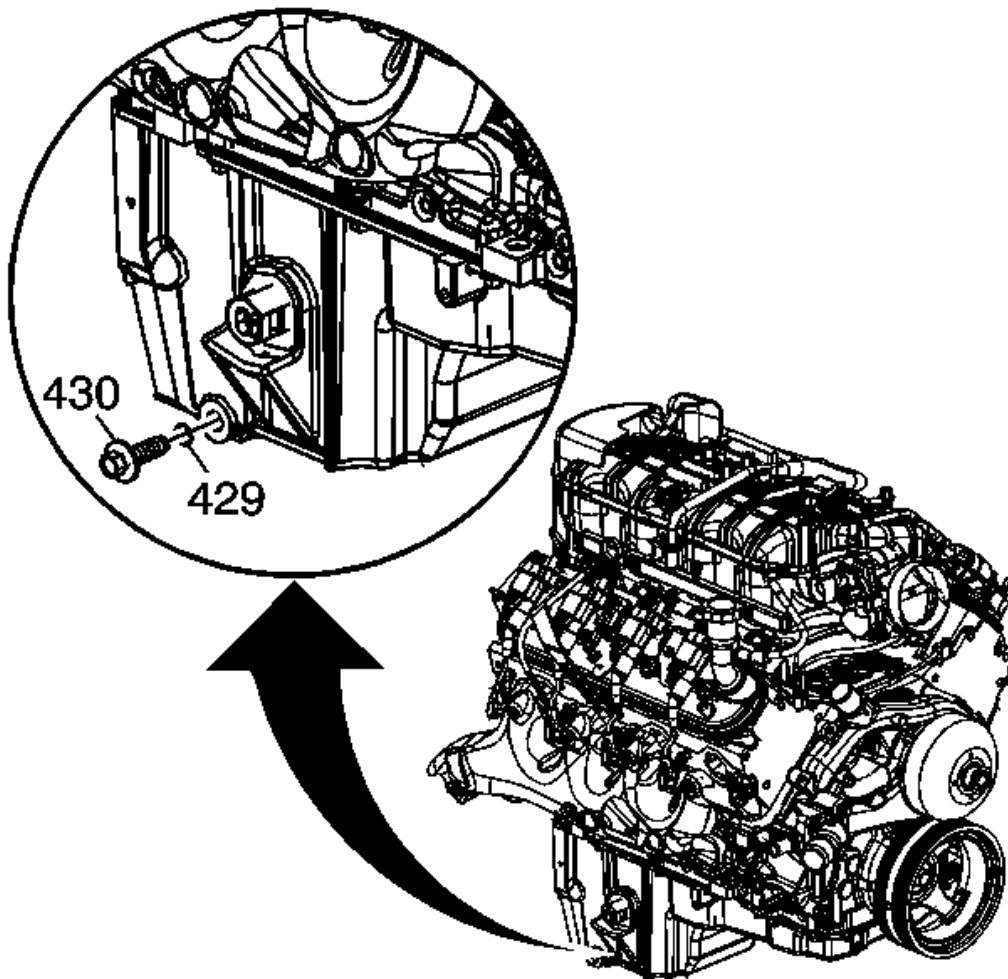


Fig. 176: View Of Oil Pan Drain Plug & Seal
Courtesy of GENERAL MOTORS CORP.

1. Remove the oil pan drain plug (430) and O-ring (429).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

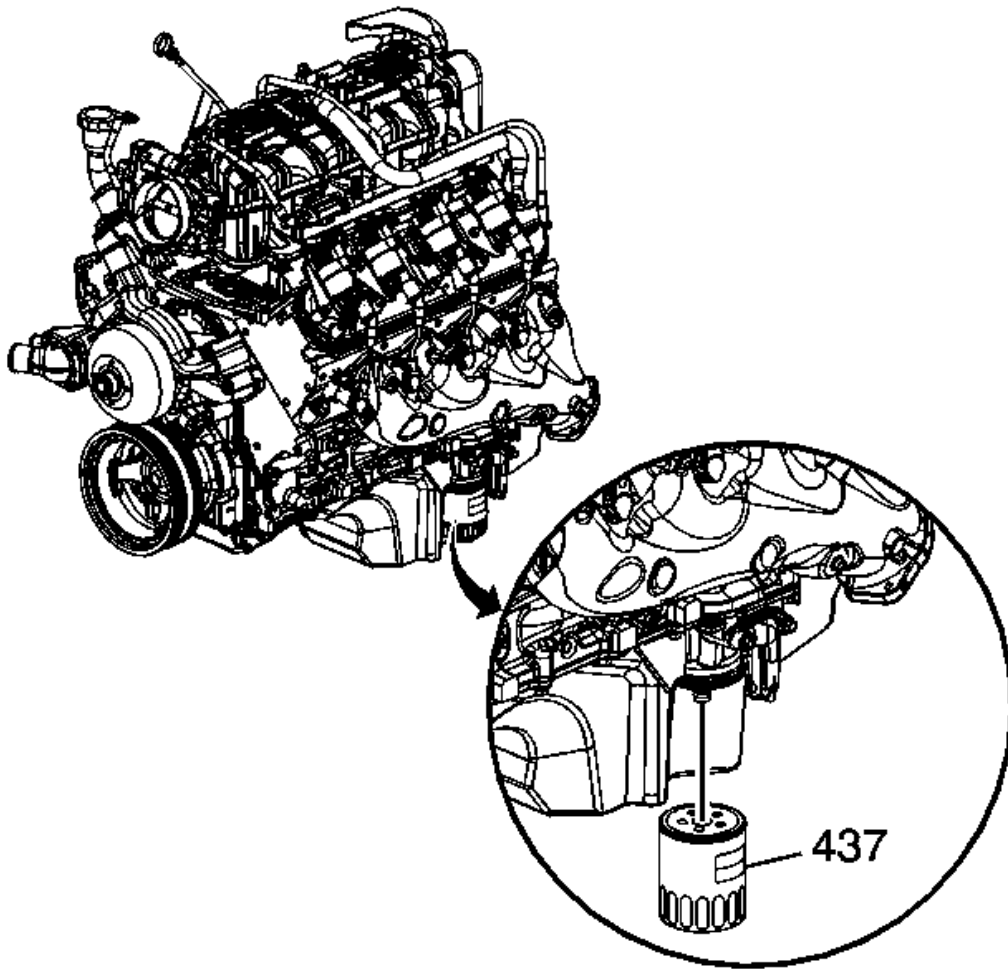


Fig. 177: View Of Engine Oil Filter
Courtesy of GENERAL MOTORS CORP.

2. Remove the engine oil filter (437).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

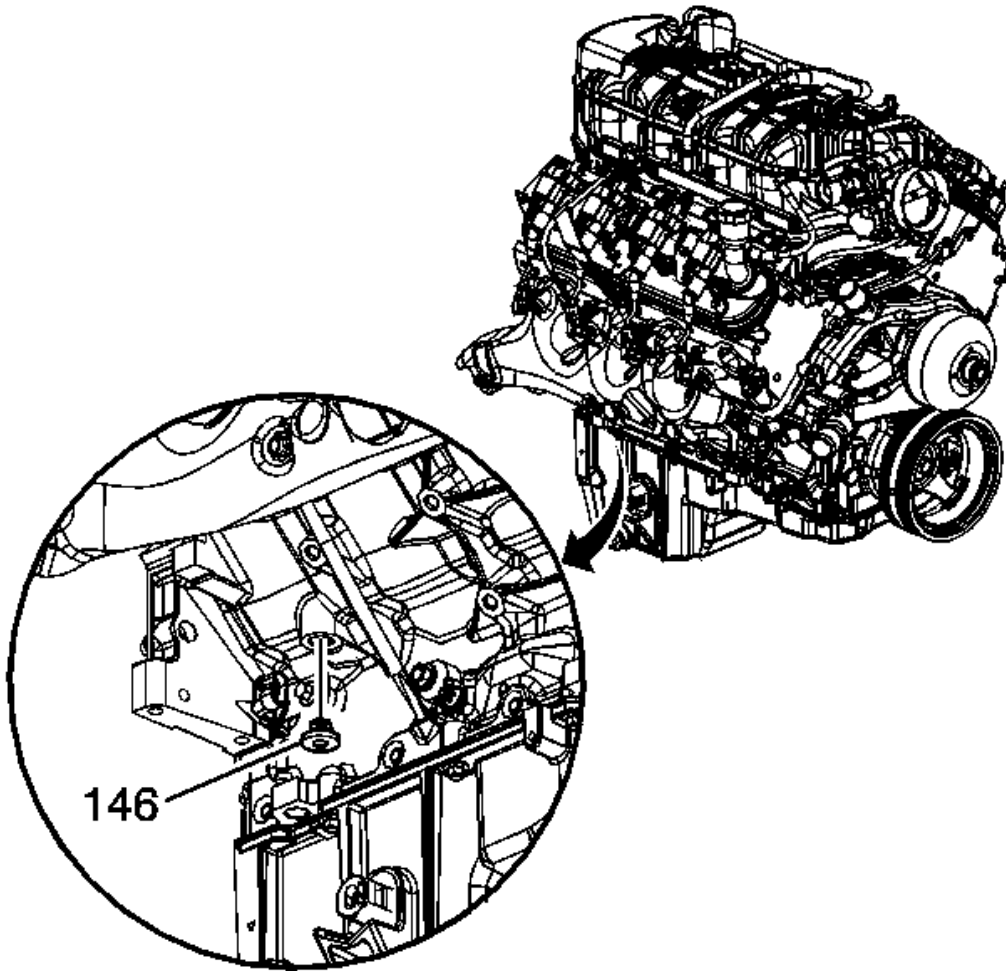


Fig. 178: View Of Engine Block Coolant Drain Hole Plug
Courtesy of GENERAL MOTORS CORP.

3. Remove the right side engine block coolant drain hole plug (146).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

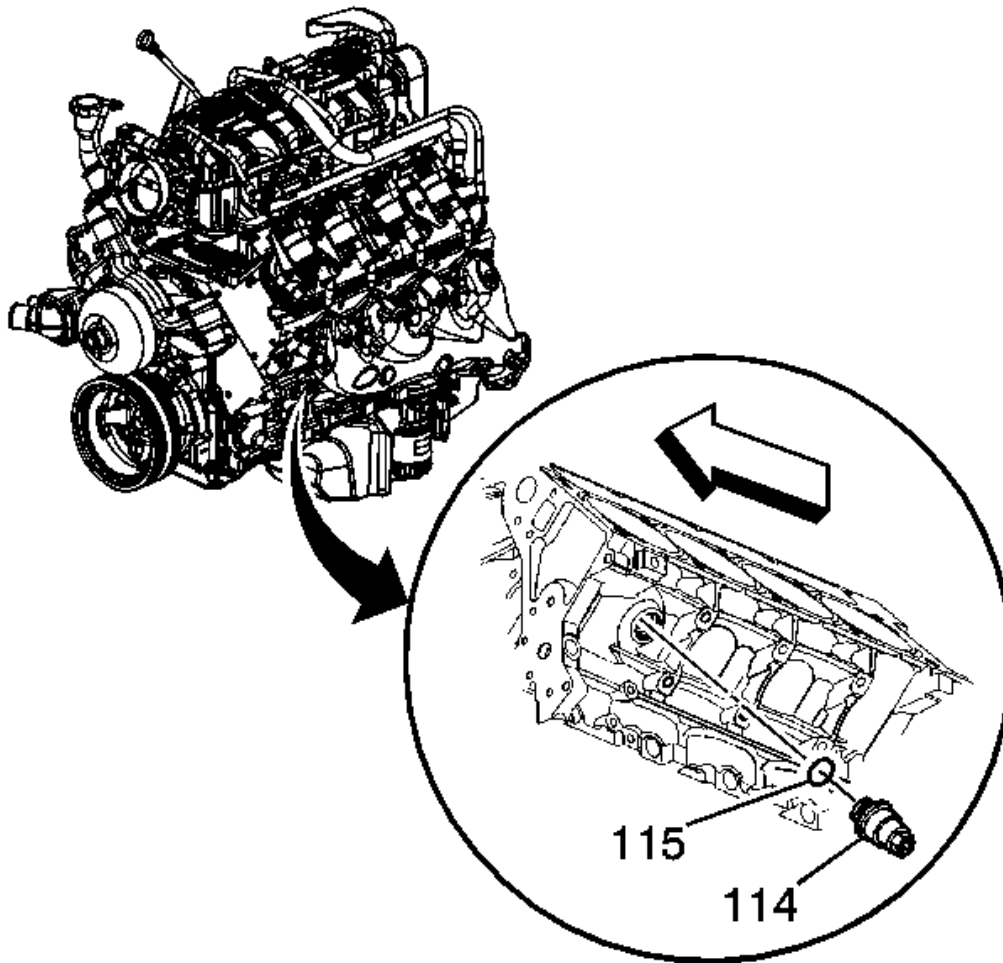


Fig. 179: View Of Engine Block Coolant Heater & Washer
Courtesy of GENERAL MOTORS CORP.

4. Remove the left side engine block coolant heater (114) and washer (115).

CRANKSHAFT BALANCER REMOVAL

Tools Required

- **J 41816-A** Crankshaft Balancer Remover. See **Special Tools** .
- **J 41816-2** Crankshaft End Protector. See **Special Tools** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- **J 42386-A** Flywheel Holding Tool. See **Special Tools** .

Removal

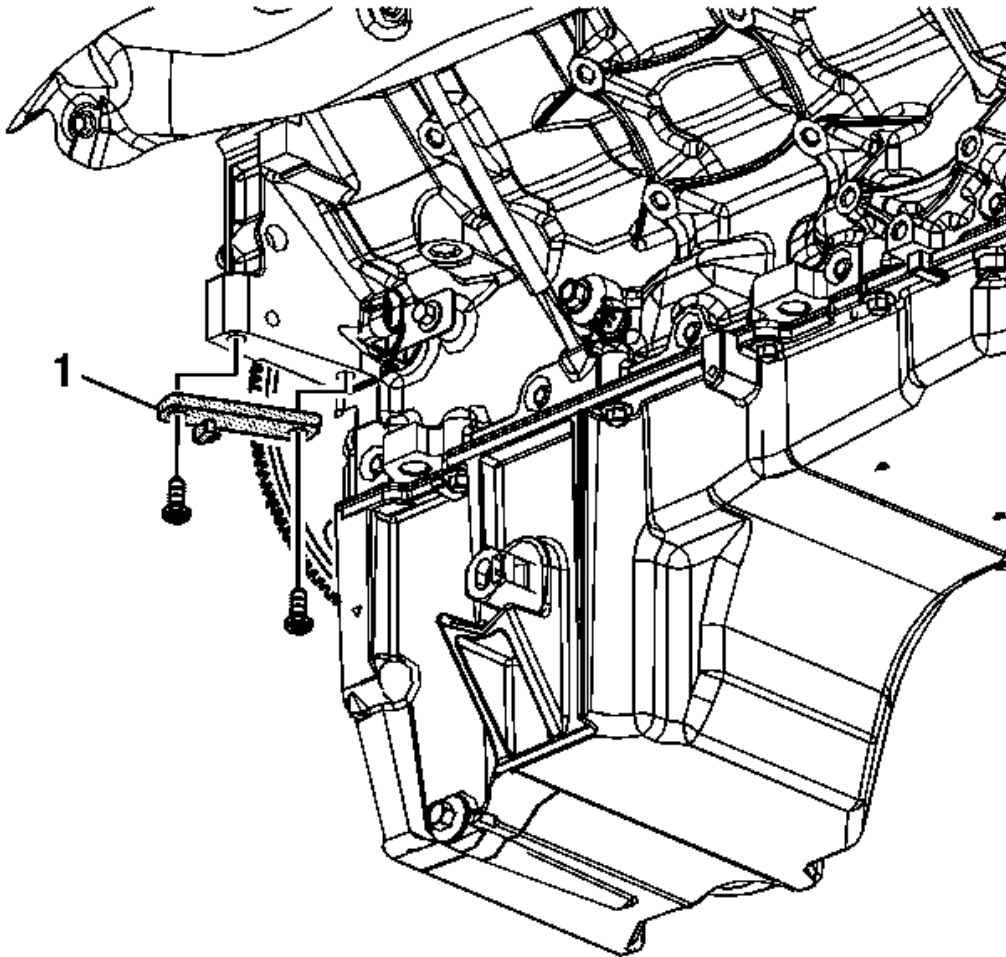


Fig. 180: View Of Special Tool & Bolts
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to **Fastener Notice** .

IMPORTANT: Do not use the crankshaft balancer bolt again. Install a **NEW** crankshaft balancer bolt during final assembly.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Install the **J 42386-A** (1) and bolts. See **Special Tools** .

Use 1 M10 - 1.5 x 120 mm and 1 M10 - 1.5 x 45 mm bolt for proper tool operation.

Tighten: Tighten the **J 42386-A** bolts to 50 N. See **Special Tools** .m (37 lb ft).

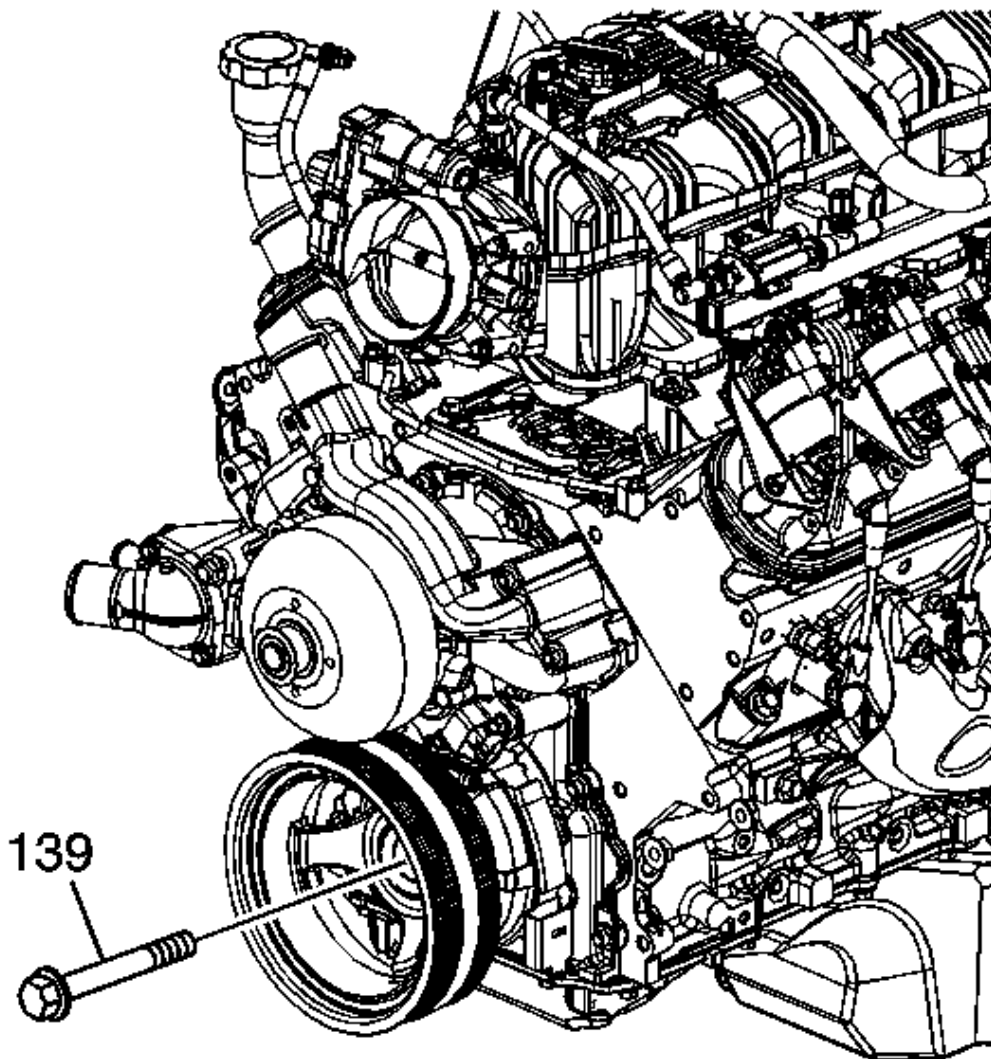


Fig. 181: View Of Crankshaft Balancer Bolt
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Remove the crankshaft balancer bolt (139).

Do not discard the crankshaft balancer bolt. The balancer bolt is used during the balancer installation procedure.

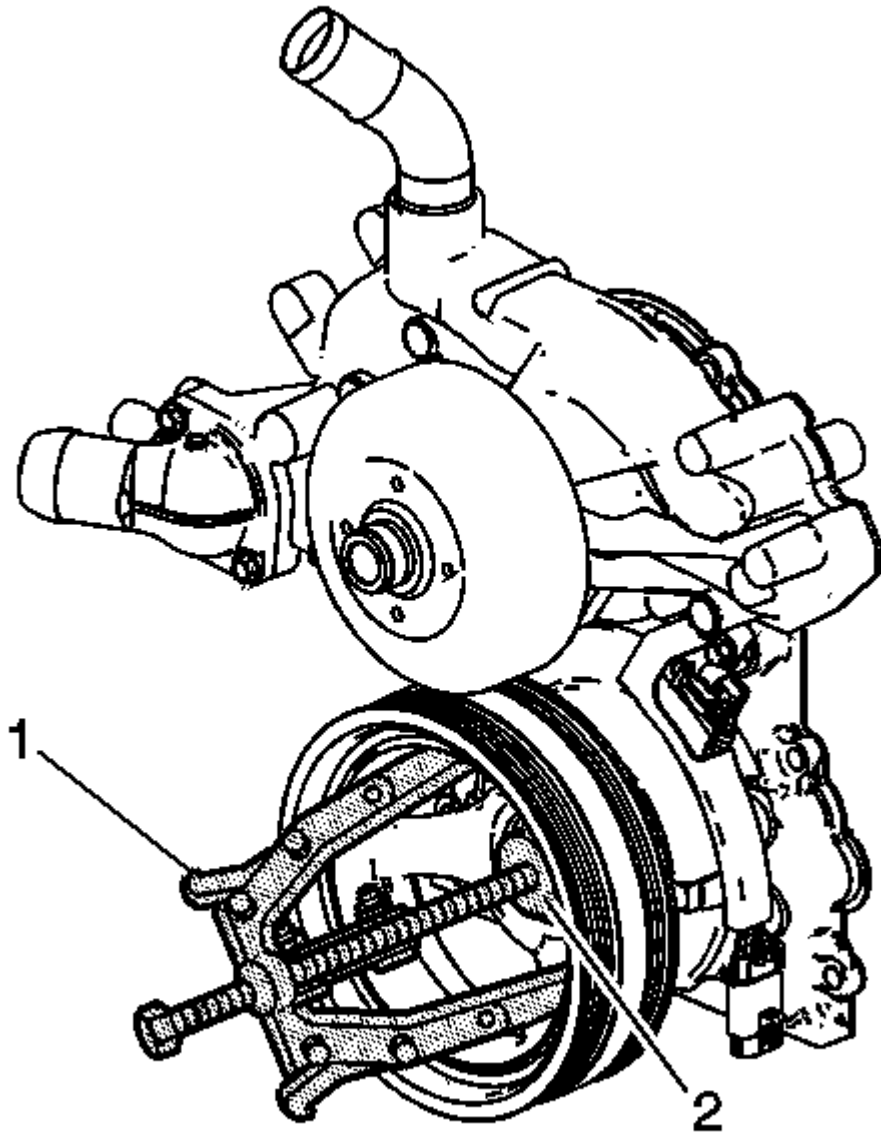


Fig. 182: Removing Crankshaft Balancer

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Courtesy of GENERAL MOTORS CORP.

3. Use the **J 41816-A** (1) and the **J 41816-2** (2) in order to remove the crankshaft balancer. See **Special Tools** .

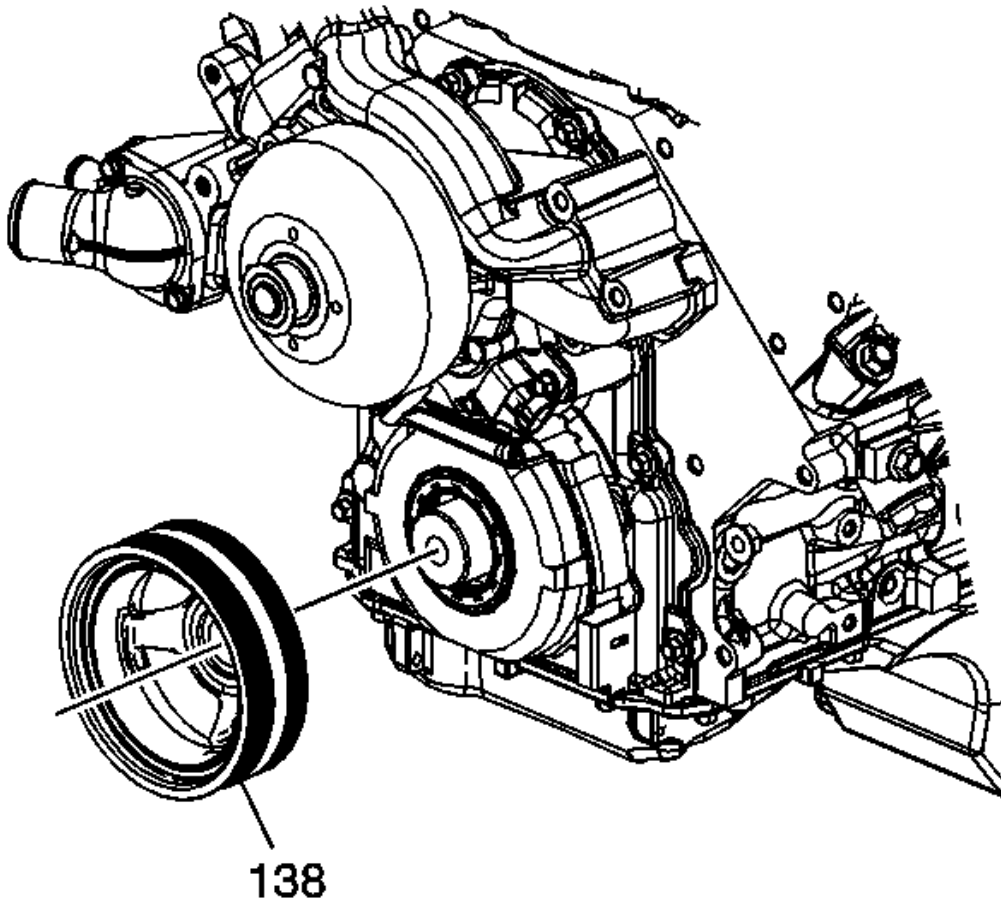


Fig. 183: View Of Crankshaft Balancer
Courtesy of GENERAL MOTORS CORP.

4. Remove the balancer (138).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

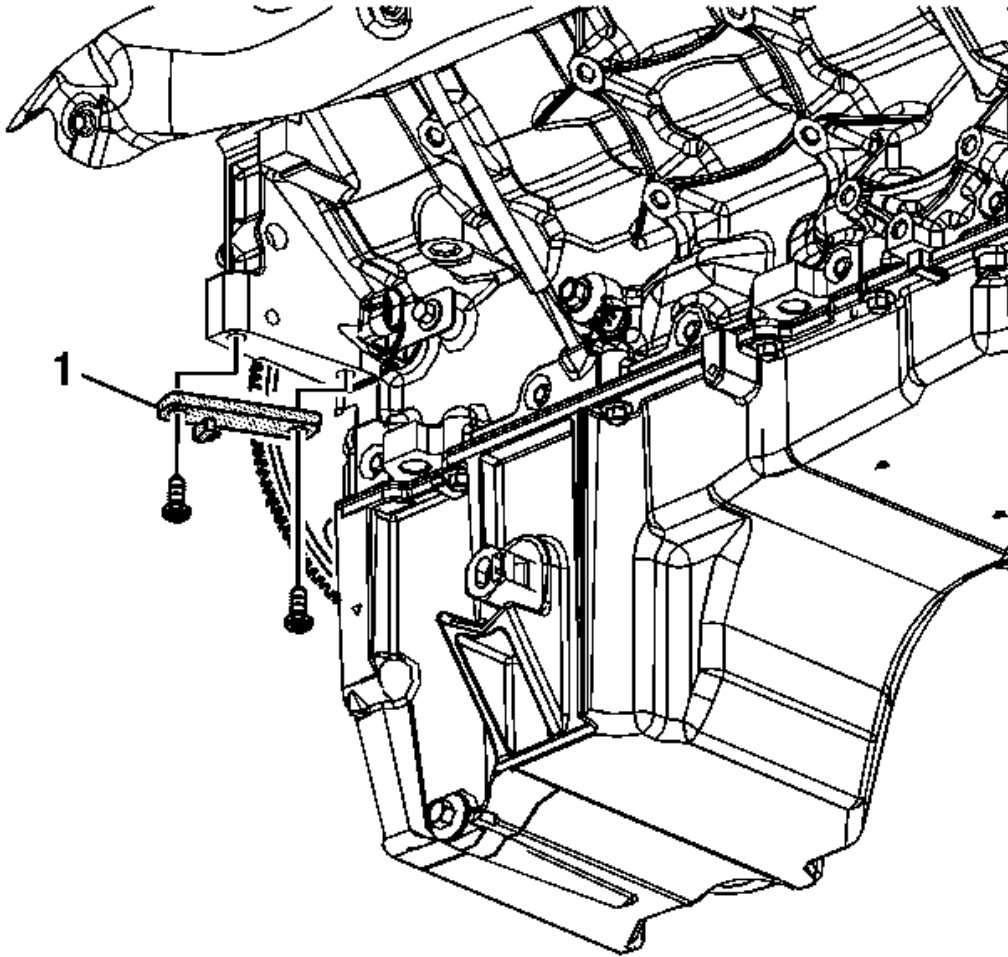


Fig. 184: View Of Special Tool & Bolts
Courtesy of GENERAL MOTORS CORP.

5. Remove the **J 42386-A** (1) and bolts. See **Special Tools** .

AUTOMATIC TRANSMISSION FLEX PLATE REMOVAL

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

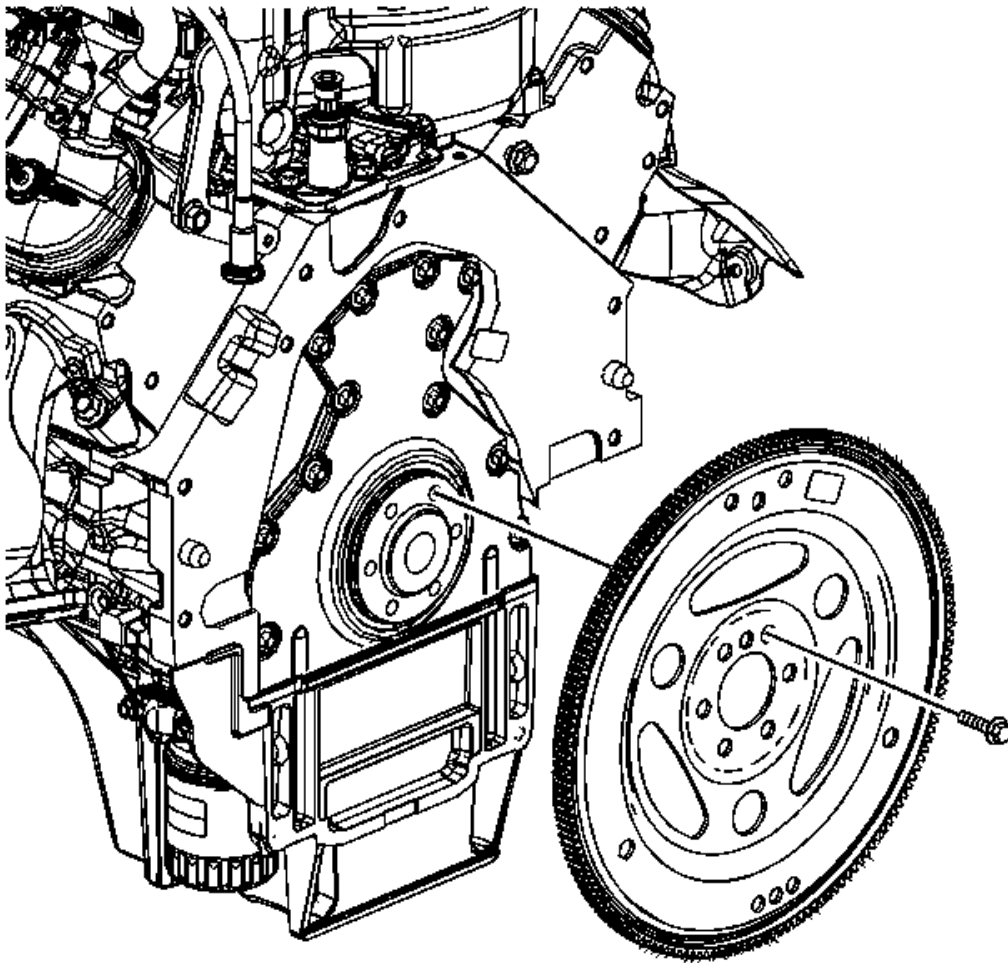


Fig. 185: View Of Flex Plate & Bolts
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The flex plate does not use a locating pin for alignment and will not initially seat against the crankshaft flange, but will be pulled onto the crankshaft by the engine flex plate bolts. This procedure requires a 3 stage tightening process.

1. Remove the engine flex plate bolts.
2. Remove the flex plate.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

OIL LEVEL INDICATOR AND TUBE REMOVAL

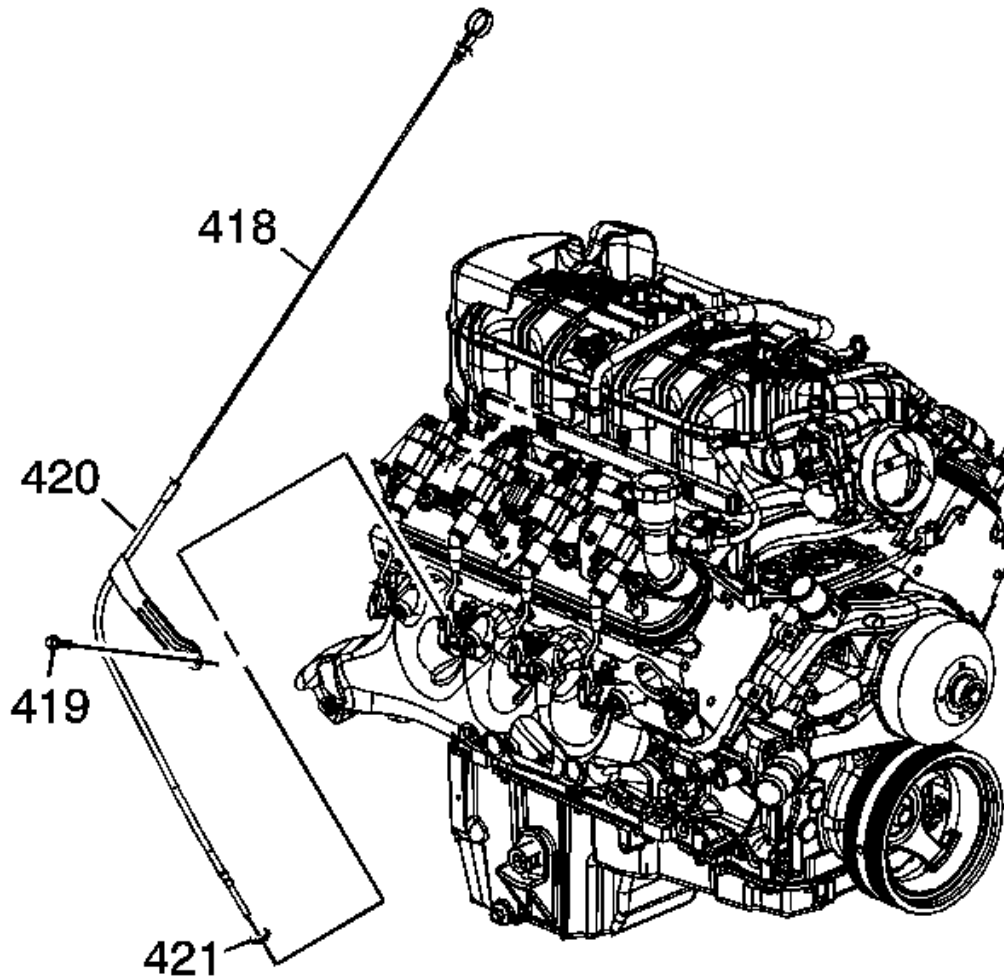


Fig. 186: View Of Oil Level Indicator, Tube Bolt, Indicator Tube & O-Ring Seal
Courtesy of GENERAL MOTORS CORP.

1. Remove the oil level indicator (418) from the tube.
2. Remove the oil level indicator tube bolt (419).
3. Remove the oil level indicator tube (420) from the engine block.

IMPORTANT: Inspect the O-ring for cuts or damage. The O-ring seal may

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

be used again if it is not cut or damaged.

4. Remove the O-ring (421) from the tube, as required.

EXHAUST MANIFOLD REMOVAL - LEFT SIDE

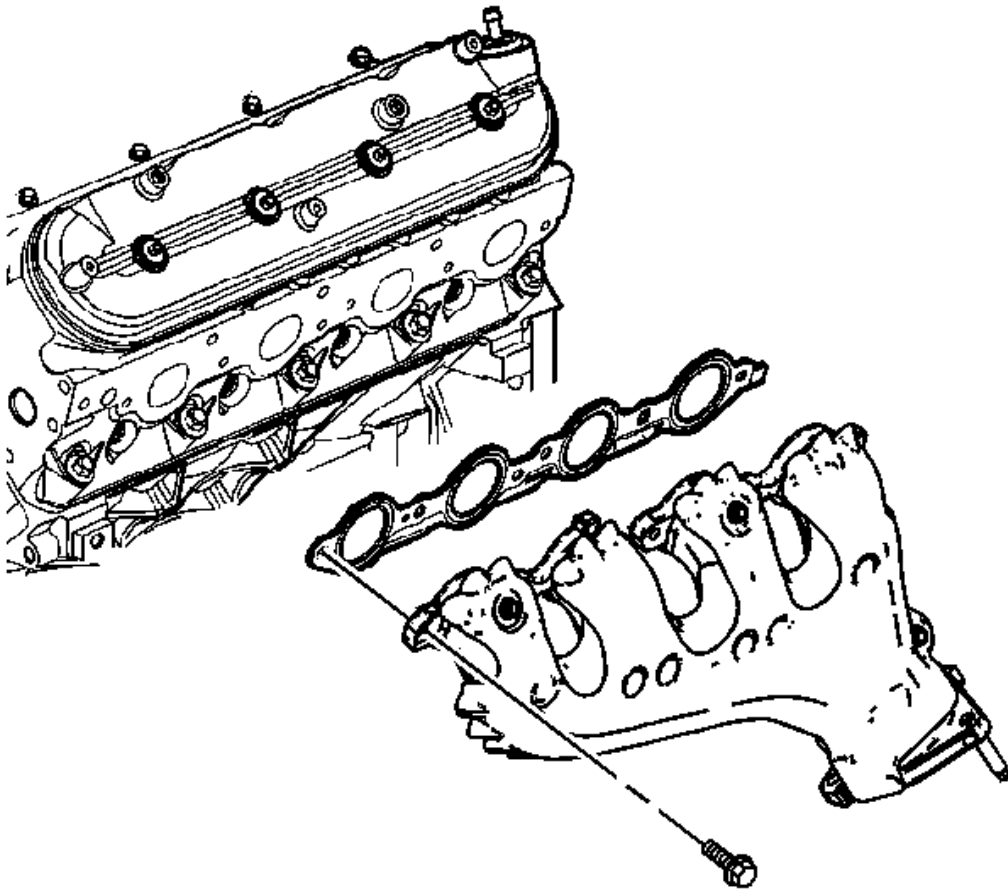


Fig. 187: Exhaust Manifold
Courtesy of GENERAL MOTORS CORP.

1. Remove the spark plug wires from the spark plugs.
2. Remove the exhaust manifold, bolts, and gasket.
3. Discard the gasket.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

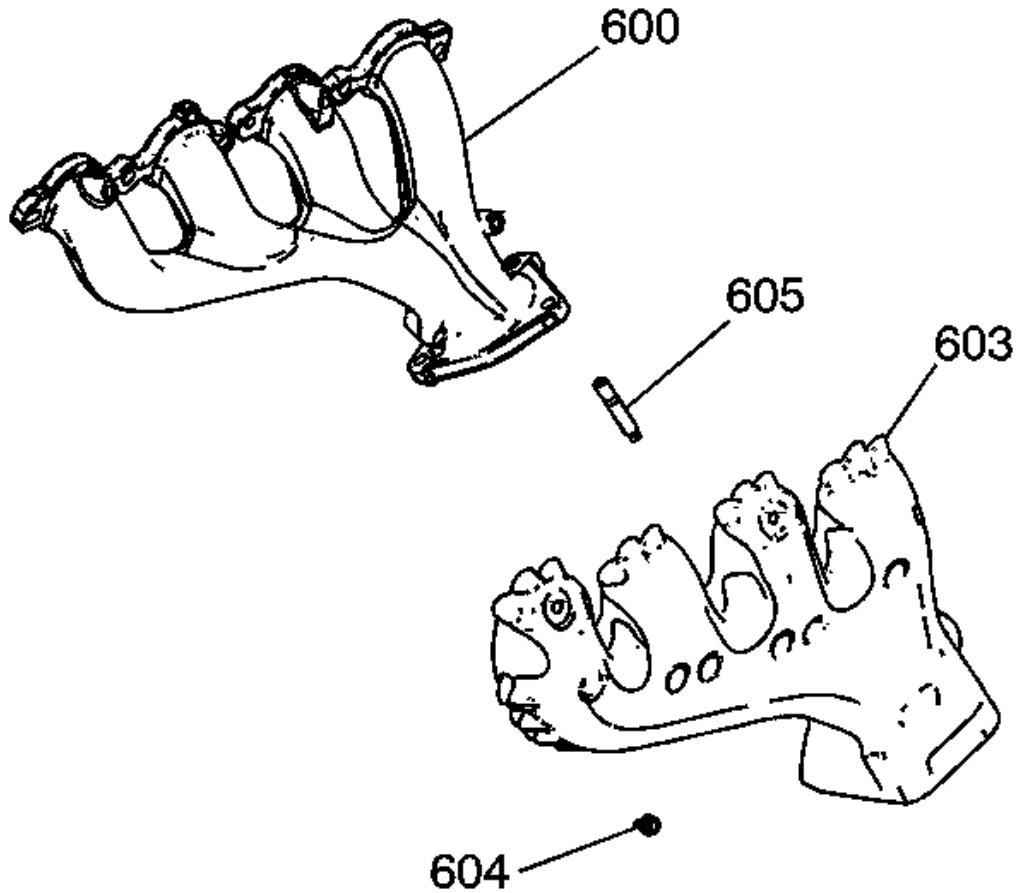


Fig. 188: Exhaust Manifold

Courtesy of GENERAL MOTORS CORP.

4. Remove the heat shield (603) and bolts (604) from the manifold (600), as required.
5. Remove the studs (605), as required.

EXHAUST MANIFOLD REMOVAL - RIGHT SIDE

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

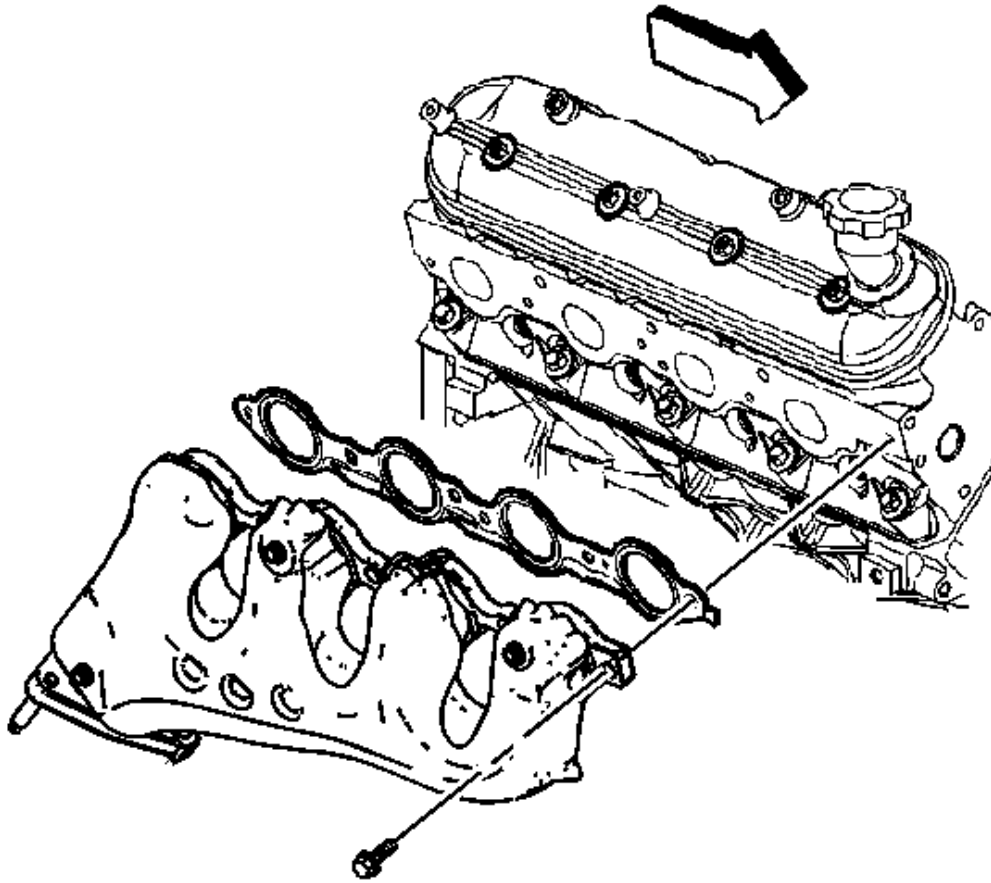


Fig. 189: Exhaust Manifold
Courtesy of GENERAL MOTORS CORP.

1. Remove the spark plug wires from the spark plugs.
2. Remove the exhaust manifold, bolts, and gasket.
3. Discard the gasket.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

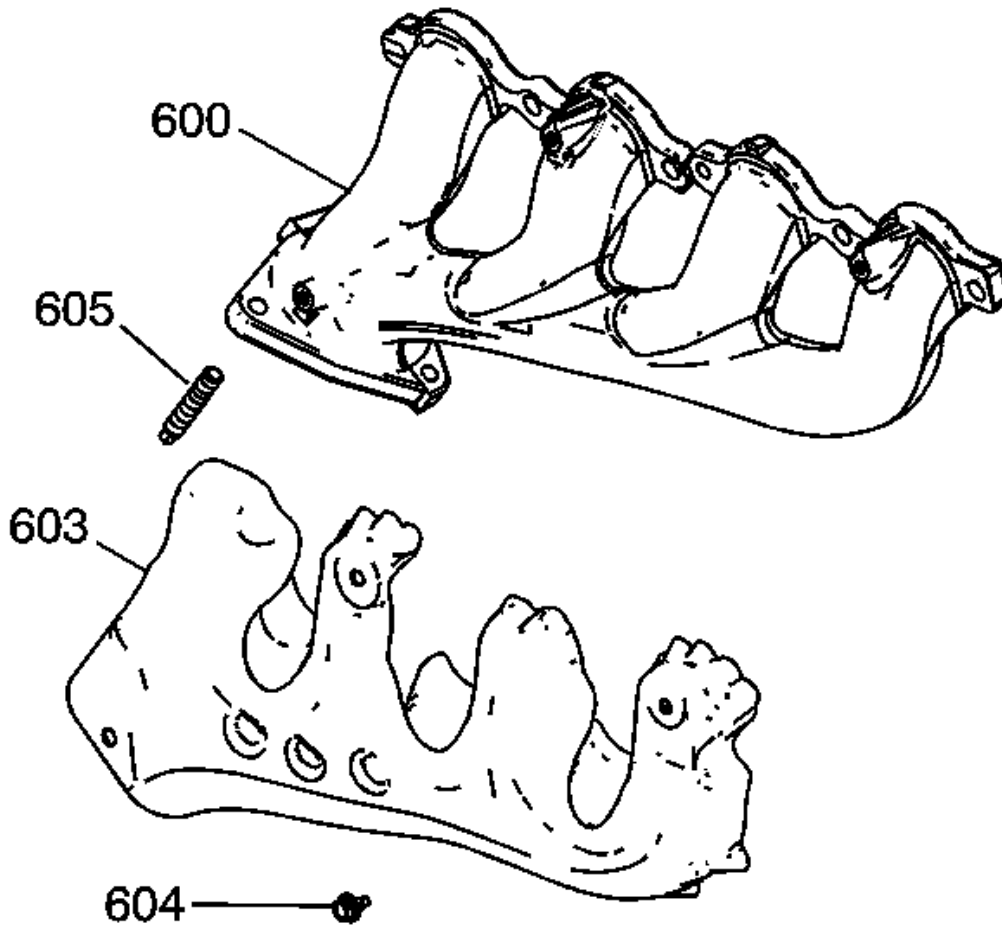


Fig. 190: Exhaust Manifold

Courtesy of GENERAL MOTORS CORP.

4. Remove the heat shield (603) and bolts (604) from the manifold (600), as required.
5. Remove the studs (605), as required.

WATER PUMP REMOVAL (RPO LY2/LH6/LMG/LY5/LC9)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

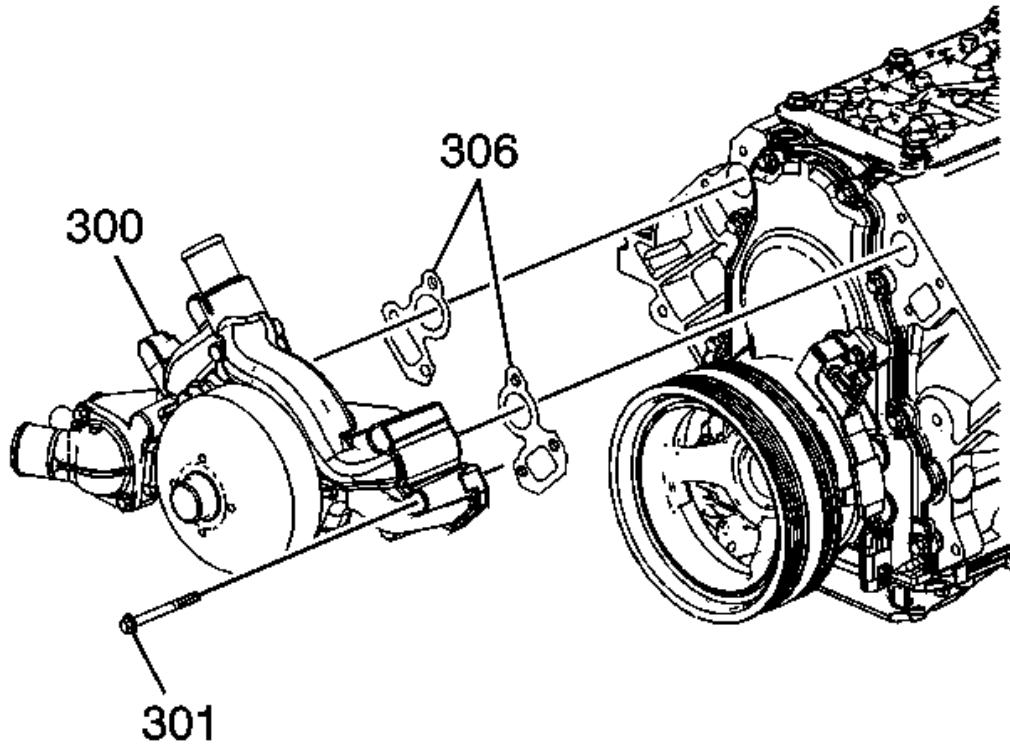


Fig. 191: View Of Water Pump, Bolts & Gaskets
Courtesy of GENERAL MOTORS CORP.

1. Remove the water pump bolts (301).
2. Remove the water pump (300) and gaskets (306).
3. Discard the water pump gaskets.

WATER PUMP REMOVAL (RPO LY6/L76/L92)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

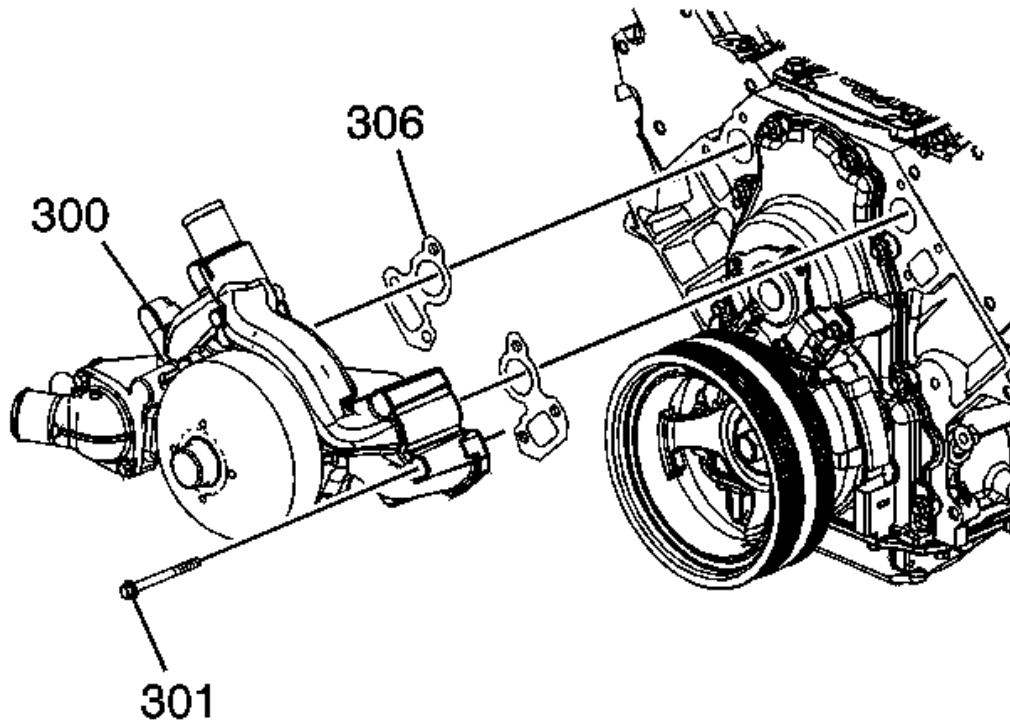


Fig. 192: View Of Water Pump, Bolts & Gaskets
Courtesy of GENERAL MOTORS CORP.

1. Remove the water pump bolts (301).
2. Remove the water pump (300) and gaskets (306).
3. Discard the water pump gaskets.

THROTTLE BODY REMOVAL

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

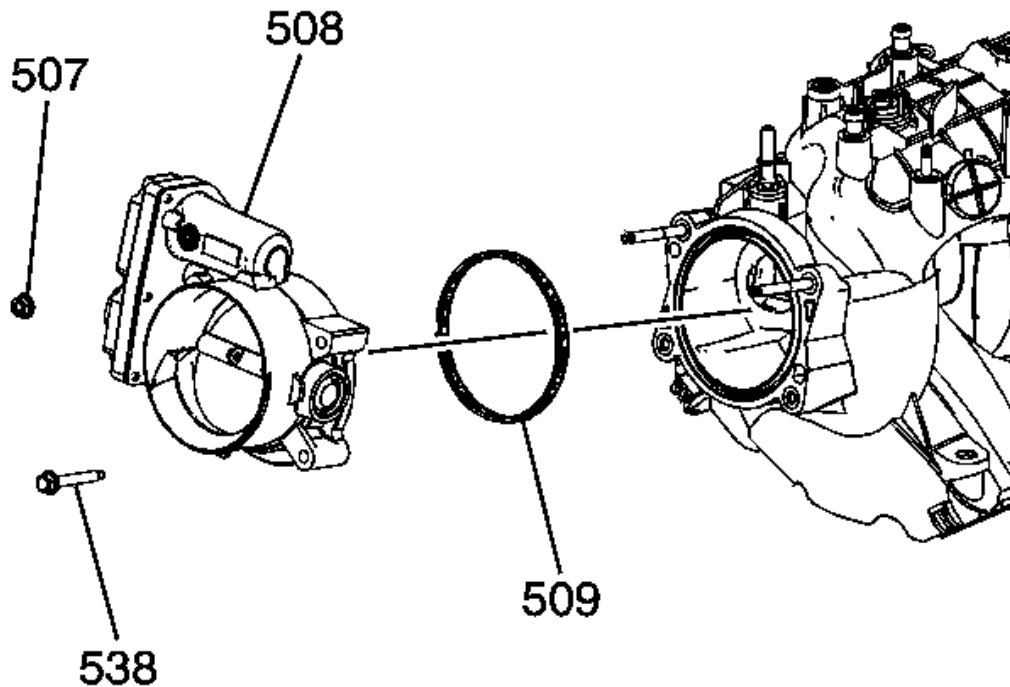


Fig. 193: Throttle Body Assembly
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The intake manifold, throttle body, fuel injection rail, and fuel injectors may be removed as an assembly. If not servicing the individual components, remove the manifold as a complete assembly.

1. Remove the electrical wire harness connectors from the throttle body.
2. Remove the throttle body nuts (507) and bolts (538).
3. Remove the throttle body (508).
4. Remove the throttle body gasket (509).
5. Discard the gasket.

FUEL RAIL AND INJECTORS REMOVAL

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

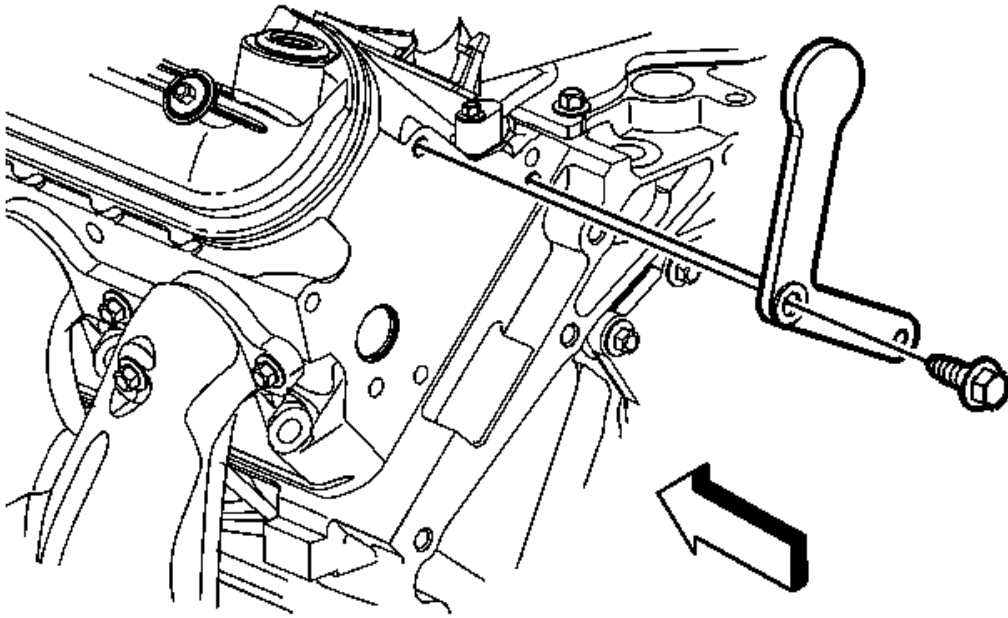


Fig. 194: View Of Fuel Rail Stop Bracket & Bolt
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to Fuel Rail Stop Bracket Installation Caution .

IMPORTANT: The intake manifold, throttle body, fuel injection rail and fuel injectors may be removed as an assembly. If not servicing the individual components, remove the intake manifold as a complete assembly.

1. Remove the fuel rail stop bracket and bolt, as required.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

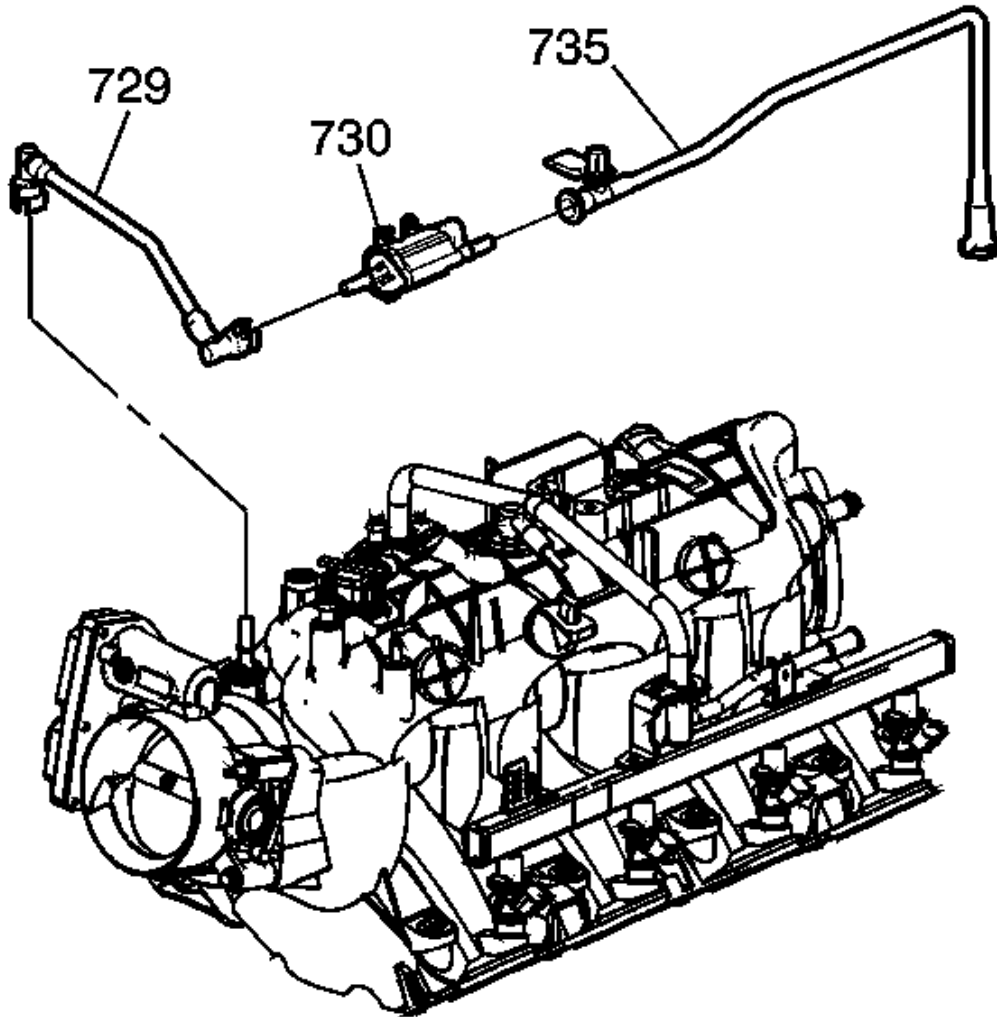


Fig. 195: EVAP Purge Valve & Tubes
Courtesy of GENERAL MOTORS CORP.

2. Remove the evaporative emission (EVAP) canister purge solenoid valve (730) and tubes (729, 735).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

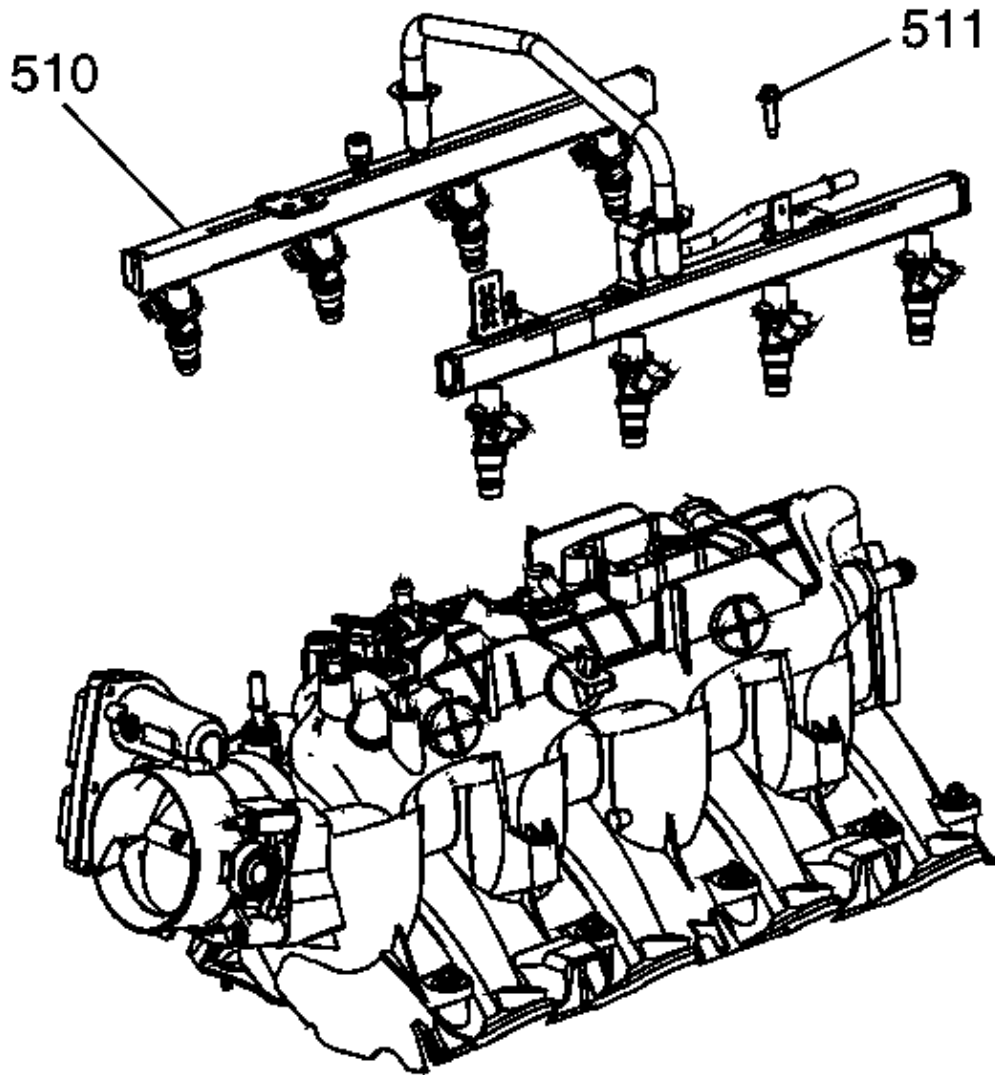


Fig. 196: Fuel Rail

Courtesy of GENERAL MOTORS CORP.

3. Remove the fuel rail bolts (511).

IMPORTANT:

- Do not separate the fuel injectors from the fuel rail, unless component service is required.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- Use cleanliness and care when handling the fuel system components.
 - Do not allow dirt or debris to enter the fuel injectors or fuel rail components. Cap ends, as necessary.
4. Remove the fuel rail (510) with injectors. Lift evenly on both sides of the fuel rail until all the injectors have left their bores.

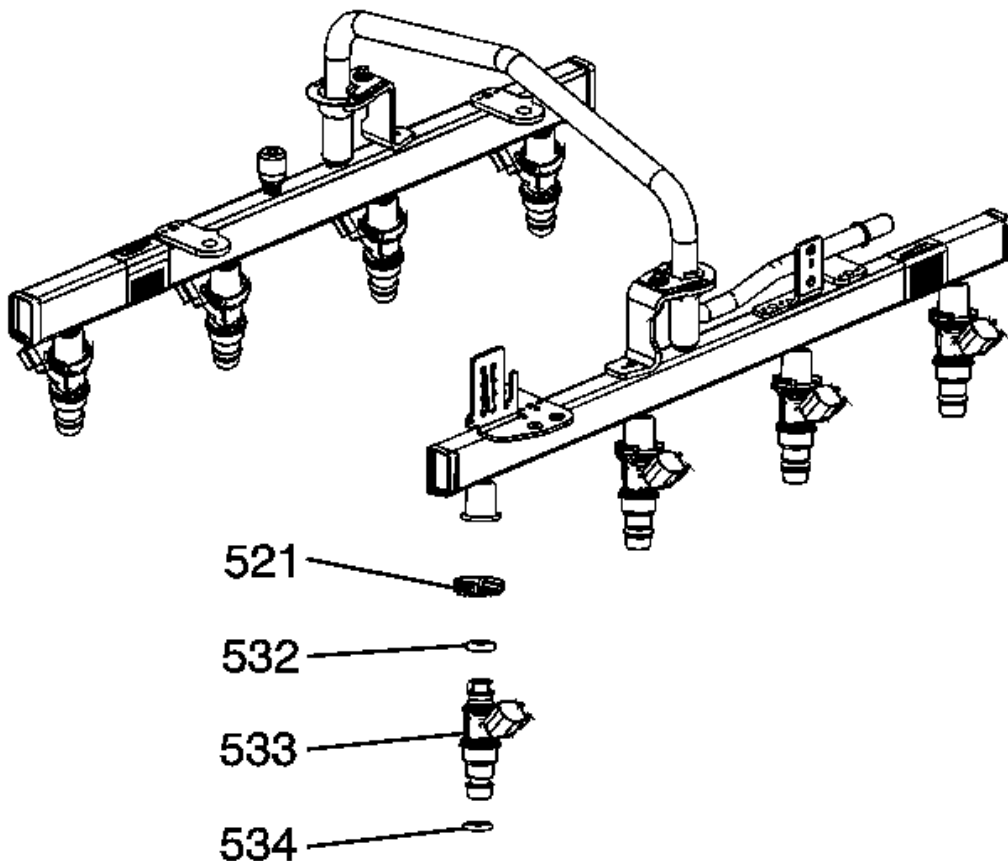


Fig. 197: Fuel Rail & Injectors
Courtesy of GENERAL MOTORS CORP.

5. Remove the fuel injector retainers (521) and fuel injectors (533), as required.
6. Remove the O-rings (532, 534) from the injectors, as required.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

INTAKE MANIFOLD REMOVAL (RPO LY2/LY6/L92)

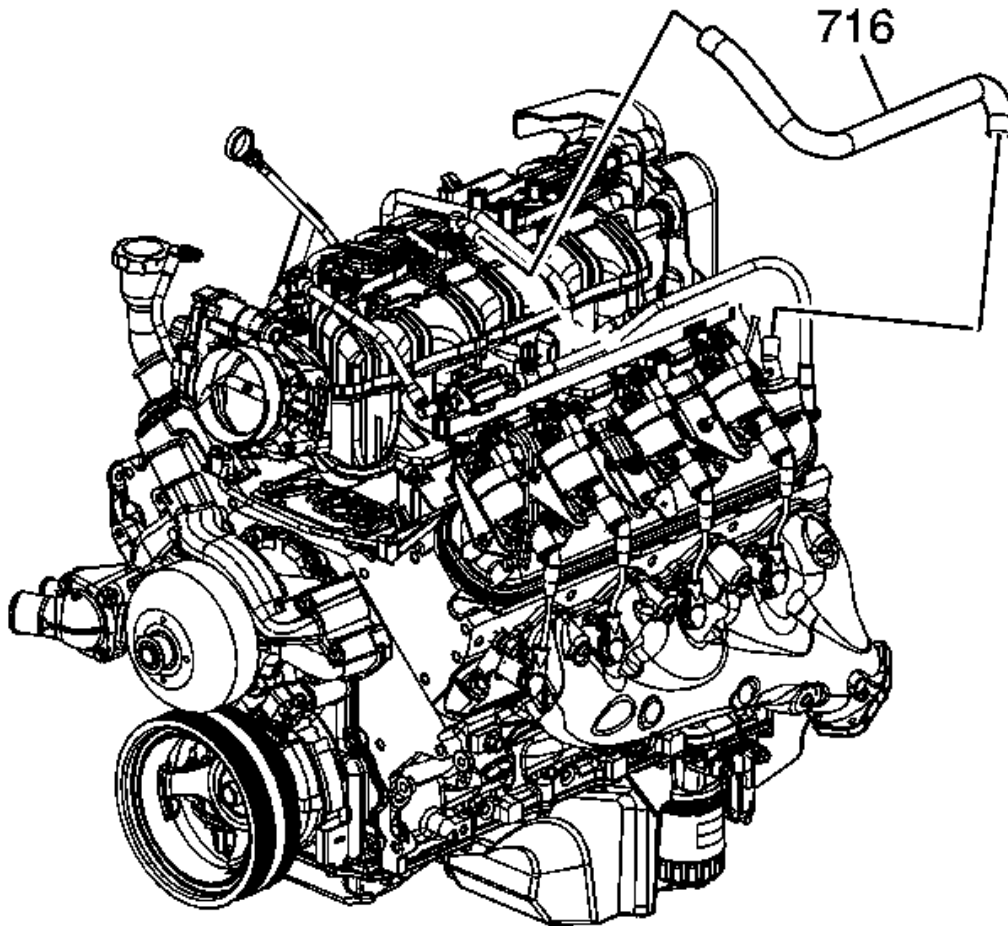


Fig. 198: View Of PCV Dirty-Air Hose
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- The intake manifold, throttle body, fuel injection rail, and fuel injectors may be removed as an assembly. If not servicing the individual components, remove the manifold as a complete assembly.
- **DO NOT** use the intake manifold-to-cylinder head gaskets again.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Remove the positive crankcase ventilation (PCV) hose - dirty air (716).

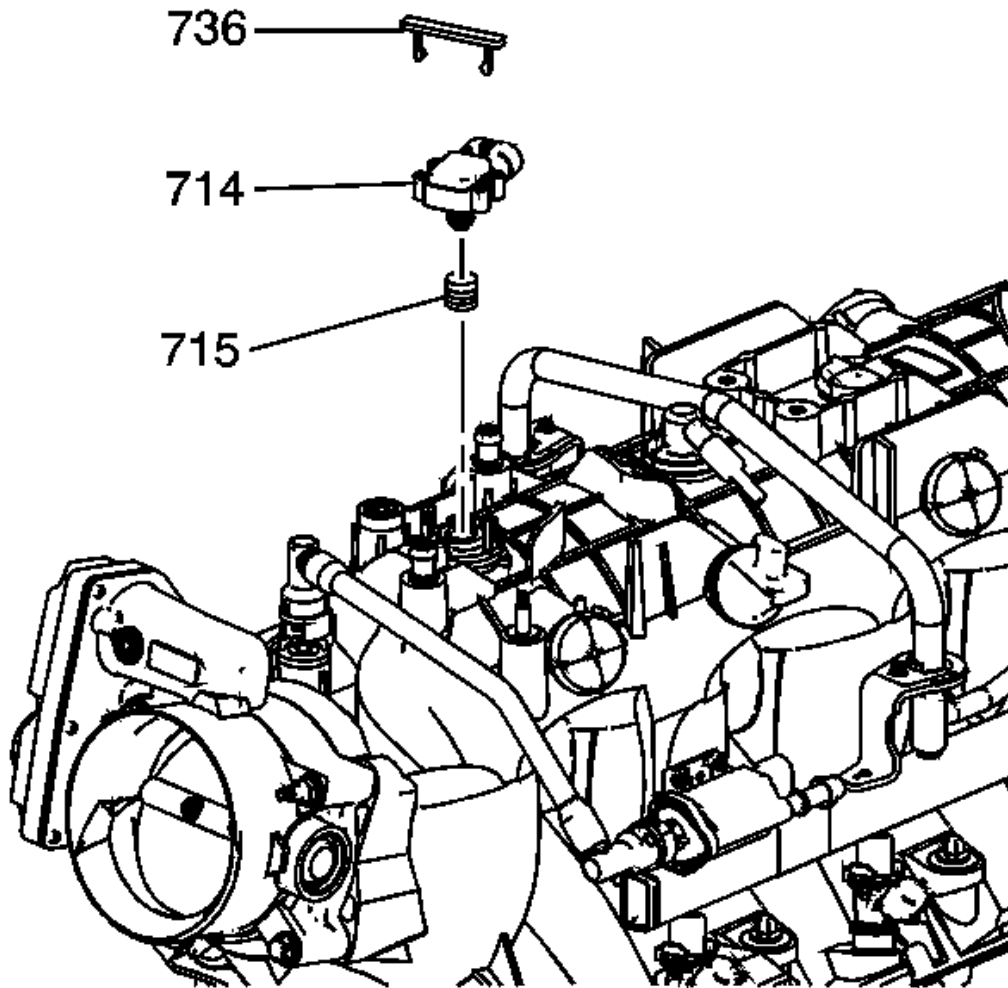


Fig. 199: MAP Sensor

Courtesy of GENERAL MOTORS CORP.

2. Remove the manifold absolute pressure (MAP) sensor (714) and retainer (736), as required.
3. Remove the O-ring (715) from the sensor, as required.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

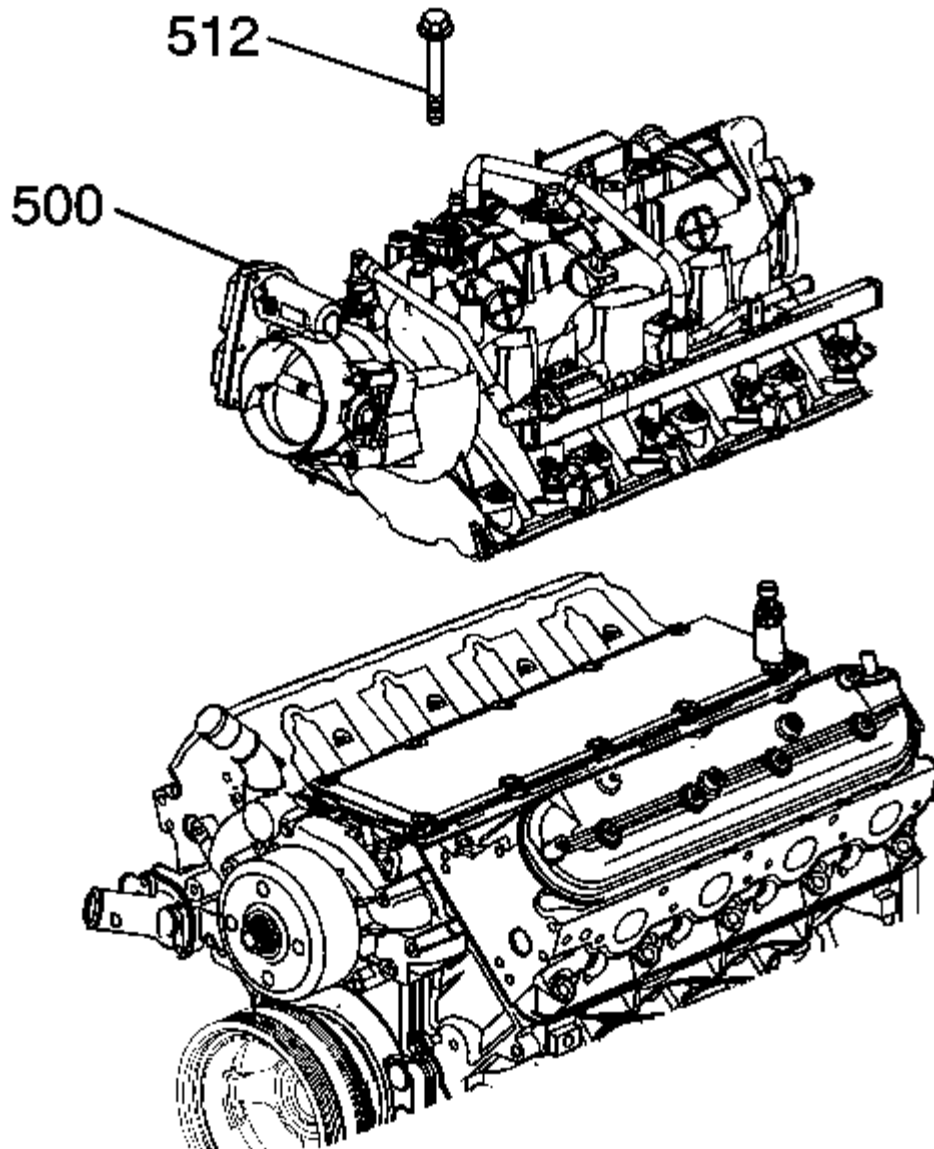


Fig. 200: Removing/Installing Intake Manifold Bolts
Courtesy of GENERAL MOTORS CORP.

4. Remove the intake manifold bolts (512).
5. Remove the intake manifold (500) with gaskets.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

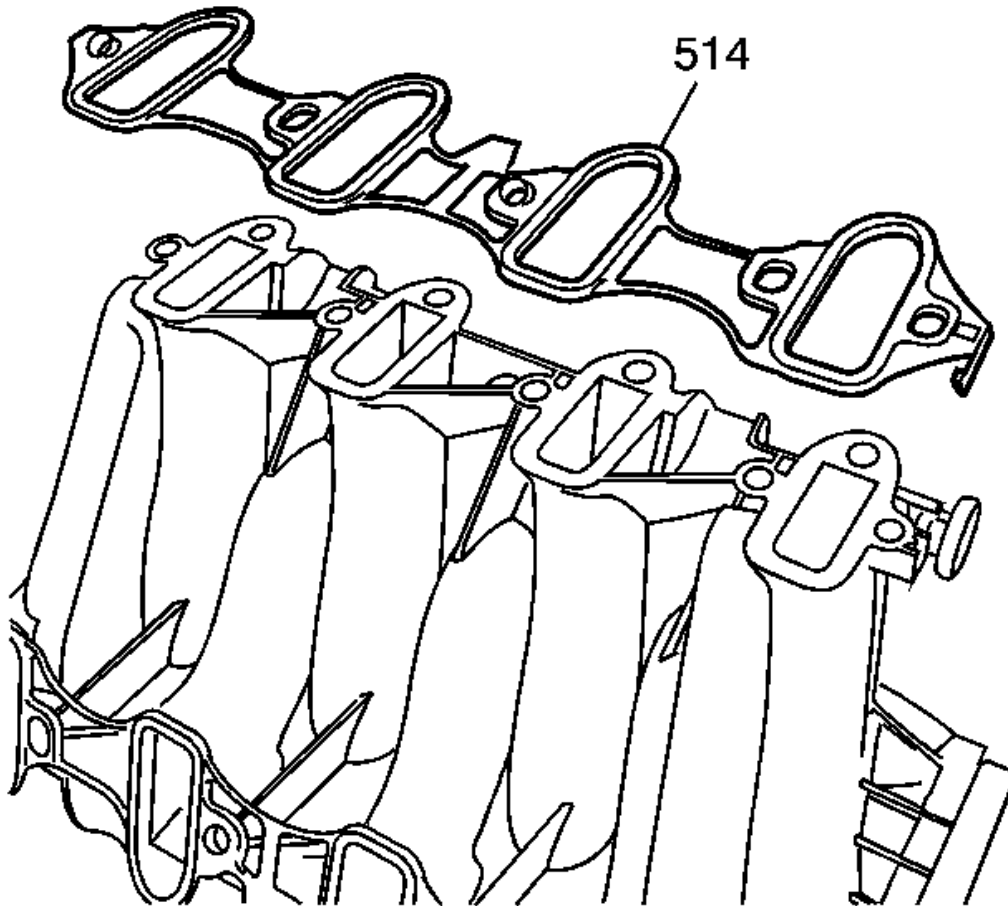


Fig. 201: View Of Intake Manifold-To-Cylinder Head Gasket
Courtesy of GENERAL MOTORS CORP.

6. Remove the intake manifold gaskets (514).
7. Discard the intake manifold gaskets.

INTAKE MANIFOLD REMOVAL (RPO LH6/LMG/LY5/LC9/L76)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

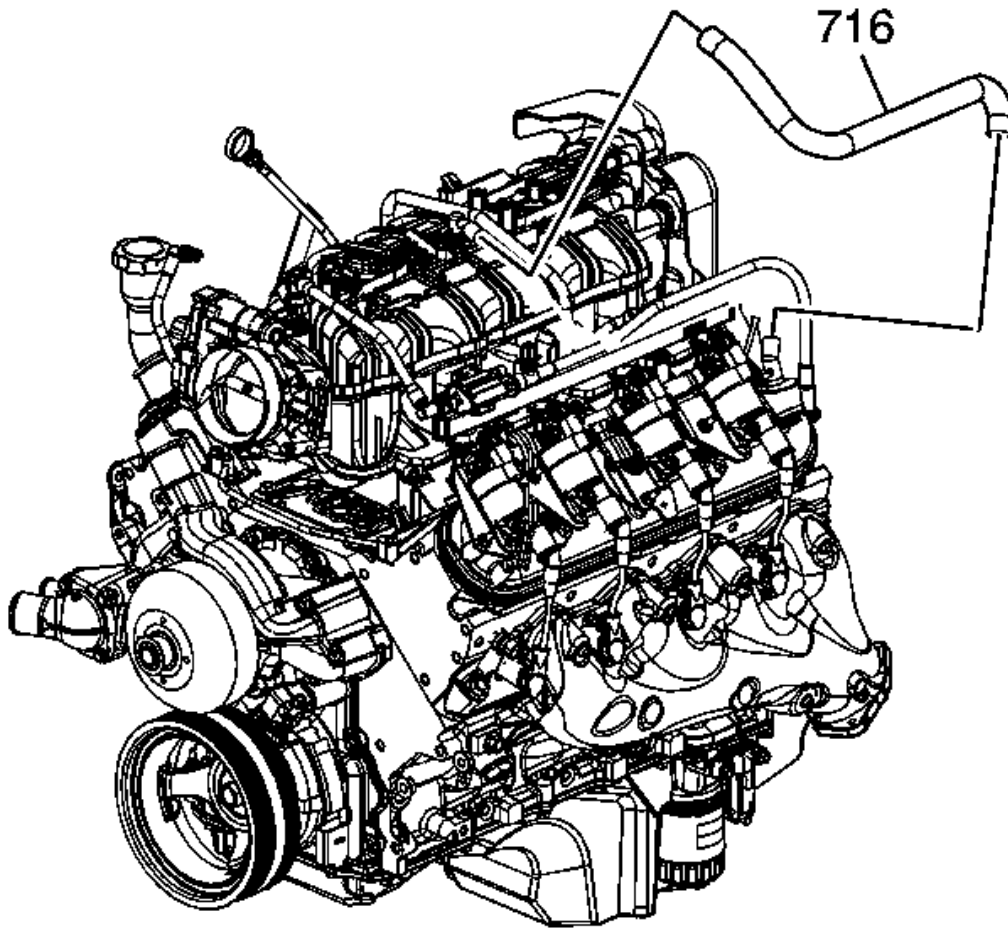


Fig. 202: View Of PCV Dirty-Air Hose
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- The intake manifold, throttle body, fuel injection rail, and fuel injectors may be removed as an assembly. If not servicing the individual components, remove the manifold as a complete assembly.
- **DO NOT** use the intake manifold-to-cylinder head gaskets again.

1. Remove the positive crankcase ventilation (PCV) hose - dirty air (716).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

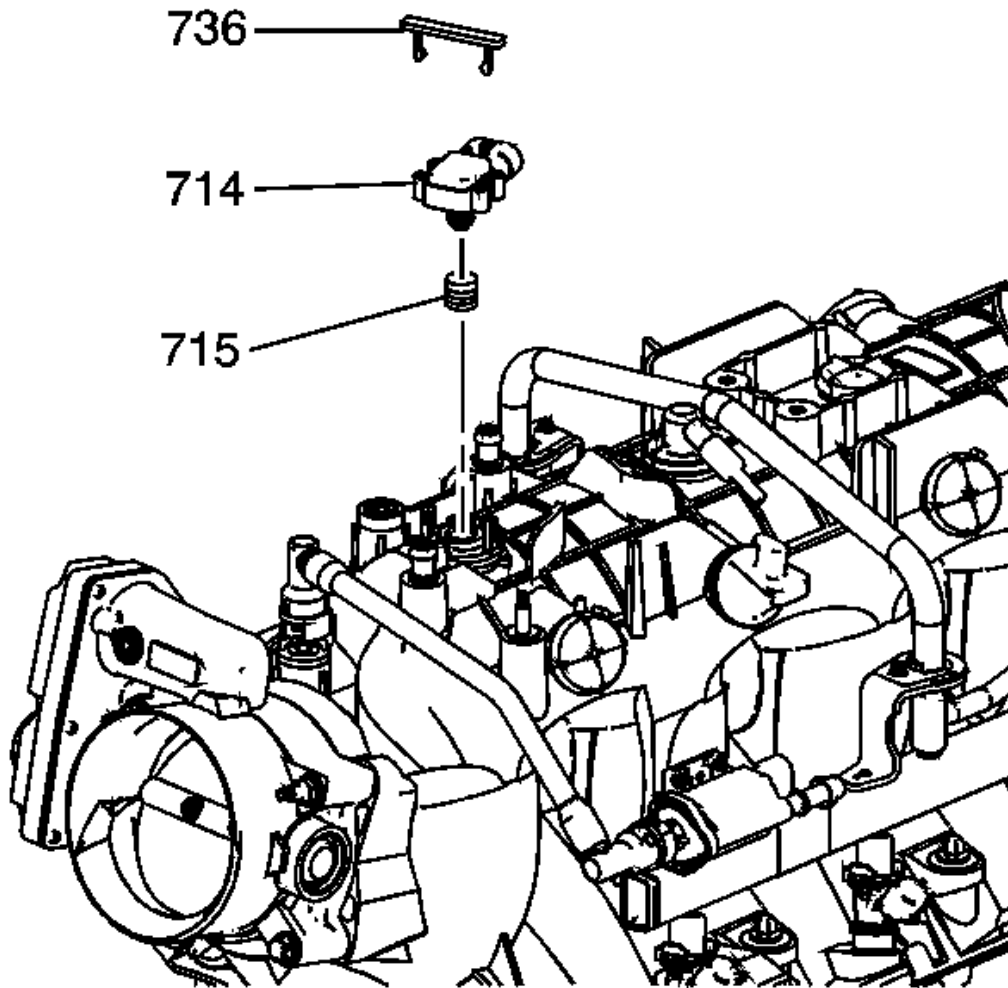


Fig. 203: MAP Sensor
Courtesy of GENERAL MOTORS CORP.

2. Remove the manifold absolute pressure (MAP) sensor (714) and retainer (736), as required.
3. Remove the O-ring (715) from the sensor, as required.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

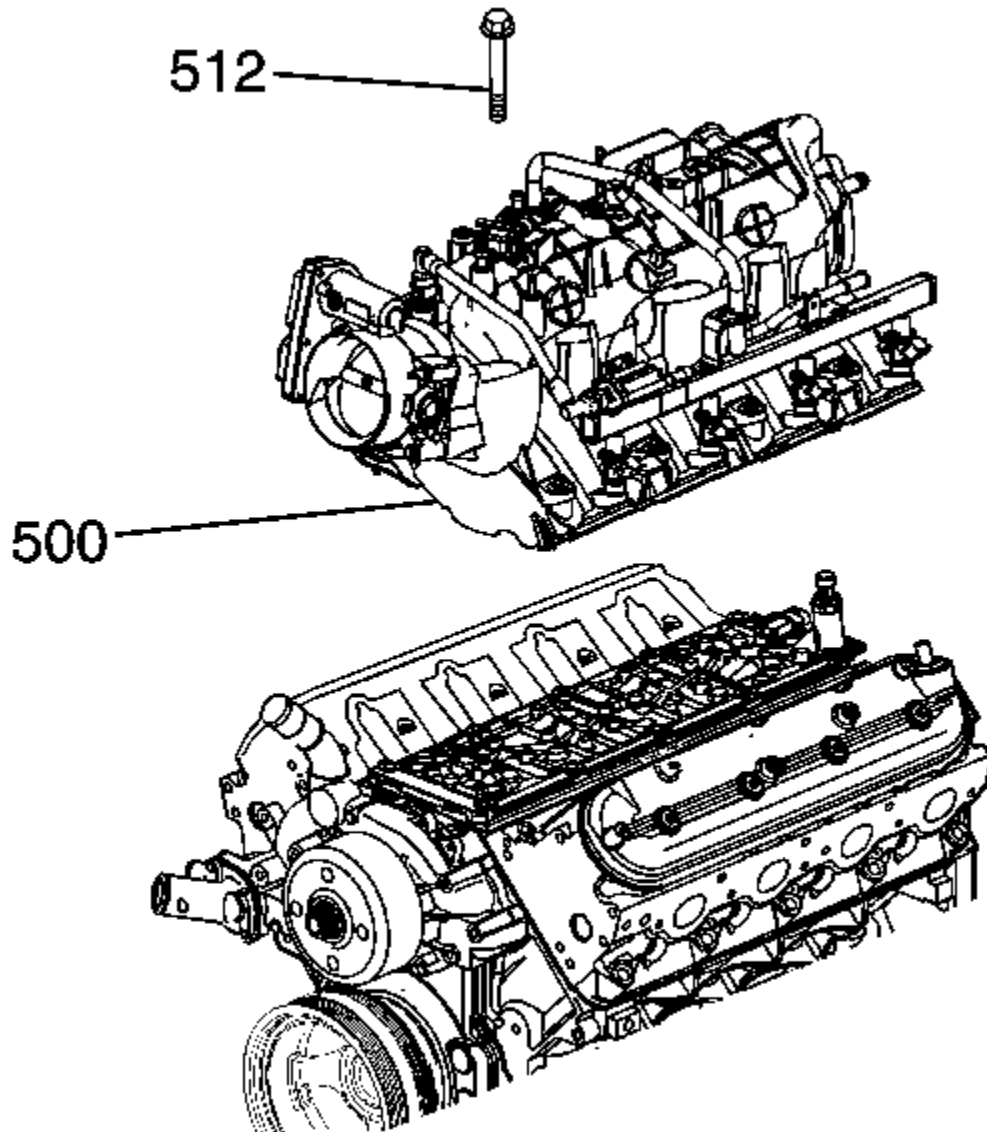


Fig. 204: Intake Manifold

Courtesy of GENERAL MOTORS CORP.

4. Remove the intake manifold bolts (512).
5. Remove the intake manifold (500) with gaskets.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

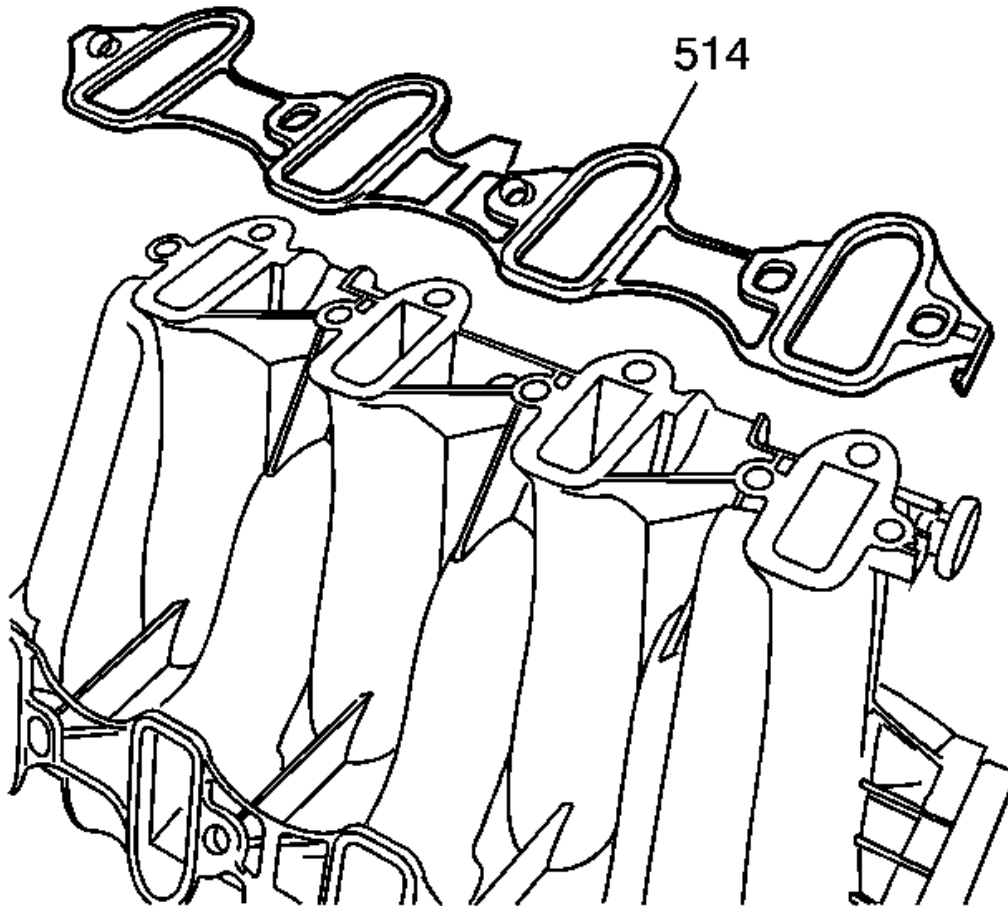


Fig. 205: View Of Intake Manifold-To-Cylinder Head Gasket
Courtesy of GENERAL MOTORS CORP.

6. Remove the intake manifold gaskets (514).
7. Discard the intake manifold gaskets.

ENGINE COOLANT AIR BLEED PIPE AND HOLE COVER REMOVAL (RPO LY2/LY6/L92)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

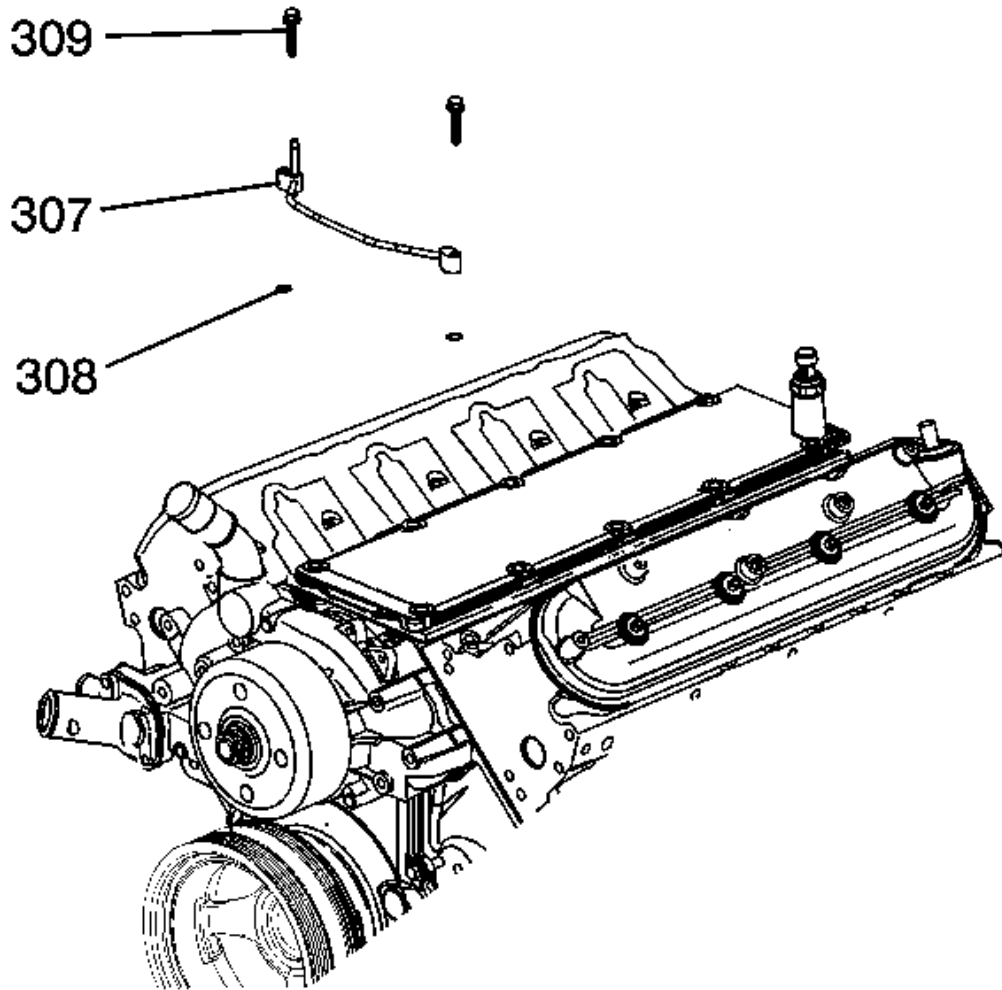


Fig. 206: Removing/Installing Engine Coolant Air Bleed Pipe
Courtesy of GENERAL MOTORS CORP.

1. Remove the engine coolant air bleed pipe bolts (309).
2. Remove the pipe (307) with seals (308).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

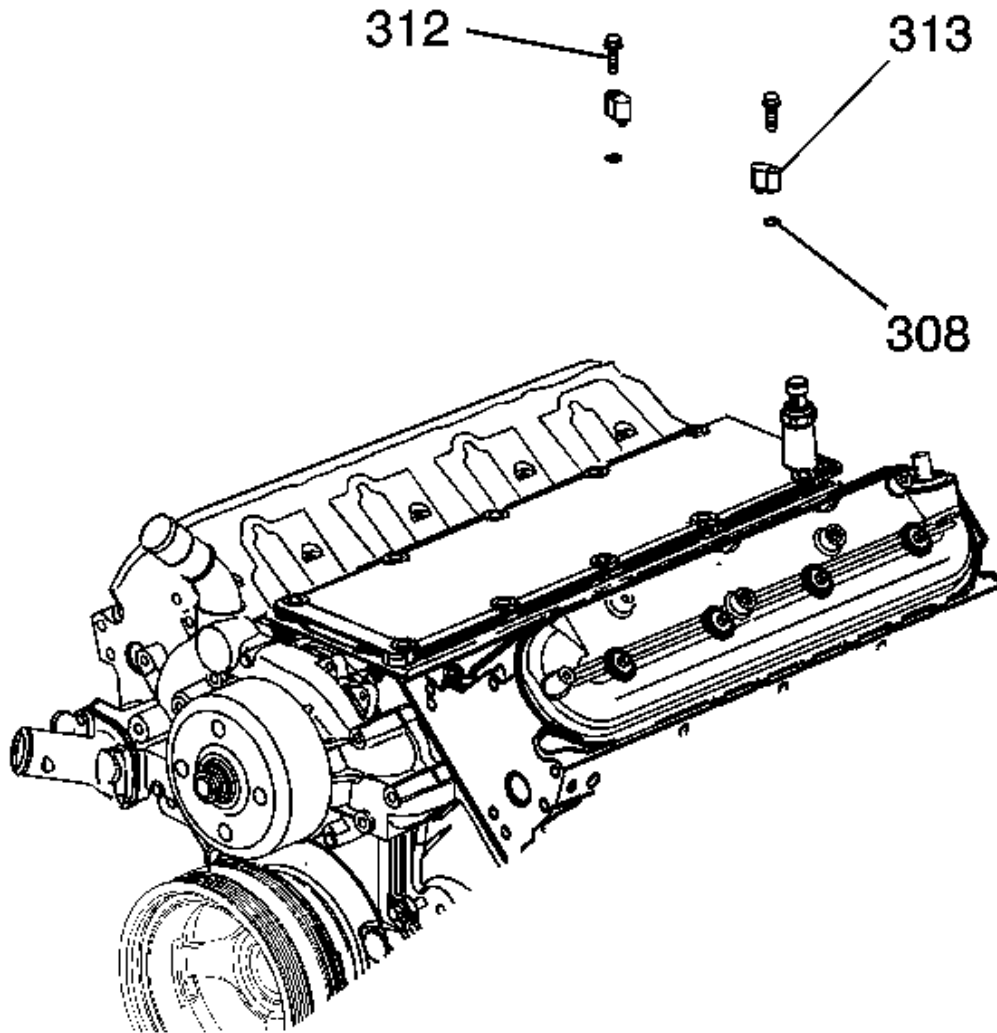


Fig. 207: Removing/Installing Coolant Air Bleed Cover Bolts
Courtesy of GENERAL MOTORS CORP.

3. Remove the engine coolant air bleed cover bolts (312).
4. Remove the covers (313) with seals (308).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

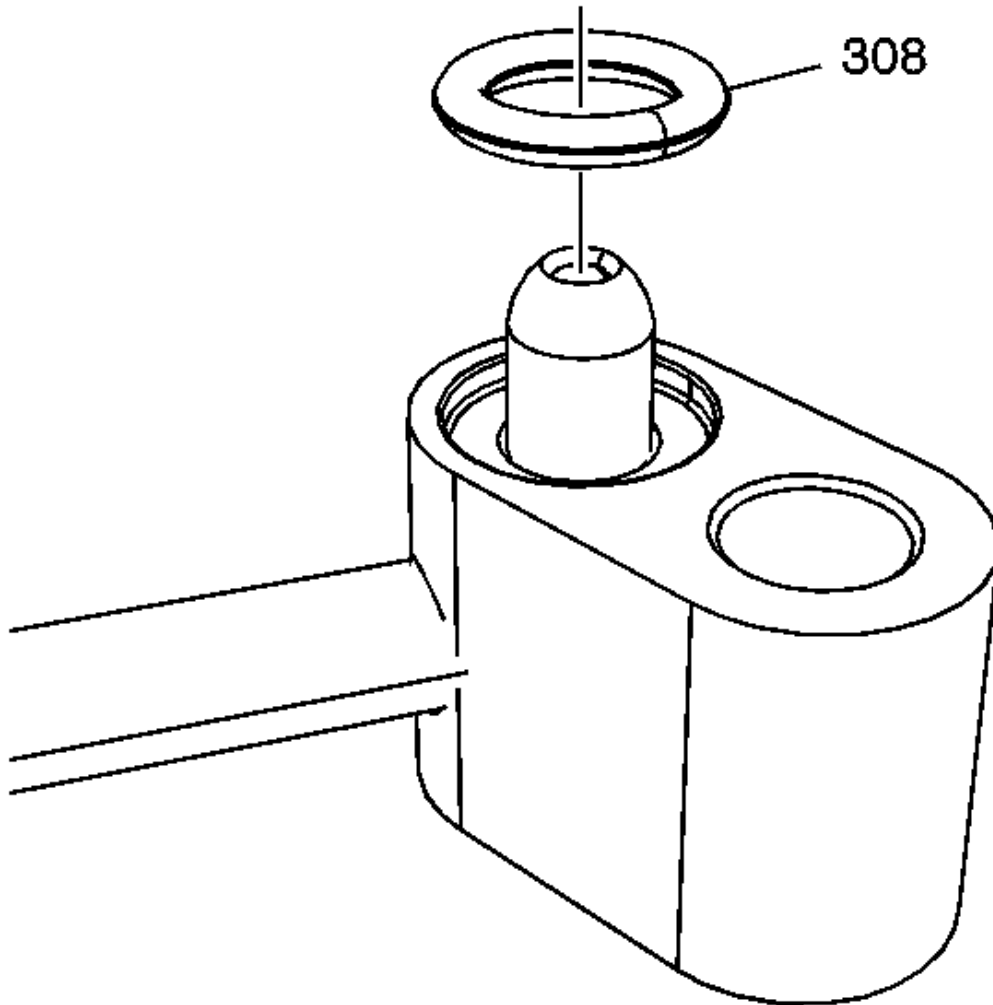


Fig. 208: View Of Coolant Air Bleed Pipe Seal
Courtesy of GENERAL MOTORS CORP.

5. Remove the seals (308) from the pipe and covers.
6. Discard the seals.

**ENGINE COOLANT AIR BLEED PIPE AND HOLE COVER REMOVAL (RPO
LH6/LMG/LY5/LC9/L76)**

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

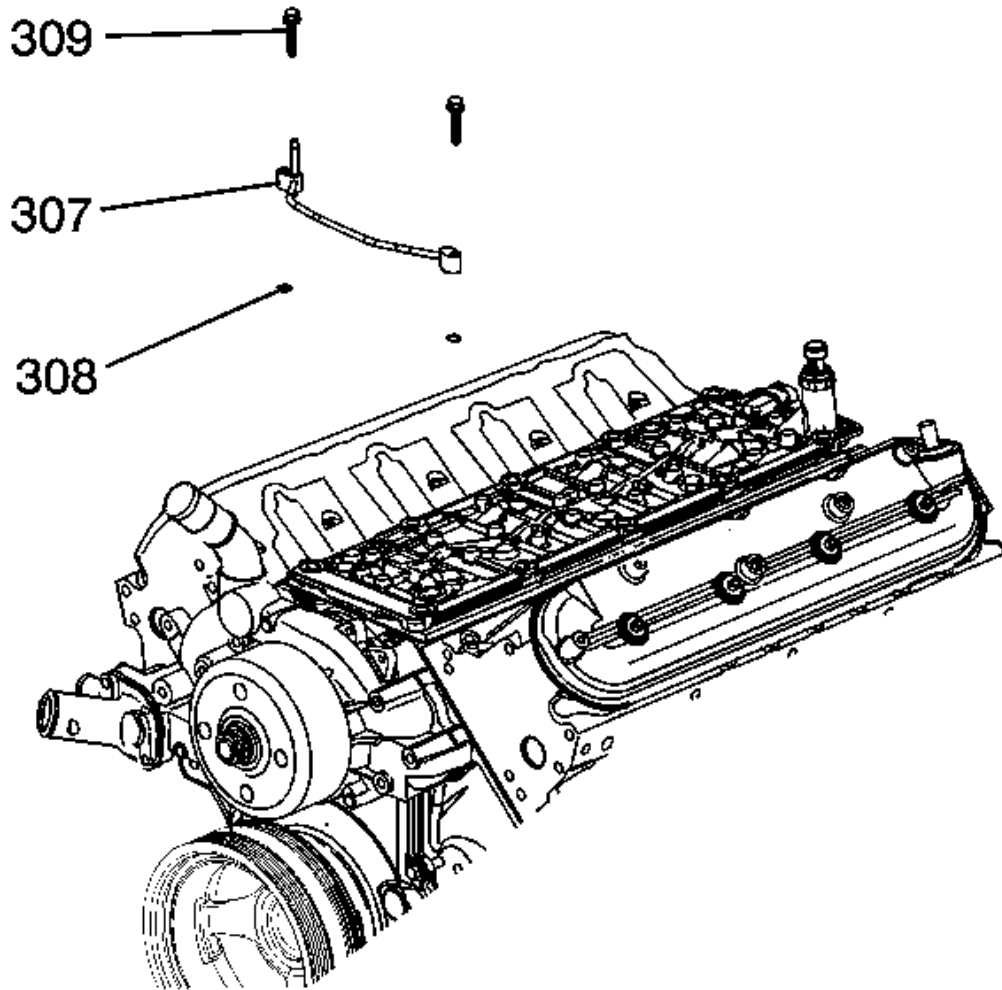


Fig. 209: Engine Coolant Air Bleed Pipe
Courtesy of GENERAL MOTORS CORP.

1. Remove the engine coolant air bleed pipe bolts (309).
2. Remove the pipe (307) with seals (308).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

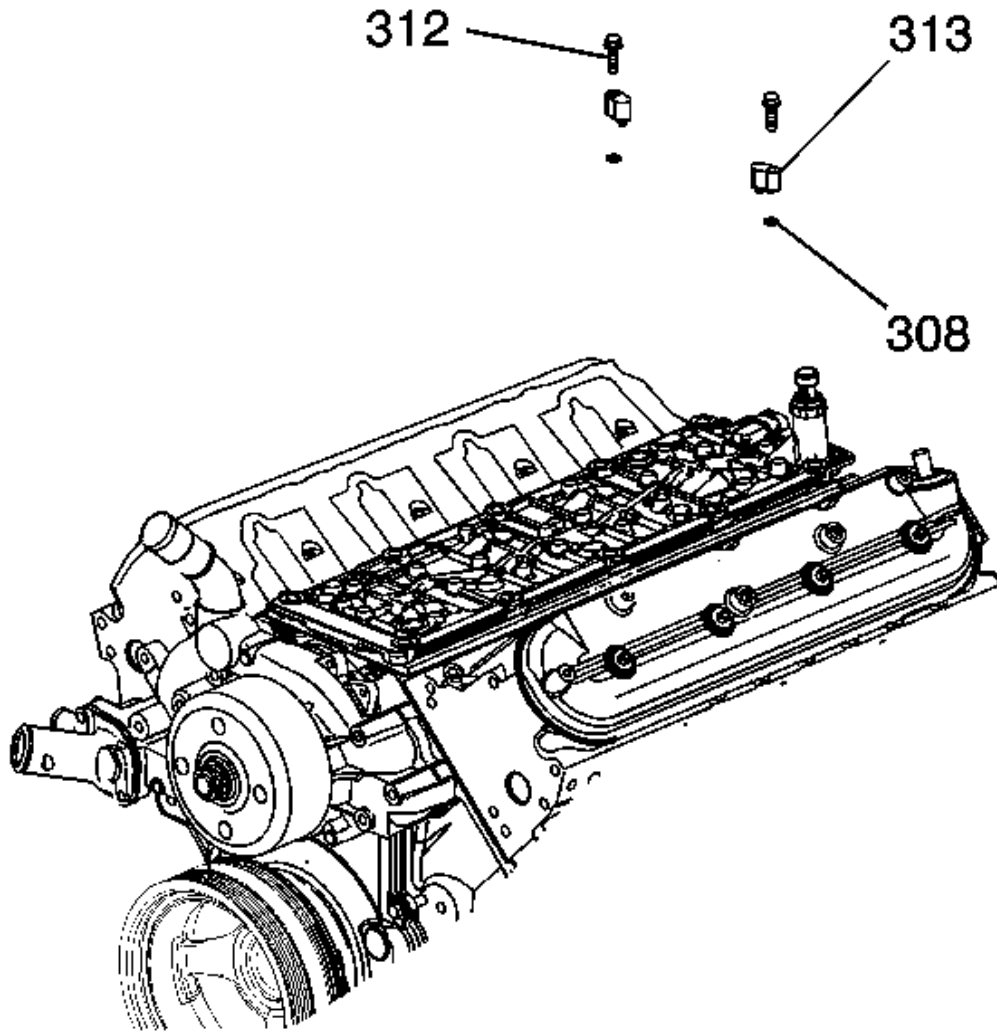


Fig. 210: Engine Coolant Air Bleed Cover Bolts
Courtesy of GENERAL MOTORS CORP.

3. Remove the engine coolant air bleed cover bolts (312).
4. Remove the covers (313) with seals (308).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

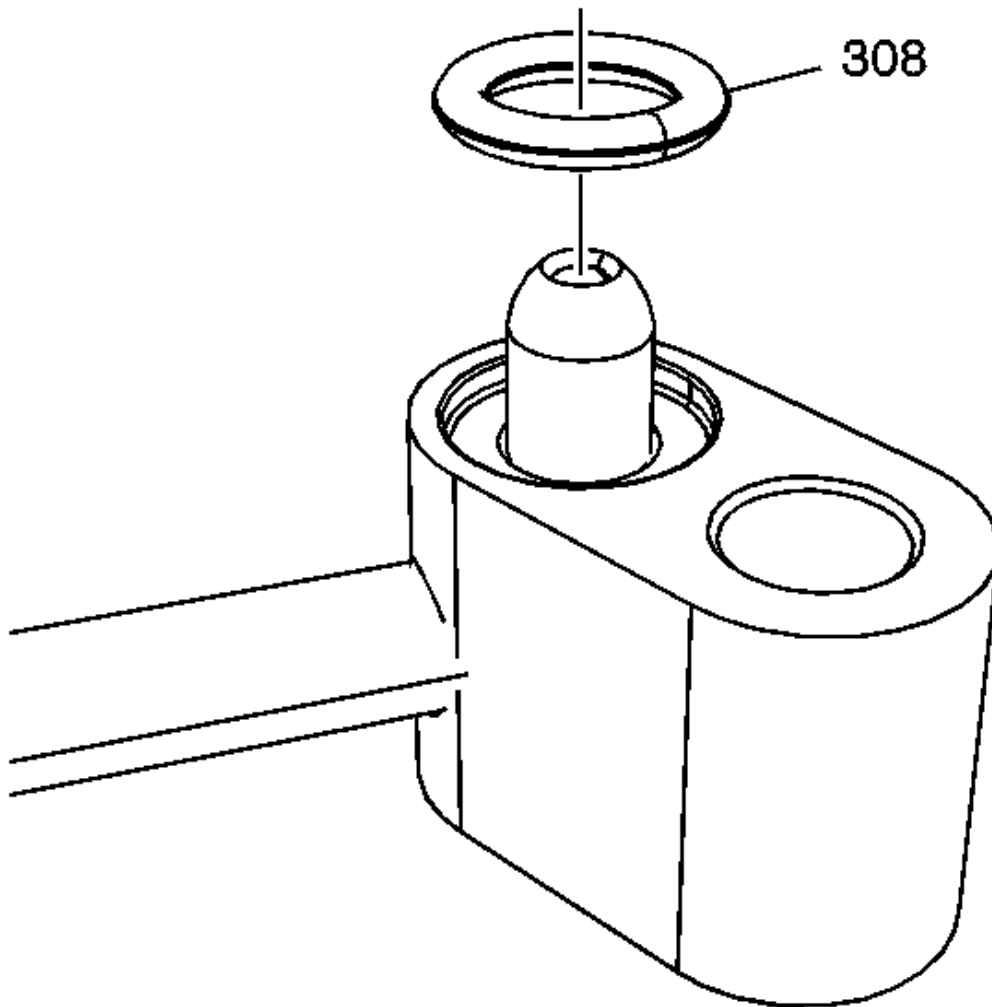


Fig. 211: View Of Coolant Air Bleed Pipe Seal
Courtesy of GENERAL MOTORS CORP.

5. Remove the seals (308) from the pipe and covers.
6. Discard the seals.

ENGINE BLOCK VALLEY COVER REMOVAL

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

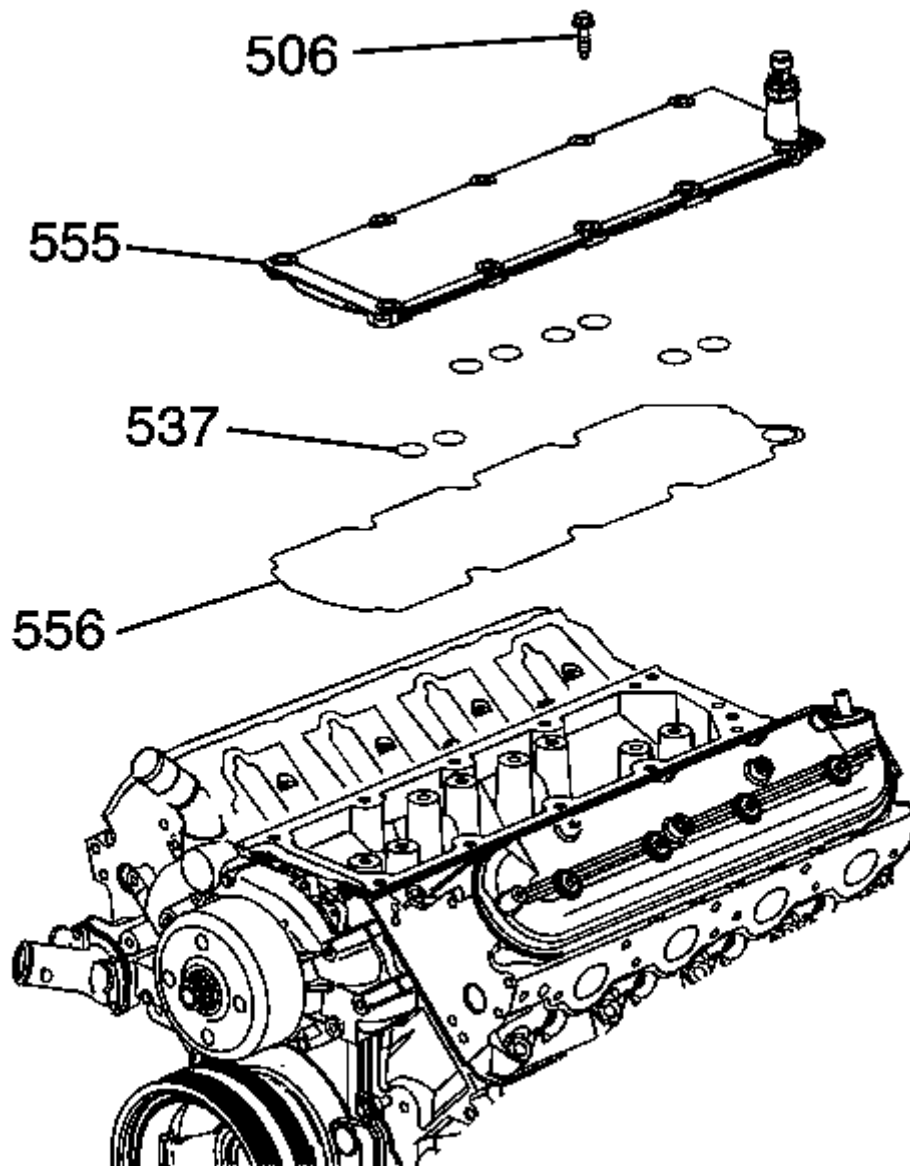


Fig. 212: Removing/Installing Engine Valley Cover
Courtesy of GENERAL MOTORS CORP.

1. Remove the valley cover bolts (506).
2. Remove the valley cover (555) and gasket (556).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

3. Remove the O-ring seals (537) from the cover.

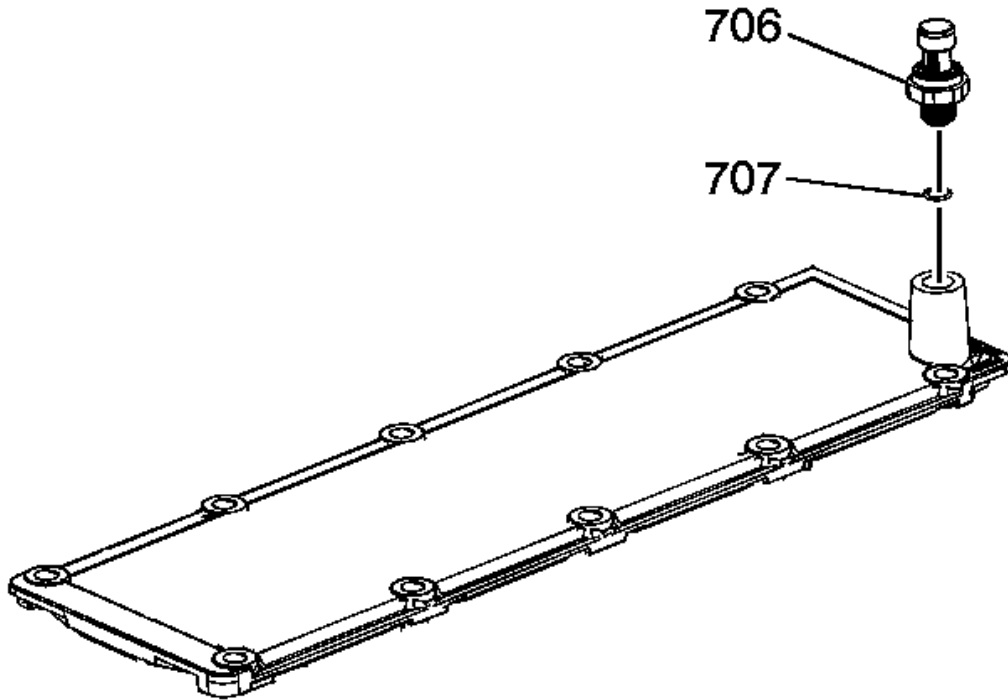


Fig. 213: Removing/Installing Oil Pressure Sensor & Washer
Courtesy of GENERAL MOTORS CORP.

4. Remove the oil pressure sensor (706) and washer (707), as required.

VALVE LIFTER OIL MANIFOLD REMOVAL

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

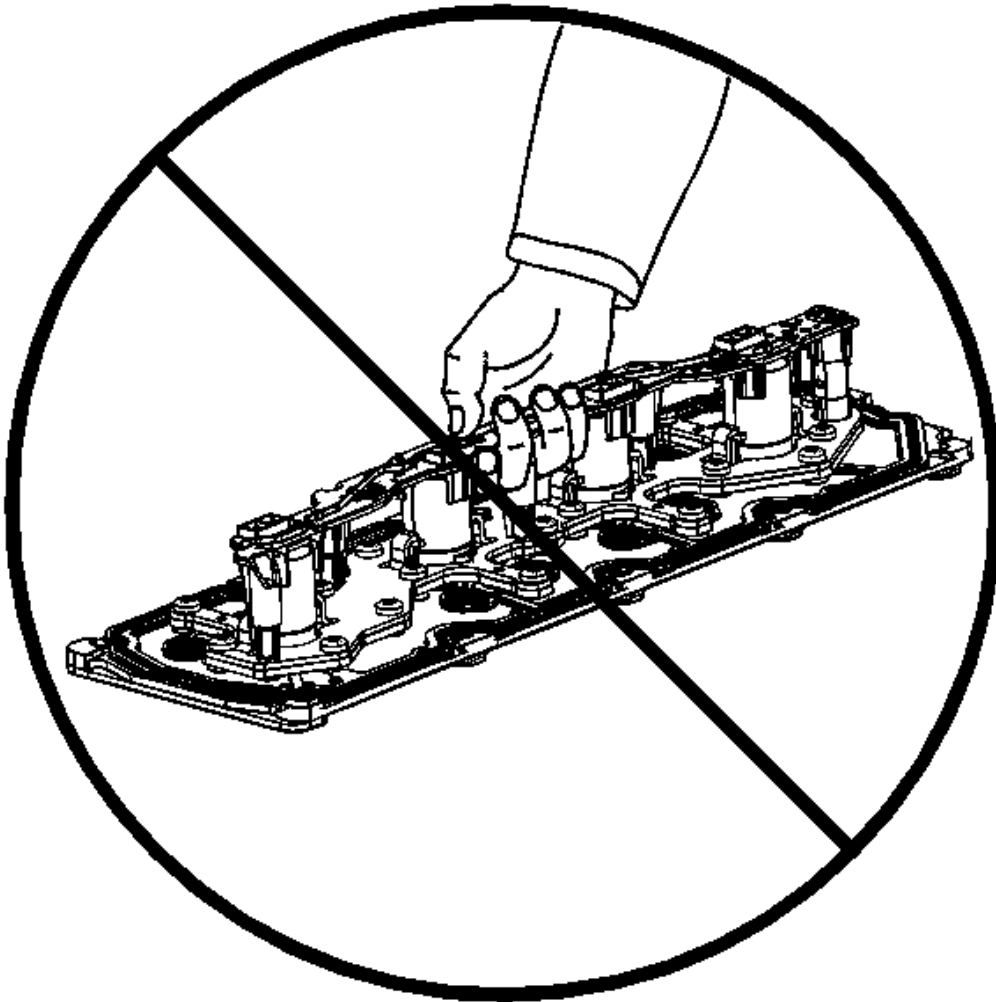


Fig. 214: Valve Lifter Oil Manifold
Courtesy of GENERAL MOTORS CORP.

1. Do not lift the manifold by the electrical lead frame.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

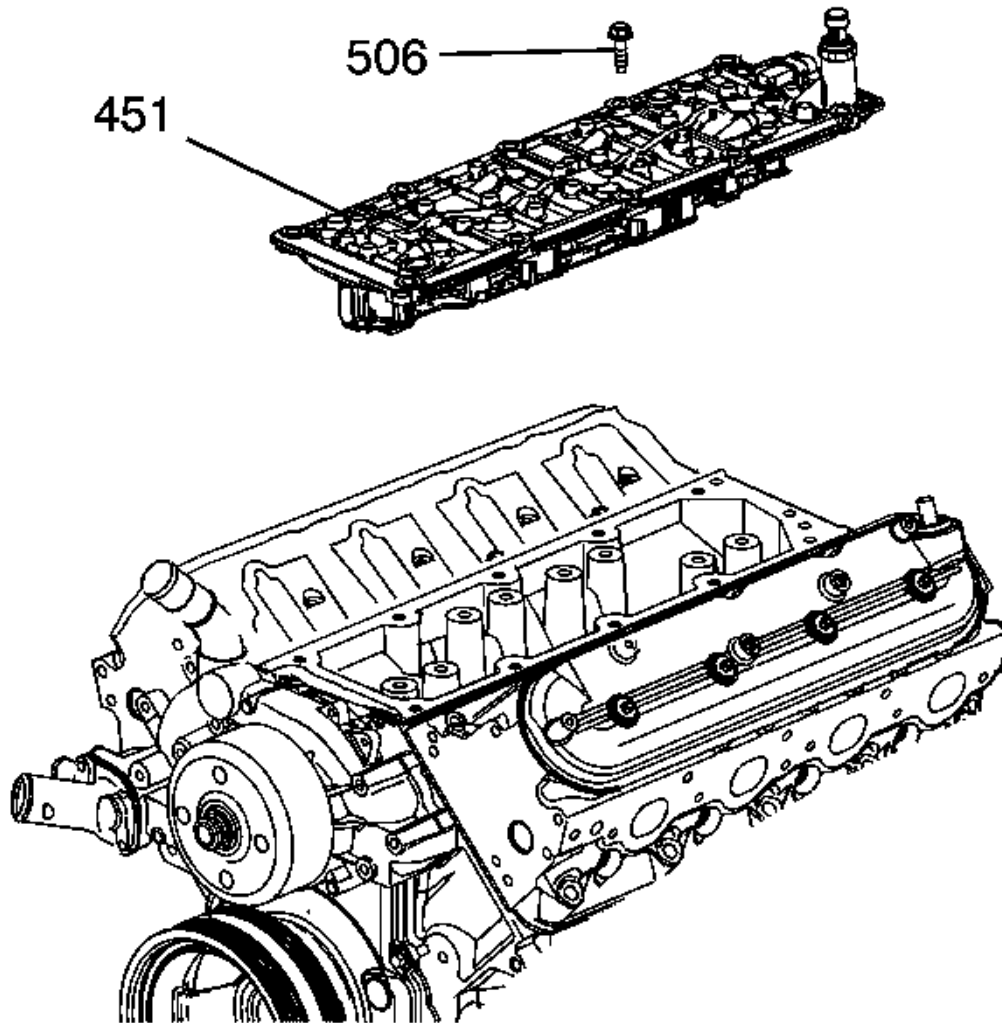


Fig. 215: View Of Valve Lifter Oil Manifold
Courtesy of GENERAL MOTORS CORP.

2. Remove the valve lifter oil manifold bolts (506).

IMPORTANT: Do not allow dirt or debris to enter the oil passages of the manifold. Plug, as required.

3. Remove the valve lifter oil manifold (451).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

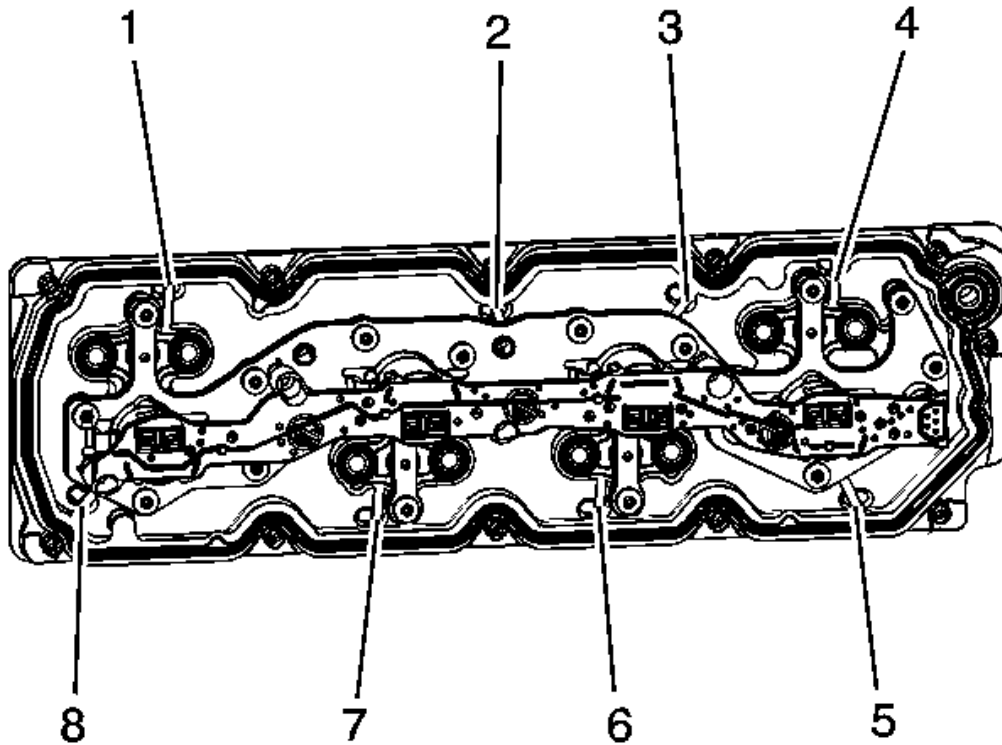


Fig. 216: Gasket Retaining Strap Locations
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Remove only the outer gasket from the manifold. Do not disassemble any of the internal components of the manifold in an attempt to remove the 8 inner sealing gaskets. If the inner gaskets are cut or damaged, replace the manifold as an assembly. Only use a wire-cutter type tool in order to minimize the amount of debris. Do not use a rotary-type cutting tool on the retaining straps.

4. Identify the 8 gasket retaining strap locations (1-8).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

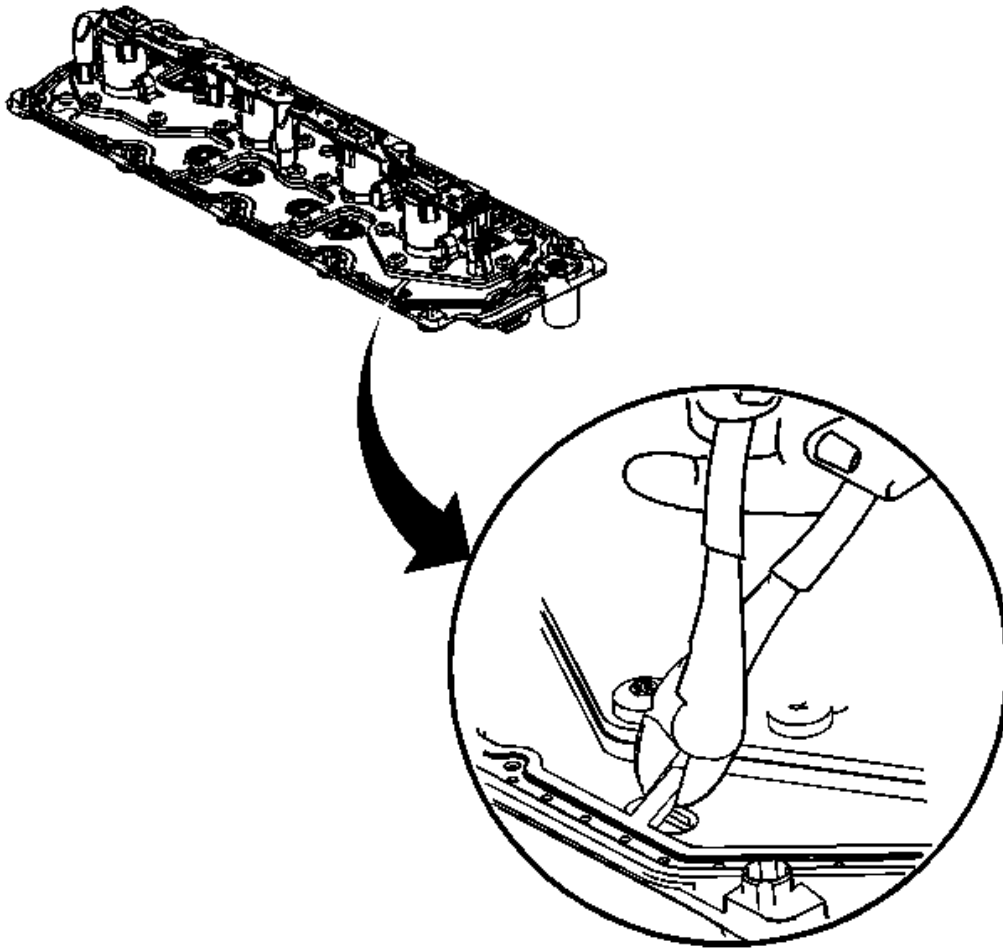


Fig. 217: Retaining Strap
Courtesy of GENERAL MOTORS CORP.

5. Using a wire-cutter type tool, cut the 8 retaining straps.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

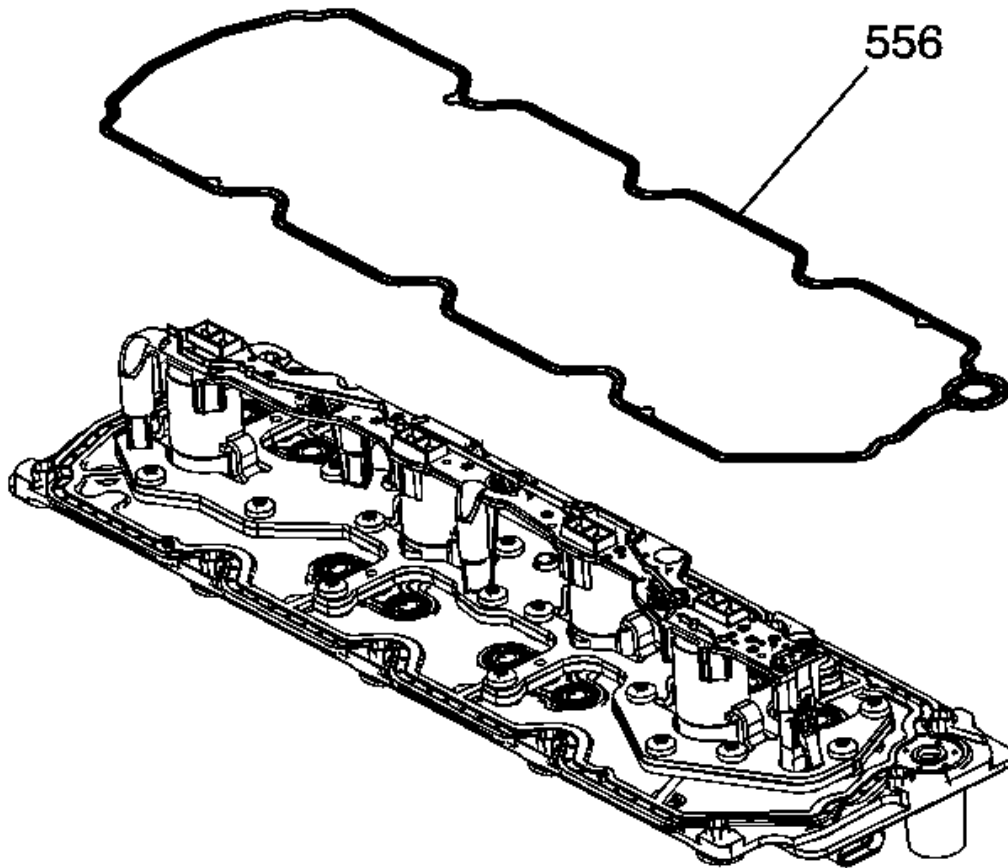


Fig. 218: View Of Outer Gasket
Courtesy of GENERAL MOTORS CORP.

6. Remove the outer gasket (556) from the manifold.

VALVE LIFTER OIL FILTER REMOVAL

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

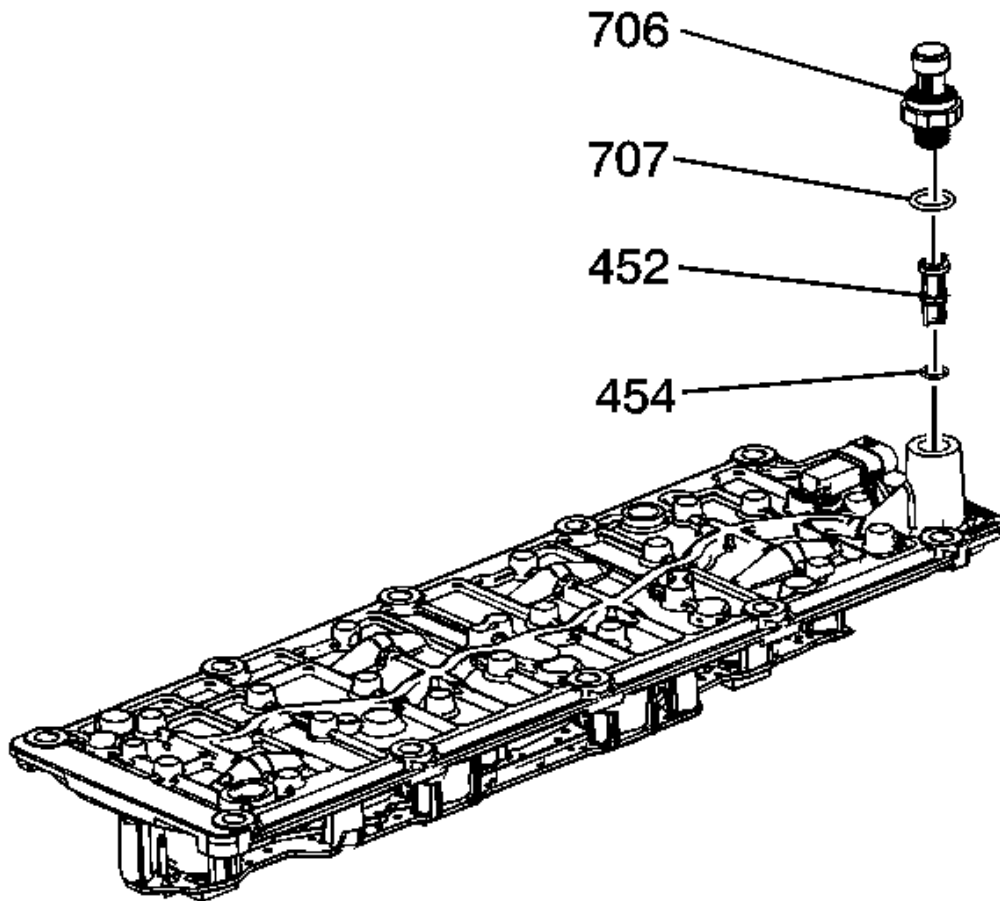


Fig. 219: View Of Oil Pressure Sensor, Washer And Valve Lifter Oil Filter
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not allow dirt or debris to enter the oil passages of the manifold. Plug, as required.

1. Remove the oil pressure sensor (706).
2. Remove the oil filter (452).
3. Inspect the O-ring (454) for cuts or damage. If the filter is plugged or the O-ring is cut or damaged, replace the filter and O-ring as an assembly.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

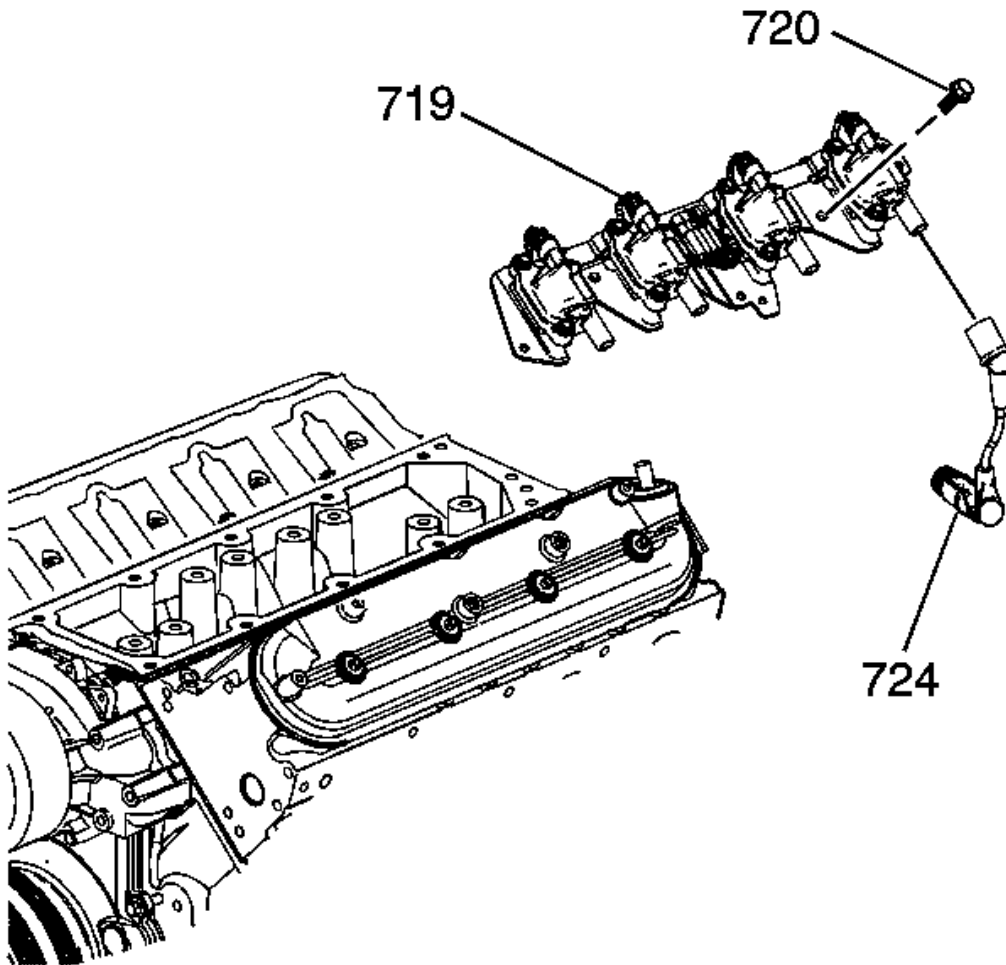


Fig. 220: Ignition Coils & Bracket
Courtesy of GENERAL MOTORS CORP.

1. Remove the spark plug wires (724).
2. Remove the ignition coil bracket studs (720).
3. Remove the ignition coil and bracket assembly (719).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

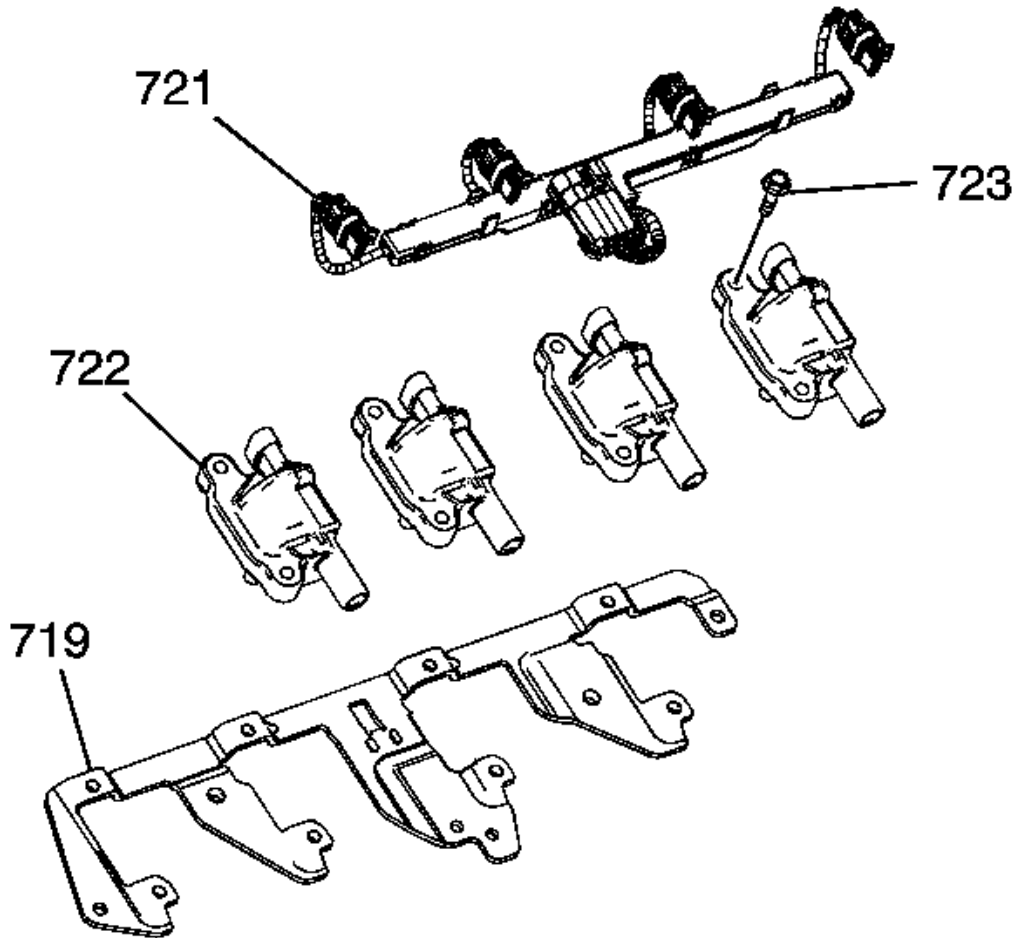


Fig. 221: View Of Bracket, Bolts, Coils & Wire Harness
Courtesy of GENERAL MOTORS CORP.

4. Disconnect the ignition coil electrical connectors.
5. Remove the bolts (723), coils (722), and wire harness (721) from the bracket (719), as required.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

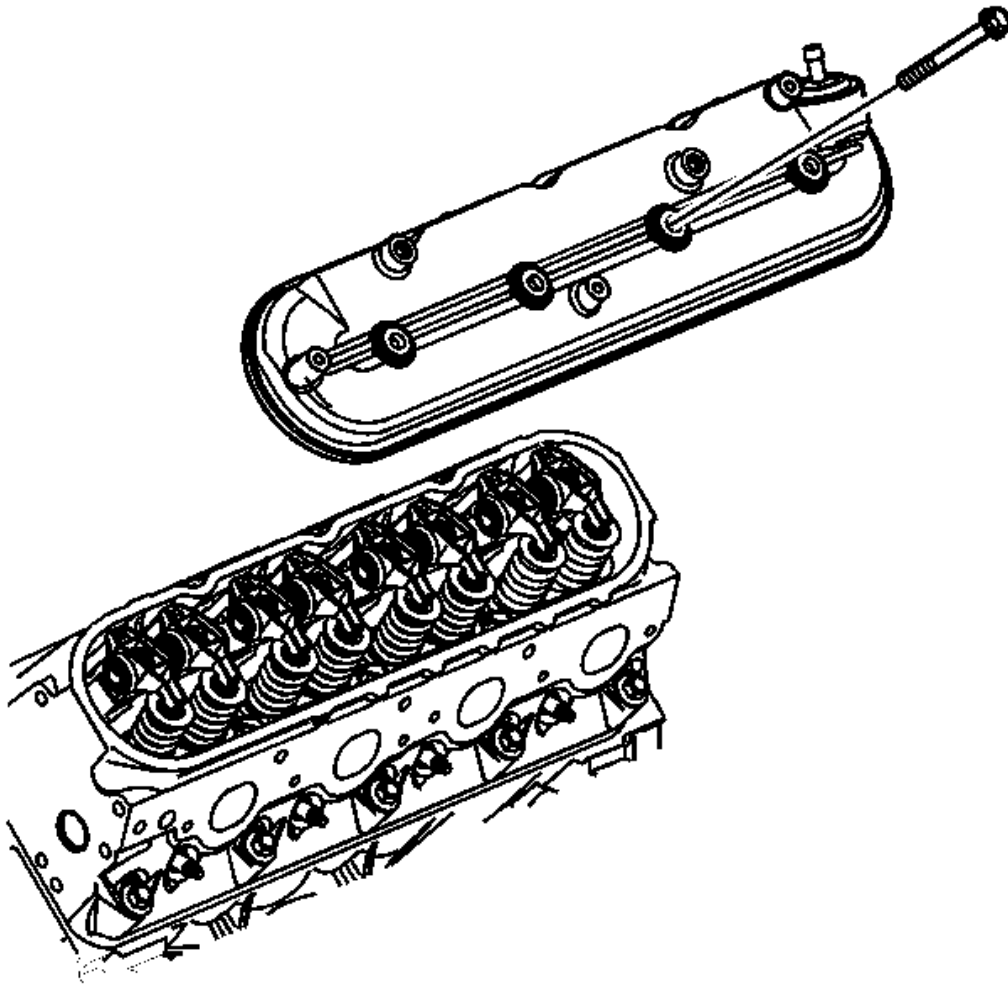


Fig. 222: View Of Valve Rocker Arm Cover
Courtesy of GENERAL MOTORS CORP.

6. Remove the valve rocker arm cover bolts and cover.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

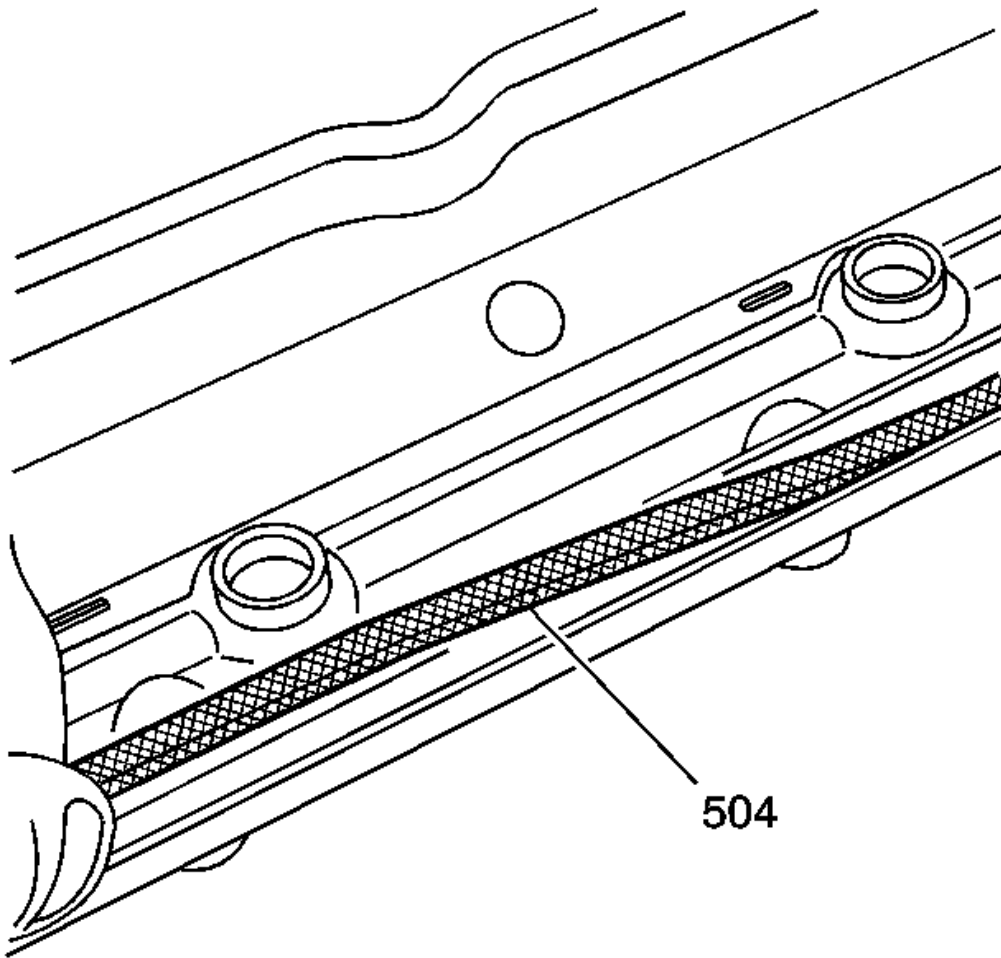


Fig. 223: View Of Valve Rocker Arm Cover Gasket
Courtesy of GENERAL MOTORS CORP.

7. Remove the gasket (504) from the cover.

VALVE ROCKER ARM COVER REMOVAL - RIGHT SIDE

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

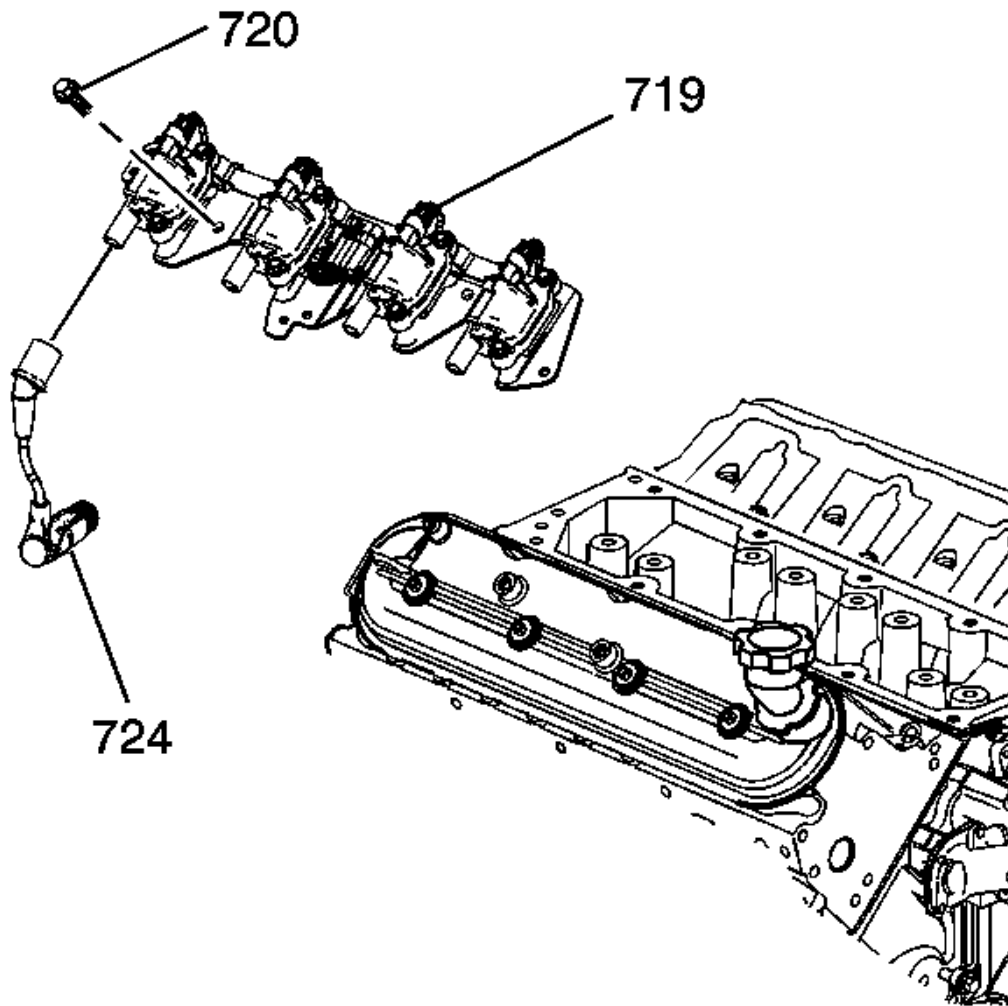


Fig. 224: Ignition Coils & Bracket

Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not remove the oil fill tube from the cover, unless service is required. If the oil fill tube has been removed from the cover, install a NEW tube during assembly.

1. Remove the spark plug wires (724).
2. Remove the ignition coil bracket studs (720).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

3. Remove the ignition coil and bracket assembly (719).

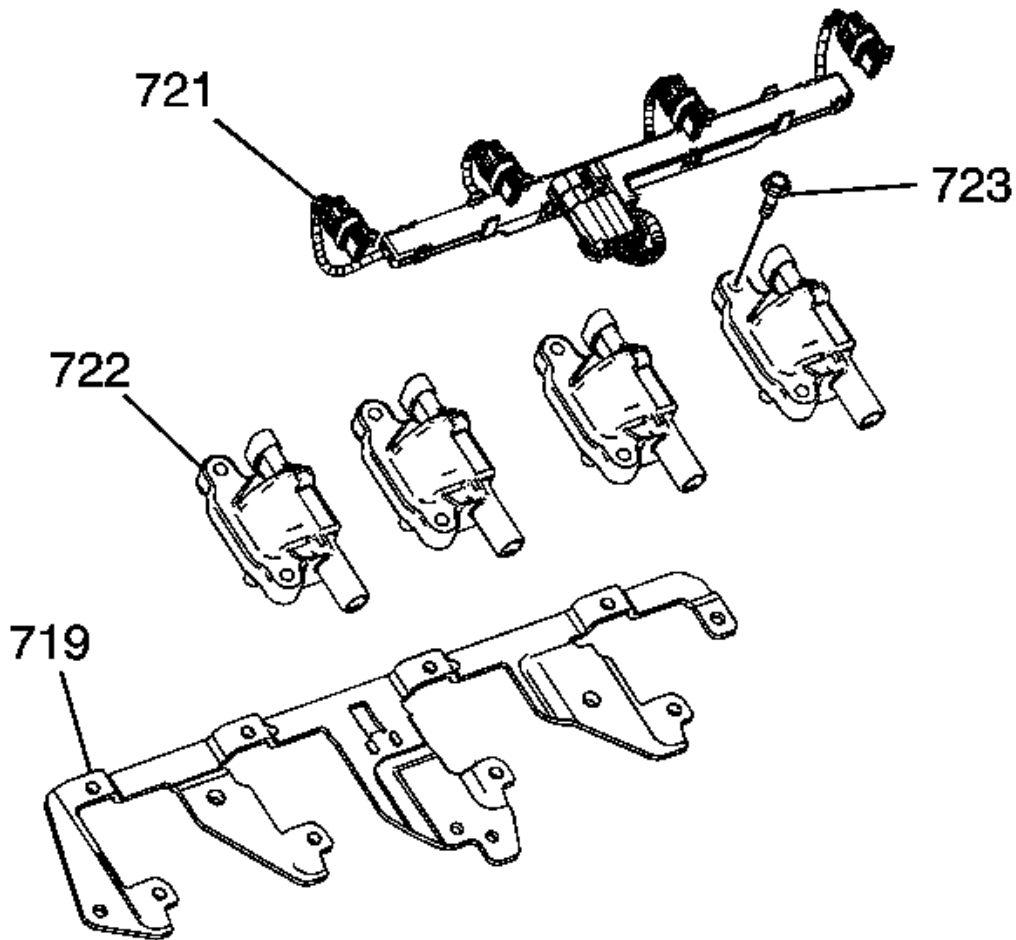


Fig. 225: View Of Bracket, Bolts, Coils & Wire Harness
Courtesy of GENERAL MOTORS CORP.

4. Disconnect the ignition coil electrical connectors.
5. Remove the bolts (723), coils (722), and wire harness (721) from the bracket (719), as required.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

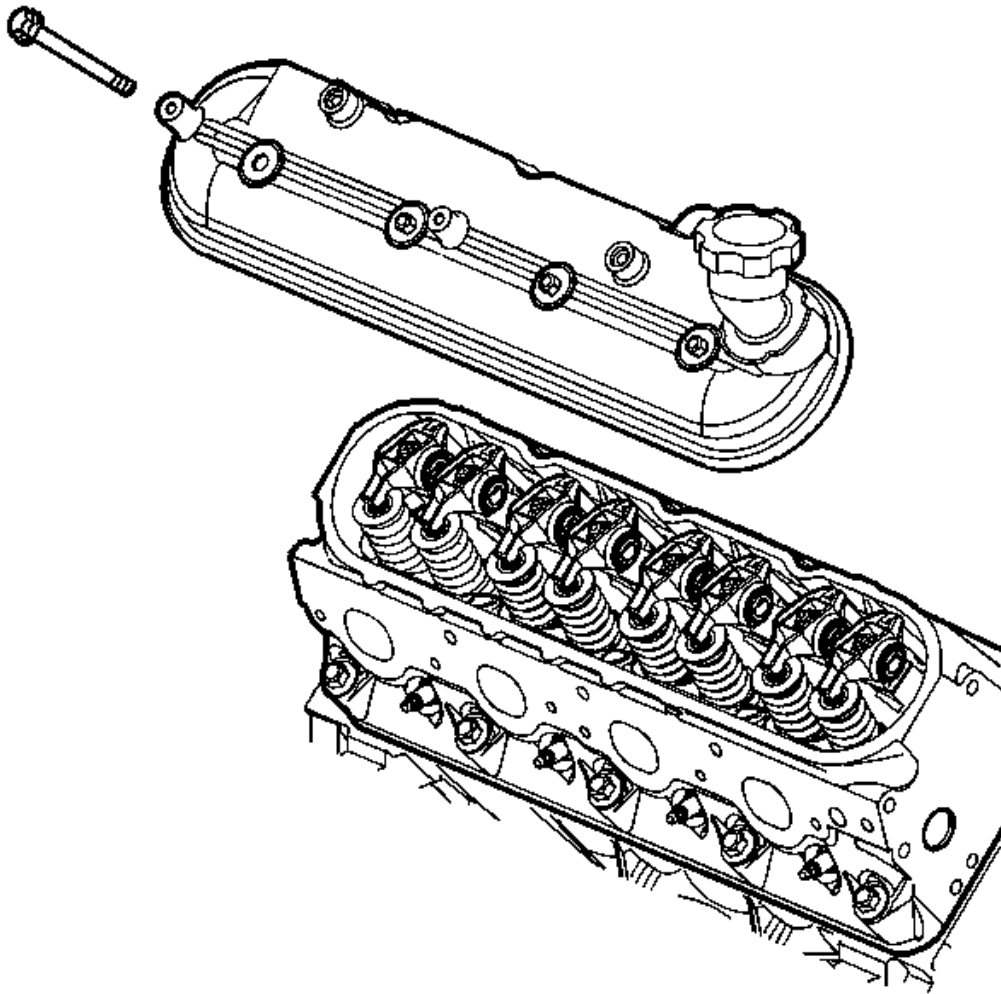


Fig. 226: View Of Valve Rocker Arm Cover & Bolts (Right)
Courtesy of GENERAL MOTORS CORP.

6. Remove the valve rocker arm cover bolts and cover.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado,
Sierra & Silverado

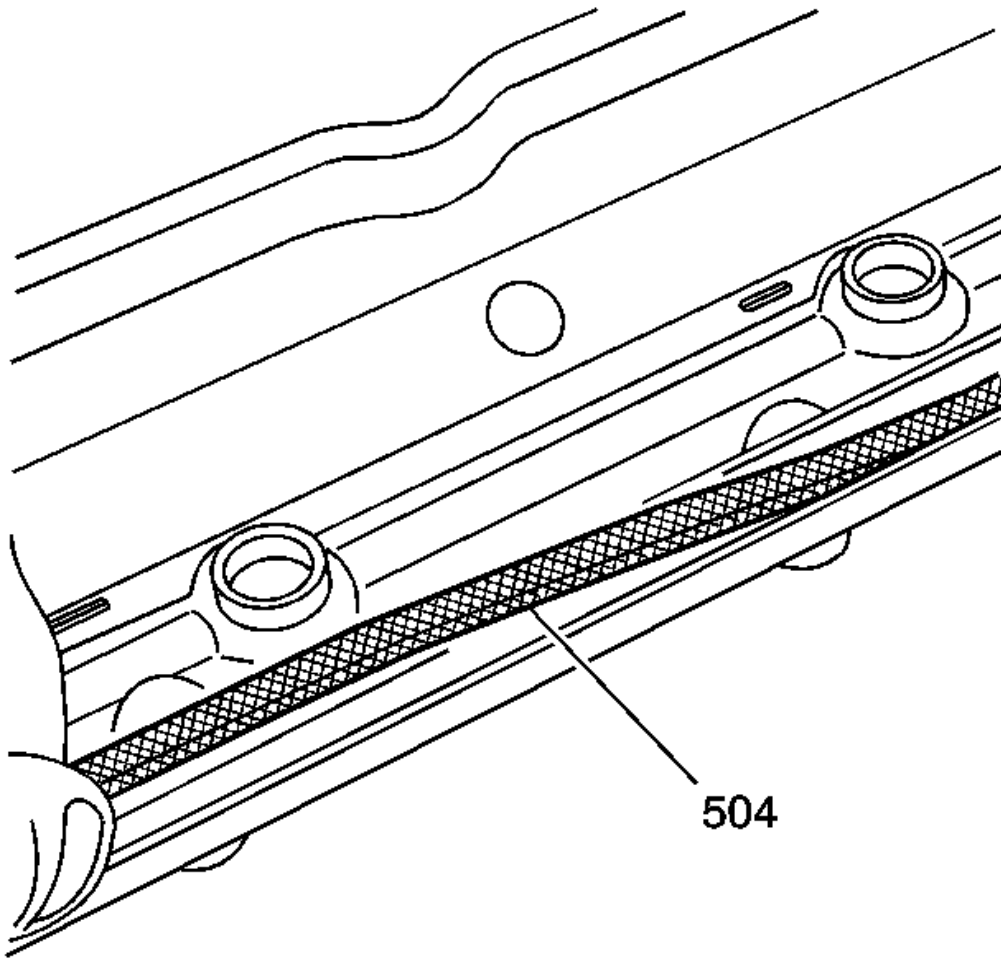


Fig. 227: View Of Valve Rocker Arm Cover Gasket
Courtesy of GENERAL MOTORS CORP.

7. Remove the gasket (504) from the cover.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

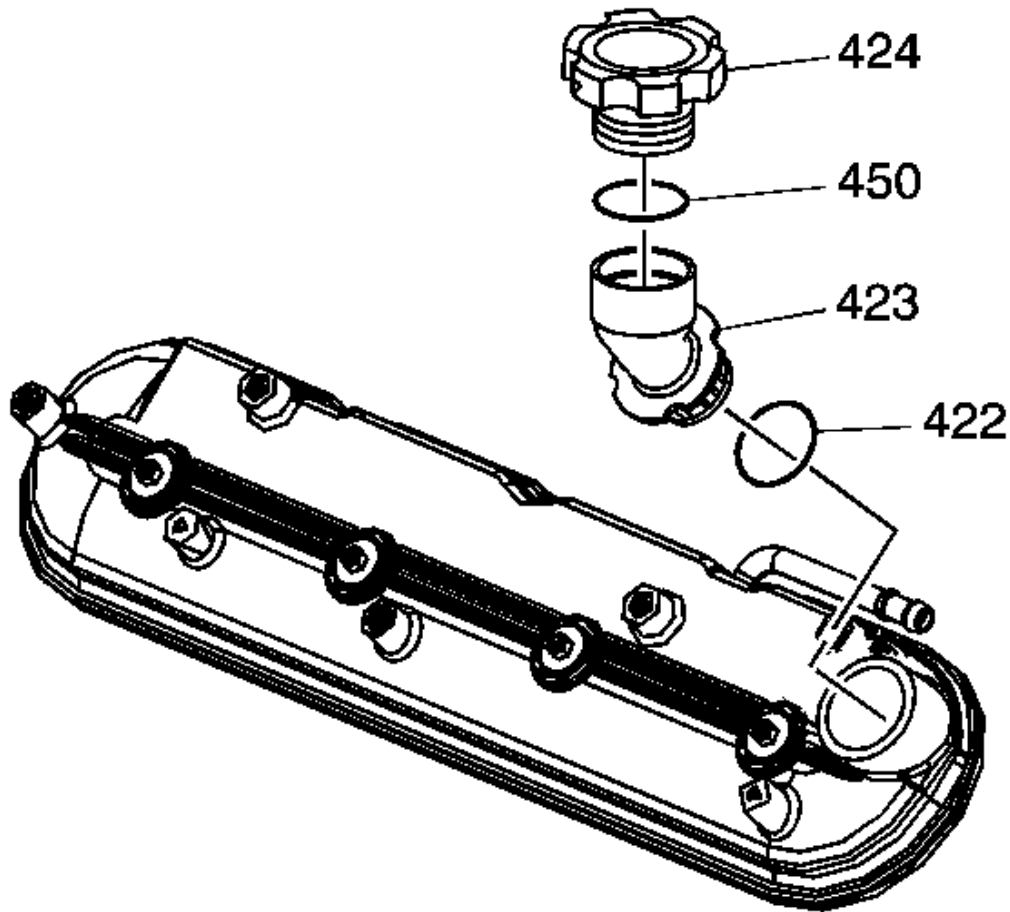


Fig. 228: Oil Fill Cap & Oil Fill Tube
Courtesy of GENERAL MOTORS CORP.

8. Remove the oil fill cap (424) from the oil fill tube (423).
9. Remove the oil fill tube, as required.
10. Discard the oil fill tube.

VALVE ROCKER ARM AND PUSH ROD REMOVAL (RPO LY2/LH6/LMG/LY5/LC9)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

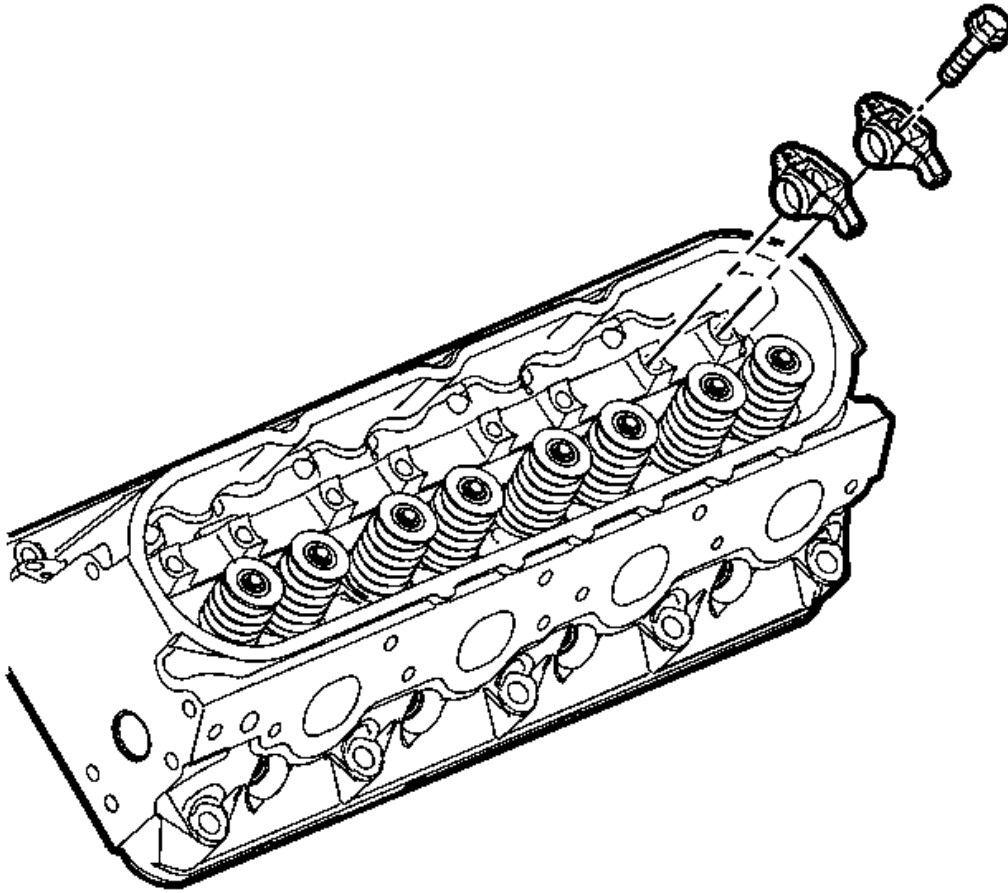


Fig. 229: View Of Rocker Arms & Bolts
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Place the valve rocker arms, valve pushrods, and pivot support, in a rack so they can be installed in the same location from which they were removed.

1. Remove the valve rocker arm bolts.
2. Remove the valve rocker arms.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

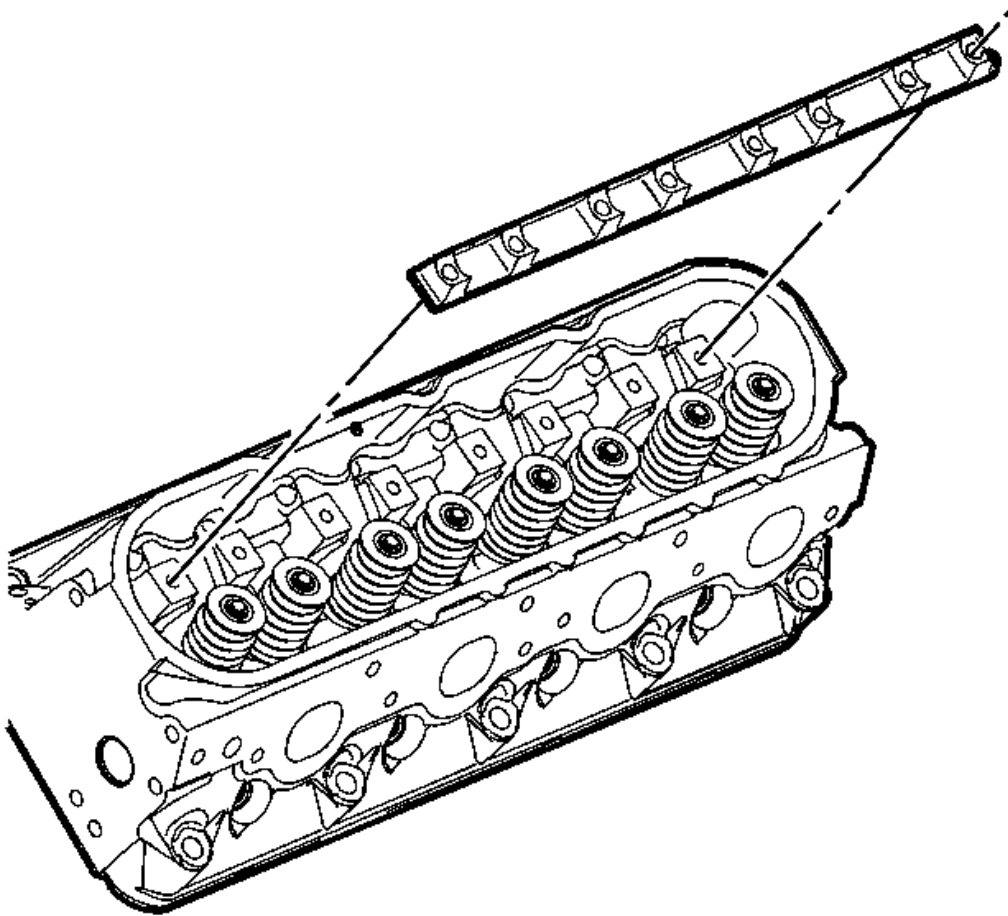


Fig. 230: View Of Valve Rocker Arm Pivot Support
Courtesy of GENERAL MOTORS CORP.

3. Remove the valve rocker arm pivot support.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

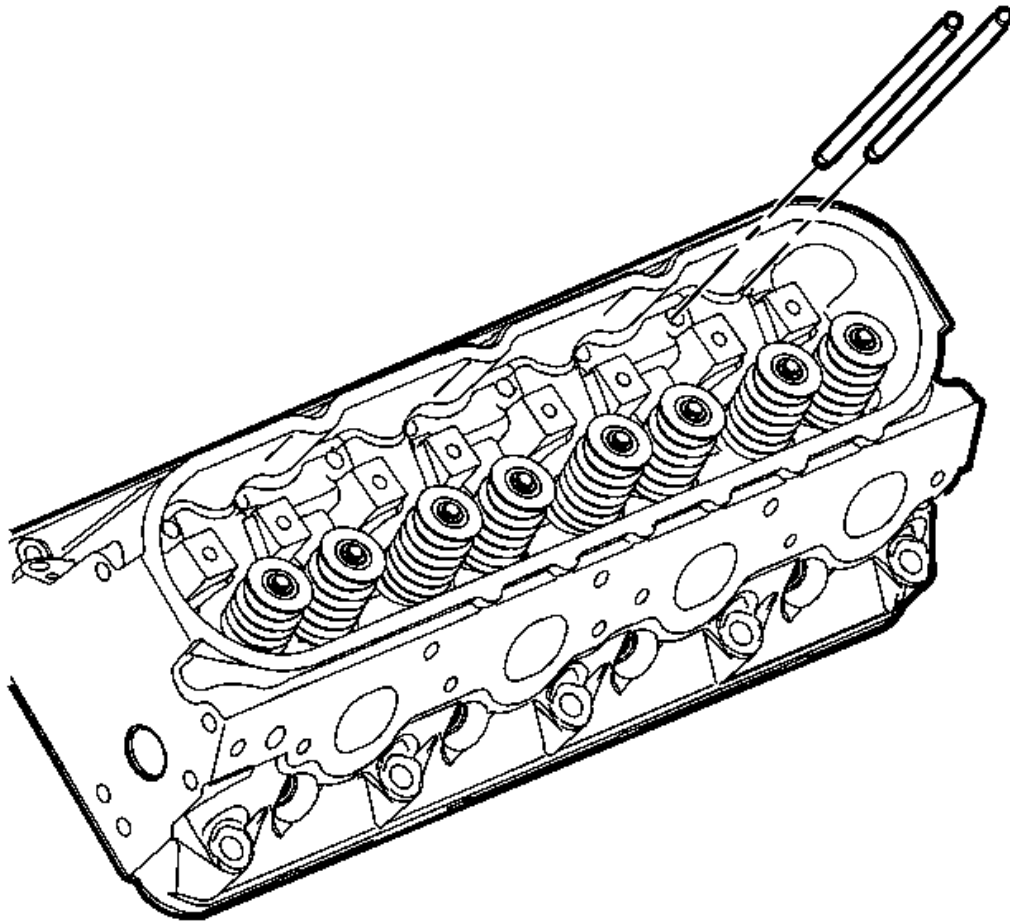


Fig. 231: View Of Pushrods
Courtesy of GENERAL MOTORS CORP.

4. Remove the pushrods.

VALVE ROCKER ARM AND PUSH ROD REMOVAL (RPO LY6/L76/L92)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

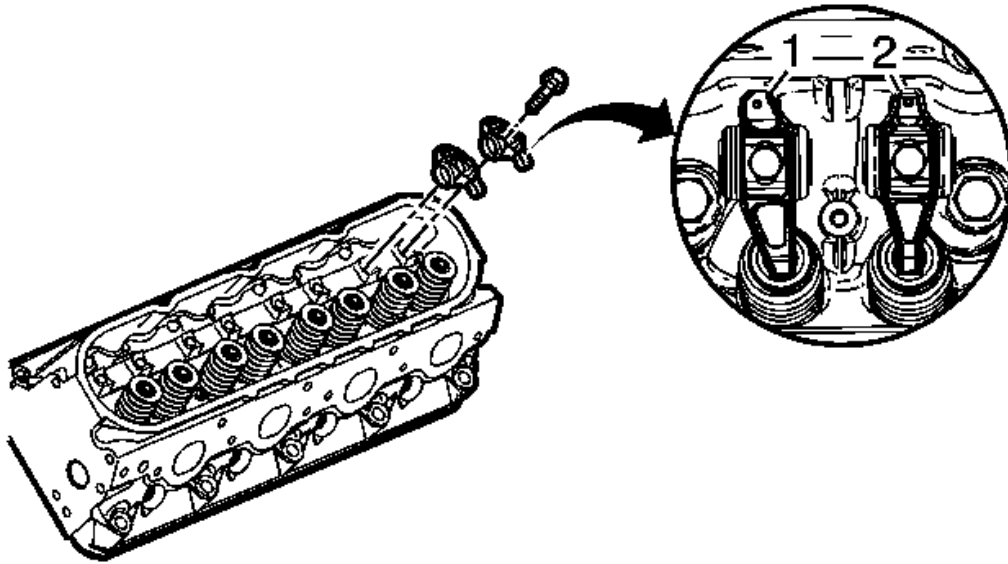


Fig. 232: Identifying Offset Intake Rocker Arm & Non-Offset Rocker Arm
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Place the valve rocker arms, valve pushrods, and pivot support, in a rack so they can be installed in the same location from which they were removed.

1. Remove the valve rocker arm bolts.
2. Remove the valve rocker arms.

The intake rocker arms (1) have an offset design.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

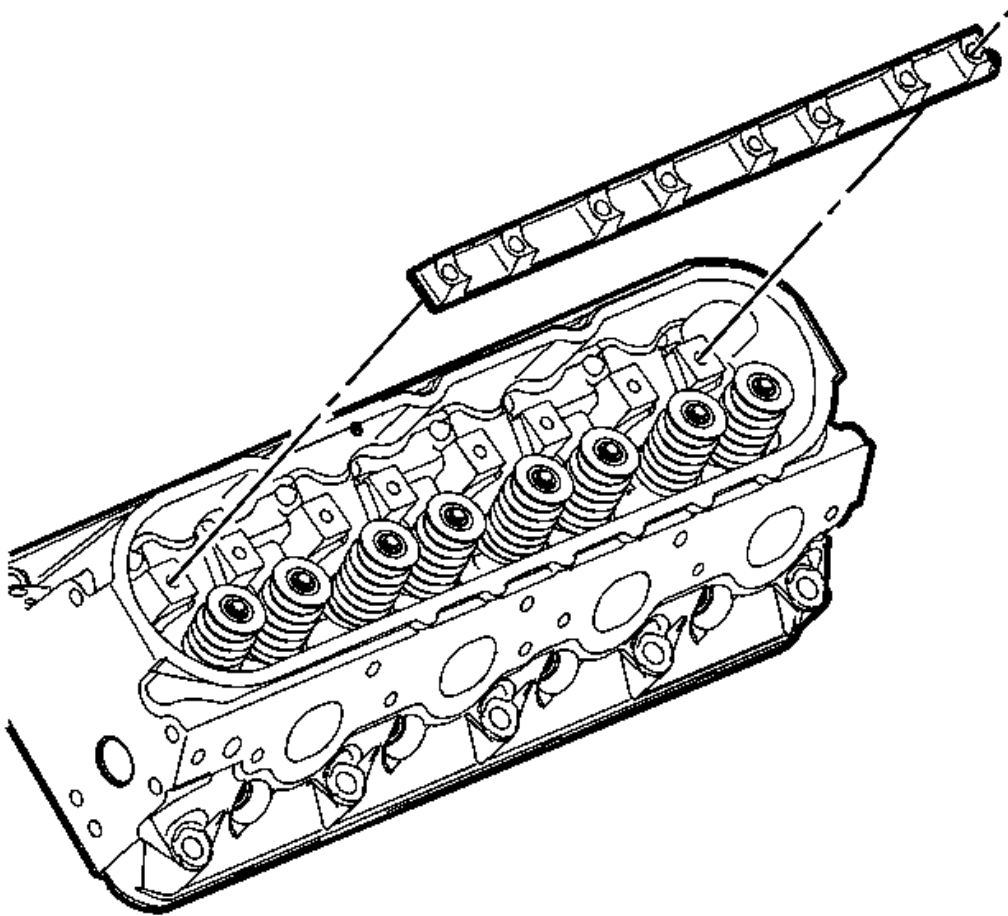


Fig. 233: View Of Valve Rocker Arm Pivot Support
Courtesy of GENERAL MOTORS CORP.

3. Remove the valve rocker arm pivot support.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

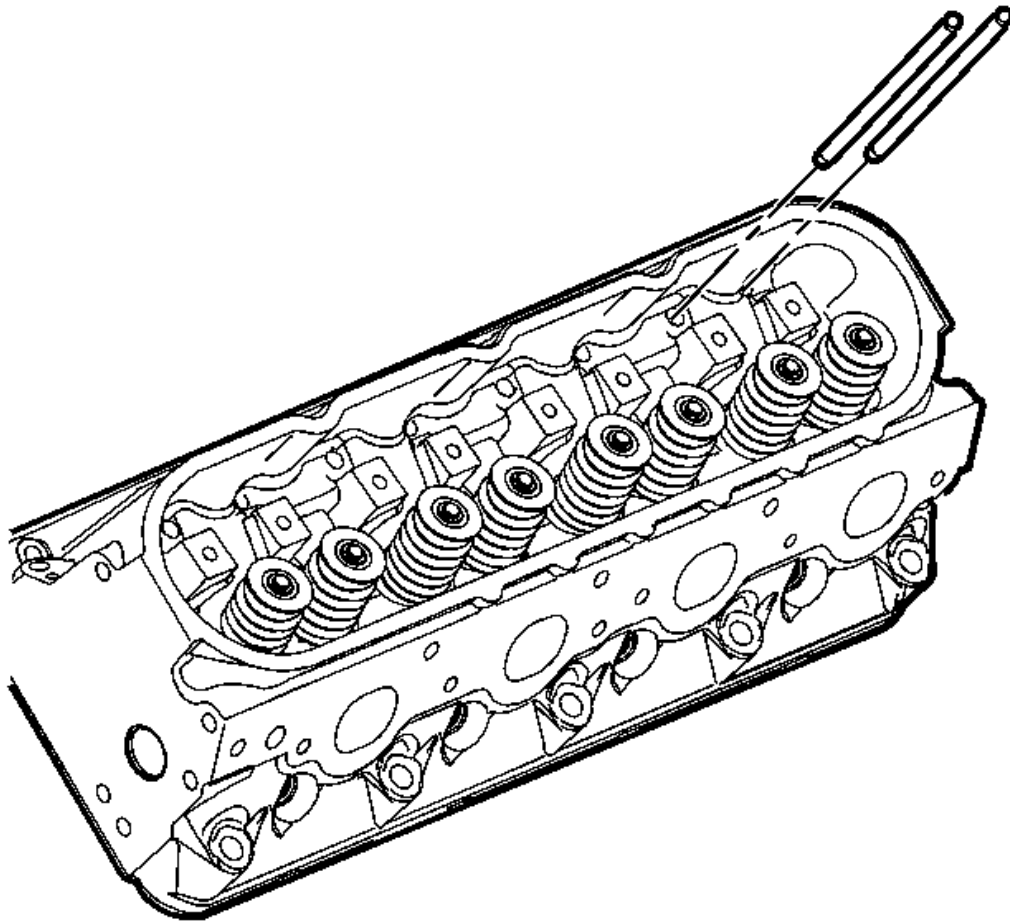


Fig. 234: View Of Pushrods
Courtesy of GENERAL MOTORS CORP.

4. Remove the pushrods.

CYLINDER HEAD REMOVAL - LEFT SIDE

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

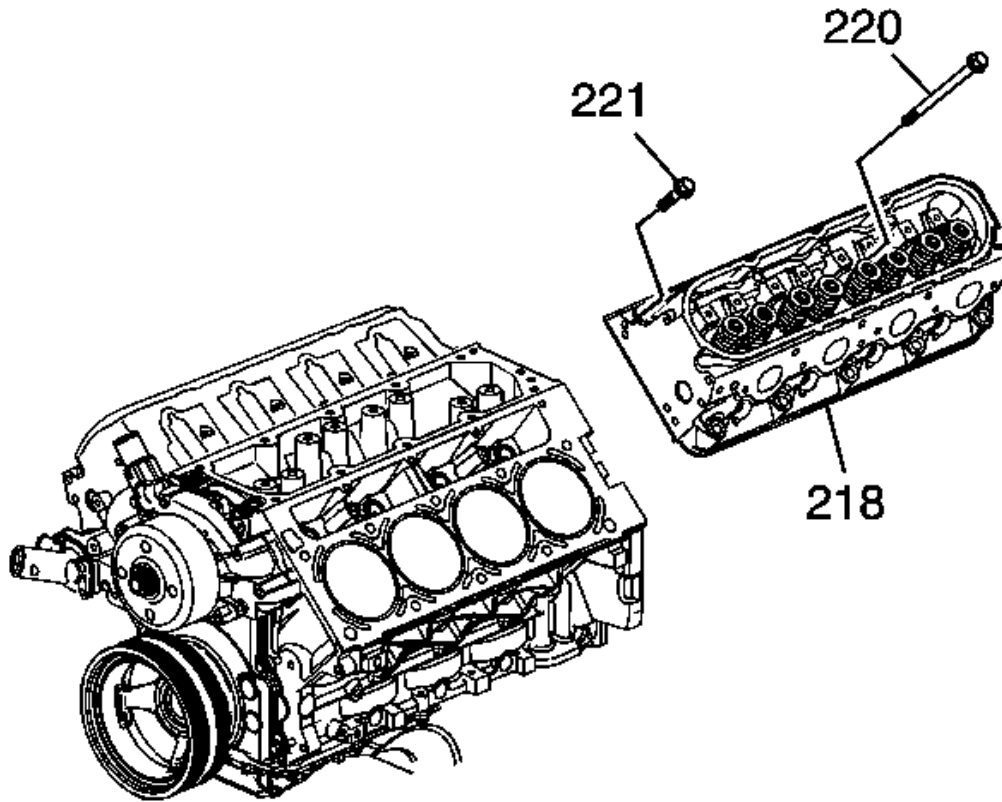


Fig. 235: View Of Cylinder Head & Bolts
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The cylinder head bolts are of a torque-to-yield design and are NOT to be used again. Install NEW cylinder head bolts during assembly.

1. Remove the cylinder head bolts (220, 221).

NOTE: After removal, place the cylinder head on 2 wood blocks in order to prevent damage to the sealing surfaces.

2. Remove the cylinder head (218).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

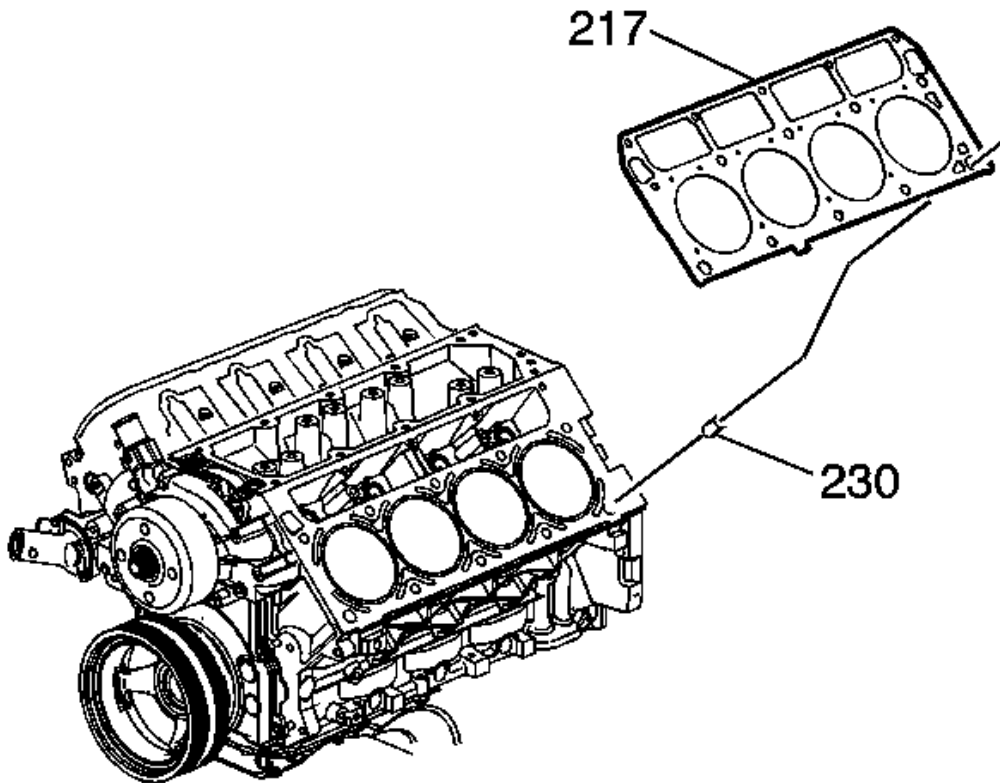


Fig. 236: View Of Cylinder Head Gasket & Locating Pins
Courtesy of GENERAL MOTORS CORP.

3. Remove the gasket (217) and locating pins (230).
4. Discard the gasket and cylinder head bolts.

CYLINDER HEAD REMOVAL - RIGHT SIDE

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

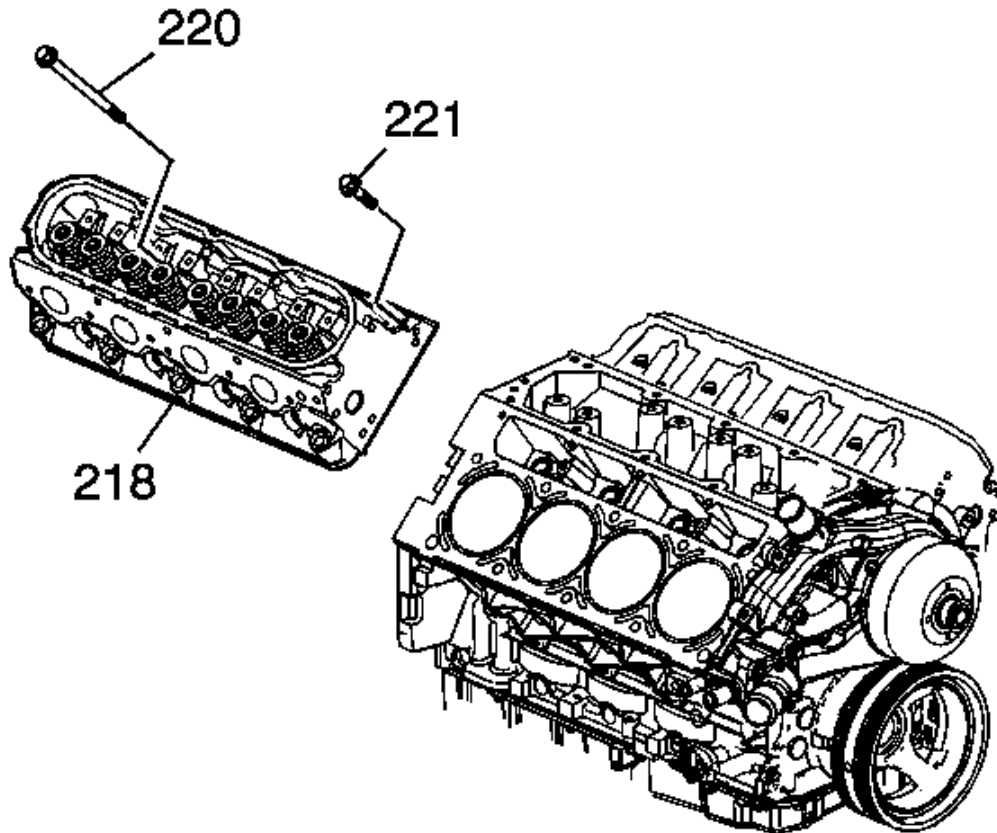


Fig. 237: View Of Cylinder Head & Bolts
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The cylinder head bolts are of a torque-to-yield design and are NOT to be used again. Install NEW cylinder head bolts during assembly.

1. Remove the cylinder head bolts (220, 221).

NOTE: After removal, place the cylinder head on 2 wood blocks in order to prevent damage to the sealing surfaces.

2. Remove the cylinder head (218).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

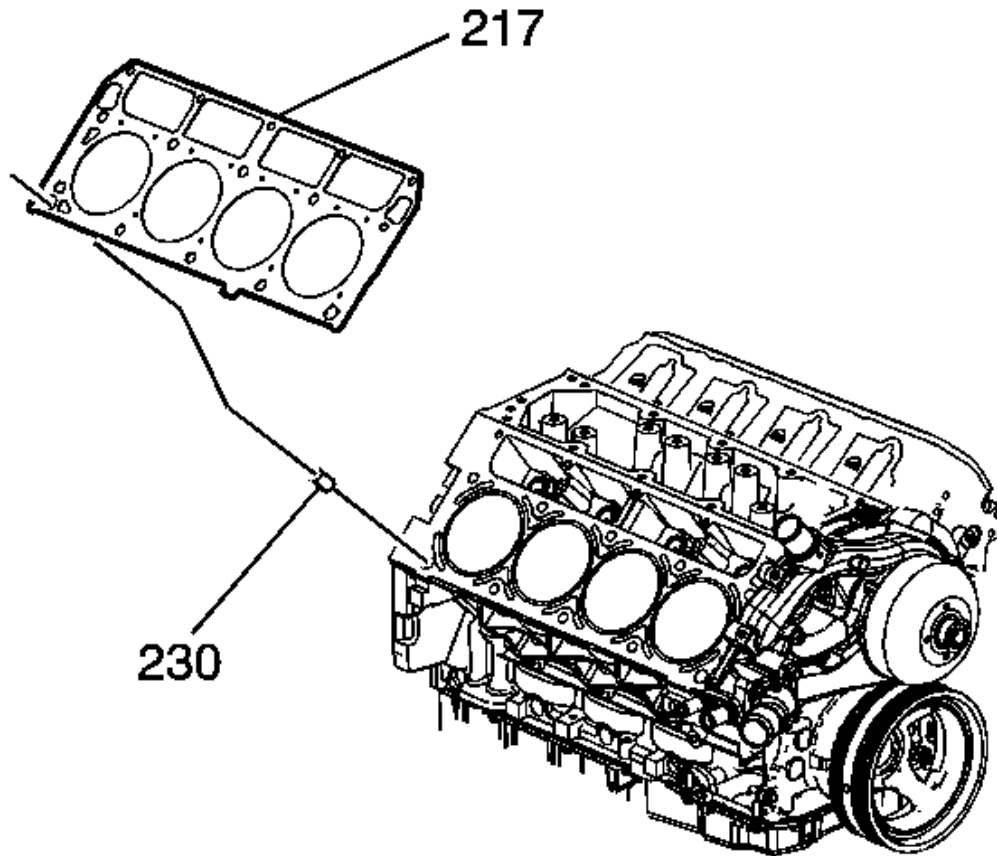


Fig. 238: View Of Cylinder Head Gasket & Locating Pins
Courtesy of GENERAL MOTORS CORP.

3. Remove the gasket (217) and locating pins (230).
4. Discard the gasket and cylinder head bolts.

VALVE LIFTER REMOVAL (RPO LY2/LY6/L92)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

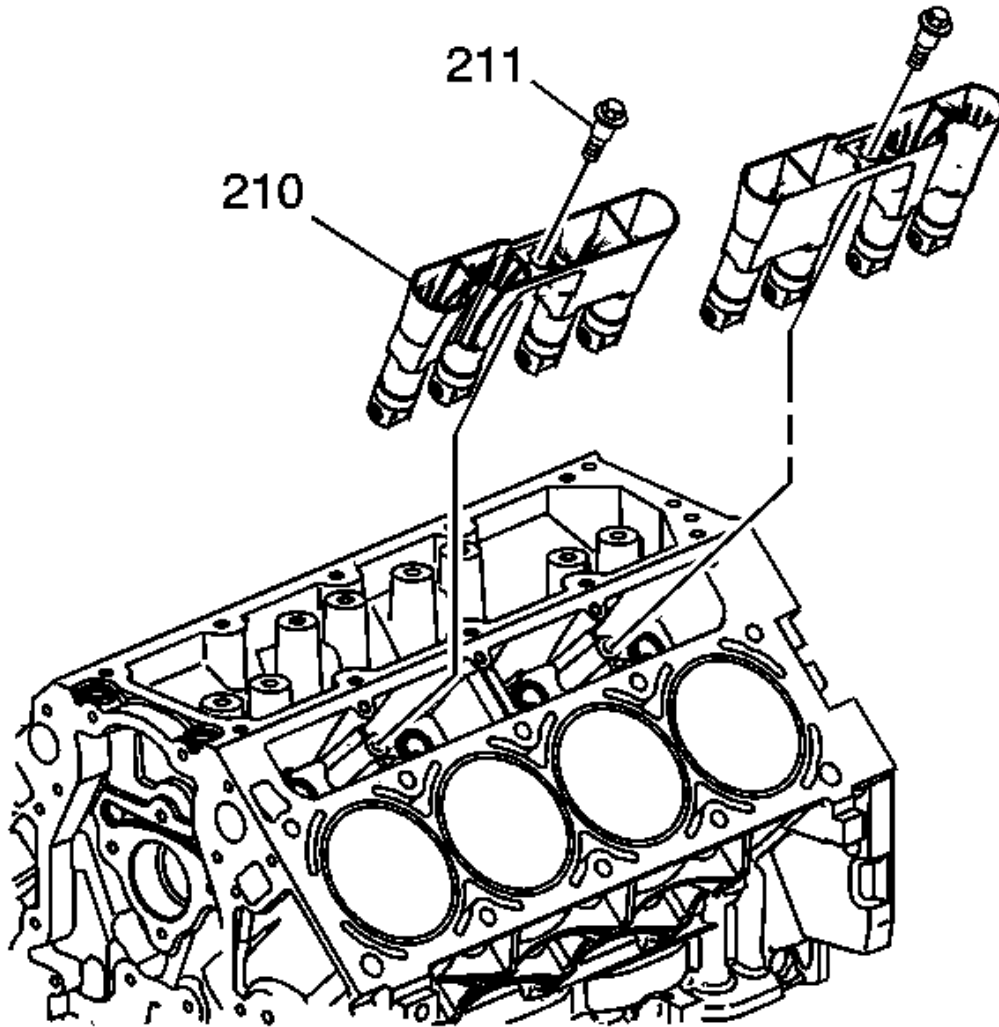


Fig. 239: Valve Lifter Guides, Cylinder Head & Bolts
Courtesy of GENERAL MOTORS CORP.

1. Remove the guide bolts (211).
2. Remove the guides (210) with lifters.

Note the installed position of the guides. The notched area of the guide is to align with the locating tab on the block.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

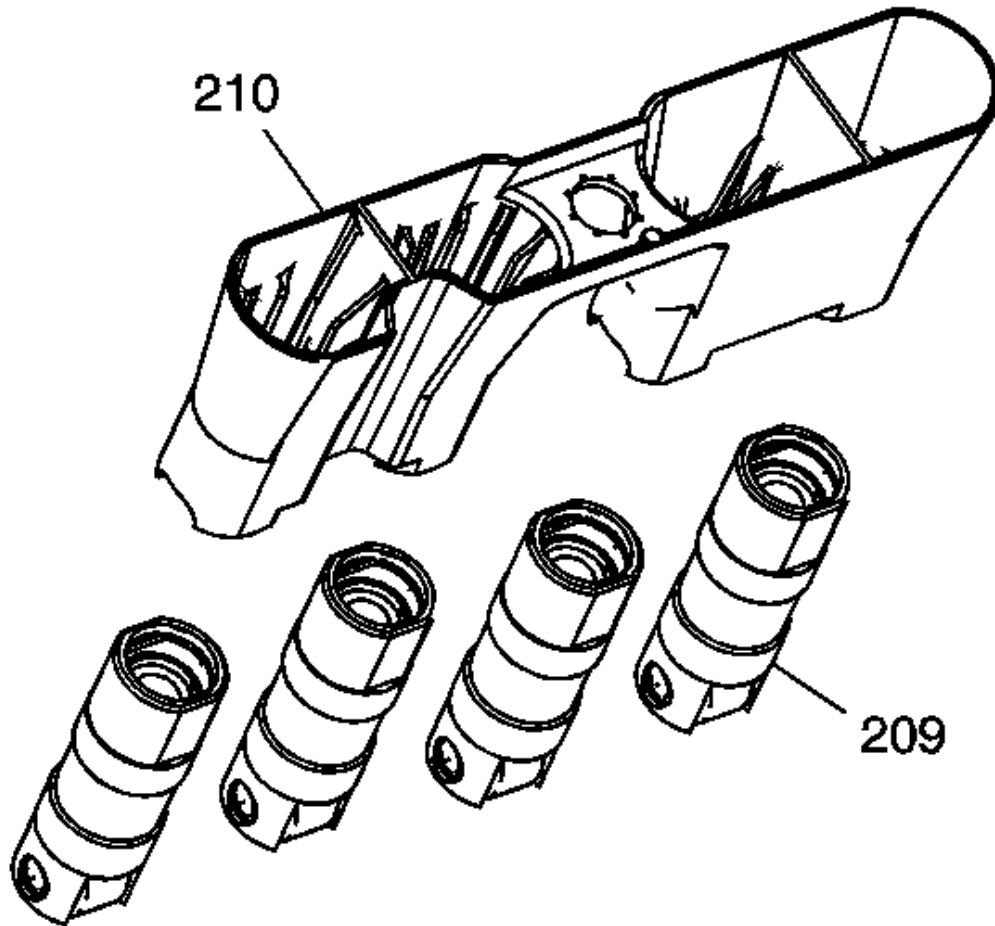


Fig. 240: Valve Lifter Guides & Bolts
Courtesy of GENERAL MOTORS CORP.

3. Remove the valve lifters (209) from the guide (210).
4. Organize or mark the components so they can be installed in the same location from which they were removed. Refer to **Separating Parts** .

VALVE LIFTER REMOVAL (RPO LH6/LMG/LY5/LC9/L76)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

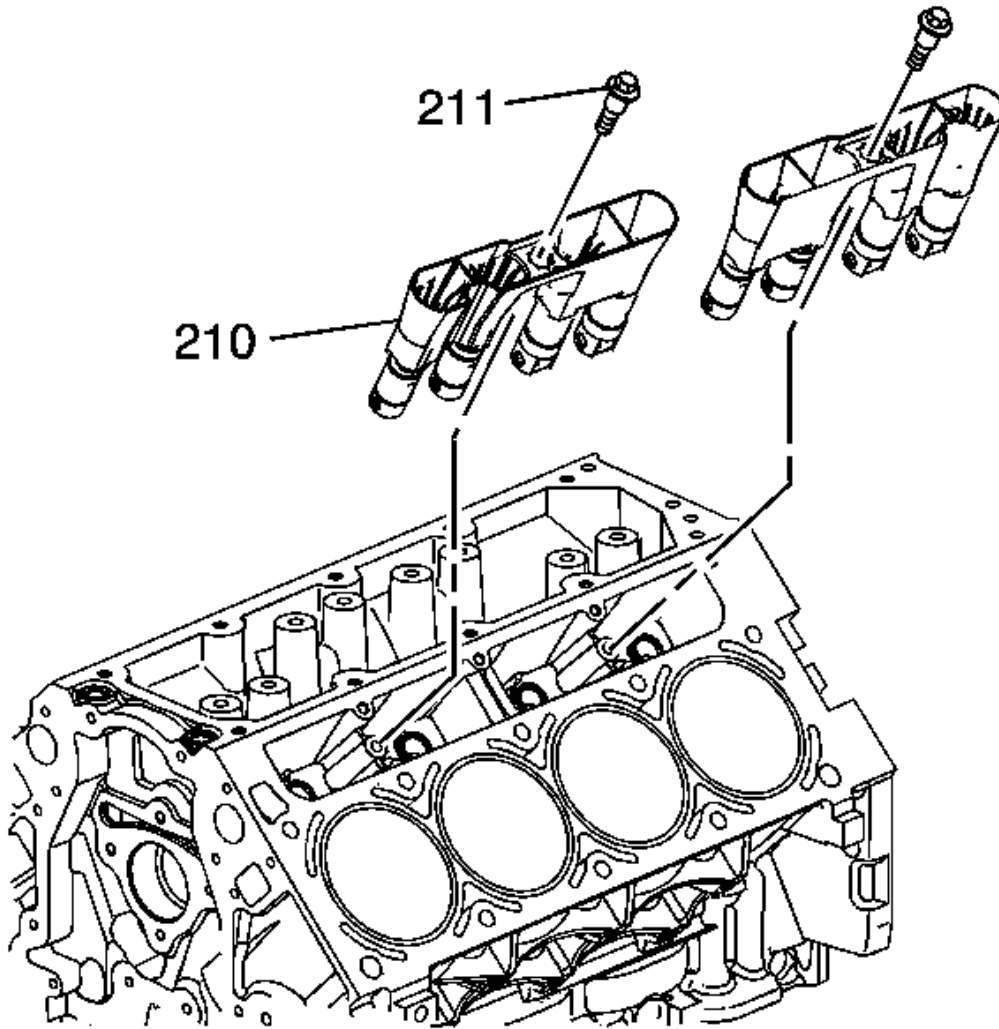


Fig. 241: View Of Lifter Guides & Lifters
Courtesy of GENERAL MOTORS CORP.

1. Remove the bolts (211).
2. Remove the guides (210) with lifters.

Note the installed position of the guides. The notched area of the guide is to align with the locating tab of the block.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

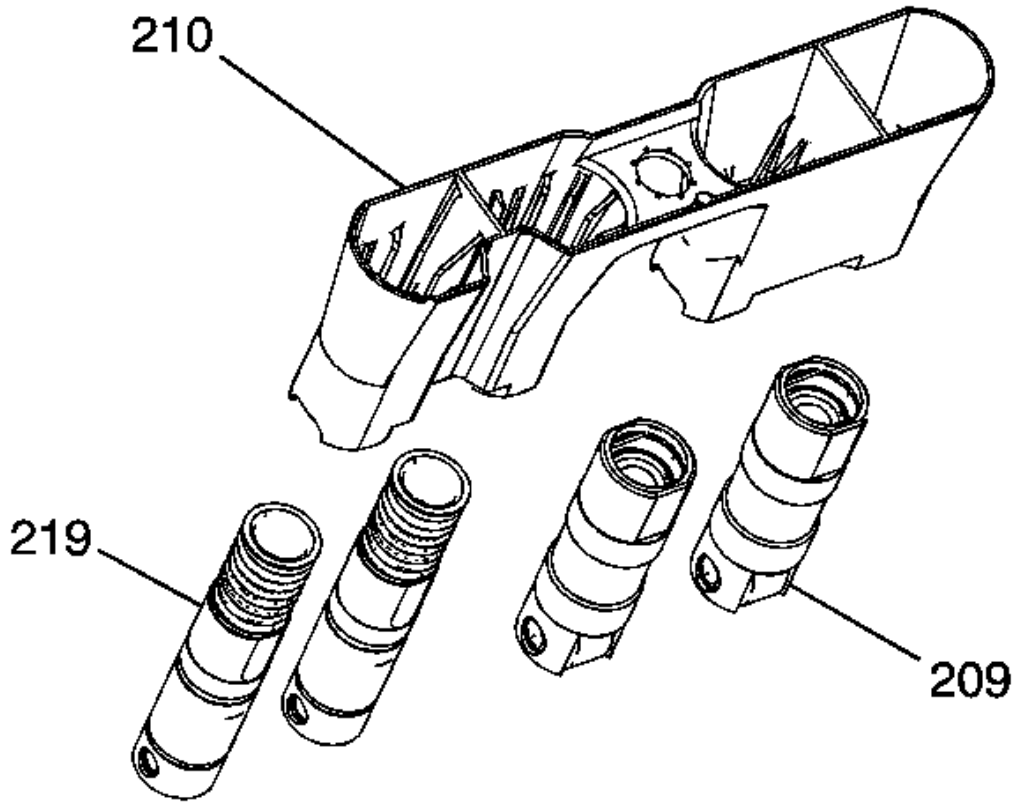


Fig. 242: Exploded View Of Lifter Guides & Lifters
Courtesy of GENERAL MOTORS CORP.

3. Remove the valve lifters (209, 219) from the guide (210).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

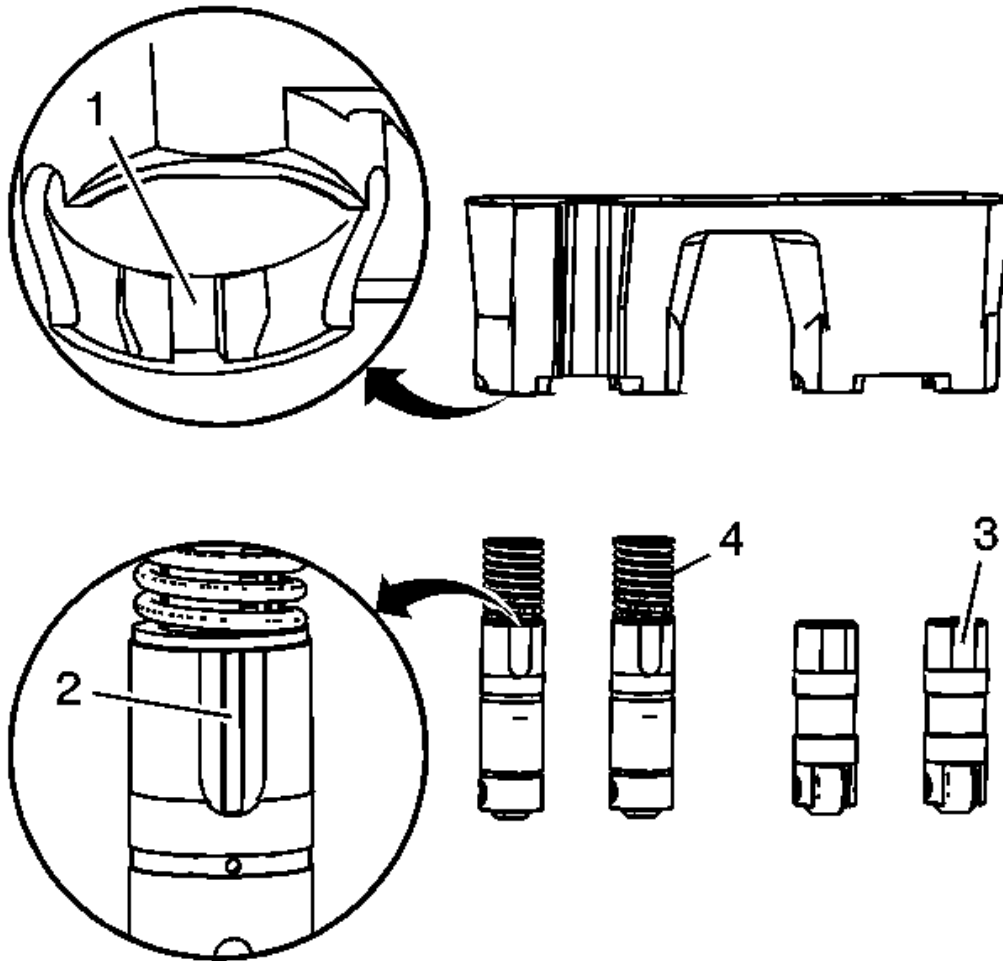


Fig. 243: Inserting Valve Lifters Into Lifter Guides
Courtesy of GENERAL MOTORS CORP.

4. Organize or mark the components so they can be installed in the same location from which they were removed. The active fuel management lifters (4) are installed into the guide by aligning the notched area of the guide (1) with the raised surface on the side of the lifter (2). Refer to **Separating Parts** .

OIL FILTER REMOVAL

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

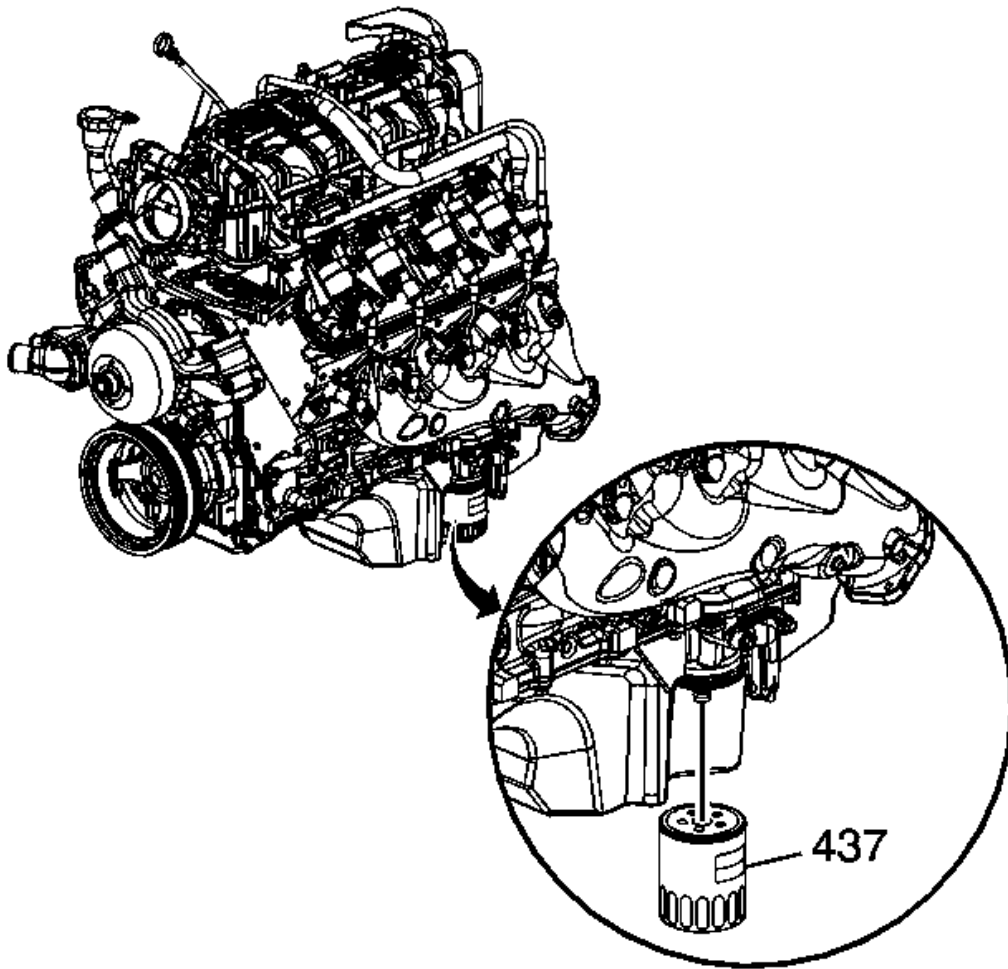


Fig. 244: View Of Engine Oil Filter
Courtesy of GENERAL MOTORS CORP.

1. Remove the oil filter (437).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

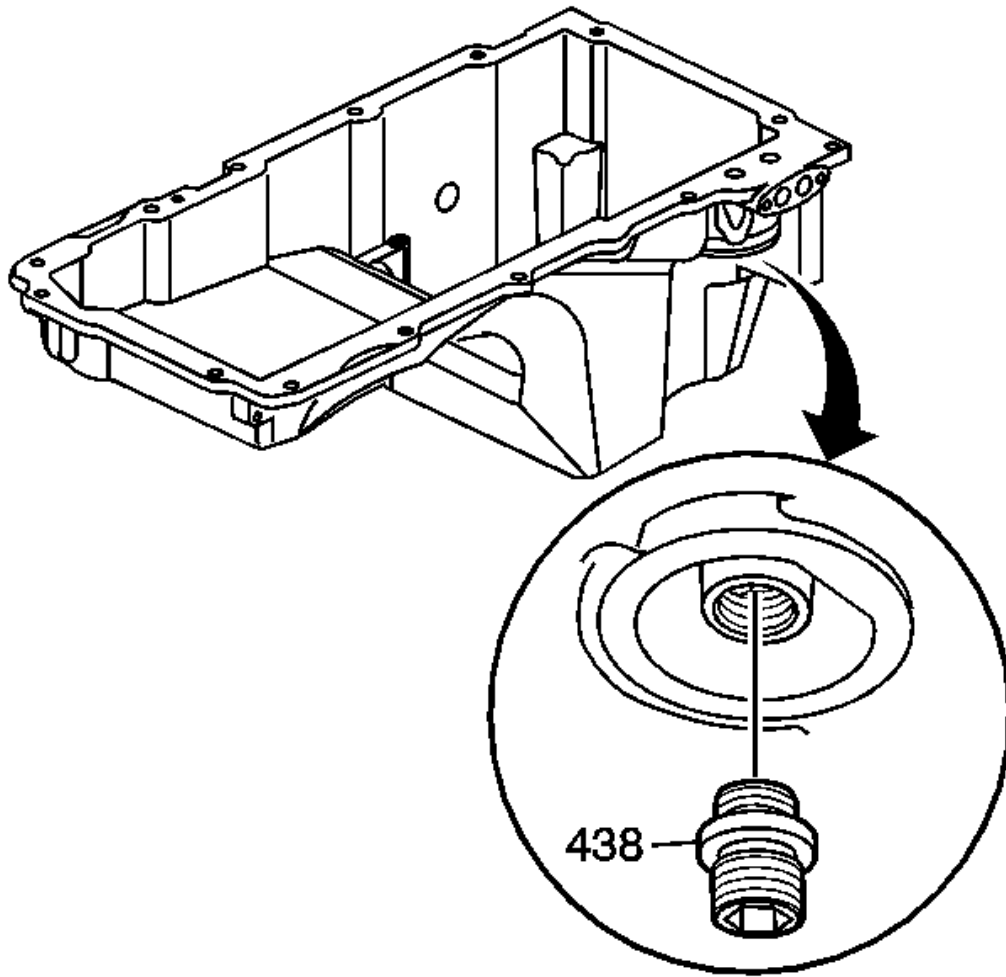


Fig. 245: View Of Oil Filter Fitting
Courtesy of GENERAL MOTORS CORP.

2. Remove the oil filter fitting (438).

OIL PAN REMOVAL

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

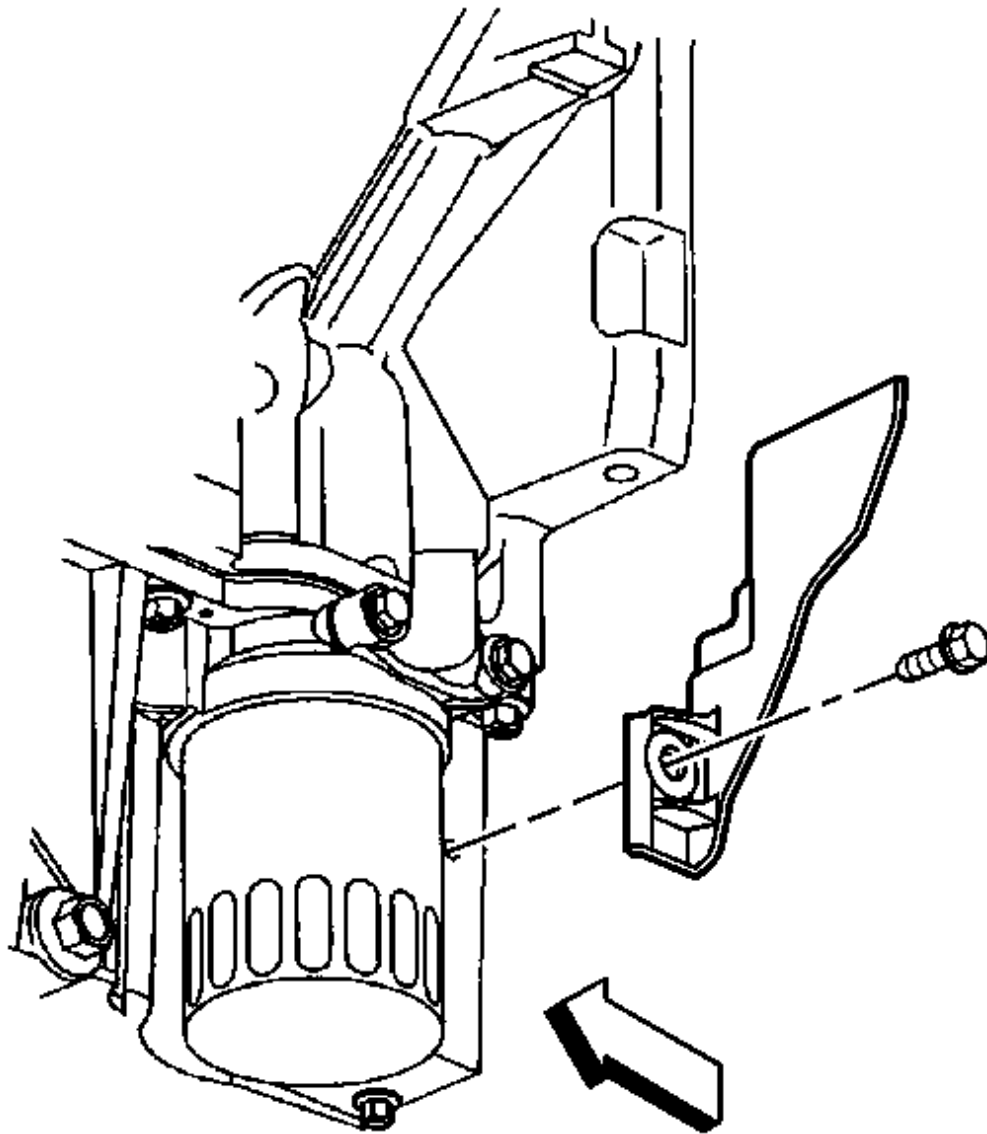


Fig. 246: View Of Left Closeout Cover & Bolt
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- The original oil pan gasket is retained and aligned to the oil pan by rivets. When installing a new gasket, it is not necessary to install new oil pan gasket rivets.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- **DO NOT** use the oil pan gasket again. When installing the oil pan, install a **NEW** oil pan gasket.
- It is not necessary to remove the oil level indicator switch prior to oil pan removal. Remove the oil level indicator switch, if service is required.

1. Remove the left closeout cover and bolt.

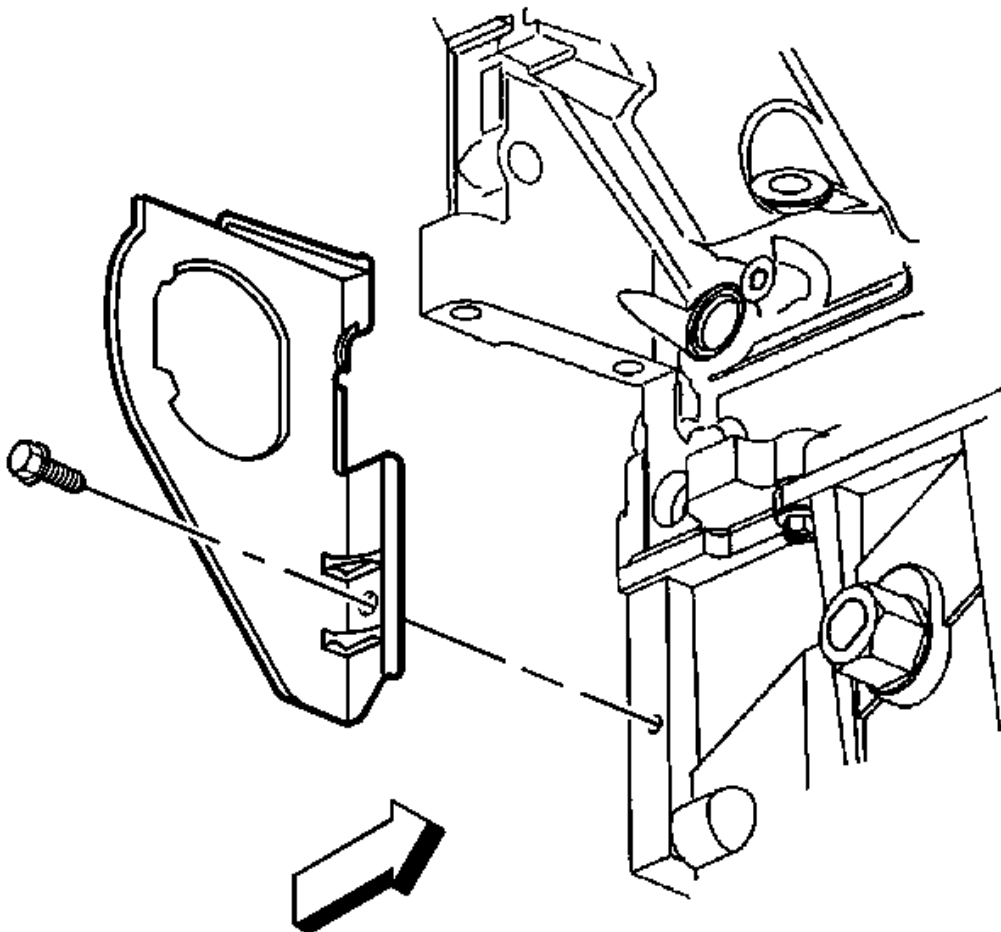


Fig. 247: View Of Right Closeout Cover & Bolt
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Remove the right closeout cover and bolt.

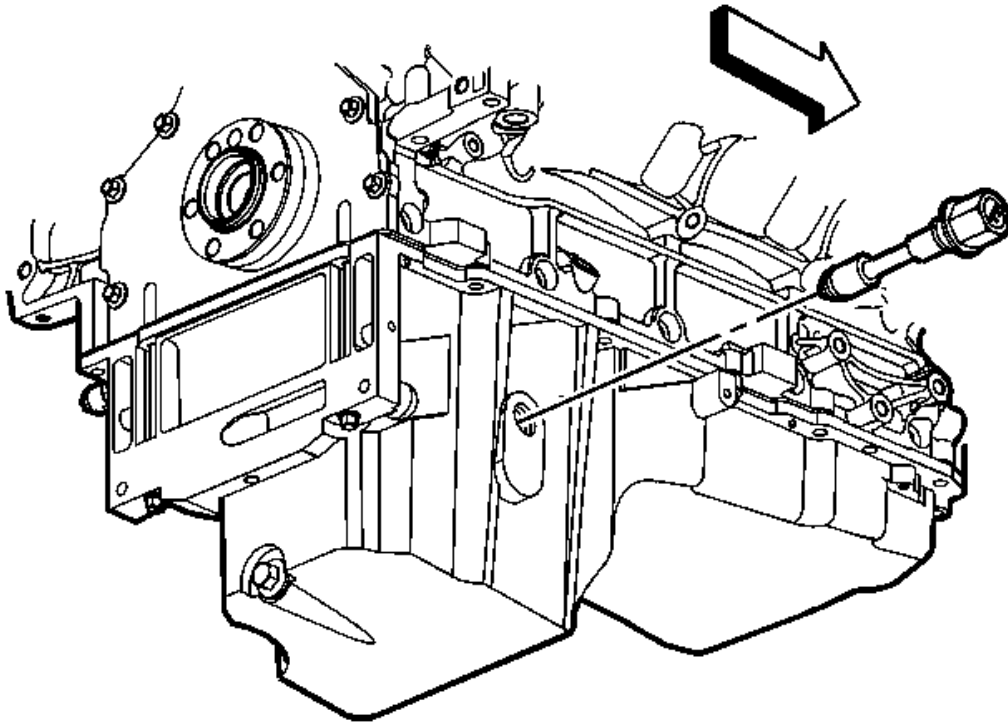


Fig. 248: View Of Oil Level Sensor
Courtesy of GENERAL MOTORS CORP.

3. Remove the oil indicator switch from the oil pan, if required.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

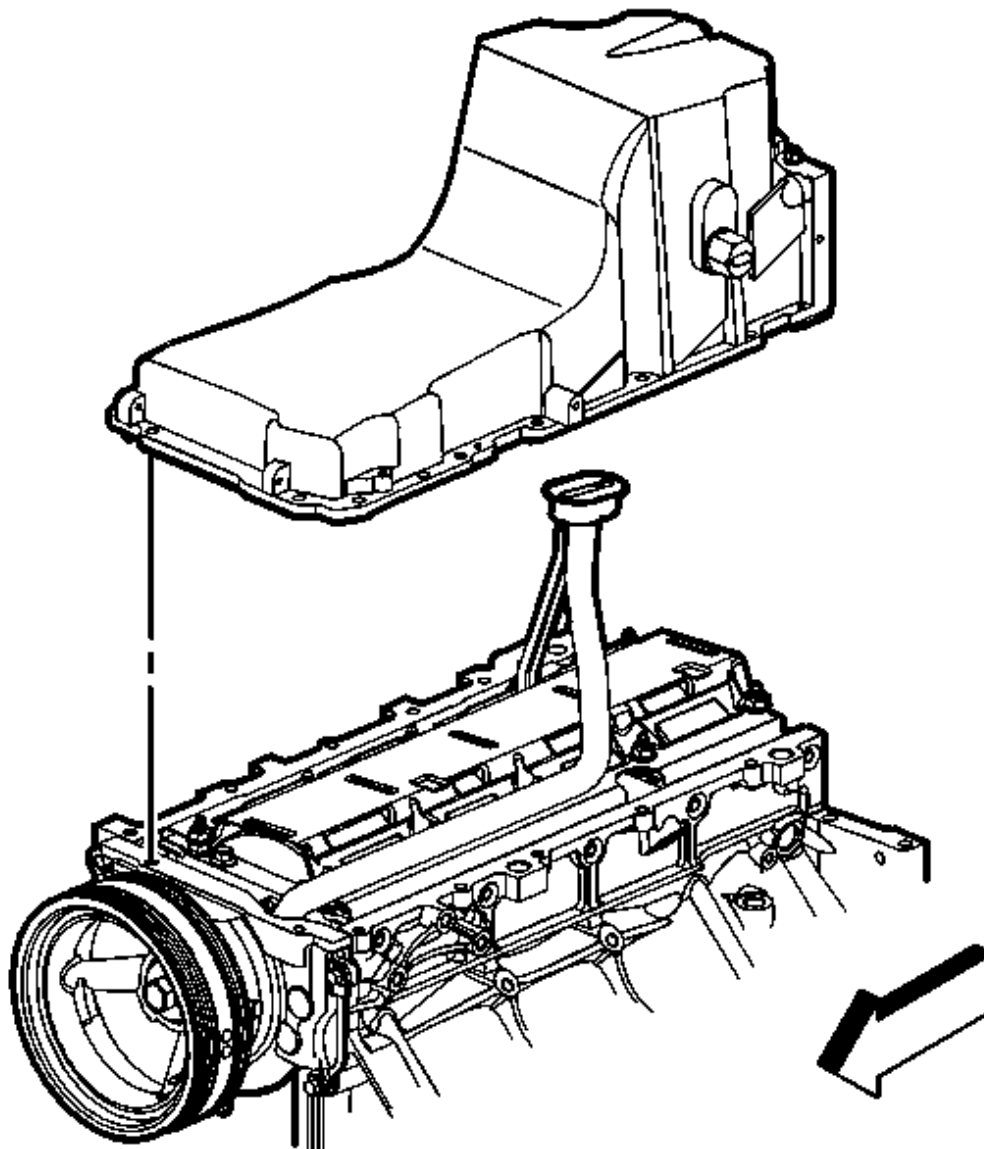


Fig. 249: View Of Oil Pan
Courtesy of GENERAL MOTORS CORP.

4. Remove the oil pan bolts.
5. Remove the oil pan.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

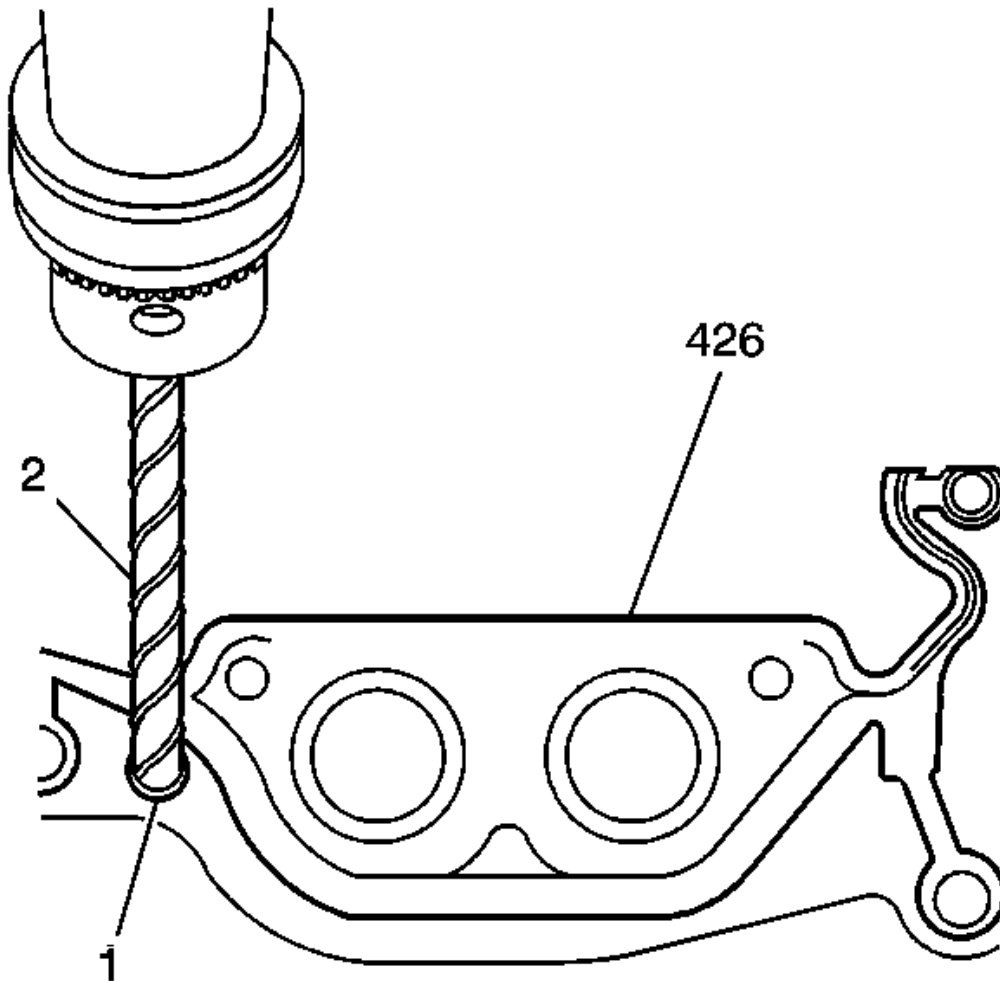


Fig. 250: Drilling Out Oil Pan Gasket Retaining Rivets
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- **DO NOT** allow foreign material to enter the oil passages of the oil pan. Cap or cover the openings, as required.
- Use care not to gouge, score, or damage the oil pan sealing surface.

6. Drill (2) out the oil pan gasket retaining rivets (1), if required.

7. Remove the gasket (426) from the pan.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

8. Discard the gasket and rivets.

ENGINE FRONT COVER REMOVAL (RPO LY2/LH6/LMG/LY5/LC9)

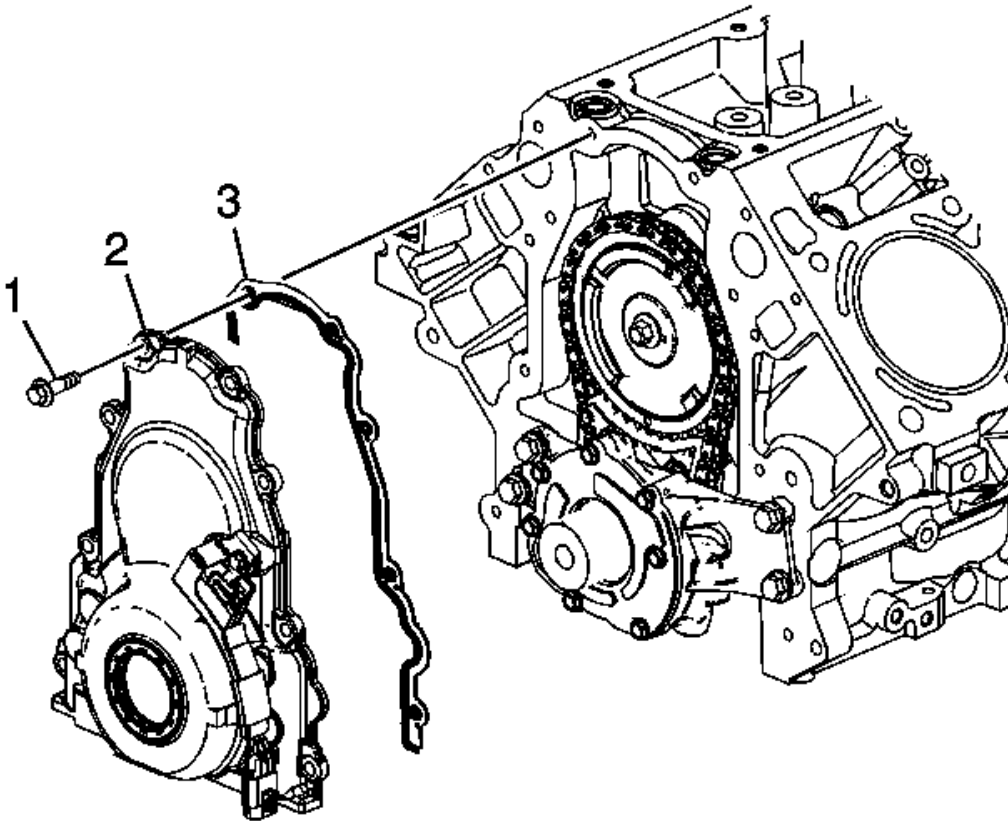


Fig. 251: View Of Front Cover & Gasket
Courtesy of GENERAL MOTORS CORP.

1. Remove the front cover bolts (1).
2. Remove the front cover (2) and gasket (3).
3. Discard the front cover gasket.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

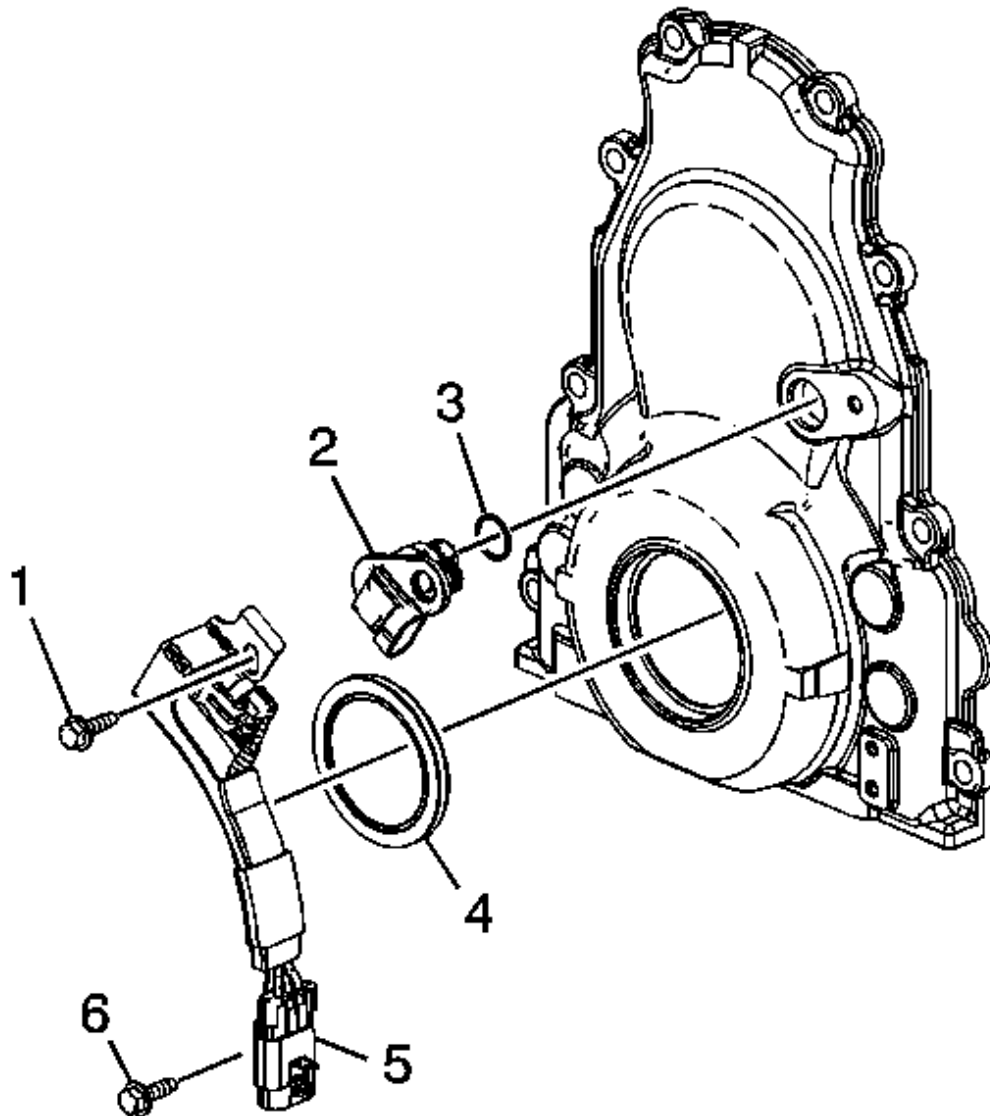


Fig. 252: View Of Front Cover, Oil Seal, Camshaft Position Sensor, Bracket & O Ring

Courtesy of GENERAL MOTORS CORP.

4. Remove the oil seal (4).
5. Remove the bolts (1, 6), camshaft position (CMP) sensor (2), and wire harness (5).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

6. Remove the O-ring (3) from the sensor, as required.

ENGINE FRONT COVER REMOVAL (RPO LY6/L76/L92)

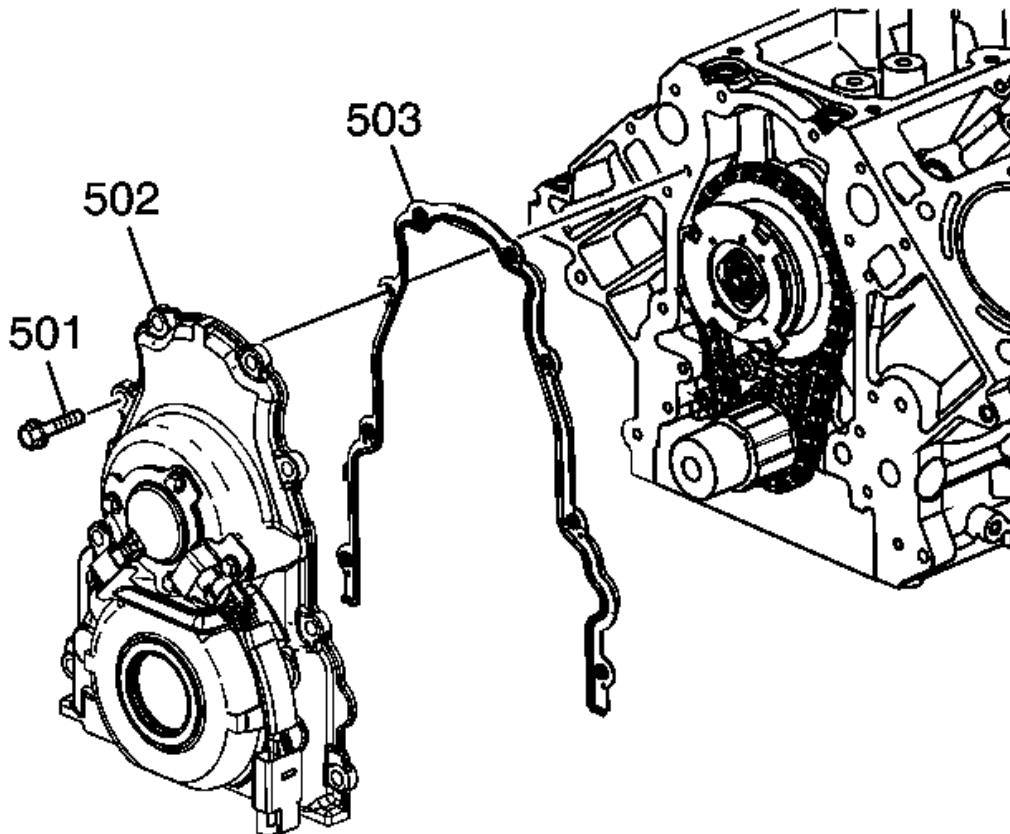


Fig. 253: View Of Front Cover, Bolts & Gasket
Courtesy of GENERAL MOTORS CORP.

1. Remove the front cover bolts (501).
2. Remove the front cover (502) and gasket (503).
3. Discard the front cover gasket.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

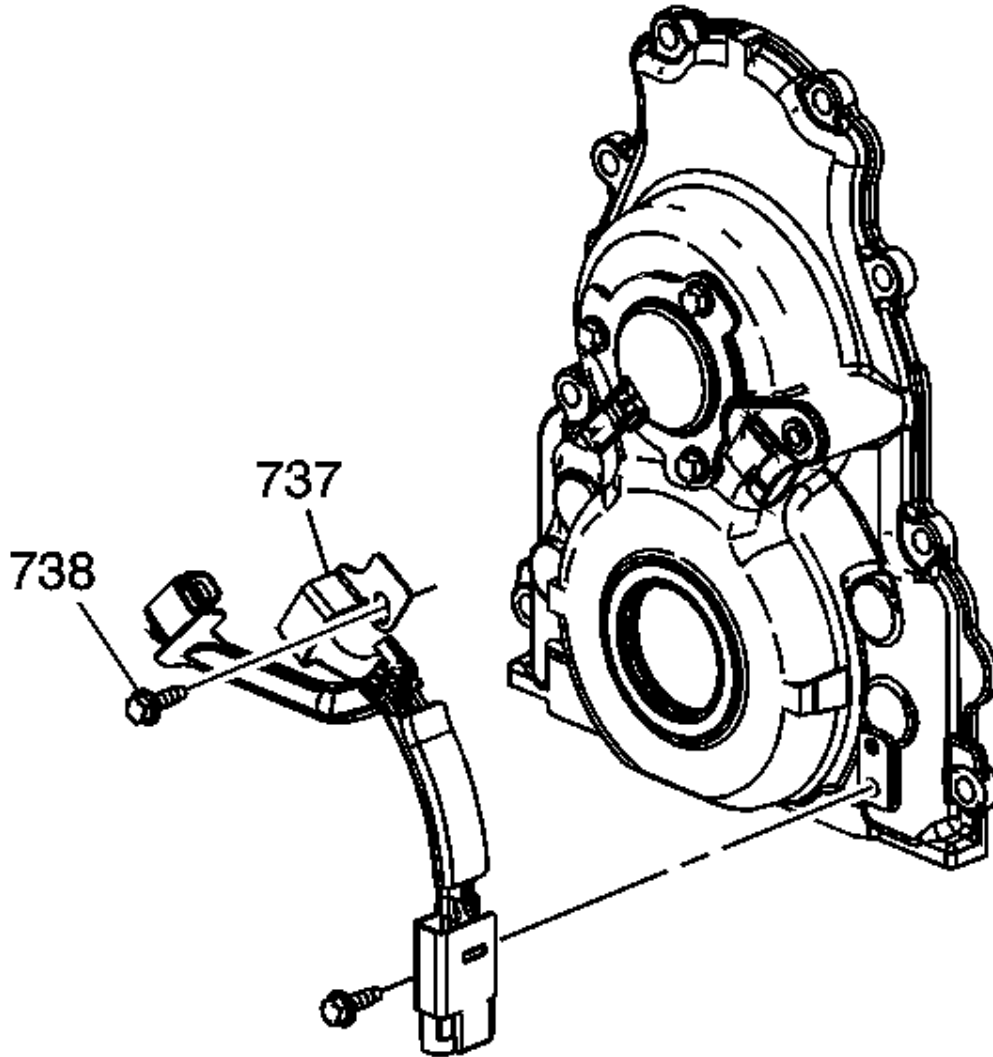


Fig. 254: View Of CMP Sensor Wire Harness & Bolts
Courtesy of GENERAL MOTORS CORP.

4. Remove the camshaft position (CMP) sensor wire harness (737) and bolts (738).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

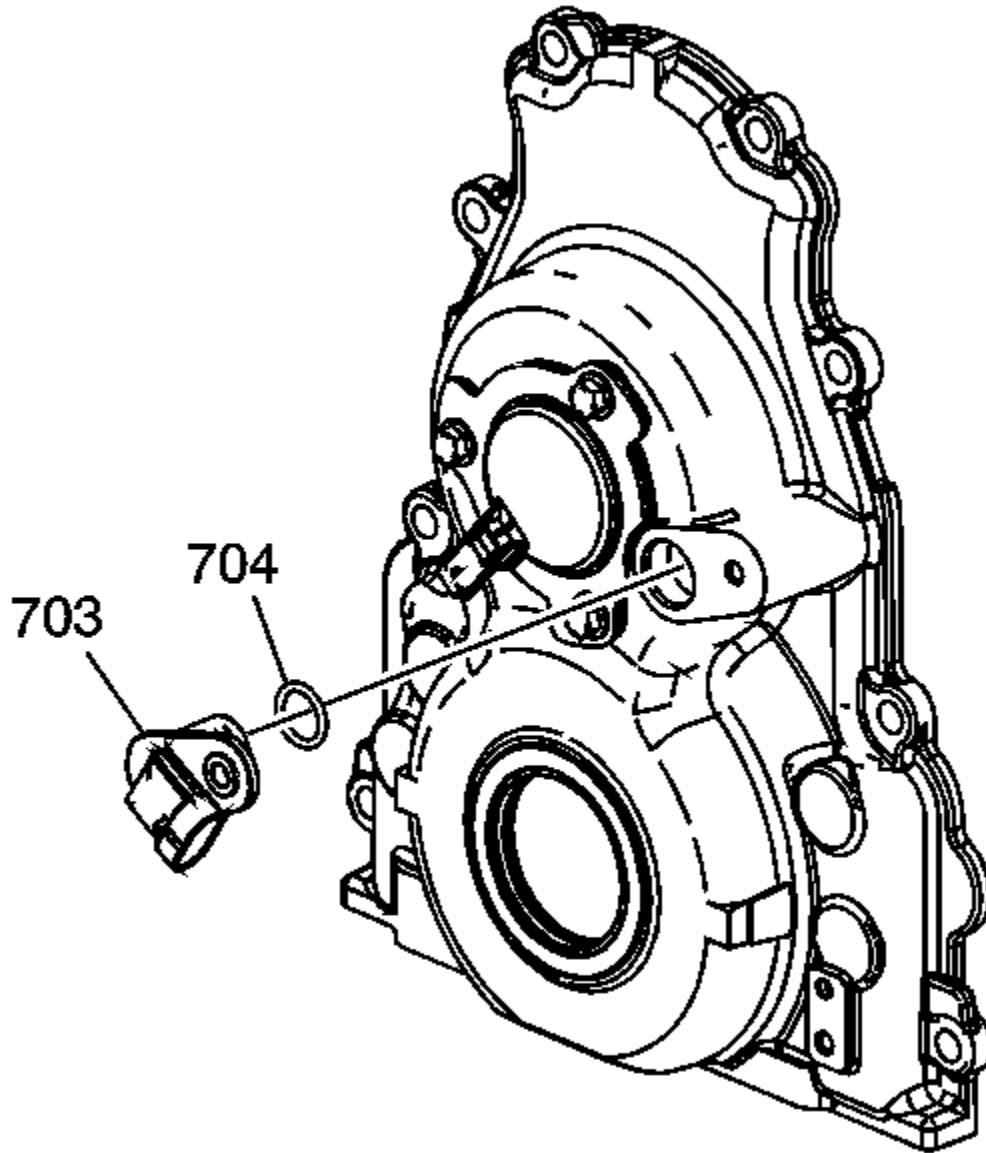


Fig. 255: View Of CMP Sensor & O-Ring
Courtesy of GENERAL MOTORS CORP.

5. Remove the CMP sensor (703).
6. Remove the O-ring (704) from the sensor, as required.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

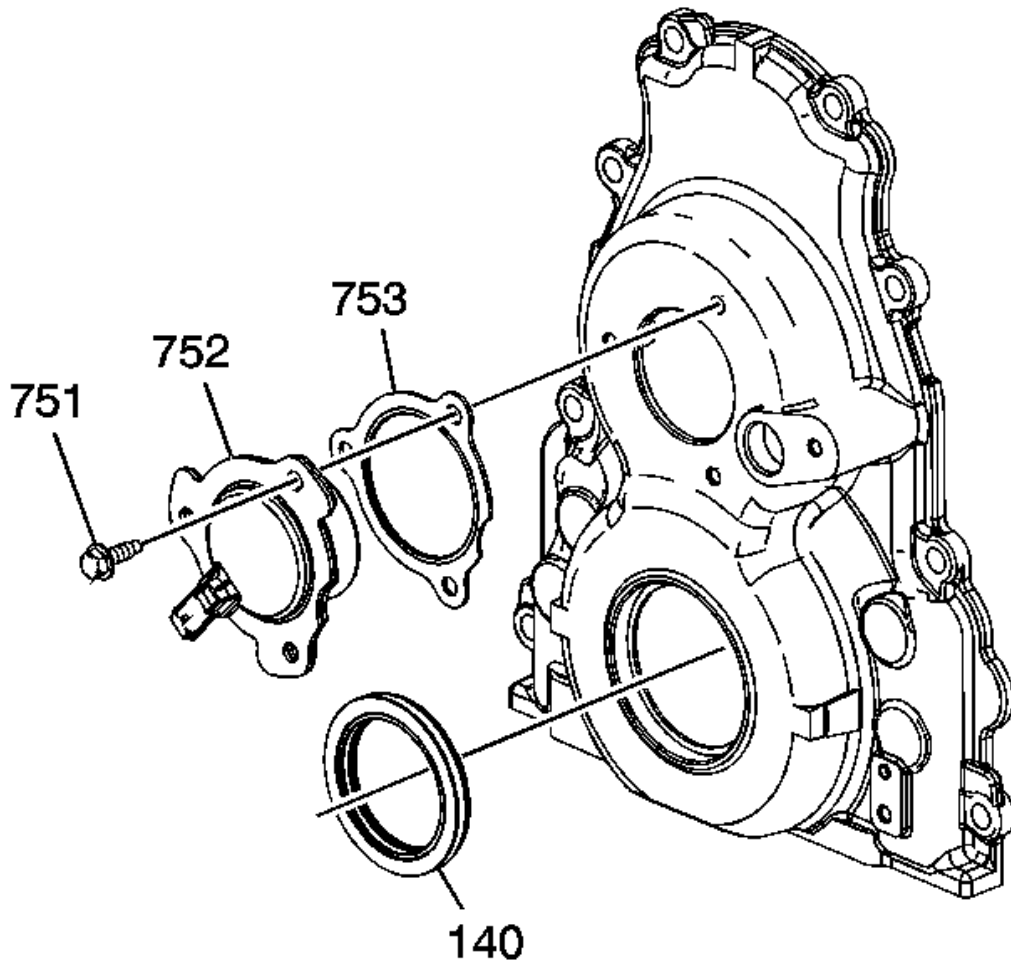


Fig. 256: View Of CMP Actuator Magnet, Bolts, Gasket & Oil Seal
Courtesy of GENERAL MOTORS CORP.

7. Remove the CMP actuator magnet (752), bolts (751), and gasket (753).
8. Remove the oil seal (140).

CRANKSHAFT REAR OIL SEAL HOUSING REMOVAL

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

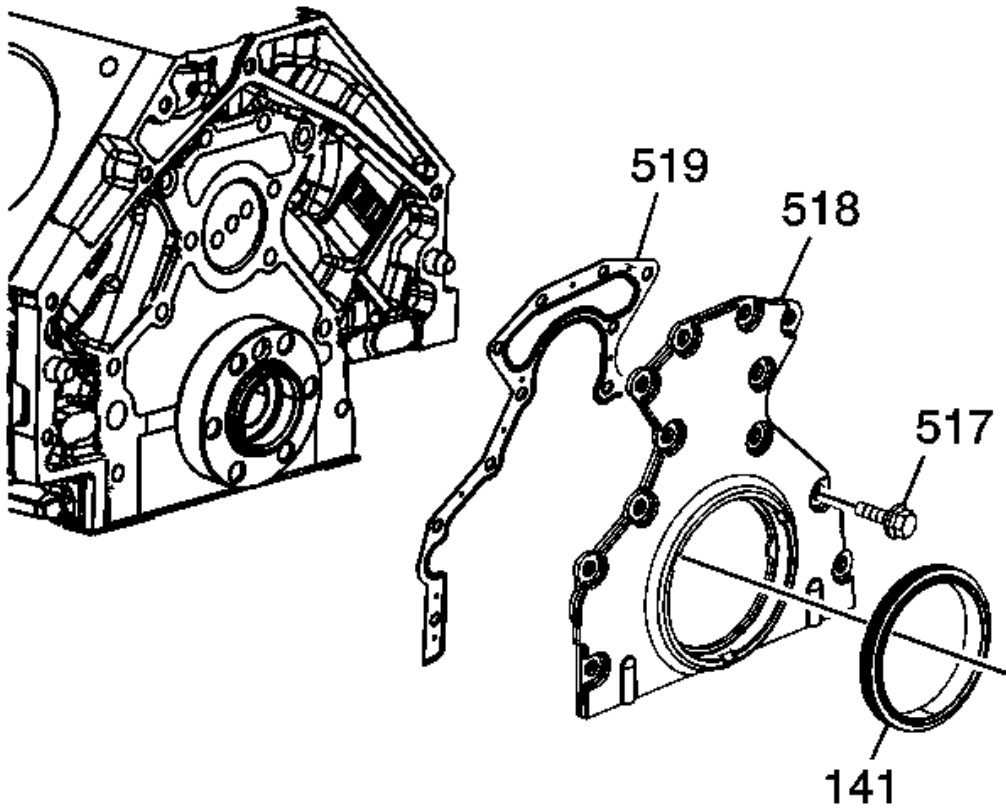


Fig. 257: View of Rear Housing, Gasket and Seal
Courtesy of GENERAL MOTORS CORP.

1. Remove the rear oil seal housing bolts (517).
2. Remove the housing (518) and gasket (519).
3. Remove the rear oil seal (141).

**OIL PUMP, SCREEN AND CRANKSHAFT OIL DEFLECTOR REMOVAL (RPO
LY2/LH6/LMG/LY5/LC9)**

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

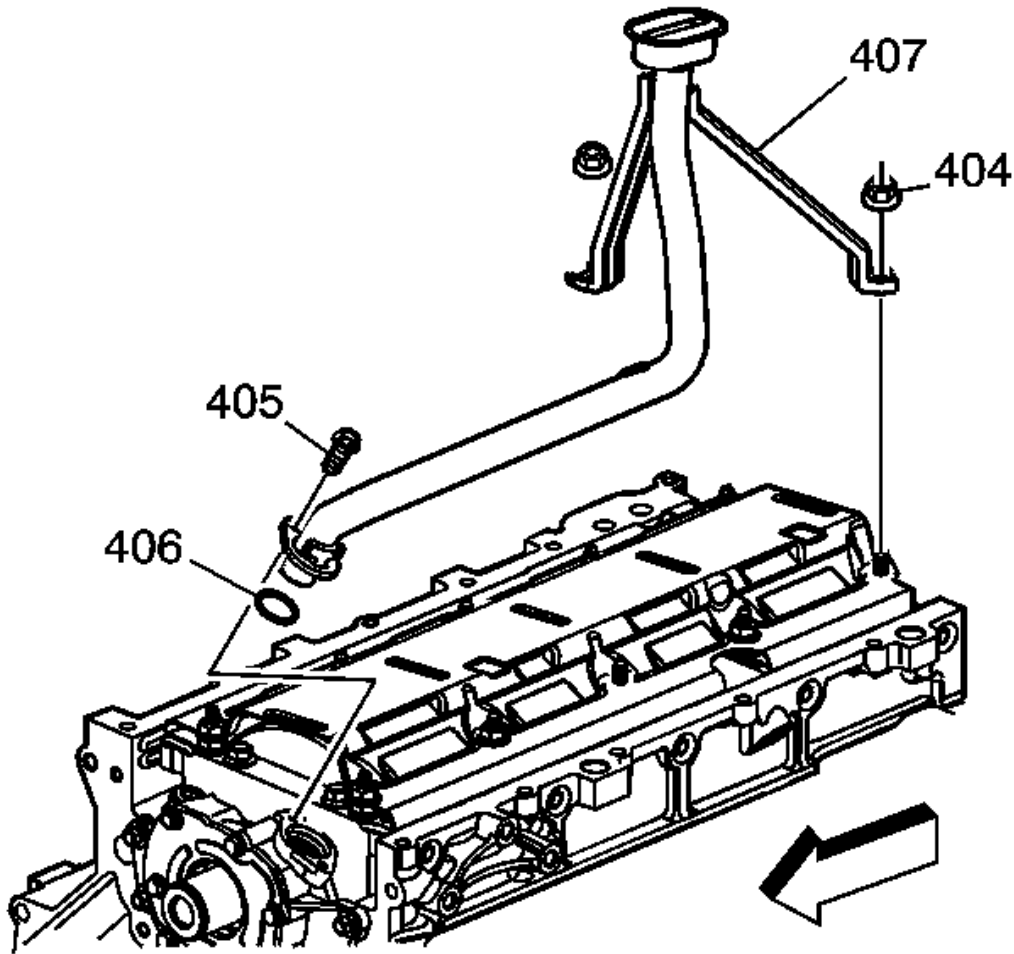


Fig. 258: View Of Oil Pump Screen, Bolt, Nuts, & O-Ring Seal
Courtesy of GENERAL MOTORS CORP.

1. Remove the oil pump screen bolt (405) and nuts (404).
2. Remove the oil pump screen (407) with O-ring seal (406).
3. Remove the O-ring seal from the pump screen.
4. Discard the O-ring seal.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

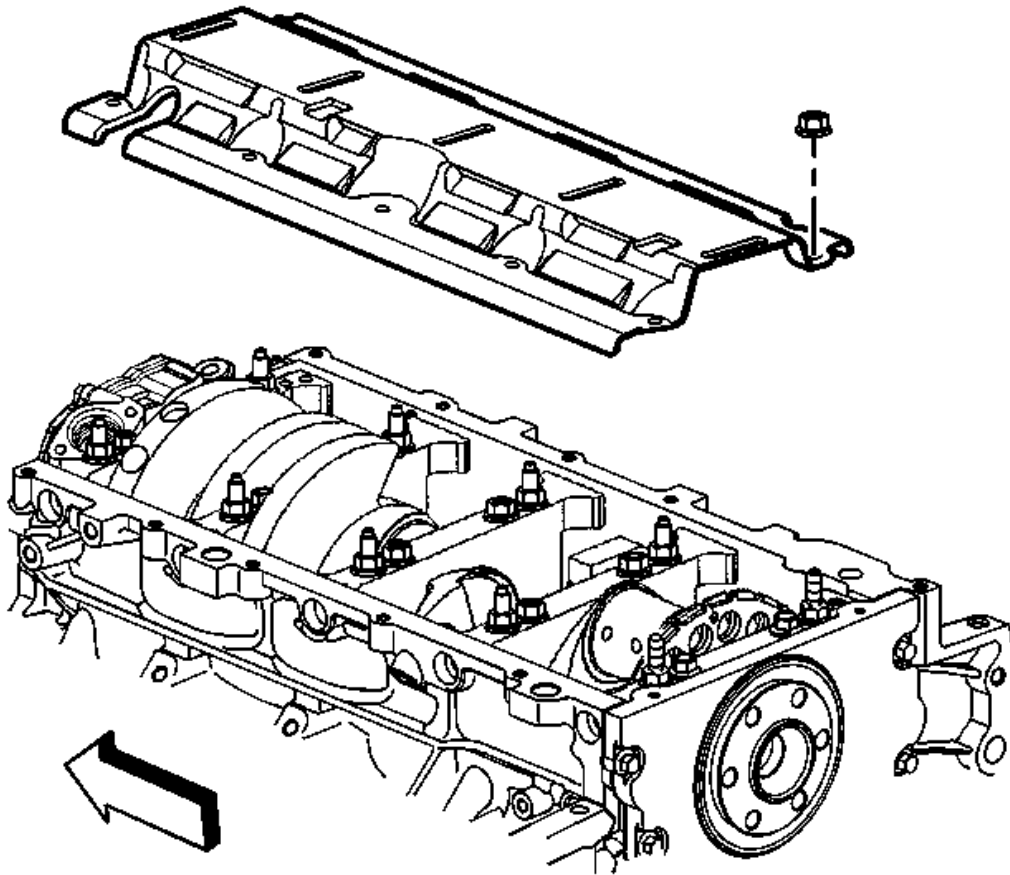


Fig. 259: View Of Crankshaft Oil Deflector
Courtesy of GENERAL MOTORS CORP.

5. Remove the remaining crankshaft oil deflector nuts.
6. Remove the crankshaft oil deflector.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

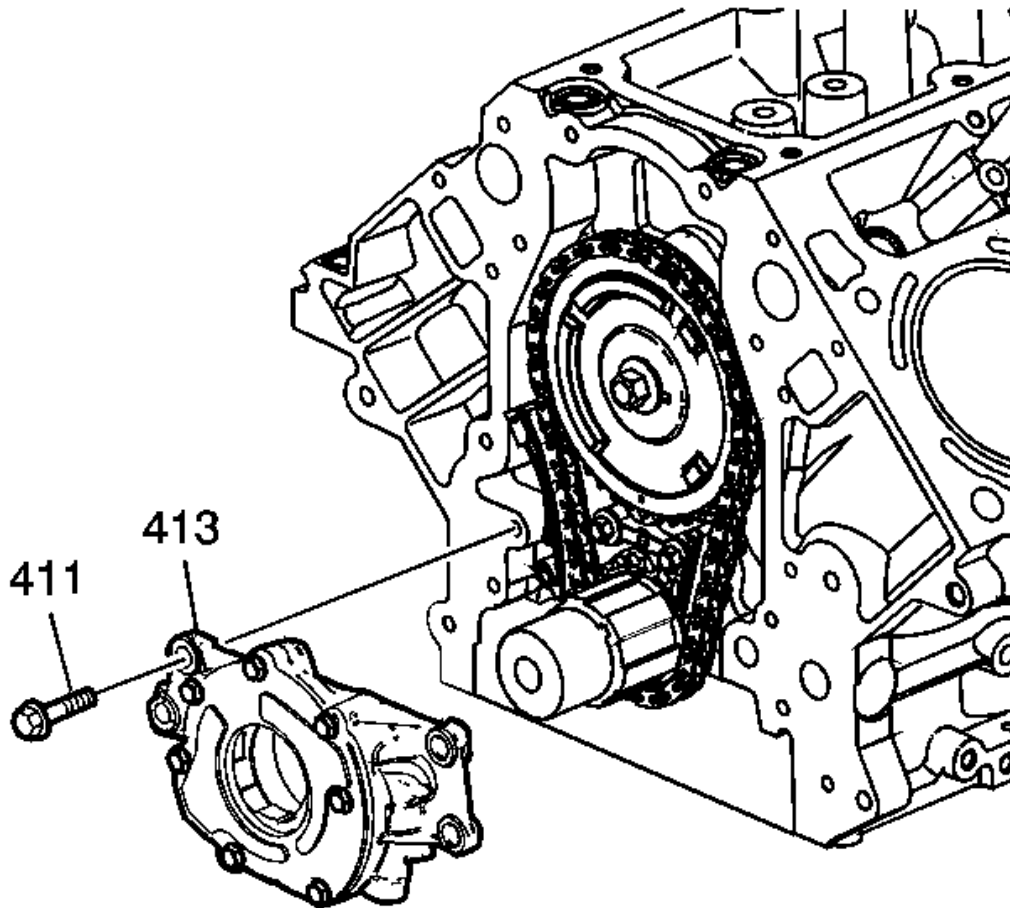


Fig. 260: View Of Oil Pump & Bolts
Courtesy of GENERAL MOTORS CORP.

7. Remove the oil pump bolts (411).

**IMPORTANT: Do not allow dirt or debris to enter the oil pump assembly.
Cap ends, as necessary.**

8. Remove the oil pump (413).

OIL PUMP, SCREEN AND CRANKSHAFT OIL DEFLECTOR REMOVAL (RPO LY6/L76/L92)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

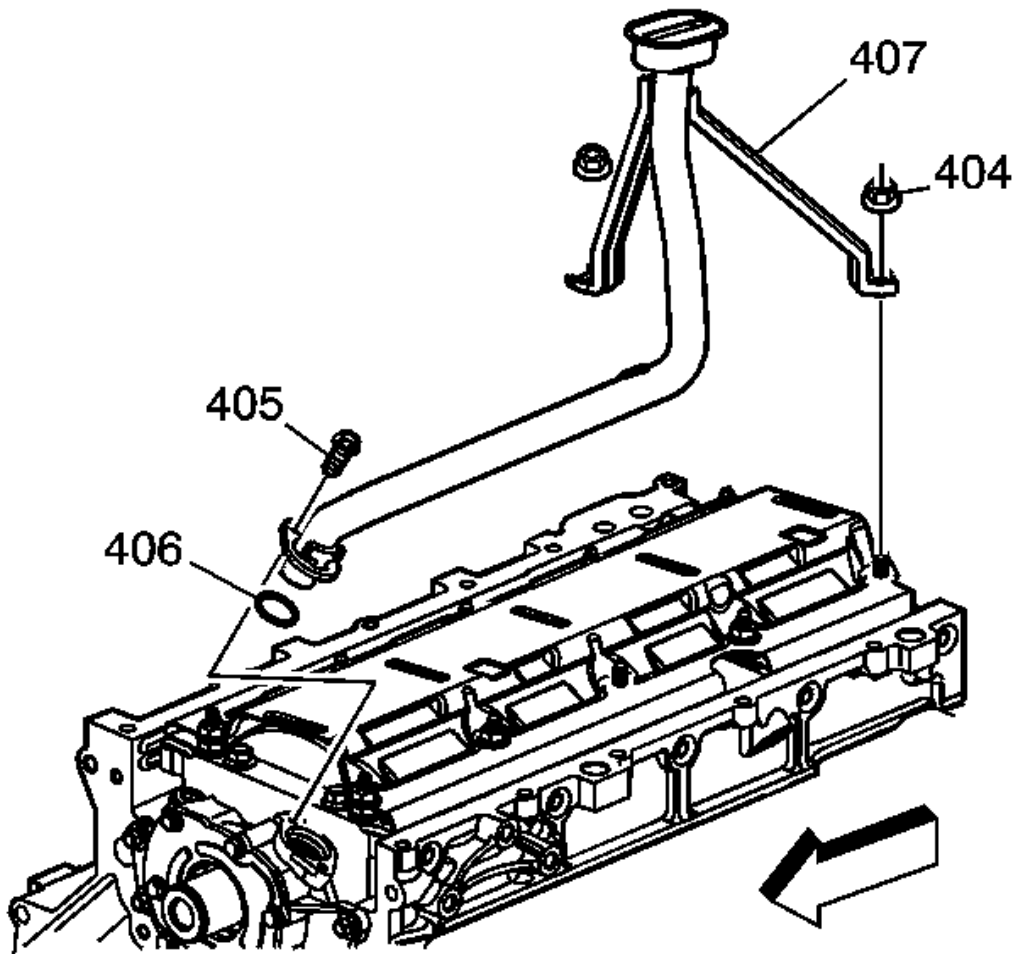


Fig. 261: View Of Oil Pump Screen, Bolt, Nuts, & O-Ring Seal
Courtesy of GENERAL MOTORS CORP.

1. Remove the oil pump screen bolt (405) and nuts (404).
2. Remove the oil pump screen (407) with O-ring seal (406).
3. Remove the O-ring seal from the pump screen.
4. Discard the O-ring seal.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

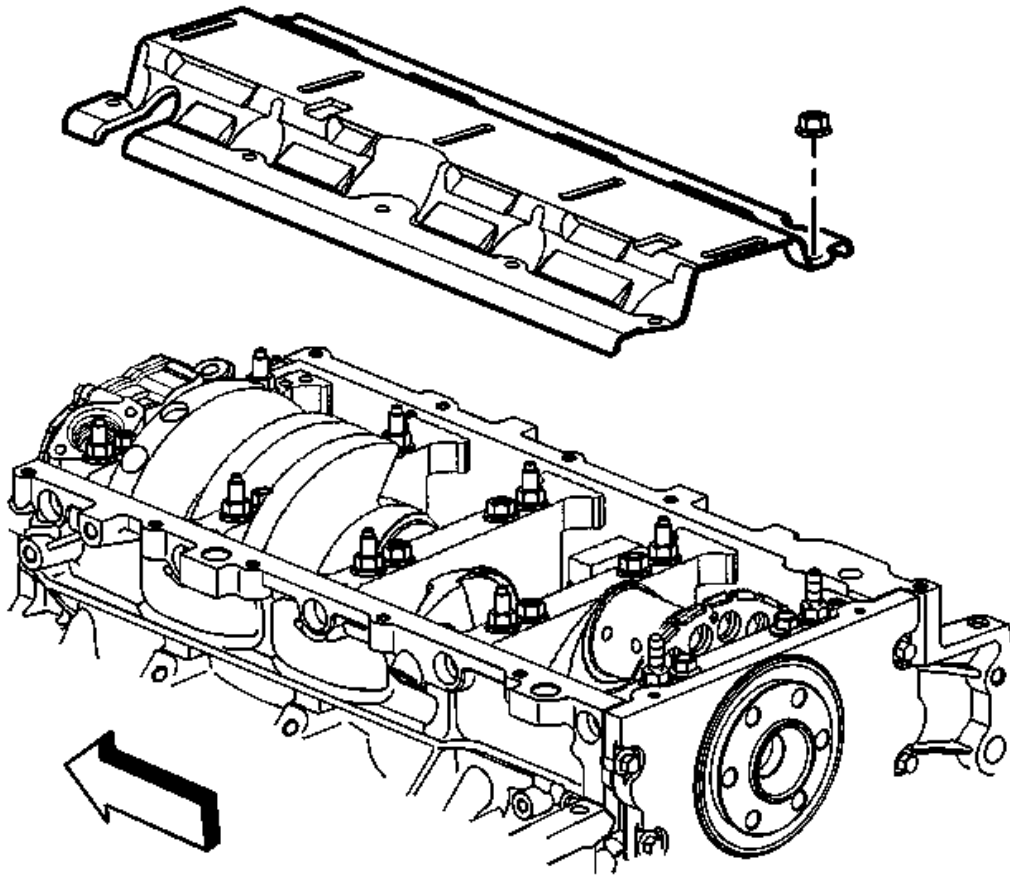


Fig. 262: View Of Crankshaft Oil Deflector
Courtesy of GENERAL MOTORS CORP.

5. Remove the remaining crankshaft oil deflector nuts.
6. Remove the crankshaft oil deflector.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

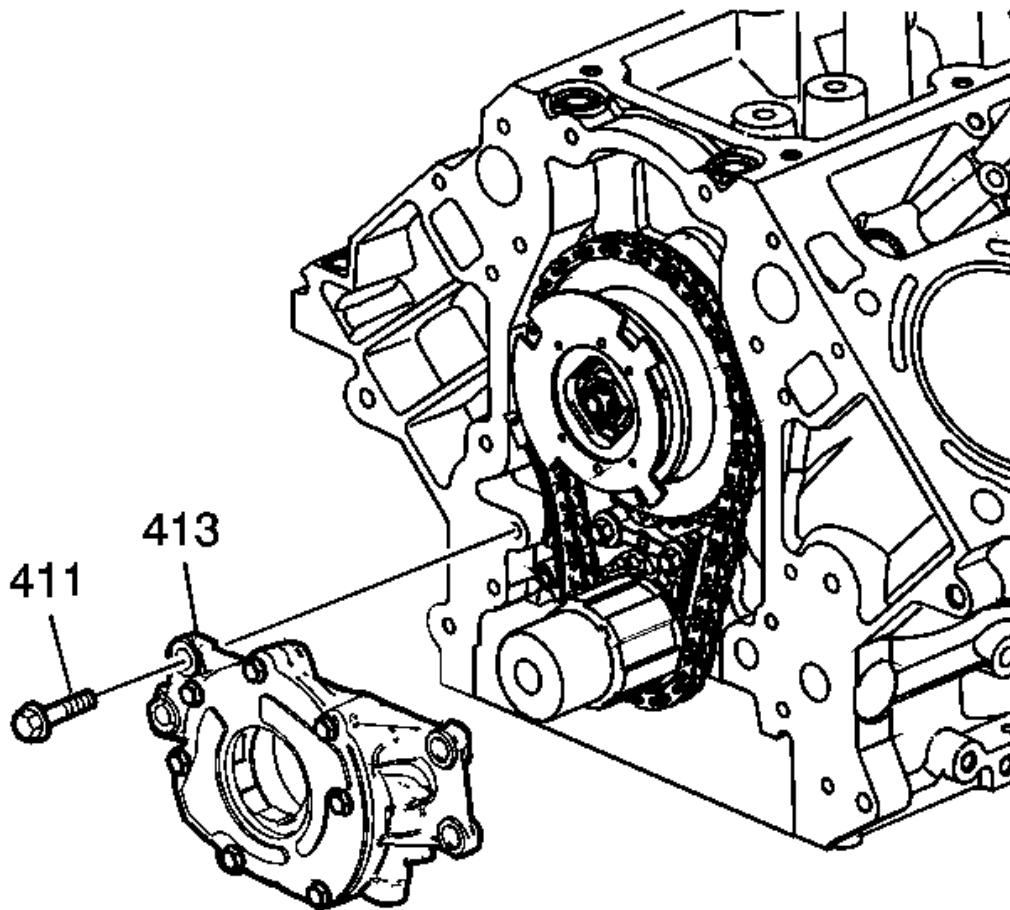


Fig. 263: View Of Oil Pump & Bolts
Courtesy of GENERAL MOTORS CORP.

7. Remove the oil pump bolts (411).

**IMPORTANT: Do not allow dirt or debris to enter the oil pump assembly.
Cap ends, as necessary.**

8. Remove the oil pump (413).

TIMING CHAIN AND SPROCKETS REMOVAL

Tools Required

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- **J 8433** Two Jaw Puller. See Special Tools .
- **J 41558** Crankshaft Sprocket Remover. See Special Tools .
- **J 41816-2** Crankshaft End Protector. See Special Tools .
- **J 42386-A** Flywheel Holding Tool. See Special Tools .

Removal

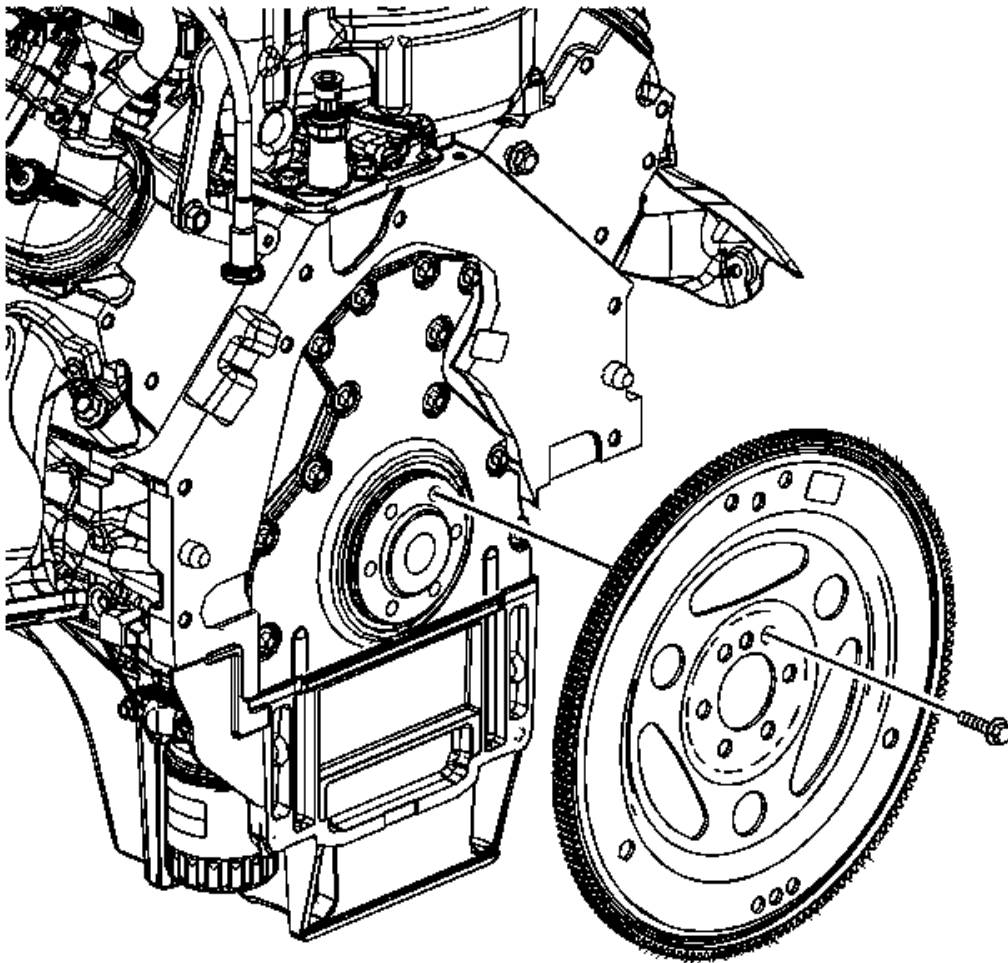


Fig. 264: View Of Flex Plate & Bolts
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

IMPORTANT: Do not apply threadlock to the flex plate bolts at this time.

1. Temporarily install the automatic transmission flex plate and bolts. Refer to [Automatic Transmission Flex Plate Installation](#) .

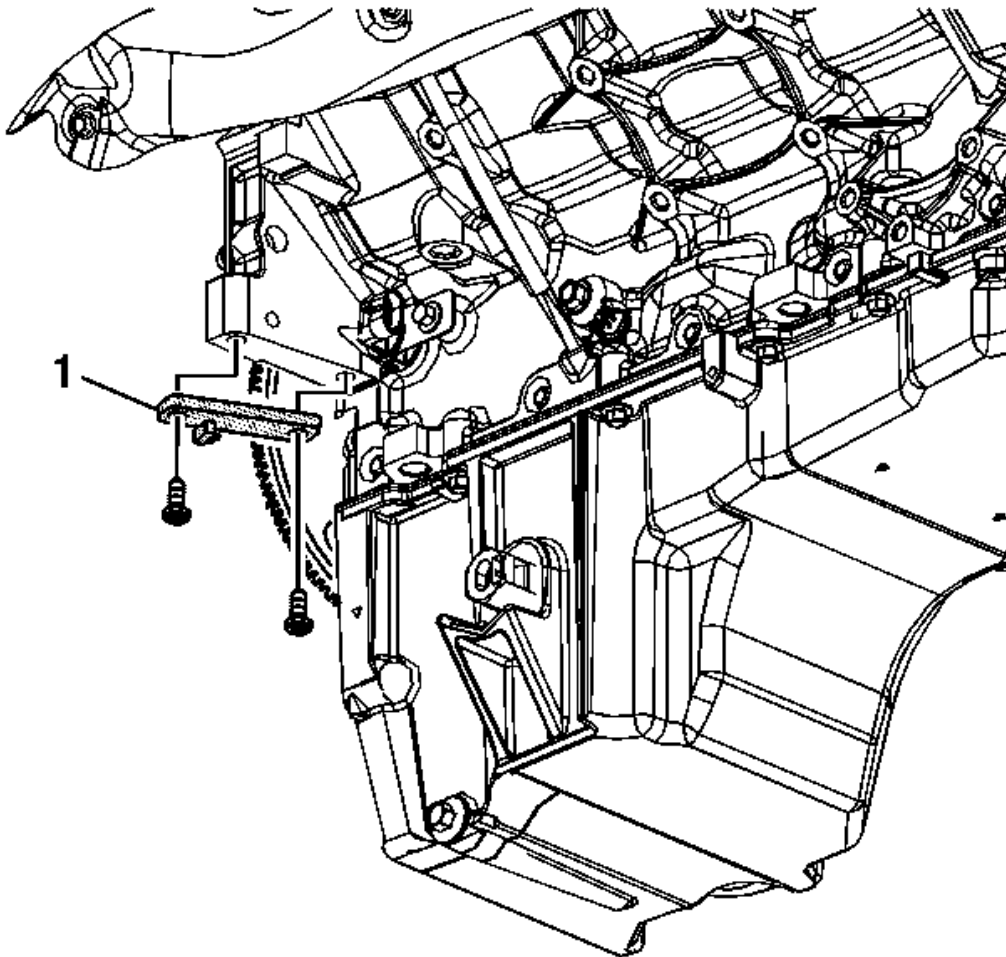


Fig. 265: View Of Special Tool & Bolts
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to [Fastener Notice](#) .

2. Install the **J 42386-A** (1) and bolts. See [Special Tools](#) . Use 1 M10 - 1.5 x 120 mm and 1

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

M10 - 1.5 x 45 mm bolt for proper tool operation.

Tighten: Tighten the **J 42386-A** bolts to 50 N. See **Special Tools .m** (37 lb ft).

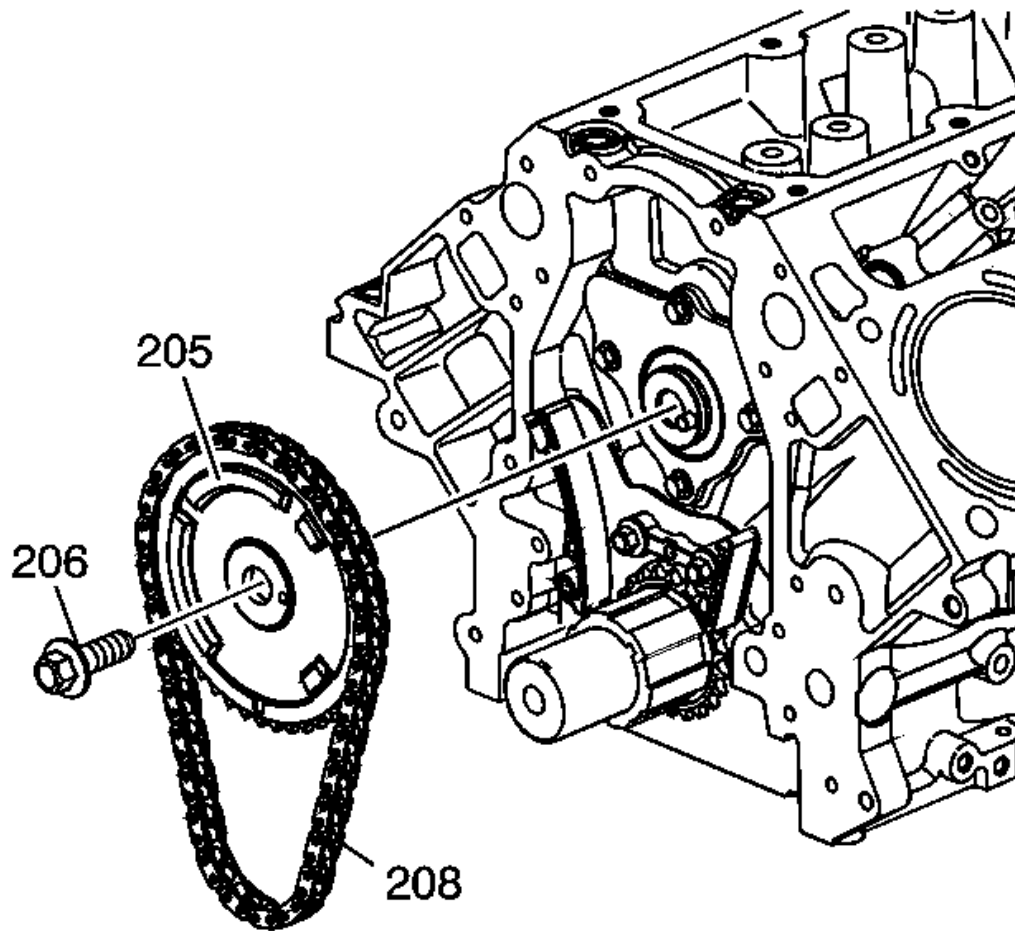


Fig. 266: View Of Camshaft Sprocket, Sprocket Bolt & Timing Chain
Courtesy of GENERAL MOTORS CORP.

NOTE: Do not turn the crankshaft assembly after the timing chain has been removed in order to prevent damage to the piston assemblies or the valves.

3. Remove and discard the camshaft sprocket bolt (206).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

4. Remove the camshaft sprocket (205) and timing chain (208).

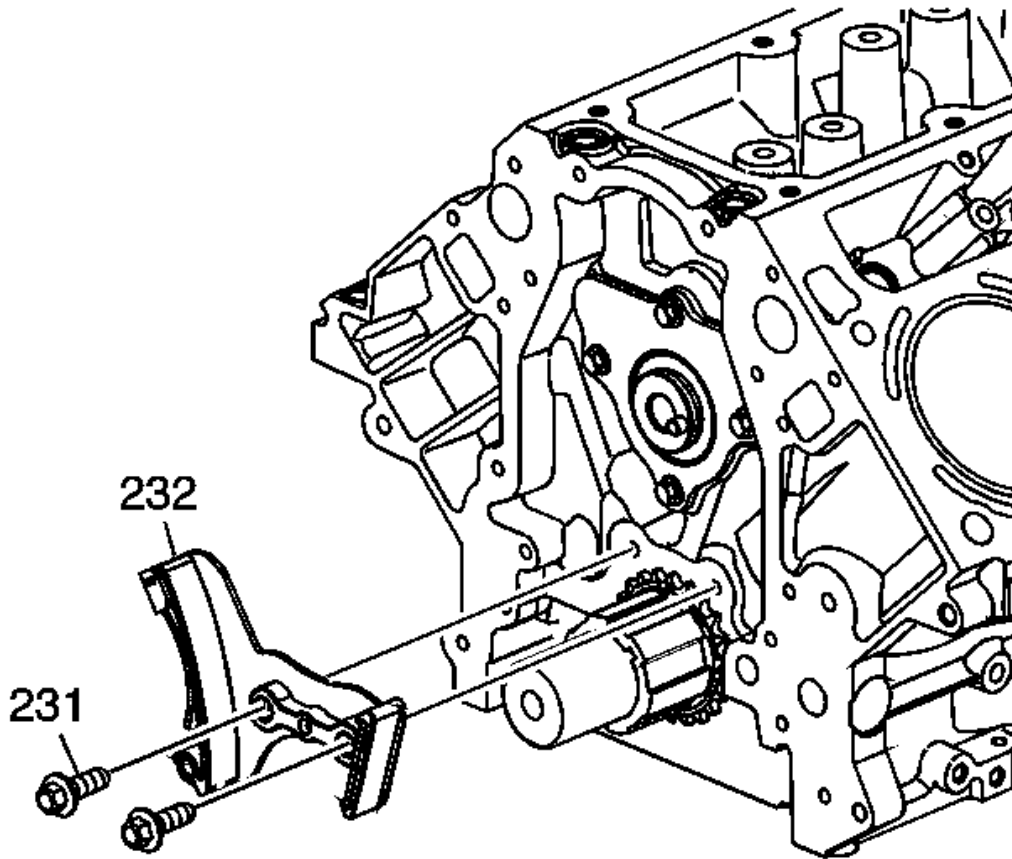


Fig. 267: View Of Timing Chain Tensioner & Bolts
Courtesy of GENERAL MOTORS CORP.

5. Remove the bolts (231) and timing chain tensioner (232).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

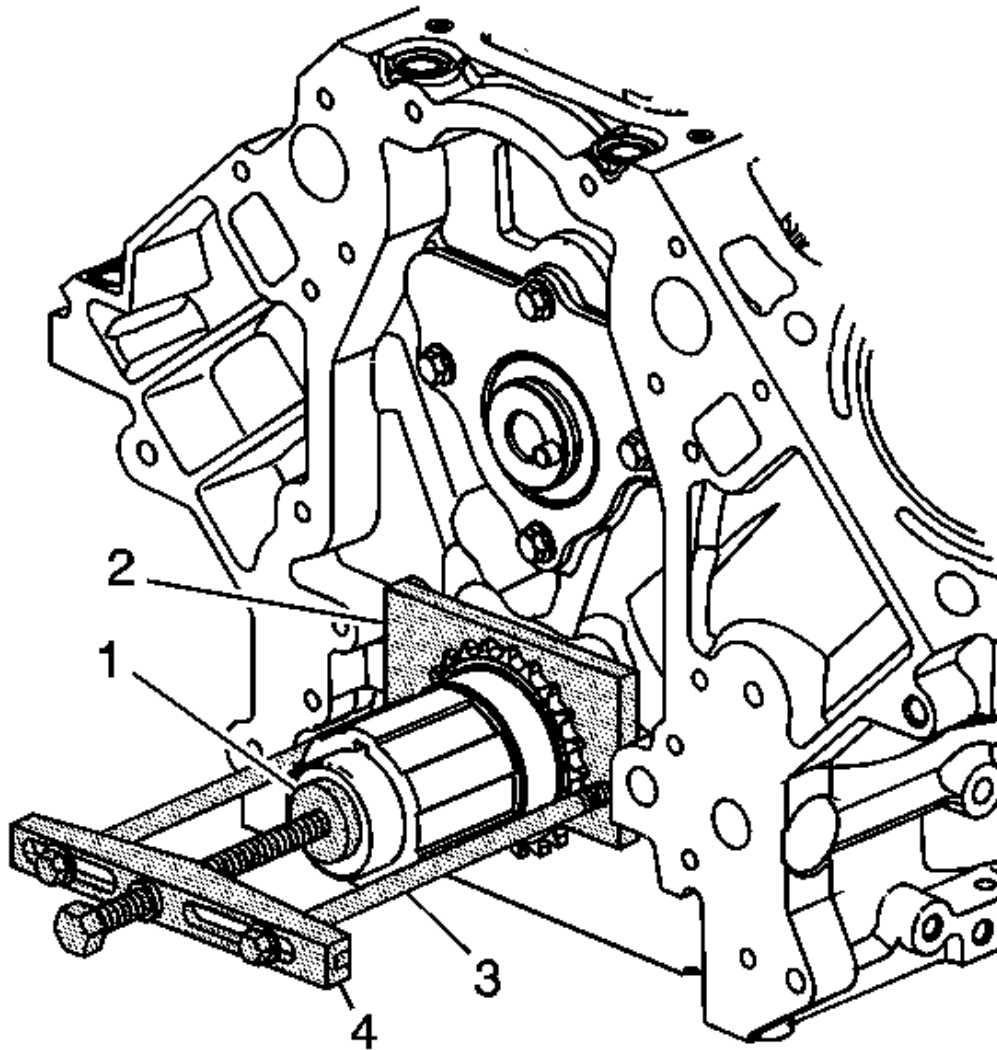


Fig. 268: View Of Crankshaft Sprocket Special Tools
Courtesy of GENERAL MOTORS CORP.

6. Use the **J 41816-2** (1), the **J 41558** (2), bolts (3), and the **J 8433** (4) in order to remove the crankshaft sprocket. See **Special Tools** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

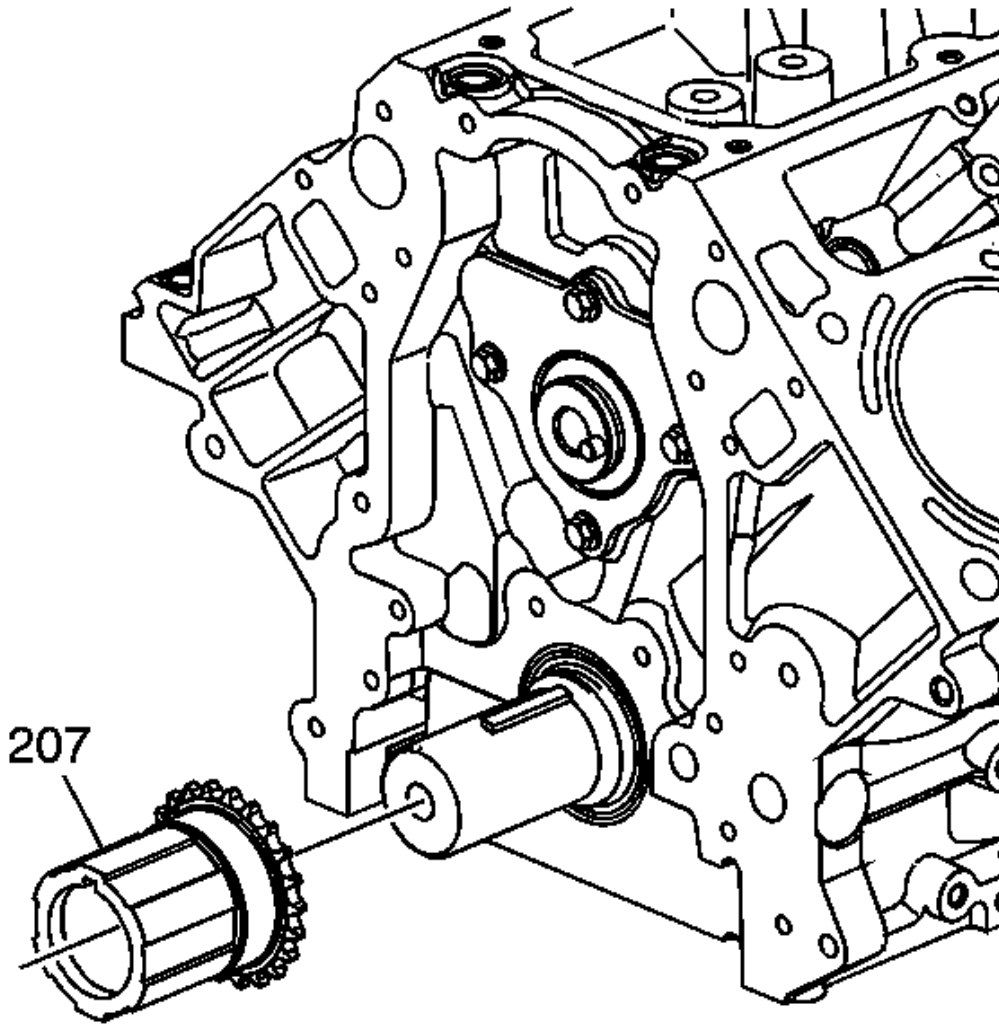


Fig. 269: View Of Crankshaft Sprocket
Courtesy of GENERAL MOTORS CORP.

7. Remove the crankshaft sprocket (207).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

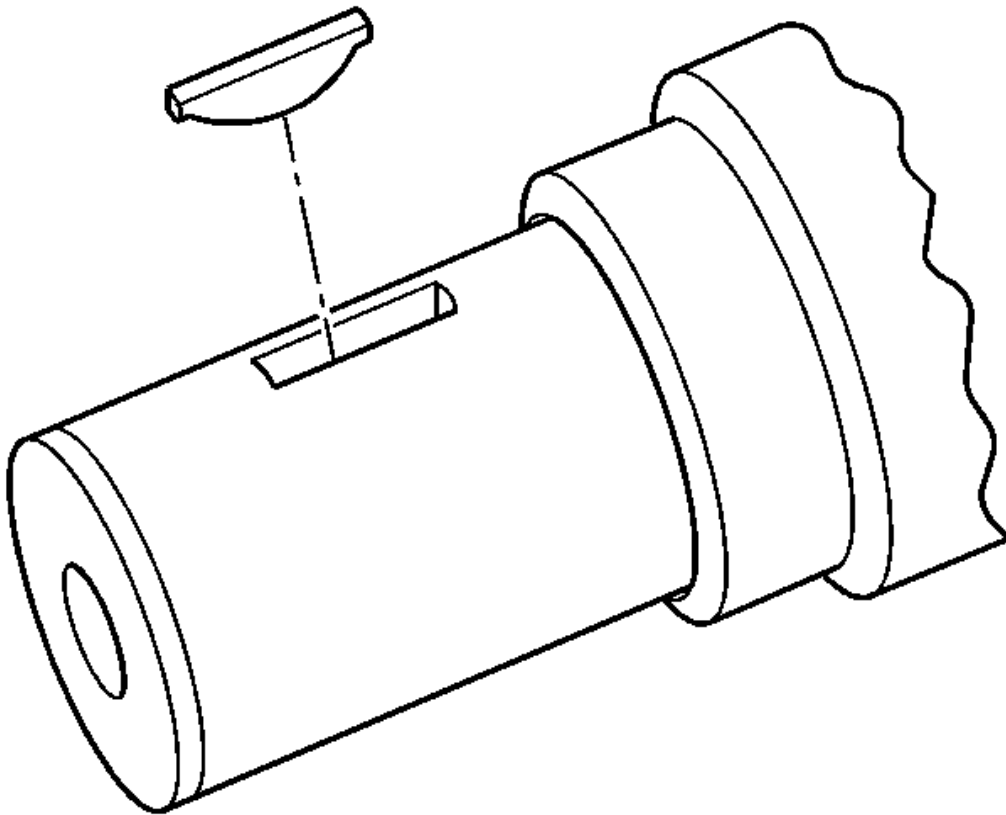


Fig. 270: View Of Crankshaft Key & Keyway
Courtesy of GENERAL MOTORS CORP.

8. Remove the crankshaft sprocket key, as required.
9. Remove the automatic transmission flex plate and bolts. Refer to **Automatic Transmission Flex Plate Removal**.
10. Remove the **J 42386-A** and bolts. See **Special Tools** .

CAMSHAFT POSITION ACTUATOR AND SOLENOID VALVE REMOVAL

Tools Required

- **J 8433** Two Jaw Puller. See **Special Tools** .
- **J 41558** Crankshaft Sprocket Remover. See **Special Tools** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- **J 41816-2** Crankshaft End Protector. See Special Tools .
- **J 42386-A** Flywheel Holding Tool. See Special Tools .

Removal

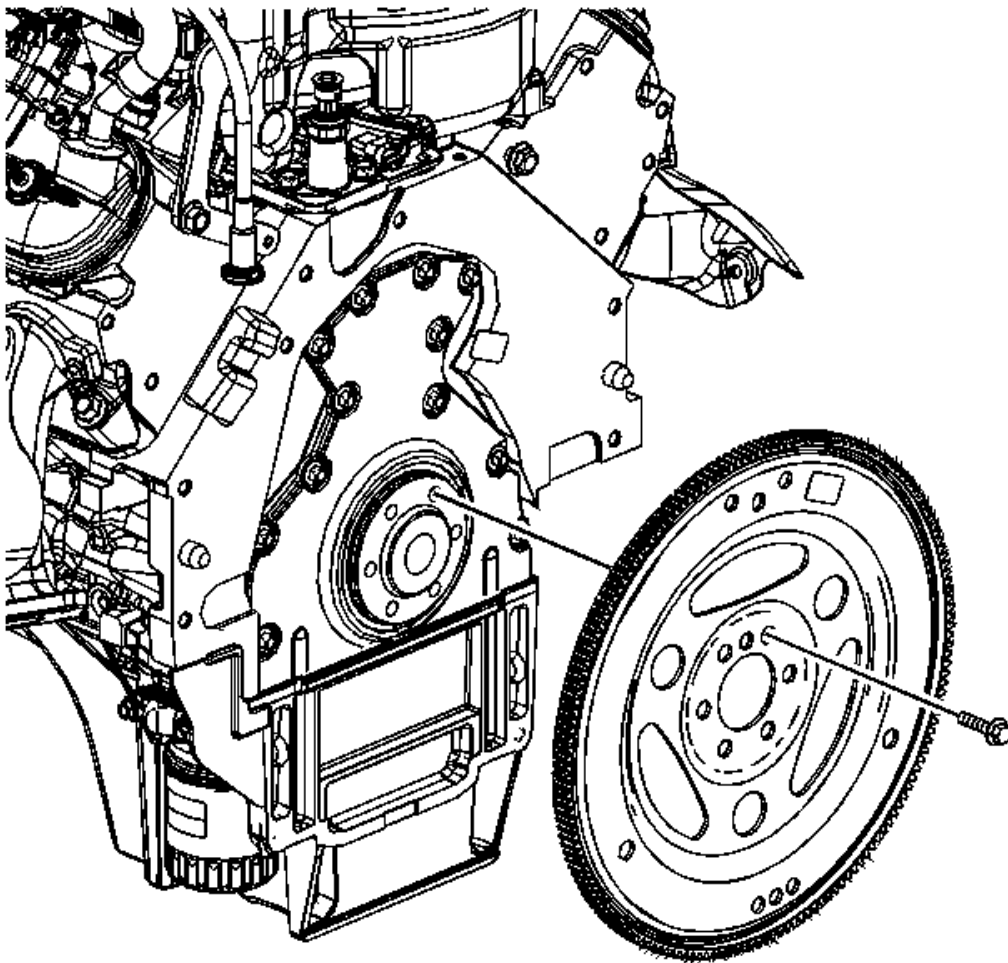


Fig. 271: View Of Flex Plate & Bolts
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- Do not use the camshaft position (CMP) actuator solenoid valve again. Upon installation of the CMP actuator and timing chain, install a NEW valve.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- Do not apply threadlock to the flex plate bolts at this time.

1. Temporarily install the automatic transmission flex plate and bolts. Refer to Automatic Transmission Flex Plate Installation .

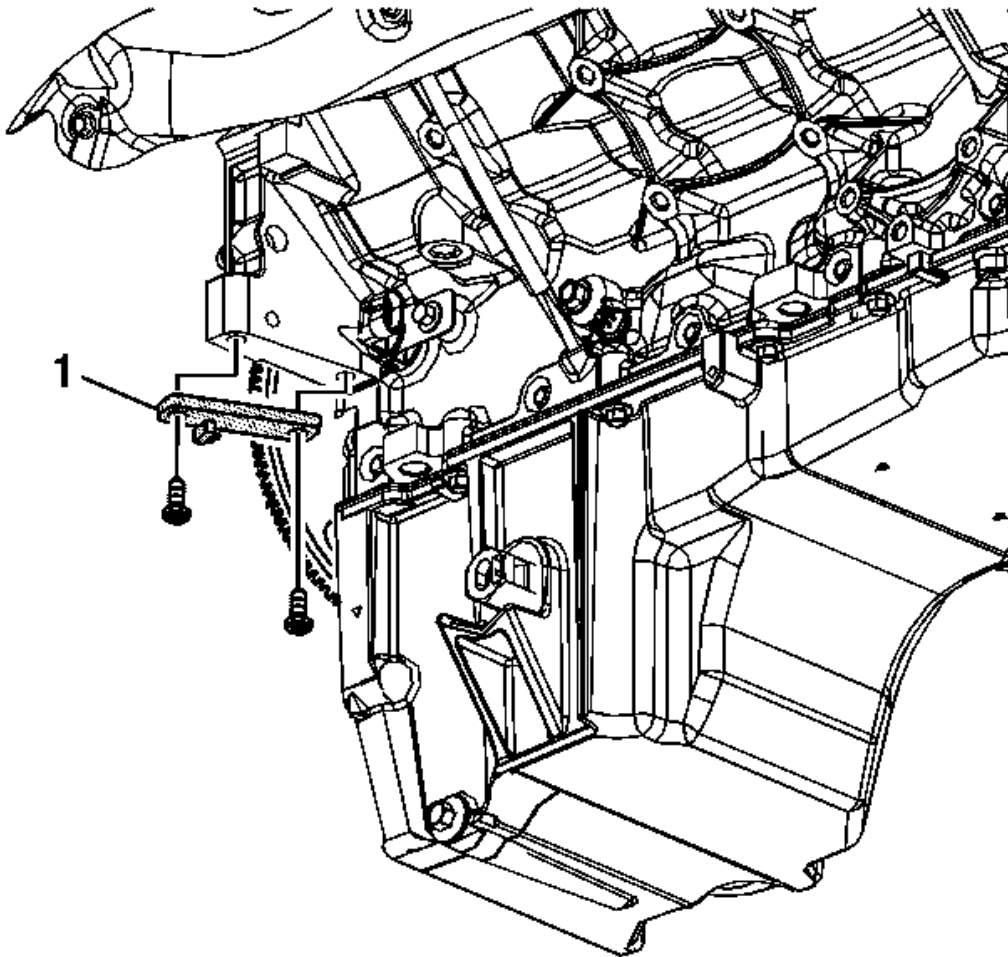


Fig. 272: View Of Special Tool & Bolts
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Install the **J 42386-A** (1) and bolts. See **Special Tools** . Use 1 M10 - 1.5 x 120 mm and 1 M10 - 1.5 x 45 mm bolt for proper tool operation.

Tighten: Tighten the **J 42386-A** bolts to 50 N. See **Special Tools** .m (37 lb ft).

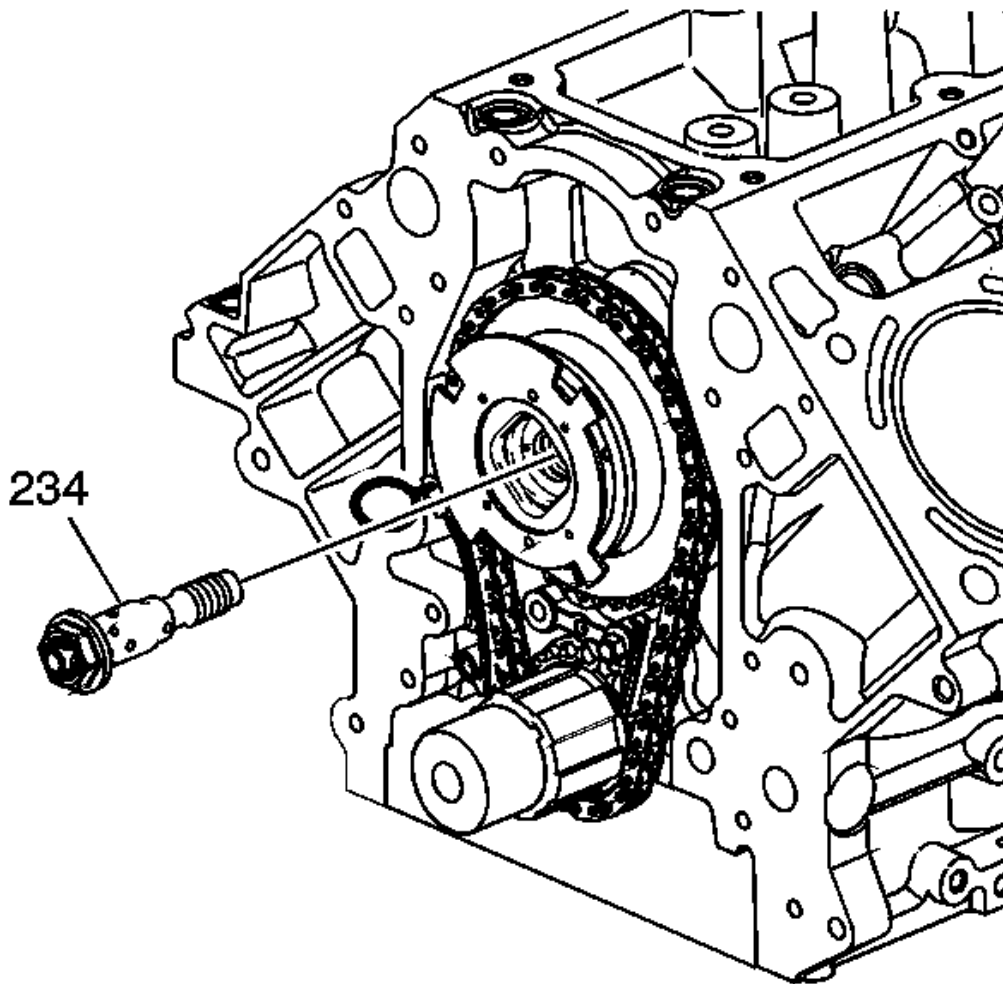


Fig. 273: View Of CMP Actuator Solenoid Valve
Courtesy of GENERAL MOTORS CORP.

3. Remove the CMP actuator solenoid valve (234).
4. Discard the solenoid valve.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

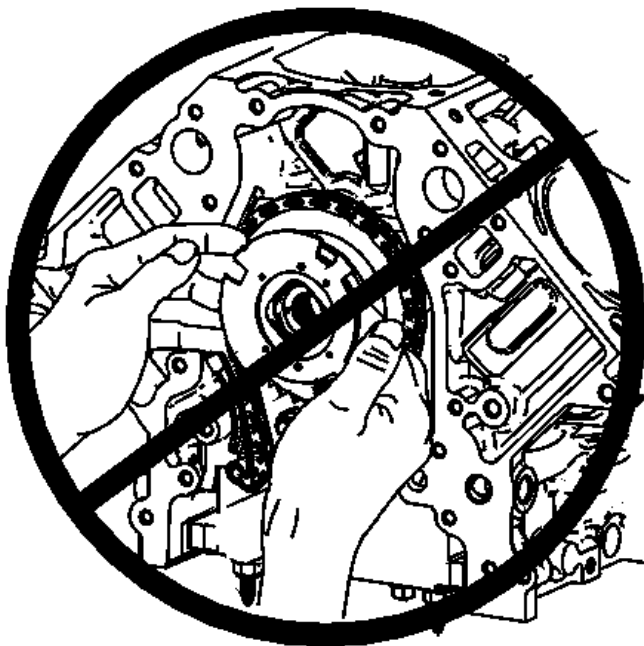
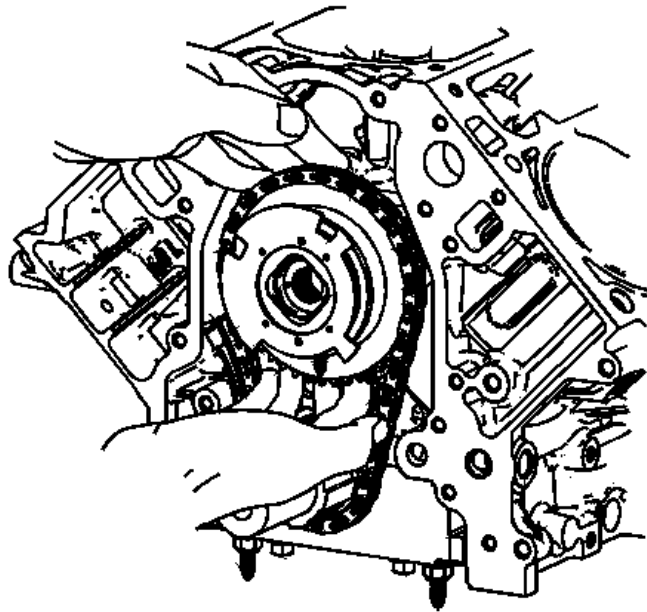


Fig. 274: View Of Proper CMP Actuator Removal
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

CAUTION: Refer to Camshaft Position Actuator Removal and Installation Caution .

5. Loosen and separate the CMP actuator and timing chain from the camshaft. Position fingers behind the actuator sprocket and pull the actuator away from the front of the camshaft. Never pull on the reluctor wheel when attempting to remove the actuator.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

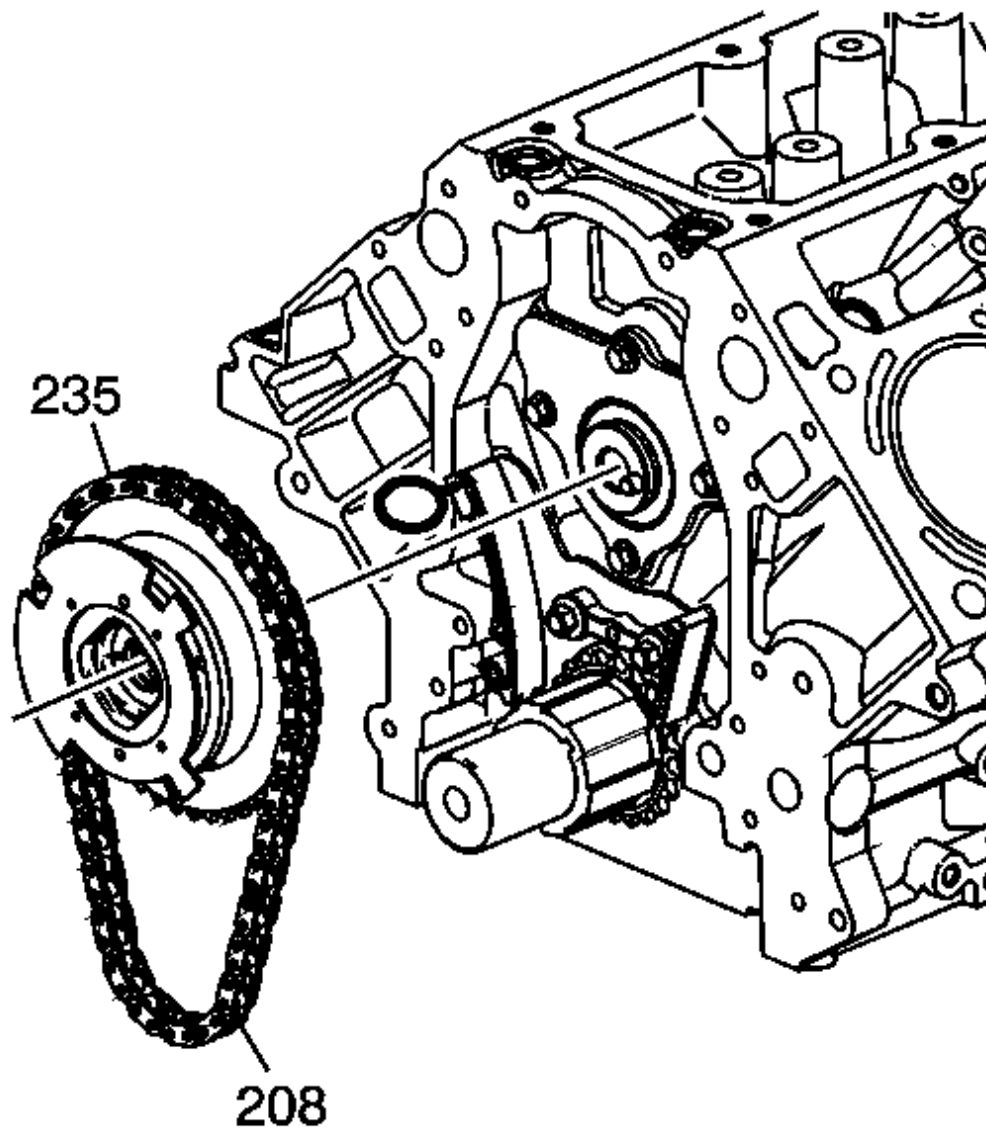


Fig. 275: View Of CMP Actuator & Timing Chain
Courtesy of GENERAL MOTORS CORP.

6. Remove the CMP actuator (235) and timing chain (208).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

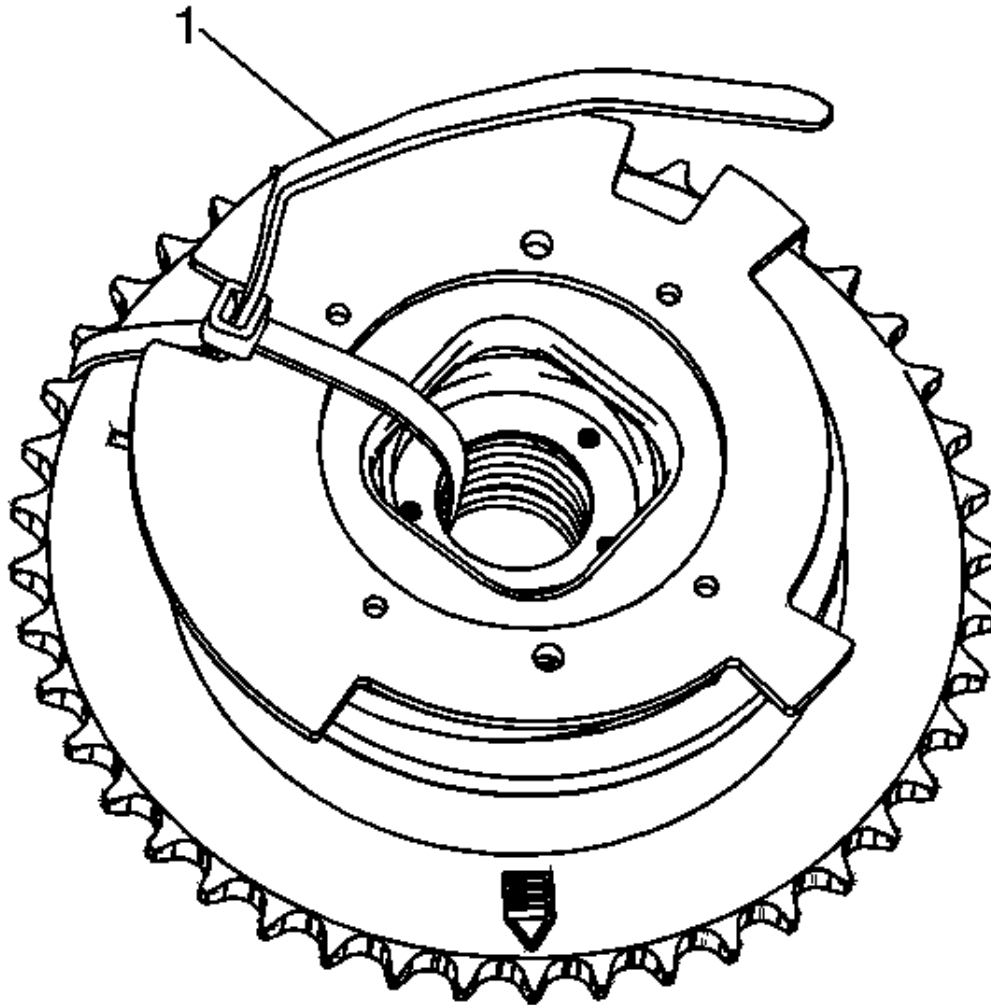


Fig. 276: View Of Tie Strap Through Center Of Actuator
Courtesy of GENERAL MOTORS CORP.

7. Insert a tie strap (1) through the center of the actuator and over the reluctor wheel.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

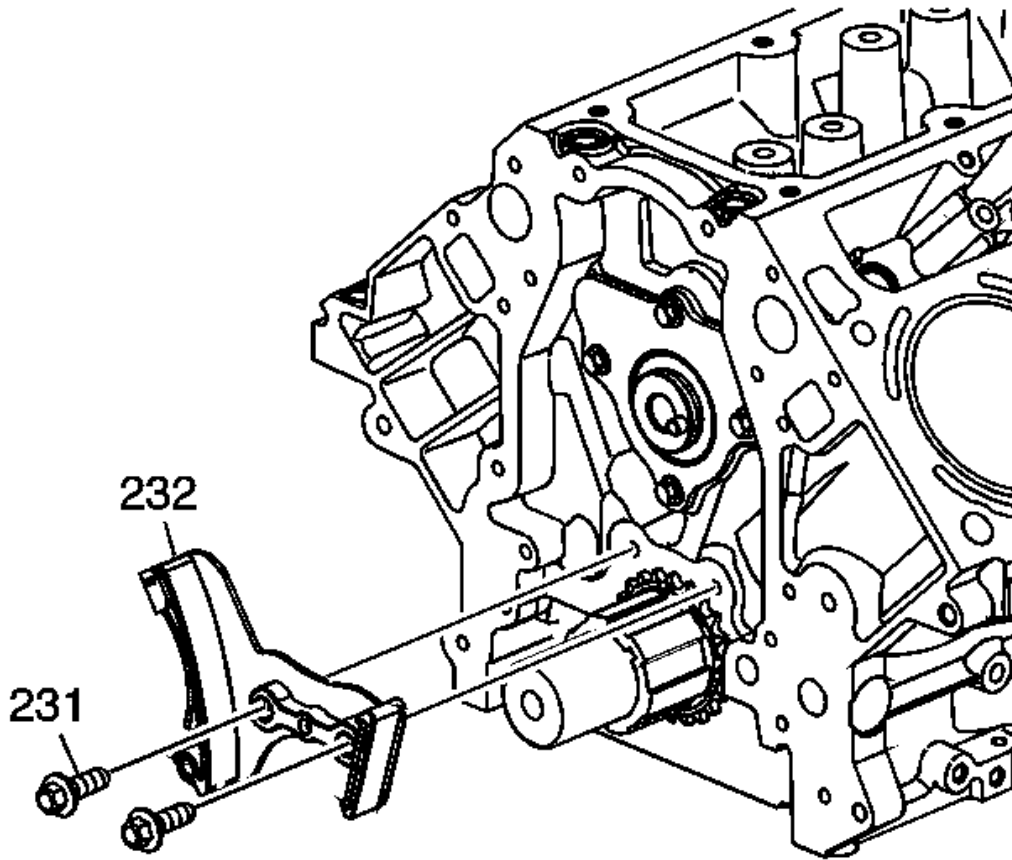


Fig. 277: View Of Timing Chain Tensioner & Bolts
Courtesy of GENERAL MOTORS CORP.

8. Remove the bolts (231) and timing chain tensioner (232).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

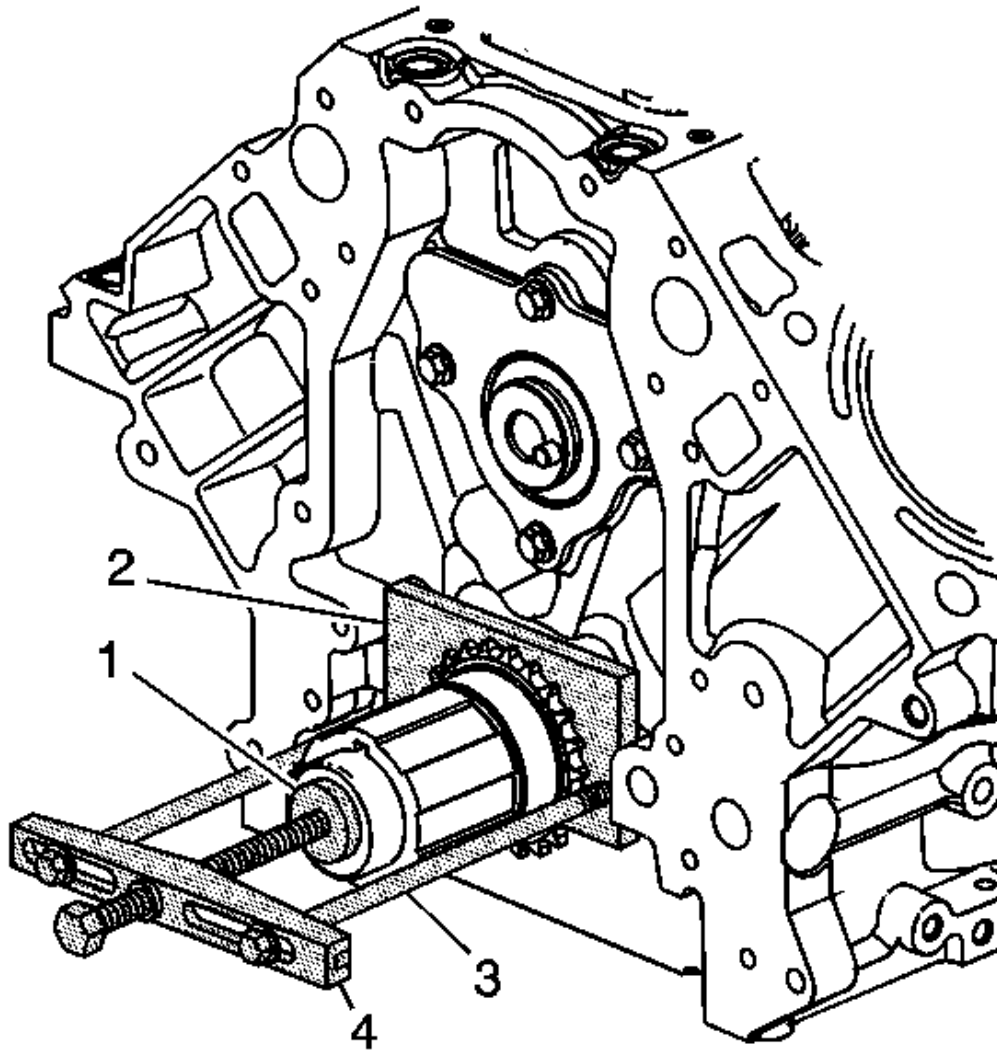


Fig. 278: View Of Crankshaft Sprocket Special Tools
Courtesy of GENERAL MOTORS CORP.

9. Use the **J 41816-2** (1), the **J 41558** (2), bolts (3), and the **J 8433** (4) in order to remove the crankshaft sprocket. See **Special Tools** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

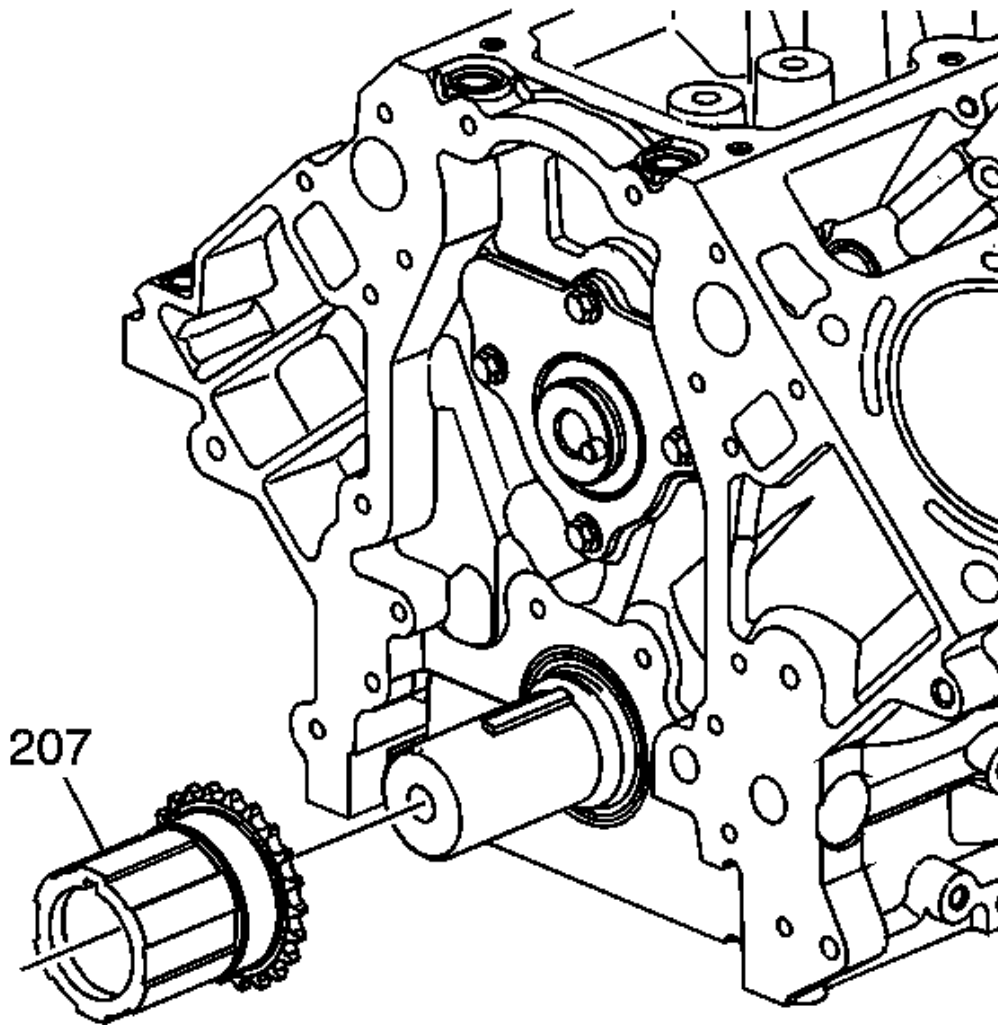


Fig. 279: View Of Crankshaft Sprocket
Courtesy of GENERAL MOTORS CORP.

10. Remove the crankshaft sprocket (207).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

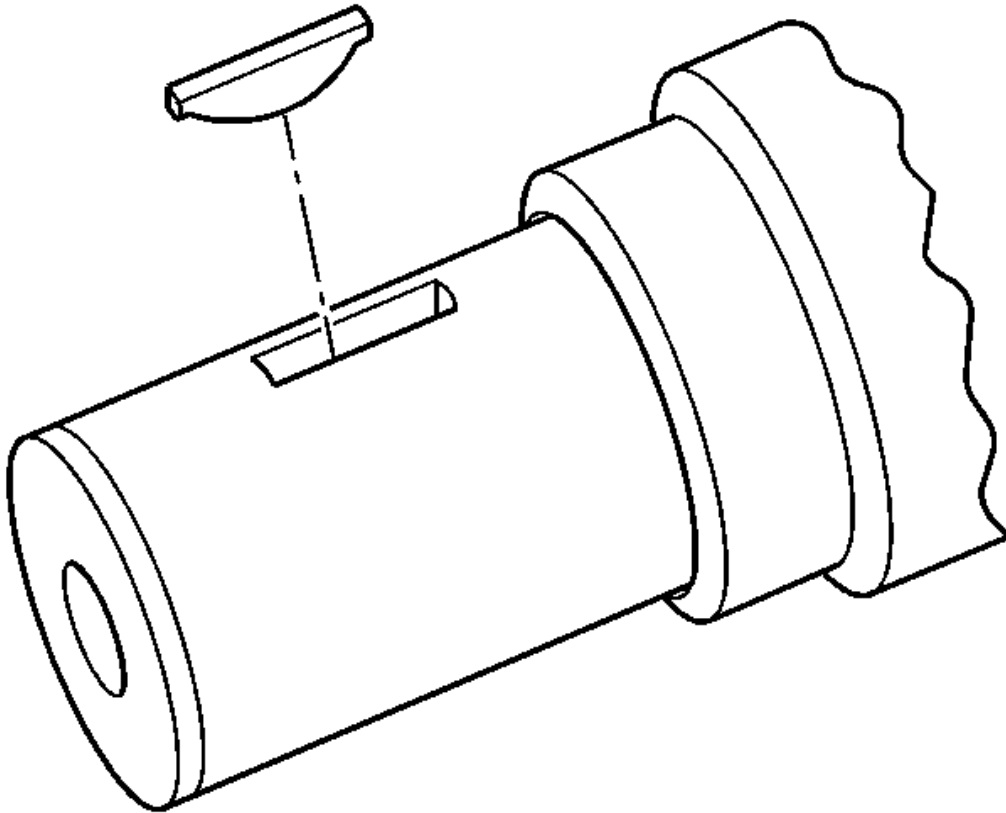


Fig. 280: View Of Crankshaft Key & Keyway
Courtesy of GENERAL MOTORS CORP.

11. Remove the crankshaft sprocket key, as required.
12. Remove the flex plate and bolts. Refer to **Automatic Transmission Flex Plate Removal.**
13. Remove the **J 42386-A** and bolts. See **Special Tools** .

CAMSHAFT REMOVAL

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

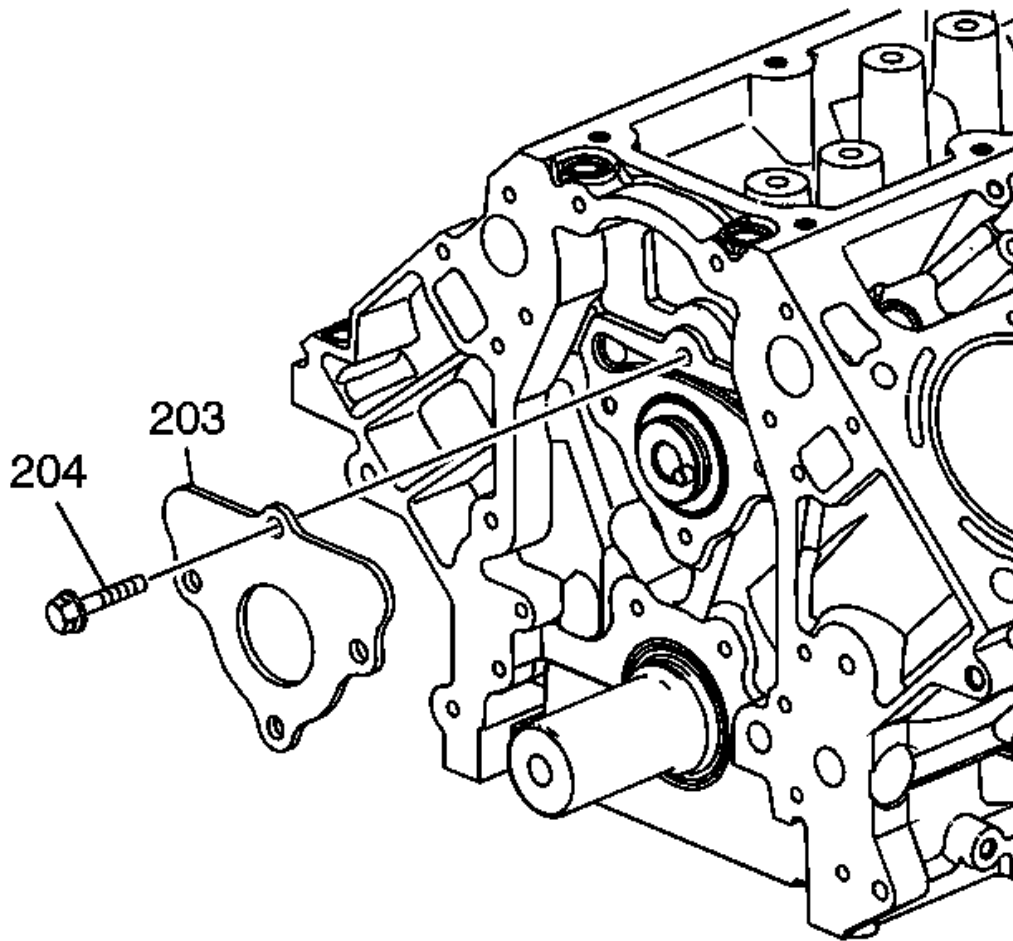


Fig. 281: View Of Camshaft Retainer & Retainer Bolt
Courtesy of GENERAL MOTORS CORP.

1. Remove the camshaft retainer bolts (204) and retainer (203).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

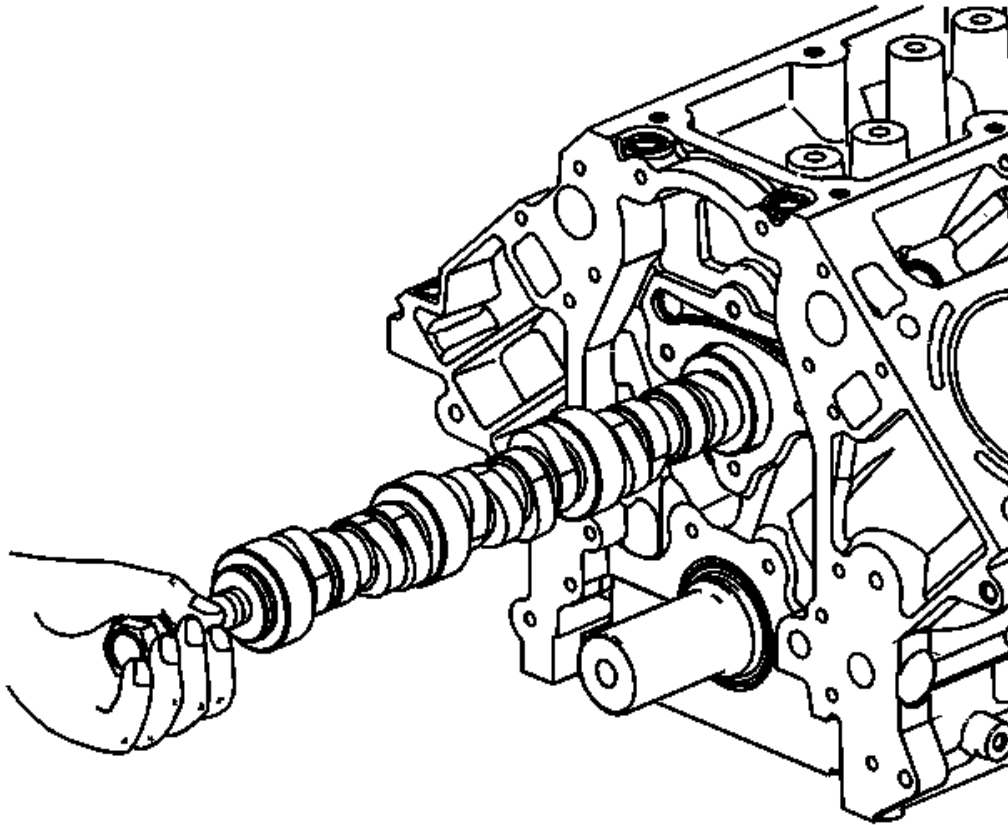


Fig. 282: View Of Camshaft
Courtesy of GENERAL MOTORS CORP.

NOTE: All camshaft journals are the same diameter, so care must be used in removing or installing the camshaft to avoid damage to the camshaft bearings.

2. Remove the camshaft.
 1. Install the camshaft sprocket bolt into the camshaft front bolt hole.
 2. Using the bolt as a handle, carefully rotate and pull the camshaft out of the engine block.
 3. Remove the bolt from the front of the camshaft.

PISTON, CONNECTING ROD, AND BEARING REMOVAL

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Tools Required

- **J 24270** Cylinder Bore Ridge Reamer
- **J 41556** Connecting Rod Guide. See **Special Tools** .

Removal

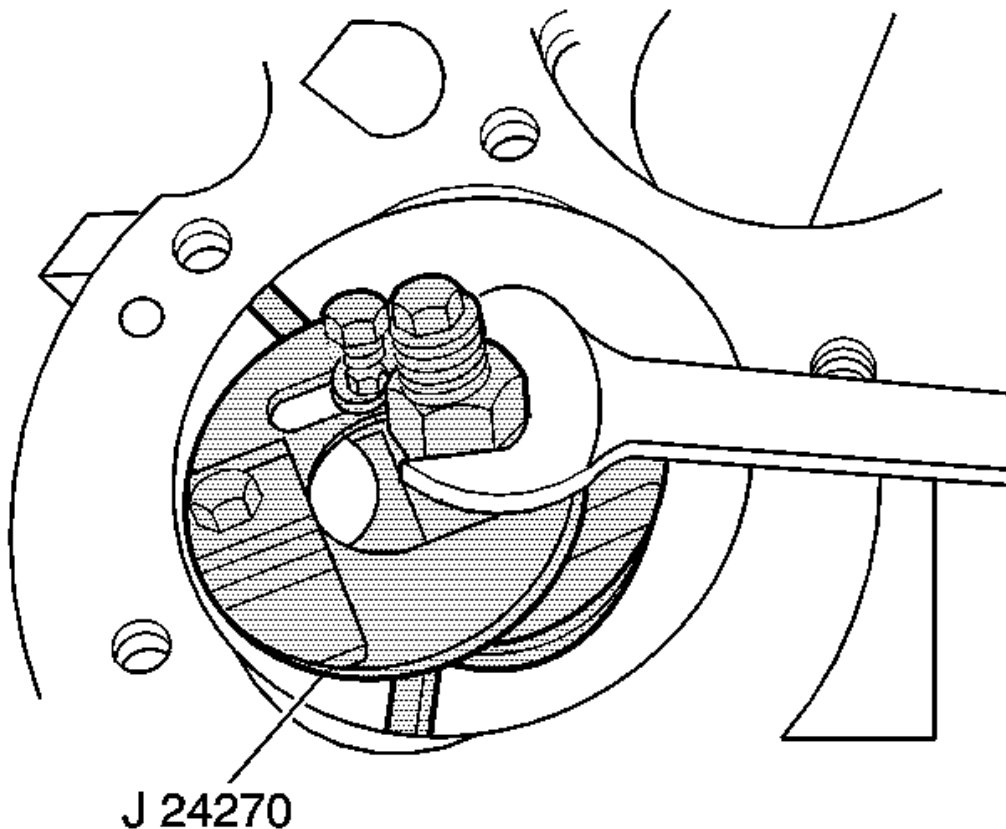


Fig. 283: Removing Cylinder Bore Ring Ridge
Courtesy of GENERAL MOTORS CORP.

1. Use the **J 24270** in order to remove the cylinder bore ring ridge, if required.
 1. Turn the crankshaft until the piston is at the bottom of the stroke.
 2. Place a cloth on top of the piston.
 3. Use the **J 24270** , or equivalent, in order to remove a cylinder ring ridge.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

4. Turn the crankshaft so the piston is at the top of the stroke.
5. Remove the cloth.
6. Remove the cutting debris from the cylinder and piston.

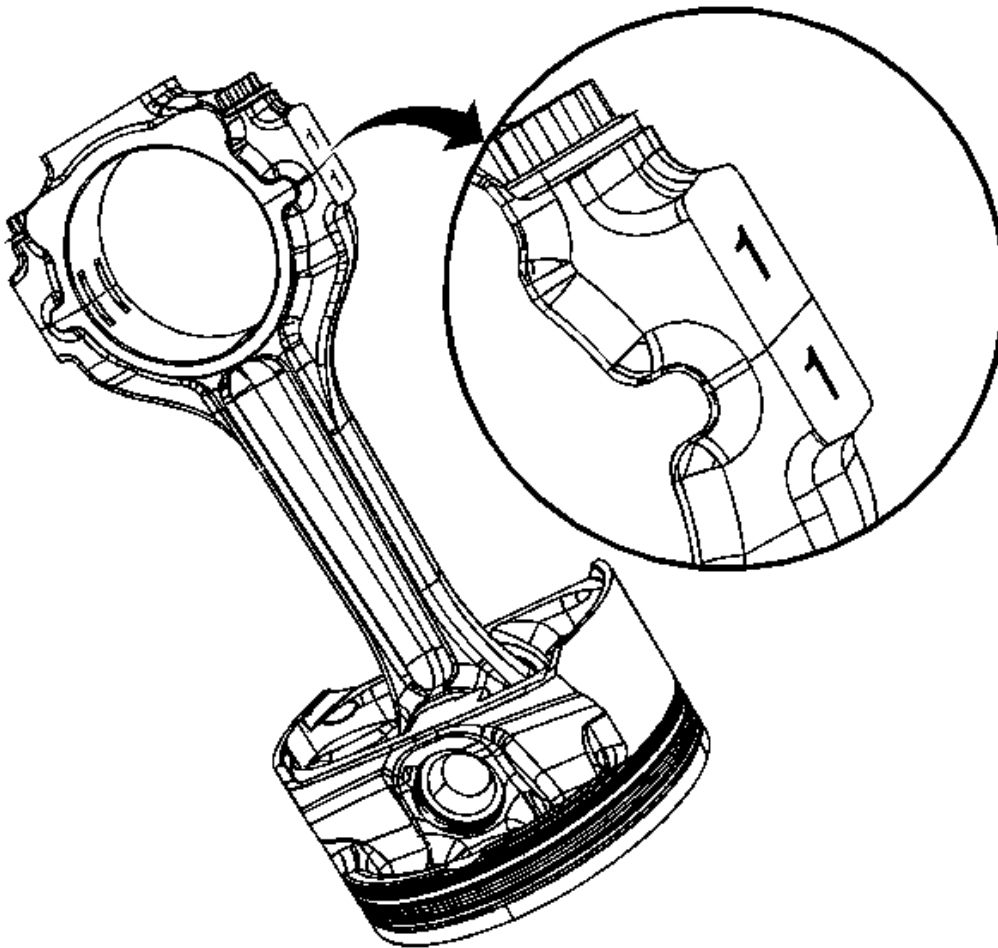


Fig. 284: Matchmarks On Connecting Rods & Caps
Courtesy of GENERAL MOTORS CORP.

2. Using a paint stick or etching tool, place matchmarks or numbers on the connecting rods and the connecting rod caps. The connecting rods and caps **MUST** be assembled to their original position and direction.
 - A stamping mark on the side of the connecting rod, at the crankshaft journal, may

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

affect component geometry.

- Mark the top of the piston to the specific cylinder bore.

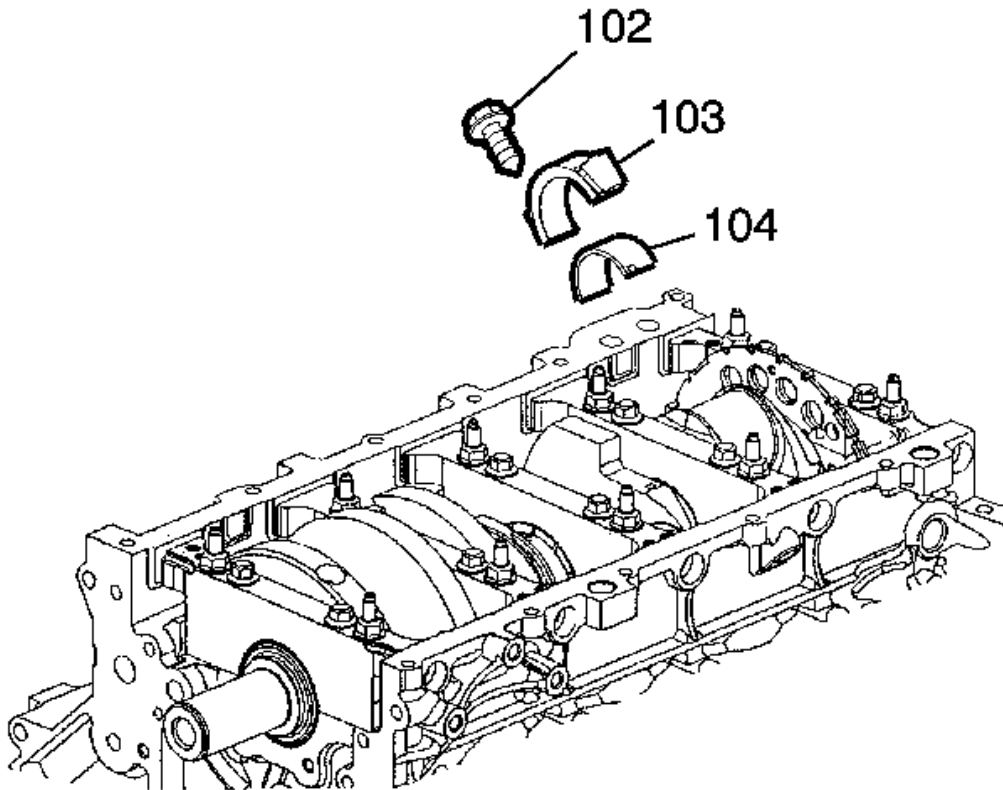


Fig. 285: Connecting Rod Bolt, Cap & Bearing
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Mark, sort, or organize the connecting rod bearings so they may be installed to their original position and location. The connecting rods and the bearing caps are **NOT** interchangeable. Refer to Separating Parts .

3. Remove the connecting rod bolts (102), cap (103) and bearing (104).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

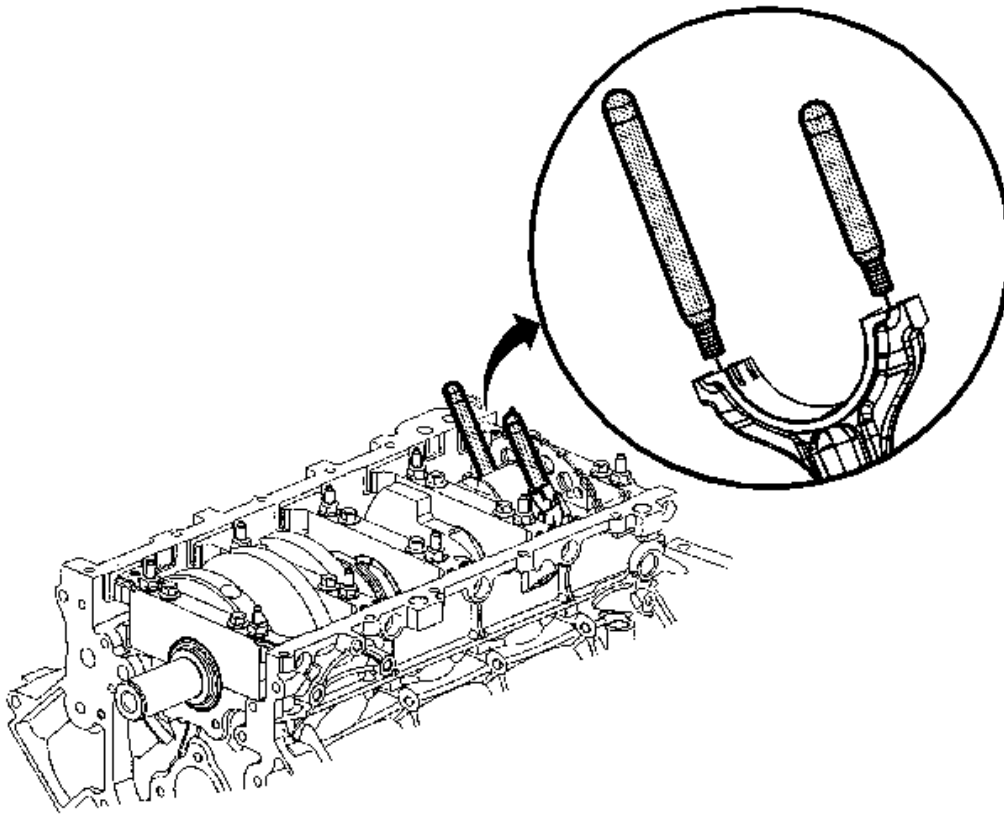


Fig. 286: Installing Piston & Connecting Rod Assembly
Courtesy of GENERAL MOTORS CORP.

4. Install the **J 41556** to the connecting rod. See **Special Tools** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

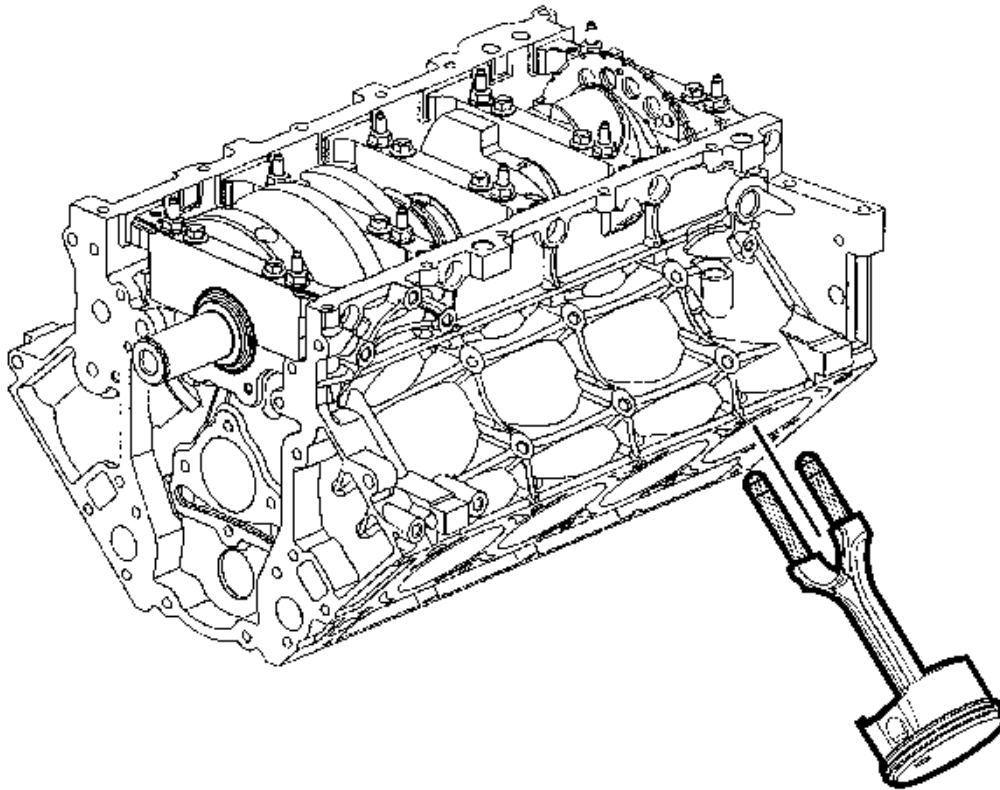


Fig. 287: Piston, Connecting Rod & Cylinder Bore
Courtesy of GENERAL MOTORS CORP.

5. Using a hammer, tap lightly on the end of the **J 41556** in order to remove the piston and connecting rod assembly from the cylinder bore. See **Special Tools** .
6. Remove the **J 41556** . See **Special Tools** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

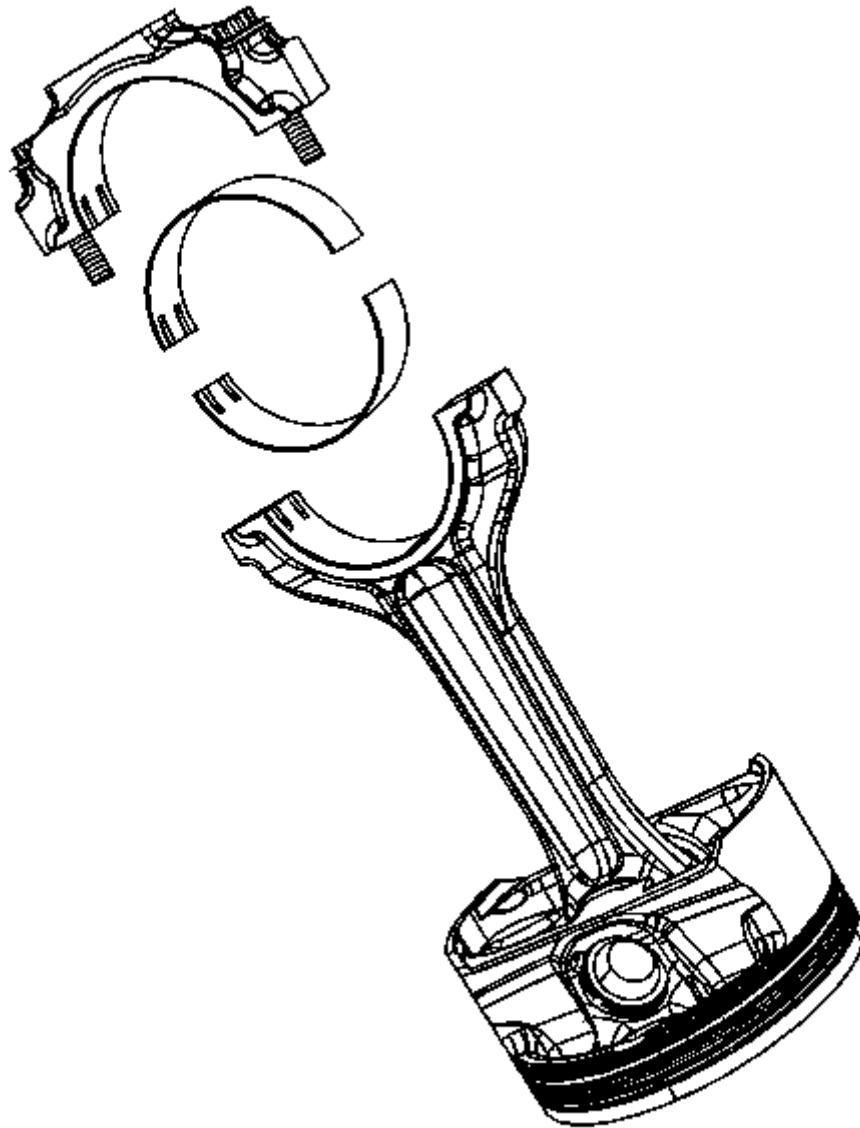


Fig. 288: View Of Piston, Connecting Rod & Bearing Assembly
Courtesy of GENERAL MOTORS CORP.

7. Upon removal of the piston and connecting rod assembly, assemble the connecting rod cap and bolts onto the matching connecting rod.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

CRANKSHAFT AND BEARING REMOVAL

Tools Required

- **J 6125-1B** Slide Hammer
- **J 41818** Crankshaft Bearing Cap Remover. See **Special Tools** .

Removal

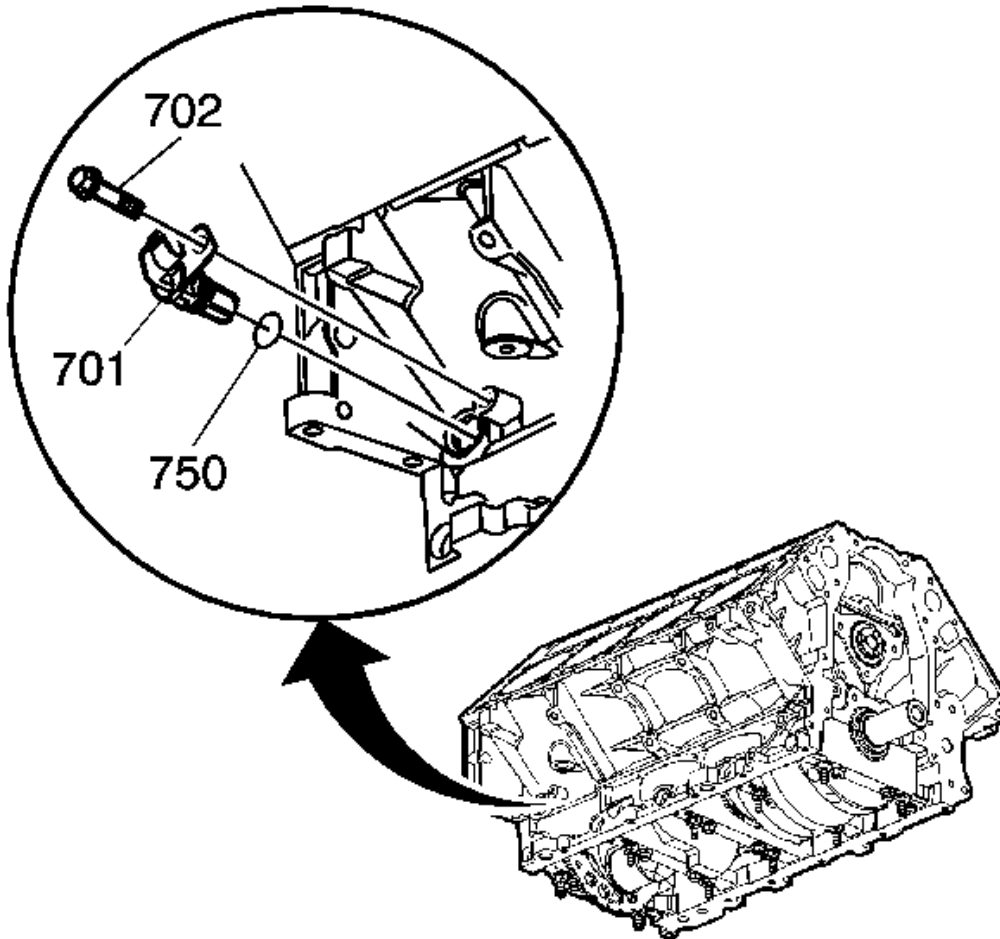


Fig. 289: CKP Sensor, Bolt & O-Ring
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

IMPORTANT:

- **The crankshaft bearing caps are machined with the engine block, for the proper clearances. Mark or identify each crankshaft bearing cap location and direction before removal. The crankshaft bearing caps **MUST** be installed to their original position and direction.**
- **Do not use the bearing cap M8 side bolts again.**

1. Remove the crankshaft position (CKP) sensor bolt (702).
2. Remove the CKP sensor (701).
3. Remove the O-ring (750) from the sensor, as required.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

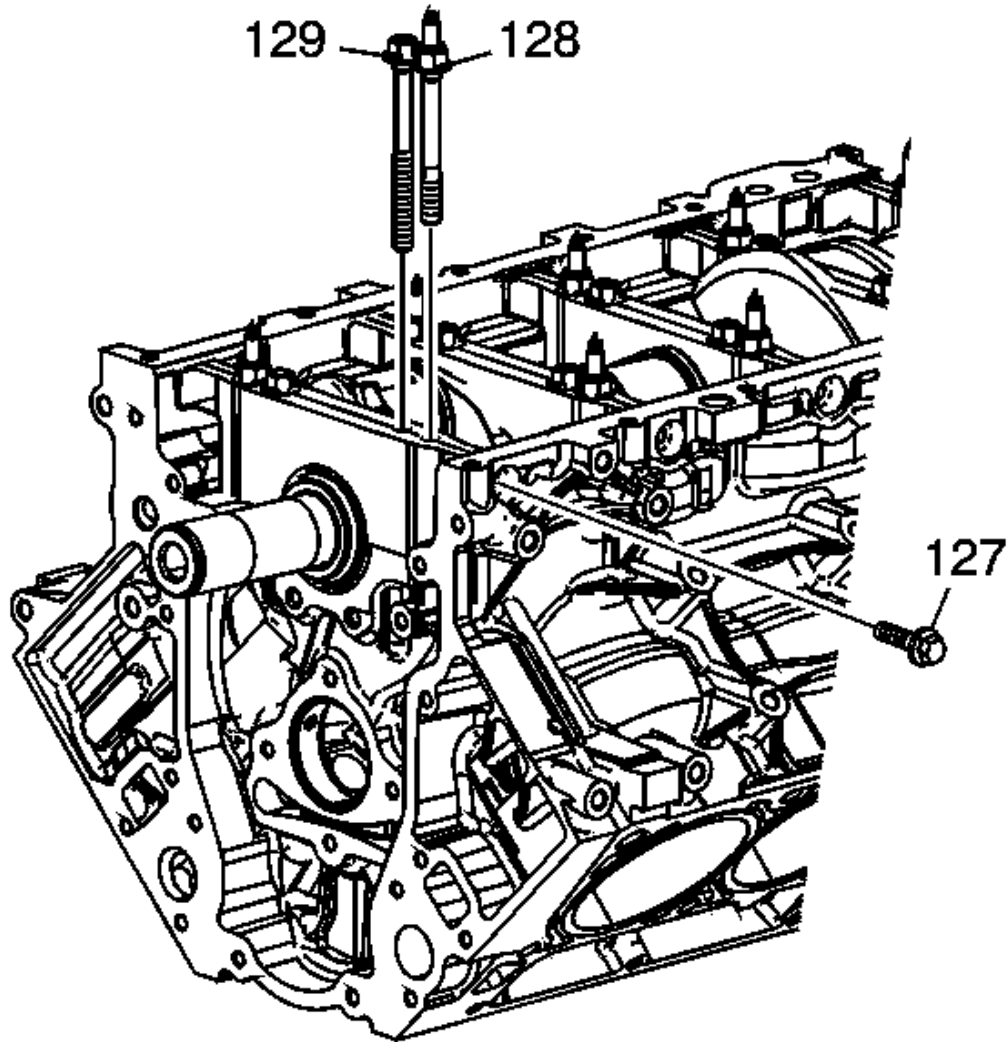


Fig. 290: Identifying Bearing Cap Bolts & Studs
Courtesy of GENERAL MOTORS CORP.

4. Remove the crankshaft bearing cap M8 bolts (127).
5. Remove the bearing cap M10 bolts (129) and studs (128).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

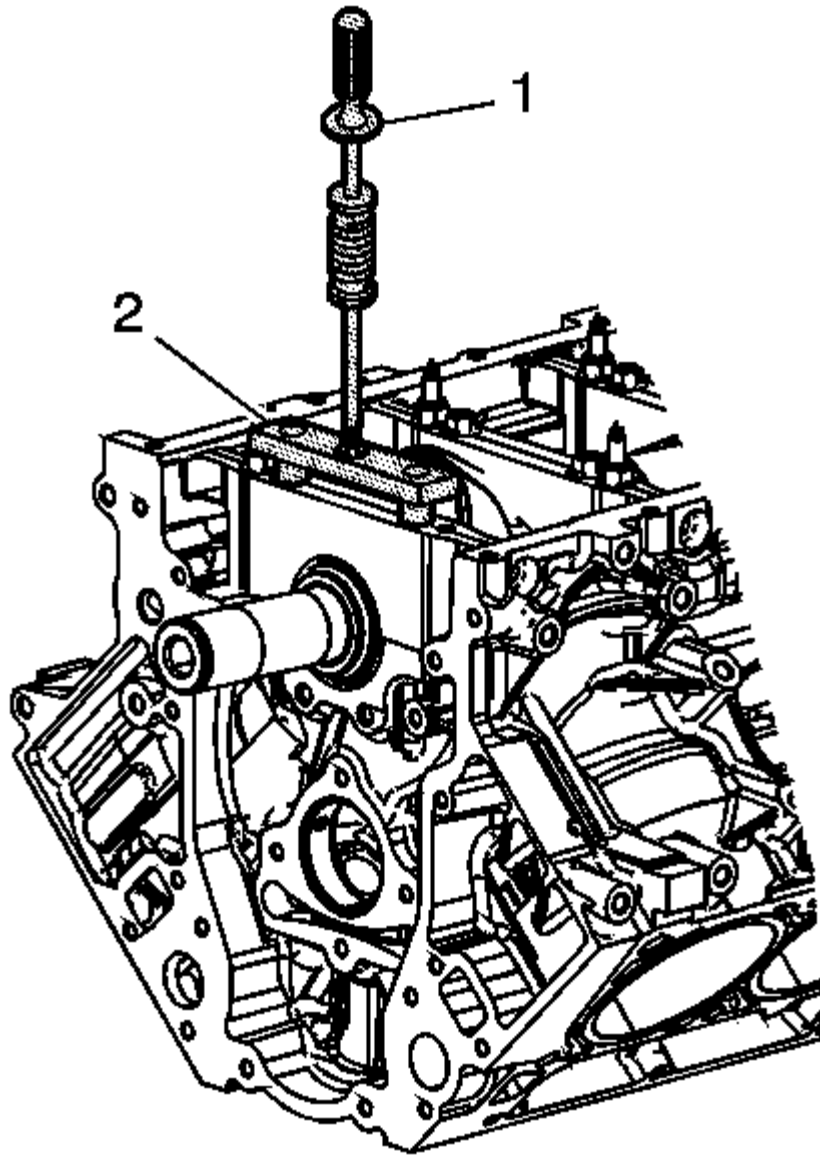


Fig. 291: View Of Crankshaft Bearing Cap Bolts (M10)
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

6. Install the **J 41818** (2). See **Special Tools** .

Tighten: Tighten the **J 41818** (2) bolts to 11 N. See **Special Tools** .m (100 lb in).

7. Install the **J 6125-1B** (1) to the **J 41818** (2) in order to remove the crankshaft bearing caps. See **Special Tools** .

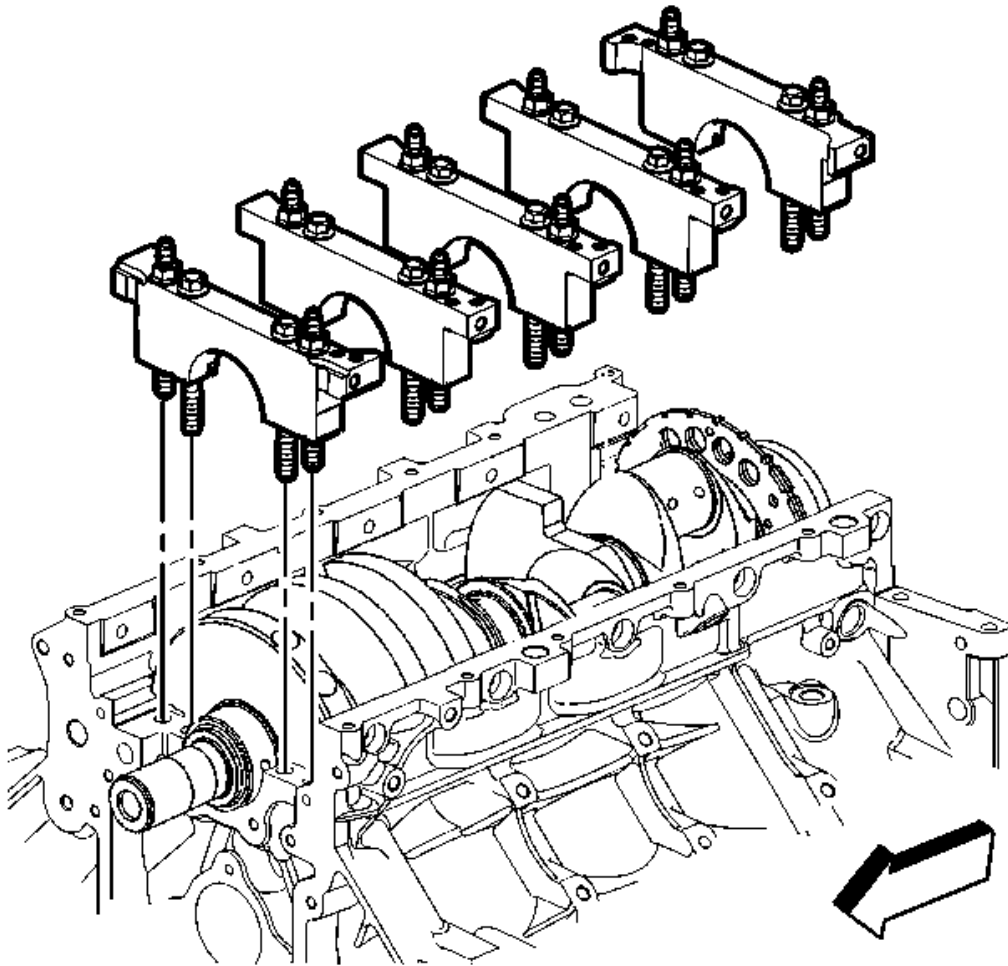


Fig. 292: View Of Crankshaft Main Bearing Caps
Courtesy of GENERAL MOTORS CORP.

8. Remove the bearing caps.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

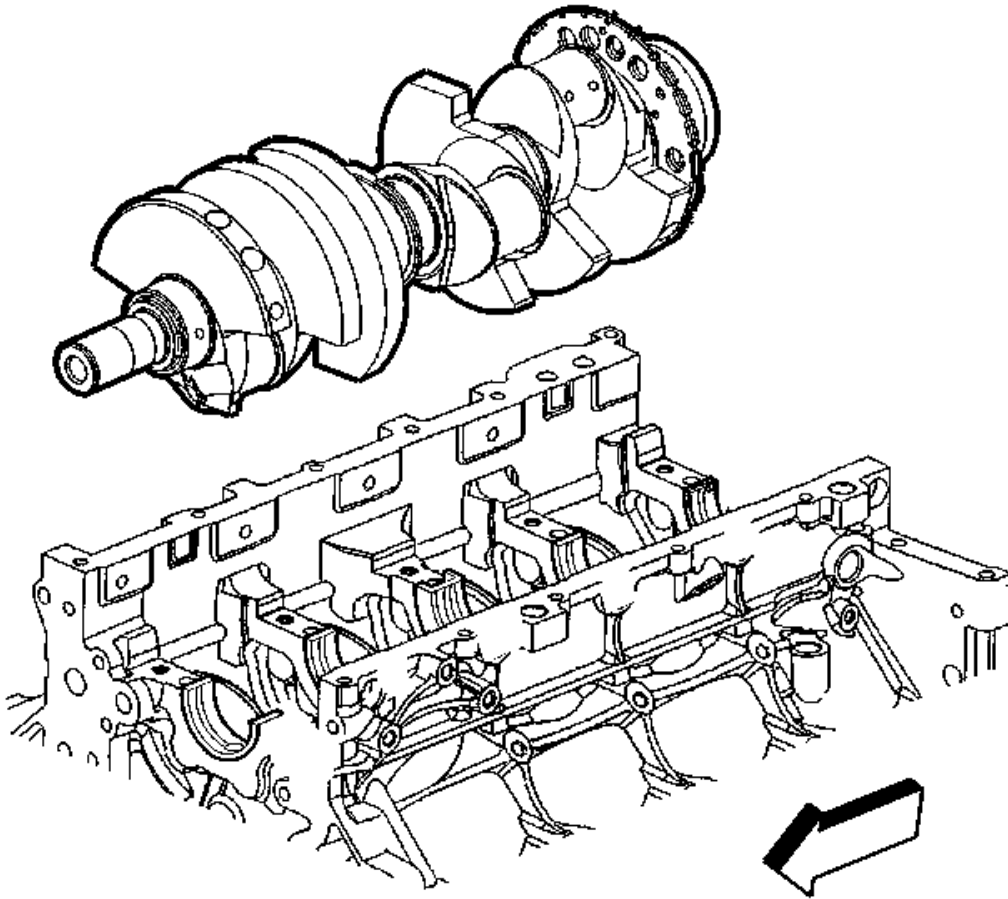


Fig. 293: View Of Crankshaft & Engine Block
Courtesy of GENERAL MOTORS CORP.

9. Remove the crankshaft.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

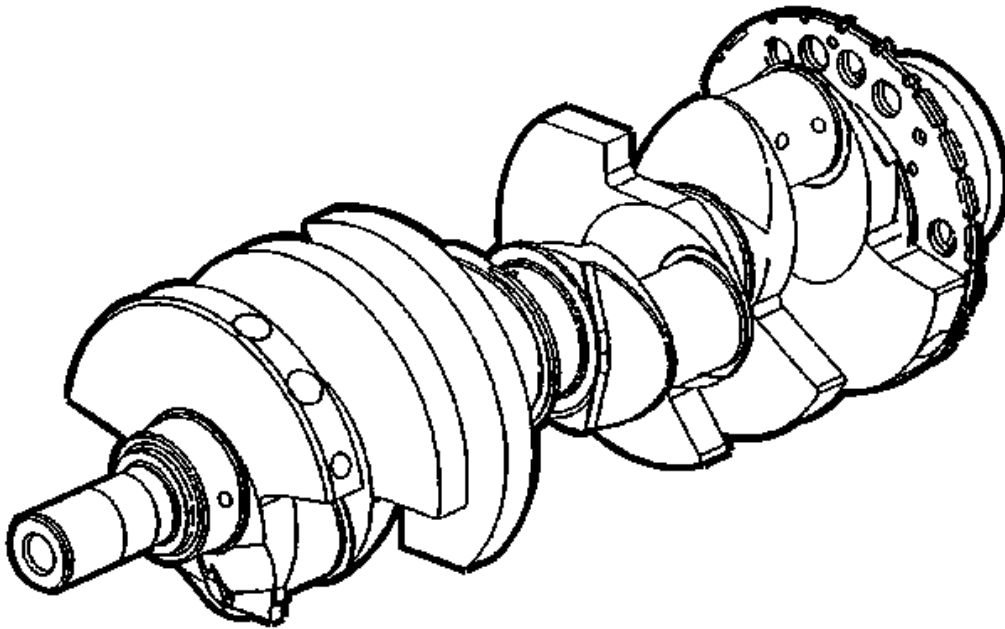


Fig. 294: View Of Camshaft

Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Use care when handling the crankshaft. Avoid damage to the CKP sensor reluctor ring teeth. Nicks, burrs or other damage to the teeth may effect on-board diagnostics (OBD) II system performance.

10. Lay the crankshaft onto 2 wooden V-blocks or other protective surface.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

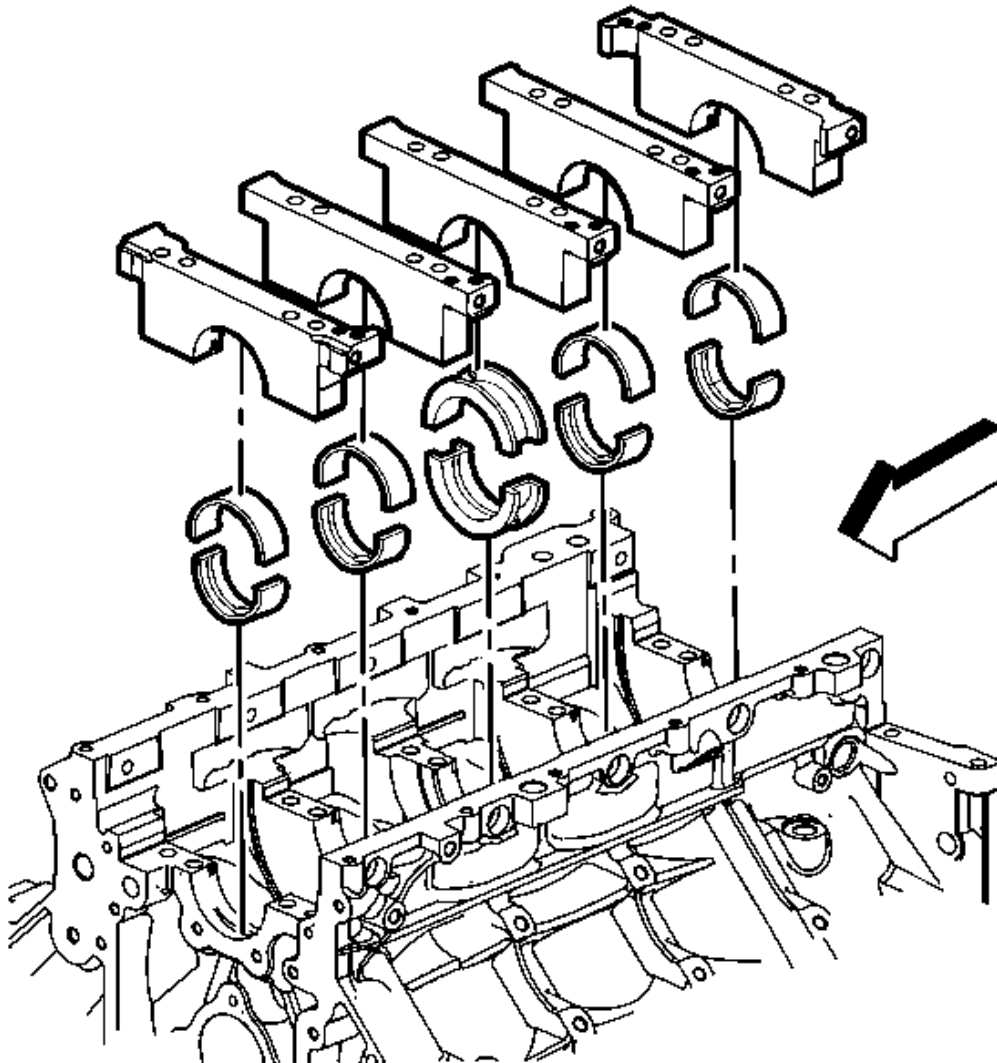


Fig. 295: View Of Crankshaft Bearings & Bearing Caps
Courtesy of GENERAL MOTORS CORP.

11. Remove the crankshaft bearings from the bearing caps and the engine block.
12. Mark, sort, or organize the crankshaft bearings so they may be installed to their original position and location. Refer to **Separating Parts** .

ENGINE BLOCK PLUG REMOVAL

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

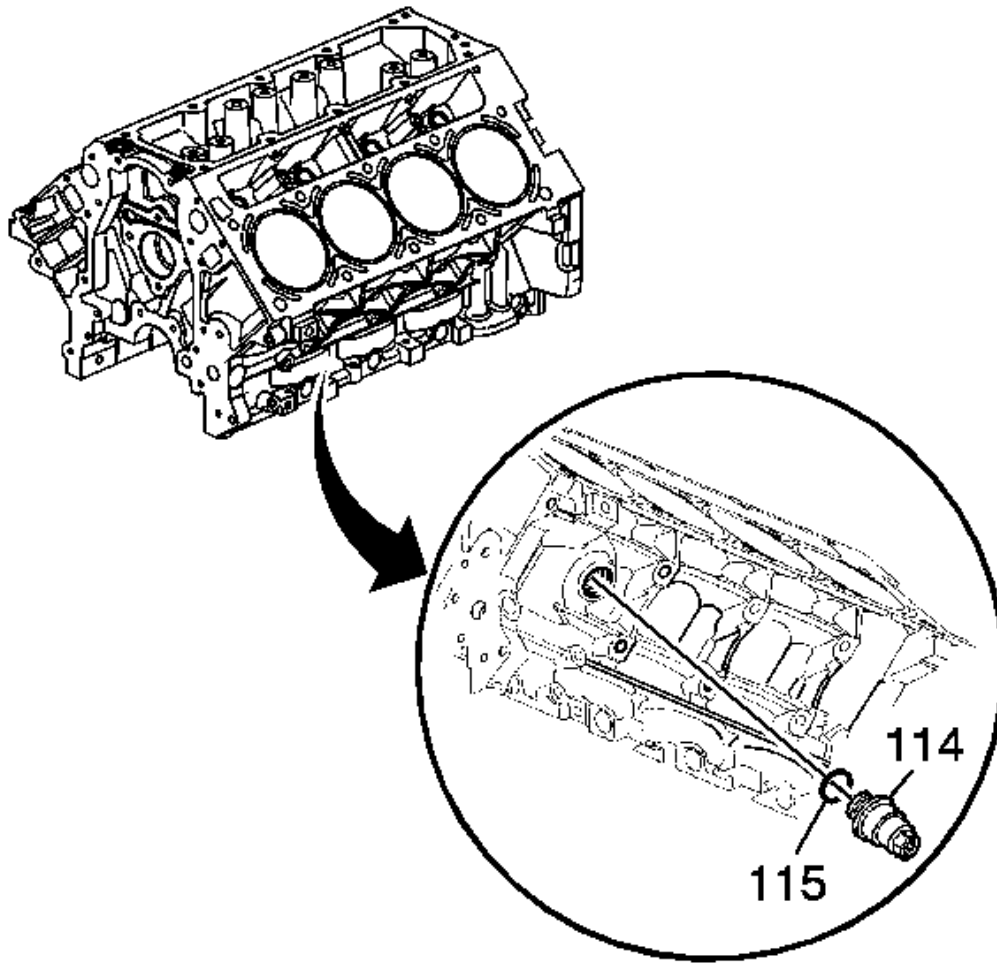


Fig. 296: Identifying Engine Block Coolant Heater
Courtesy of GENERAL MOTORS CORP.

1. Remove the engine block coolant heater (114) and seal (115).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

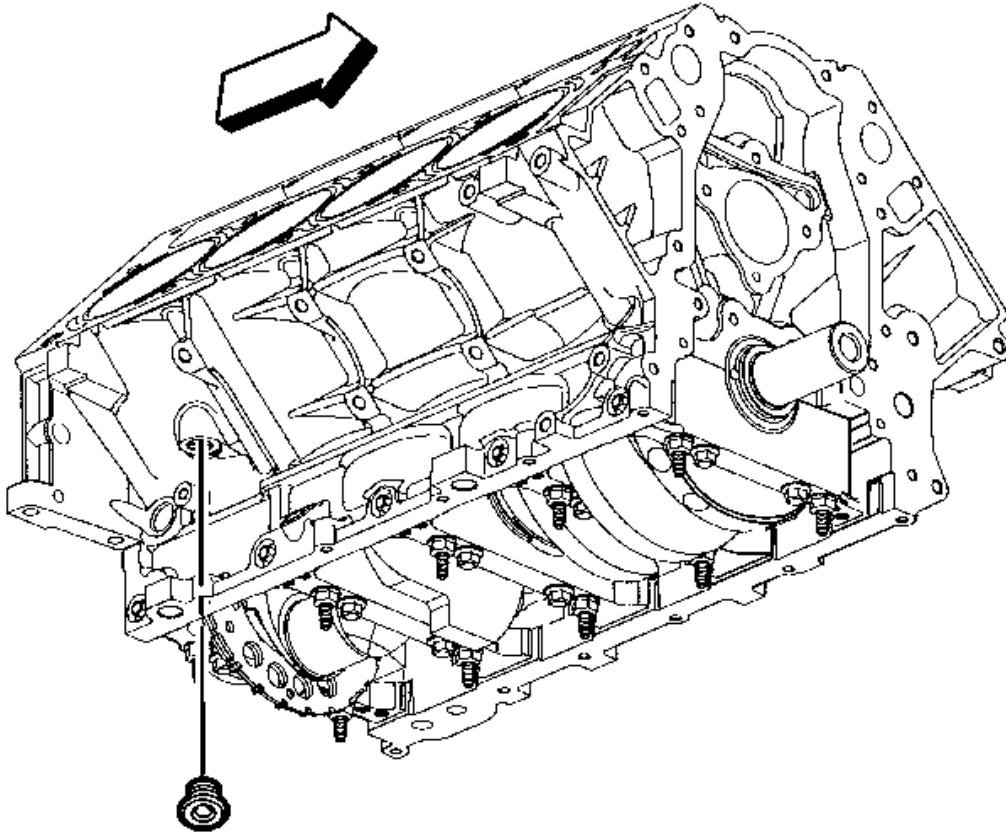


Fig. 297: Identifying Plug Location On Underside Of Block
Courtesy of GENERAL MOTORS CORP.

2. Remove the engine block right rear coolant drain hole plug and seal.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

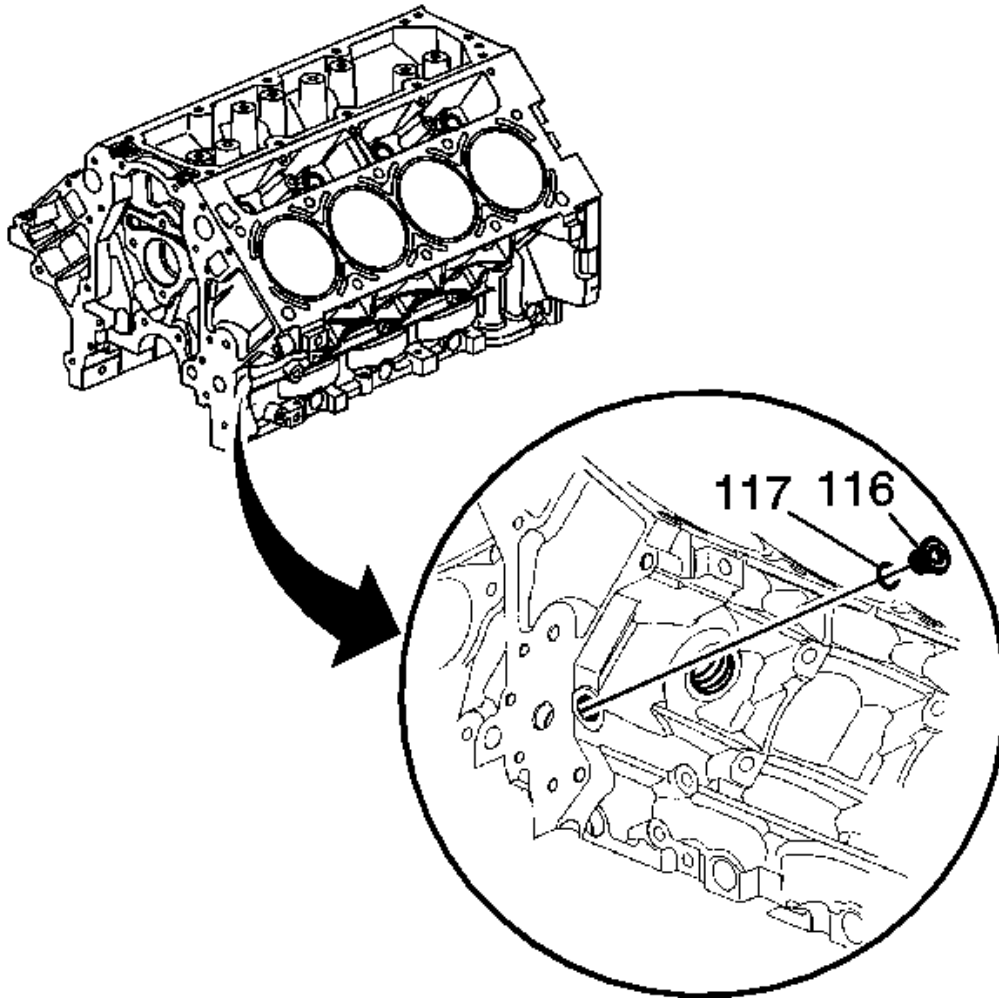


Fig. 298: Locating Engine Block Left Front Oil Gallery Plug & Seal
Courtesy of GENERAL MOTORS CORP.

3. Remove the engine block left front oil gallery plug (116) and seal (117).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

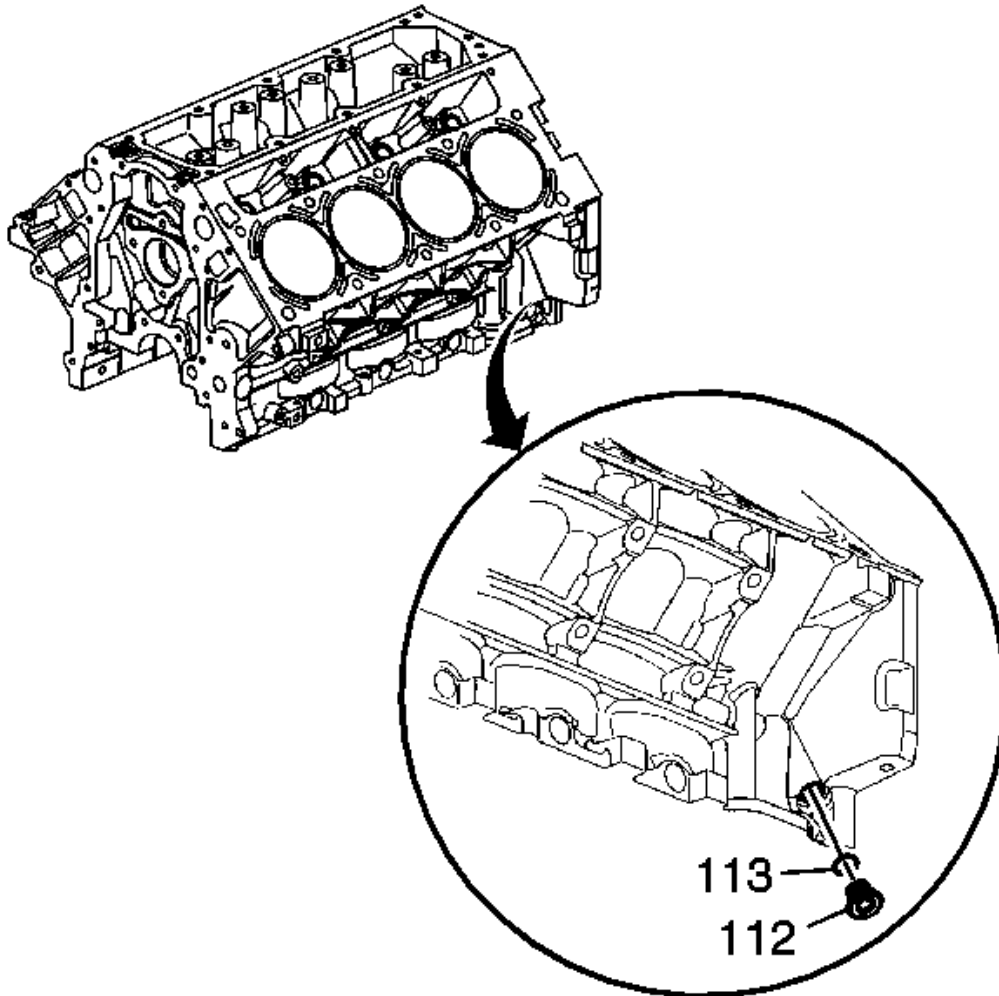


Fig. 299: Locating Engine Block Left Rear Oil Gallery Plug & Seal
Courtesy of GENERAL MOTORS CORP.

4. Remove the engine block left rear oil gallery plug (112) and seal (113).

If the block plug and coolant heater sealing washers are not damaged, they may be used during assembly.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

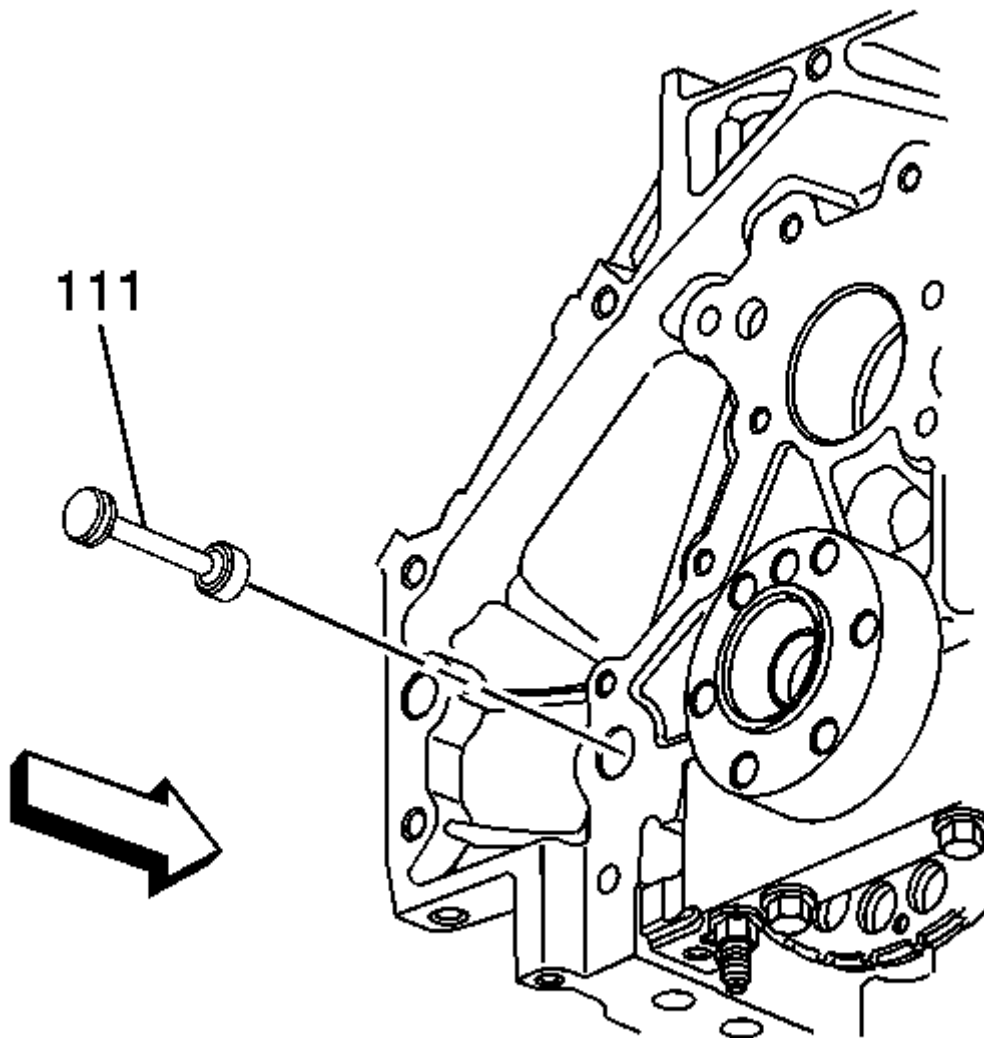


Fig. 300: Identifying Engine Block Rear Oil Gallery Plug & Seal
Courtesy of GENERAL MOTORS CORP.

5. Remove the engine block rear oil gallery plug (111) and seal.
6. Inspect the O-ring seal of the rear oil gallery plug.

If the O-ring seal is not cut or damaged, the plug and O-ring seal may be used during assembly.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

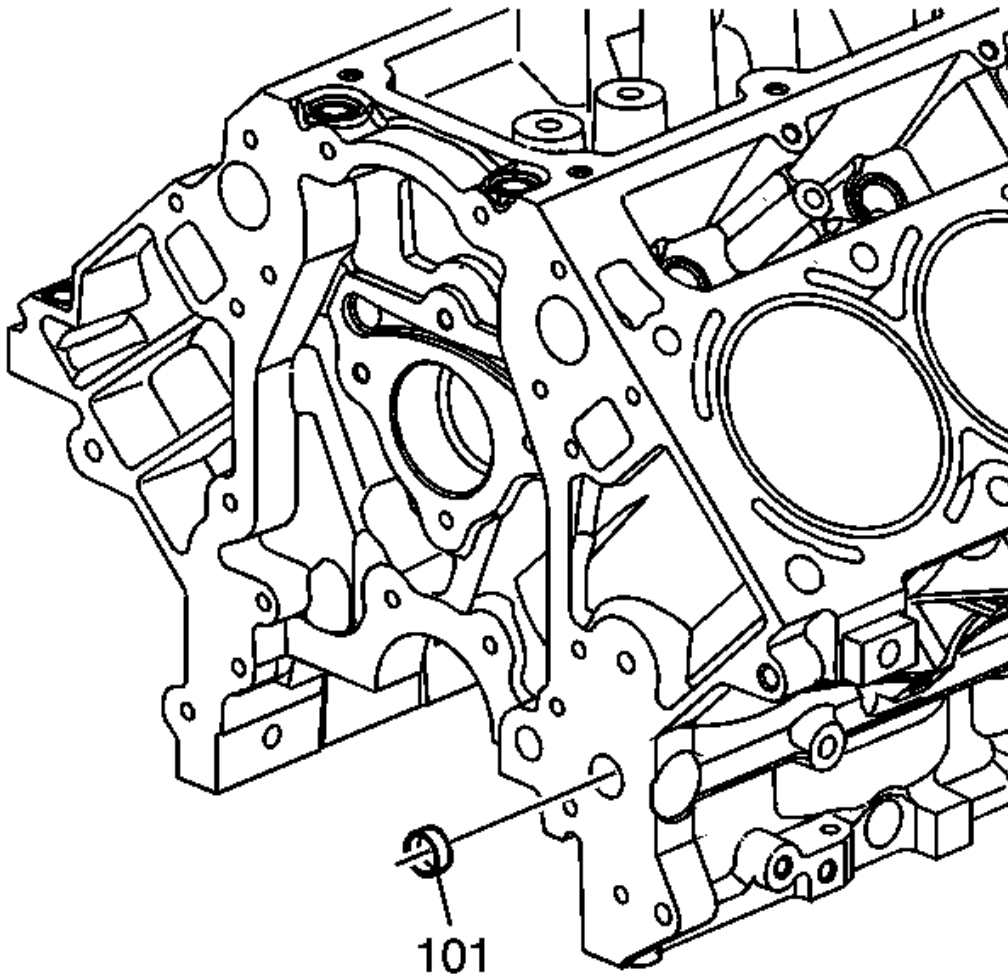


Fig. 301: View Of Engine Block Front Oil Gallery Plug
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Remove the front oil gallery plug, only if service is required.
If the front oil gallery plug is removed, a **NEW** oil gallery plug
must be installed.

7. Remove the engine block front oil gallery plug (101).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

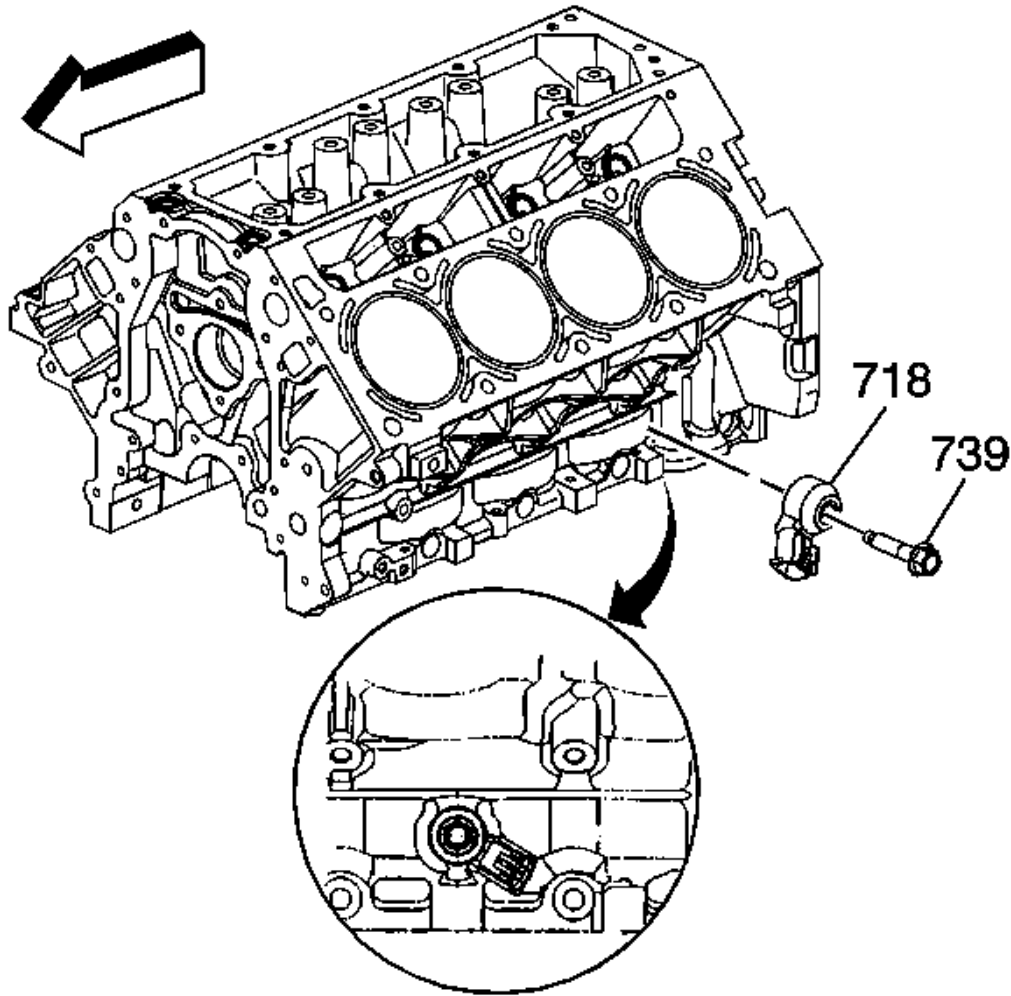


Fig. 302: Left Side Knock Sensor & Bolt
Courtesy of GENERAL MOTORS CORP.

8. Remove the left side knock sensor (718) and bolt (739).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

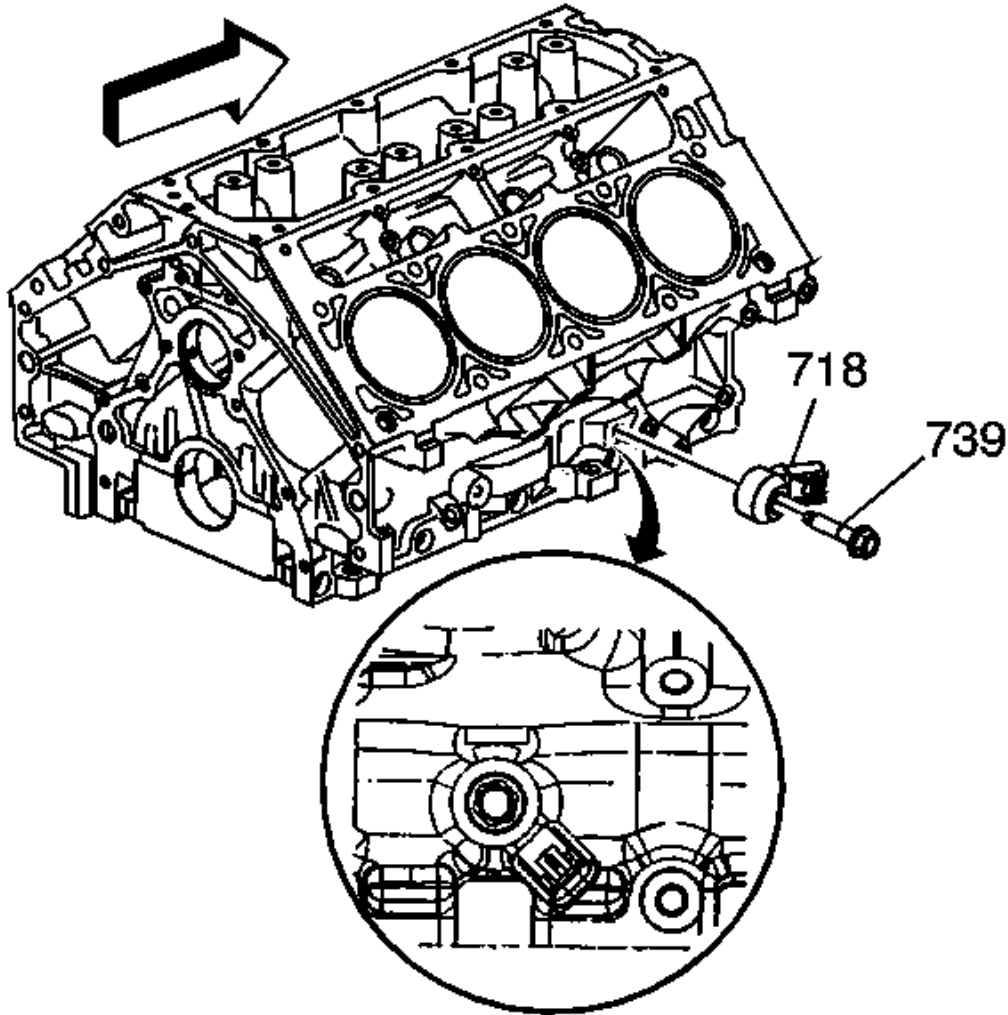


Fig. 303: Right Side Knock Sensor & Bolt
Courtesy of GENERAL MOTORS CORP.

9. Remove the right side knock sensor (718) and bolt (739).

ENGINE BLOCK CLEANING AND INSPECTION

Tools Required

- J 8087 Cylinder Bore Gage

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- **J 42385-100** Head/Main Bolt Thread Repair Kit. See **Special Tools** .

Cleaning Procedure

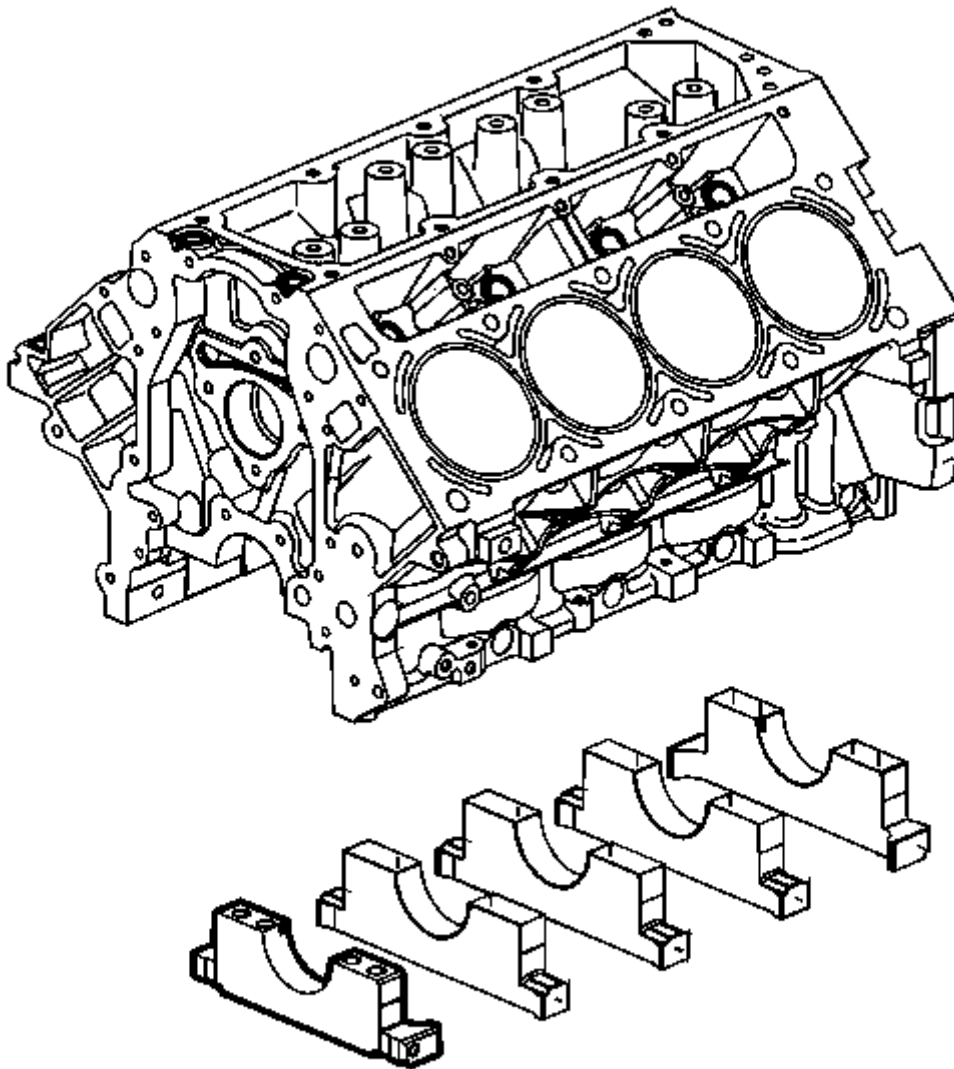


Fig. 304: Main Bearing Caps
Courtesy of GENERAL MOTORS CORP.

NOTE: Do not use a caustic solution to clean the aluminum engine block.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

IMPORTANT: When cleaning the engine block in a thermal type oven, do not exceed 232°C (450°F).

Clean the following components:

- Remove all sludge, dirt, or debris using a cleaning solvent or thermal type oven. Refer to **Cleanliness and Care** .
- Gasket surfaces

Refer to **Replacing Engine Gaskets** .

- Coolant passages
- Oil galleries
- Main bearing caps
- Cylinder head bolt holes to remove threadlocking material

Thread repair tool J 42385-107 may be used to clean the threads of any residual threadlocking material.

Inspection Procedure

1. Inspect the following components:

- Cylinder walls for excessive scratches, gouging, or ring ridge
- Cylinder bores for excessive ring ridge at the top of the cylinder
- Coolant jacket for cracks
- Valve lifter bores for excessive scoring or wear
- Crankshaft bearing webs for cracks
- Gasket sealing surfaces for excessive scratches or gouging

Refer to **Replacing Engine Gaskets** .

- Oil galleries for restrictions
- Threaded bolt holes for damaged threads
- Cylinder bores for excessive ring ridge at the top of the cylinder

2. Measure the cylinder bores for an oversize condition:

Measuring the Cylinder for Oversize

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

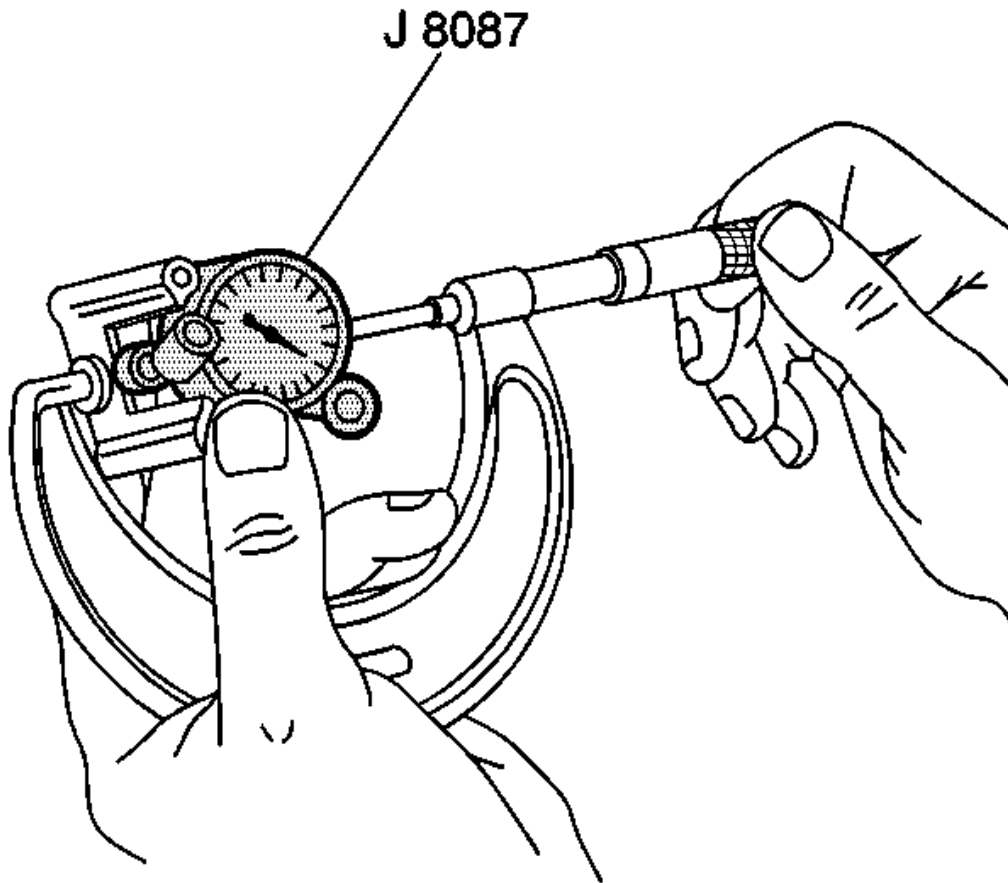


Fig. 305: Measuring Bore Gauge With Micrometer
Courtesy of GENERAL MOTORS CORP.

1. Adjust the micrometer to a dimension slightly smaller than the bore size. Refer to **Engine Mechanical Specifications (RPO LY5 VIN J)** or **Engine Mechanical Specifications (RPO LC9 VIN 3)** or **Engine Mechanical Specifications (RPO LY2 VIN C)** or **Engine Mechanical Specifications (RPO LH6 VIN M)** or **Engine Mechanical Specifications (RPO LMG VIN 0)** or **Engine Mechanical Specifications (RPO LY6 VIN K)** or **Engine Mechanical Specifications (RPO L76 VIN Y)** or **Engine Mechanical Specifications (RPO L92 VIN 8)** .
2. Insert the **J 8087** into the micrometer and zero the bore gage dial.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

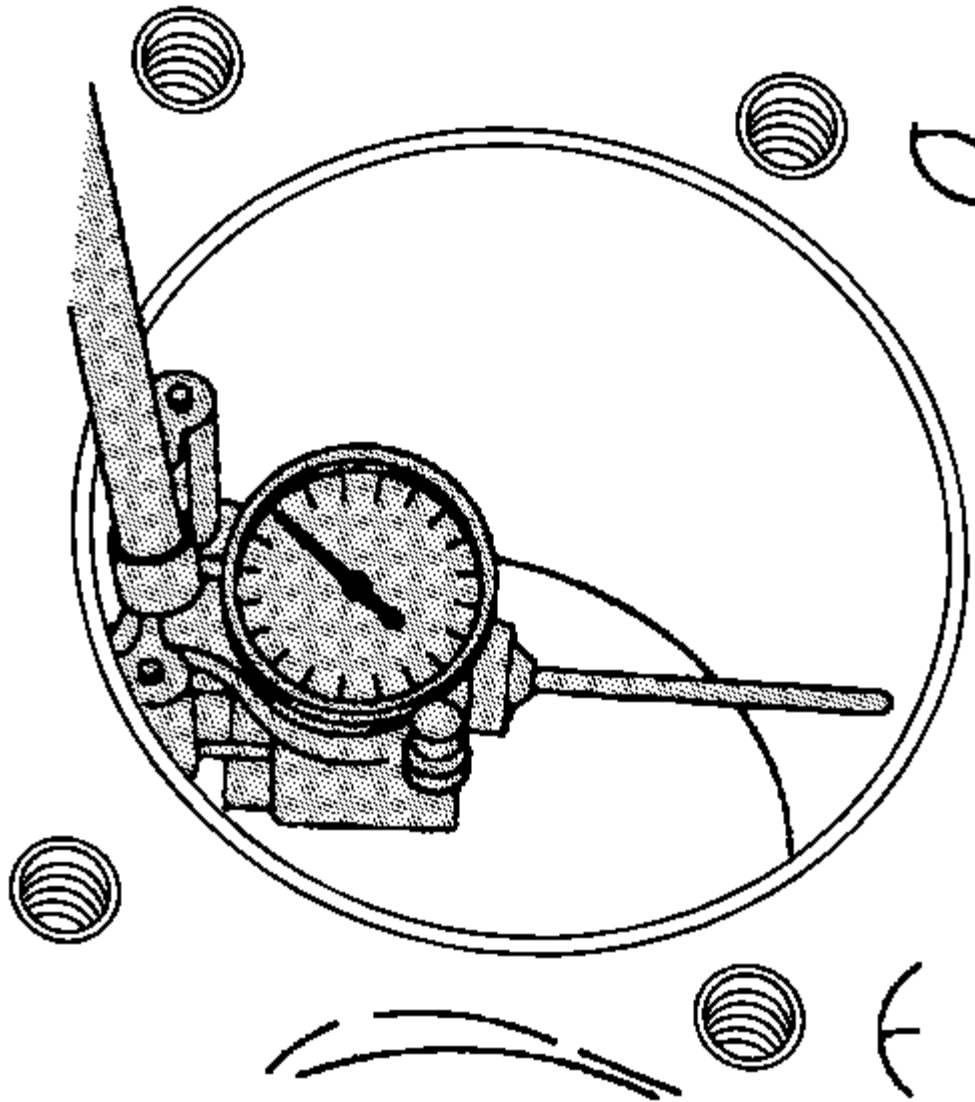


Fig. 306: Measuring Cylinder Bore
Courtesy of GENERAL MOTORS CORP.

3. Use the **J 8087** and measure the cylinder bore for oversize.

Slide the bore gage up and down throughout the length of the cylinder bore. Measure the bore, both parallel and perpendicular to the centerline of the crankshaft, at the top, center,

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

and bottom of the bore. A cylinder bore that exceeds the maximum diameter must be serviced with an oversized piston. Refer to **Engine Mechanical Specifications (RPO LY5 VIN J)** or **Engine Mechanical Specifications (RPO LC9 VIN 3)** or **Engine Mechanical Specifications (RPO LY2 VIN C)** or **Engine Mechanical Specifications (RPO LH6 VIN M)** or **Engine Mechanical Specifications (RPO LMG VIN 0)** or **Engine Mechanical Specifications (RPO LY6 VIN K)** or **Engine Mechanical Specifications (RPO L76 VIN Y)** or **Engine Mechanical Specifications (RPO L92 VIN 8)** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2008 ENGINE

Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

OFF-VEHICLE REPAIR INFORMATION (CONT.)

CYLINDER BORING AND HONING

Boring Procedure

IMPORTANT: A 0.5 mm (0.02 in) oversize service piston and a piston ring set are available.

1. Measure all pistons with a micrometer to determine the cylinder bore diameter.
2. Before you use any type of boring bar, use a fine file and clean the top of the cylinder block, removing any dirt or burrs. If you do not check the cylinder block, the boring bar may be improperly positioned or tilted and the cylinder bore could be bored at an incorrect angle.
3. Carefully follow the instructions furnished by the manufacturer regarding use of the equipment.
4. When you bore the cylinders, ensure all the crankshaft bearing caps are in place. Tighten the crankshaft bearing caps to the proper torque in order to avoid distortion of the cylinder bores during final assembly.
5. When you take the final cut with a boring bar, leave 0.03 mm (0.001 in) on the cylinder bore diameter for the finish honing and fit of the piston.

Honing Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

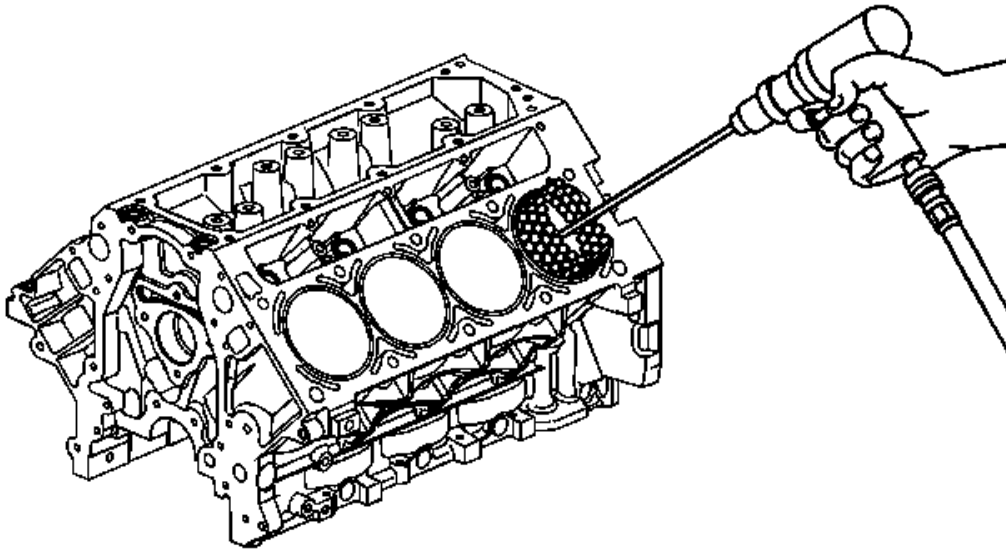


Fig. 1: View Of Honing Of Cylinders
Courtesy of GENERAL MOTORS CORP.

1. When honing the cylinders, follow the manufacturer's recommendations for equipment use, cleaning, and lubrication. Use only clean, sharp stones of the proper grade for the amount of material you remove. Dull, dirty stones cut unevenly and generate excessive heat. Do not hone to final clearance with a coarse or medium-grade stone. Leave sufficient metal so that all stone marks may be removed with fine-grade stones. Perform final honing with a fine-grade stone, honing the cylinder to the proper clearance.
2. During the honing operation, thoroughly clean the cylinder bore. Repeatedly check the cylinder bore for fit with the selected piston.

All measurements of the piston or the cylinder bore should be made with the components at normal room temperature.

3. When honing a cylinder for fit to an oversize piston, first perform the preliminary honing with a 100-grit stone.
4. Perform final cylinder honing with a 240-grit stone and obtain a 45 degree cross hatch pattern.

A 240-grit stone is preferred for final honing. If a 240-grit stone is not available, a 220-grit

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

stone may be used as a substitute.

5. The finish marks should be clean but not sharp. The finish marks should also be free from imbedded particles and torn or folded metal.
6. By measuring the selected piston at the sizing point and by adding the average of the clearance specification, you can determine the final cylinder honing dimension required.
7. After final honing and before the piston is checked for fit, clean the cylinder bores with hot water and detergent. Scrub the bores with a stiff bristle brush and rinse the bores thoroughly with hot water. Do not allow any abrasive material to remain in the cylinder bores. This abrasive material may cause premature wear of the new piston rings and the cylinder bores. Abrasive material will also contaminate the engine oil and may cause premature wear of the bearings. After washing the cylinder bore, dry the bore with a clean rag.
8. Perform final measurements of the piston and the cylinder bore.
9. Permanently mark the top of the piston for the specific cylinder to which it has been fitted.
10. Apply clean engine oil to each cylinder bore in order to prevent rusting.

Deglazing Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

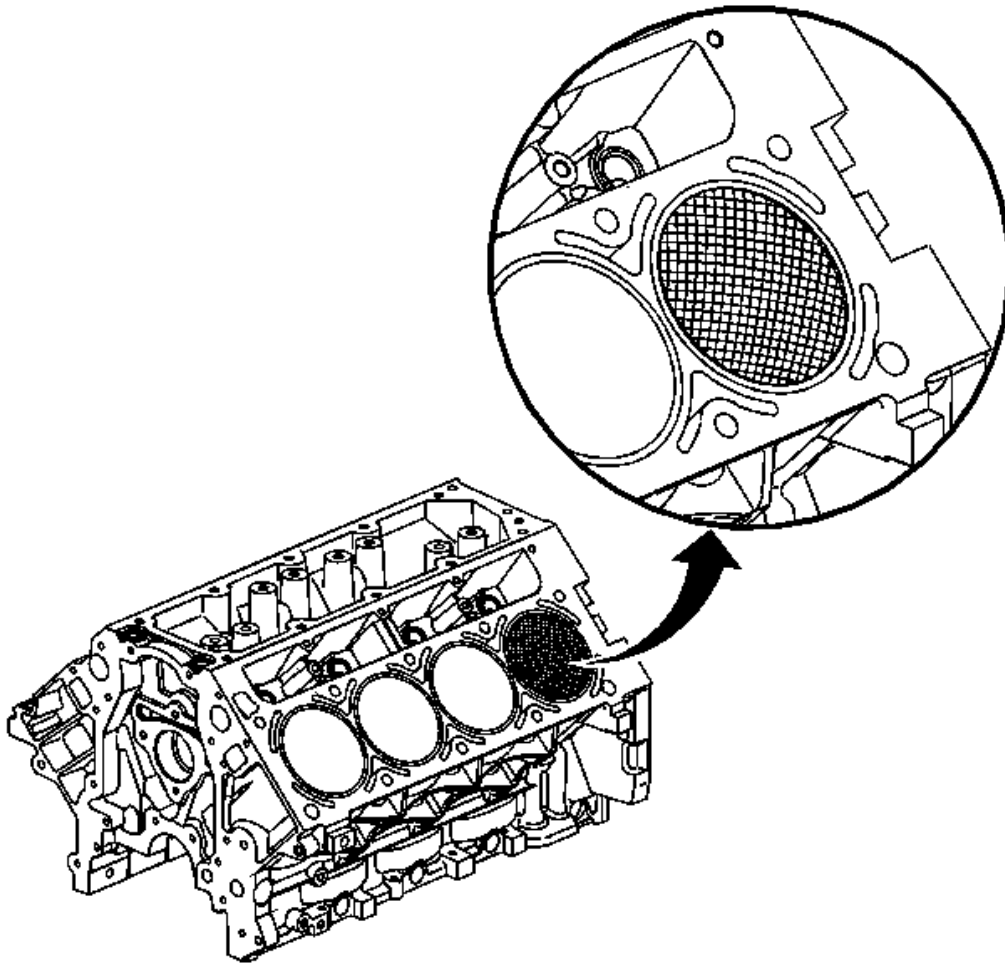


Fig. 2: Illustrating Deglazing Cylinder Bore
Courtesy of GENERAL MOTORS CORP.

Using a ball type or self centering honing tool, deglaze the cylinder bore lightly. Deglazing should be done only to remove any deposits that may have formed. Use a 240-grit stone of silicone carbide, or equivalent, material when performing the deglazing procedure.

A 240-grit stone is preferred for final honing. If a 240-grit stone is not available, a 220-grit stone may be used as a substitute.

CRANKSHAFT AND BEARING CLEANING AND INSPECTION

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Tools Required

- **J 7872** Magnetic Base Dial Indicator Set
- **J 43690** Rod Bearing Checking Tool
- **J 43690-100** Rod Bearing Checking Tool - Adapter Kit. See **Special Tools** .

Cleaning Procedure

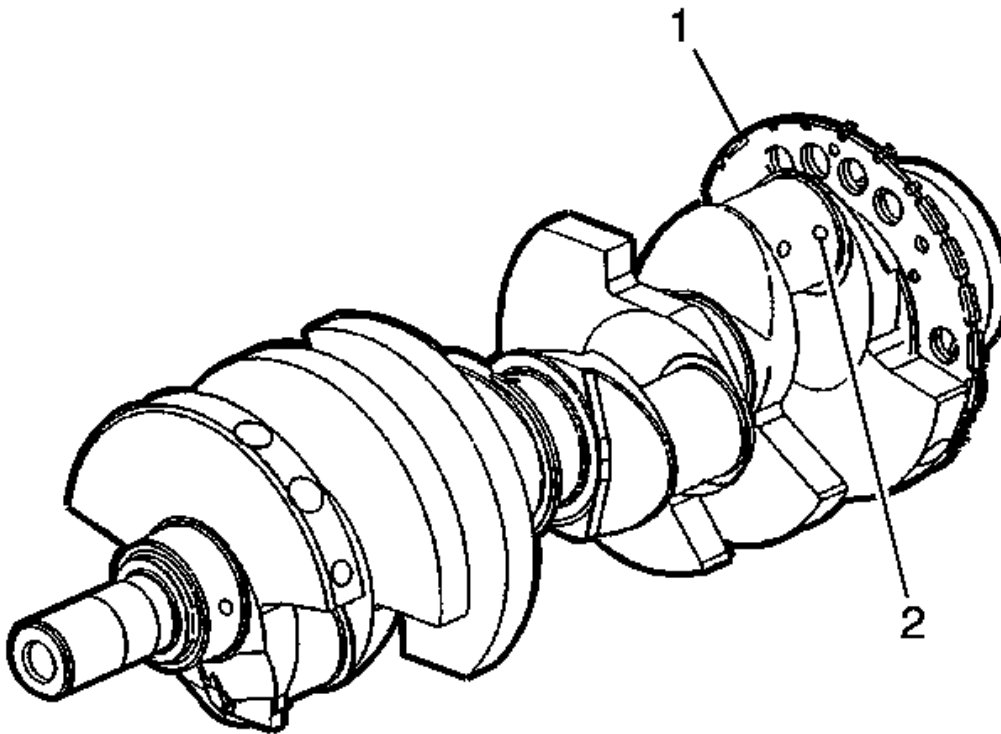


Fig. 3: Oil Passages & CKP Reluctor Ring Teeth
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Use care when handling the crankshaft. Avoid damage to the bearing surfaces or the lobes of the crankshaft position (CKP) reluctor ring. Damage to the teeth of the CKP reluctor ring may affect on-board diagnostics (OBD) II system performance.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Clean the crankshaft with solvent.
2. Thoroughly clean all oil passages (2) and inspect for restrictions or burrs.

CAUTION: Refer to Safety Glasses Caution .

3. Dry the crankshaft with compressed air.

Inspection Procedure

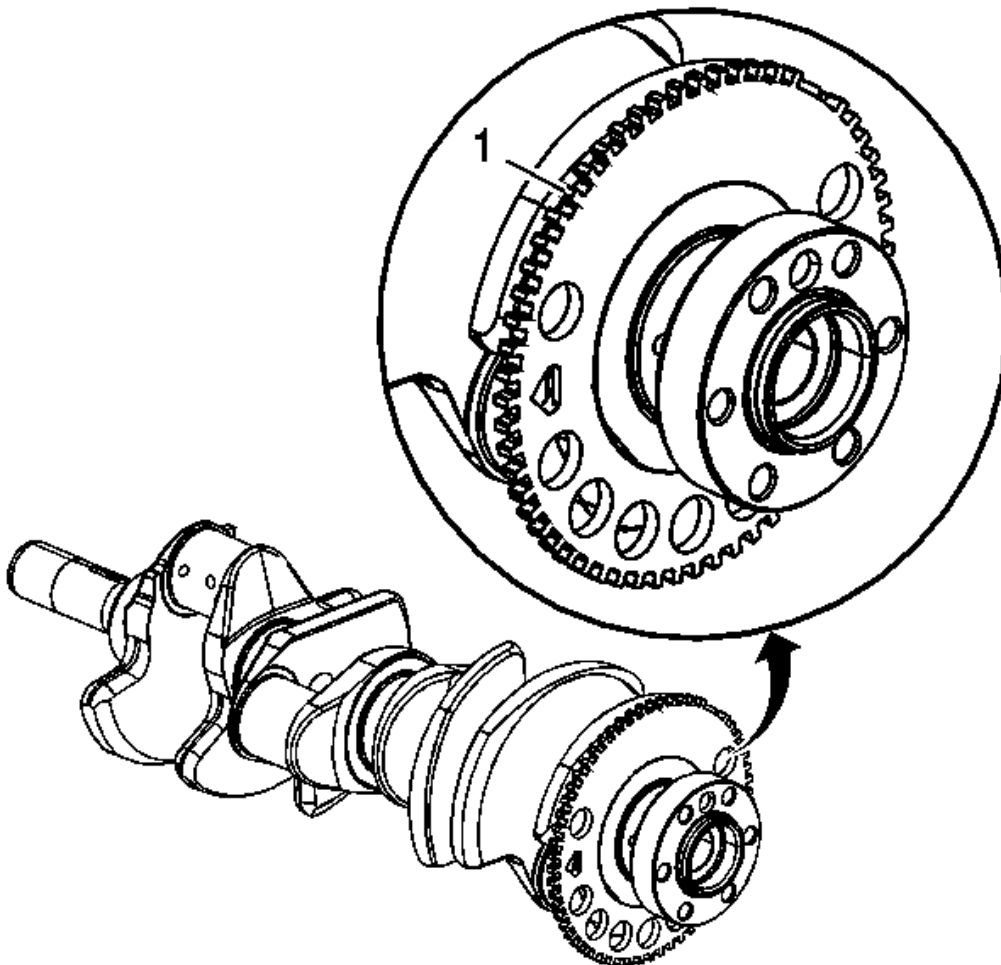


Fig. 4: View Of Reluctor Ring Teeth

Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The reluctor ring teeth should not have imperfections on the rising or falling edges. Imperfections of the reluctor ring teeth may affect OBD II system performance.

1. Inspect the CKP reluctor ring teeth (1) for damage.

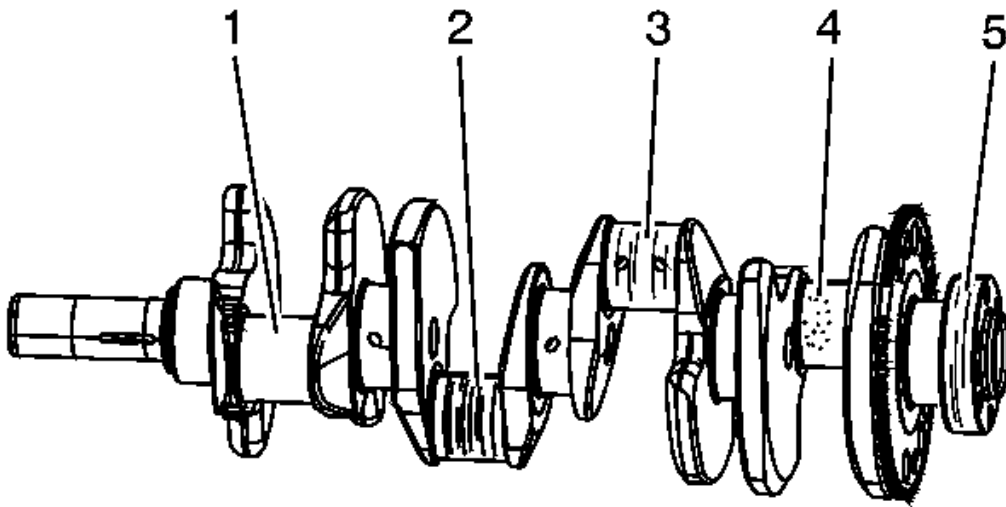


Fig. 5: View Of Crankshaft Journals
Courtesy of GENERAL MOTORS CORP.

2. Inspect the crankshaft journals for wear.

Journals should be smooth (1) with no signs of scoring, wear, or damage.

3. Inspect the crankshaft journals for grooves or scoring (2).
4. Inspect the crankshaft journals for scratches or wear (3).
5. Inspect the crankshaft journals for pitting or imbedded bearing material (4).
6. Inspect the crankshaft rear oil seal surface (5) for grooves or scoring.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

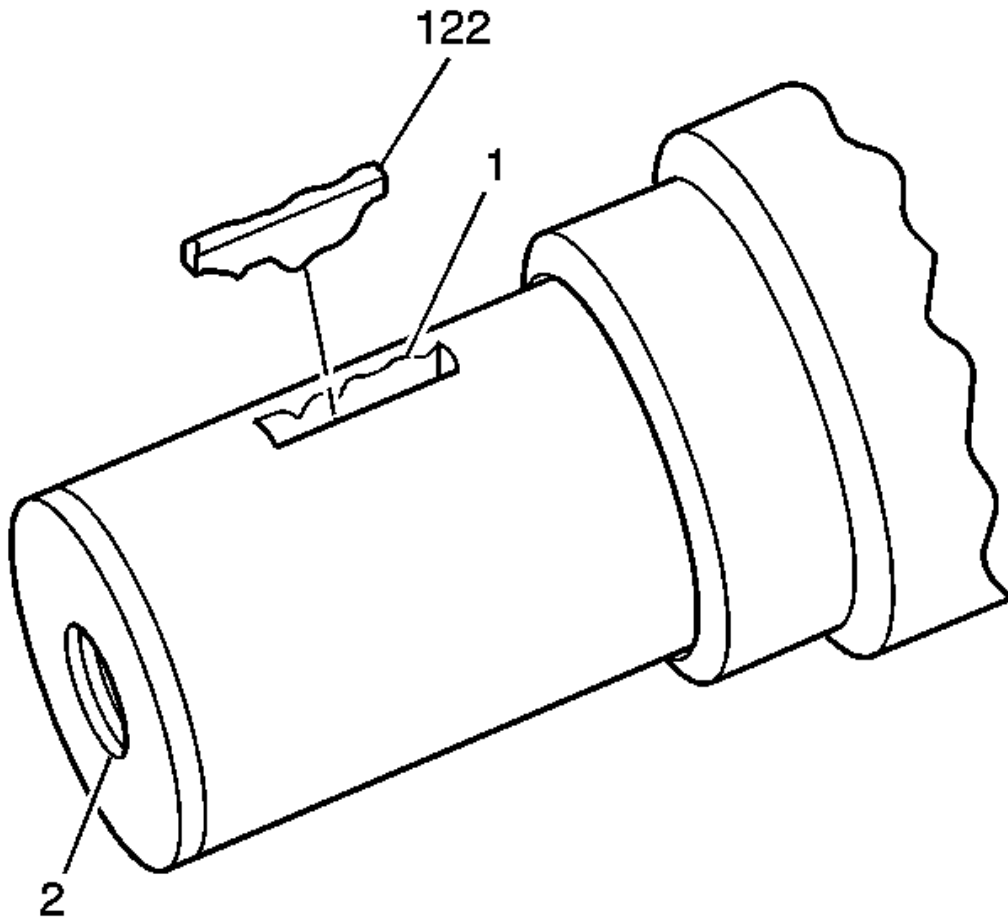


Fig. 6: View Of Crankshaft Key, Keyway & Threaded Hole
Courtesy of GENERAL MOTORS CORP.

7. Inspect the crankshaft key (122), keyway (1), and threaded hole (2) for damage.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

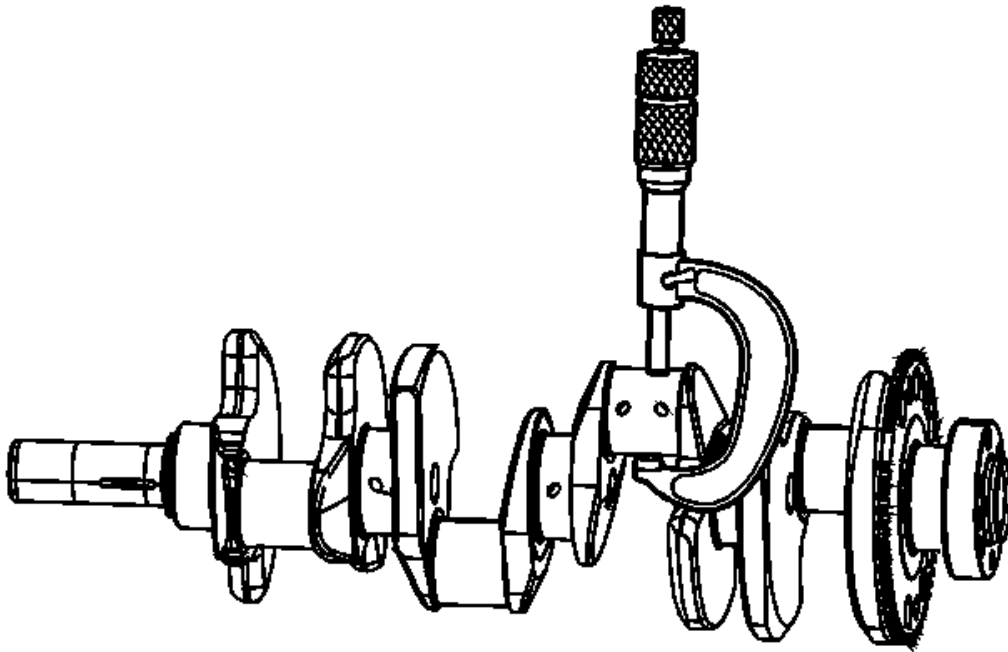


Fig. 7: Measuring Connecting Rod Journals For Out-Of-Round And Taper
Courtesy of GENERAL MOTORS CORP.

8. Measure the connecting rod journals for out-of-round and taper.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

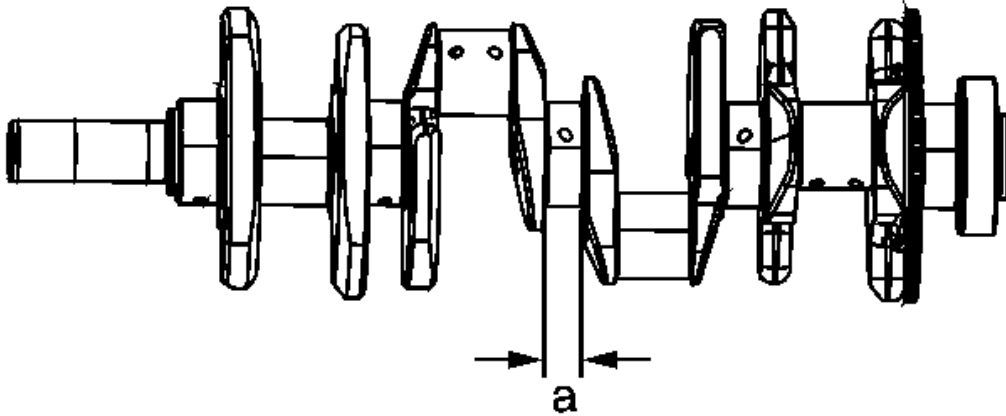


Fig. 8: Measuring Crankshaft Thrust Wall Width
Courtesy of GENERAL MOTORS CORP.

9. Measure the crankshaft thrust wall width.

A crankshaft with a thrust wall width in excess of 26.2 mm (1.0315 in) (a) must be replaced.

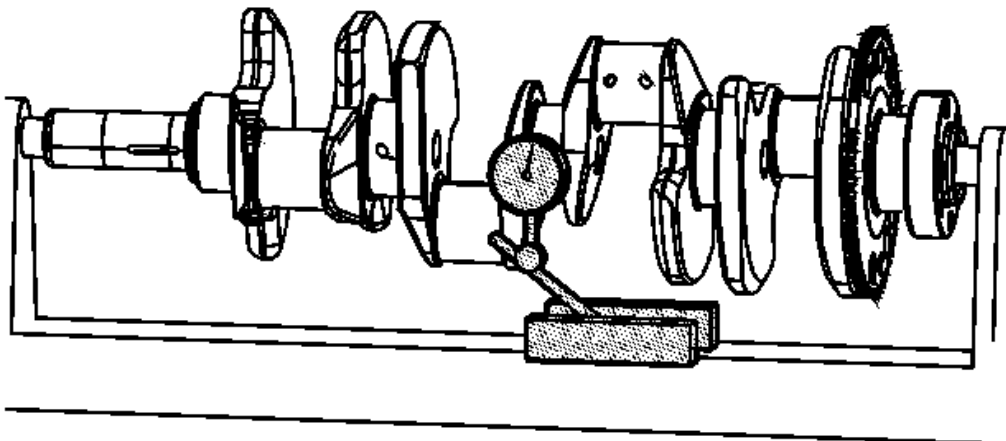


Fig. 9: Measuring Crankshaft Runout

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Courtesy of GENERAL MOTORS CORP.

10. Measure the crankshaft runout.

Use wooden V-blocks or a fixture to support the crankshaft on the front and rear journals.

11. Use the **J 7872** in order to measure the crankshaft runout at the front and rear intermediate journals.
12. Use the **J 7872** in order to measure the runout of the crankshaft rear flange.
13. Use the **J 7872** in order to measure the runout of the crankshaft position reluctor ring. Reluctor ring runout should be measured 1.0 mm (0.04 in) below the ring teeth.

If the reluctor ring has runout in excess of 0.7 mm (0.028 in), replace the crankshaft.

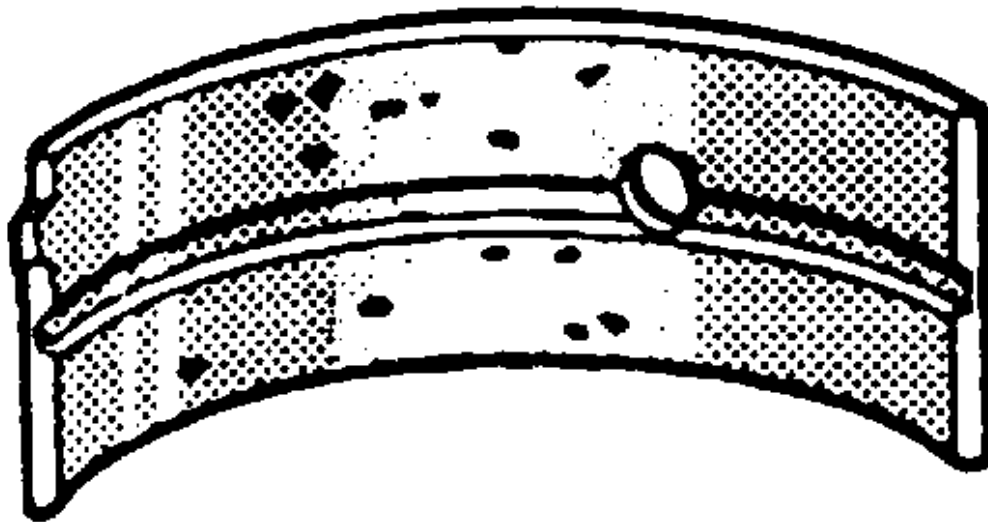


Fig. 10: Identifying Crankshaft Bearing Craters Or Pockets
Courtesy of GENERAL MOTORS CORP.

14. Inspect crankshaft bearings for craters or pockets. Flattened sections on the bearing halves also indicate fatigue.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

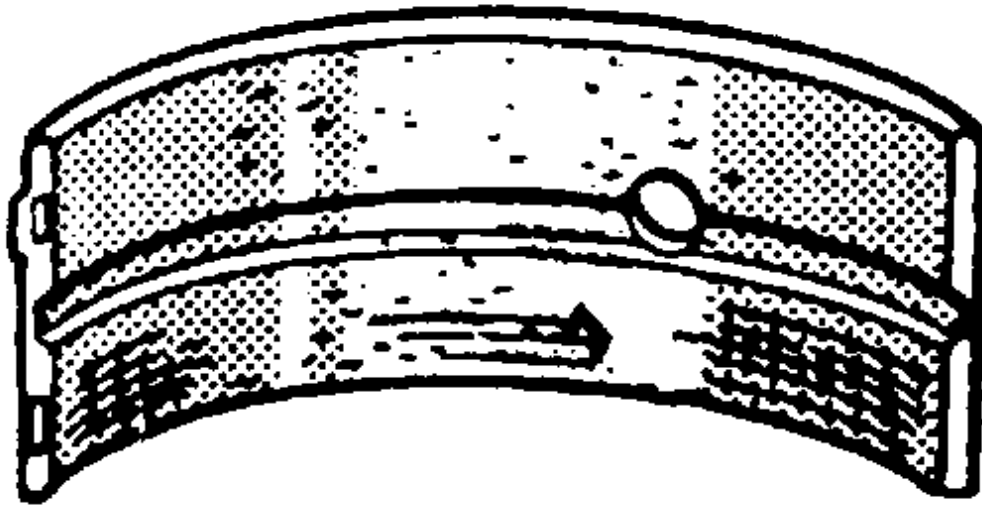


Fig. 11: Identifying Connecting Rod Bearing Scoring Or Discoloration
Courtesy of GENERAL MOTORS CORP.

15. Inspect the crankshaft bearings for excessive scoring or discoloration.
16. Inspect the crankshaft bearings for dirt or debris imbedded into the bearing material.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

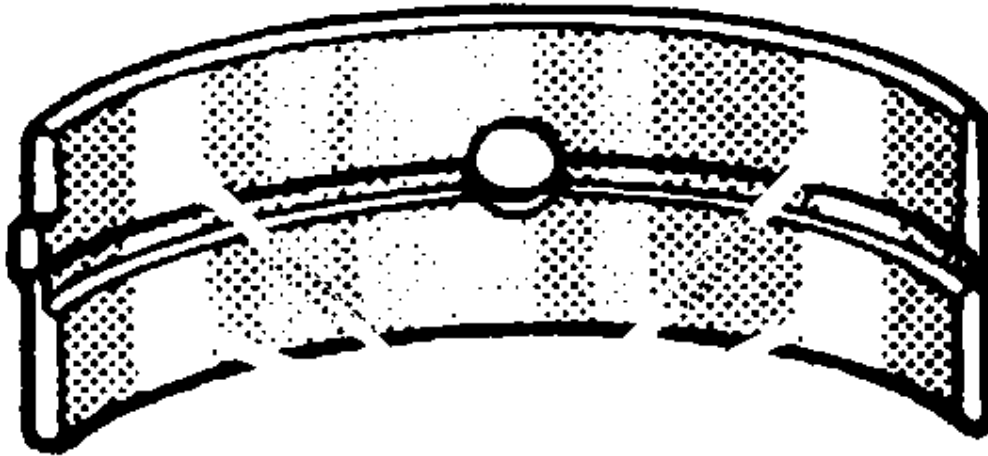


Fig. 12: Crankshaft Bearing Polished Sections (Improper Seating)
Courtesy of GENERAL MOTORS CORP.

17. Inspect the crankshaft bearings for improper seating, indicated by bright, polished sections of the bearing.

If the lower half of the bearing is worn or damaged, both upper and lower halves should be replaced.

Generally, if the lower half is suitable for use, the upper half should also be suitable for use.

Measuring Main Bearing Clearance - Gaging Plastic Method

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

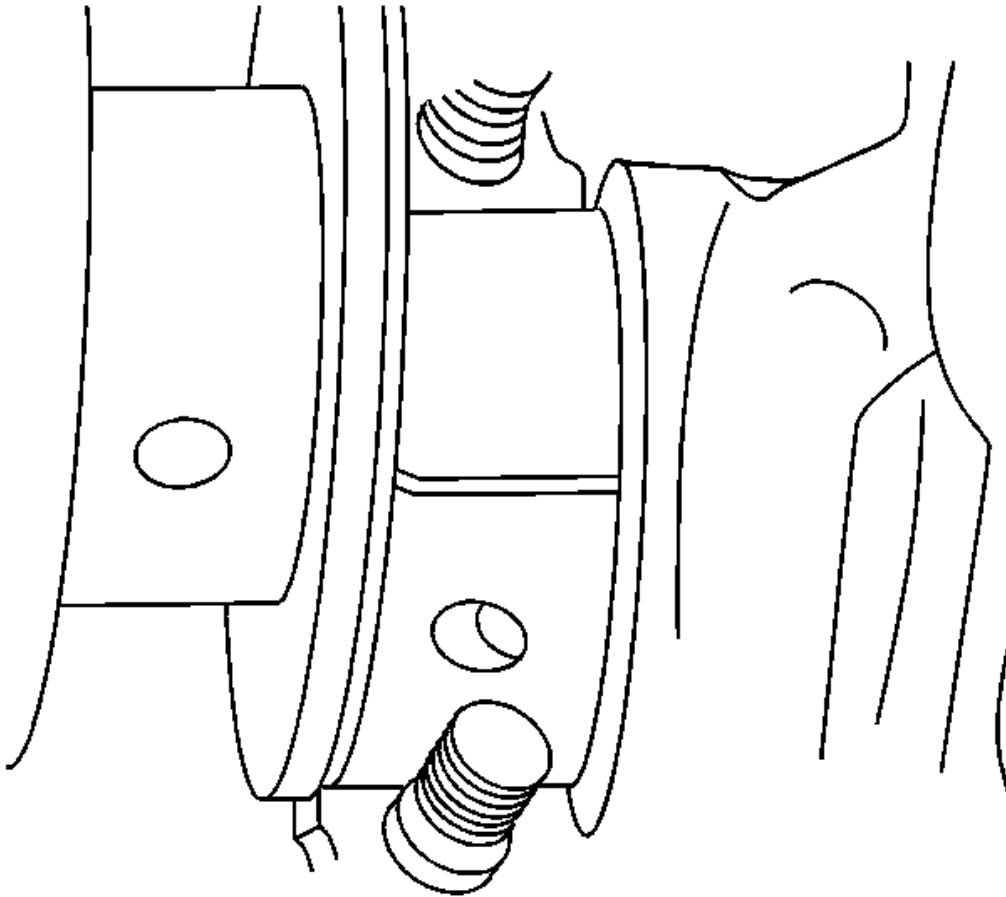


Fig. 13: View Of Gaging Plastic Installed On Crankshaft Journal
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- The crankshaft main bearings are a precision insert type. Main bearing caps are machined with the engine block, for proper clearance, and cannot be shimmed or filed for bearing fit. If the clearances are found to be excessive, new bearings and/or engine block and cap repair or replacement may be required.
- Do not rotate the crankshaft while gaging plastic is between the crankshaft journal and the bearing surface.
- The crankshaft bearing clearances are critical.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Excessive bearing clearance may affect crankshaft position sensor signals and may affect OBD II system operation.

- **Remove the bearing cap side bolts prior to cap removal.**

1. Remove the bearing caps, bearing half, and bolts. Refer to **Crankshaft and Bearing Removal** .
2. Install gaging plastic onto the crankshaft journal. Install the gaging plastic the full width of the crankshaft bearing journal.
3. Install the bearing caps, bearing half, and bolts. Refer to **Crankshaft and Bearing Installation**.
4. Remove the bearing caps, bearing half, and bolts. Refer to **Crankshaft and Bearing Removal** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

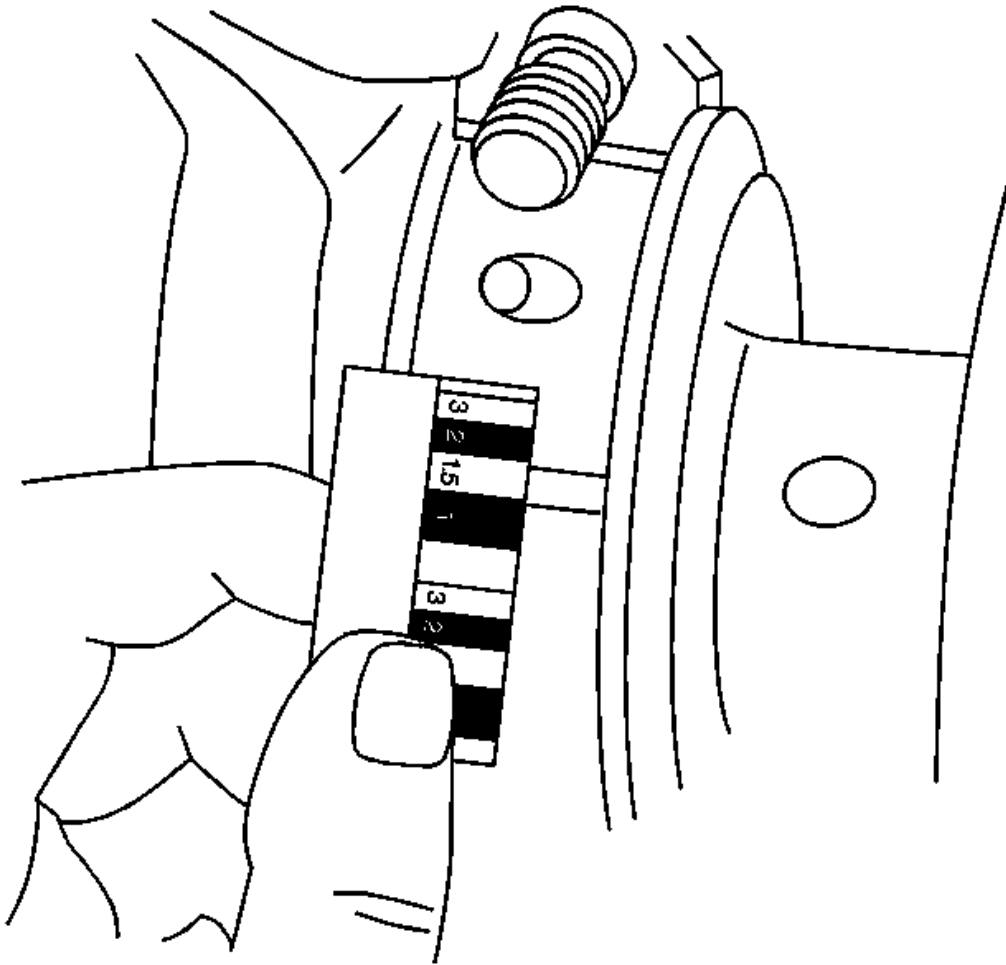


Fig. 14: Measuring Gaging Plastic
Courtesy of GENERAL MOTORS CORP.

5. Using the scale supplied with the plastic gaging kit, measure the gaging plastic at its widest area.
 - If the gaging plastic shows irregularity in the journal, exceeding 0.025 mm (0.001 in), remove the crankshaft and measure the journal with a micrometer.
 - If clearance cannot be brought to specifications, replace the crankshaft or engine block as required. Refer to **Engine Mechanical Specifications (RPO LY5 VIN J)** or **Engine Mechanical Specifications (RPO LC9 VIN 3)** or **Engine Mechanical Specifications (RPO LY2 VIN C)** or **Engine Mechanical Specifications (RPO**

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

LH6 VIN M) or **Engine Mechanical Specifications (RPO LMG VIN 0)** or **Engine Mechanical Specifications (RPO LY6 VIN K)** or **Engine Mechanical Specifications (RPO L76 VIN Y)** or **Engine Mechanical Specifications (RPO L92 VIN 8)** .

Measuring Connecting Rod Bearing Clearance - Gaging Plastic Method

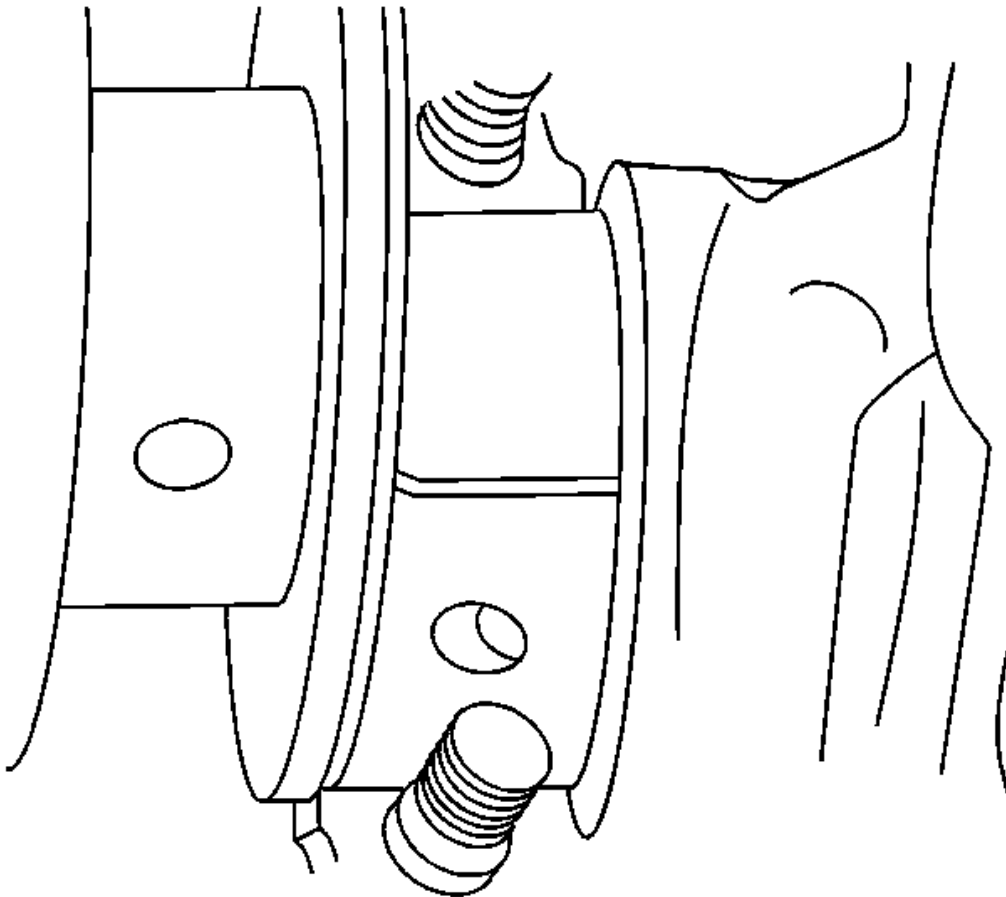


Fig. 15: View Of Gaging Plastic Installed On Crankshaft Journal
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- **Connecting rod bearings are a precision insert type. Connecting rods are of a powdered metal design and cannot be shimmed or filed for bearing fit. If clearances**

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

are found to be excessive, a new bearing and/or connecting rod is required.

- **Do not rotate the crankshaft while gaging plastic is between the crankshaft journal and the bearing surface.**

1. Remove the bearing cap, bearing half, and bolts. Refer to **Piston, Connecting Rod, and Bearing Removal** .
2. Install the gaging plastic onto the connecting rod bearing journal. Install the gaging plastic the full width of the journal.
3. Install the bearing cap, bearing half, and bolts. Refer to **Piston, Connecting Rod, and Bearing Installation**.
4. Remove the bearing cap, bearing half, and bolts. Refer to **Piston, Connecting Rod, and Bearing Removal** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

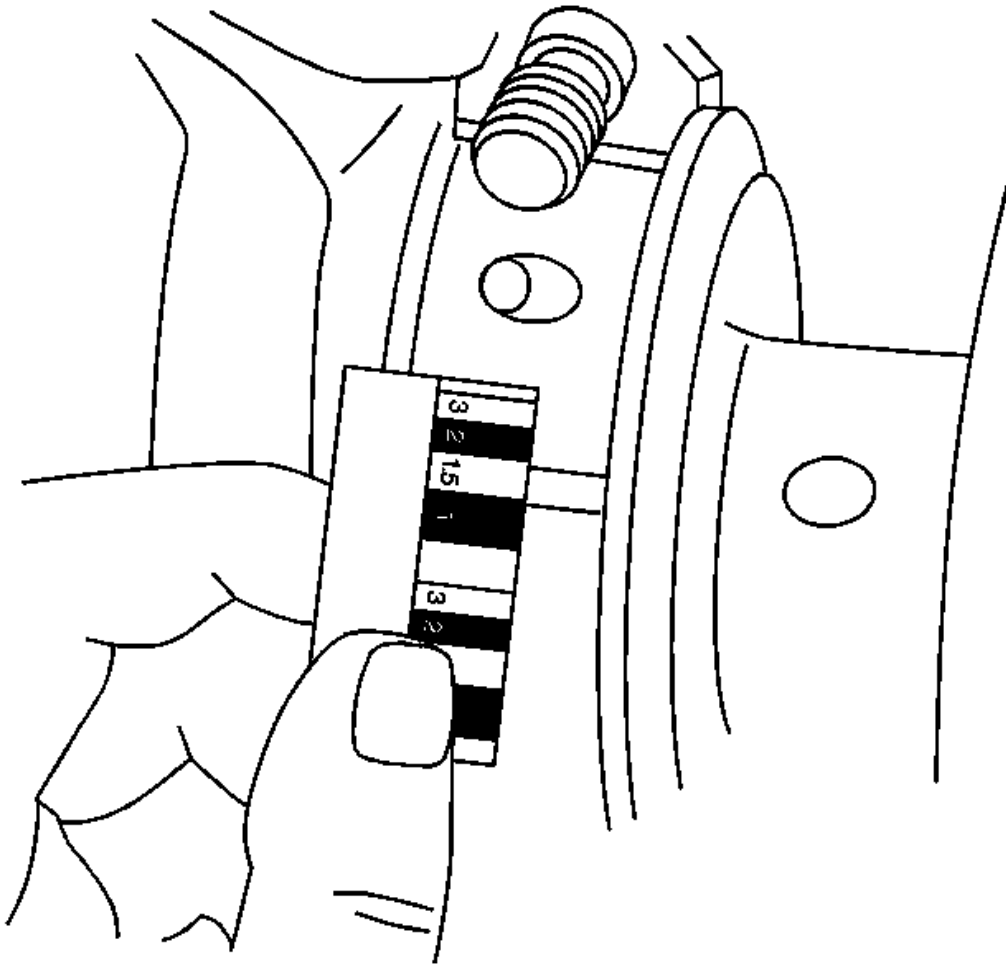


Fig. 16: Measuring Gaging Plastic
Courtesy of GENERAL MOTORS CORP.

5. Using the scale supplied with the plastic gaging kit, measure the gaging plastic at its widest area. Refer to **Engine Mechanical Specifications (RPO LY5 VIN J)** or **Engine Mechanical Specifications (RPO LC9 VIN 3)** or **Engine Mechanical Specifications (RPO LY2 VIN C)** or **Engine Mechanical Specifications (RPO LH6 VIN M)** or **Engine Mechanical Specifications (RPO LMG VIN 0)** or **Engine Mechanical Specifications (RPO LY6 VIN K)** or **Engine Mechanical Specifications (RPO L76 VIN Y)** or **Engine Mechanical Specifications (RPO L92 VIN 8)** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

J 43690 and **J 43690-100** have been developed as a more accurate method to measure connecting rod bearing clearances. See **Special Tools** . The instructions below provide an overview of tool set-up and usage. For more detailed information, refer to the tool instruction sheets supplied by the tool manufacturer.

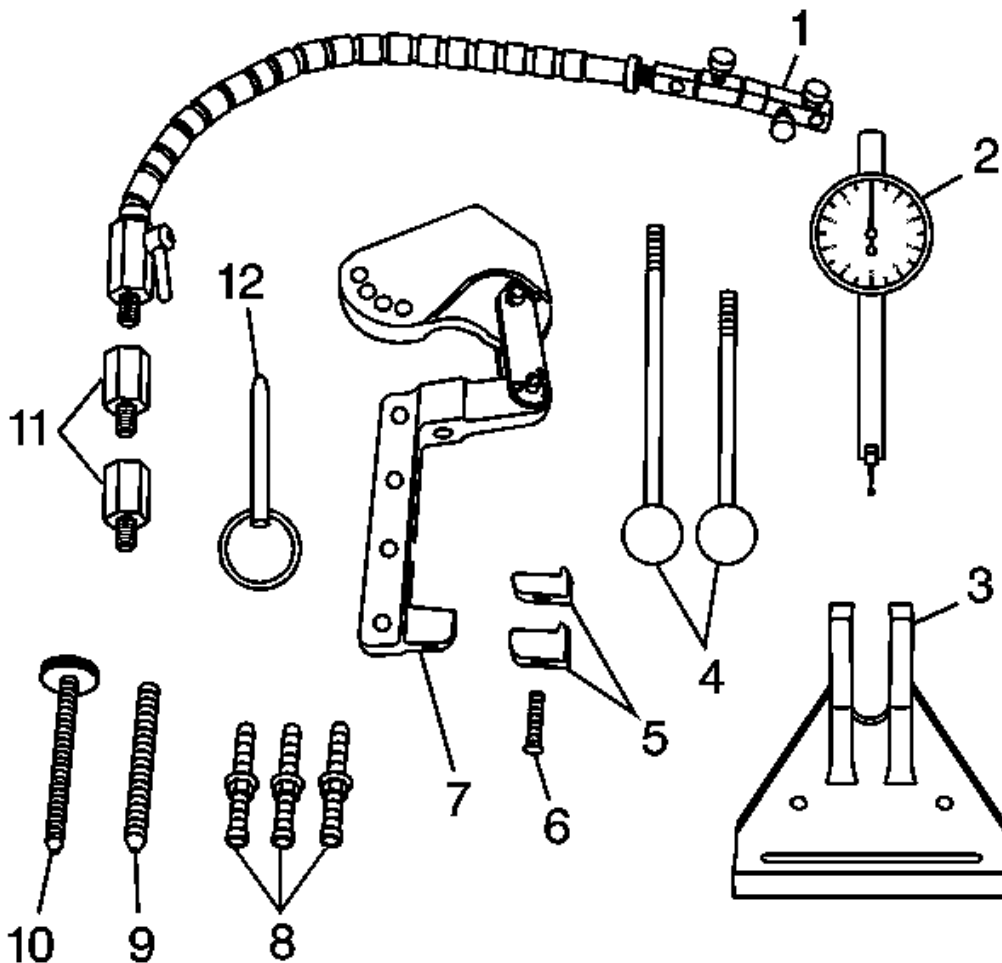


Fig. 17: Identifying Rod Bearing Clearance Checking Tool

Courtesy of GENERAL MOTORS CORP.

Rod Bearing Checking Tool

- J 43690-20 Swivel Base (1)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- J 43690-19 Dial Indicator (2)
- J 43690-2 Base (3)
- J 43690-5, J 43690-6 Handle (4)
- J 43690-10, J 43690-11 Foot (5)
- 280307 Screw (6)
- J 43690-1 Pivot Arm Assembly (7)
- J 43690-3, J 43690-7, J 43690-8 Screws (8)
- 280319 Screw (9)
- 280311 Screw (10)
- J 43690-17, J 43690-18 Adapter (11)
- 280310 Pin (12)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

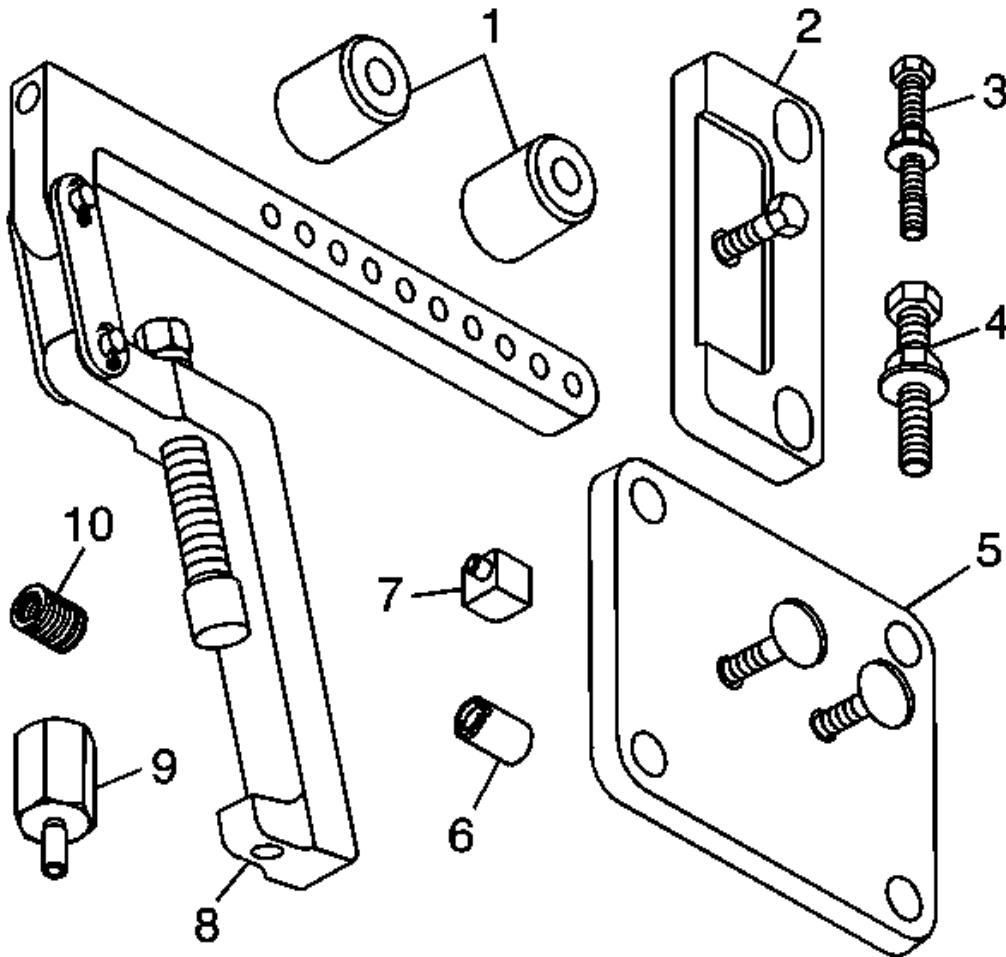


Fig. 18: Identifying Rod Bearing Clearance Tool - Adapter Kit
Courtesy of GENERAL MOTORS CORP.

Rod Bearing Checking Tool - Adapter Kit. See Special Tools .

- J 43690-104 Spacer (1)
- J 43690-105 Retainer Plate (2)
- 505478 Bolt (3)
- 511341 Bolt (4)
- J 43690-106 Retainer Plate (5)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- J 43690-107 Cap (6)
- J 43690-102 Foot (7)
- J 43690-101 Pivot Arm Assembly (8)
- J 43690-103 Adapter (9)
- 505439 Adapter (10)

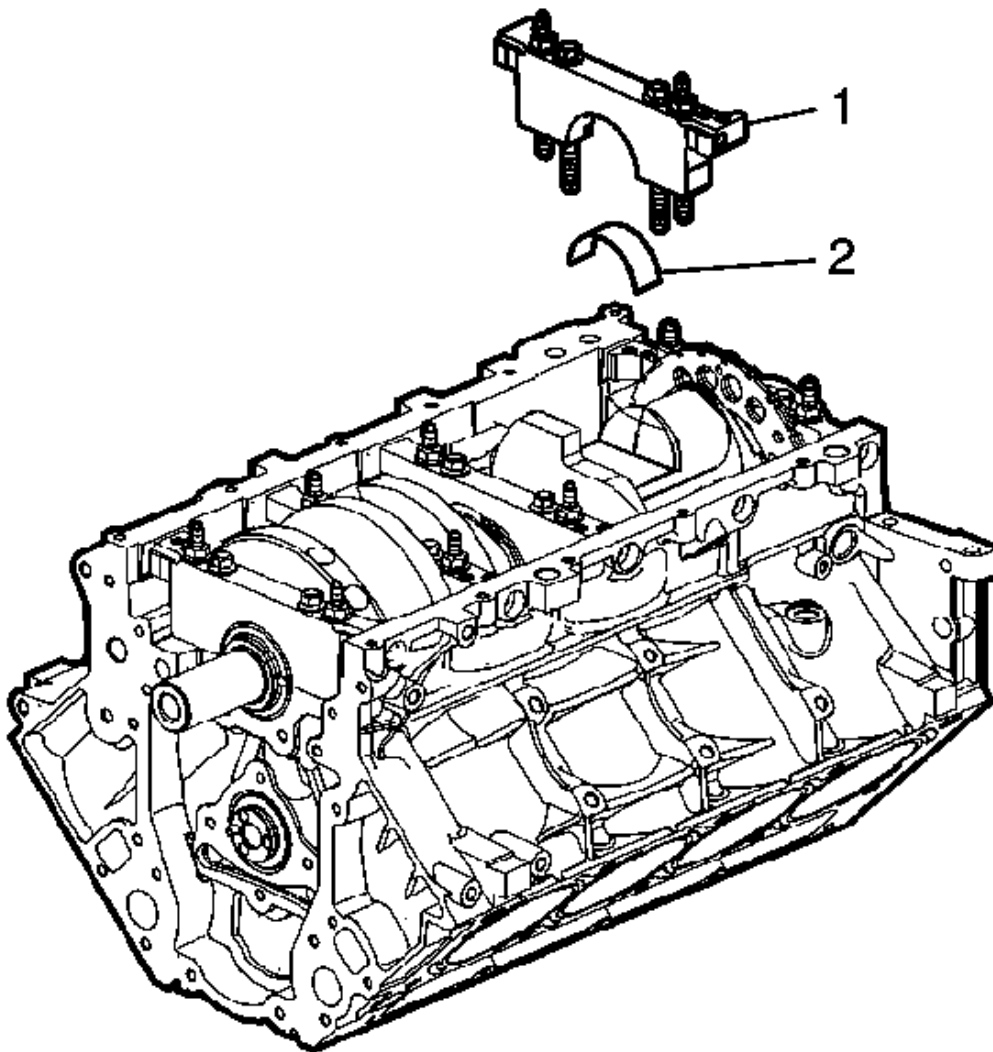


Fig. 19: View Of Bearing Cap, Bolt & Bearing Half

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Courtesy of **GENERAL MOTORS CORP.**

IMPORTANT: The crankshaft must be secure, with no movement or rotation, in order to obtain an accurate reading.

1. Rotate the crankshaft until the journal/connecting rod to be measured is in the 12 o'clock position.
2. Remove a bearing cap and bolts (1).
3. Remove the bearing half (2).
4. Insert a piece of paper card stock onto the crankshaft journal.
5. Install the bearing half (2) and cap and bolts (1). Refer to **Fastener Tightening Specifications** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

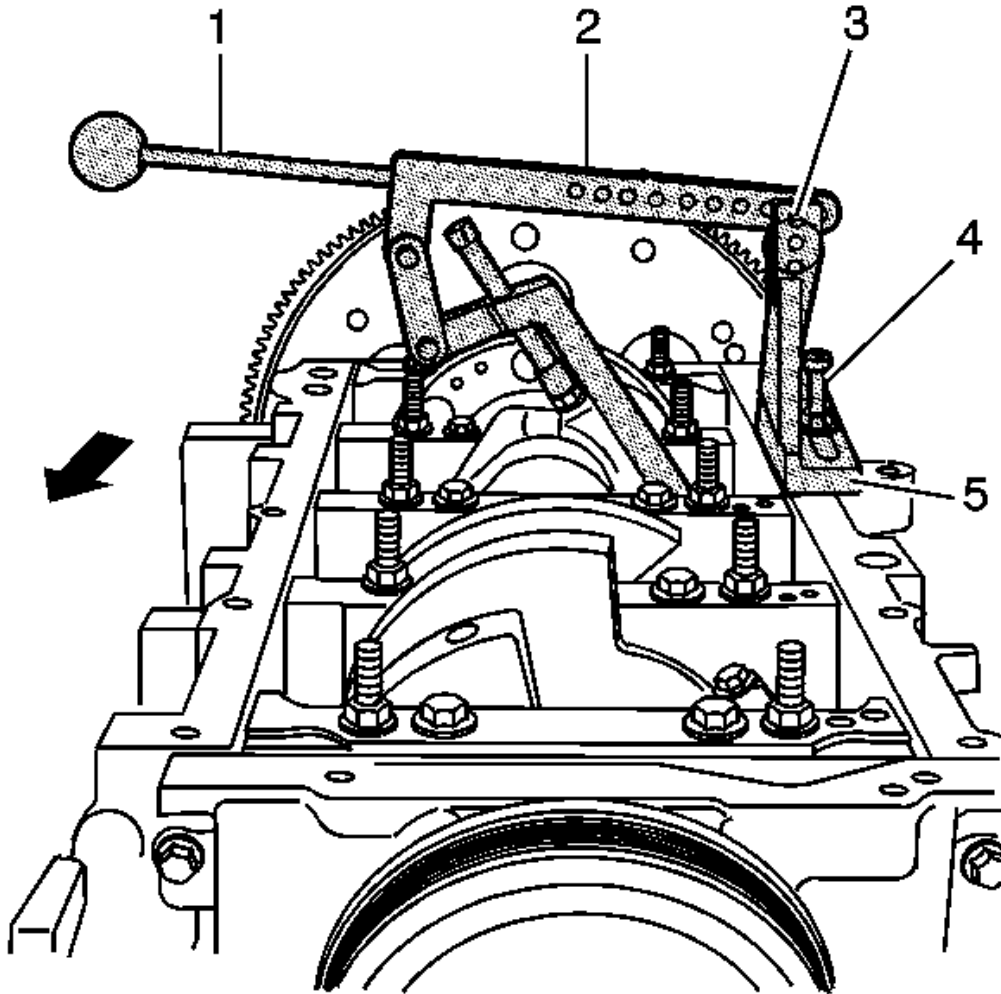


Fig. 20: View Of Special Tool Installed On Engine Block
Courtesy of GENERAL MOTORS CORP.

6. Install the following:
 1. J 43690-2 (5)
 2. J 43690-3 (4)
 3. J 43690-101 (2)
 4. 280310 (3)
 5. J 43690-5 (1)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

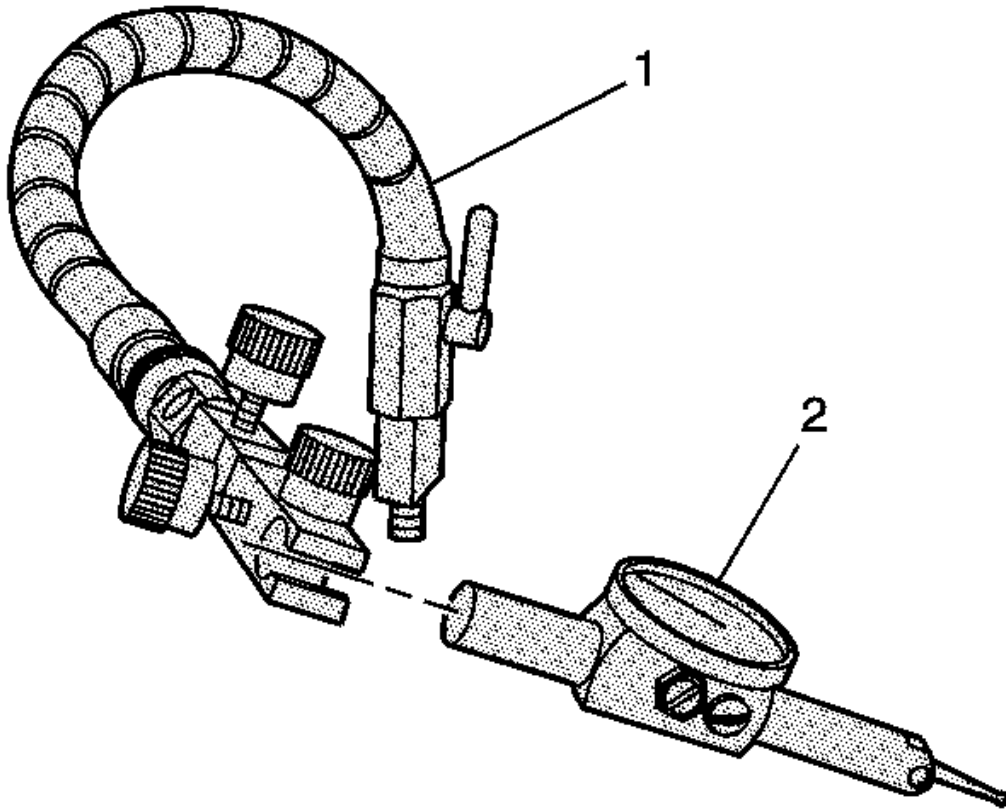


Fig. 21: View Of Swivel Base & Dial Indicator
Courtesy of GENERAL MOTORS CORP.

7. Install the swivel base (1) and dial indicator (2).
8. Adjust per the manufacturers instructions and measure the connecting rod bearing clearance.

A connecting rod with a clearance in excess of 0.076 mm (0.003 in) is considered excessive. Service components, as required.

CRANKSHAFT BALANCER CLEANING AND INSPECTION

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

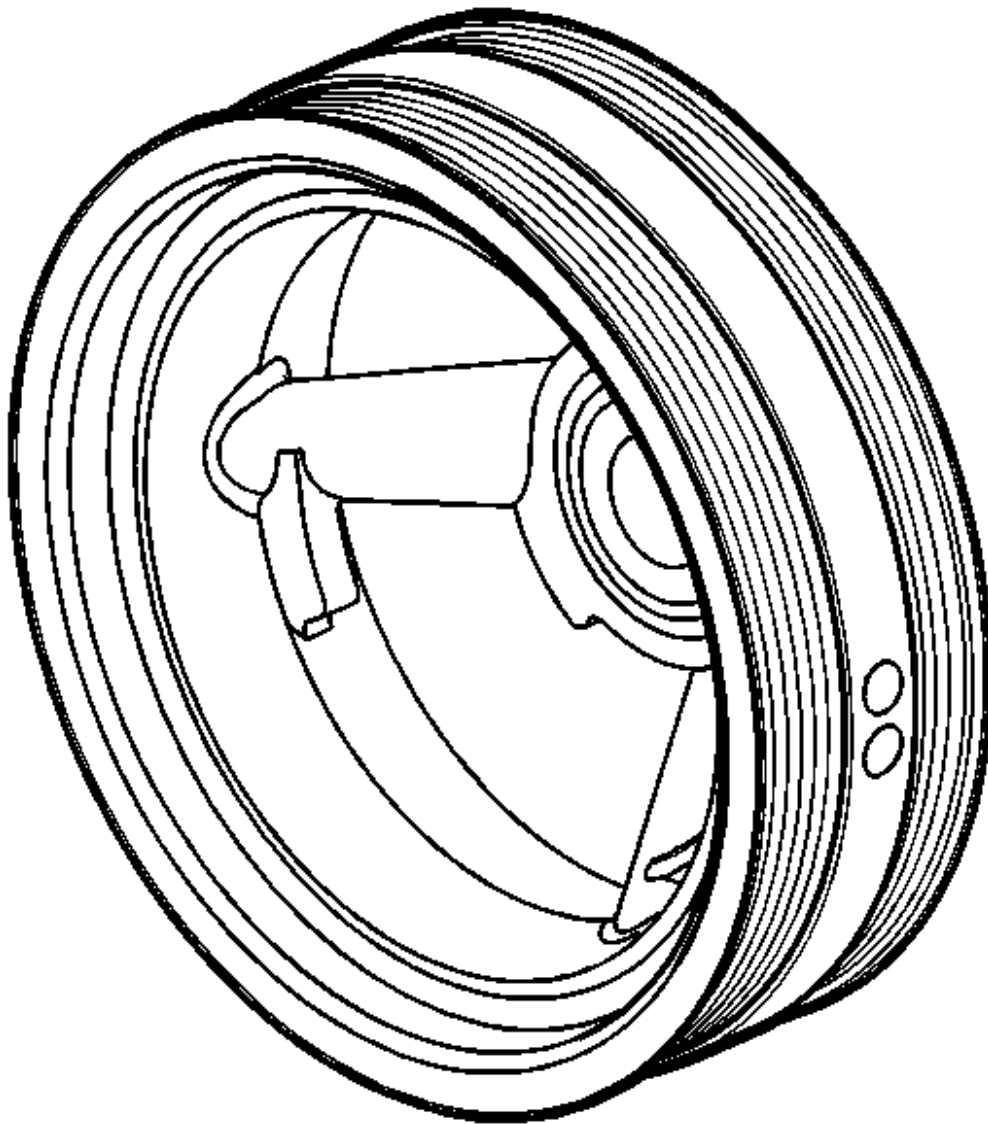


Fig. 22: View Of Crankshaft Balancer
Courtesy of GENERAL MOTORS CORP.

1. Clean the crankshaft balancer in solvent.
2. Clean the belt grooves of all dirt or debris with a wire brush.
3. Dry the crankshaft balancer with compressed air.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

4. Inspect the crankshaft balancer for the following conditions:

- Worn, grooved, or damaged hub seal surface

A crankshaft balancer hub seal surface with excessive scoring, grooves, rust or other damage must be replaced.

Minor imperfections on the hub seal surface may be removed with polishing compound or fine grade emery cloth.

IMPORTANT: In order for the belt to track properly, the belt grooves should be free of all dirt or debris.

- Dirty or damaged belt grooves

The balancer belt grooves should be free of any nicks, gouges, or other damage that may not allow the belt to track properly.

Minor imperfections may be removed with a fine file.

- Worn, chunking, or deteriorated rubber between the hub and pulley

AUTOMATIC TRANSMISSION FLEX PLATE CLEANING AND INSPECTION

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

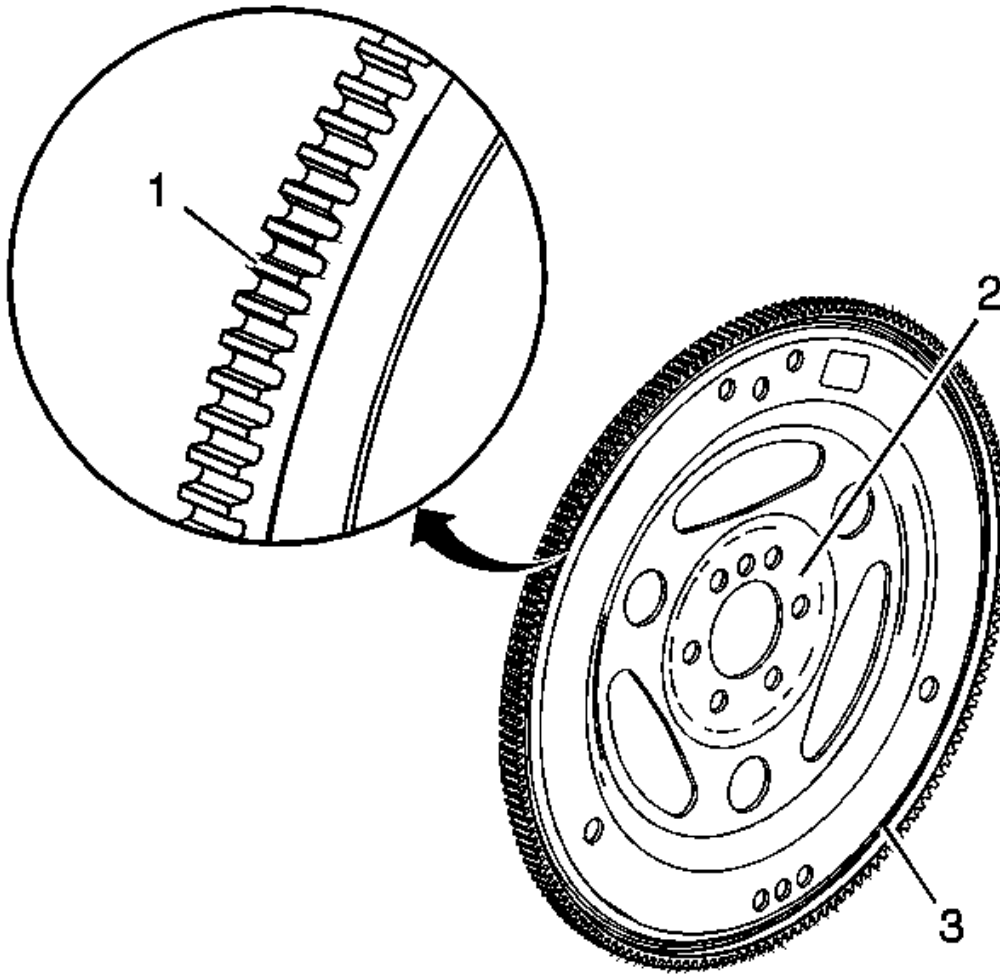


Fig. 23: View Of Ring Gear Teeth
Courtesy of GENERAL MOTORS CORP.

1. Clean the flex plate in solvent.

CAUTION: Refer to Safety Glasses and Compressed Air Caution .

2. Dry the flex plate with compressed air.
3. Inspect the flex plate for the following conditions:

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- Damaged ring gear teeth (1)
- Stress cracks around the flex plate-to-crankshaft bolt hole locations (2)

IMPORTANT: Do not attempt to repair the welded areas that retain the ring gear to the flex plate. Install a new flex plate.

- Welded areas (3) that retain the ring gear onto the flex plate for cracking

PISTON AND CONNECTING ROD DISASSEMBLE

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

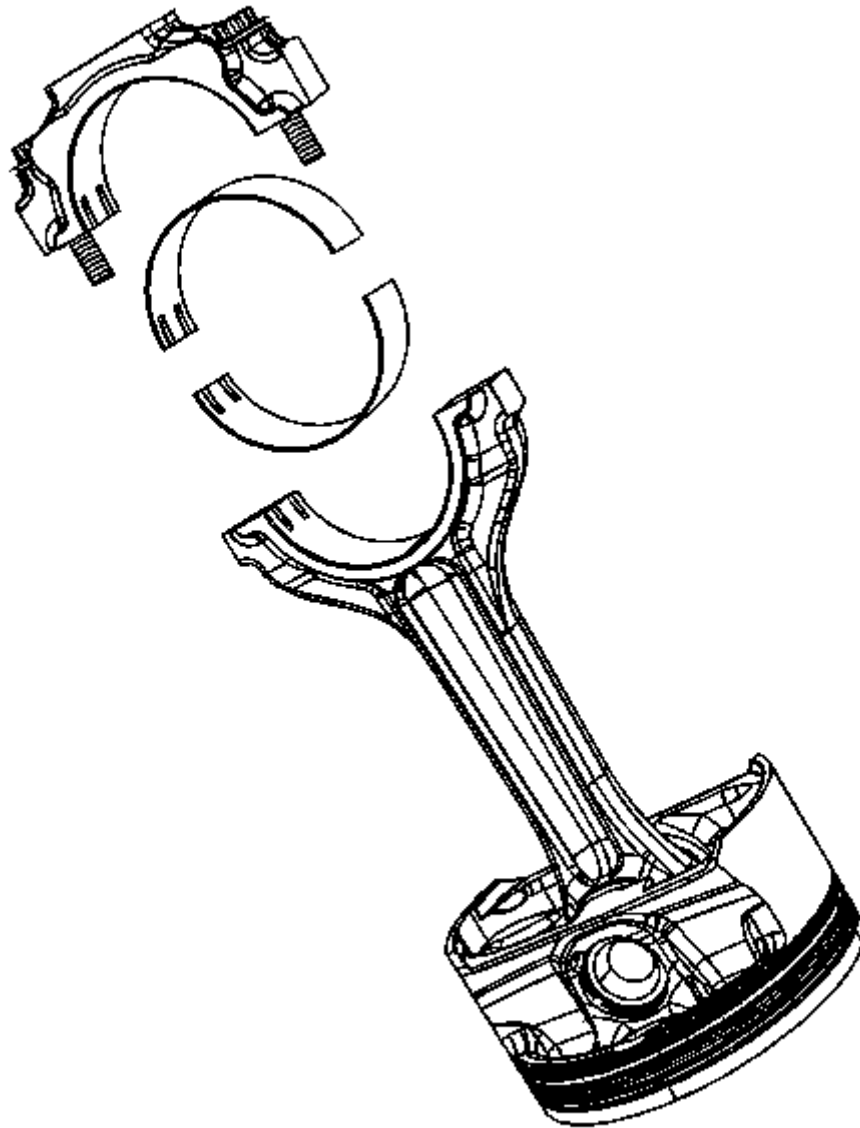


Fig. 24: View Of Piston, Connecting Rod & Bearing Assembly
Courtesy of GENERAL MOTORS CORP.

1. Remove the connecting rod bearings from the rod and cap.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

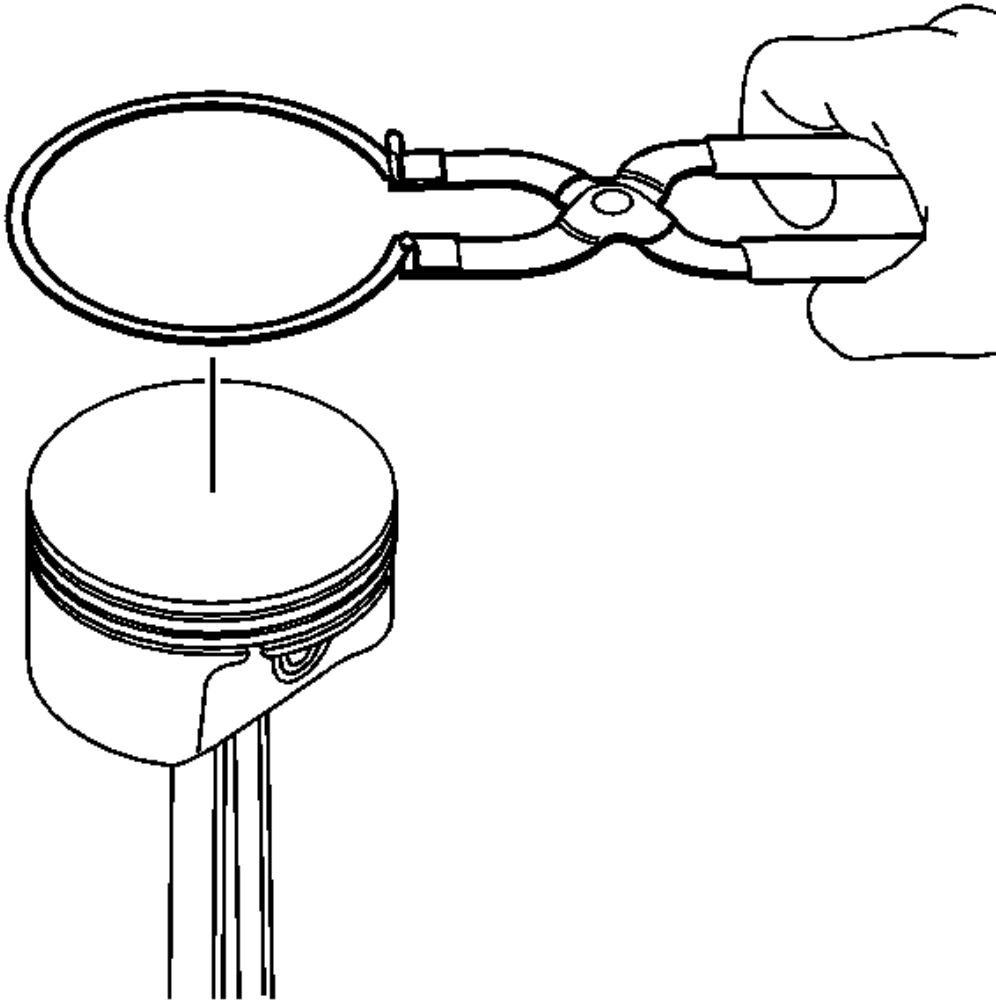


Fig. 25: Removing/Installing Piston Rings
Courtesy of GENERAL MOTORS CORP.

2. Using piston ring pliers, remove the piston rings from the piston.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

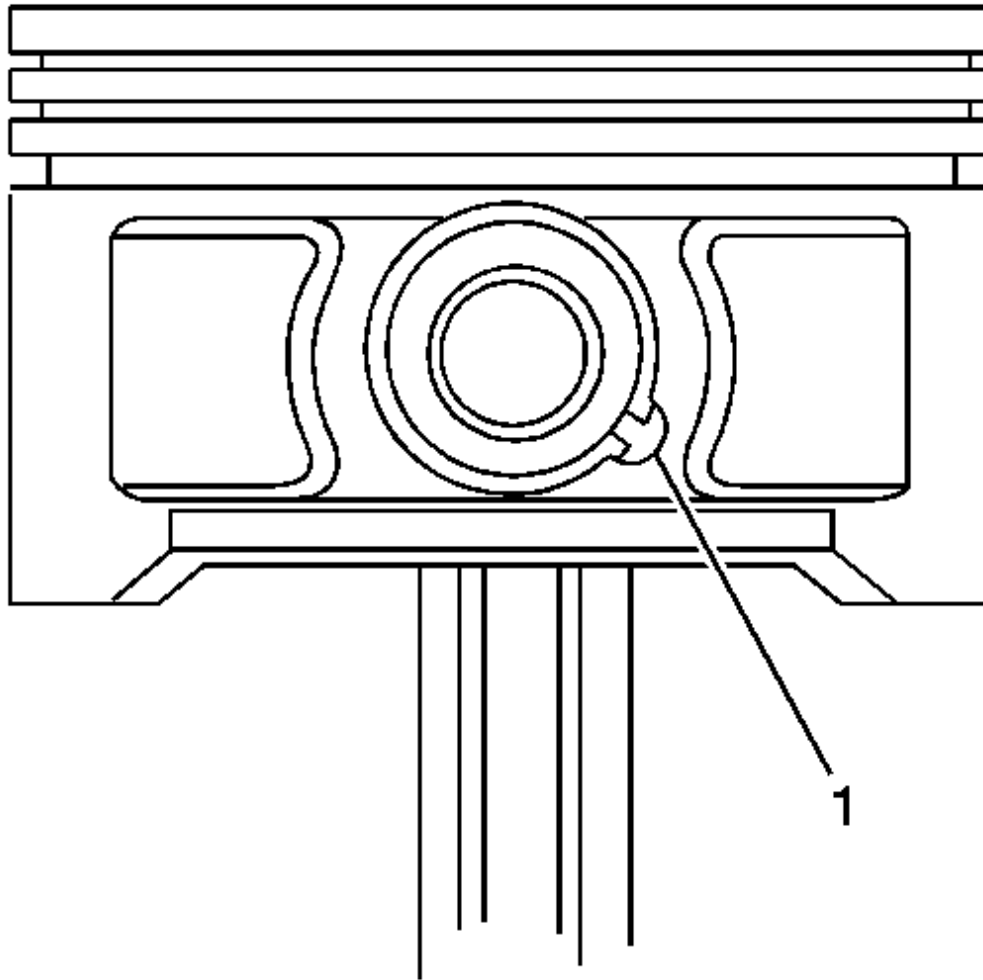


Fig. 26: View Of Piston Pin Retaining Clip & Cutout Area Of Pin Bore
Courtesy of GENERAL MOTORS CORP.

3. Rotate the piston pin retainers until the ring end gaps are positioned in the cutout area (1) of the pin bore.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

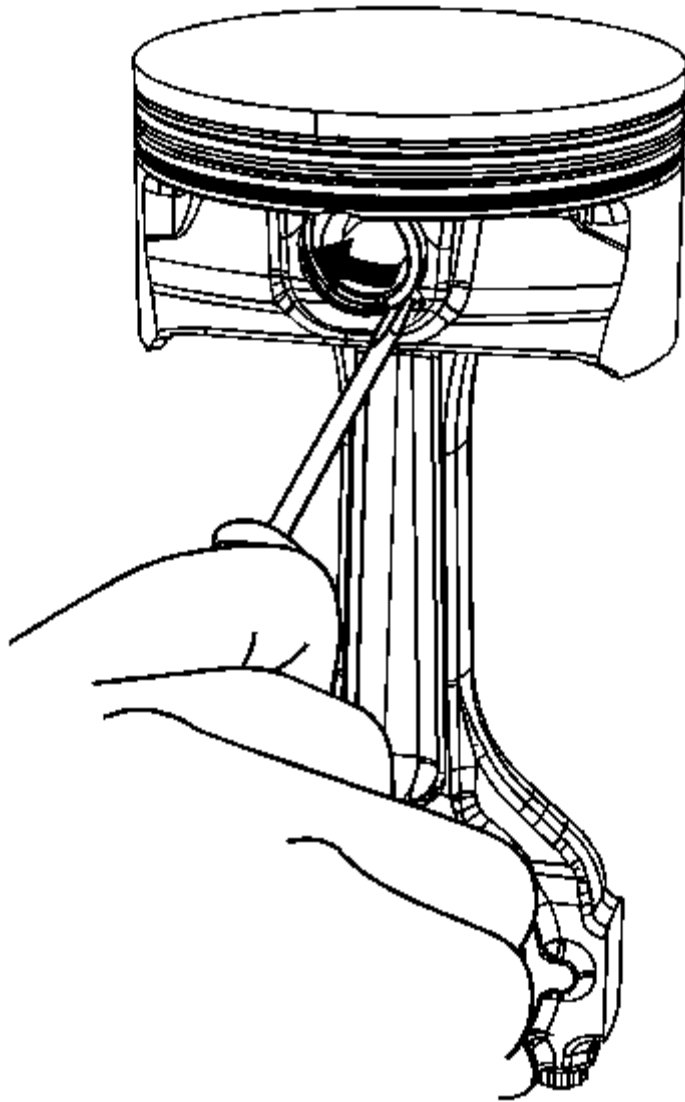


Fig. 27: Piston Pin Retainer
Courtesy of GENERAL MOTORS CORP.

4. Remove the retainers starting in the cutout area of the pin bore.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

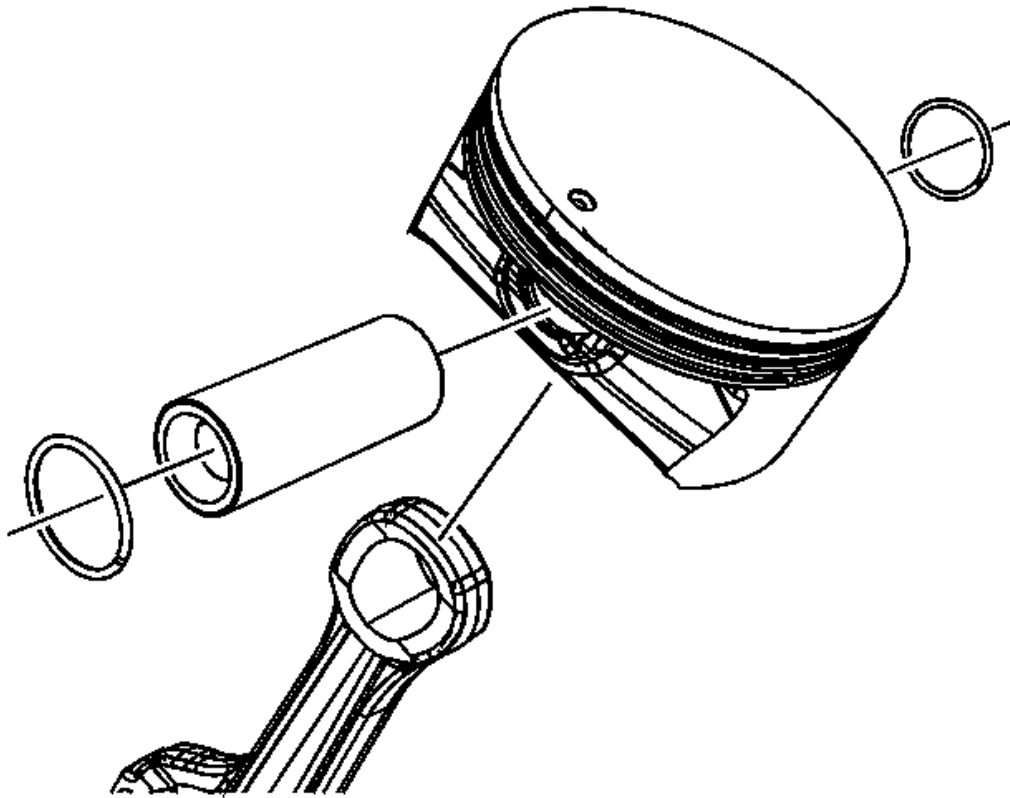


Fig. 28: Piston Pin, Piston & Connecting Rod
Courtesy of GENERAL MOTORS CORP.

5. Remove the pin from the piston and connecting rod.
6. The piston and pin are a matched set and are not to be serviced separately.

Mark, sort, or organize the piston and the matching piston pin.

PISTON, CONNECTING ROD, AND BEARING CLEANING AND INSPECTION

Piston, Pin, and Piston Rings

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

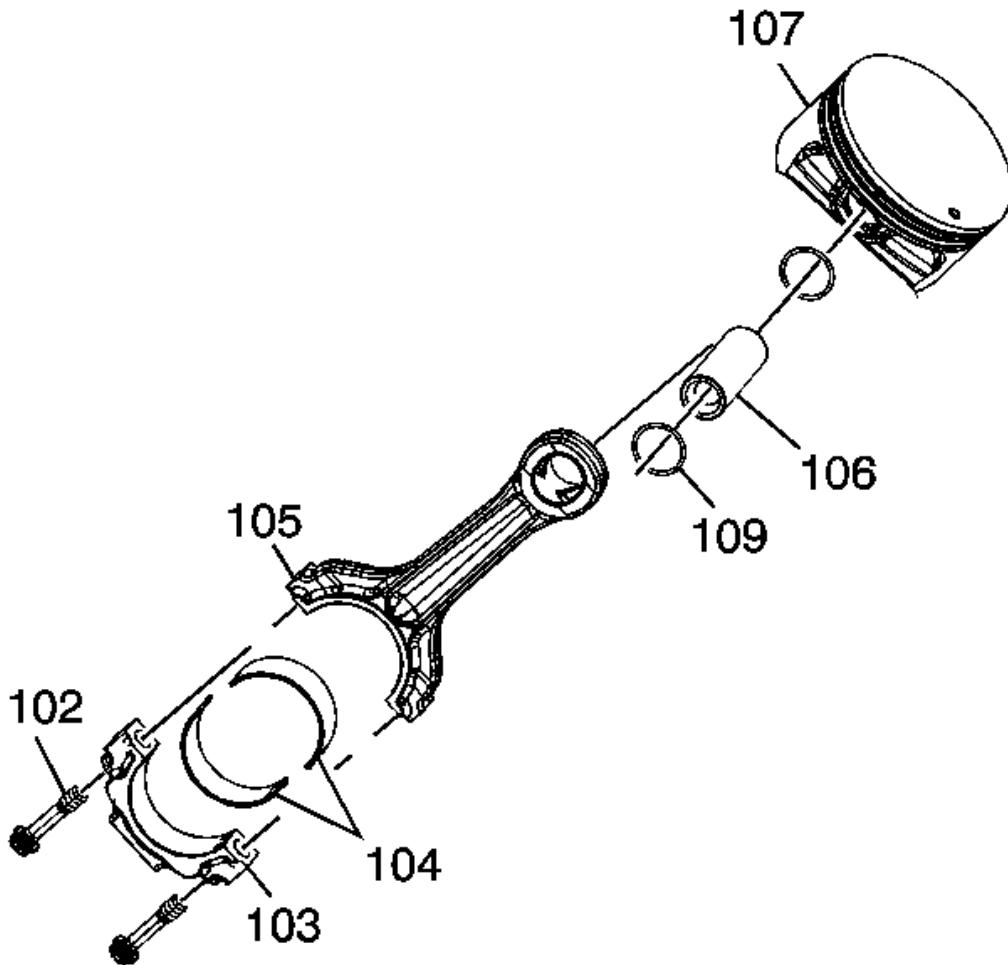


Fig. 29: View Of Piston, Pin & Piston Rings
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- Replace pistons, pins, and connecting rods that are damaged or show signs of excessive wear.
- The piston and pin are to be serviced as an assembly.
- Do not wire brush any part of the piston.
- Measurement of the components should be taken with the components at normal room temperature.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Clean the varnish and carbon from the piston (107) using cleaning solvent.

CAUTION: Refer to Safety Glasses Caution .

2. Dry the components with compressed air.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

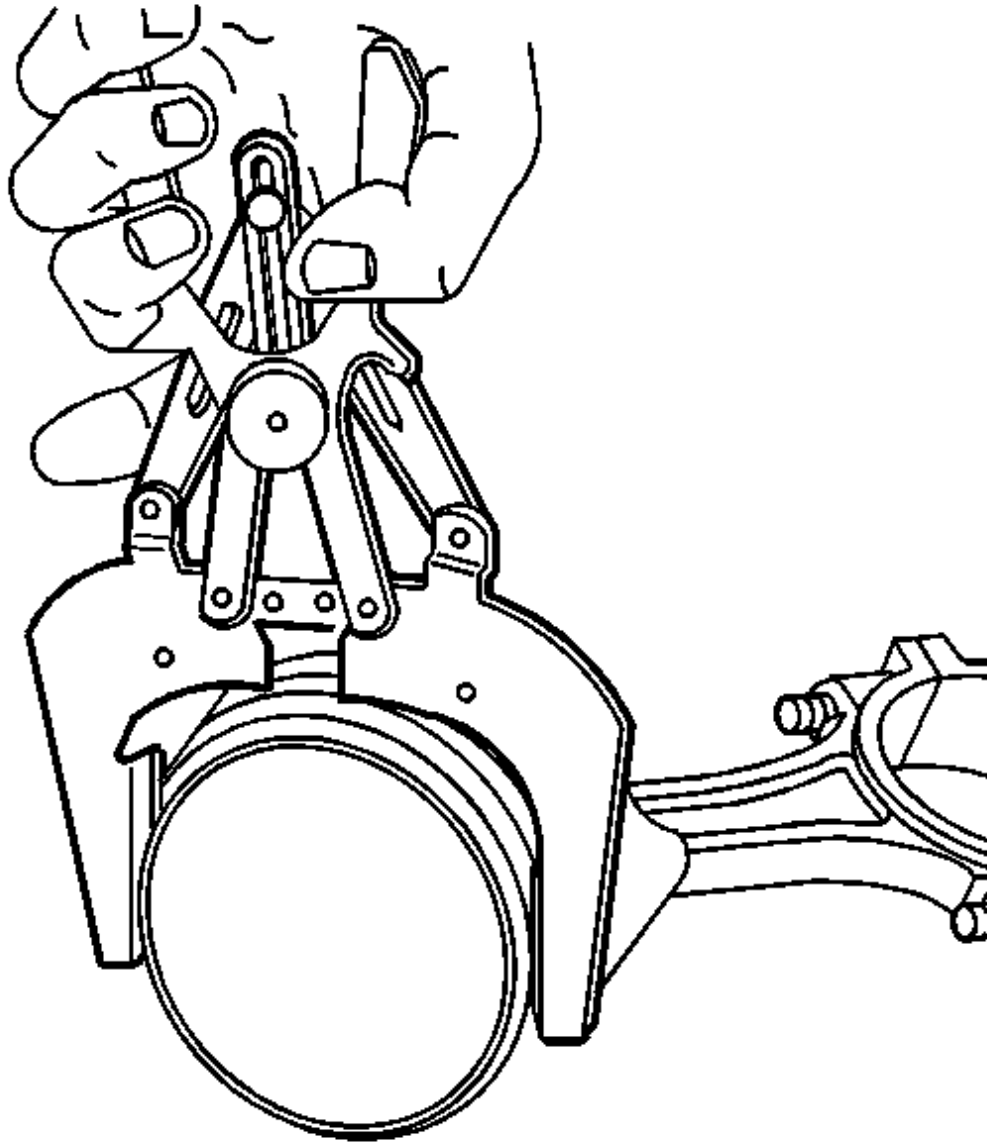


Fig. 30: Cleaning Piston Ring Grooves With Suitable Ring Groove Cleaning Tool
Courtesy of GENERAL MOTORS CORP.

3. Clean the piston ring grooves with a suitable ring groove cleaning tool.
4. Clean the oil lubrication holes and slots.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

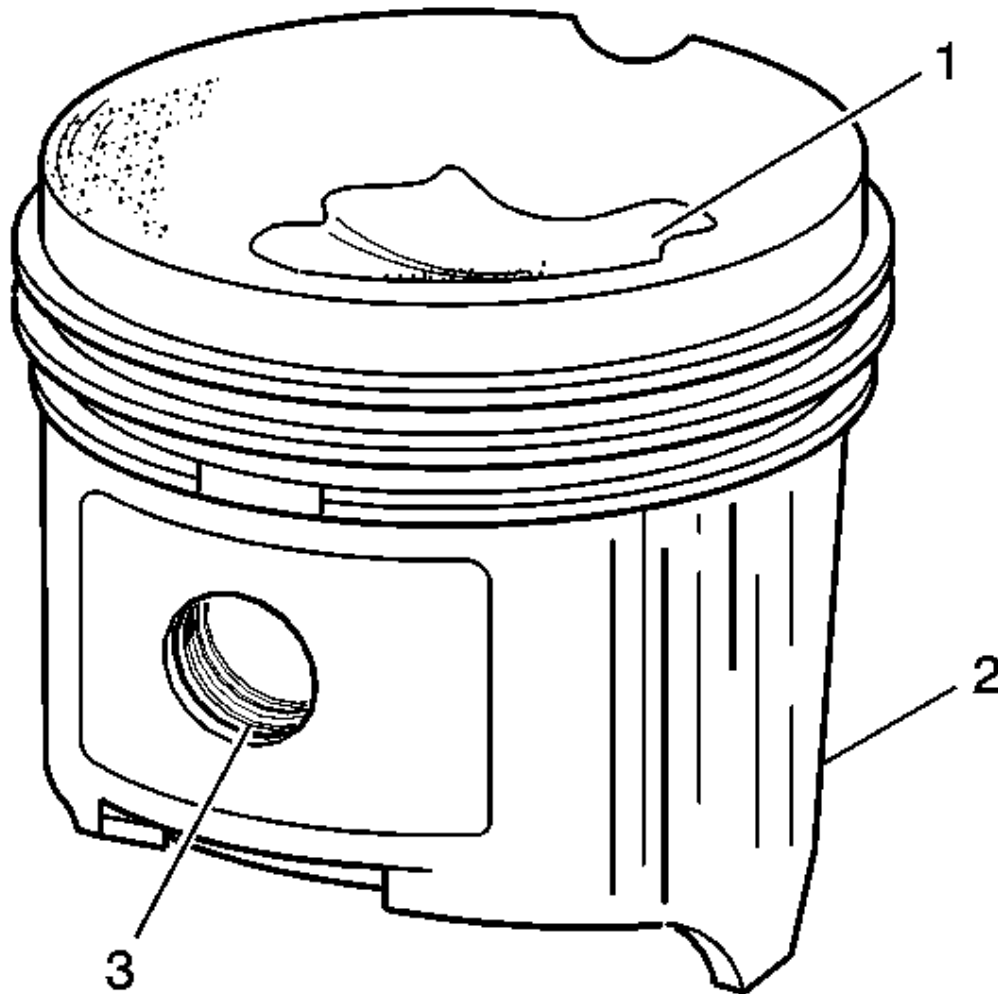


Fig. 31: Identifying Piston Damage Inspection Areas
Courtesy of GENERAL MOTORS CORP.

5. Inspect the piston for the following conditions:
 - Cracks in the piston ring lands, the piston skirt, or pin bosses
 - Piston ring grooves for nicks, burrs, or warpage which may cause the piston ring to bind

MINOR imperfections may be removed from the piston with a fine file.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- Eroded areas at the top of the piston (1)
- Scuffed or damaged skirts (2)
- Scoring to the piston pin bore (3) or piston pin

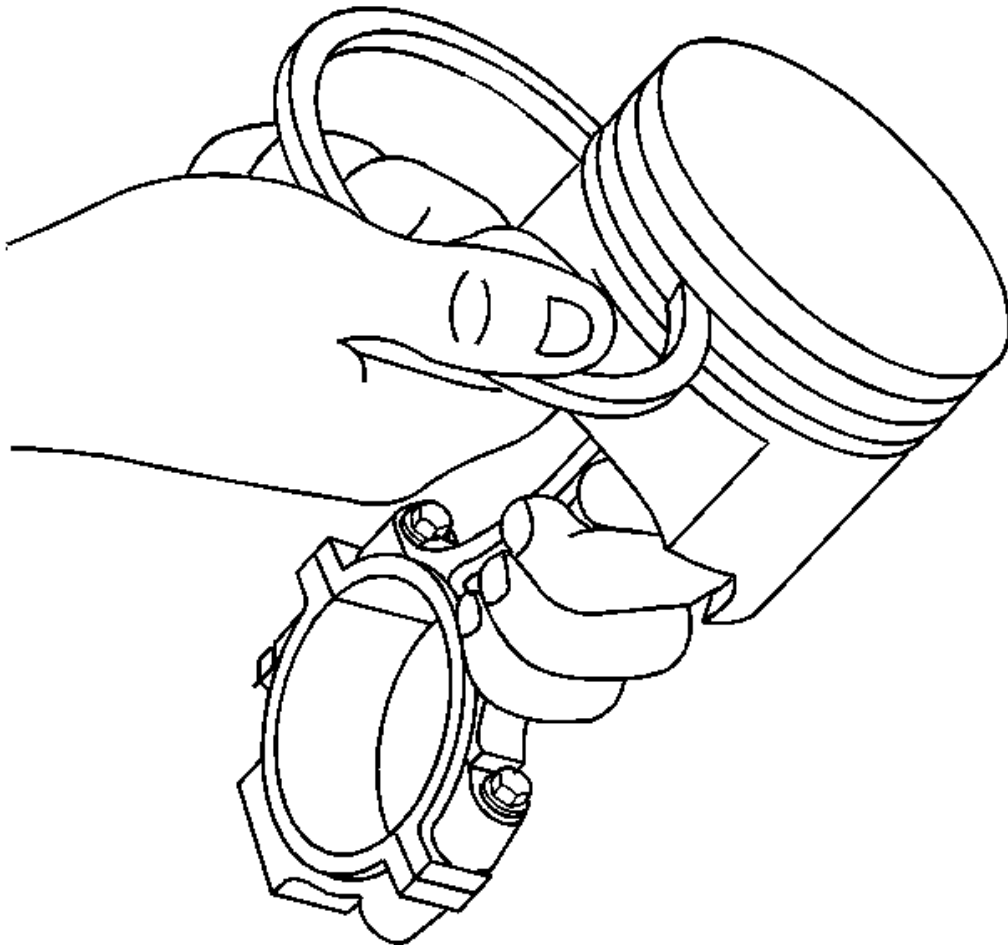


Fig. 32: Inserting Piston Ring Into Ring Groove
Courtesy of GENERAL MOTORS CORP.

6. Insert the edge of the piston ring into the piston ring groove.

Roll the piston ring completely around the piston. If binding is caused by a distorted ring groove, MINOR imperfections may be removed with a fine file. If binding is caused by a

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

distorted piston ring, replace the rings, as required.

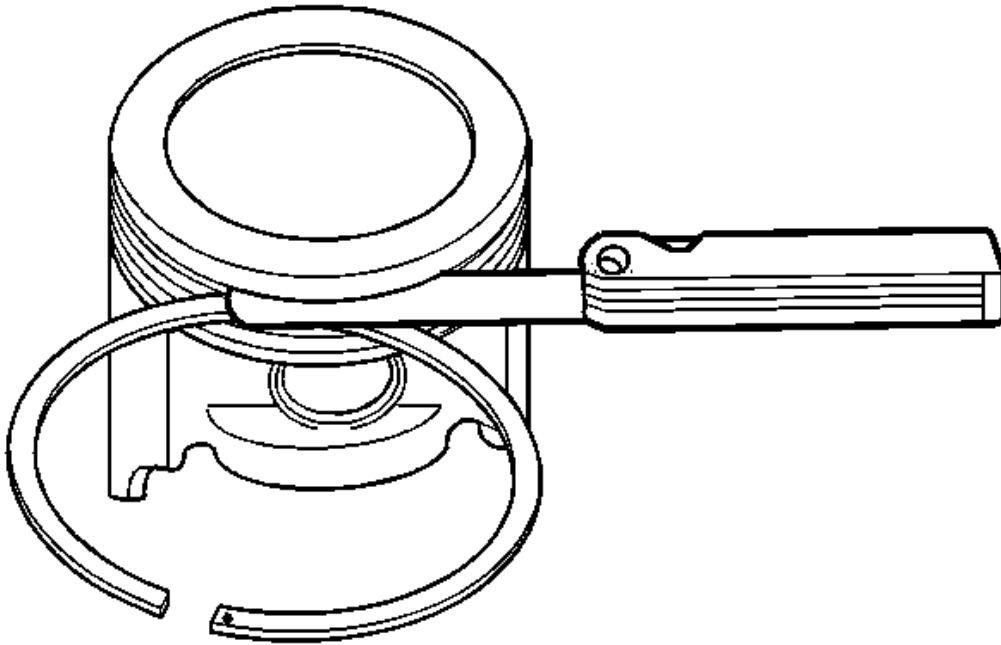


Fig. 33: Measuring Piston Ring Side Clearance
Courtesy of GENERAL MOTORS CORP.

7. Measure the piston ring side clearance with a feeler gage. If side clearance is not within specifications, try another piston ring. If the proper ring-to-groove clearance cannot be obtained, replace the piston and pin as an assembly. Refer to **Engine Mechanical Specifications (RPO LY5 VIN J)** or **Engine Mechanical Specifications (RPO LC9 VIN 3)** or **Engine Mechanical Specifications (RPO LY2 VIN C)** or **Engine Mechanical Specifications (RPO LH6 VIN M)** or **Engine Mechanical Specifications (RPO LMG VIN 0)** or **Engine Mechanical Specifications (RPO LY6 VIN K)** or **Engine Mechanical Specifications (RPO L76 VIN Y)** or **Engine Mechanical Specifications (RPO L92 VIN 8)** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

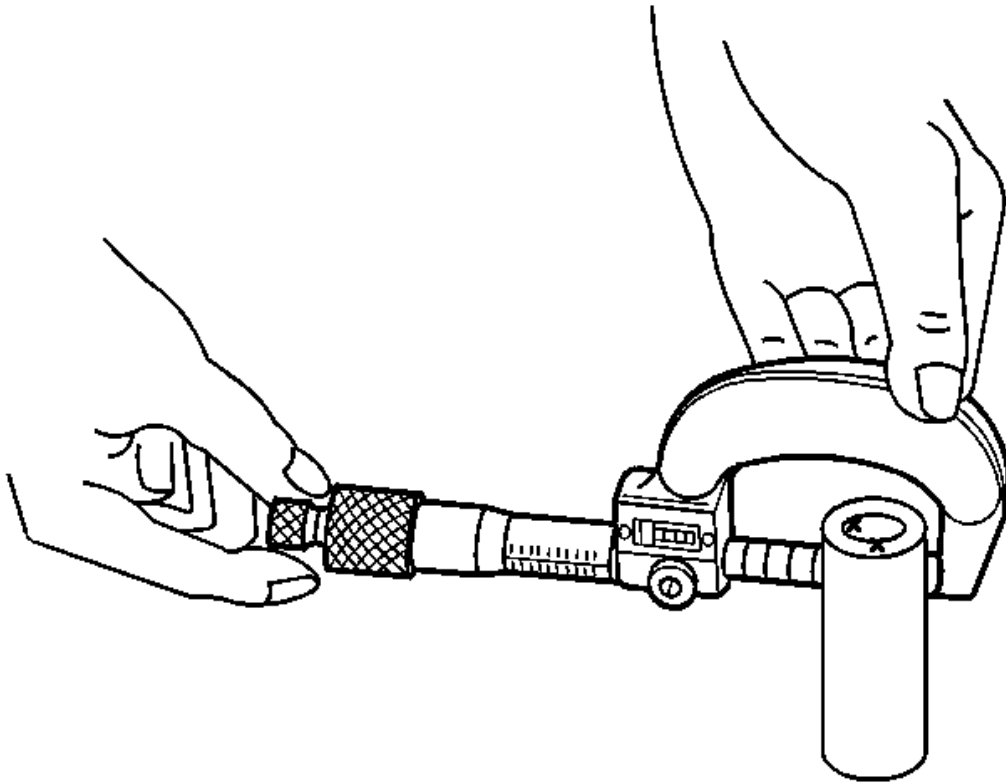


Fig. 34: Measuring Piston Pin Diameter
Courtesy of GENERAL MOTORS CORP.

8. To determine piston pin-to-bore clearance, use a micrometer and measure the piston pin outside diameter (OD).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

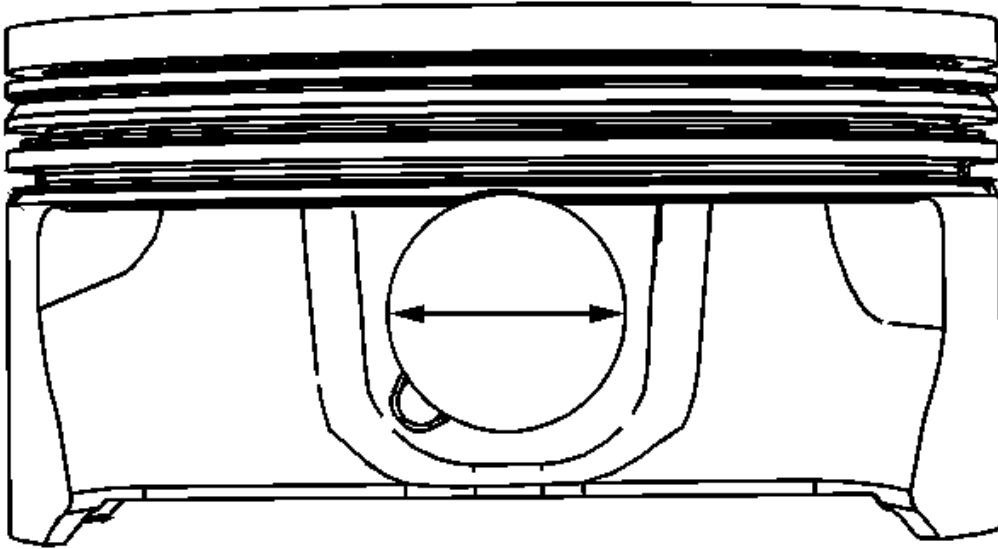


Fig. 35: Measuring Piston Pin-To-Bore Clearance
Courtesy of GENERAL MOTORS CORP.

9. To determine the piston pin-to-bore clearance, use an inside micrometer and measure the piston pin bore inside diameter (ID).
10. Subtract the piston pin OD measurement from the piston pin bore ID measurement to determine pin-to-bore clearance. Refer to **Engine Mechanical Specifications (RPO LY5 VIN J)** or **Engine Mechanical Specifications (RPO LC9 VIN 3)** or **Engine Mechanical Specifications (RPO LY2 VIN C)** or **Engine Mechanical Specifications (RPO LH6 VIN M)** or **Engine Mechanical Specifications (RPO LMG VIN 0)** or **Engine Mechanical Specifications (RPO LY6 VIN K)** or **Engine Mechanical Specifications (RPO L76 VIN Y)** or **Engine Mechanical Specifications (RPO L92 VIN 8)** .

Measuring Piston Ring End Gap

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

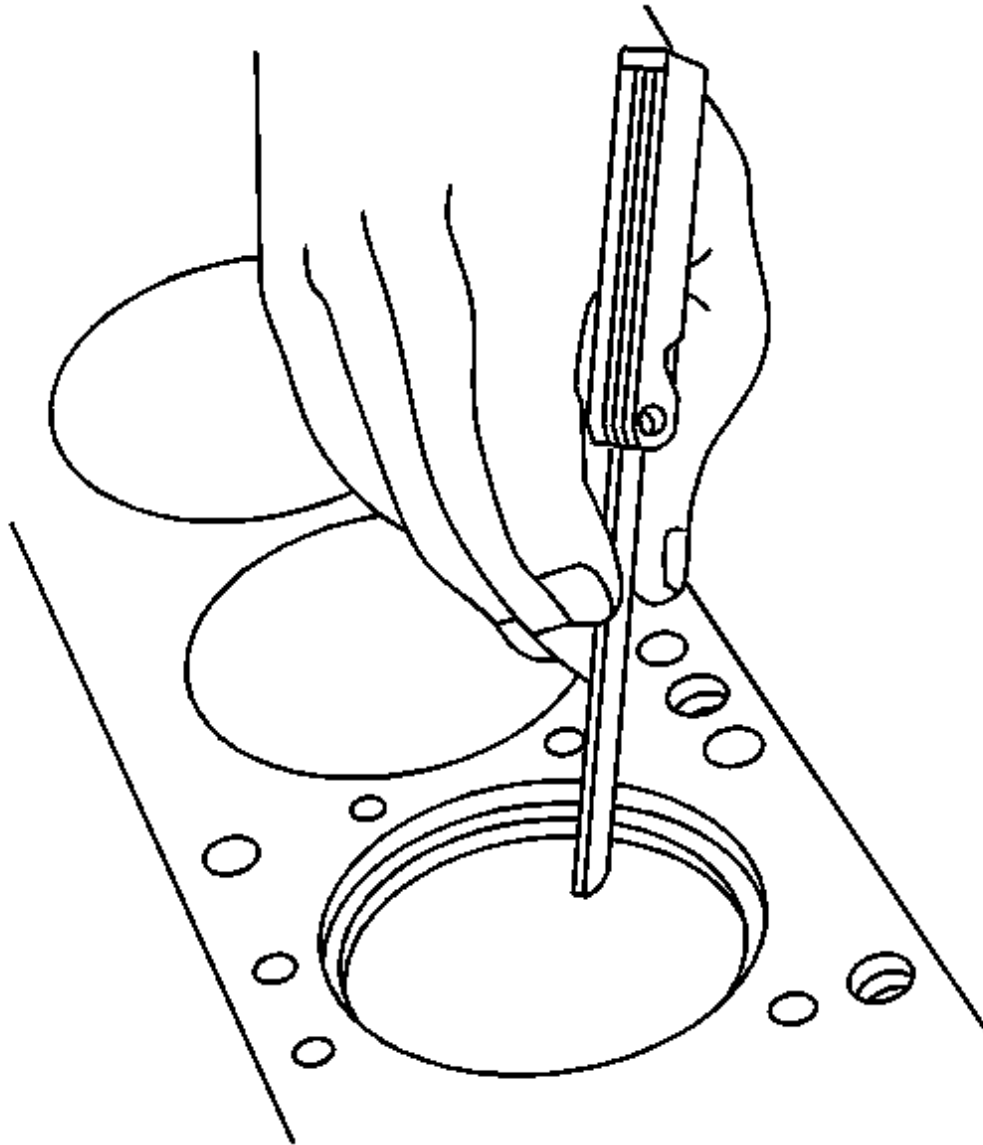


Fig. 36: Measuring Piston Ring End Gap
Courtesy of GENERAL MOTORS CORP.

- IMPORTANT:**
- Do not attempt to file the end of the piston ring to achieve the proper end gap clearance.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- **Measure the piston ring in the cylinder in which it will be used.**
1. Place the piston ring into the cylinder bore 6.5 mm (0.25 in) below the top of the ring travel area. Both rings should be installed with the orientation marks facing the top of the piston.
 2. Insert a feeler gage and measure the piston ring end gap. Refer to **Engine Mechanical Specifications (RPO LY5 VIN J)** or **Engine Mechanical Specifications (RPO LC9 VIN 3)** or **Engine Mechanical Specifications (RPO LY2 VIN C)** or **Engine Mechanical Specifications (RPO LH6 VIN M)** or **Engine Mechanical Specifications (RPO LMG VIN 0)** or **Engine Mechanical Specifications (RPO LY6 VIN K)** or **Engine Mechanical Specifications (RPO L76 VIN Y)** or **Engine Mechanical Specifications (RPO L92 VIN 8)** .

Connecting Rod and Bearings

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

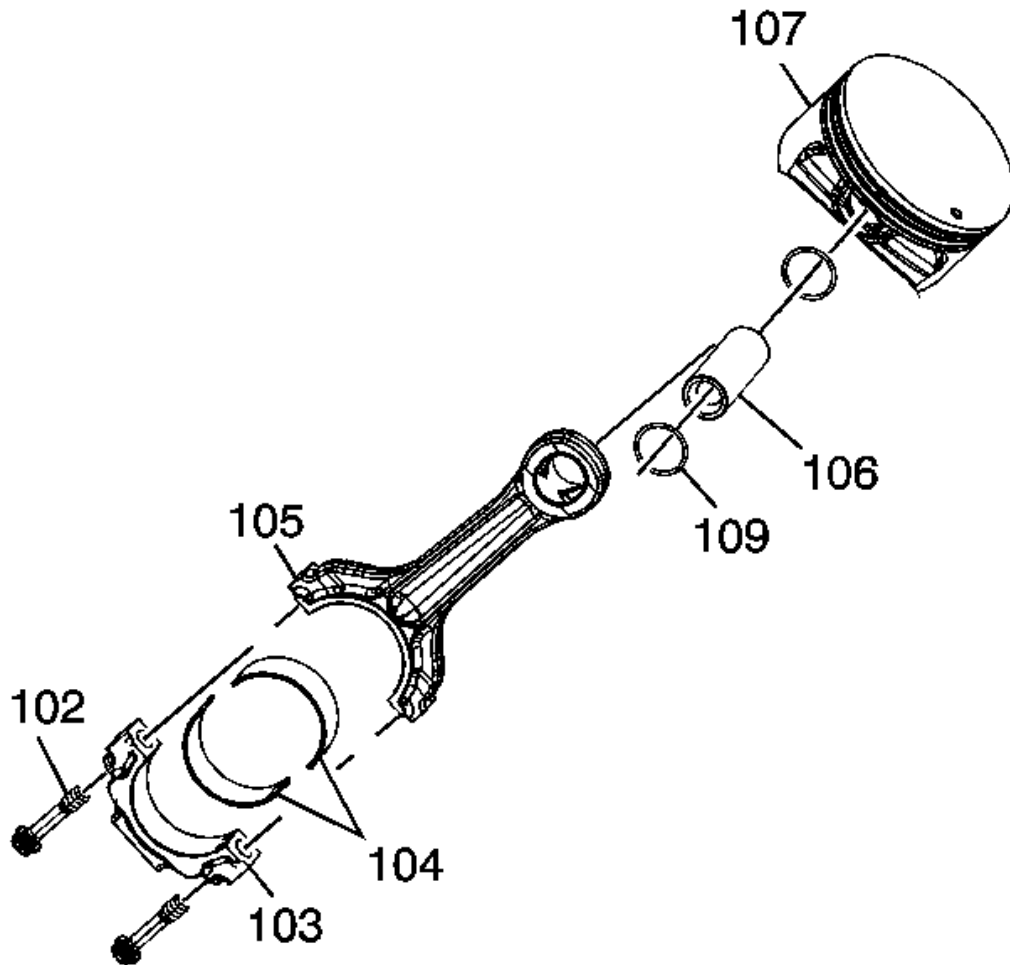


Fig. 37: View Of Piston, Pin & Piston Rings
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- The powdered metal connecting rod and cap are machined for proper clearances. The connecting rod and cap must be used as an assembly with no repair or modifications to either mating surface. Do not attempt to repair the rod or cap. If service is required, replace the rod and cap as an assembly.
- Do not attempt to repair the bolt hole threads of the

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

connecting rod.

1. Clean the connecting rod (105) and cap (103) in solvent.

CAUTION: Refer to Safety Glasses Caution .

2. Dry the components with compressed air.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

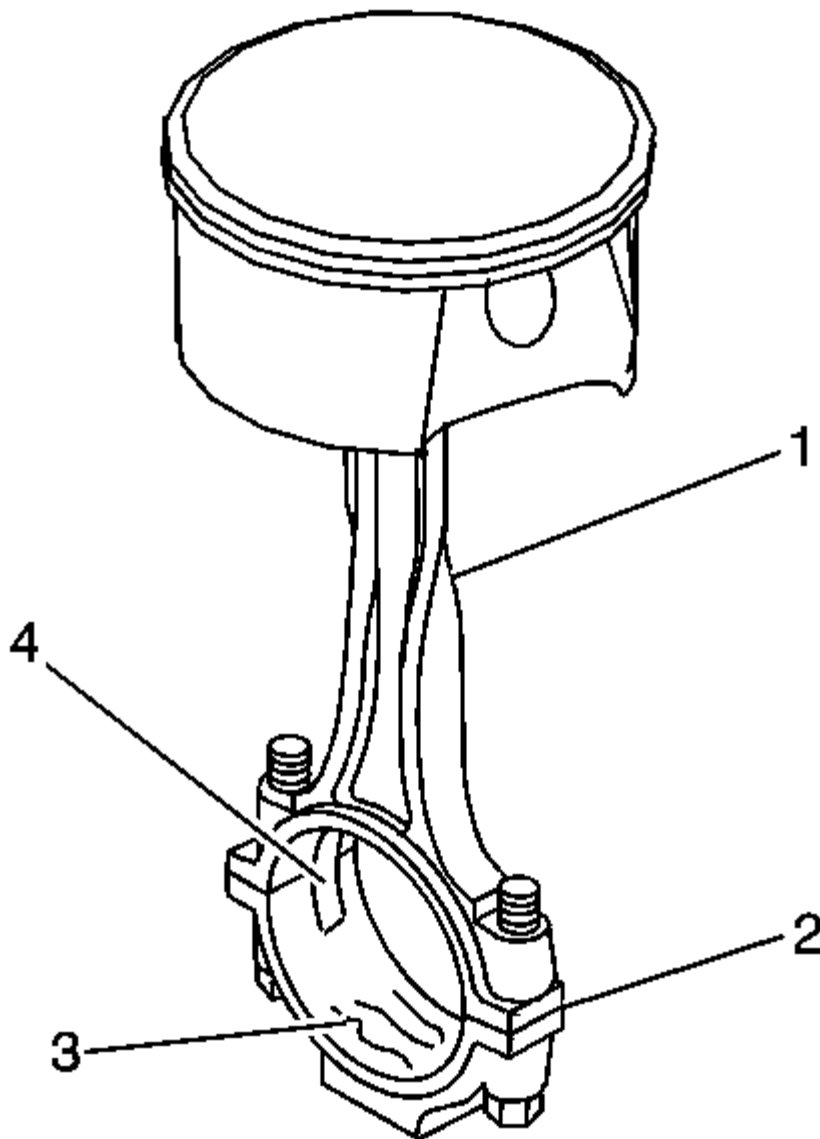


Fig. 38: Identifying Connecting Rod Inspection Areas
Courtesy of GENERAL MOTORS CORP.

3. Inspect the connecting rod for the following conditions:
 - Twisting (1)
 - Proper fit of the connecting rod and cap mating surfaces (2)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- Nicks or gouges in the bearing bore (3)
- Damage to the bearing locating slots (4)

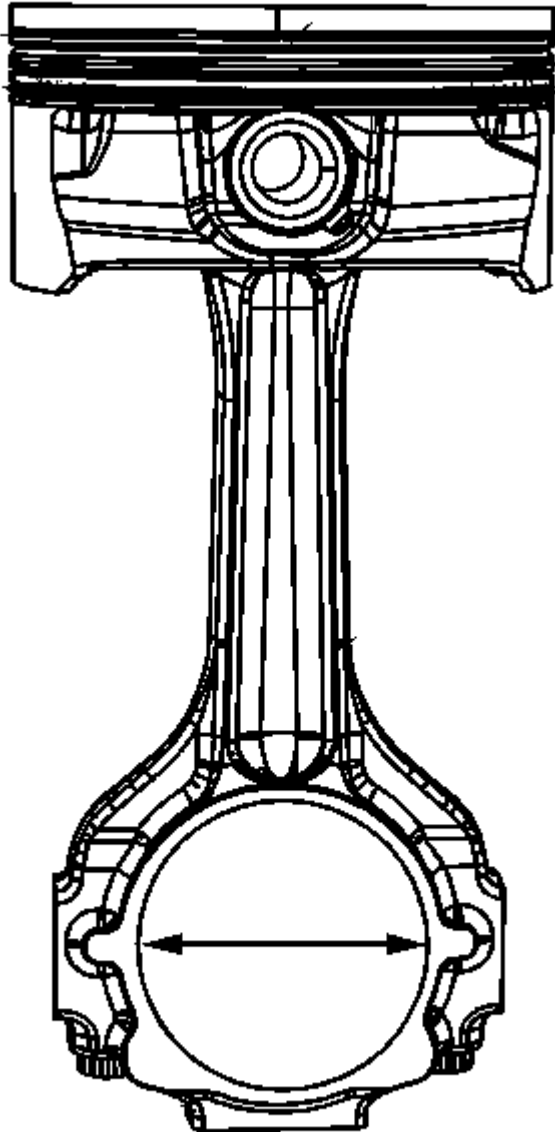


Fig. 39: Identifying Connecting Rod Bearing Bore
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

4. Measure the connecting rod bearing bore for an out-of-round condition. Refer to **Engine Mechanical Specifications (RPO LY5 VIN J)** or **Engine Mechanical Specifications (RPO LC9 VIN 3)** or **Engine Mechanical Specifications (RPO LY2 VIN C)** or **Engine Mechanical Specifications (RPO LH6 VIN M)** or **Engine Mechanical Specifications (RPO LMG VIN 0)** or **Engine Mechanical Specifications (RPO LY6 VIN K)** or **Engine Mechanical Specifications (RPO L76 VIN Y)** or **Engine Mechanical Specifications (RPO L92 VIN 8)** .

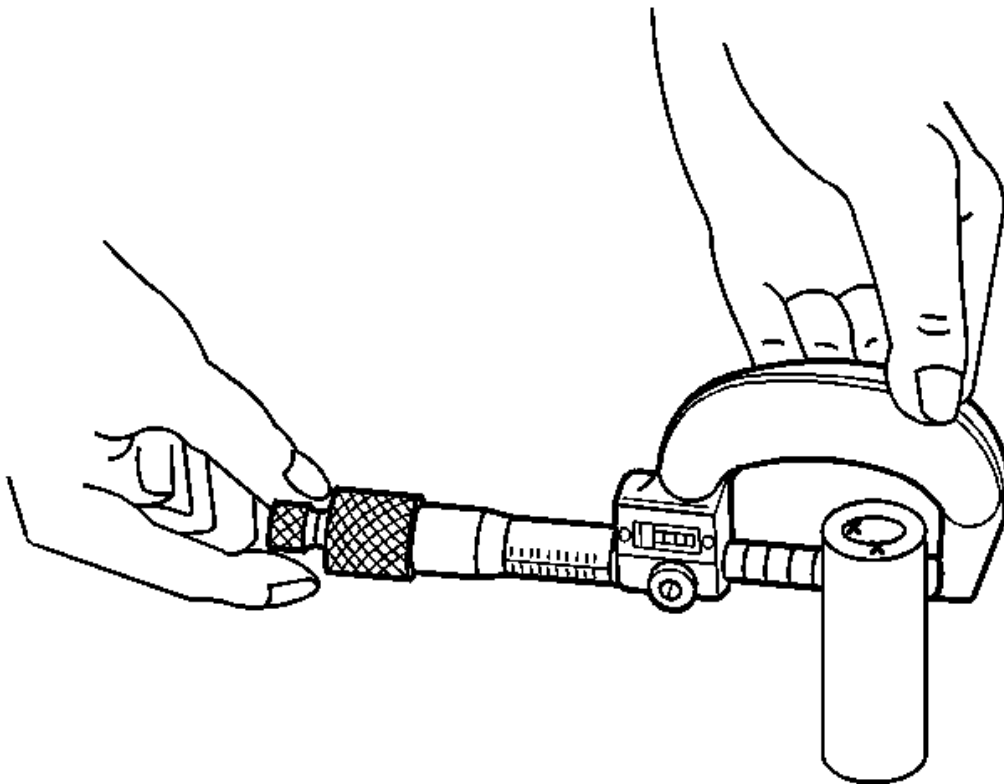


Fig. 40: Measuring Piston Pin Diameter
Courtesy of GENERAL MOTORS CORP.

5. To determine piston pin-to-connecting rod bore clearance, use a micrometer and measure the piston pin OD.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

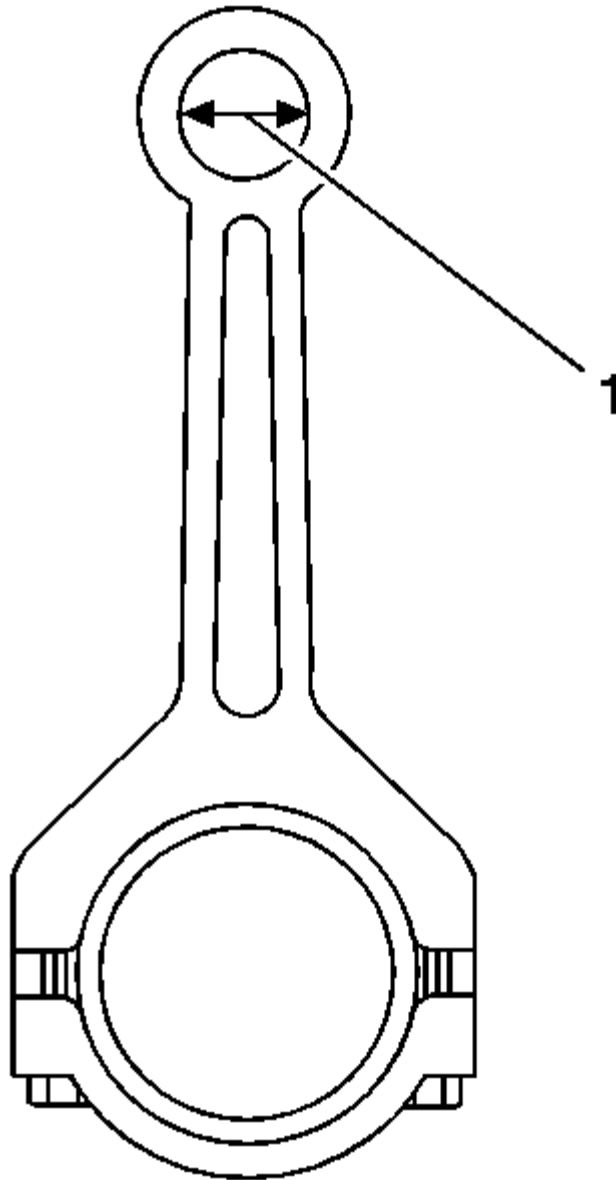


Fig. 41: Measuring Connecting Rod Pin Bore Inside Diameter
Courtesy of GENERAL MOTORS CORP.

6. To determine the piston pin-to-connecting rod bore clearance, use a micrometer and measure the connecting rod pin bore (1) ID.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

7. Subtract the piston pin OD measurement from the connecting rod pin bore ID measurement to determine pin-to-bore clearance. Refer to Engine Mechanical Specifications (RPO LY5 VIN J) or Engine Mechanical Specifications (RPO LC9 VIN 3) or Engine Mechanical Specifications (RPO LY2 VIN C) or Engine Mechanical Specifications (RPO LH6 VIN M) or Engine Mechanical Specifications (RPO LMG VIN 0) or Engine Mechanical Specifications (RPO LY6 VIN K) or Engine Mechanical Specifications (RPO L76 VIN Y) or Engine Mechanical Specifications (RPO L92 VIN 8) .

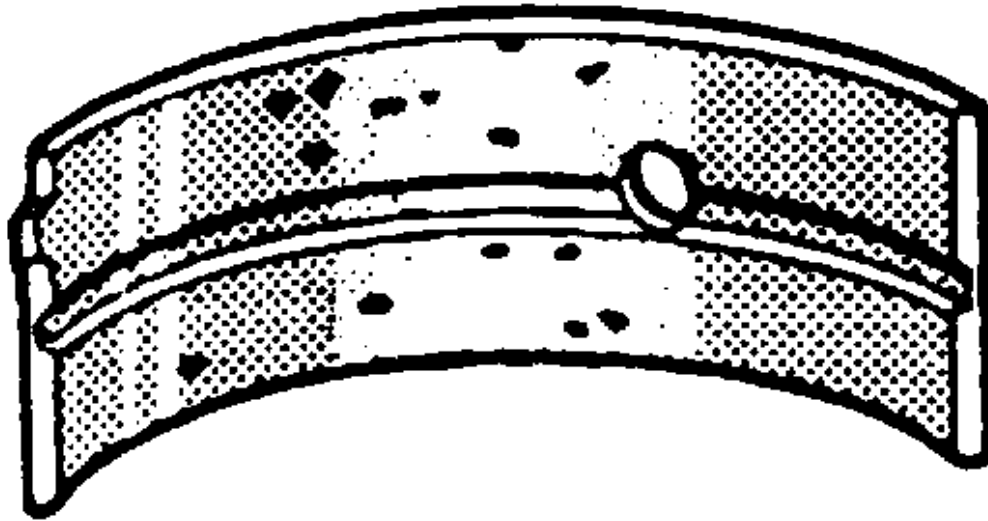


Fig. 42: Identifying Crankshaft Bearing Craters Or Pockets
Courtesy of GENERAL MOTORS CORP.

8. Inspect the connecting rod bearings for craters or pockets. Flattened sections on the bearing halves indicate fatigue.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

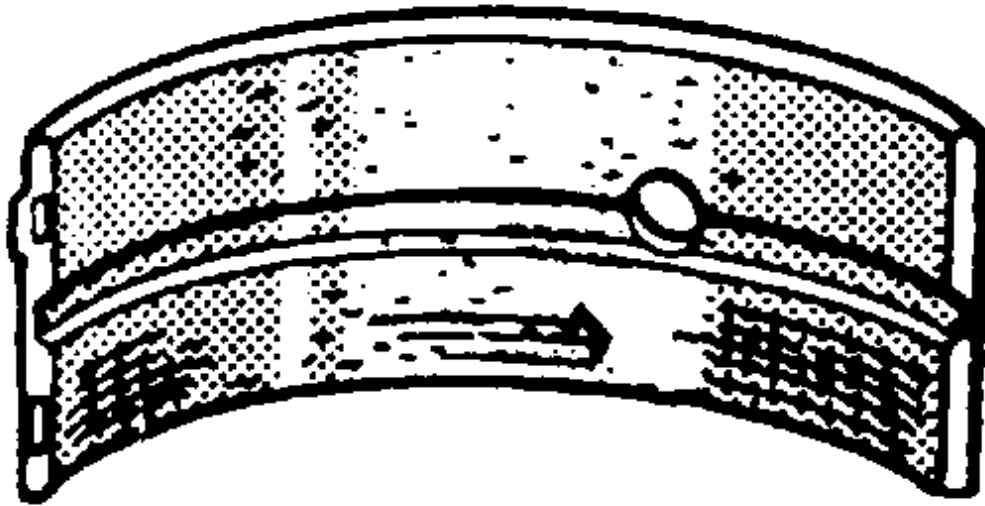


Fig. 43: Identifying Connecting Rod Bearing Scoring Or Discoloration
Courtesy of GENERAL MOTORS CORP.

9. Inspect the connecting rod bearings for excessive scoring or discoloration.
10. Inspect the connecting rod bearings for dirt or debris imbedded into the bearing material.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

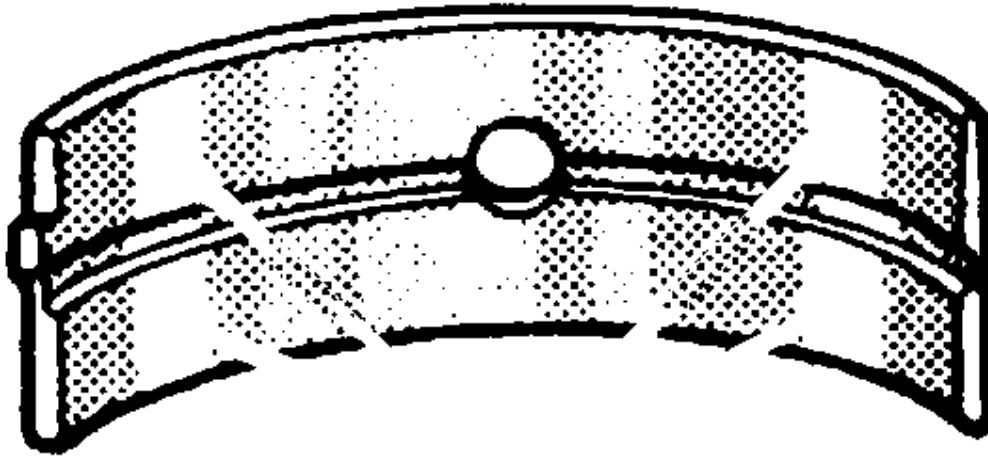


Fig. 44: Crankshaft Bearing Polished Sections (Improper Seating)
Courtesy of GENERAL MOTORS CORP.

11. Inspect the connecting rod bearings for improper seating indicated by bright, polished sections of the bearing surface.
12. To determine the piston pin-to-bore clearance, use an inside micrometer and measure the piston pin bore ID.
13. Subtract the piston pin OD measurement from the piston pin bore ID measurement to determine pin-to-bore clearance. Refer to **Engine Mechanical Specifications (RPO LY5 VIN J)** or **Engine Mechanical Specifications (RPO LC9 VIN 3)** or **Engine Mechanical Specifications (RPO LY2 VIN C)** or **Engine Mechanical Specifications (RPO LH6 VIN M)** or **Engine Mechanical Specifications (RPO LMG VIN 0)** or **Engine Mechanical Specifications (RPO LY6 VIN K)** or **Engine Mechanical Specifications (RPO L76 VIN Y)** or **Engine Mechanical Specifications (RPO L92 VIN 8)** .

PISTON AND CONNECTING ROD ASSEMBLE

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

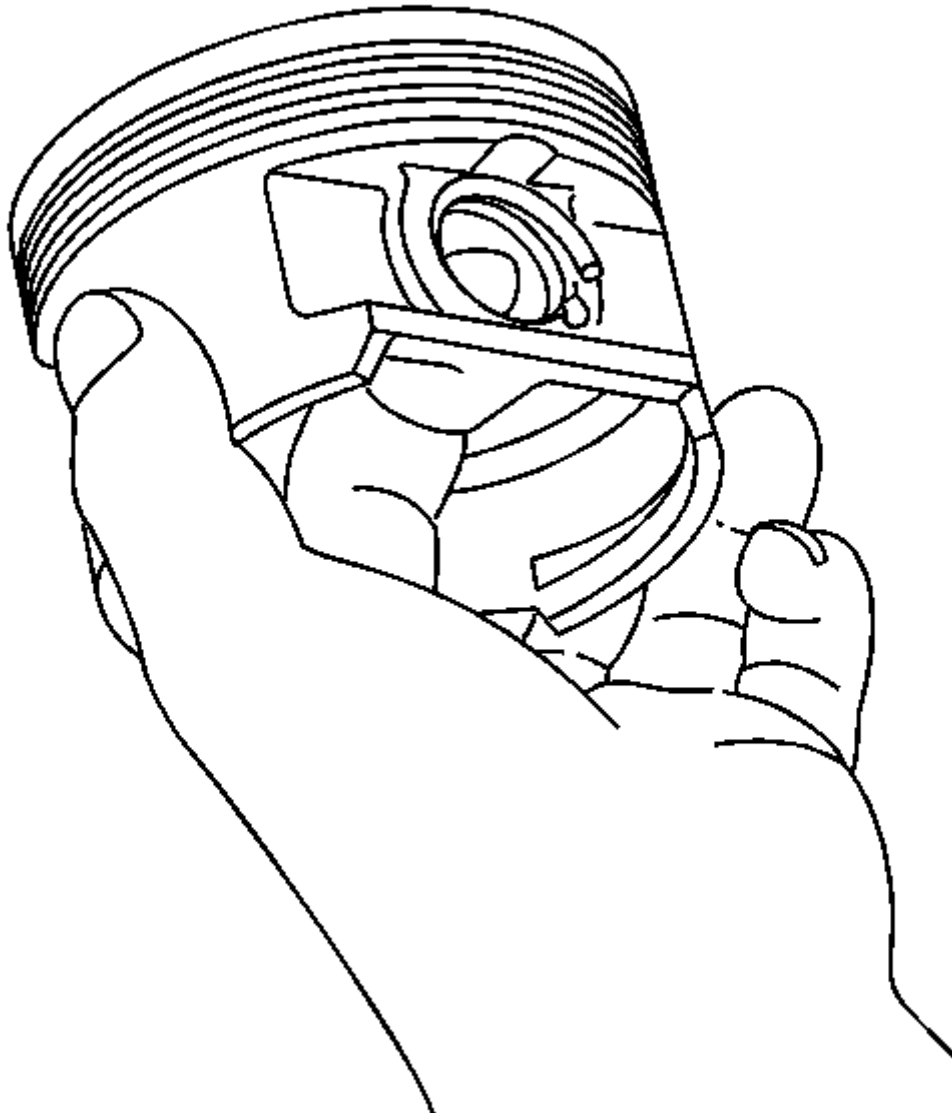


Fig. 45: View Of Retaining Clip In Pin Bore Groove
Courtesy of GENERAL MOTORS CORP.

1. Install the retainer. The retainer should be seated in the groove of the pin bore.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

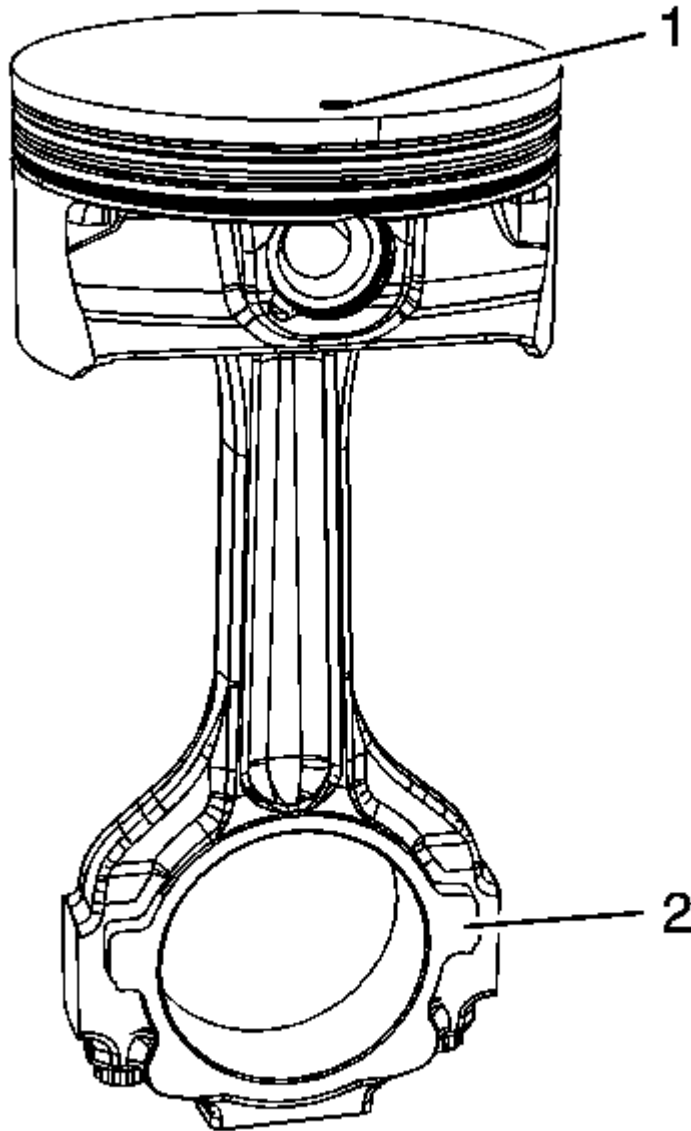


Fig. 46: Locating Mark On Top Of Piston & Connecting Rod Tab
Courtesy of GENERAL MOTORS CORP.

2. Assemble the piston and connecting rod. The mark (1) on the top of the piston and the tab (2) on the side of the connecting rod should be facing the same direction.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

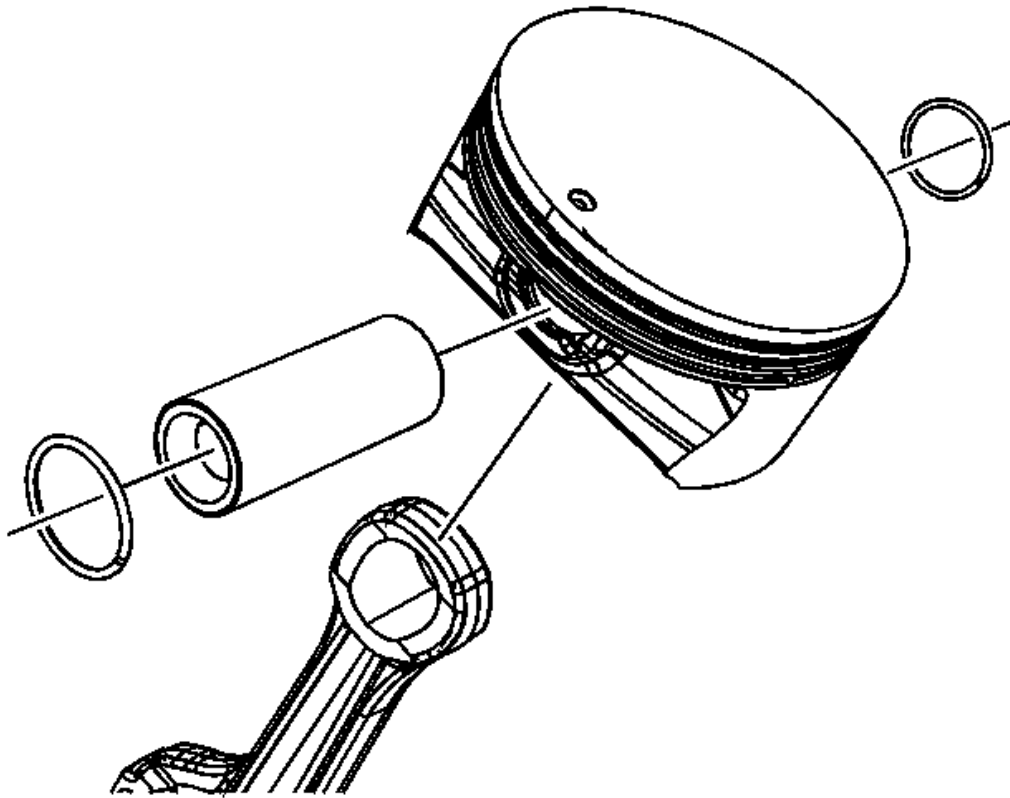


Fig. 47: Piston Pin, Piston & Connecting Rod
Courtesy of GENERAL MOTORS CORP.

3. Install the piston pin to the piston and connecting rod.
4. Install the retainers. The retainers should be seated in the groove of the pin bore.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

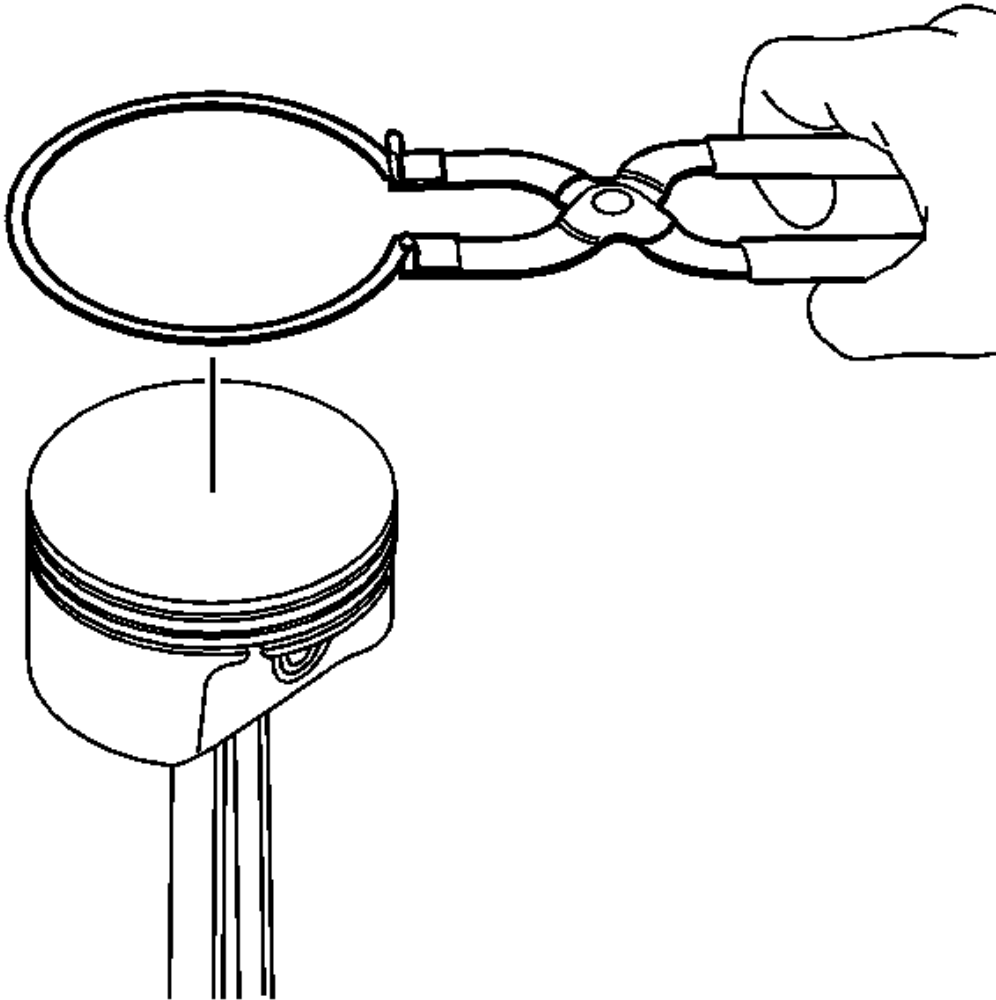


Fig. 48: Removing/Installing Piston Rings
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: When installing piston rings, use a ring expander plier type tool. Do not roll the rings into the grooves of the piston. Use caution and care to expand the rings only slightly larger than the outside diameter (OD) of the piston.

5. Using piston ring pliers, install the piston rings onto the piston. The dimple or mark on the piston ring should face the top of the piston. If no dimple or mark can be found on the top

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

compression ring, it may be installed in either direction.

6. Position the oil control ring end gaps a minimum of 25 mm (1.0 in) from each other.
7. Position the compression ring end gaps 180 degrees opposite each other.

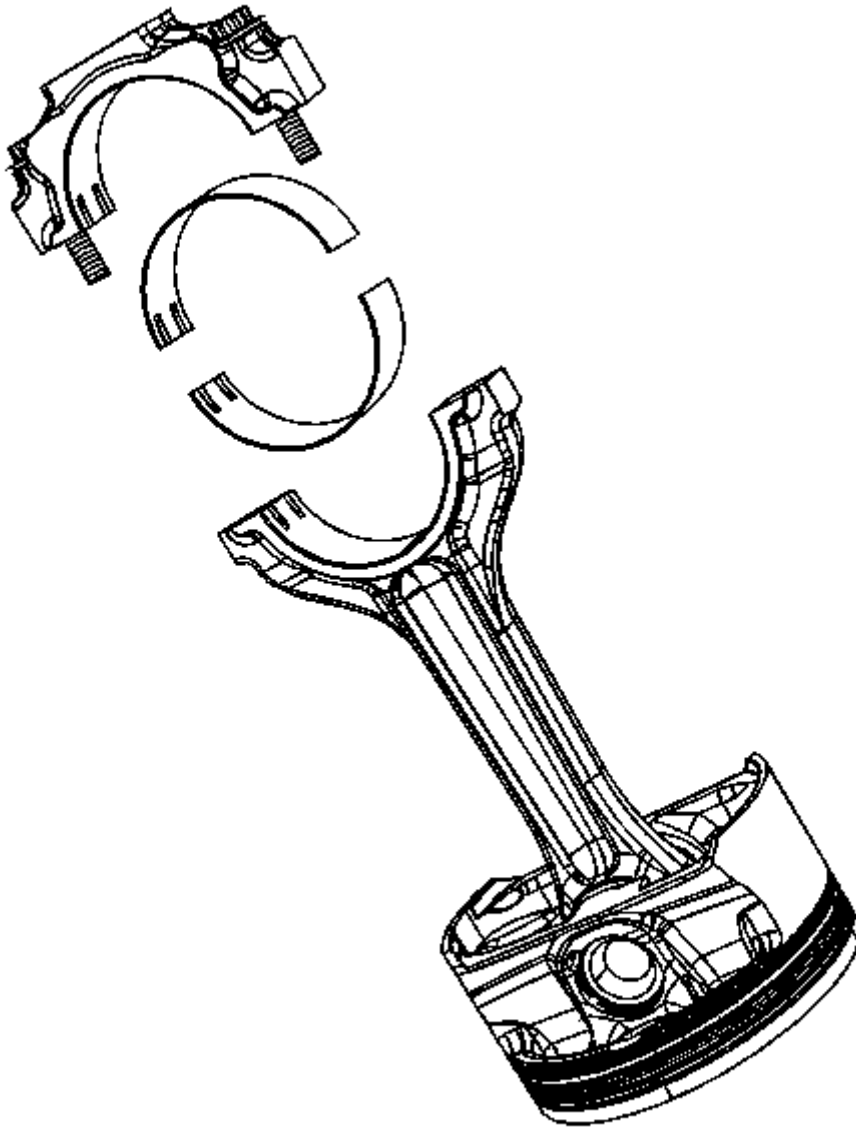


Fig. 49: View Of Piston, Connecting Rod & Bearing Assembly
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

8. Install the connecting rod bearings to the rod and cap.

CAMSHAFT BEARING REMOVAL

Tools Required

J 33049 Camshaft Bearing Service Set

Removal

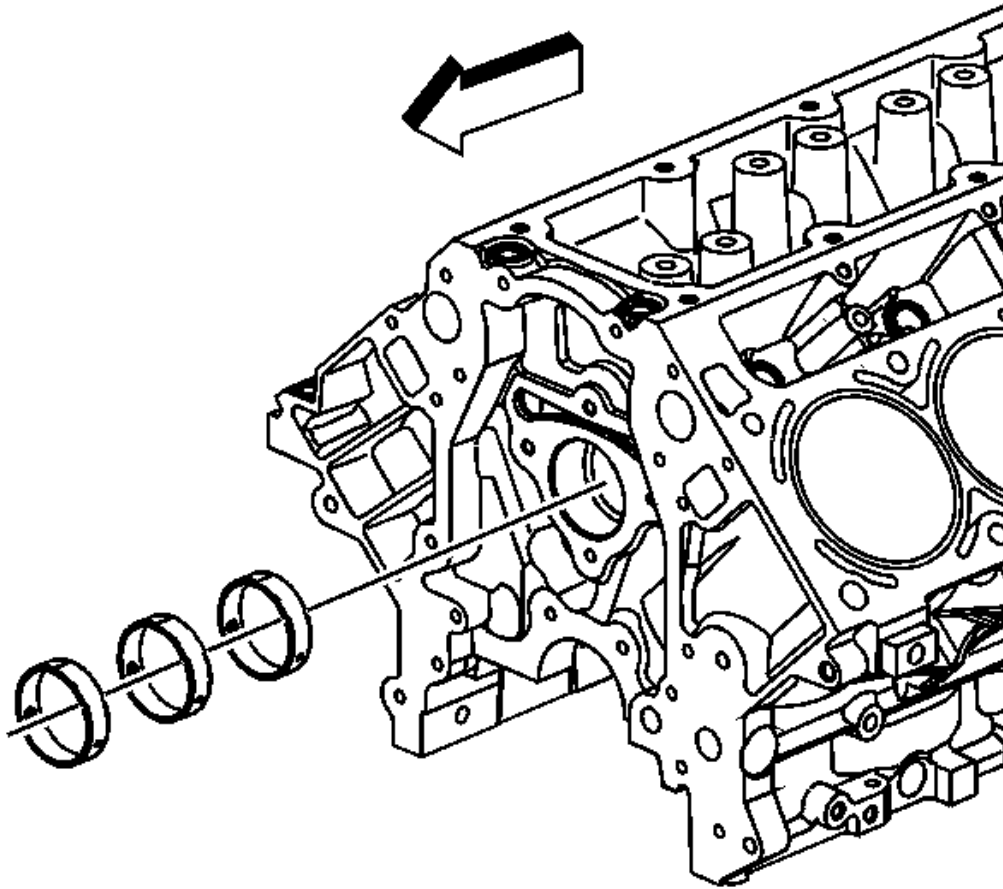


Fig. 50: Camshaft Bearings
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: A loose camshaft bearing may be caused by an enlarged, out

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

of round, or damaged engine block bearing bore.

1. Prior to bearing removal, inspect the camshaft bearings for loose fit in the engine block bearing bores. Refer to **Camshaft and Bearings Cleaning and Inspection (RPO LY2/LH6/LMG/LY5/LC9)** or **Camshaft and Bearings Cleaning and Inspection (RPO LY6/L76/L92)**.
2. Repair or replace the components, as required.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

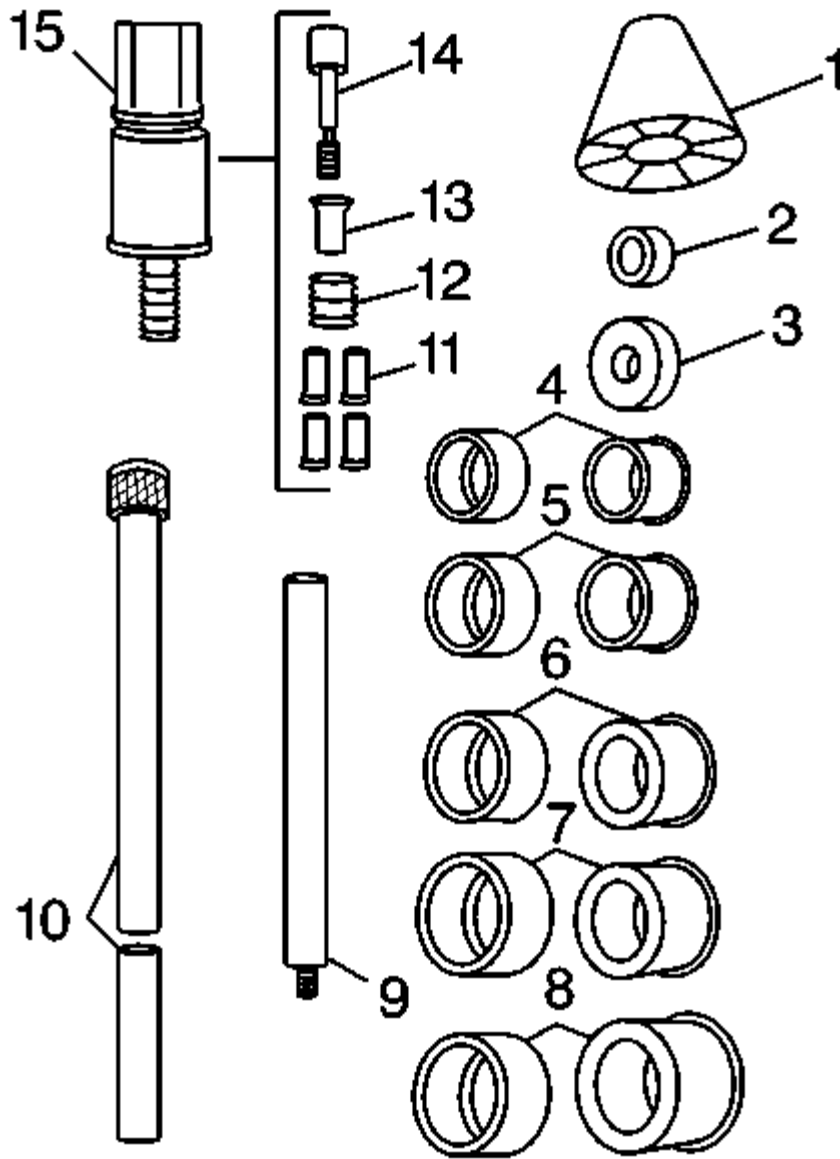


Fig. 51: View Of J 33049 Camshaft Bearing Service Kit Components
Courtesy of GENERAL MOTORS CORP.

3. Select the expanding driver (4-8) and washer (2 or 3) from the **J 33049** .
4. Assemble the tool.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

5. Insert the tool through the front of the engine block and into the bearing.
6. Tighten the expander assembly (15) nut until snug.
7. Push the guide cone (1) into the front camshaft bearing in order to align the tool.

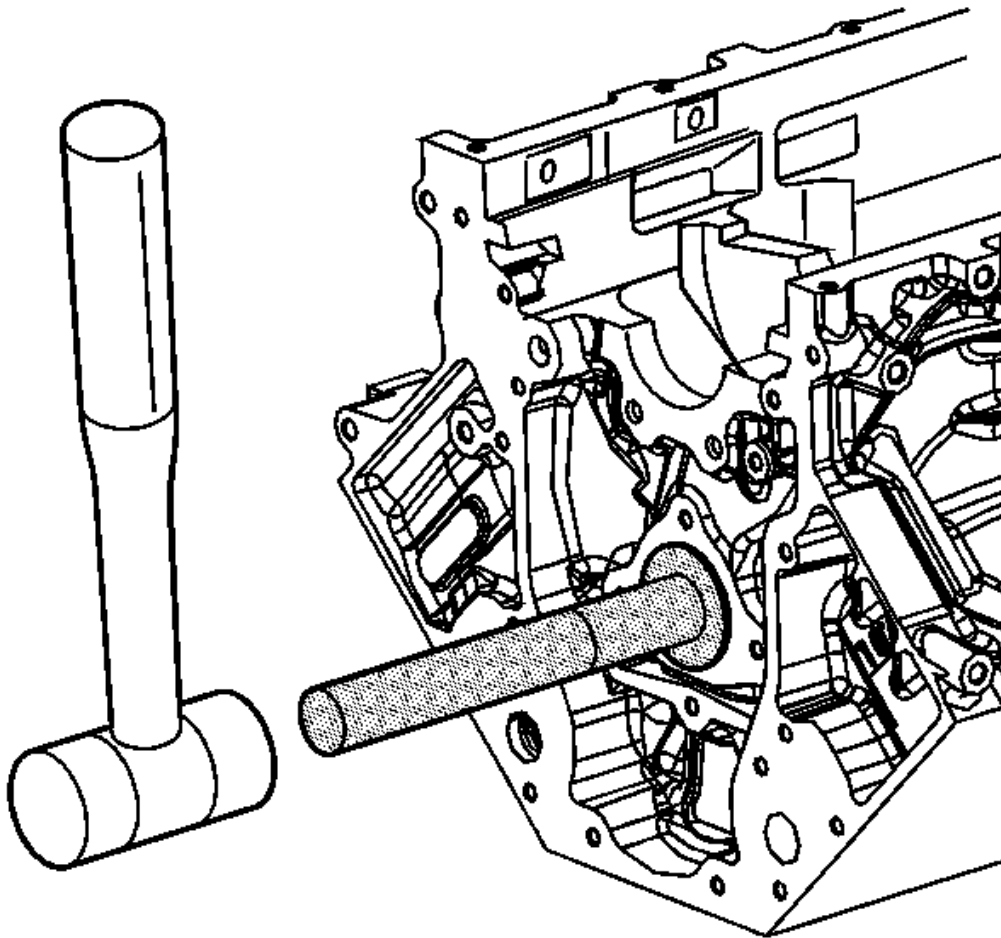


Fig. 52: Driving Bearing Out Of Or Into Engine Block
Courtesy of GENERAL MOTORS CORP.

8. Drive the bearing from the block bore.

IMPORTANT: In order to remove the front camshaft bearing, operate the tool from the rear of the block, using the guide cone in the

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

rear camshaft bearing bore.

9. Repeat the above procedures in order to remove the remaining bearings.

Tool Usage Information

Bearing, Expander, and Expander Driver Information

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

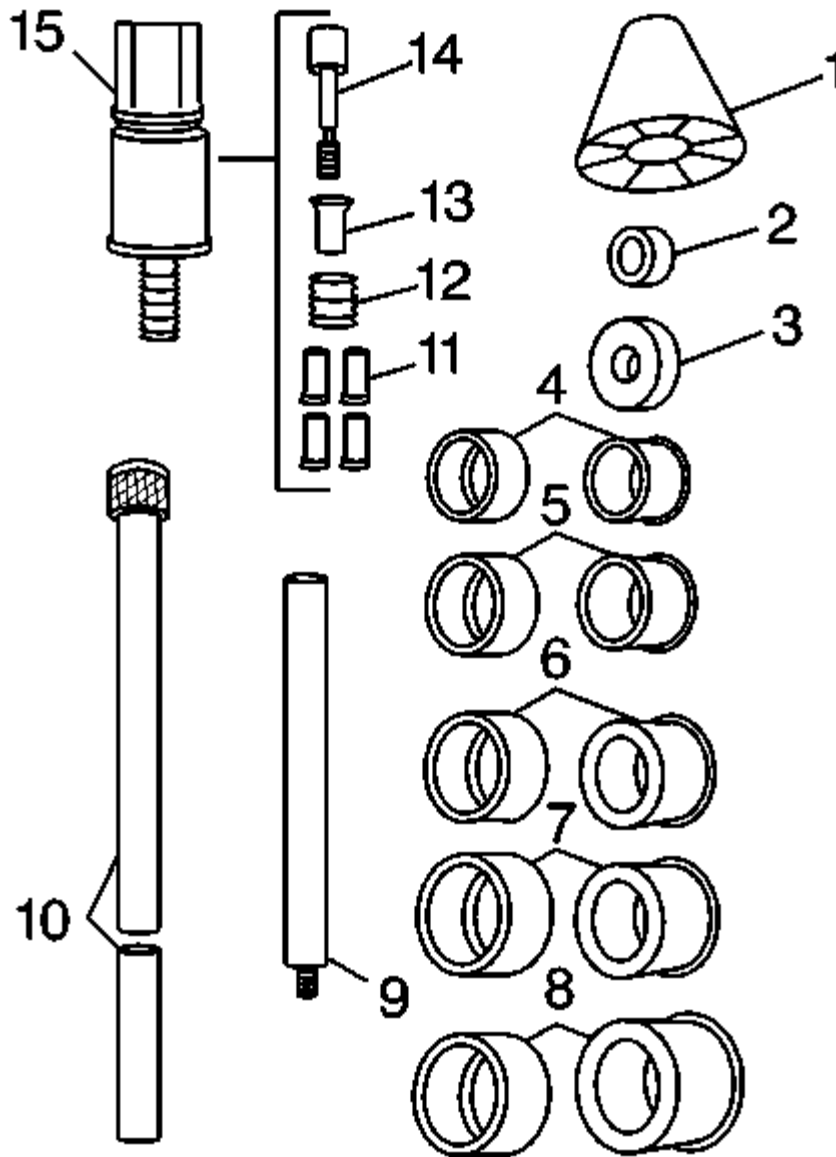


Fig. 53: View Of J 33049 Camshaft Bearing Service Kit Components
Courtesy of GENERAL MOTORS CORP.

- The tool consists of a guide cone (1), driving washers (2 or 3), expander bearing drivers (4-8), driver bars (9 or 10), expander jaws (11), expander sleeve (12), expander cone (13), expander shaft (14), and expander assembly (15).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- Expander bearing driver number 1 inside diameter is 28.575-37.465 mm (1.125-1.475 in) and is used with the expander assembly and the small washer.
- Expander bearing driver number 2 inside diameter is 37.465-43.18 mm (1.475-1.7 in) and is used with number 1 expanding driver and the small washer.
- Expander bearing driver number 3 inside diameter is 43.18-48.895 mm (1.7-1.925 in) and is used with number 2 expanding driver and the large washer.
- Expander bearing driver number 4 inside diameter is 48.895-54.61 mm (1.925-2.15 in) and is used with number 3 expanding driver and the large washer.
- Expander bearing driver number 5 inside diameter is 54.61-60.325 mm (2.150-2.375 in) and is used with number 4 expanding driver and the large washer.
- Expander bearing driver number 6 inside diameter is 60.325-68.326 mm (2.375-2.69 in) and is used with number 5 expanding driver and the large washer.

Tool Assembly and Operation

1. Select the proper expanding driver and washer from the expanding driver and washer information.

IMPORTANT: To install or remove the expanding driver, always push on or pull from the ends.

Pressure on the outside diameter may cause a bind against the rubber expanding sleeve.

2. Place the expanding driver onto the expander assembly.
3. Ensure the separation lines between the segments of the expanding driver align with the separation lines of the expander assembly.
4. With the small end of the cone facing the driver assembly, place the guide cone over the driving bar.
5. Place the driving washer over the threaded portion of the expander assembly.
6. Screw the expander assembly, with driving washer, onto the driving bar.

For removal of the inner bearings, it may be necessary to install the driver bar extension.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

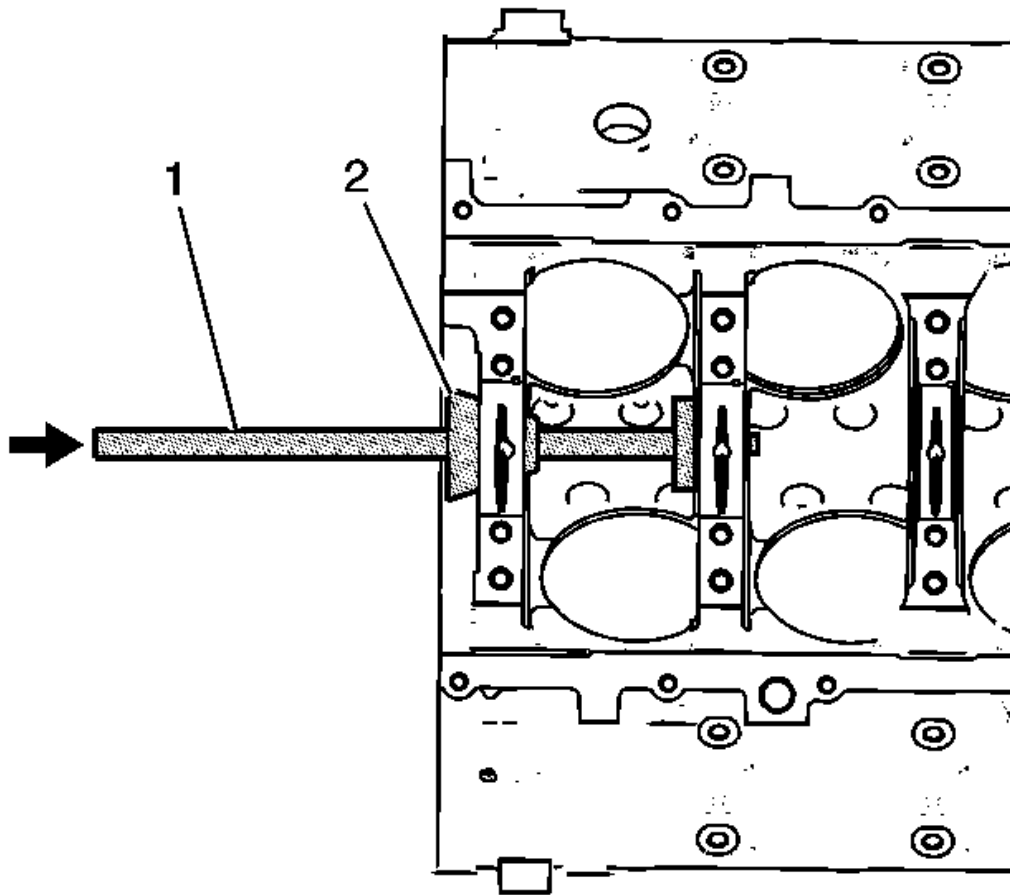


Fig. 54: Driving Bearing Out Of Or Into Engine Block
Courtesy of GENERAL MOTORS CORP.

7. Insert the tool into an inner camshaft bearing and tighten until snug.

Operate the tool from the front or rear of the engine block.

On some engine blocks, the nut on the expander assembly is inaccessible, except from either end. In this case, you must use a socket and extension to enlarge and reduce the expander assembly.

8. Slide the nylon cone (2) into the front or rear camshaft bearing. This will properly align the tool.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

9. Drive the bearing out of or into the engine block.
10. Repeat the procedure for the additional inner bearings.

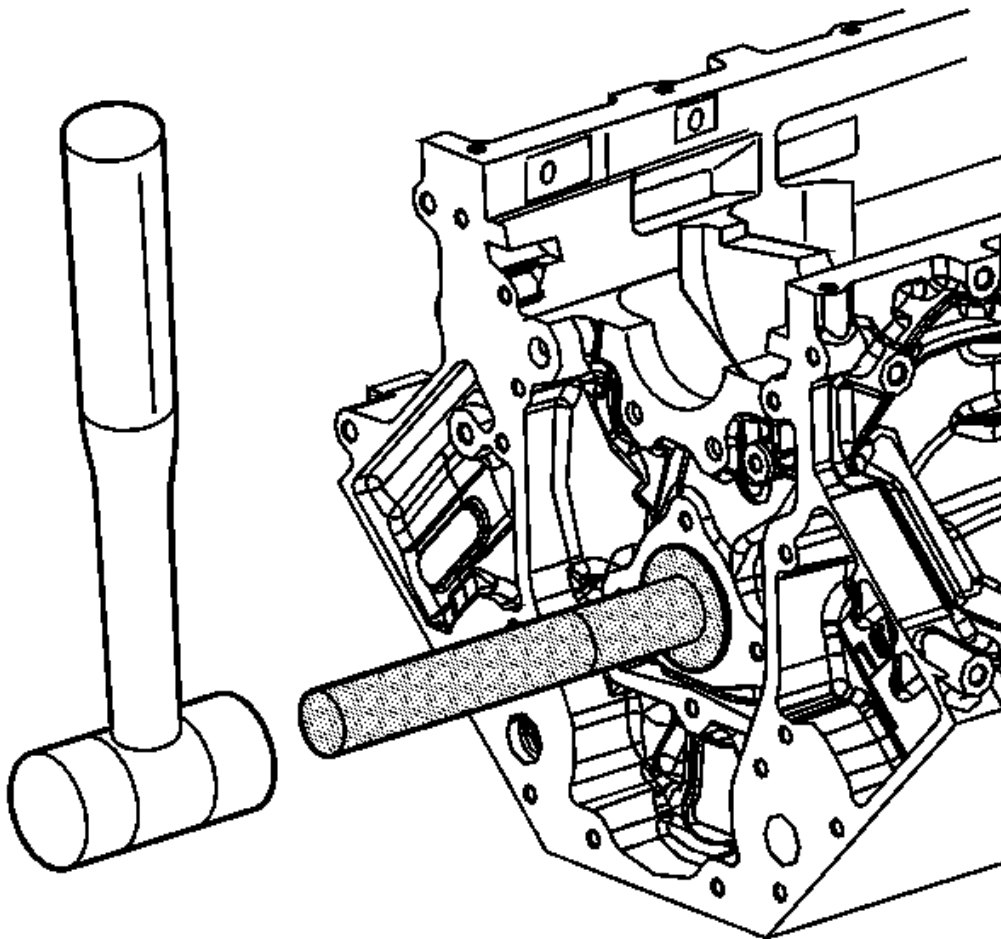


Fig. 55: Driving Bearing Out Of Or Into Engine Block
Courtesy of GENERAL MOTORS CORP.

11. For the 2 end bearings, front and rear, remove the nylon cone and driver bar extension.
12. Drive the bearings out of or into the engine block.

**CAMSHAFT AND BEARINGS CLEANING AND INSPECTION (RPO LY2/L
LY2/LH6/LMG/LY5/LC9)**

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Tools Required

- **J 7872** Magnetic Base Dial Indicator Set
- **J 8520** Camshaft Lobe Lift Indicator. See **Special Tools** .

Cleaning & Inspection

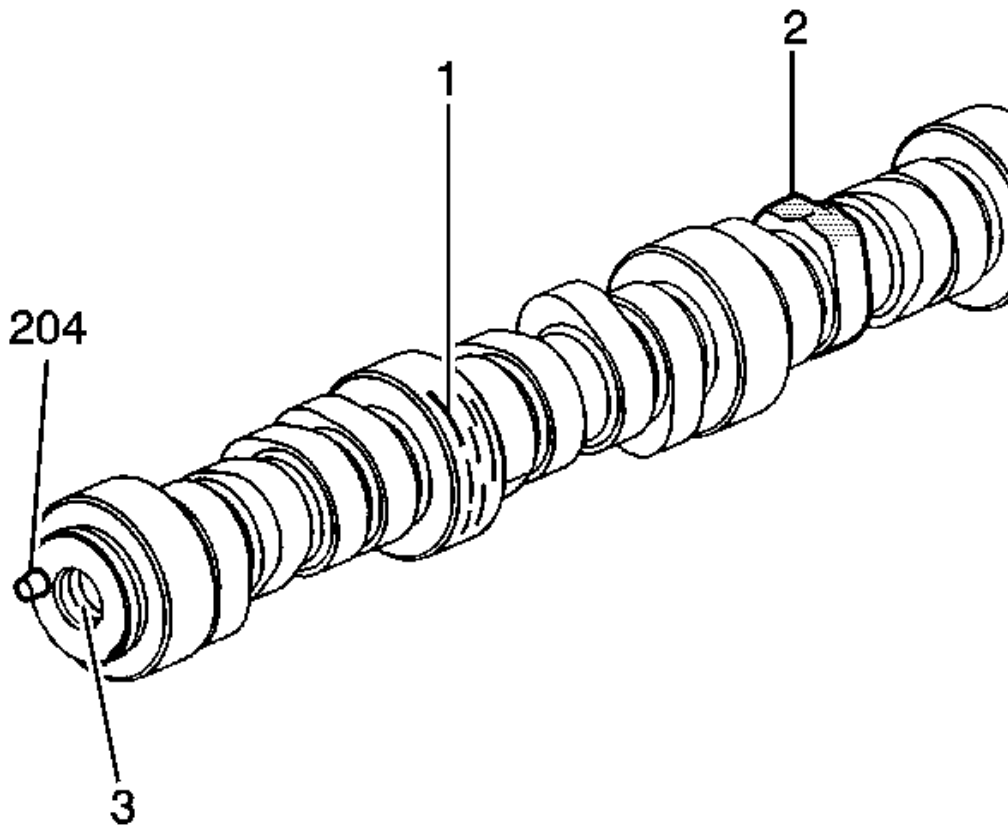


Fig. 56: Identifying Camshaft Inspection Areas
Courtesy of GENERAL MOTORS CORP.

1. Clean the components in solvent.

CAUTION: Refer to Safety Glasses and Compressed Air Caution .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Dry the components with compressed air.
3. Inspect the camshaft bearing journals (1) for scoring or excessive wear.
4. Inspect the camshaft valve lifter lobes (2) for scoring or excessive wear.
5. Inspect the threaded bolt hole (3) in the front of the camshaft for damaged threads or debris.
6. Inspect the camshaft sprocket pin (204) for damage.
7. Inspect the camshaft retainer plate for wear or a damaged sealing gasket.

If the camshaft retainer plate sealing gasket is not cut or damaged, it may be used again.

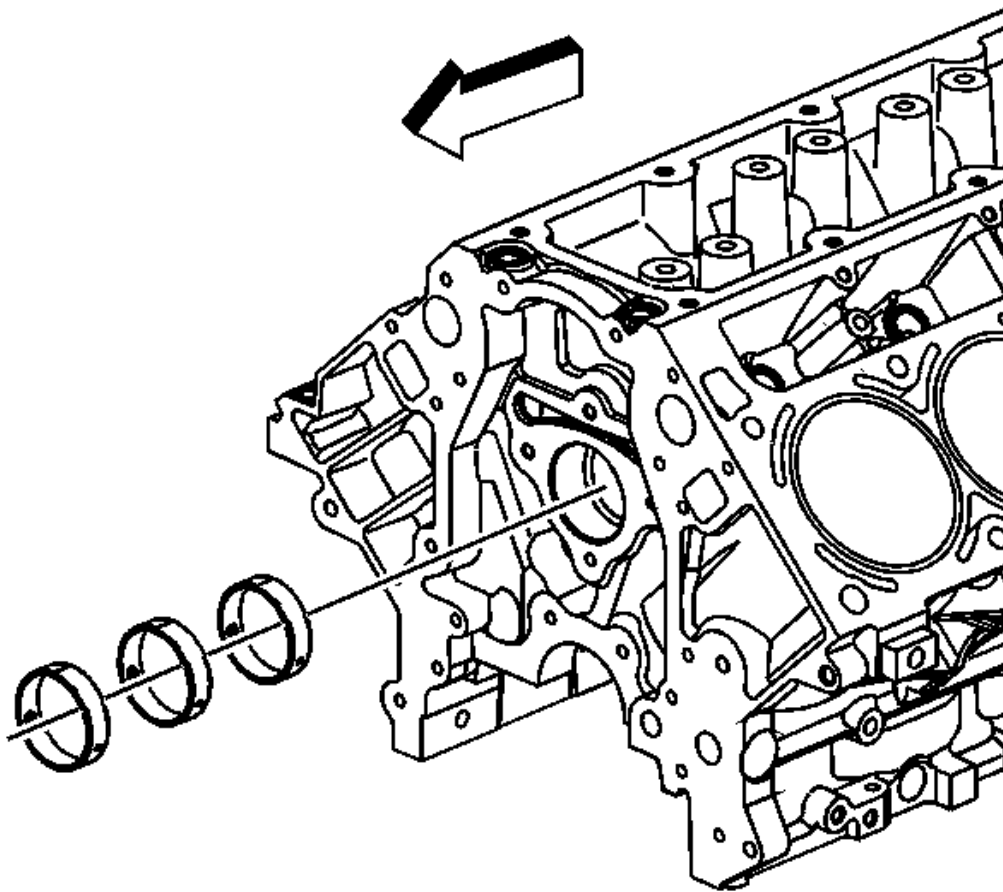


Fig. 57: Camshaft Bearings
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

8. Inspect the camshaft bearings for proper fit in the engine block. Camshaft bearings have an interference fit to the engine block and should not be loose in the engine block bearing bores.
9. Inspect the camshaft bearings for excessive wear or scoring.

Bearings with excessive scoring or wear must be replaced.

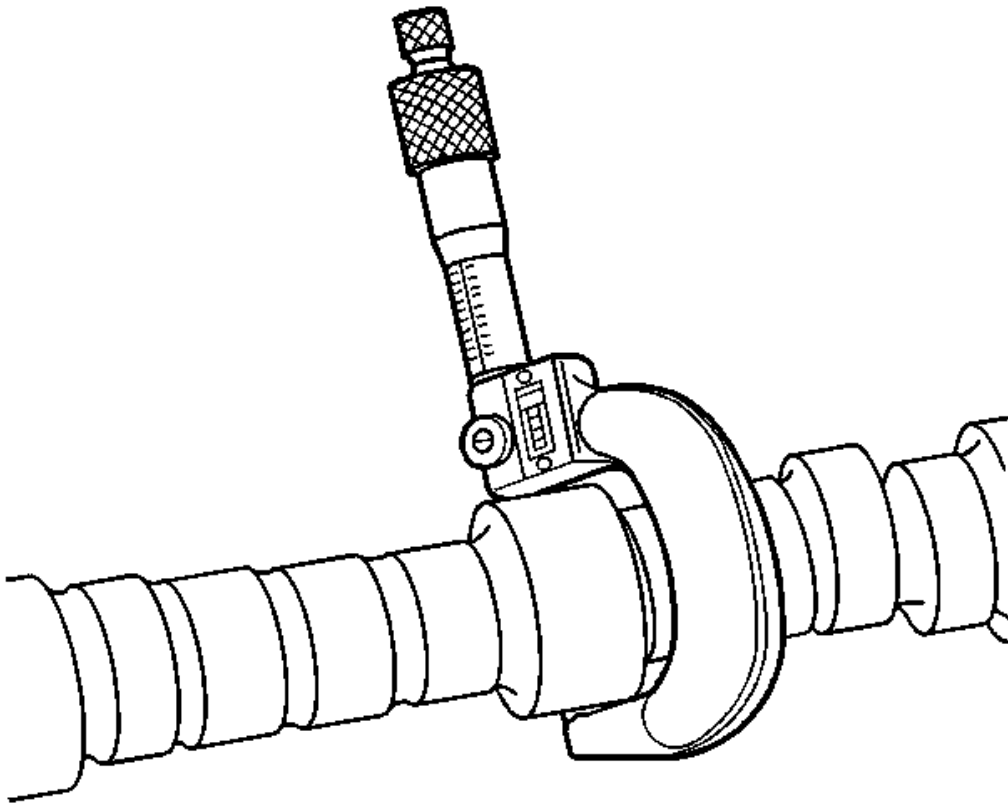


Fig. 58: Measure Camshaft Journals With Micrometer
Courtesy of GENERAL MOTORS CORP.

10. Using a micrometer, measure the camshaft journals for wear and out-of-round.
 - If the camshaft bearing journals are greater than 0.025 mm (0.001 in) out-of-round, replace the camshaft.
 - If the camshaft bearing journal diameter is less than 54.99 mm (2.164 in), replace the

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

camshaft.

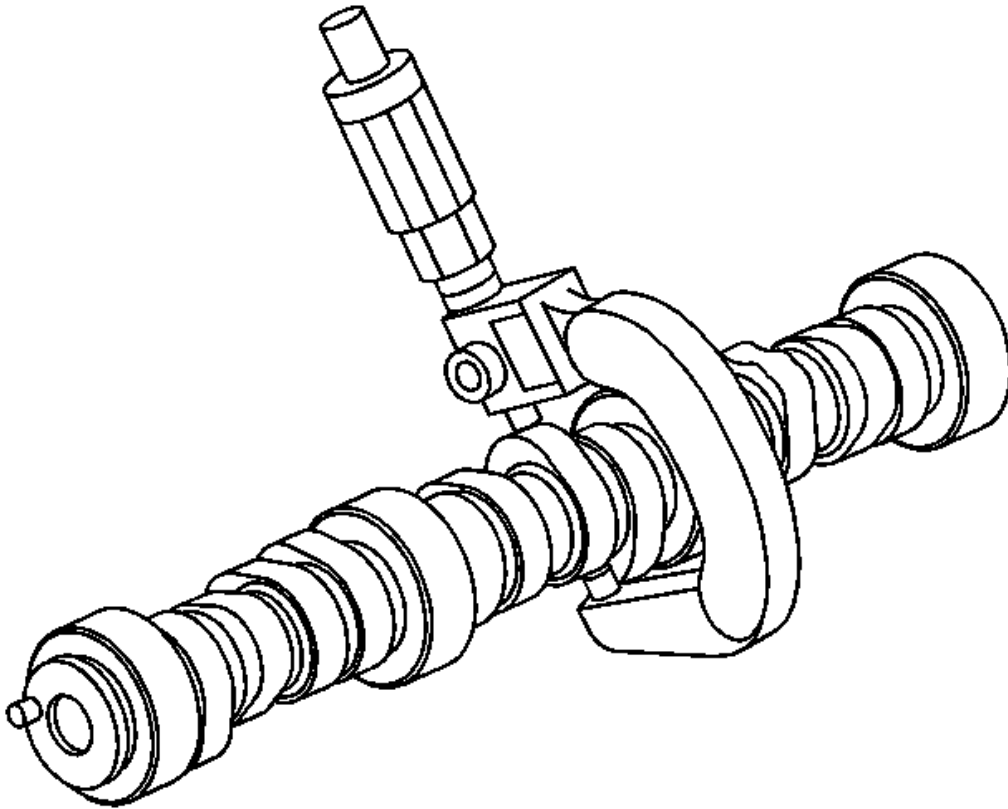


Fig. 59: Measuring Camshaft Lobes
Courtesy of GENERAL MOTORS CORP.

11. Using a micrometer, measure the camshaft lobes for wear. Refer to **Engine Mechanical Specifications (RPO LY5 VIN J)** or **Engine Mechanical Specifications (RPO LC9 VIN 3)** or **Engine Mechanical Specifications (RPO LY2 VIN C)** or **Engine Mechanical Specifications (RPO LH6 VIN M)** or **Engine Mechanical Specifications (RPO LMG VIN 0)** or **Engine Mechanical Specifications (RPO LY6 VIN K)** or **Engine Mechanical Specifications (RPO L76 VIN Y)** or **Engine Mechanical Specifications (RPO L92 VIN 8)** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

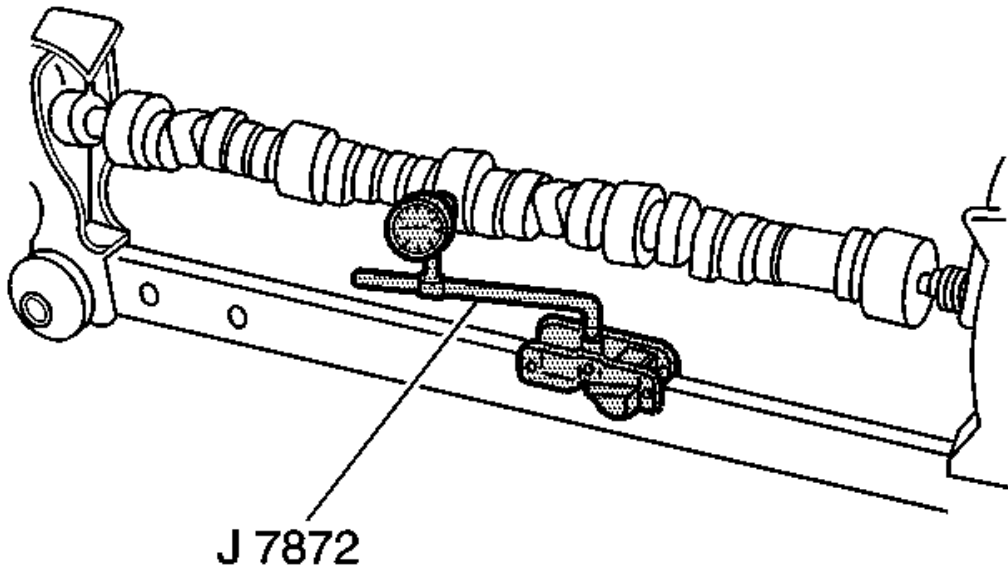


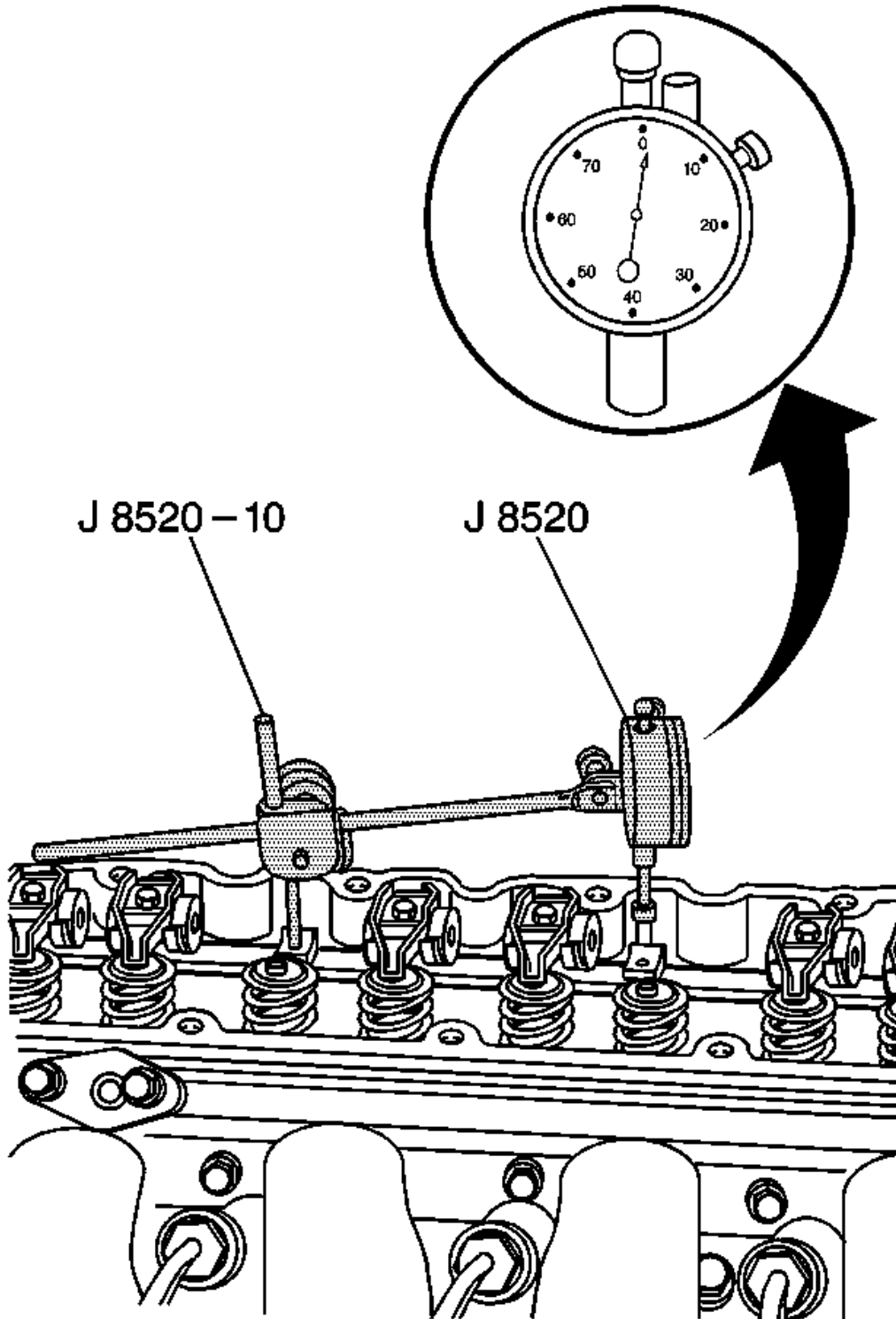
Fig. 60: Measuring Camshaft Runout
Courtesy of GENERAL MOTORS CORP.

12. Measure the camshaft runout.
 1. Mount the camshaft in wooden V-blocks or between centers on a fixture.
 2. Using the **J 7872** , measure the runout of the intermediate camshaft bearing journals.
 3. If camshaft runout exceeds 0.05 mm (0.002 in), the camshaft is bent and should be replaced.

Measuring Camshaft Lobe Lift

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado



2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Fig. 61: Measuring Camshaft Lobe Lift **Courtesy of GENERAL MOTORS CORP.**

IMPORTANT: Measuring camshaft lobe lift is a procedure used to determine if the camshaft lobes have worn. This test is to be performed prior to engine disassembly and with the camshaft and valve train components installed in the engine.

1. Using the **J 8520** , measure camshaft lobe lift. See **Special Tools** .
2. Remove the valve rocker arms and bolts.
3. Install the dial indicator mounting stud into the valve rocker arm bolt hole.
4. Assemble the components of the **J 8520** and position onto the stud. See **Special Tools** .
5. Position the shaft of the dial indicator onto the end of the pushrod.
6. Rotate the face of the dial indicator to zero.
7. Slowly rotate the crankshaft clockwise, until the dial indicator obtains its highest and lowest readings.
8. Compare the total to specifications. Refer to **Engine Mechanical Specifications (RPO LY5 VIN J)** or **Engine Mechanical Specifications (RPO LC9 VIN 3)** or **Engine Mechanical Specifications (RPO LY2 VIN C)** or **Engine Mechanical Specifications (RPO LH6 VIN M)** or **Engine Mechanical Specifications (RPO LMG VIN 0)** or **Engine Mechanical Specifications (RPO LY6 VIN K)** or **Engine Mechanical Specifications (RPO L76 VIN Y)** or **Engine Mechanical Specifications (RPO L92 VIN 8)** .

CAMSHAFT AND BEARINGS CLEANING AND INSPECTION (RPO LY6/L76/L92)

Tools Required

- **J 7872** Magnetic Base Dial Indicator Set
- **J 8520** Camshaft Lobe Lift Indicator. See **Special Tools** .

Cleaning & Inspection

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

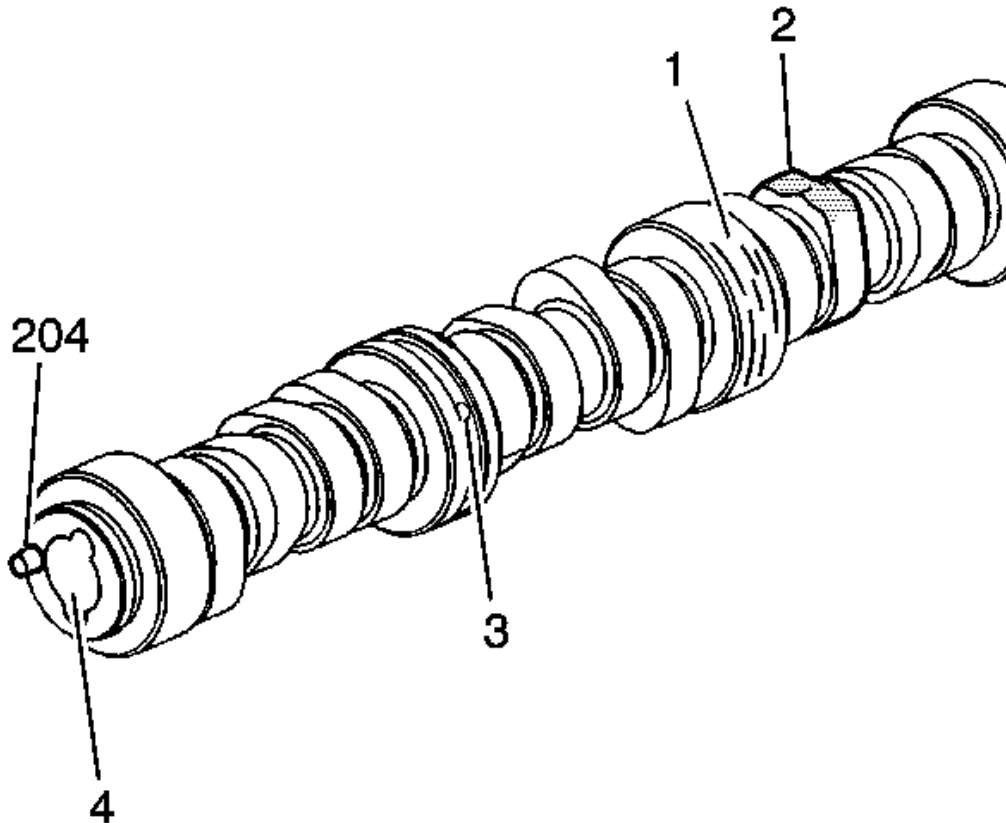


Fig. 62: View Of Camshaft Inspection Points
Courtesy of GENERAL MOTORS CORP.

1. Clean the components in solvent.

CAUTION: Refer to Safety Glasses and Compressed Air Caution .

2. Dry the components with compressed air.
3. Inspect the camshaft bearing journals (1) for scoring or excessive wear.
4. Inspect the camshaft valve lifter lobes (2) for scoring or excessive wear.
5. Inspect the camshaft position (CMP) actuator oil passages (3) for restrictions.
6. Inspect the threaded bolt hole (4) in the front of the camshaft for damaged threads or debris.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

7. Inspect the camshaft sprocket pin (204) for damage.
8. Inspect the camshaft retainer plate for wear or a damaged sealing gasket.

If the camshaft retainer plate sealing gasket is not cut or damaged, it may be used again.

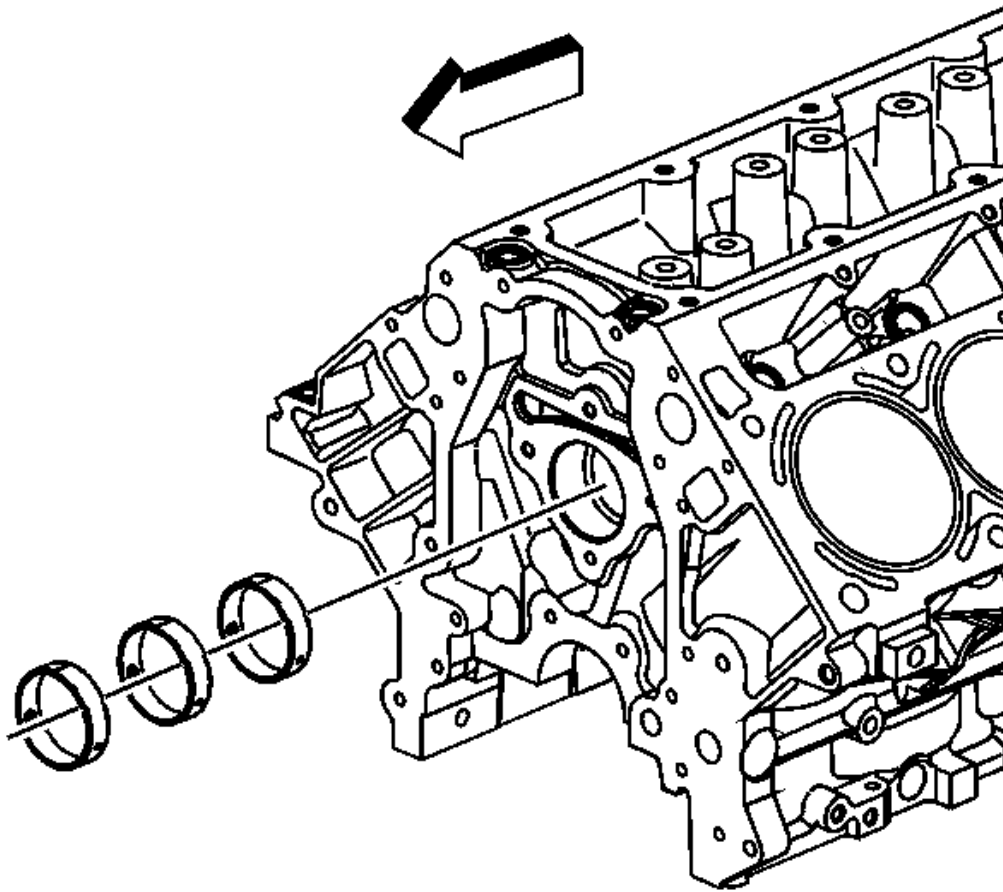


Fig. 63: Camshaft Bearings
Courtesy of GENERAL MOTORS CORP.

9. Inspect the camshaft bearings for proper fit in the engine block. Camshaft bearings have an interference fit to the engine block and should not be loose in the engine block bearing bores.
10. Inspect the camshaft bearings for excessive wear or scoring.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Bearings with excessive scoring or wear must be replaced.

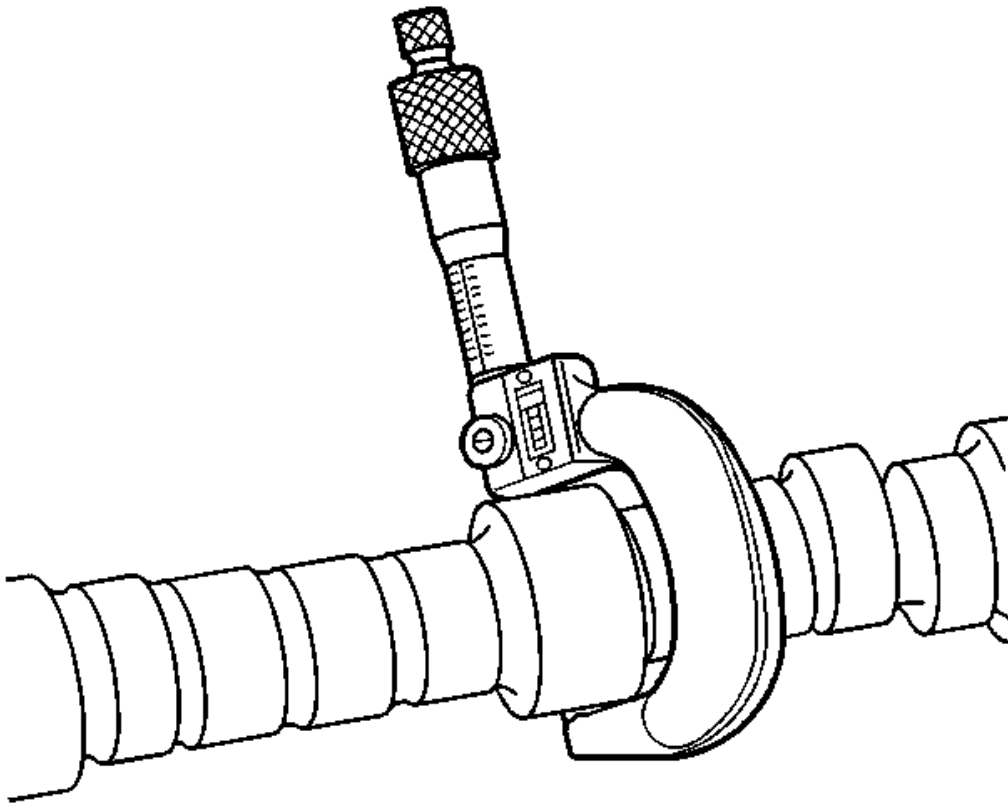


Fig. 64: Measure Camshaft Journals With Micrometer
Courtesy of GENERAL MOTORS CORP.

11. Using a micrometer, measure the camshaft journals for wear and out-of-round.
 - If the camshaft bearing journals are greater than 0.025 mm (0.001 in) out-of-round, replace the camshaft.
 - If the camshaft bearing journal diameter is less than 54.99 mm (2.164 in), replace the camshaft.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

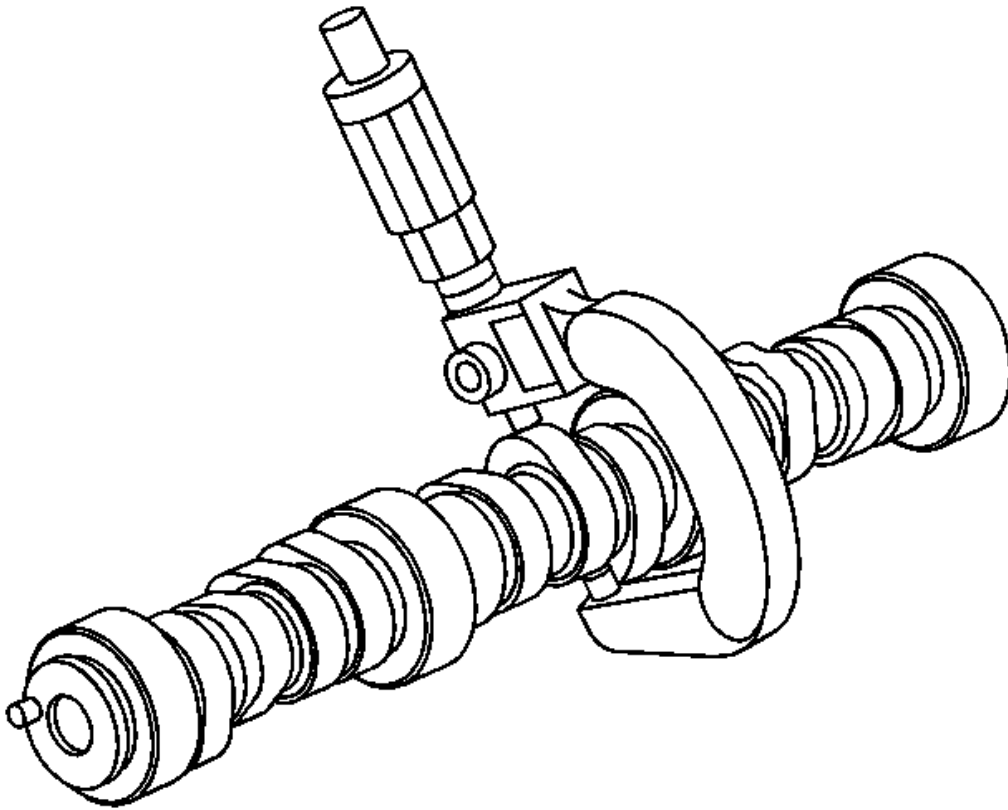


Fig. 65: Measuring Camshaft Lobes
Courtesy of GENERAL MOTORS CORP.

- Using a micrometer, measure the camshaft lobes for wear. Refer to **Engine Mechanical Specifications (RPO LY5 VIN J)** or **Engine Mechanical Specifications (RPO LC9 VIN 3)** or **Engine Mechanical Specifications (RPO LY2 VIN C)** or **Engine Mechanical Specifications (RPO LH6 VIN M)** or **Engine Mechanical Specifications (RPO LMG VIN 0)** or **Engine Mechanical Specifications (RPO LY6 VIN K)** or **Engine Mechanical Specifications (RPO L76 VIN Y)** or **Engine Mechanical Specifications (RPO L92 VIN 8)** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

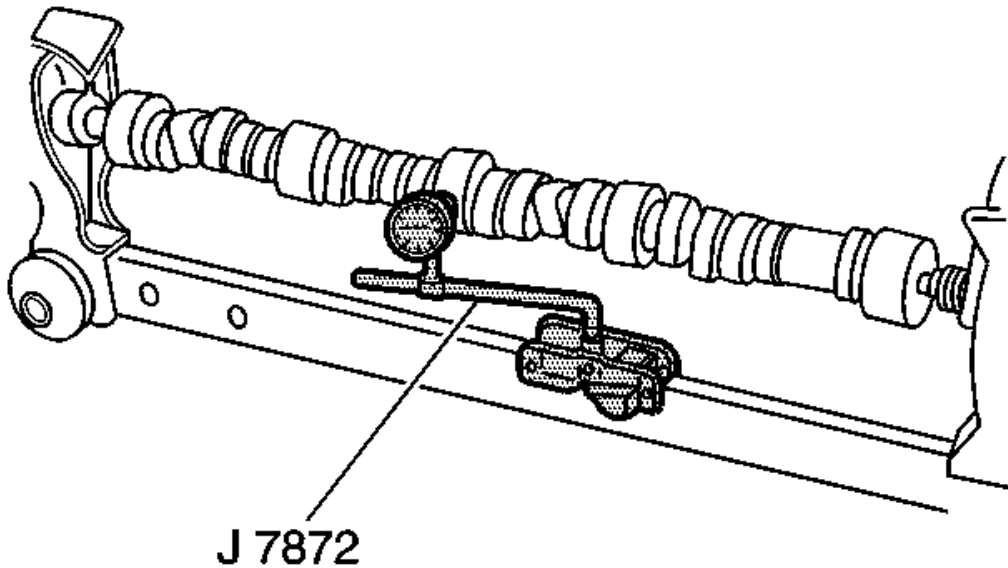


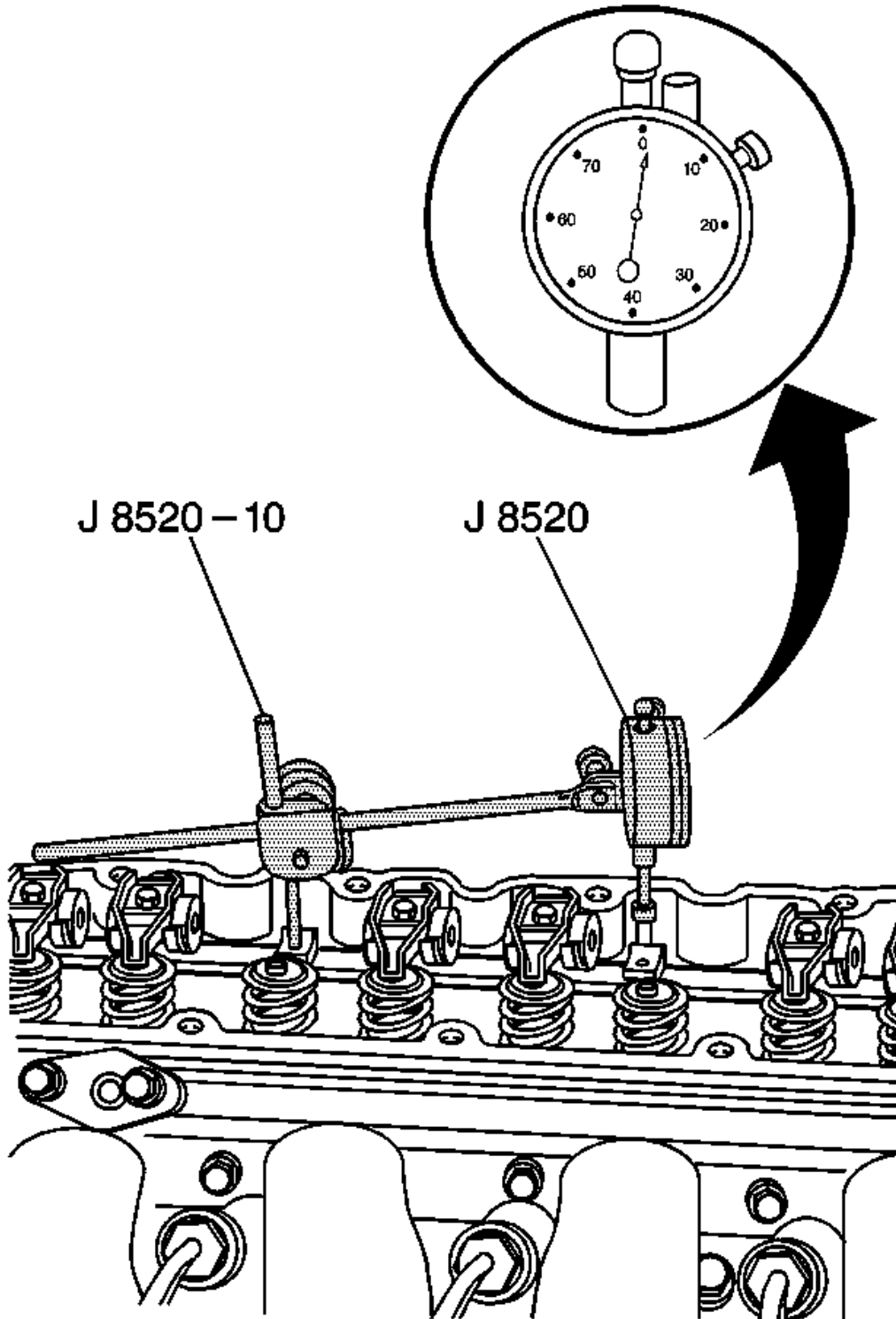
Fig. 66: Measuring Camshaft Runout
Courtesy of GENERAL MOTORS CORP.

13. Measure the camshaft runout.
 1. Mount the camshaft in wooden V-blocks or between centers on a fixture.
 2. Using the **J 7872** , measure the runout of the intermediate camshaft bearing journals.
 3. If camshaft runout exceeds 0.05 mm (0.002 in), the camshaft is bent and should be replaced.

Measuring Camshaft Lobe Lift

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado



2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Fig. 67: Measuring Camshaft Lobe Lift **Courtesy of GENERAL MOTORS CORP.**

IMPORTANT: Measuring camshaft lobe lift is a procedure used to determine if the camshaft lobes have worn. This test is to be performed prior to engine disassembly and with the camshaft and valve train components installed in the engine.

1. Using the **J 8520** , measure camshaft lobe lift. See **Special Tools** .
2. Remove the valve rocker arms and bolts.
3. Install the dial indicator mounting stud into the valve rocker arm bolt hole.
4. Assemble the components of the **J 8520** and position onto the stud. See **Special Tools** .
5. Position the shaft of the dial indicator onto the end of the pushrod.
6. Rotate the face of the dial indicator to zero.
7. Slowly rotate the crankshaft clockwise, until the dial indicator obtains its highest and lowest readings.
8. Compare the total to specifications. Refer to **Engine Mechanical Specifications (RPO LY5 VIN J)** or **Engine Mechanical Specifications (RPO LC9 VIN 3)** or **Engine Mechanical Specifications (RPO LY2 VIN C)** or **Engine Mechanical Specifications (RPO LH6 VIN M)** or **Engine Mechanical Specifications (RPO LMG VIN 0)** or **Engine Mechanical Specifications (RPO LY6 VIN K)** or **Engine Mechanical Specifications (RPO L76 VIN Y)** or **Engine Mechanical Specifications (RPO L92 VIN 8)** .

CAMSHAFT BEARING INSTALLATION

Tools Required

J 33049 Camshaft Bearing Service Set

Installation

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

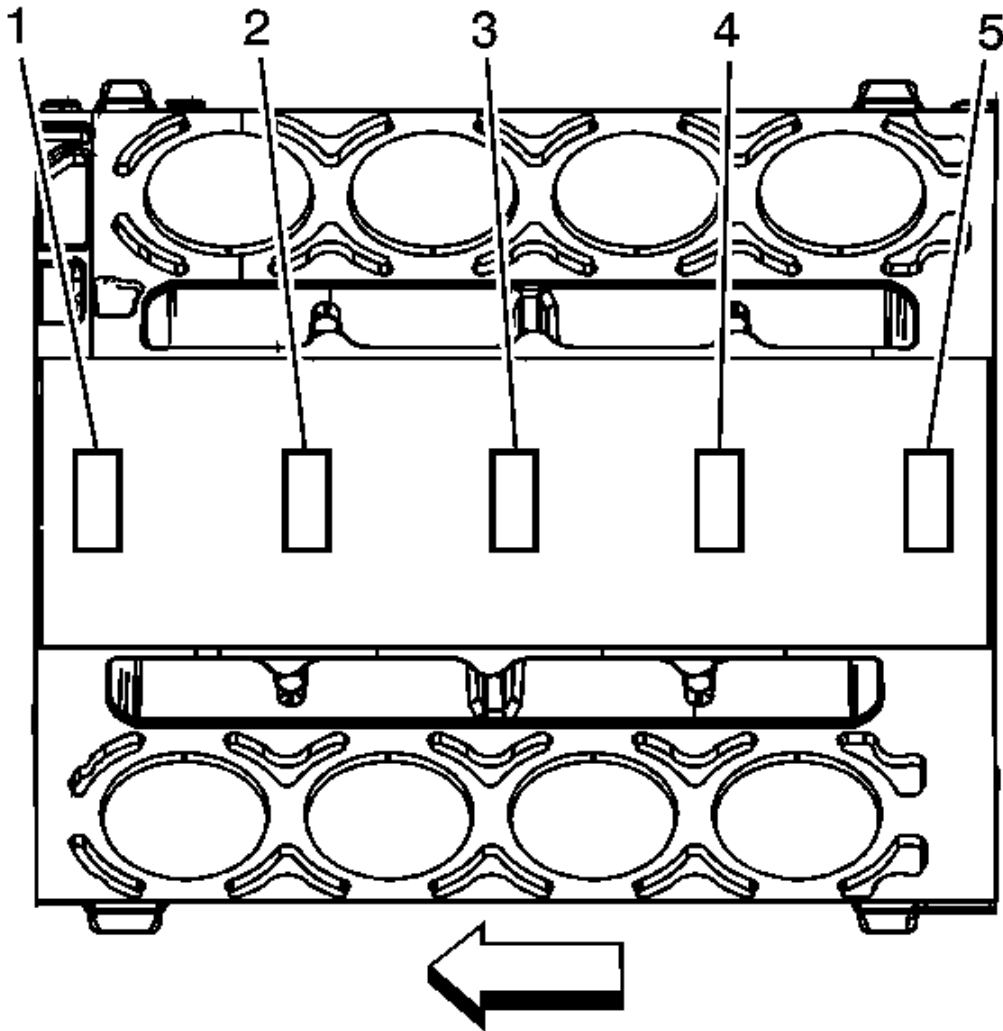


Fig. 68: Identifying Engine Block Camshaft Bearing Bores
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The engine block camshaft bearing bores are machined for 3 different outside diameter (OD) size bearings. Position 1 and 5 are the largest diameter bores. Position 3 is the smallest diameter bore. Position 2 and 4 are the intermediate size bores. The inside diameter (ID) for all camshaft bearings is the same size.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Measure the engine block camshaft bearing bores (1-5) in order to identify the correct OD size bearing for each position. Refer to **Engine Mechanical Specifications (RPO LY5 VIN J)** or **Engine Mechanical Specifications (RPO LC9 VIN 3)** or **Engine Mechanical Specifications (RPO LY2 VIN C)** or **Engine Mechanical Specifications (RPO LH6 VIN M)** or **Engine Mechanical Specifications (RPO LMG VIN 0)** or **Engine Mechanical Specifications (RPO LY6 VIN K)** or **Engine Mechanical Specifications (RPO L76 VIN Y)** or **Engine Mechanical Specifications (RPO L92 VIN 8)** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

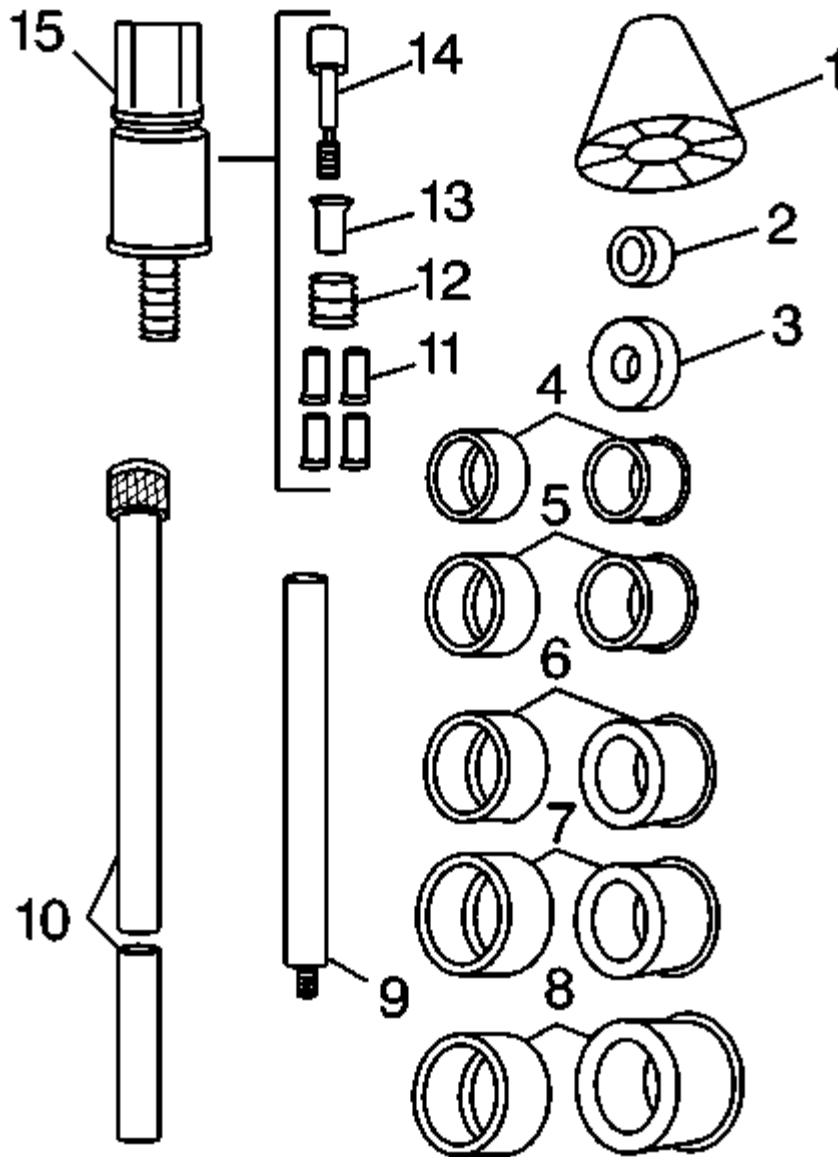


Fig. 69: View Of J 33049 Camshaft Bearing Service Kit Components
Courtesy of GENERAL MOTORS CORP.

2. Select the expanding driver (4-8) and washer (2 or 3) from the **J 33049** . Refer to **Piston and Connecting Rod Assemble**.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

3. Assemble the tool.

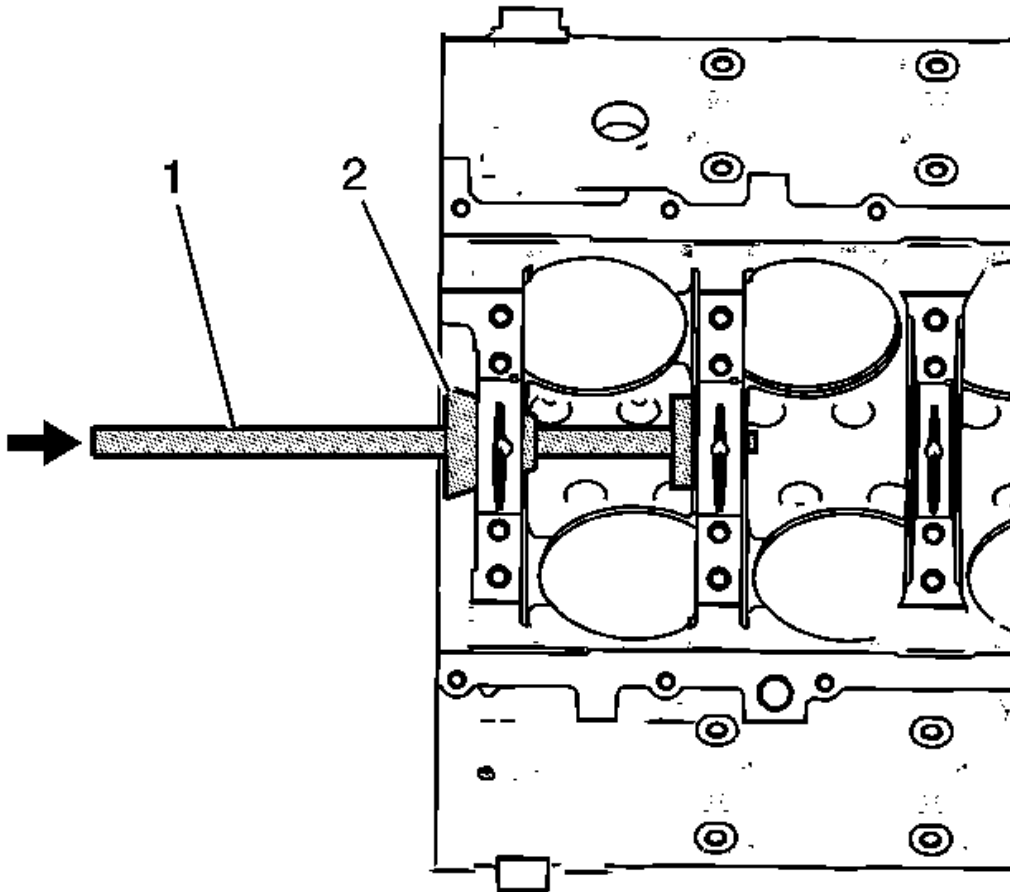


Fig. 70: Driving Bearing Out Of Or Into Engine Block
Courtesy of GENERAL MOTORS CORP.

4. Insert the tool (1) through the front of the engine block and into the bearing.
5. Tighten the expander assembly nut until snug.
6. Push the guide cone (2) into the front camshaft bearing in order to align the tool.
7. Drive the bearing into the block bore.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

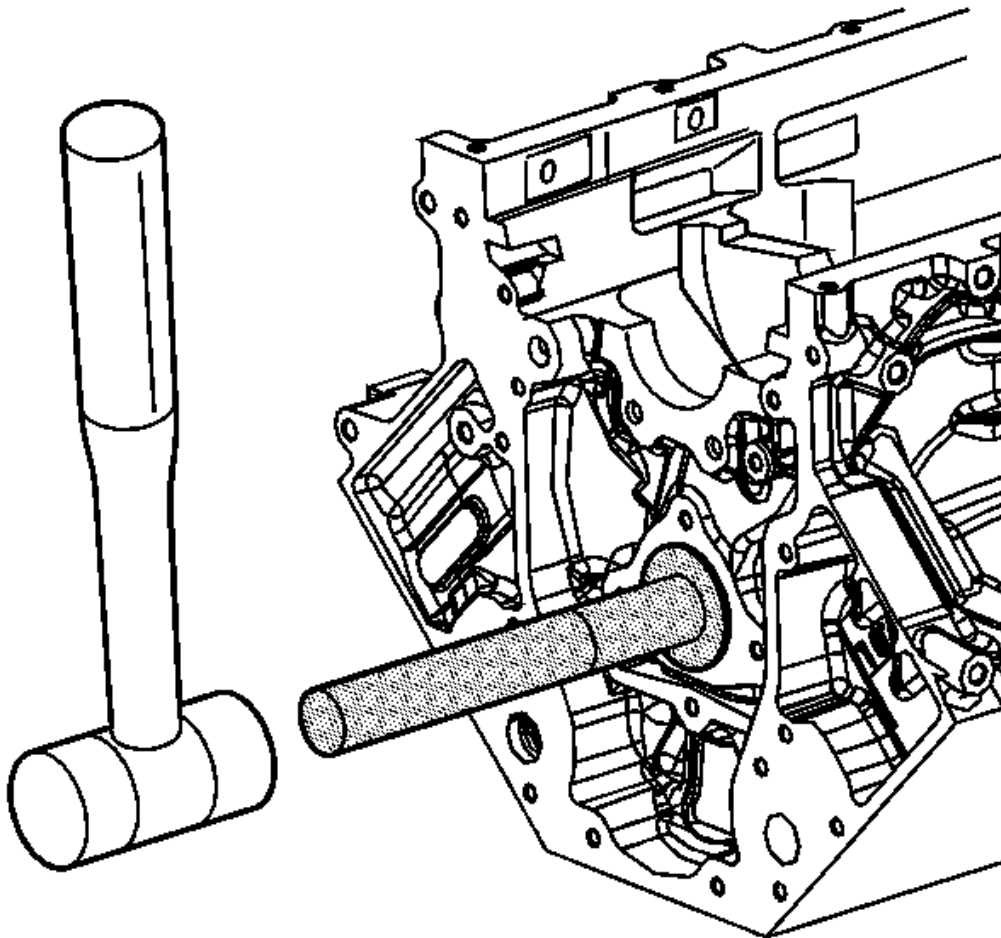


Fig. 71: Driving Bearing Out Of Or Into Engine Block
Courtesy of GENERAL MOTORS CORP.

8. Install the front and rear bearings to the block.

CAMSHAFT TIMING CHAIN AND SPROCKET CLEANING AND INSPECTION

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

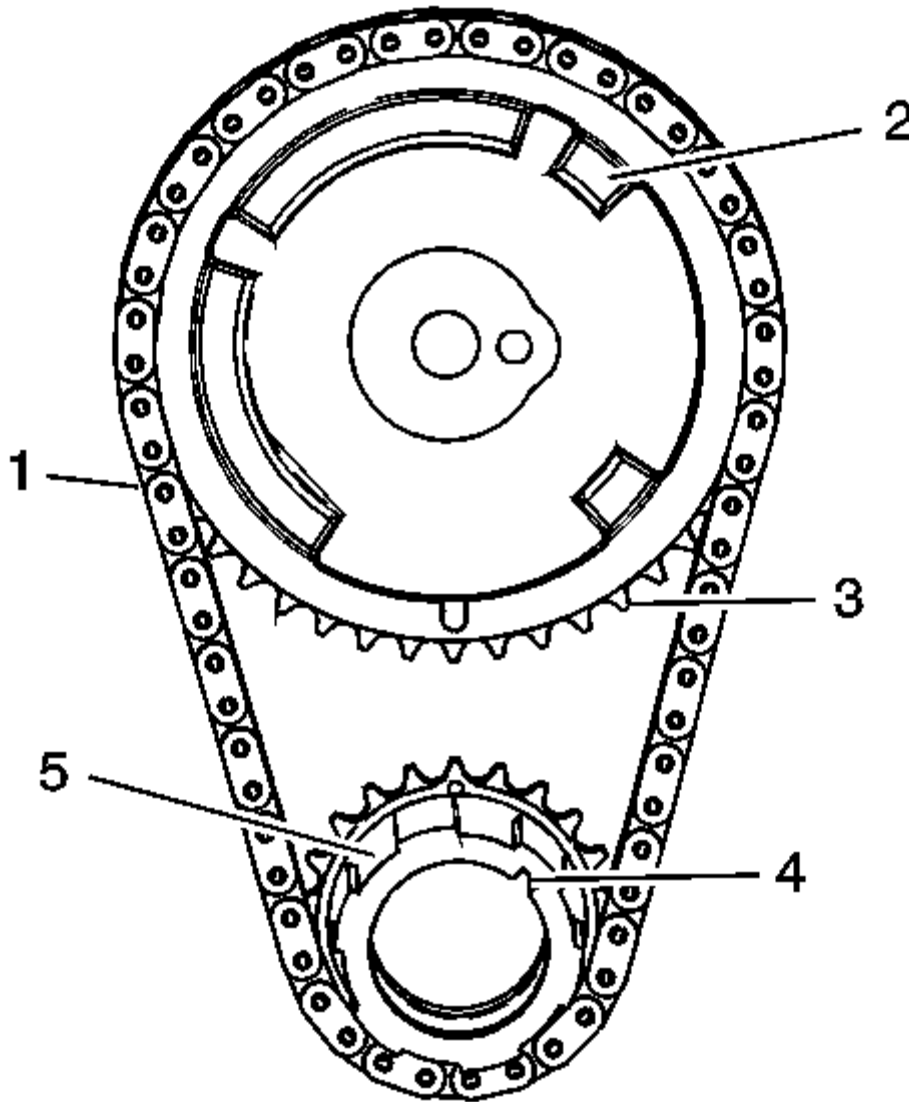


Fig. 72: Identifying Timing Chain and Sprockets Inspection Areas
Courtesy of GENERAL MOTORS CORP.

1. Clean the components with cleaning solvent.

CAUTION: Refer to Safety Glasses and Compressed Air Caution .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Dry the components with compressed air.
3. Inspect the timing chain (1) for binding or wear.
4. Inspect the camshaft position (CMP) sensor raised areas (2) for nicks or damage.
5. Inspect for worn, damaged, or chipped teeth (3).
6. Inspect for a damaged keyway (4).
7. Inspect for worn oil pump drive splines (5).

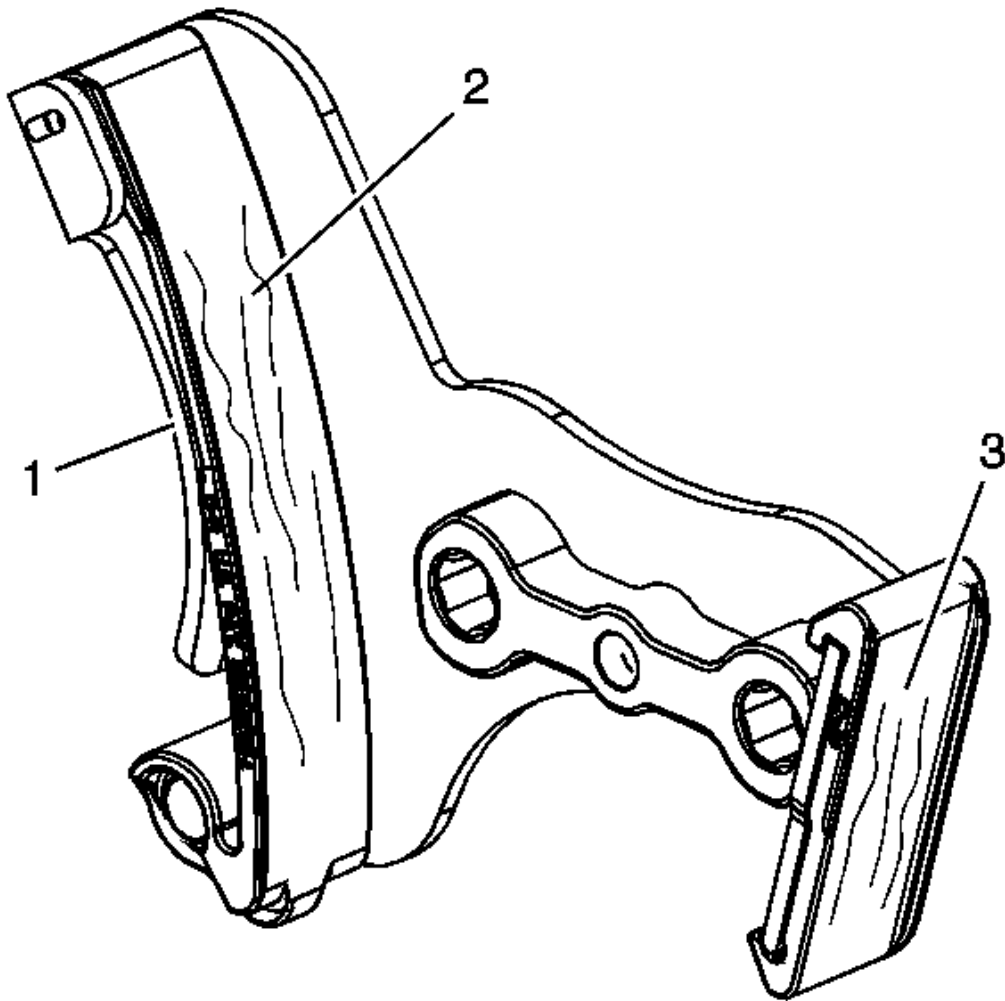


Fig. 73: View Of Timing Chain Tensioner Inspection Points
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

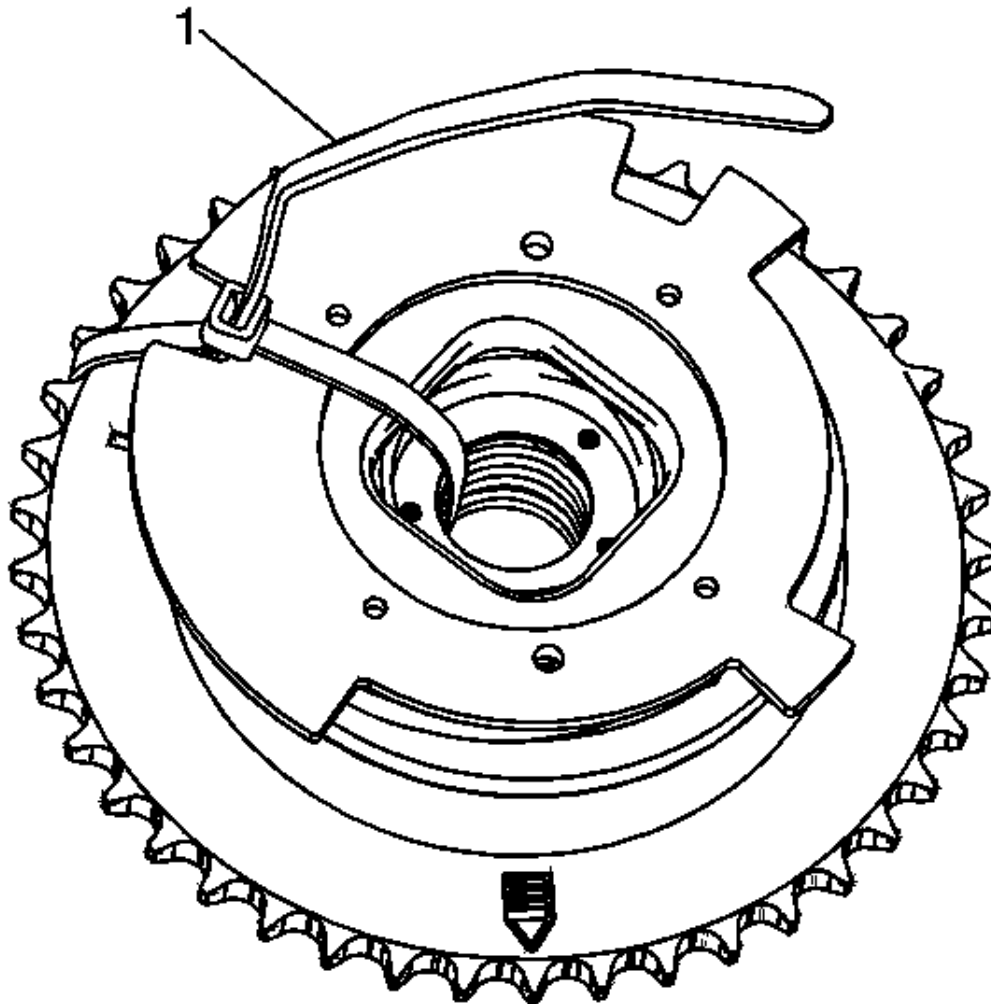
2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

8. Inspect the timing chain tensioner for the following conditions:

- Damaged or broken tension spring (1)
- Excessive wear or scoring on the chain guide surfaces (2, 3)

CAMSHAFT POSITION ACTUATOR CLEANING AND INSPECTION

CAUTION: Refer to Camshaft Position Actuator Removal and Installation Caution .



2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Fig. 74: View Of Tie Strap Through Center Of Actuator
Courtesy of GENERAL MOTORS CORP.

1. Insert a tie strap (1) through the center of the camshaft position (CMP) actuator and over the reluctor wheel.

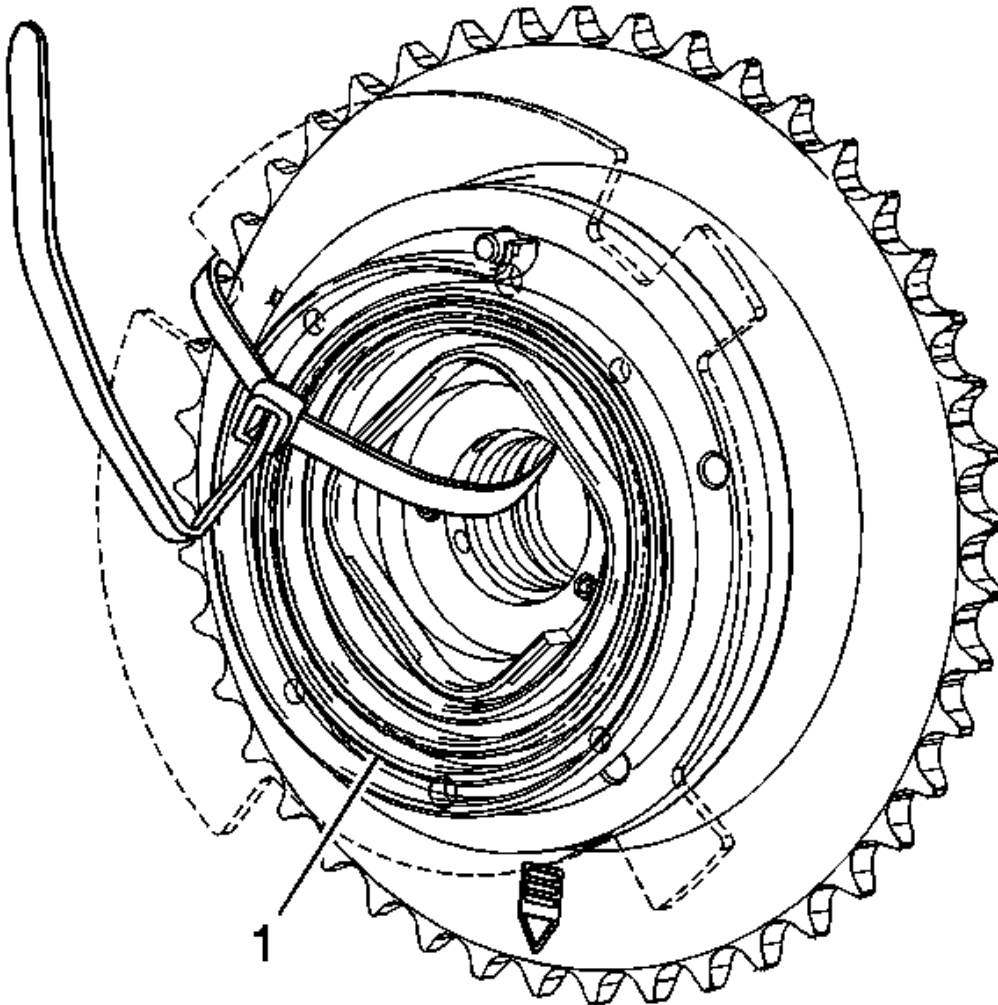


Fig. 75: Inspecting CMP Actuator For Broken Spring
Courtesy of GENERAL MOTORS CORP.

2. Clean the CMP actuator with cleaning solvent.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

CAUTION: Refer to Safety Glasses and Compressed Air Caution .

3. Dry the components with compressed air.
4. Inspect the CMP actuator for a broken spring (1).

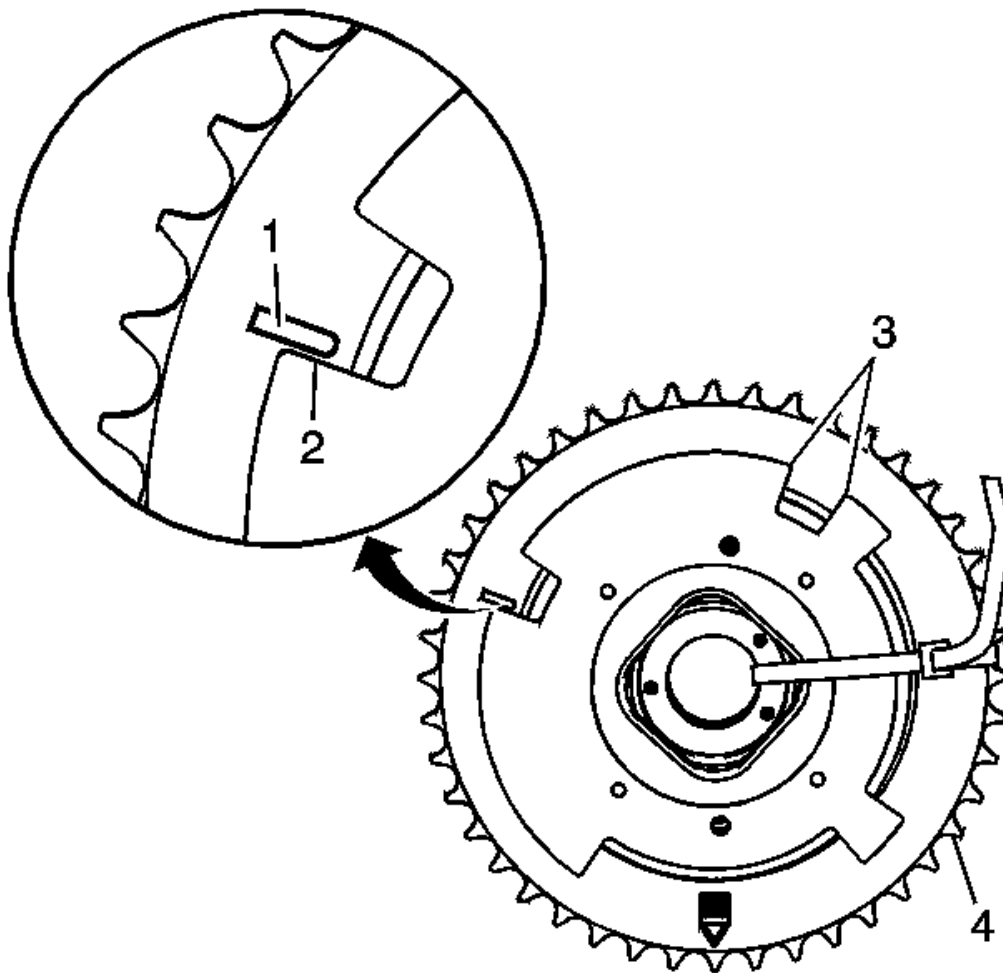


Fig. 76: CMP Actuator Inspection Points
Courtesy of GENERAL MOTORS CORP.

5. Inspect the CMP actuator for the following conditions:
 - Improper positioning of the CMP reluctor wheel. The actuator return spring should

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

reposition the reluctor wheel to the PARK position. Inspect for proper alignment of the mark on the face of the sprocket (1) with the flat edge of the reluctor wheel (2). If the reluctor wheel is not properly positioned, the internal components of the actuator are sticking or the return spring is broken and the actuator should be replaced as an assembly.

- Nicked or damaged edges (3) on the CMP reluctor wheel
- Damaged timing chain teeth (4)

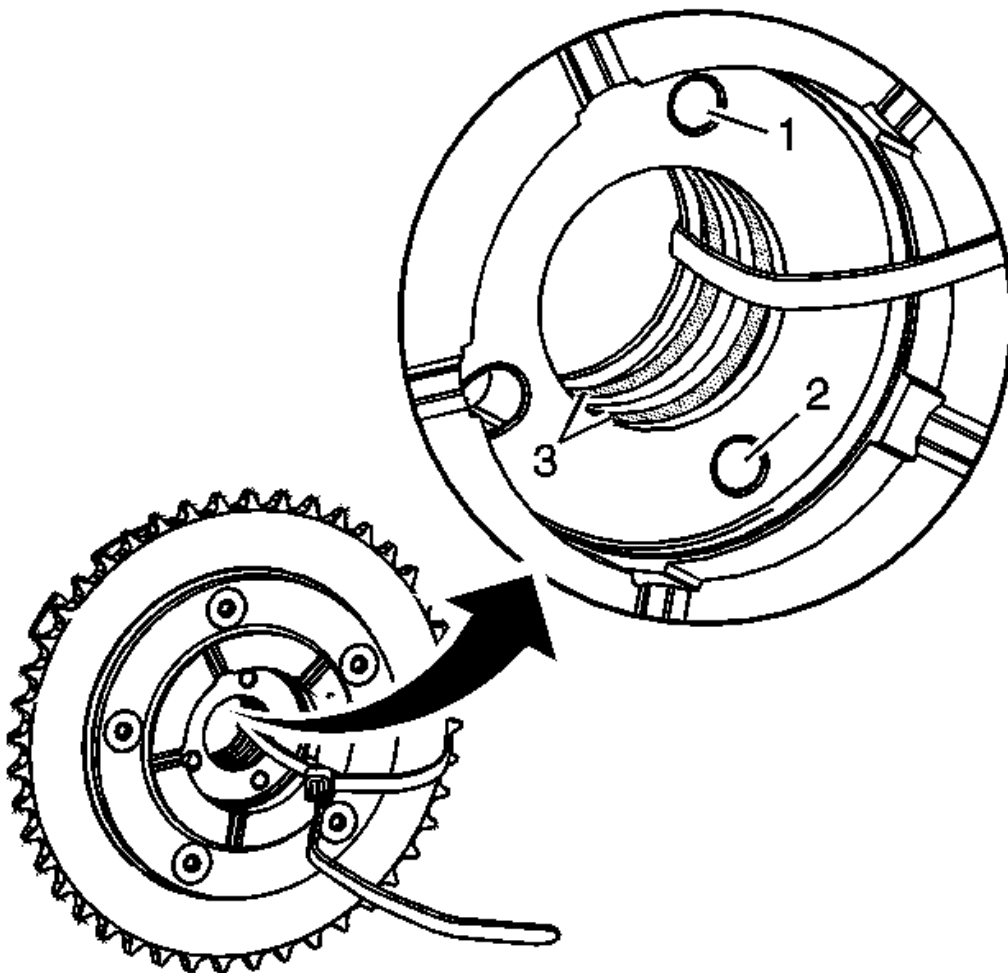


Fig. 77: View Of Oil Passages
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

6. Inspect the CMP actuator for dirt, debris, or restrictions within the oil passages (1, 2, 3).

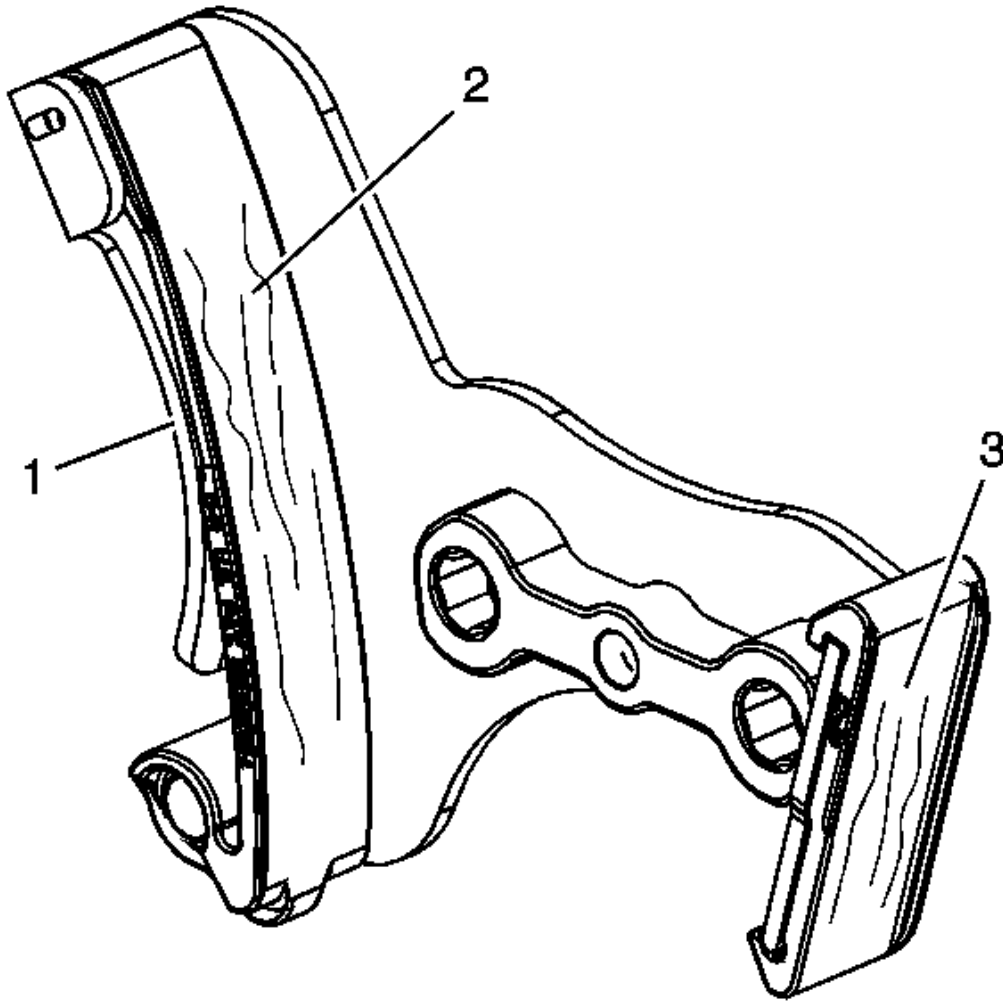


Fig. 78: View Of Timing Chain Tensioner Inspection Points
Courtesy of GENERAL MOTORS CORP.

7. Inspect the timing chain tensioner for the following conditions:

- Damaged or broken tension spring (1)
- Excessive wear or scoring on the chain guide surfaces (2, 3)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

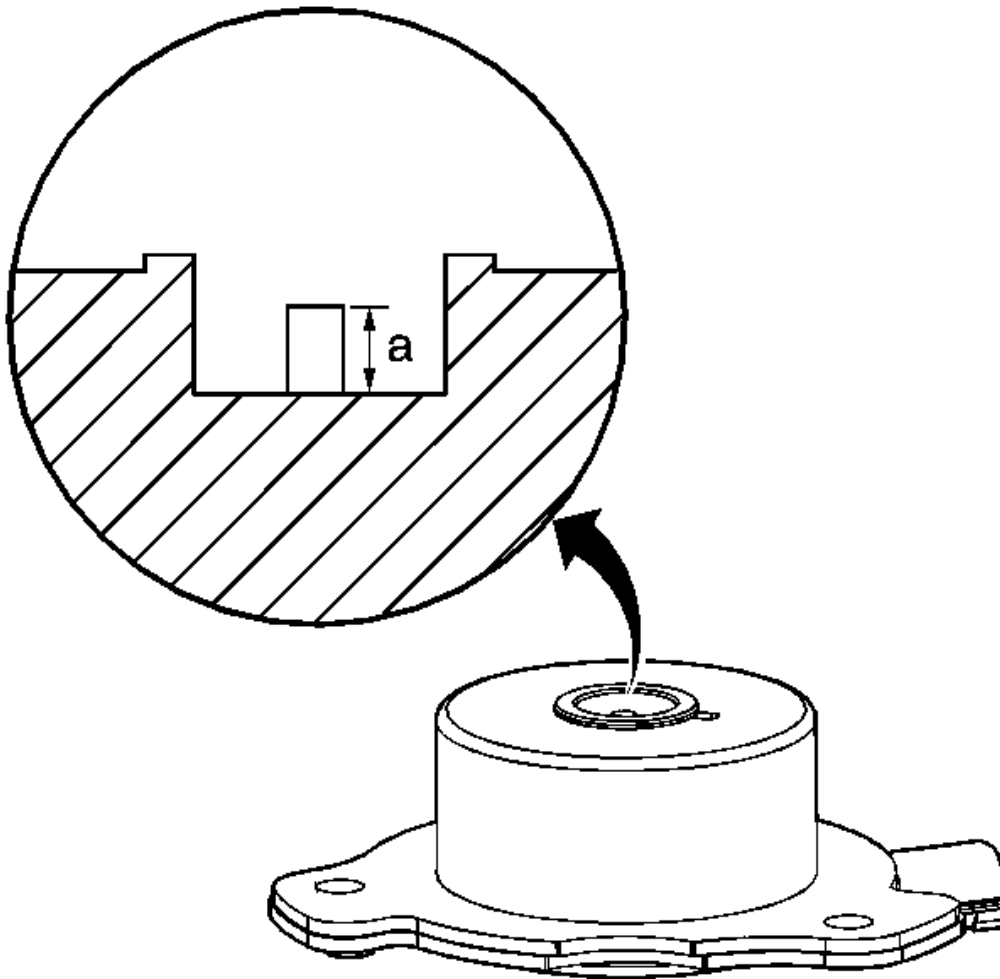


Fig. 79: Measuring Retracted Position
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not energize the camshaft position (CMP) magnet using a 12-volt power supply.

1. Inspect the CMP magnet for the following conditions:
 - A damaged electrical connector
 - An accumulation of dirt or debris in the recessed area around the pintle
 - A build-up of burnt engine oil on the shaft of the pintle which may cause the pintle to

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

stick and not move freely within the proper range of travel

2. Holding the CMP magnet with the pintle facing upward, measure the pintle retracted position (a). Record the dimension.

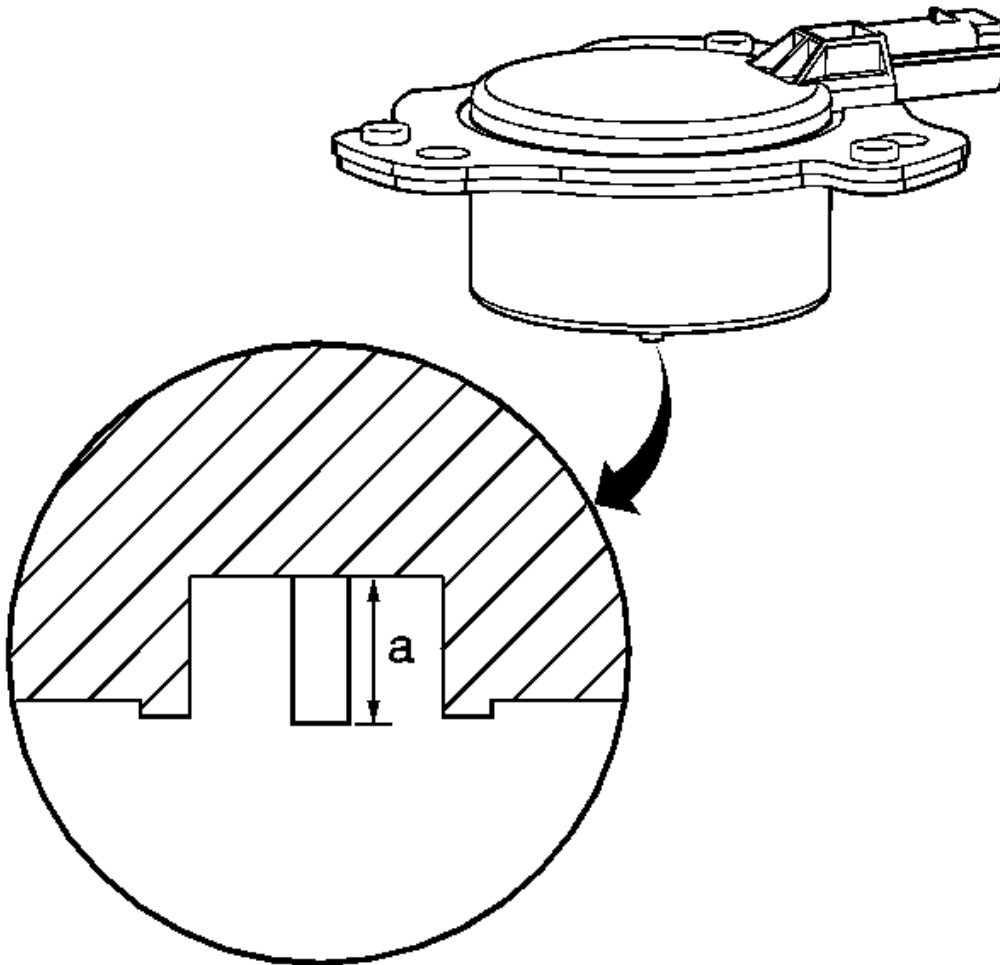


Fig. 80: Measuring The Pintle Extended Position
Courtesy of GENERAL MOTORS CORP.

3. Holding the CMP magnet with the pintle facing downward, measure the pintle extended position (a). Record the dimension.
4. Subtract the retracted dimension from the extended dimension to determine pintle travel. A properly moving pintle will travel 3.0-5.5 mm (0.12-0.22 in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

5. If the pintle of the CMP magnet is binding or does not move within the proper range of travel, replace the CMP magnet as an assembly.

CAMSHAFT POSITION ACTUATOR SOLENOID VALVE INSPECTION (ON-VEHICLE)

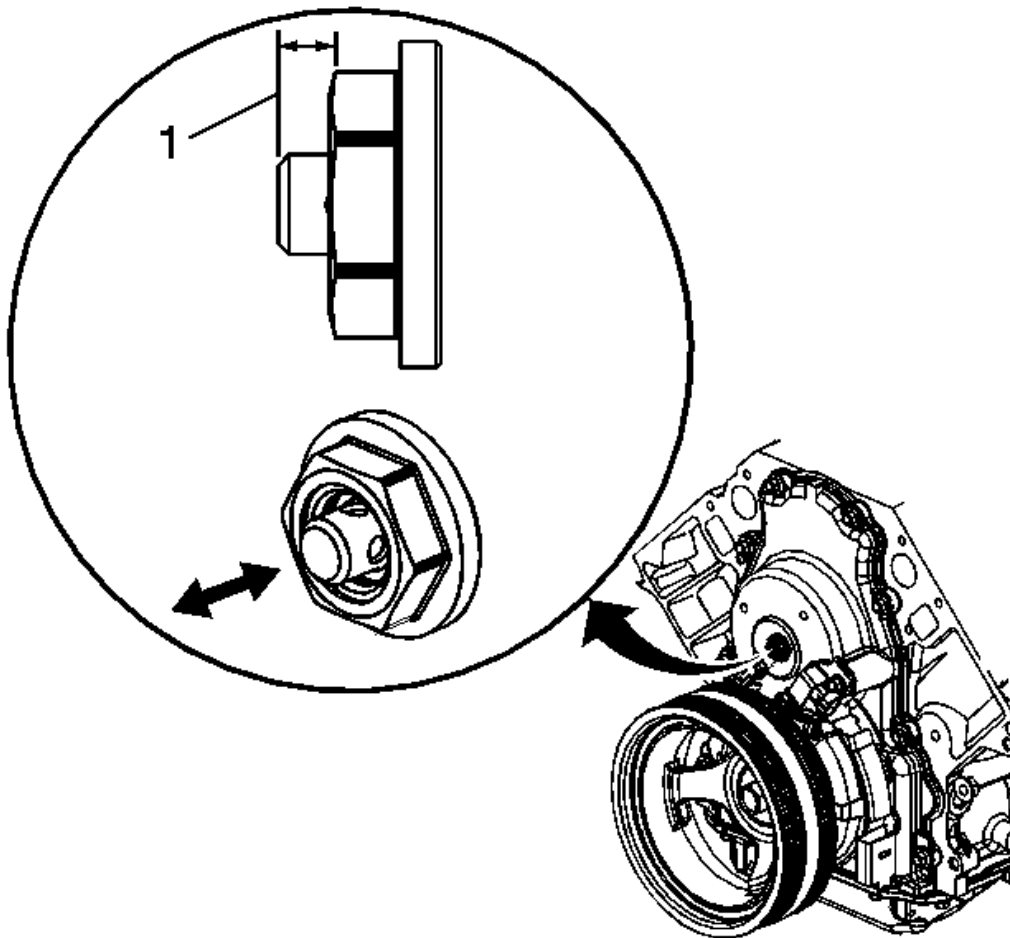


Fig. 81: View Of Proper Valve Spool Position
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not use the camshaft position (CMP) actuator solenoid valve again. Install a NEW valve during assembly. The inspection procedure below is provided for on-vehicle diagnostic purposes only.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. With the CMP magnet removed, inspect for a sticking valve spool or broken valve spool spring.
2. Depress the valve spool into the housing. The valve should move freely with no binding or sticking and minimal resistance inward. When released, the valve spring should return the spool to the proper extended position (1) of 6.08-6.12 mm (0.239-0.241 in).

CAMSHAFT POSITION ACTUATOR SOLENOID VALVE INSPECTION (OFF-VEHICLE)

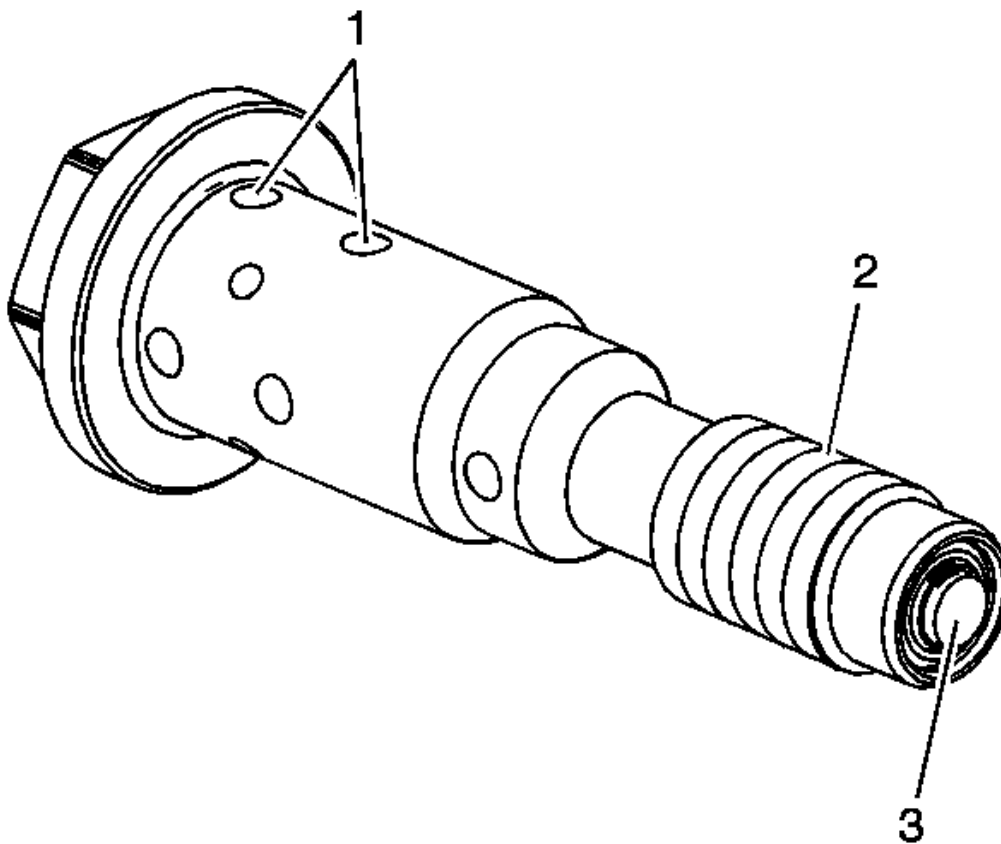


Fig. 82: View Of CMP Inspection Points
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not use the camshaft position (CMP) actuator solenoid valve again. Install a NEW valve during assembly. The inspection procedure below is provided for off-vehicle

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

diagnostic purposes only.

1. Inspect the CMP valve for the following conditions:

- Dirt, debris, or restrictions within the oil passages (1)
- Damaged threads (2)

If the threads of the valve are damaged, also inspect the threads in the front of the camshaft for damage.

- Dirt, debris, or restrictions within the oil inlet check valve (3)

If debris is detected, the engine assembly should be inspected to determine the source of contamination.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

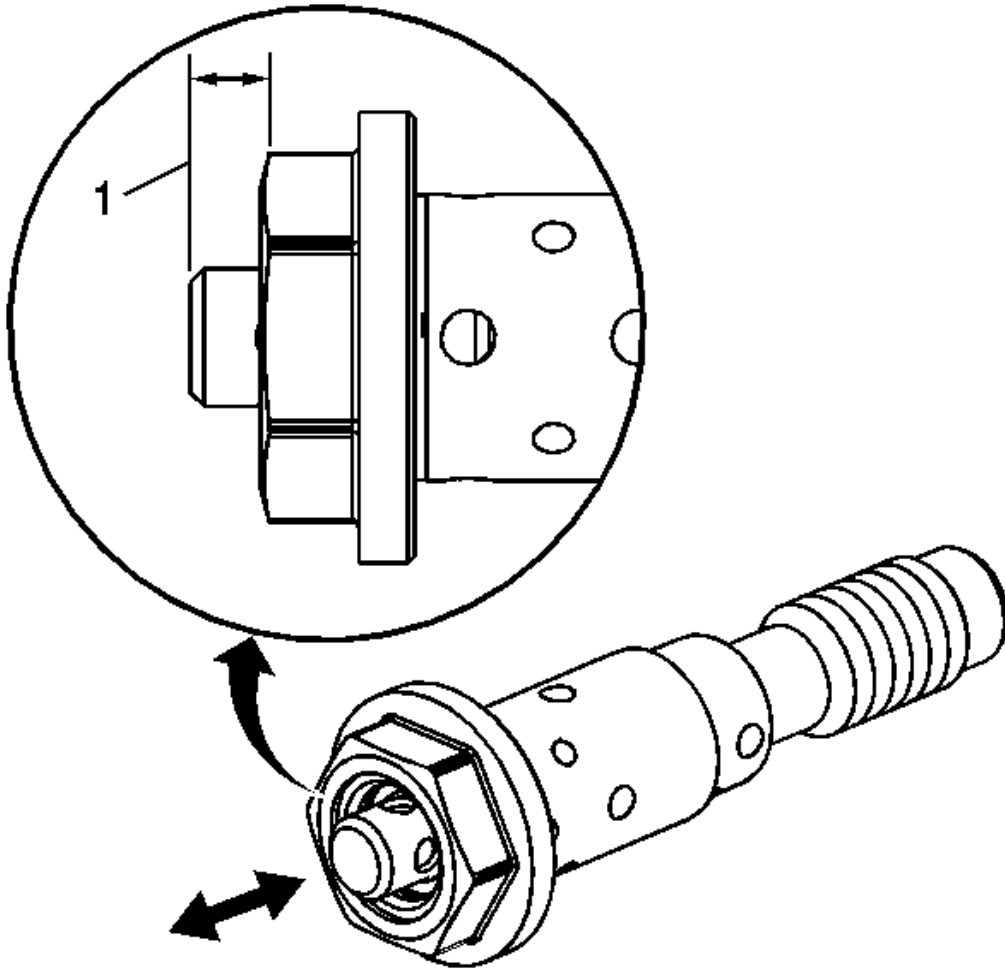


Fig. 83: View Of Proper Valve Spool Position
Courtesy of GENERAL MOTORS CORP.

2. Inspect for a sticking valve spool or broken valve spool spring.
3. Depress the valve spool into the housing. The valve should move freely with no binding or sticking and minimal resistance inward. When released, the valve spring should return the spool to the proper extended position (1) of 6.08-6.12 mm (0.239-0.241 in).

VALVE ROCKER ARM AND PUSH ROD CLEANING AND INSPECTION

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

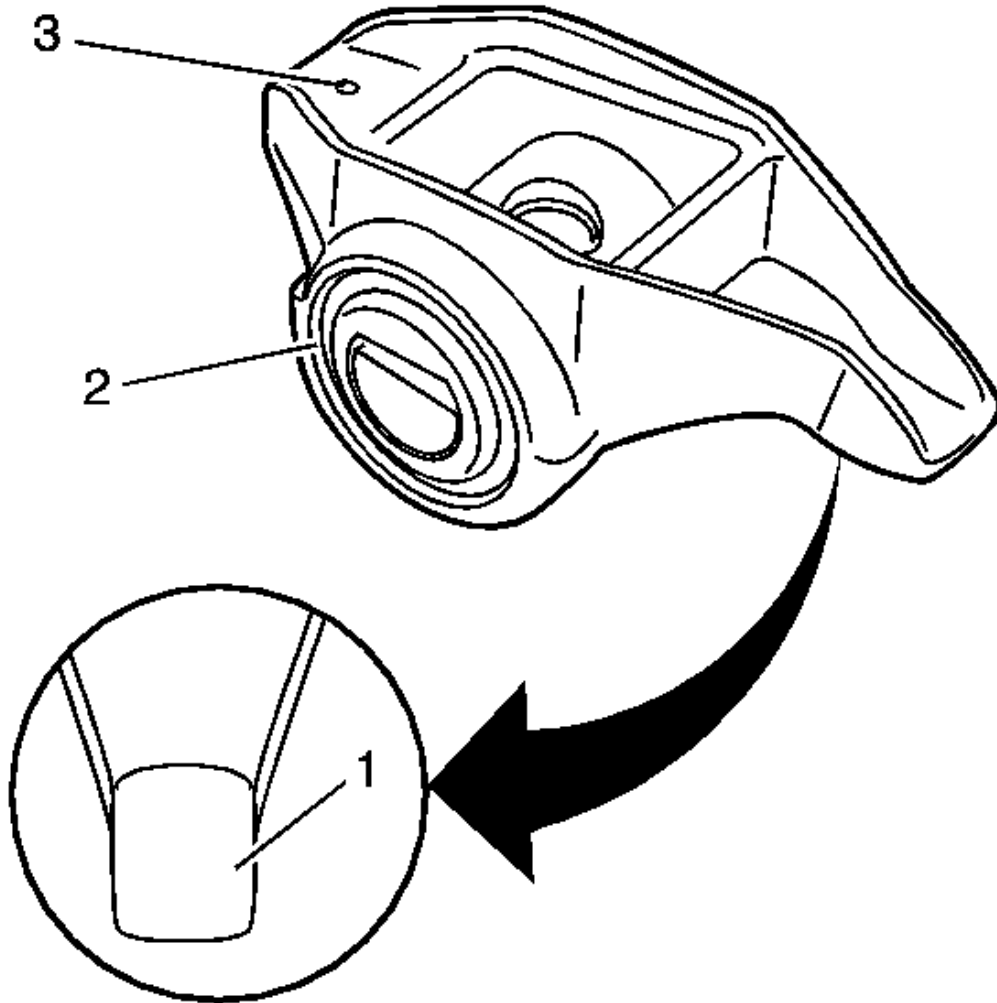


Fig. 84: Identifying Valve Rocker Arm Components
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Parts that are to be used again must be marked, sorted or organized for assembly.

1. Mark, sort, or organize the components for assembly. Refer to Separating Parts .
2. Clean the components with cleaning solvent.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

CAUTION: Refer to Safety Glasses and Compressed Air Caution .

3. Dry the components with compressed air.
4. Inspect the valve rocker arms bearings (2) for binding or roughness.
5. Inspect the valve rocker arm pushrod sockets (3) and valve stem mating surfaces (1). These surfaces should be smooth with no scoring or exceptional wear.
6. Inspect the pushrods for worn or scored ends. These surfaces should be smooth with no scoring or exceptional wear.
7. Inspect the pushrods for bends. Roll the pushrod on a flat surface to determine if the pushrod is bent.
8. Inspect the pushrod oil passages for restrictions.
9. Inspect the rocker arm pivot supports for cracks, wear, or other damage.

VALVE LIFTERS AND GUIDES CLEANING AND INSPECTION (RPO LY2/LY6/L92)

Valve Lifters

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

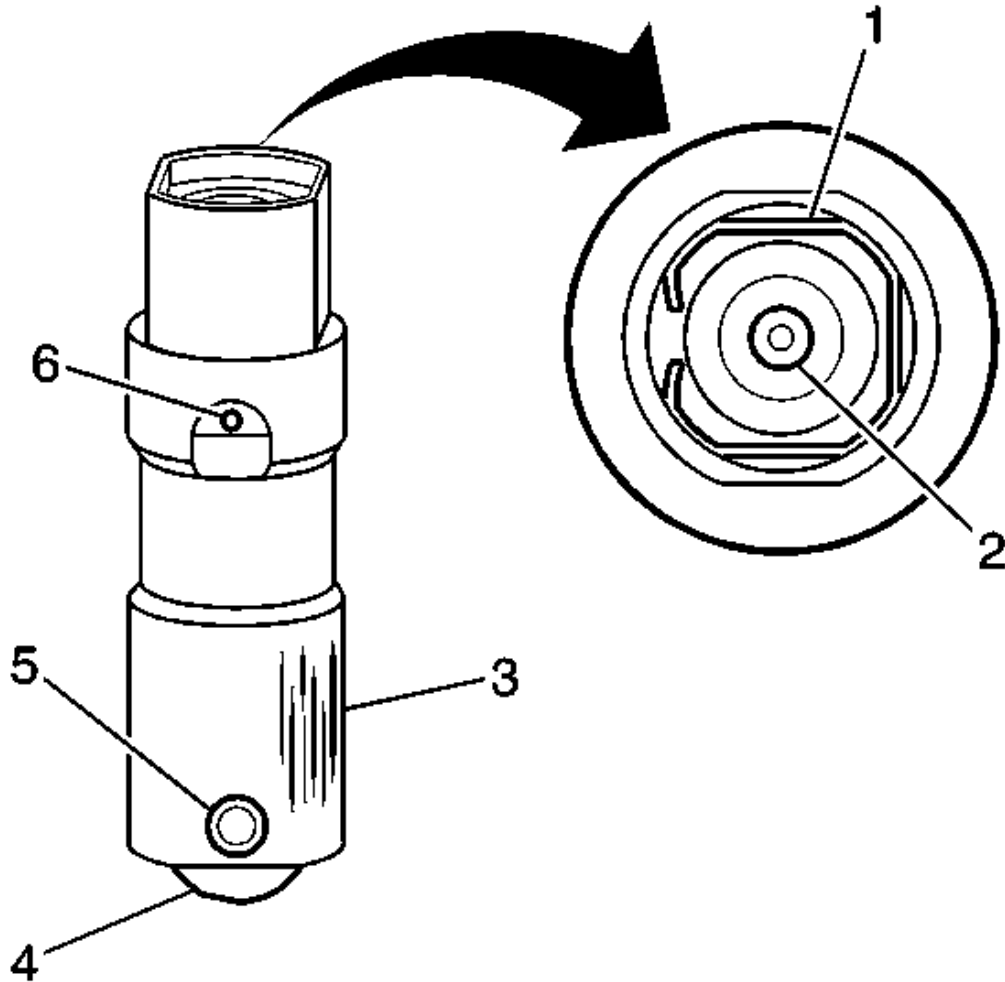


Fig. 85: Inspecting Areas Of Valve Lifters
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Components that are to be used again must be marked, sorted or organized for assembly.

1. Clean the components in cleaning solvent.

CAUTION: Refer to Safety Glasses and Compressed Air Caution .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Dry the components with compressed air.
3. Inspect the valve lifters for the following conditions:
 - Bent or broken clip (1)
 - Worn pushrod socket (2)
 - Scuffed or worn sides (3)

If the valve lifter shows wear, inspect the engine block lifter bores for wear or damage.

- Flat spots on the roller (4)
- Loose or damaged pin (5)
- Plugged oil hole (6)
- Worn or damaged roller bearing

The roller should rotate freely with no binding or roughness.

Valve Guides

Inspect the valve lifter guides for the following conditions:

- Cracks or damage
- Excessive wear in the lifter mounting bores

VALVE LIFTERS AND GUIDES CLEANING AND INSPECTION (RPO LH6/LH6/LMG/LY5/LC9/L76)

Non Active Fuel Management Valve Lifters

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

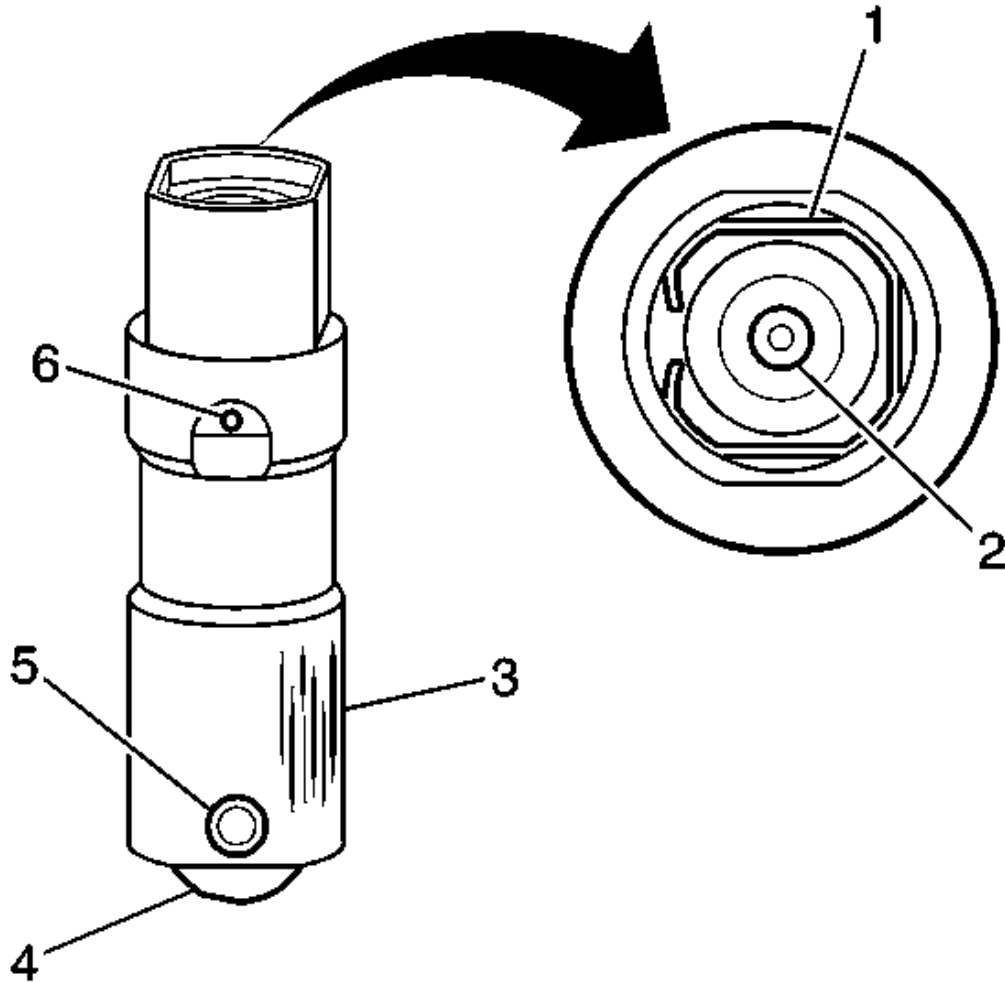


Fig. 86: Inspecting Areas Of Valve Lifters
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Components that are to be used again must be marked, sorted or organized for assembly.

1. Clean the components in cleaning solvent.

CAUTION: Refer to Safety Glasses and Compressed Air Caution .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Dry the components with compressed air.
3. Inspect the valve lifters for the following conditions:
 - Bent or broken clip (1)
 - Worn pushrod socket (2)
 - Scuffed or worn sides (3)

If the valve lifter shows wear, inspect the engine block lifter bores for wear or damage.

- Flat spots on the roller (4)
- Loose or damaged pin (5)
- Plugged oil hole (6)
- Worn or damaged roller bearing

The roller should rotate freely with no binding or roughness.

Active Fuel Management Valve Lifters

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

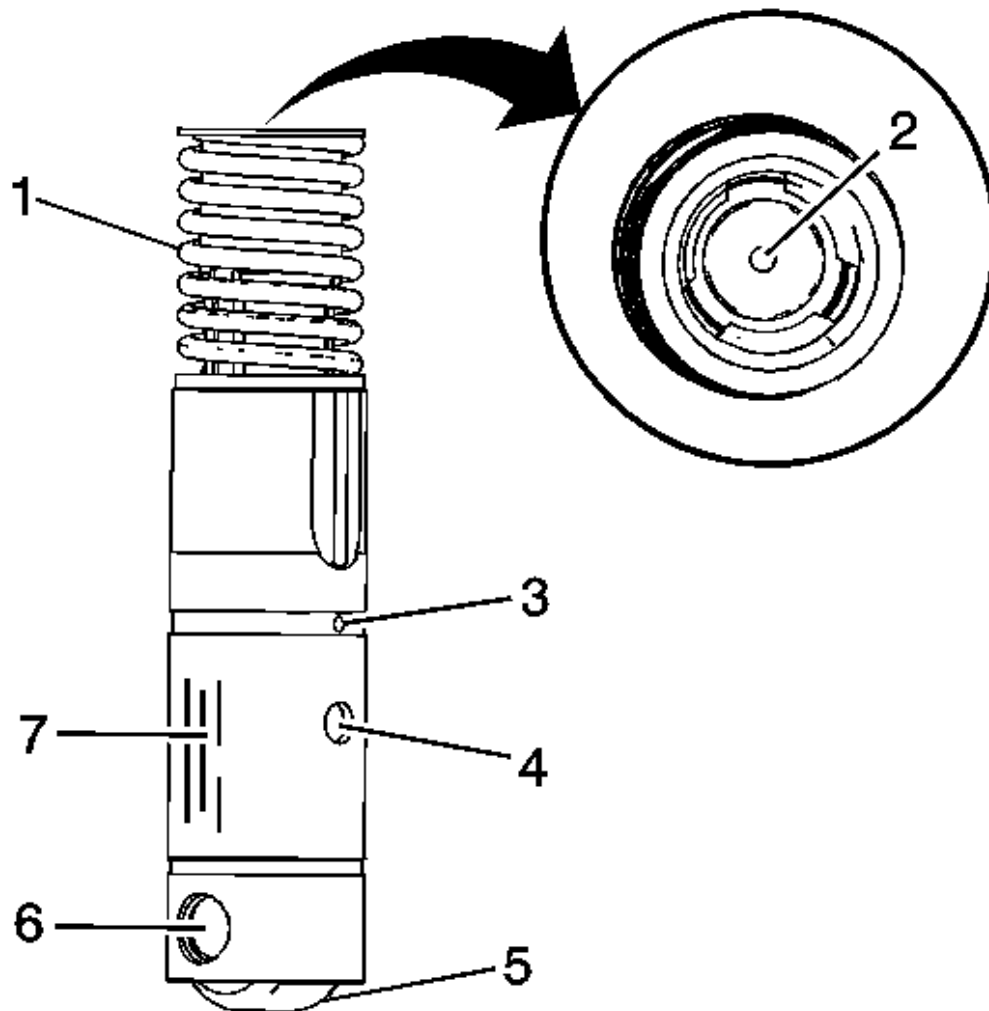


Fig. 87: Displacement On Demand Valve Lifters Assembly
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Components that are to be used again must be marked, sorted or organized for assembly.

1. Clean the components in cleaning solvent.

CAUTION: Refer to Safety Glasses and Compressed Air Caution .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Dry the components with compressed air.
3. Inspect the valve lifters for the following conditions:
 - Broken or collapsed spring (1)
 - Worn pushrod socket (2)
 - Plugged lubrication hole (3)
 - Plugged lifter oil-switching hole (4)
 - Flat spots on the roller (5)
 - Worn or damaged roller bearing (6)

The roller should rotate freely with no binding or roughness.

- Scuffed or worn sides (7)

Valve Guides

Inspect the valve lifter guides for the following conditions:

- Cracks or damage
- Excessive wear in the lifter mounting bores

CYLINDER HEAD DISASSEMBLE

Tools Required

J 8062 Valve Spring Compressor - Head Off

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

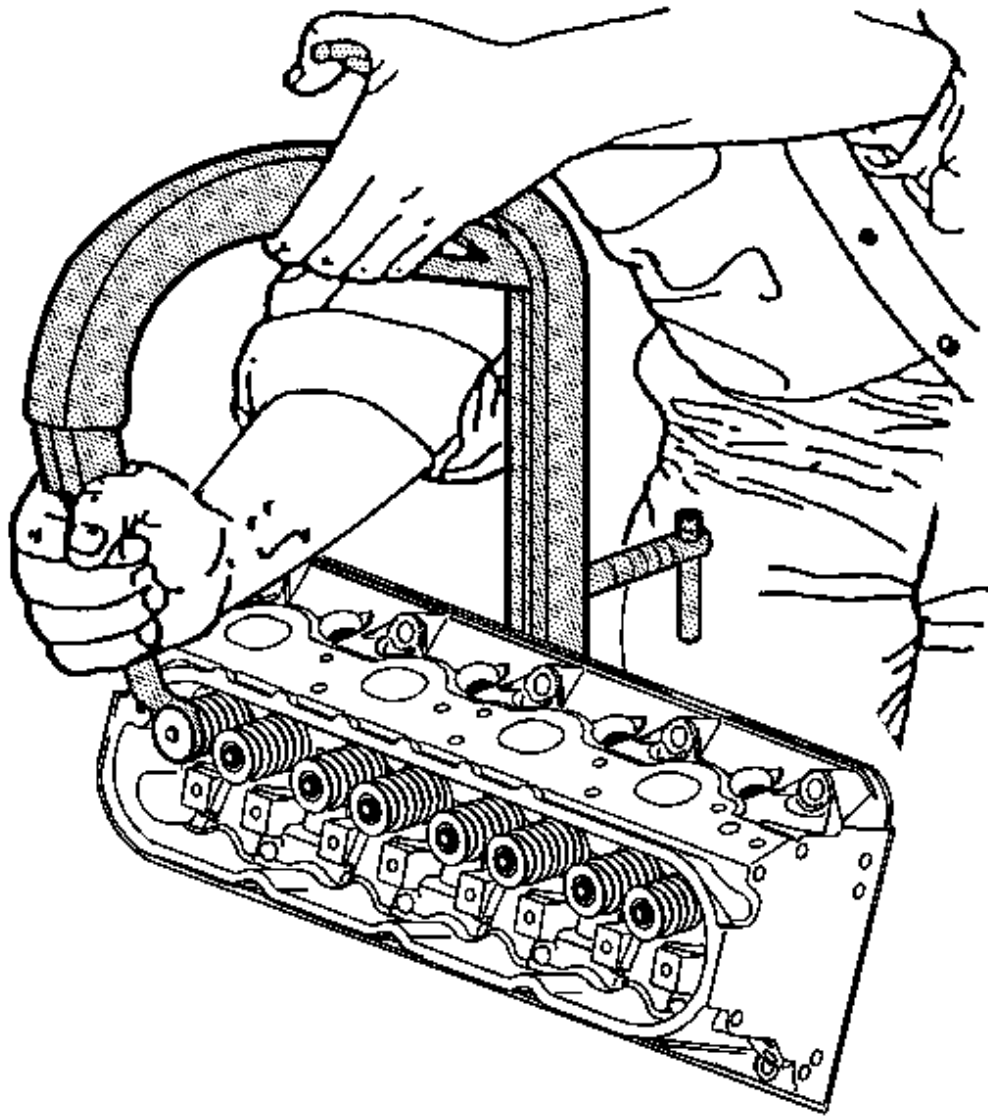


Fig. 88: Compressing Valve Spring Using
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- With the components at room temperature, remove the spark plugs from the cylinder head.
- Mark, organize, or sort the cylinder head components for

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

assembly. Return the components to their original location during assembly.

1. Remove the spark plugs from the cylinder heads.
2. Use the **J 8062** in order to compress the valve spring.

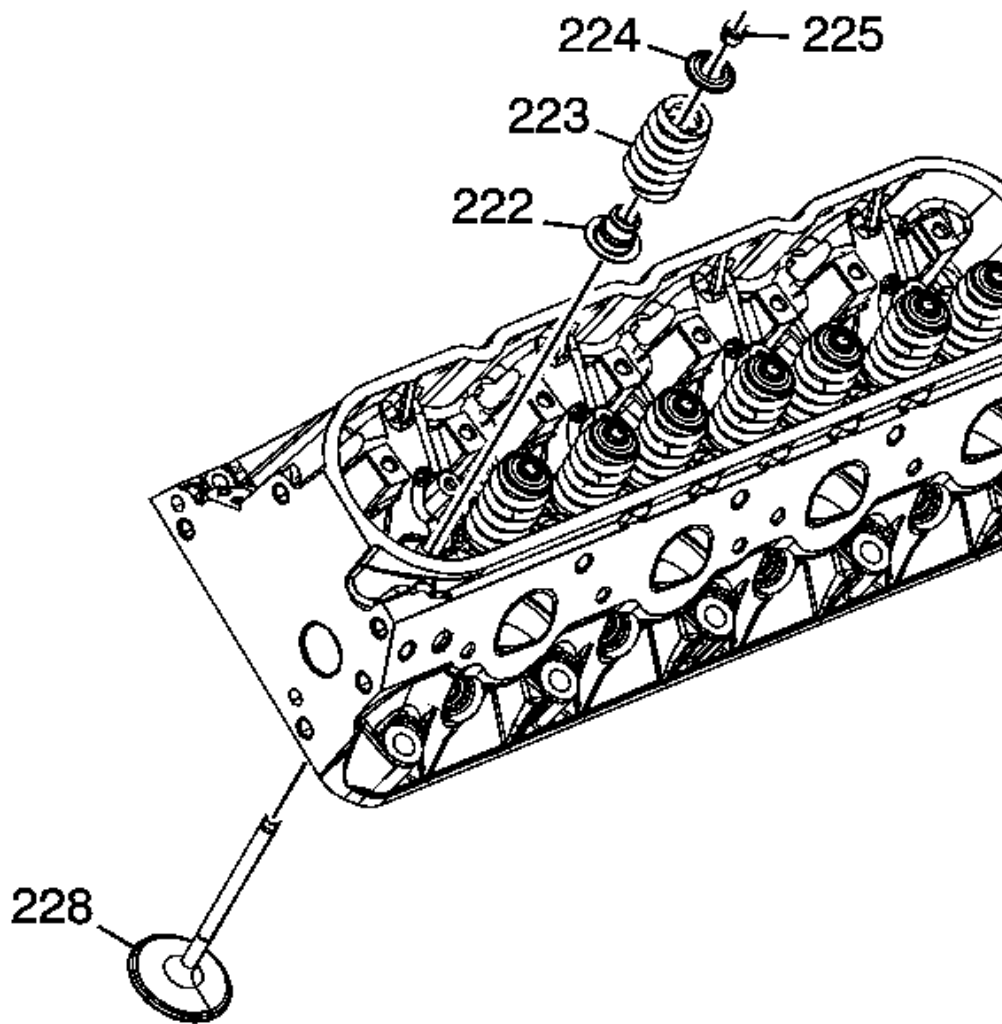


Fig. 89: Valve Stem Keys, Valve Spring Cap & Valve Spring
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

3. Remove the valve stem keys (225).
4. Remove the valve spring cap (224).
5. Remove the valve spring (223).
6. Remove the valves (228).
7. Remove the valve stem oil seal (222). Refer to **Separating Parts** .

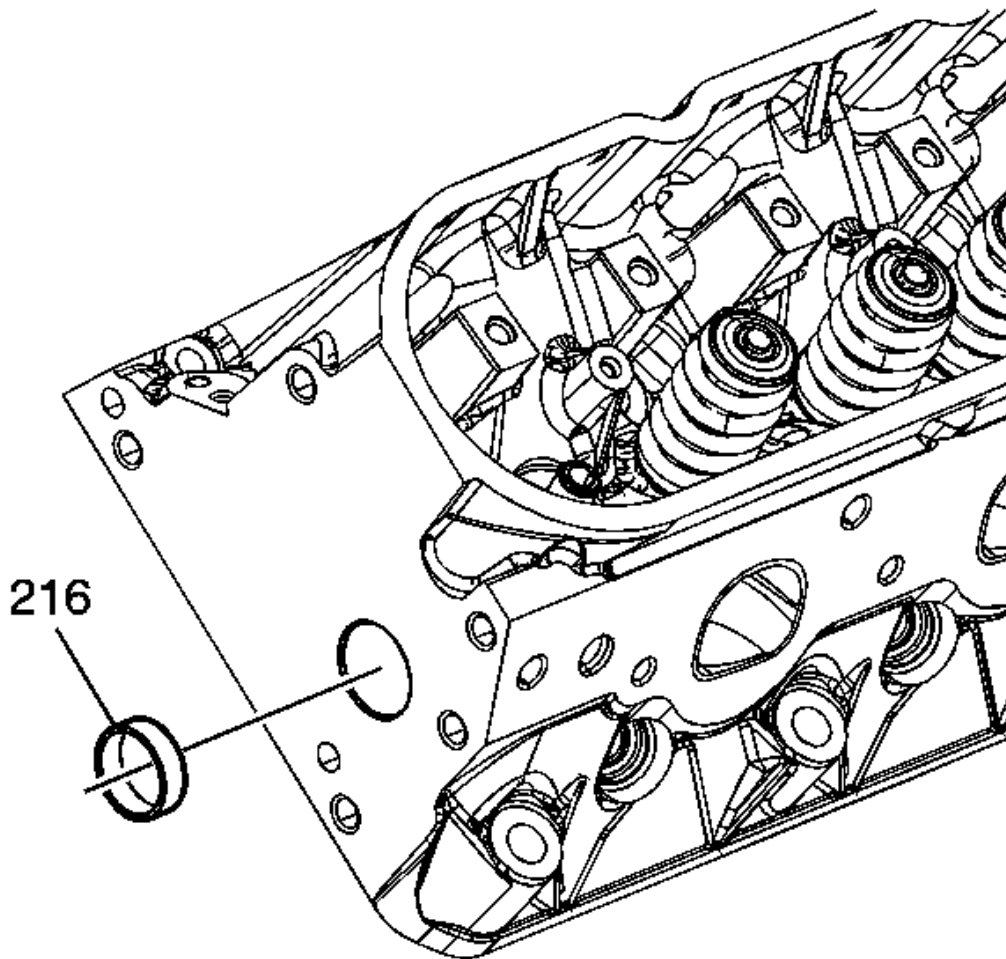


Fig. 90: Locating Cylinder Head Core Hole Plug
Courtesy of GENERAL MOTORS CORP.

8. Remove the cylinder head core hole plugs (216), as required.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

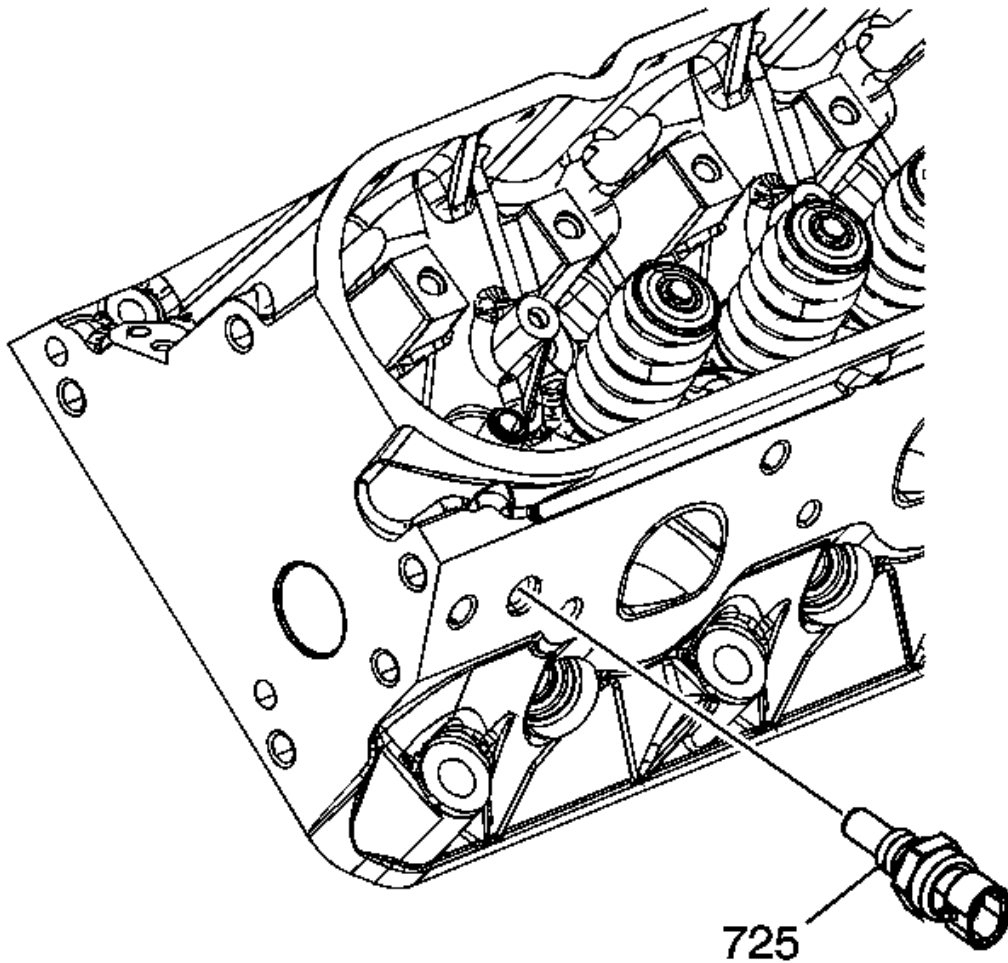


Fig. 91: Locating Coolant Temperature Sensor
Courtesy of GENERAL MOTORS CORP.

9. Remove the coolant temperature sensor (725) from the left cylinder head.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

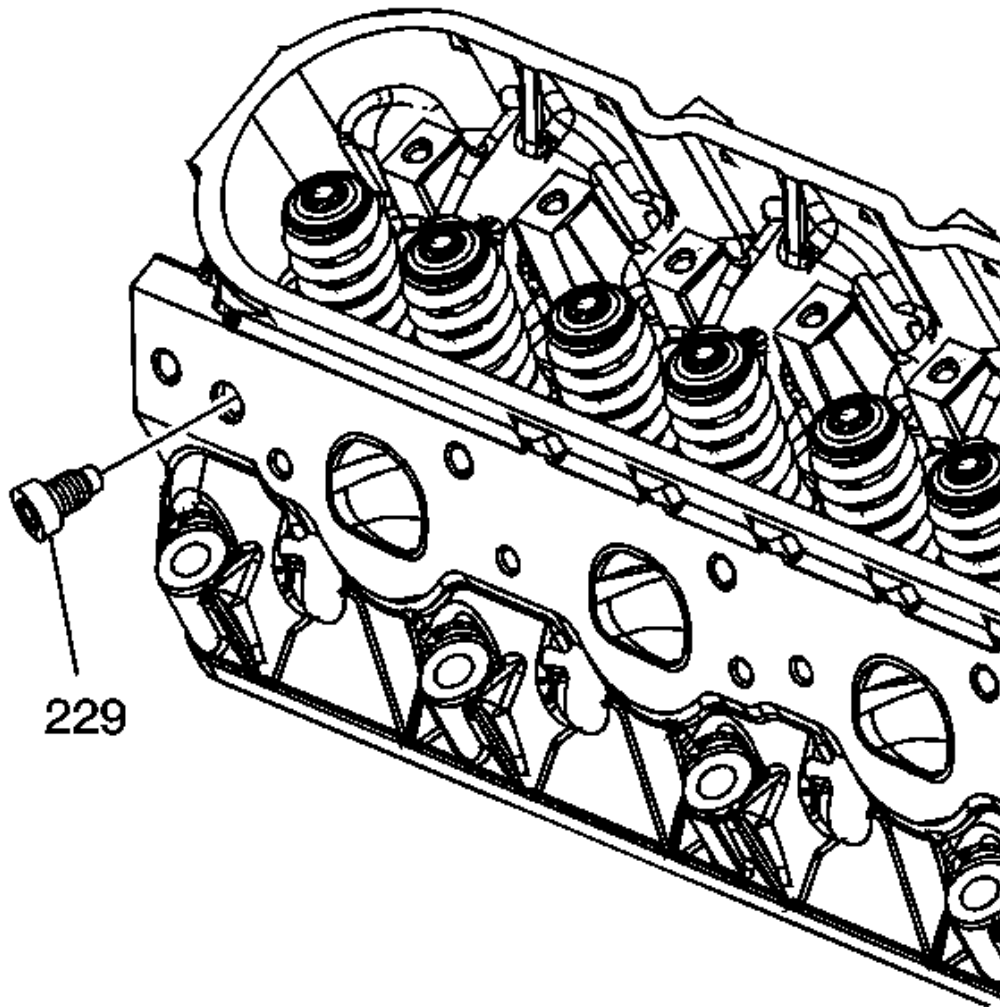


Fig. 92: Locating Coolant Plug
Courtesy of GENERAL MOTORS CORP.

10. Remove the cylinder head plug (229) from the right cylinder head.

Disassemble

CYLINDER HEAD CLEANING AND INSPECTION

Tools Required

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- **J 8089** Carbon Removal Brush. See Special Tools .
- **J 9666** Valve Spring Tester. See Special Tools .

Inspection

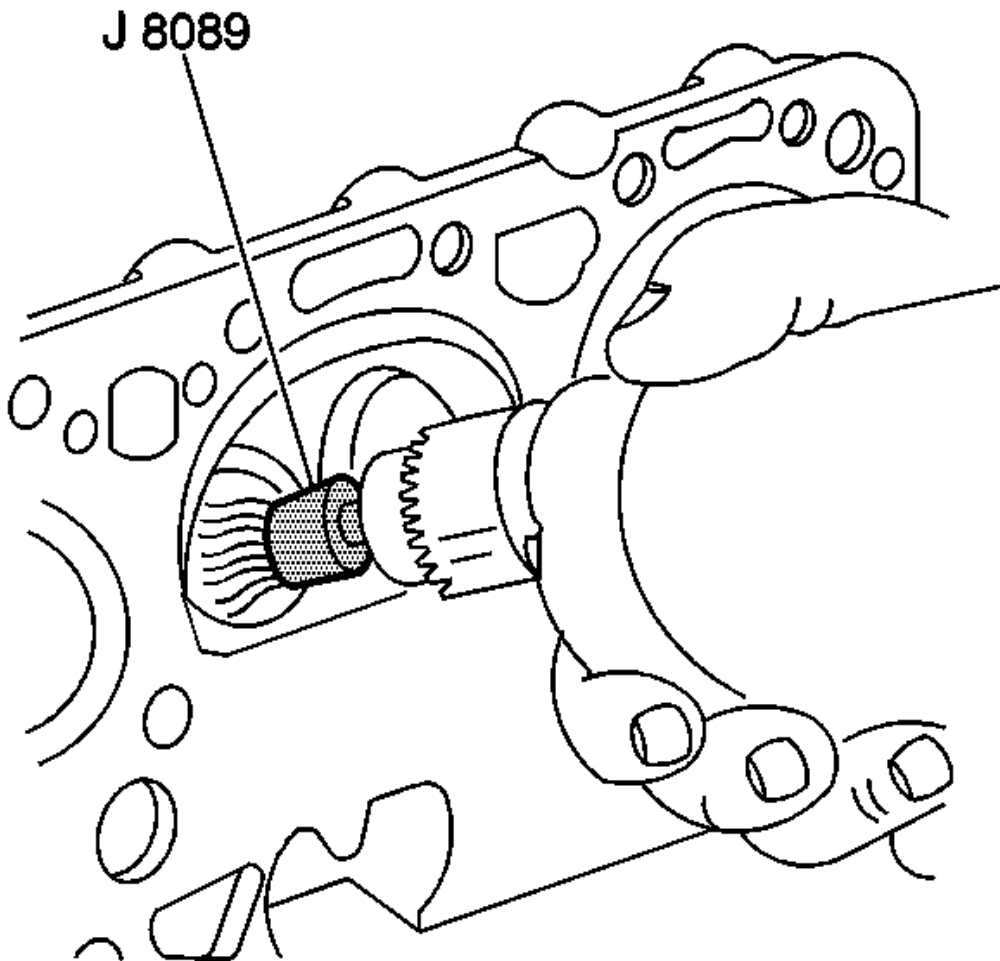


Fig. 93: Removing Carbon From Combustion Chambers
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to Safety Glasses Caution .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- IMPORTANT:**
- When cleaning a cylinder head in a thermal type oven, do not exceed 204°C (400°F).
 - Be careful not to scuff the chamber.

1. Clean the following components:

- Use the **J 8089** in order to remove the carbon from the combustion chambers. See **Special Tools** .
- Gasket surfaces

Refer to **Replacing Engine Gaskets** .

- Valve stems and heads on a buffing wheel
- Bolt hole threads

Remove all dirt, debris, or threadlocking material from the bolt holes.

2. Inspect the cylinder head for the following conditions:

1. Cracks in the exhaust ports and combustion chambers
2. External cracks in the water chambers
3. Gasket surfaces for excessive scratches or gouging

Refer to **Replacing Engine Gaskets** .

4. Bolt hole threads for debris or damaged threads

Refer to **Thread Repair** or **Thread Repair Specifications** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

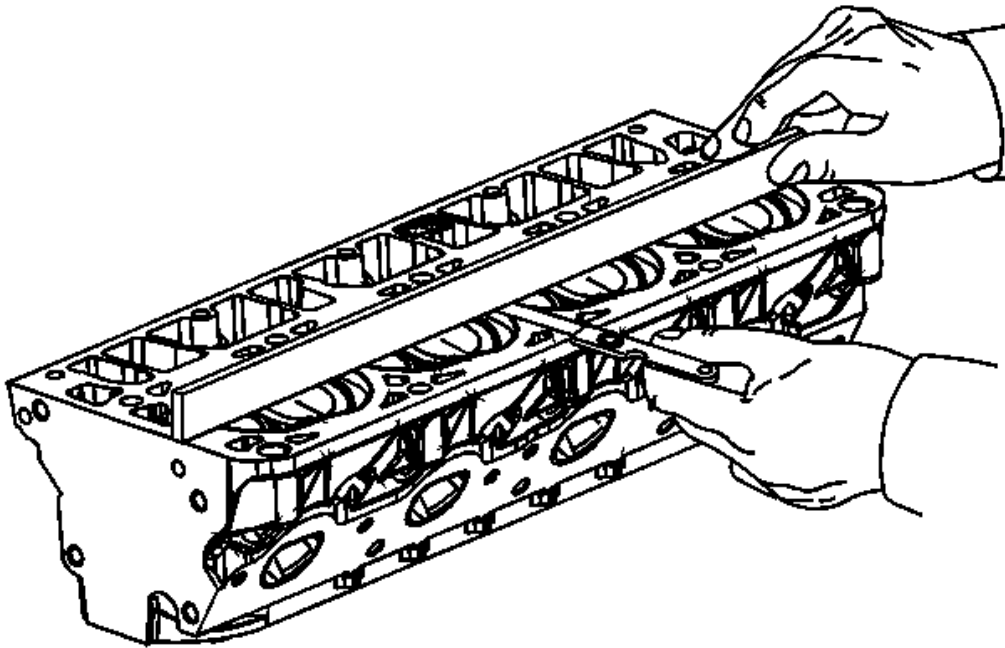


Fig. 94: Inspecting Cylinder Head For Warpage
Courtesy of GENERAL MOTORS CORP.

3. Inspect the cylinder head for warpage. Refer to Engine Mechanical Specifications (RPO LY5 VIN J) or Engine Mechanical Specifications (RPO LC9 VIN 3) or Engine Mechanical Specifications (RPO LY2 VIN C) or Engine Mechanical Specifications (RPO LH6 VIN M) or Engine Mechanical Specifications (RPO LMG VIN 0) or Engine Mechanical Specifications (RPO LY6 VIN K) or Engine Mechanical Specifications (RPO L76 VIN Y) or Engine Mechanical Specifications (RPO L92 VIN 8) .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

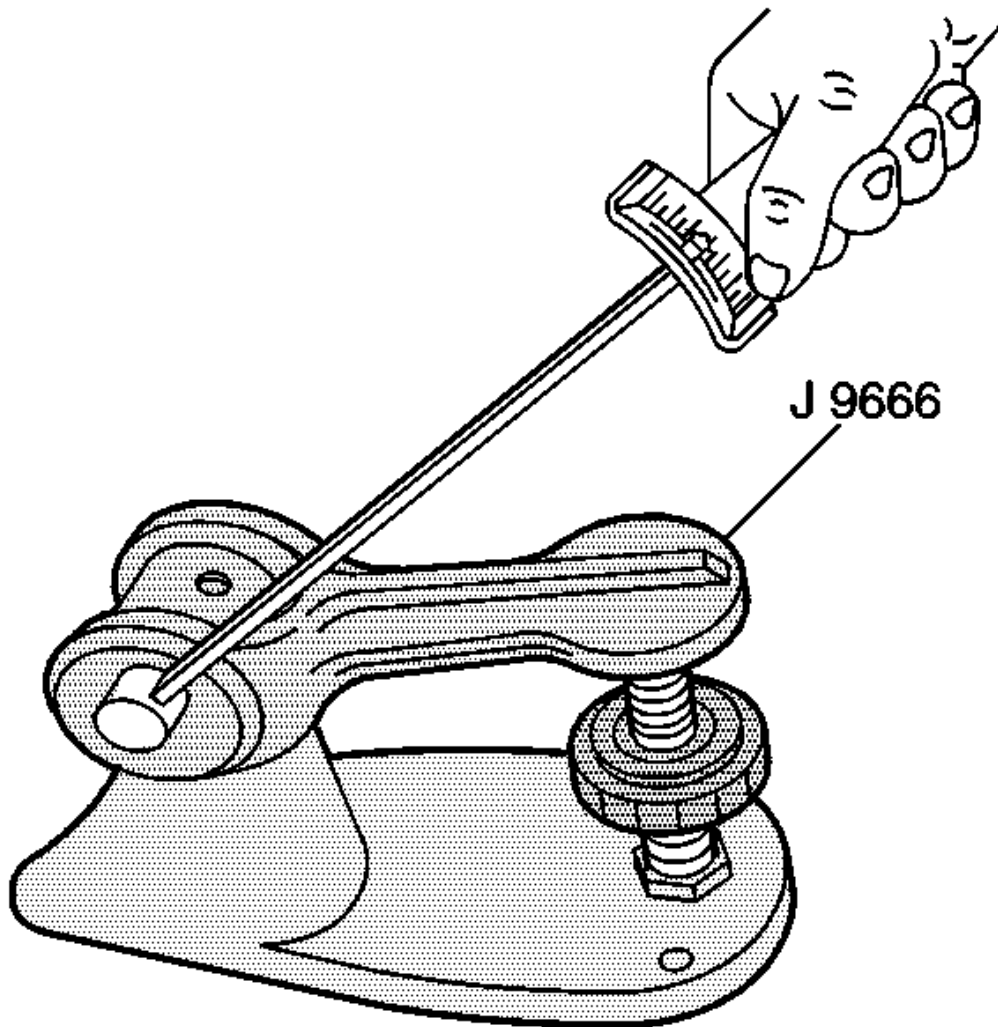


Fig. 95: Measuring Valve Spring Tension
Courtesy of GENERAL MOTORS CORP.

4. Use the **J 9666** in order to measure the valve spring tension. See **Special Tools** . Refer to **Engine Mechanical Specifications (RPO LY5 VIN J)** or **Engine Mechanical Specifications (RPO LC9 VIN 3)** or **Engine Mechanical Specifications (RPO LY2 VIN C)** or **Engine Mechanical Specifications (RPO LH6 VIN M)** or **Engine Mechanical Specifications (RPO LMG VIN 0)** or **Engine Mechanical Specifications (RPO LY6 VIN K)** or **Engine Mechanical Specifications (RPO L76 VIN Y)** or **Engine**

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Mechanical Specifications (RPO L92 VIN 8) .

VALVE GUIDE REAMING, AND VALVE AND SEAT GRINDING

Tools Required

J 37378-1 Valve Guide Reamer. See Special Tools .

Valve Guide Reaming

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

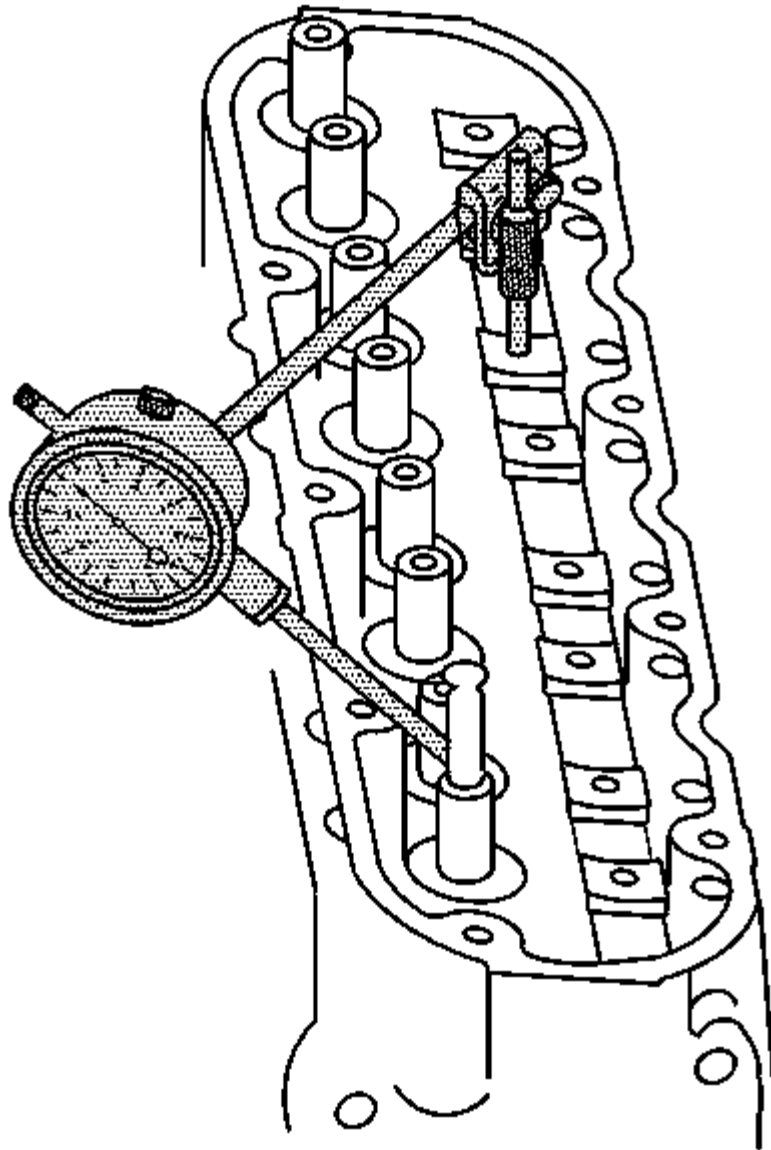


Fig. 96: Measuring Valve Stem-To-Guide Clearance
Courtesy of GENERAL MOTORS CORP.

NOTE: Excessive valve stem-to-guide clearance may cause a noisy valve train, premature valve stem oil seal wear, component

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

damage, and/or excessive engine oil consumption.

NOTE: Insufficient valve stem-to-guide clearance will result in noisy or sticking valves. Valves that are too tight may disturb engine smoothness or lead to component damage.

1. Using a dial indicator, measure the valve stem-to-guide clearance. Position the tip of the dial indicator at the top of the valve guide.

Valve stem-to-guide clearance may also be obtained by using a micrometer to measure the valve stem diameter and a ball type measuring gage to measure the guide bore.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

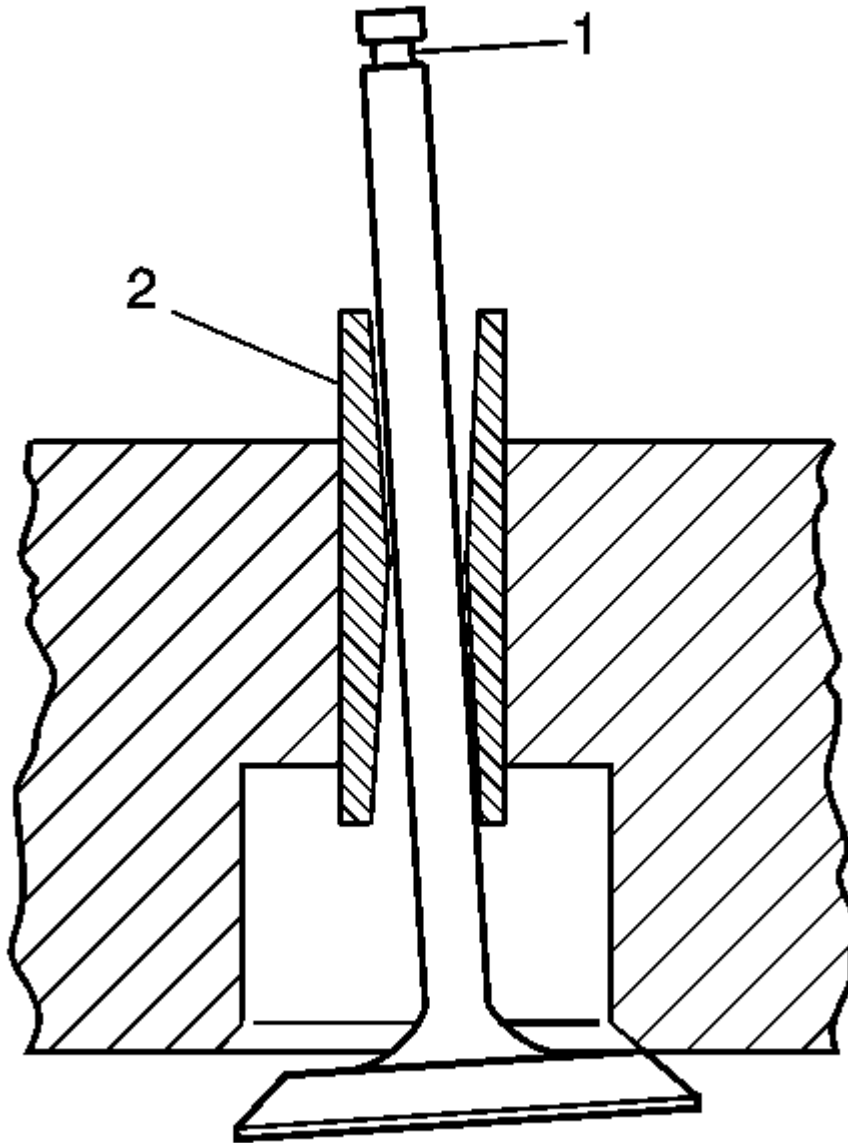


Fig. 97: Inspecting For Excessive Valve Stem To Guide Clearance
Courtesy of GENERAL MOTORS CORP.

2. A valve stem (1) and guide (2), with excessive clearance, must be replaced or the cylinder head replaced. Refer to [Engine Mechanical Specifications \(RPO LY5 VIN J\)](#) or [Engine Mechanical Specifications \(RPO LC9 VIN 3\)](#) or [Engine Mechanical Specifications](#)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

(RPO LY2 VIN C) or Engine Mechanical Specifications (RPO LH6 VIN M) or Engine Mechanical Specifications (RPO LMG VIN 0) or Engine Mechanical Specifications (RPO LY6 VIN K) or Engine Mechanical Specifications (RPO L76 VIN Y) or Engine Mechanical Specifications (RPO L92 VIN 8) .

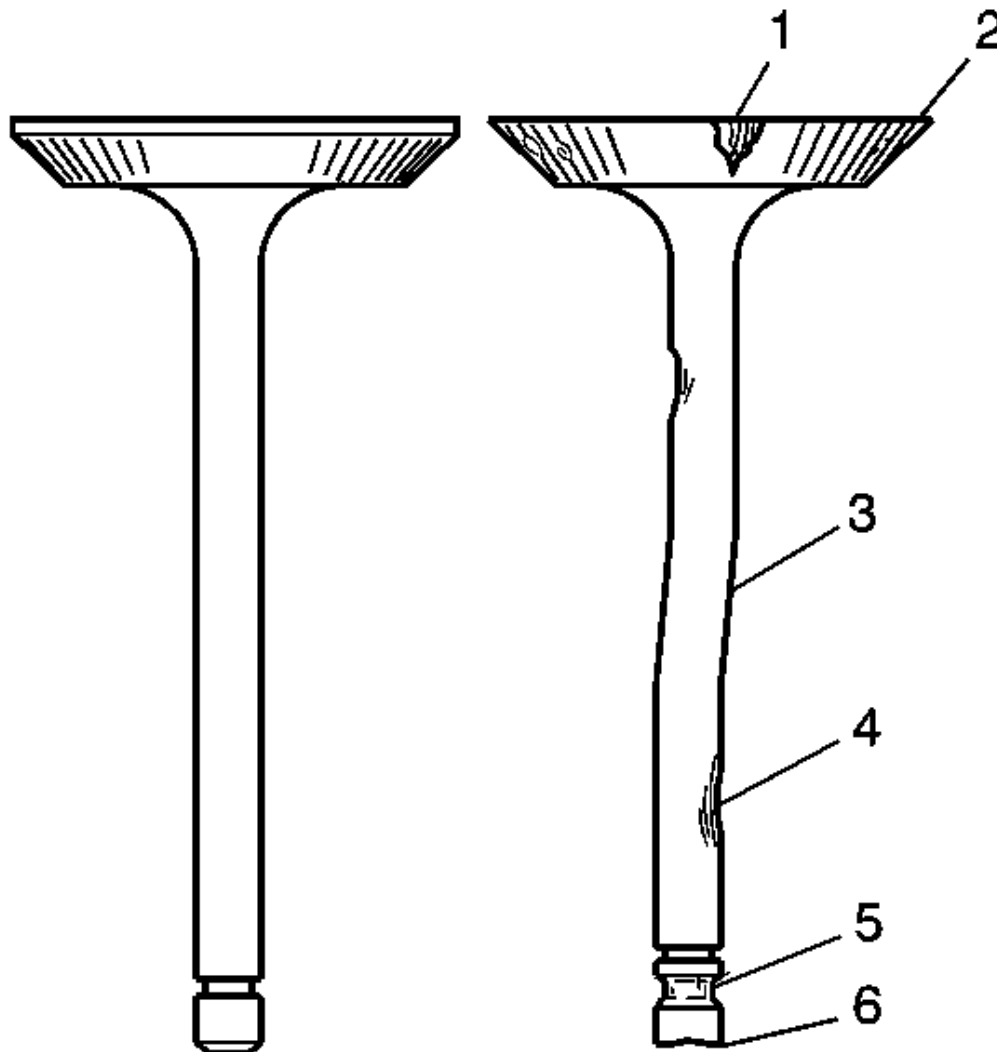


Fig. 98: Identifying Inspection Points For Valves Damage
Courtesy of GENERAL MOTORS CORP.

3. Inspect the valve stems for excessive scoring, wear, or warpage.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- A valve stem that has excessive scoring (3 or 4) or wear (4 or 6) must be replaced.
 - If a valve guide is worn or has excessive stem-to-guide clearance, the cylinder head should be replaced.
4. Measure the valve stem diameter. A valve stem with a diameter less than 7.95 mm (0.313 in) must be replaced.

If the valve stem diameter is within specifications, and the stem-to-guide clearance is excessive, the cylinder head must be replaced.

Valve and Seat Grinding

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

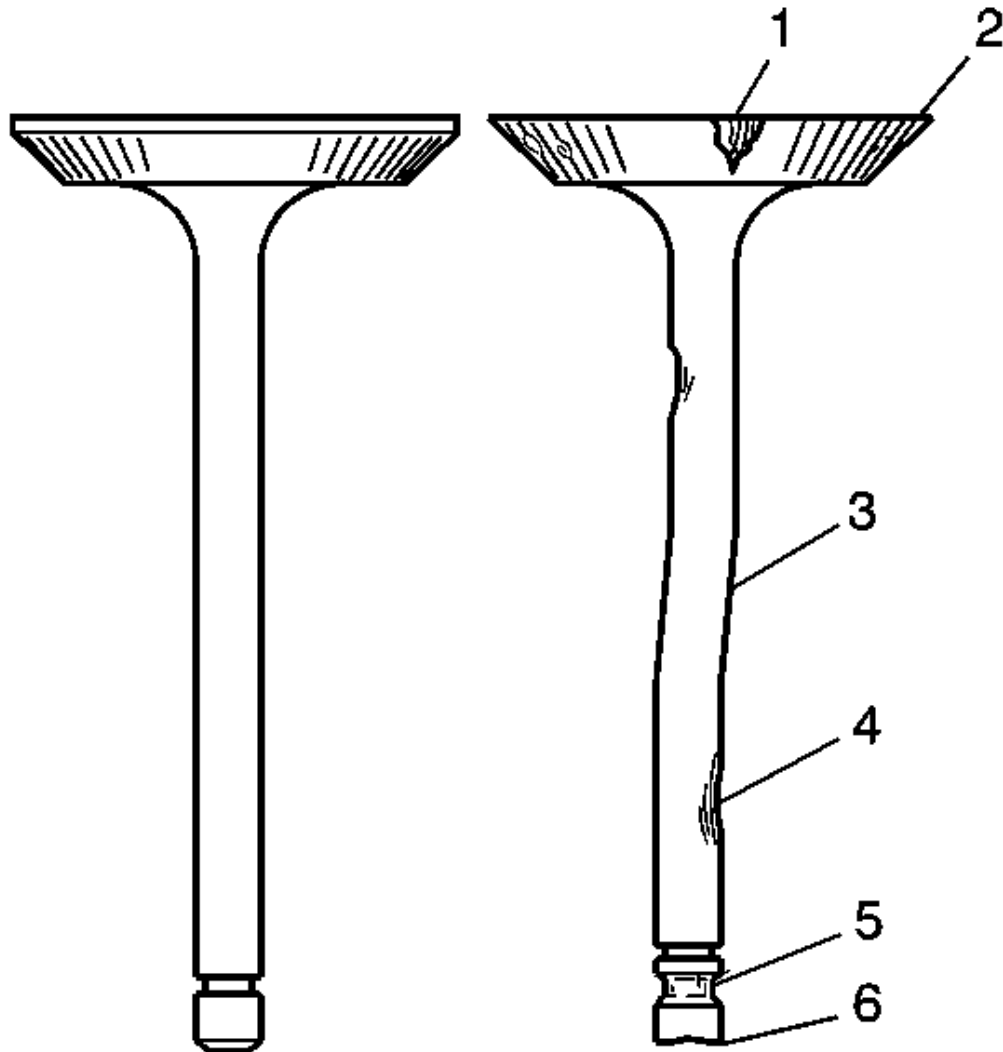


Fig. 99: Identifying Inspection Points For Valves Damage
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- Reconditioning the valve seats is very important. The seating of the valves must be perfect for the engine to deliver optimum power and performance. Several different types of equipment are available for grinding valve seats.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- **Another important factor is the cooling of the valve head. Good contact between the valve and the seat will ensure that heat will be properly dissipated.**
- **The recommendations of the equipment manufacturer should be followed carefully to obtain the proper results. Regardless of the type of equipment used, it is essential that valve guide bores be free of carbon or dirt to ensure proper centering of the tool pilot in the guide.**
- **Valves that are pitted must be refaced to the proper angle. Valve stems that show excessive wear, or valves that are warped excessively must be replaced. When a valve head that is warped excessively is refaced, a knife edge may be ground on part or all of the valve head due to the amount of metal that must be removed. Knife edges lead to breakage, burning or pre-ignition due to heat localizing on this knife edge. If the edge of the valve head is less than 1.25 mm (0.05 in) after grinding, replace the valve.**
- **Several different types of equipment are available for refacing valves. The recommendation of the equipment manufacturer should be carefully followed to obtain the proper results.**
- **DO NOT reface intake valves. Intake valves with excessive wear or damage MUST be replaced.**

1. Inspect the valve for the following conditions:

- Burnt or eroded areas (1)
- A worn margin (2)
- A bent stem (3)
- A worn or scored stem (4)
- A worn key groove (5)
- A worn stem tip (6)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

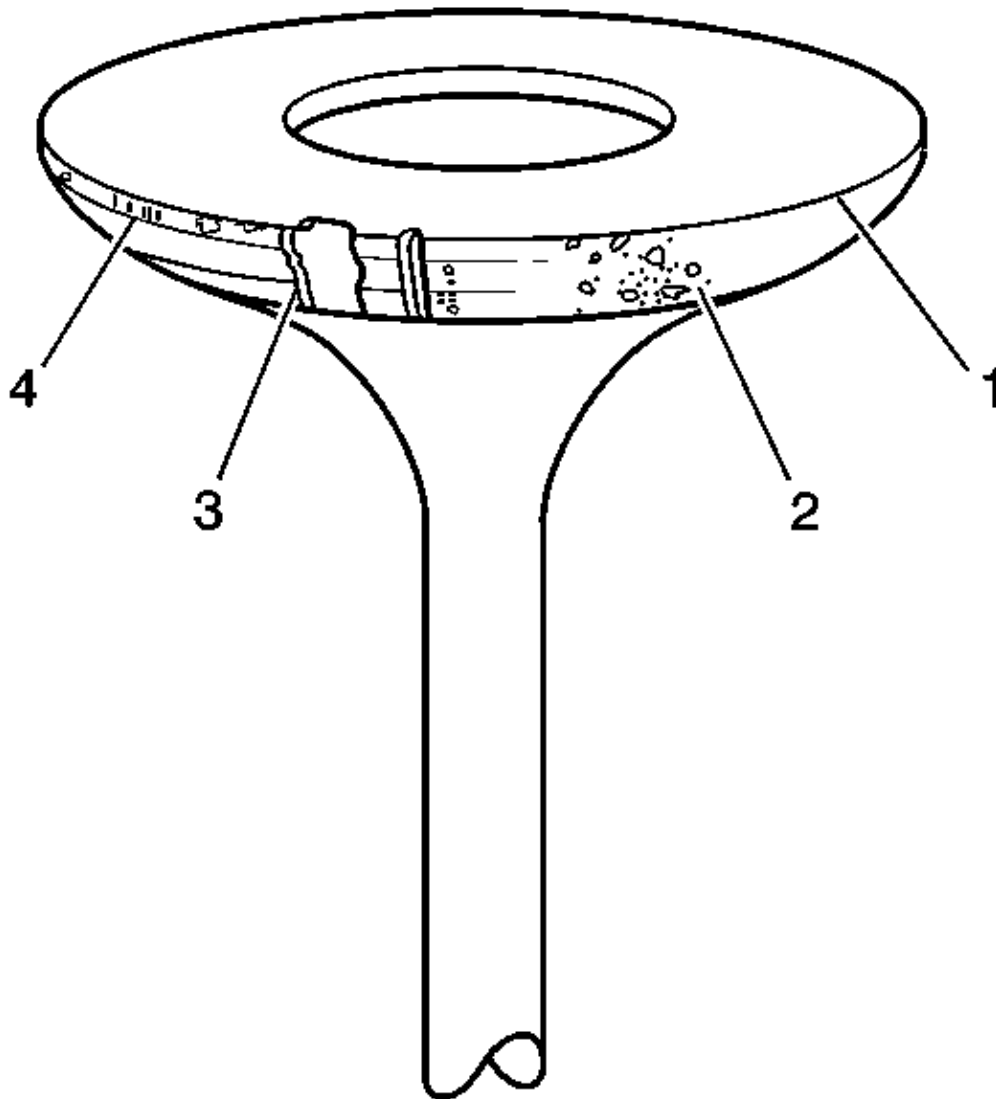


Fig. 100: Inspecting Valve Face For Burning, Pitting & Cracking
Courtesy of GENERAL MOTORS CORP.

2. Inspect the valve face for the following conditions:
 - Worn or no margin (1 or 4)
 - Pitted surfaces (2)
 - Burnt or eroded areas (3)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

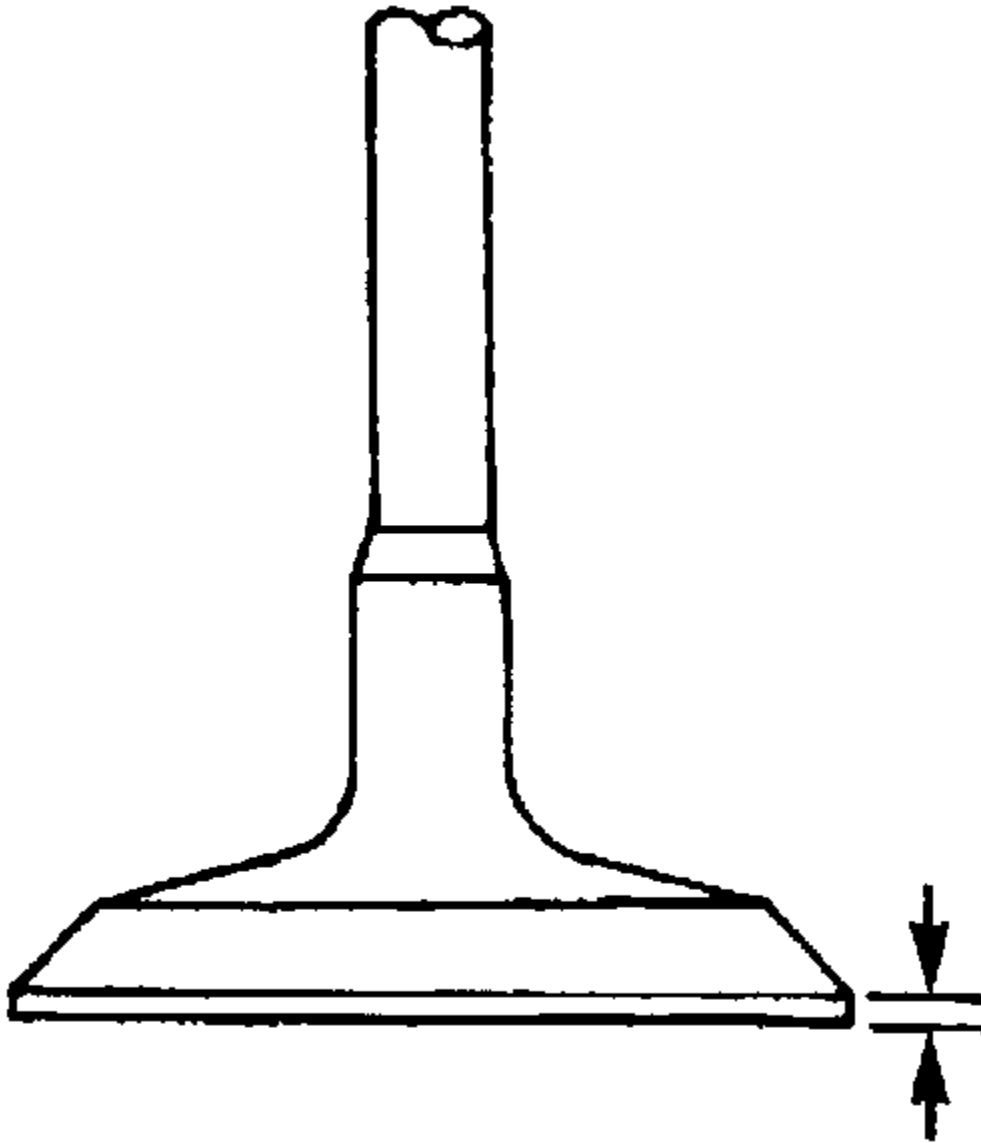


Fig. 101: Inspecting Valve Margin
Courtesy of GENERAL MOTORS CORP.

3. Inspect the valve margin.

The exhaust valve may be refaced if the margin is greater than 1.25 mm (0.05 in) thick

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

before grinding.

4. Reface pitted exhaust valves on a suitable valve refacing machine.
5. Replace the valve if the margin is less than 1.25 mm (0.05 in) thick after grinding.
6. If the valve face has been ground, it may be necessary to shim the valve spring in order to obtain the proper spring installed height. Refer to **Cylinder Head Disassemble**.
7. Inspect for a loose valve seat in the cylinder head. The valve seat has an interference fit to the cylinder head.
8. Clean the valve guide bores with a suitable tool. Remove all carbon or dirt from the bores.

The valve guide must be clean for the seat grinding tool to obtain proper results.

9. Grind the valve seat.

The recommendations of the equipment manufacturer should be followed carefully to obtain the proper results. Regardless of the type of equipment used, it is essential that valve guide bores be free from carbon or dirt to ensure proper centering of the tool pilot in the guide.

10. Inspect the valve seats.
 - The valve seats should be concentric to within 0.05 mm (0.0021 in) total indicator reading.
 - If the valve seat has been ground, it may be necessary to shim the valve spring in order to attain the proper spring installed height. Refer to **Cylinder Head Disassemble**.

CYLINDER HEAD ASSEMBLE

Tools Required

J 8062 Valve Spring Compressor - Head Off

Assemble

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

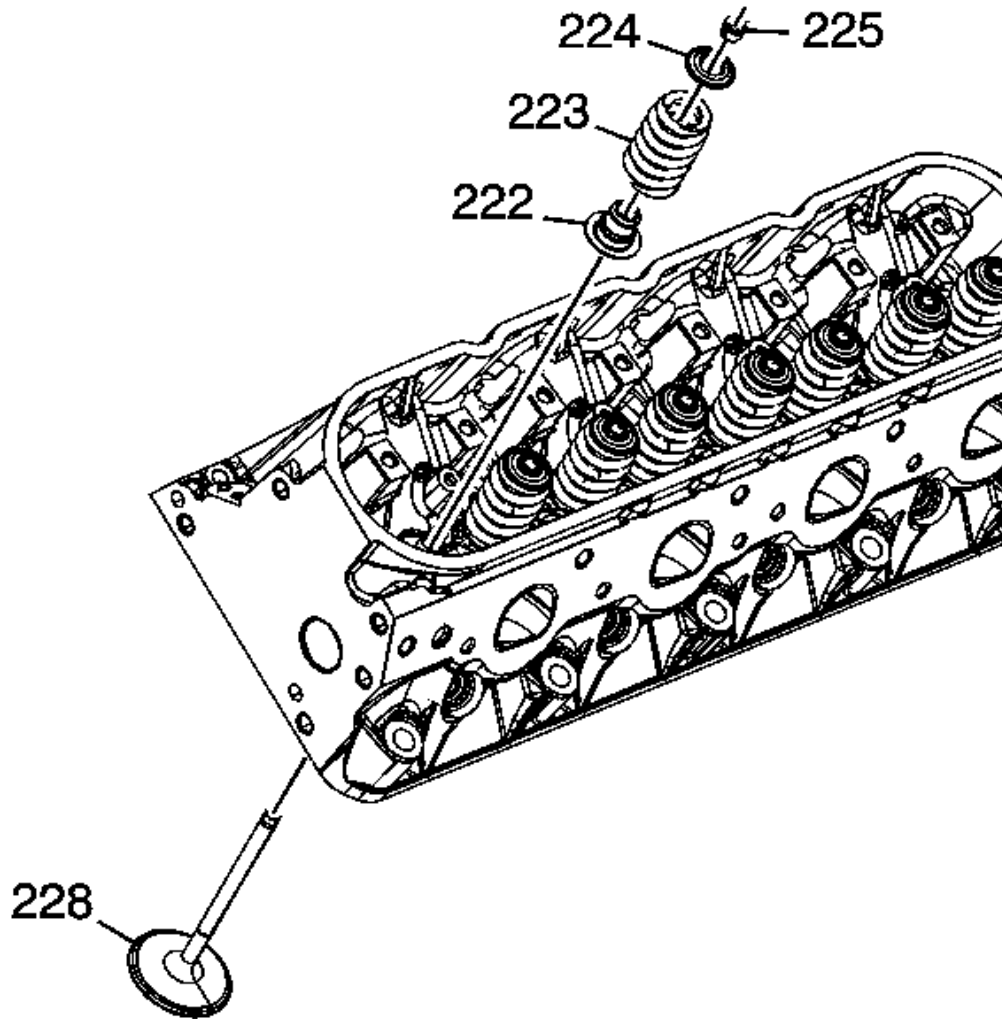


Fig. 102: Valve Stem Keys, Valve Spring Cap & Valve Spring
Courtesy of GENERAL MOTORS CORP.

1. Clean the cylinder head valve spring shim area.

IMPORTANT: When using the valves and related components again, install the parts to their original location.

2. Install the valves (228) into the proper port. Refer to Separating Parts .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

3. Install the valve stem oil seal (222).
4. Install the valve spring (223).
5. Install the valve spring cap (224).

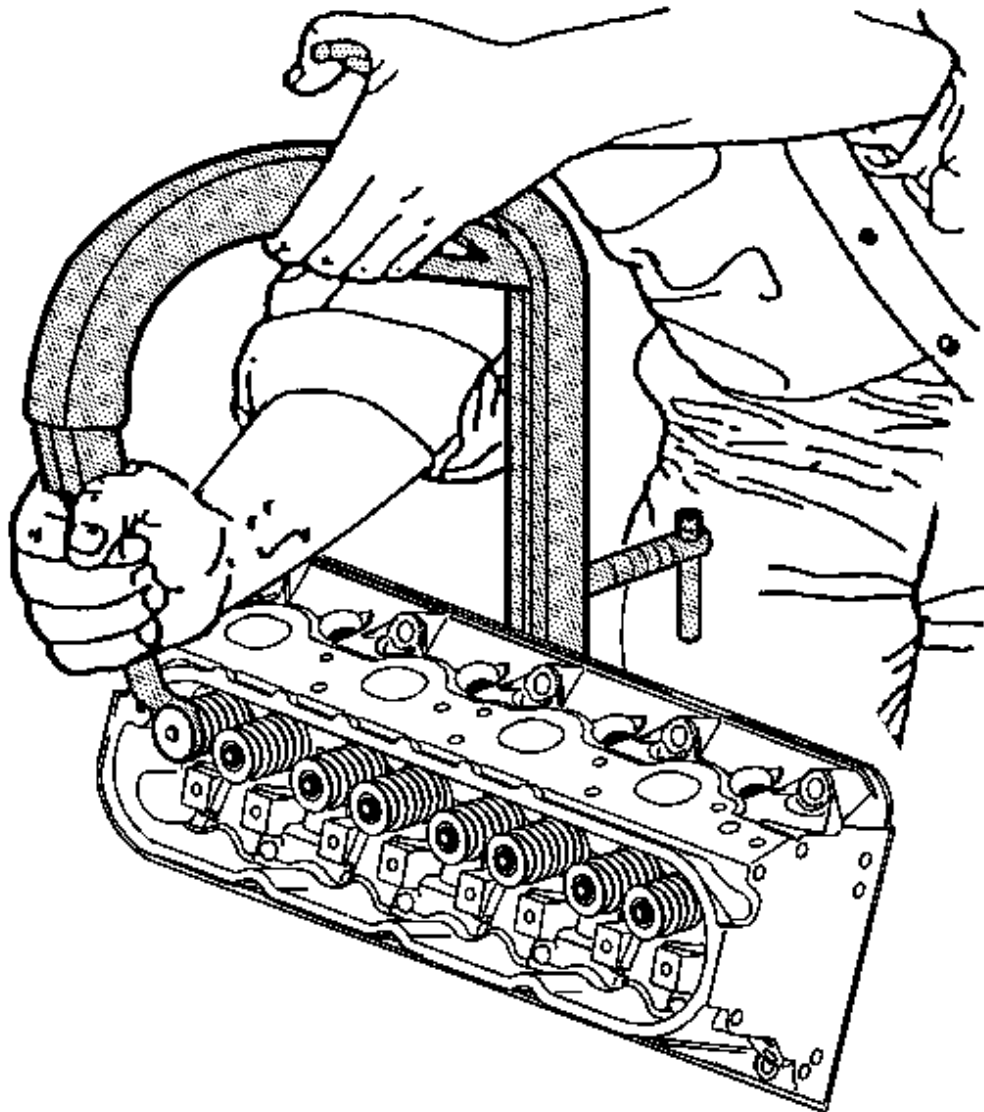


Fig. 103: Compressing Valve Spring Using
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

6. Using the **J 8062** , compress the valve spring.
7. Install the valve stem keys.
 1. Use grease in order to hold the keys in place and remove the **J 8062** .
 2. Ensure the keys seat properly in the groove of the valve stem.
 3. Tap the end of the valve stem with a plastic face hammer to seat the keys, if necessary.

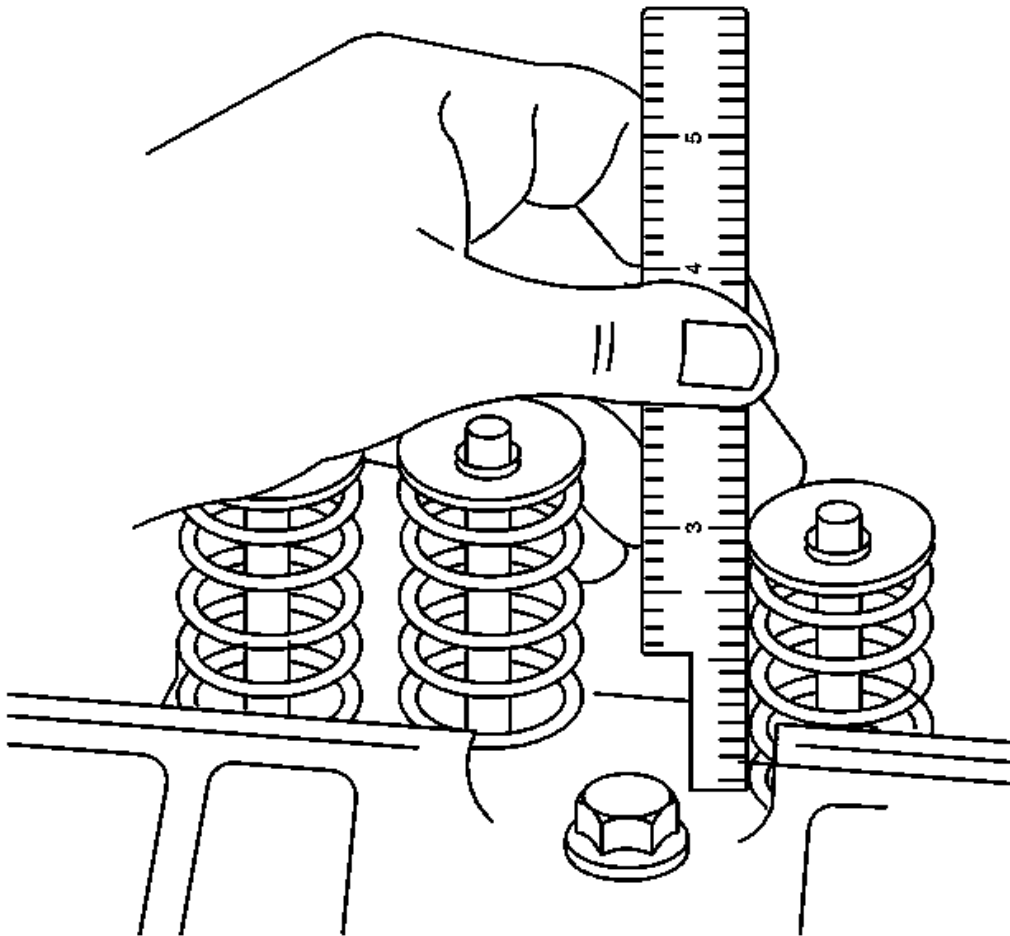


Fig. 104: Measuring Valve Spring Installed Height
Courtesy of GENERAL MOTORS CORP.

8. Using a ruler, measure the valve spring installed height.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

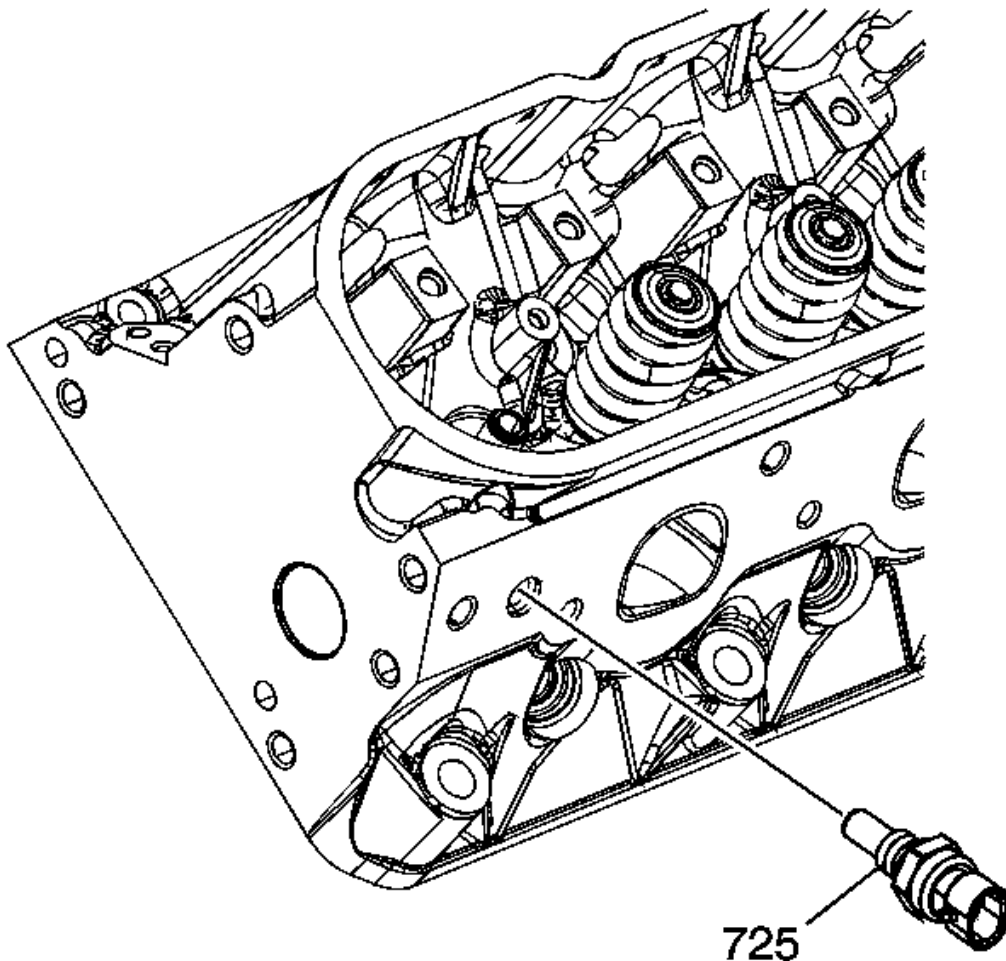
Measure from the base of the valve spring to the top of the valve spring.

Specification:

- If the installed height exceeds 46.25 mm (1.82 in), install a valve spring shim of approximately 0.5 mm (0.02 in) thick.
- Do not shim the valve spring to obtain less than the specified height.

Do not assemble the components without a spring shim on the cylinder head.

9. Install the remaining valves, springs, and other components.



2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Fig. 105: Locating Coolant Temperature Sensor **Courtesy of GENERAL MOTORS CORP.**

10. Install sealant GM P/N 12346004 (Canadian P/N 10953480), or equivalent, to the threads of the coolant temperature sensor (725).

NOTE: Refer to Fastener Notice .

11. Install the coolant temperature sensor into the left cylinder head.

Tighten: Tighten the coolant temperature sensor to 20 N.m (15 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

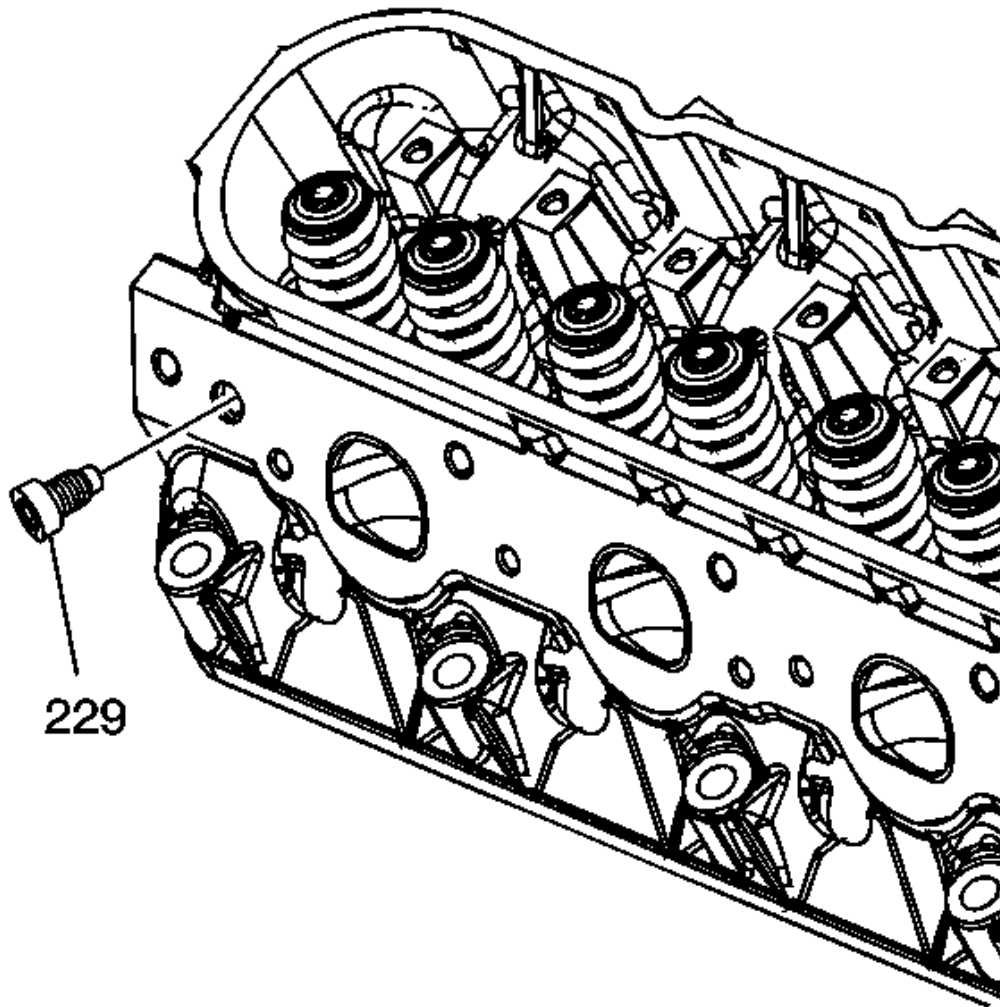


Fig. 106: Locating Coolant Plug
Courtesy of GENERAL MOTORS CORP.

12. Install sealant GM P/N 12346004 (Canadian P/N 10953480), or equivalent, to the threads of the cylinder head plug (229).
13. Install the cylinder head plug to the right cylinder head.

Tighten: Tighten the cylinder head plug to 20 N.m (15 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

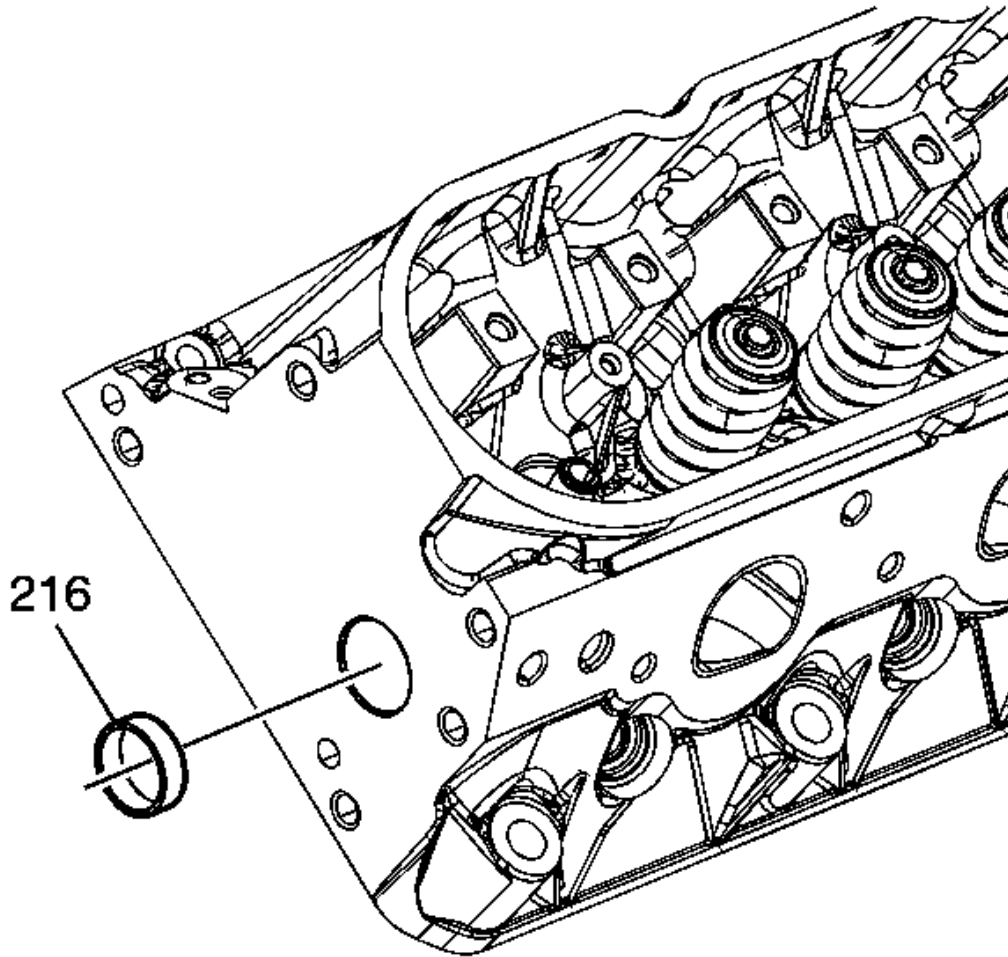


Fig. 107: Locating Cylinder Head Core Hole Plug
Courtesy of GENERAL MOTORS CORP.

14. Apply threadlock GM P/N 12345382 (Canadian P/N 10953489), or equivalent, to the sides of the cylinder head plugs (216).
15. Install the cylinder head plugs into the cylinder head.

A properly installed plug should be installed 2.5 mm (0.1 in) below the end face of the head.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

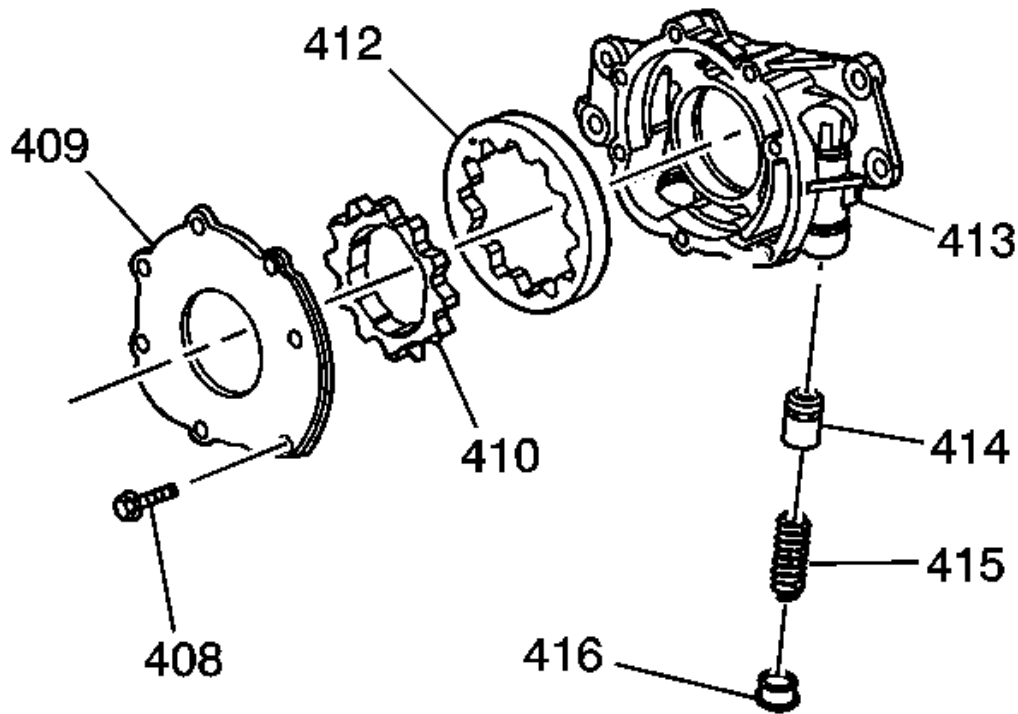


Fig. 108: Exploded View Of Oil Pump
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The internal parts of the oil pump assembly are not serviced separately, excluding the spring. If the oil pump components are worn or damaged, replace the oil pump as an assembly.

1. Remove the oil pump cover bolts (408).
2. Remove the oil pump cover (409).

IMPORTANT: Mark or identify the gears for assembly. Refer to Separating Parts .

3. Remove the drive gear (410).
4. Remove the driven gear (412).
5. Remove the pressure relief valve plug (416).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

6. Remove the pressure relief valve spring (415).
7. Remove the pressure relief valve (414).
8. Inspect the oil pump components. Refer to **Oil Pump Cleaning and Inspection**.

OIL PUMP CLEANING AND INSPECTION

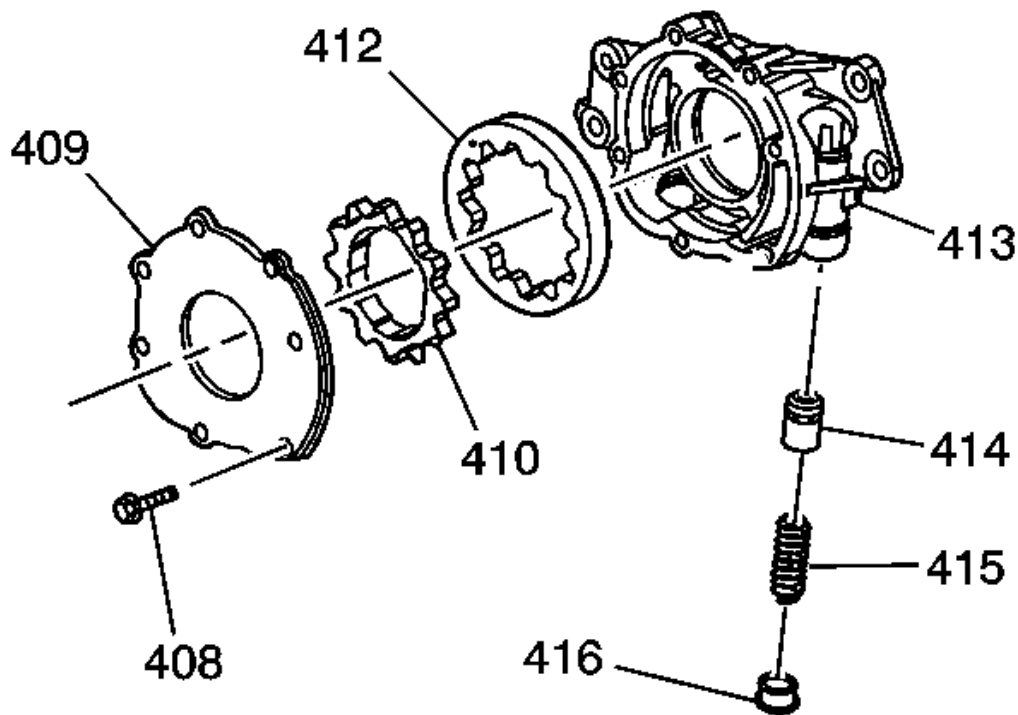


Fig. 109: Exploded View Of Oil Pump
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- The internal parts of the oil pump assembly are not serviced separately, excluding the spring. If the oil pump components are worn or damaged, replace the oil pump as an assembly.
- The oil pump pipe and screen are to be serviced as an assembly. Do not attempt to repair the wire mesh portion of the pump and screen assembly.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Clean the parts in solvent.

CAUTION: Refer to Safety Glasses Caution .

2. Dry the parts with compressed air.
3. Inspect the oil pump housing (413) and the cover (409) for cracks, excessive wear, scoring, or casting imperfections.
4. Inspect the oil pump housing-to-engine block oil gallery surface for scratches or gouging.
5. Inspect the oil pump housing for damaged bolt hole threads.
6. Inspect the relief valve plug (416) and plug bore for damaged threads.
7. Inspect the oil pump internal oil passages for restrictions.
8. Inspect the drive gear (410) and driven gear (412) for chipping, galling, or wear.

Minor burrs or imperfections on the gears may be removed with a fine oil stone.

9. Inspect the drive gear splines for excessive wear.
10. Inspect the pressure relief valve (414) and bore for scoring or wear.

The valve must move freely in the bore, with no restrictions.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

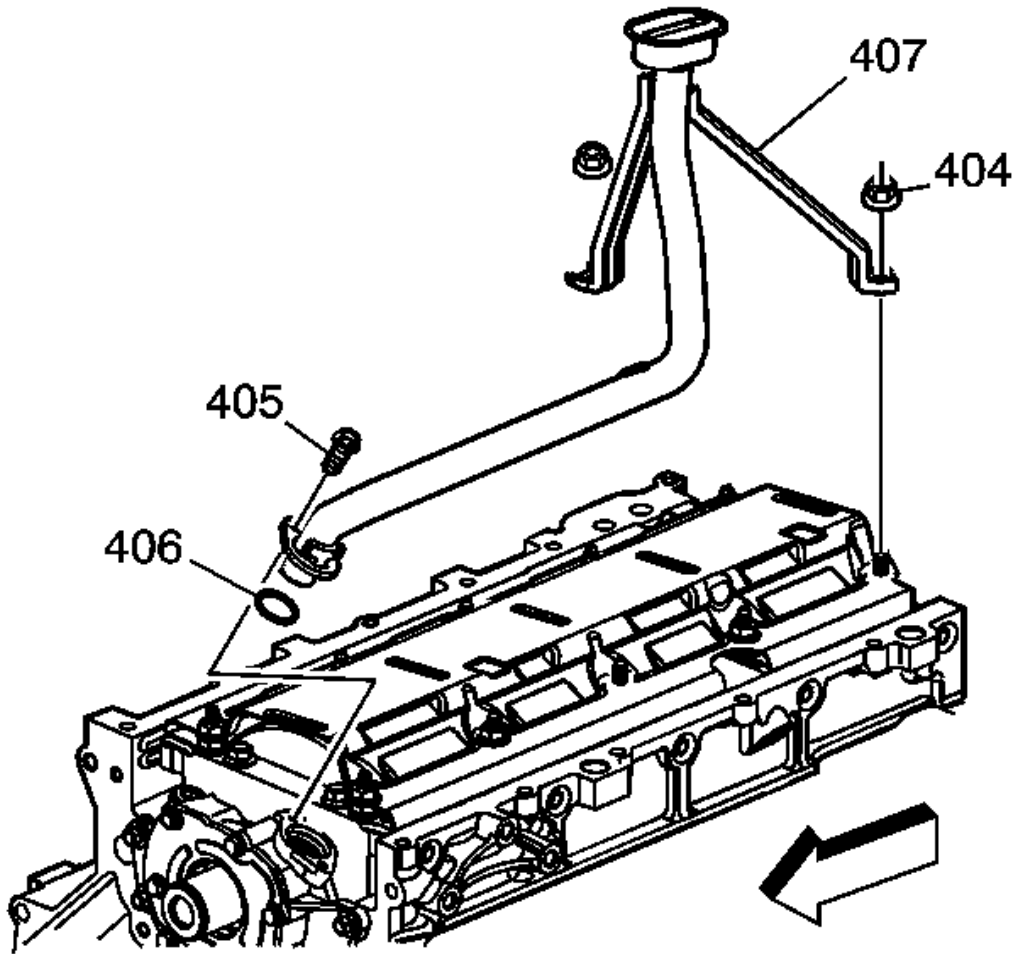


Fig. 110: View Of Oil Pump Screen, Bolt, Nuts, & O-Ring Seal
Courtesy of GENERAL MOTORS CORP.

11. Inspect the oil pump screen (407) for debris or restrictions.
12. Inspect the oil pump screen for broken or loose wire mesh.

OIL PUMP ASSEMBLY

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

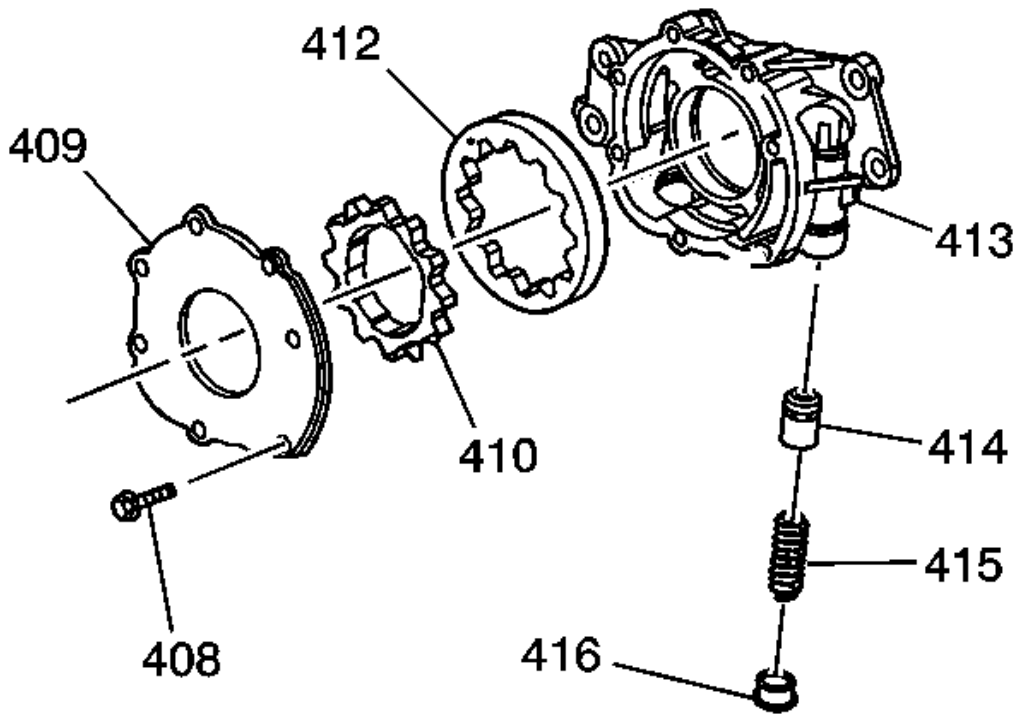


Fig. 111: Exploded View Of Oil Pump
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Prior to assembling the oil pump, coat all wear or internal surfaces with clean engine oil.

1. Install the driven gear (412) into the pump housing (413).

Install the driven gear with the orientation mark facing the pump cover.

2. Install the drive gear (410) into the pump housing.
3. Install the oil pump cover (409).

NOTE: Refer to Fastener Notice .

4. Install the oil pump cover bolts (408).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Tighten: Tighten the oil pump cover bolts to 12 N.m (106 lb in).

5. Install the relief valve (414).
6. Install the relief valve spring (415).
7. Install the relief valve plug (416).

Tighten: Tighten the relief valve plug to 12 N.m (106 lb in).

8. Inspect the oil pump for smooth operation by rotating the drive gear.

ENGINE FRONT COVER CLEANING AND INSPECTION (RPO LY2/LH6/LMG/LY5/LC9)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

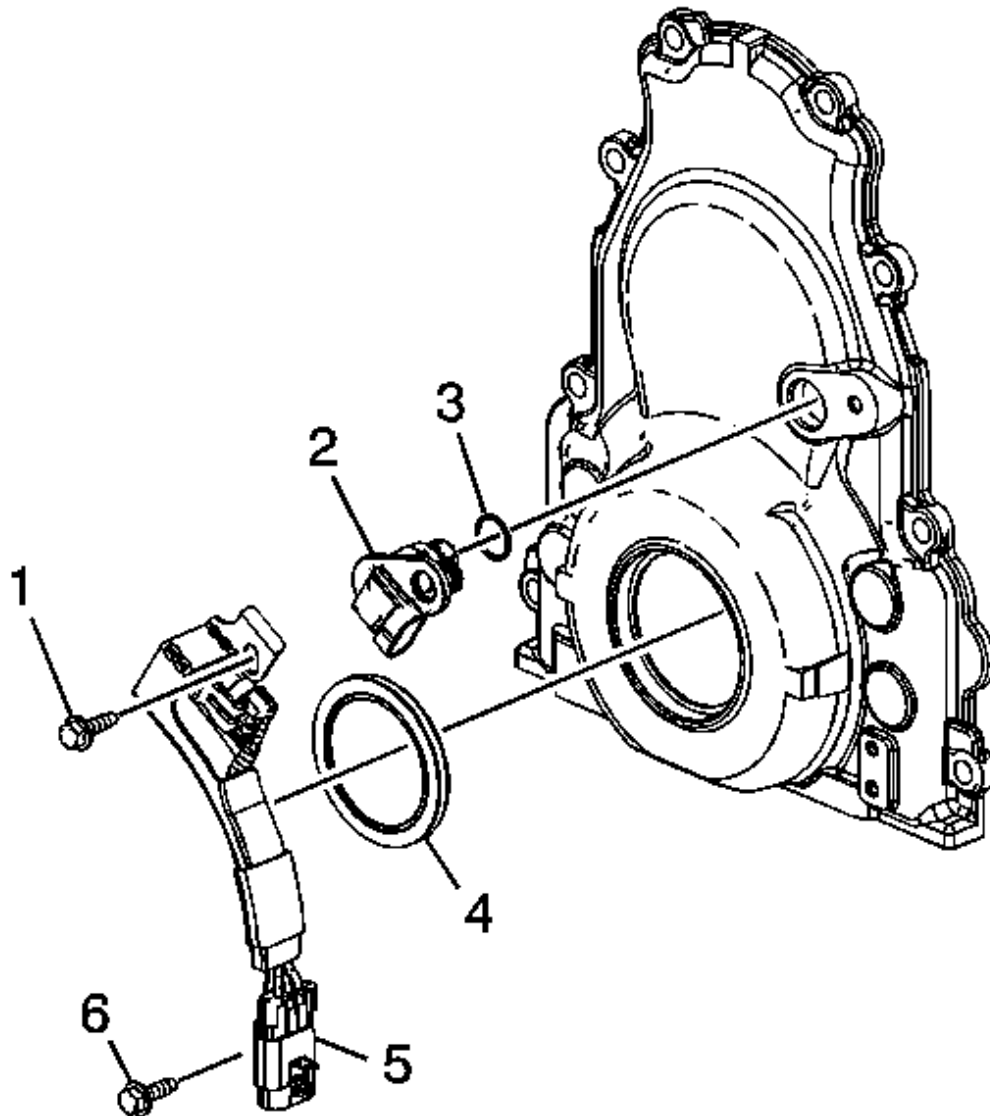


Fig. 112: View Of Front Cover, Oil Seal, Camshaft Position Sensor, Bracket & O Ring

Courtesy of GENERAL MOTORS CORP.

- IMPORTANT:**
- Do not use the crankshaft front oil seal again. Install a **NEW** crankshaft front oil seal during assembly.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- **Do not use the front cover-to-engine block gasket again. Install a NEW gasket during assembly.**

1. Remove the crankshaft front oil seal (140) from the front cover.
2. Clean the cover in solvent. Remove the sealant from the cover oil pan surface. Refer to **Replacing Engine Gaskets** .

CAUTION: Refer to Safety Glasses and Compressed Air Caution .

3. Dry the cover with compressed air.
4. Inspect the gasket sealing surfaces for excessive scratches or gouging.
5. Inspect the threaded bolt holes for damaged threads or debris.
6. Inspect the crankshaft oil seal and camshaft position (CMP) sensor mounting bore for damage.

ENGINE FRONT COVER CLEANING AND INSPECTION (RPO LY6/L76/L92)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

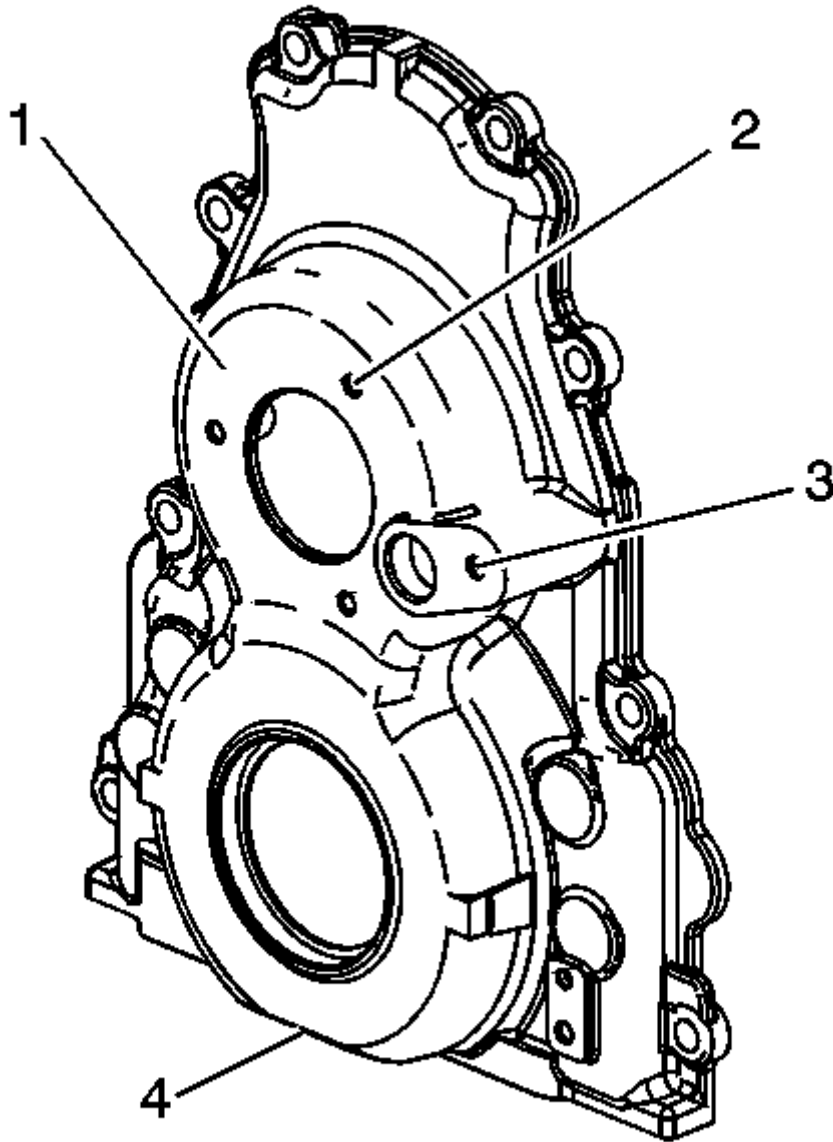


Fig. 113: View Of Gasket Sealing Surfaces & Bolt Holes
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- Do not use the crankshaft front oil seal again. Install a **NEW** crankshaft front oil seal during assembly.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- **Do not use the front cover-to-engine block gasket again. Install a NEW gasket during assembly.**
- **Do not use the camshaft position (CMP) actuator magnet gasket again. Install a NEW gasket during assembly.**

1. Clean the cover in solvent. Remove the sealant from the cover oil pan surface. Refer to **Replacing Engine Gaskets** .

CAUTION: Refer to Safety Glasses and Compressed Air Caution .

2. Dry the cover with compressed air.
3. Inspect the gasket sealing surfaces (1, 4) for excessive scratches or gouging.
4. Inspect the threaded bolt holes (2, 3) for damaged threads or debris.

CRANKSHAFT REAR OIL SEAL HOUSING CLEANING AND INSPECTION

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

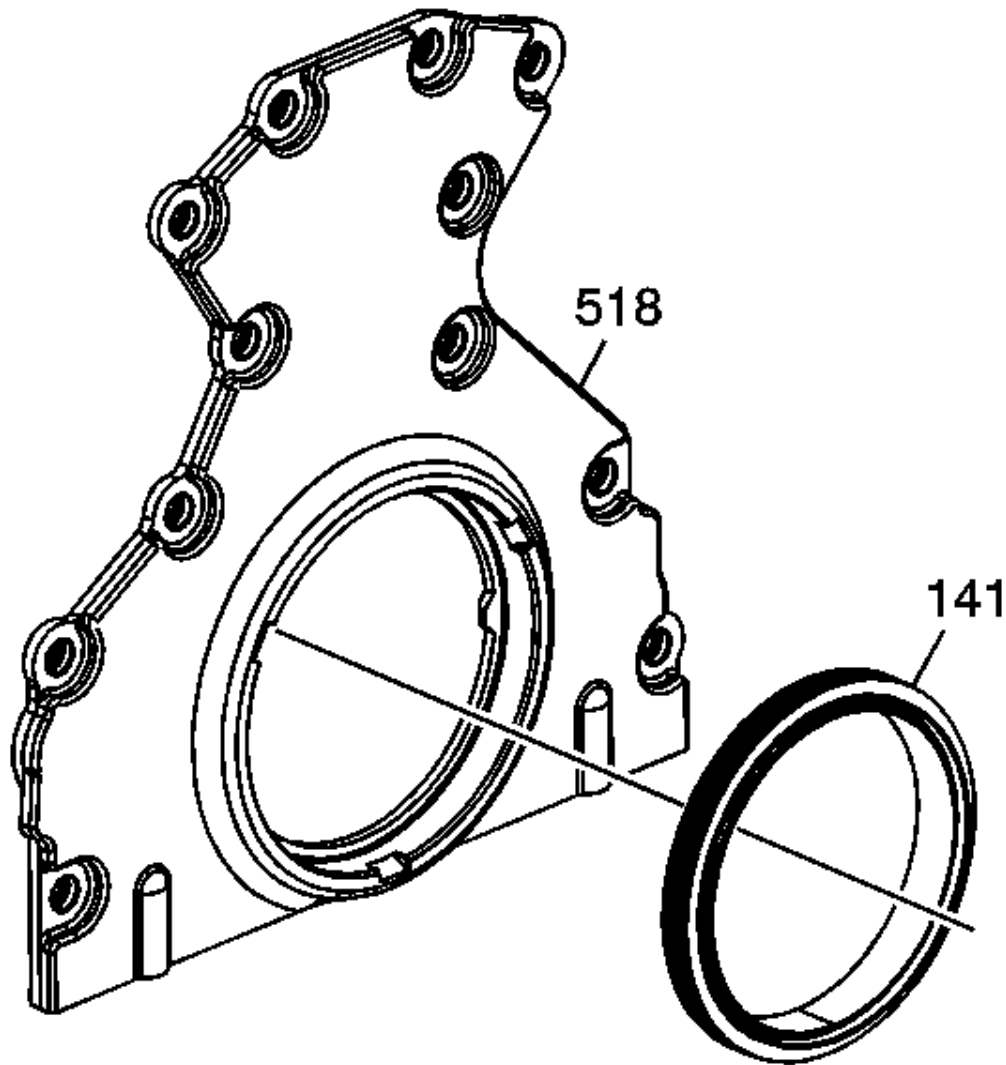


Fig. 114: Crankshaft Rear Oil Seal & Housing
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- Do not use the crankshaft rear oil seal again. Install a **NEW** crankshaft oil seal during assembly.
- Do not use the rear housing-to-engine block gasket again. Install a **NEW** gasket during assembly.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Remove the crankshaft oil seal (141) from the rear housing.
2. Clean the housing in solvent. Remove the sealant from the housing oil pan surface. Refer to **Replacing Engine Gaskets** .

CAUTION: Refer to Safety Glasses Caution .

3. Dry the housing with compressed air.
4. Inspect the gasket sealing surfaces for excessive scratches or gouging.
5. Inspect the housing-to-oil pan threaded bolt holes for damaged threads or debris.
6. Inspect the crankshaft oil seal mounting bore for damage.

ENGINE BLOCK VALLEY COVER CLEANING AND INSPECTION

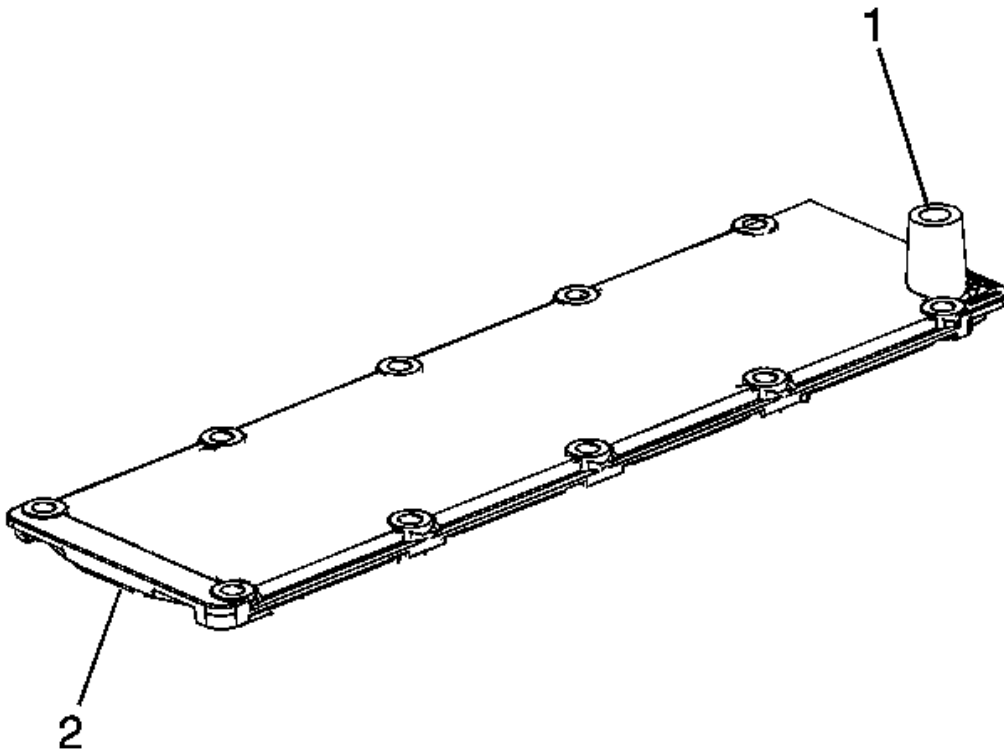


Fig. 115: View Of Engine Valley Cover

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Courtesy of GENERAL MOTORS CORP.

1. Clean the valley cover in solvent.

CAUTION: Refer to Safety Glasses Caution .

2. Dry with compressed air.
3. Inspect for damaged threads (1) and damaged sealing surfaces (2).

VALVE LIFTER OIL MANIFOLD CLEANING AND INSPECTION

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

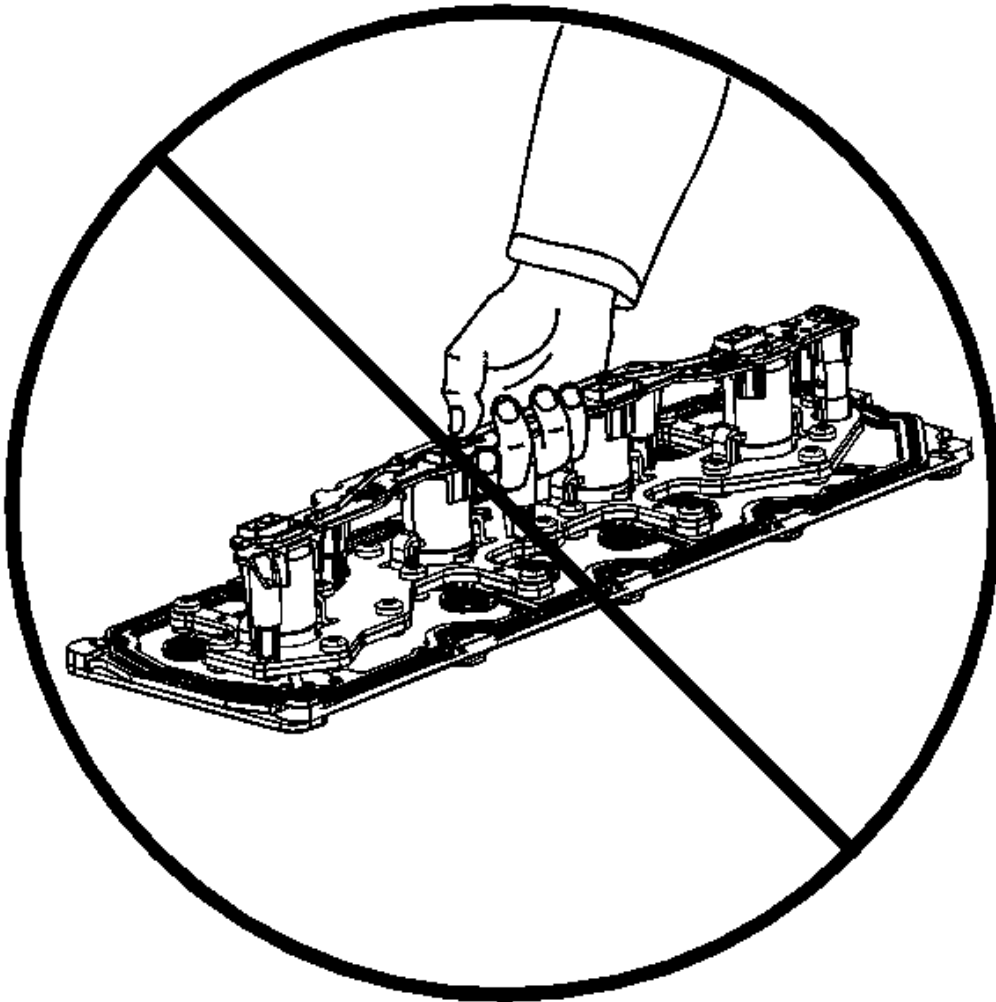


Fig. 116: Valve Lifter Oil Manifold
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- Do not allow dirt or debris to enter the oil passages of the manifold. Plug, as required.
- Do not disassemble the electrical components from the manifold.
- Do not submerge the electrical components in cleaning solvent.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- **Do not use the manifold exterior gasket again. Remove the exterior gasket and install a NEW service gasket during assembly.**

1. Do not lift the manifold assembly by the electrical lead frame.

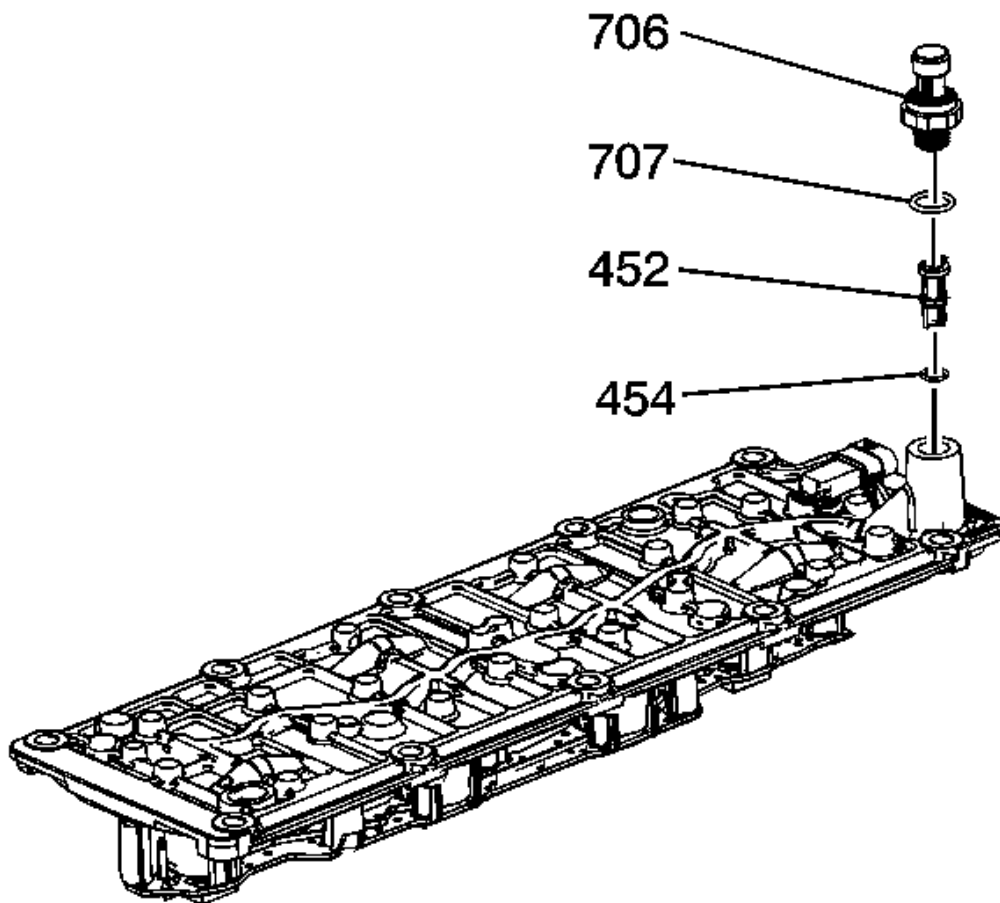


Fig. 117: View Of Oil Pressure Sensor, Washer And Valve Lifter Oil Filter
Courtesy of GENERAL MOTORS CORP.

2. Remove the oil pressure sensor (706) and washer (707).
3. Remove the oil screen (452) with O-ring (454).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

CAUTION: Refer to Safety Glasses and Compressed Air Caution .

4. Clean the manifold with compressed air.

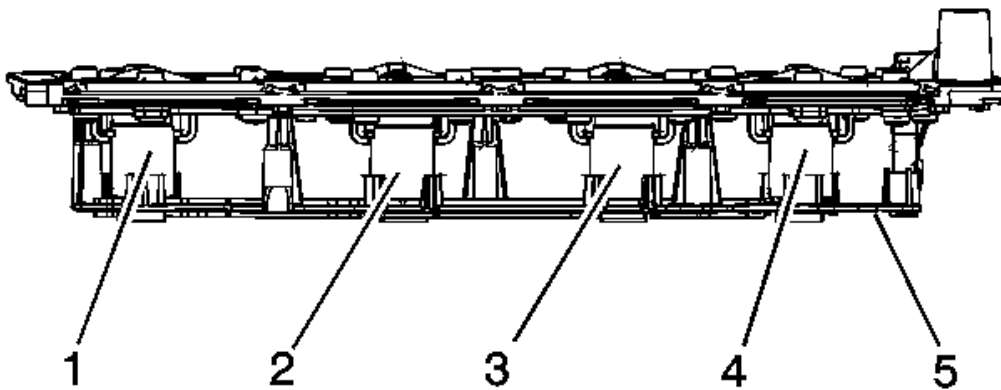


Fig. 118: Electrical Solenoids
Courtesy of GENERAL MOTORS CORP.

5. Inspect for loose electrical solenoids (1-4) or loose or missing bolts.
6. Inspect for damage to the electrical lead frame (5).
7. Inspect for a damaged electrical connector, for bent or corroded pins.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

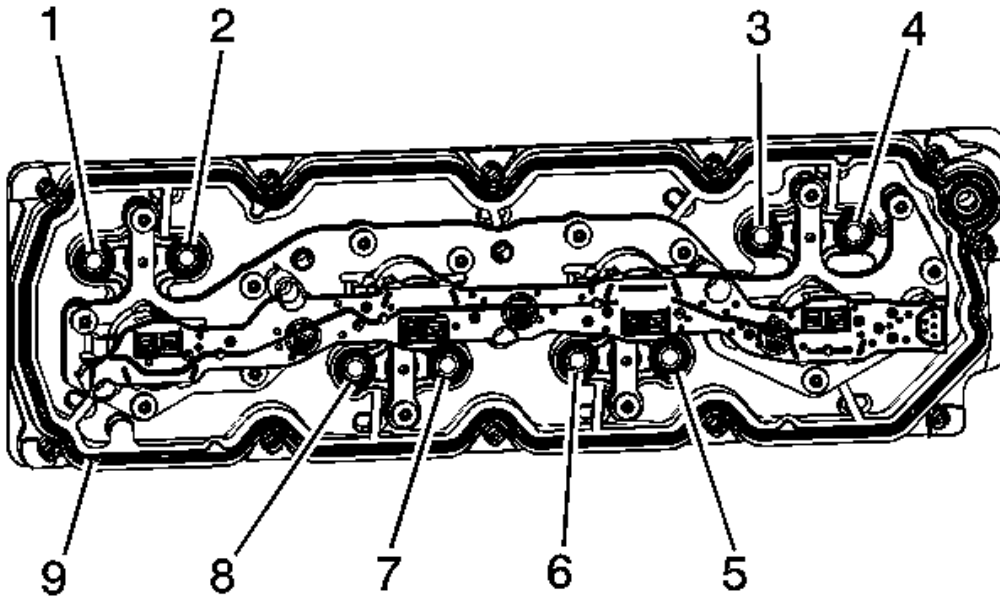


Fig. 119: Sealing Gaskets

Courtesy of GENERAL MOTORS CORP.

8. Inspect for damaged interior sealing gaskets (1-8). If the interior sealing gaskets are damaged, the manifold must be replaced as an assembly.
9. Inspect for a damaged exterior sealing gasket (9) or scored gasket surfaces.
10. Inspect for debris or restrictions within the oil passages of the manifold. Refer to **Cylinder Deactivation (Active Fuel Management) Valve Lifter Oil Manifold Diagnosis and Testing** .

VALVE ROCKER ARM COVER CLEANING AND INSPECTION

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

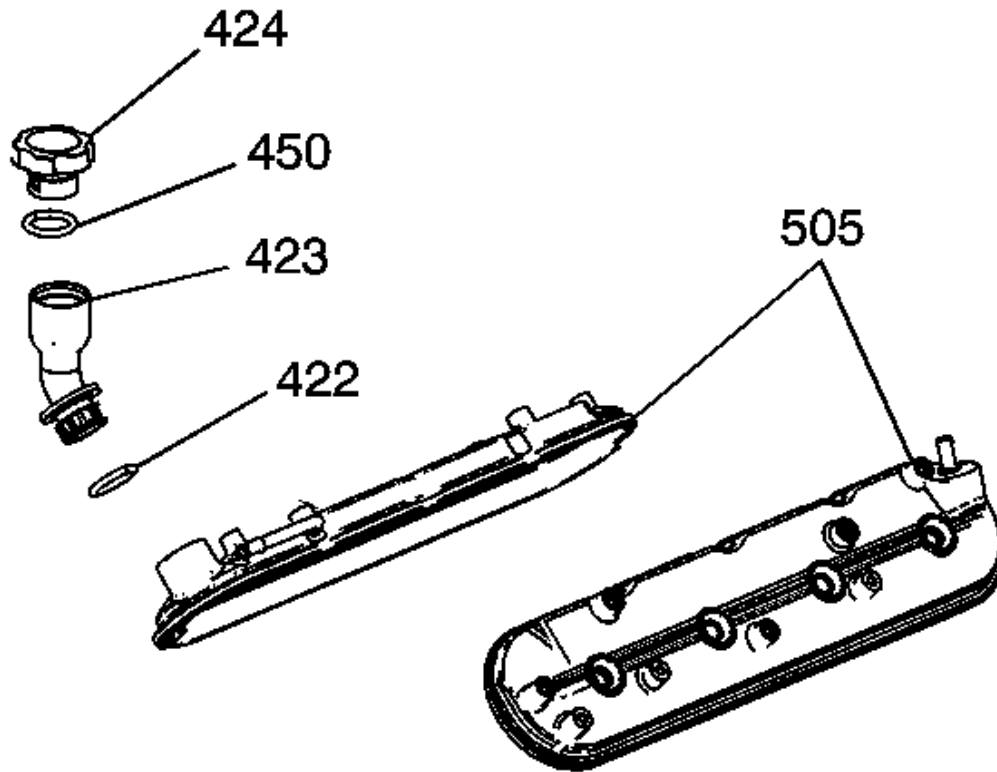


Fig. 120: View Of Valve Rocker Arm Cover
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- Do not use the valve rocker arm cover gasket again. Install a **NEW** gasket during assembly.
- Remove the ignition coils before cleaning the cover in solvent. Do not submerge the ignition coils in solvent.
- Do not remove the oil fill tube from the covers unless service is required. If the tube is removed from the cover, install a **NEW** tube (423) and seal (422) during assembly.

1. Inspect the oil fill tube (423) for a loose fit or damage.
2. Inspect the covers (505) for the following conditions:

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- Scoring or damage to the gasket surfaces
- Ventilation system passages for restrictions
- Threaded bolt holes for damage or debris

OIL PAN CLEANING AND INSPECTION

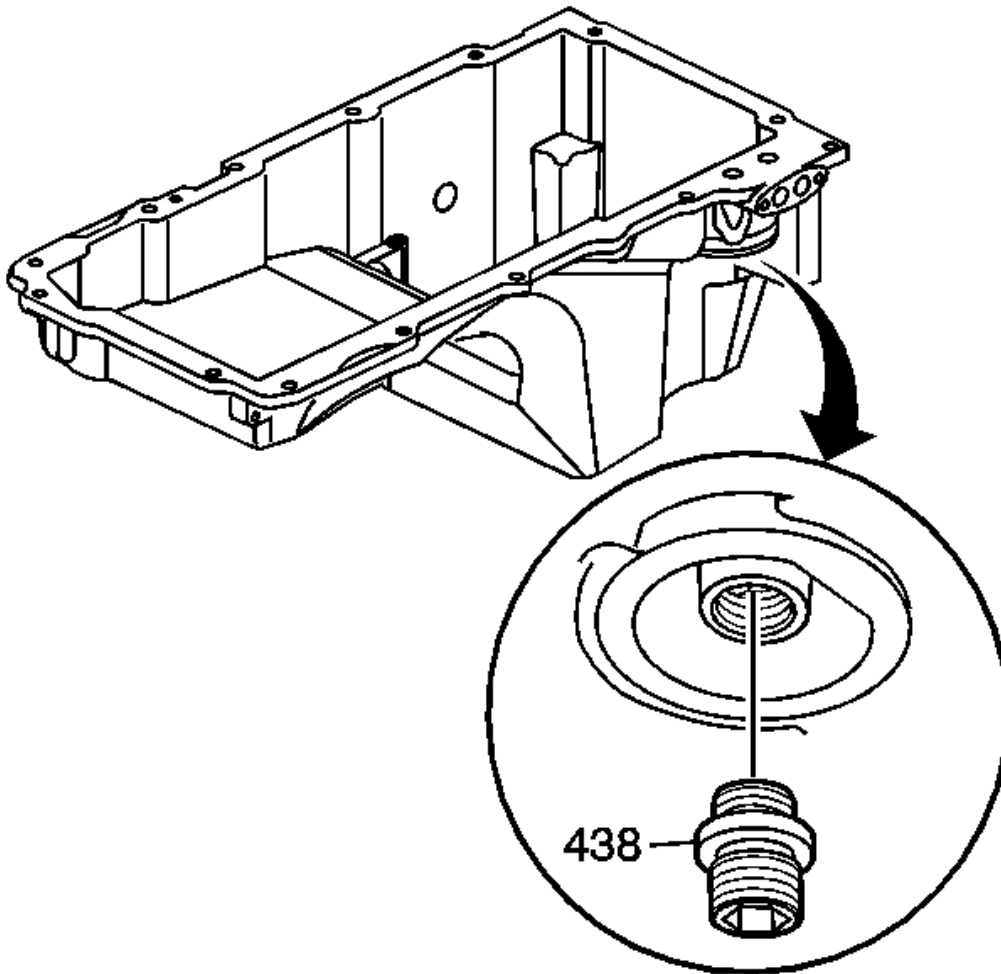


Fig. 121: View Of Oil Filter Fitting
Courtesy of GENERAL MOTORS CORP.

1. Remove the oil filter fitting (438), as required.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

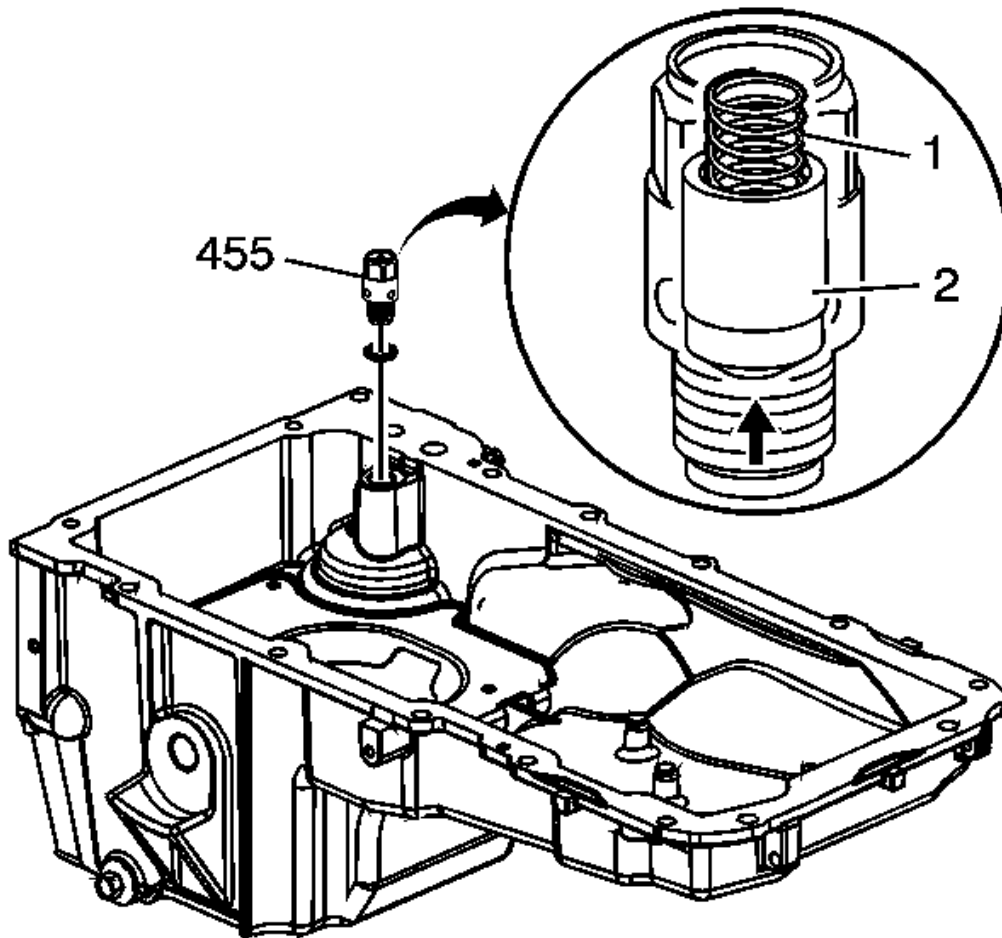


Fig. 122: View Of Oil Pressure Relief Valve Components
Courtesy of GENERAL MOTORS CORP.

2. Remove the active fuel management oil pressure relief valve (455) and washer.
3. Inspect the oil pressure relief valve for proper operation. Lightly depress the valve (2). The valve spring (1) should seat the valve to the proper closed position.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

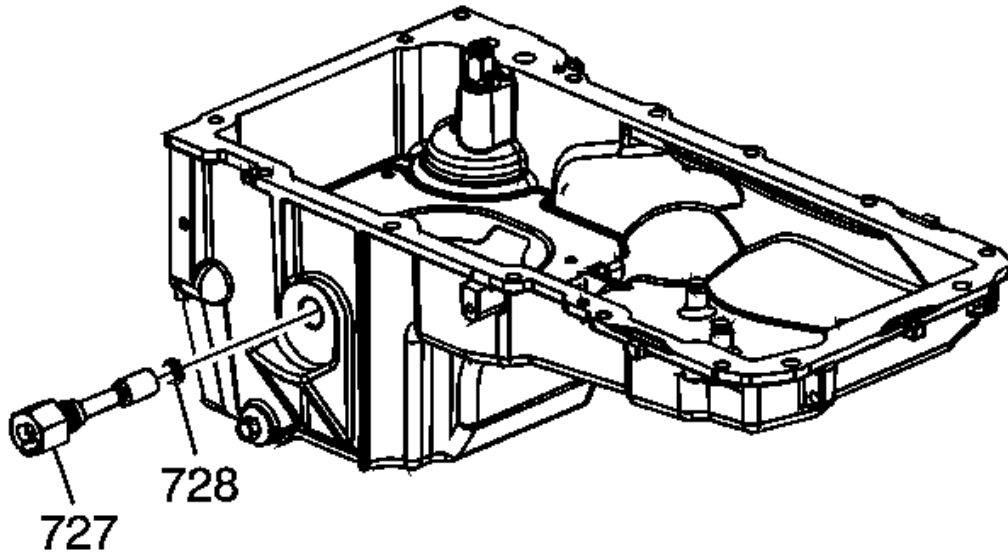


Fig. 123: View Of Oil Level Sensor & O-Ring
Courtesy of GENERAL MOTORS CORP.

4. Remove the oil level sensor (727) and O-ring (728).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

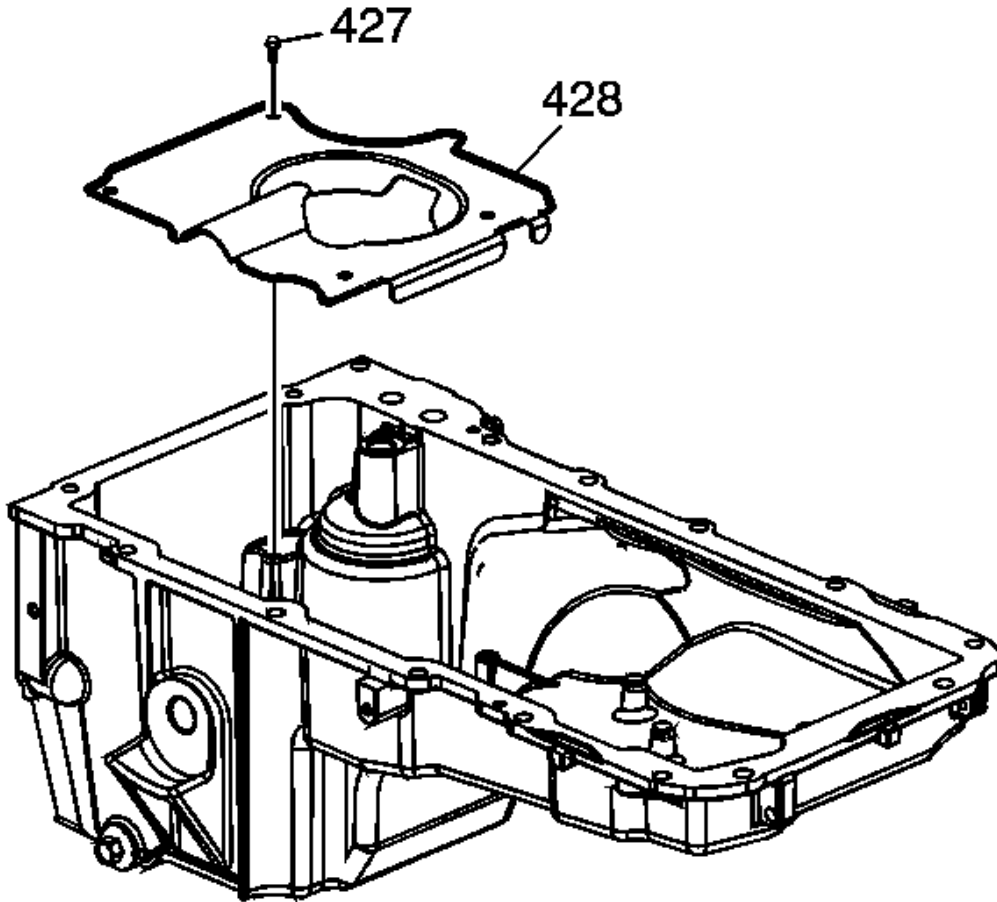


Fig. 124: View Of Baffle & Bolts
Courtesy of GENERAL MOTORS CORP.

5. Remove the bolts (427) and baffle (428).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

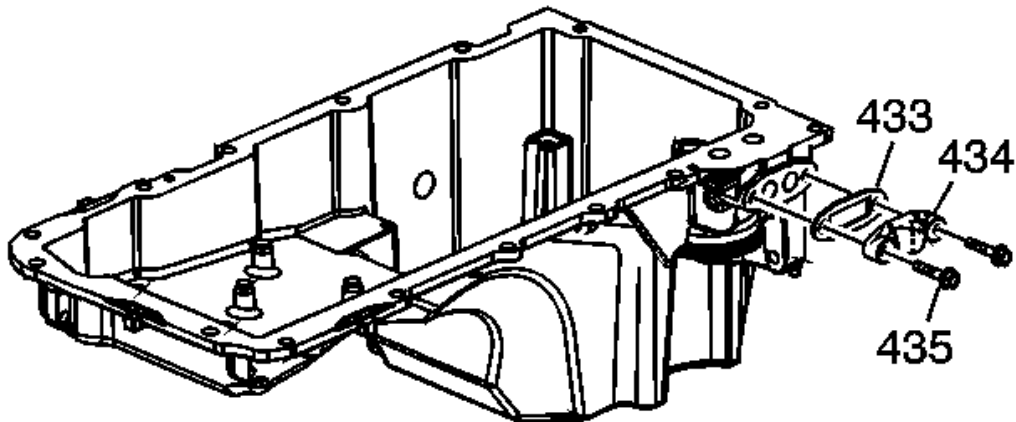


Fig. 125: View Of Oil Pan Cover, Bolts & Gasket
Courtesy of GENERAL MOTORS CORP.

6. Remove the oil pan cover (434), bolts (435), and gasket (433).
7. Clean the oil pan in solvent.

CAUTION: Refer to Safety Glasses and Compressed Air Caution .

8. Dry the oil pan with compressed air.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

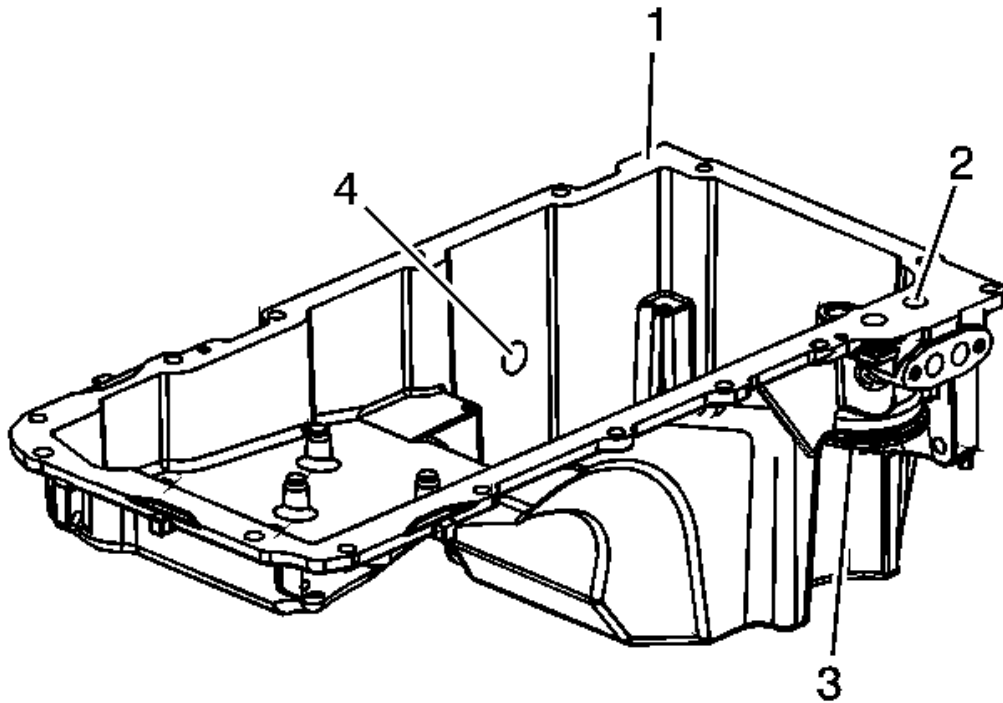


Fig. 126: View Of Oil Pan Inspection Points
Courtesy of GENERAL MOTORS CORP.

9. Inspect the oil pan for the following conditions:
- Damaged gasket surfaces (1)
 - Restrictions within the oil passages (2) of the pan
 - Damaged oil filter seal surface (3)
 - Threaded oil level sensor hole (4) for damage

INTAKE MANIFOLD CLEANING AND INSPECTION

Cleaning Procedure

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

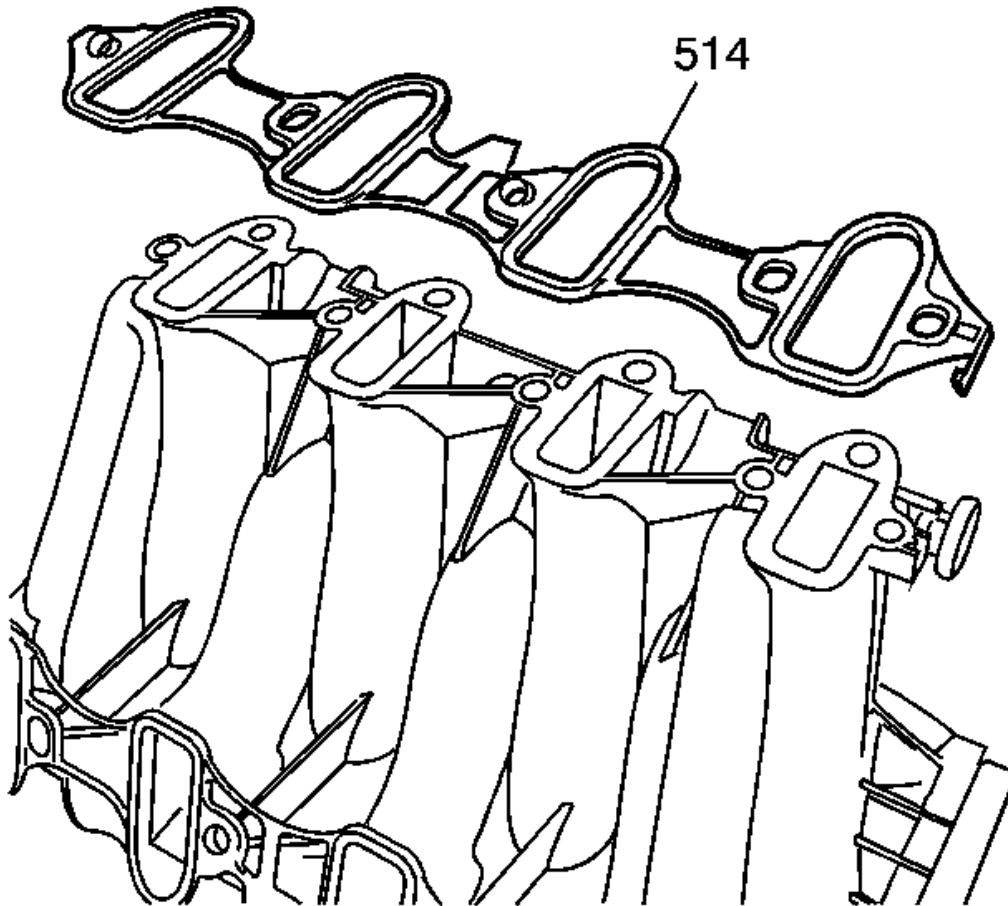


Fig. 127: View Of Intake Manifold-To-Cylinder Head Gasket
Courtesy of GENERAL MOTORS CORP.

1. Remove and discard the intake manifold-to-cylinder head gaskets (514).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

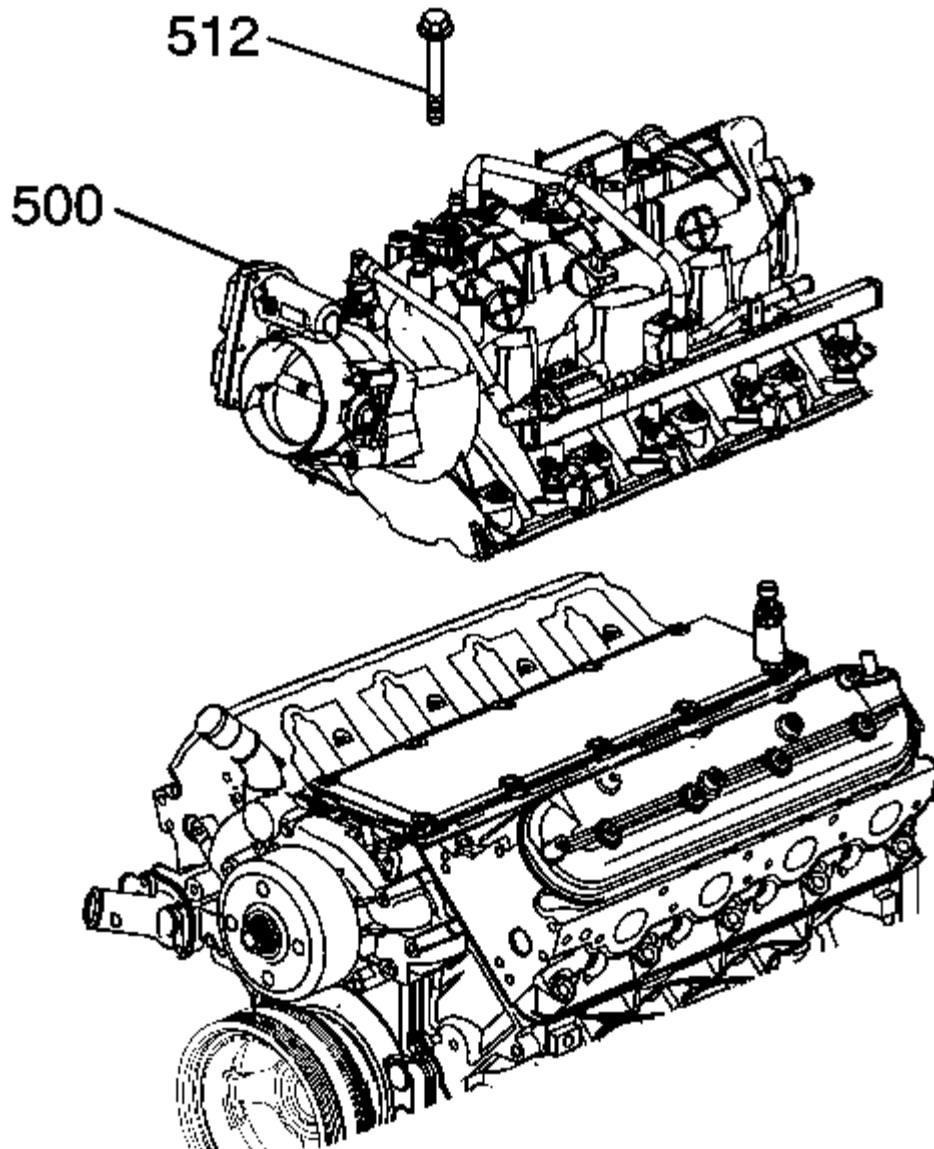


Fig. 128: Removing/Installing Intake Manifold Bolts
Courtesy of GENERAL MOTORS CORP.

2. Remove the manifold absolute pressure (MAP) sensor (714). Refer to **Intake Manifold Removal (RPO LY2/LY6/L92)** or **Intake Manifold Removal (RPO LH6/LMG/LY5/LC9/L76)** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

3. Remove the evaporative emission (EVAP) canister purge solenoid valve, EVAP tubes, and fuel rail with injectors. Refer to **Fuel Rail and Injectors Removal** .
4. Remove the throttle body and gasket. Refer to **Throttle Body Removal** .
5. Clean the intake manifold (500) in solvent.

CAUTION: Refer to Safety Glasses and Compressed Air Caution .

6. Dry the intake manifold with compressed air.

Inspection Procedure

1. Inspect the manifold for the following conditions:
 - Damaged gasket or sealing surfaces
 - Loose threaded inserts or studs
 - Debris or restrictions within the passages of the manifold
 - Damaged or broken vacuum fittings
 - Inspect the composite intake manifold assembly for cracks or other damage.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

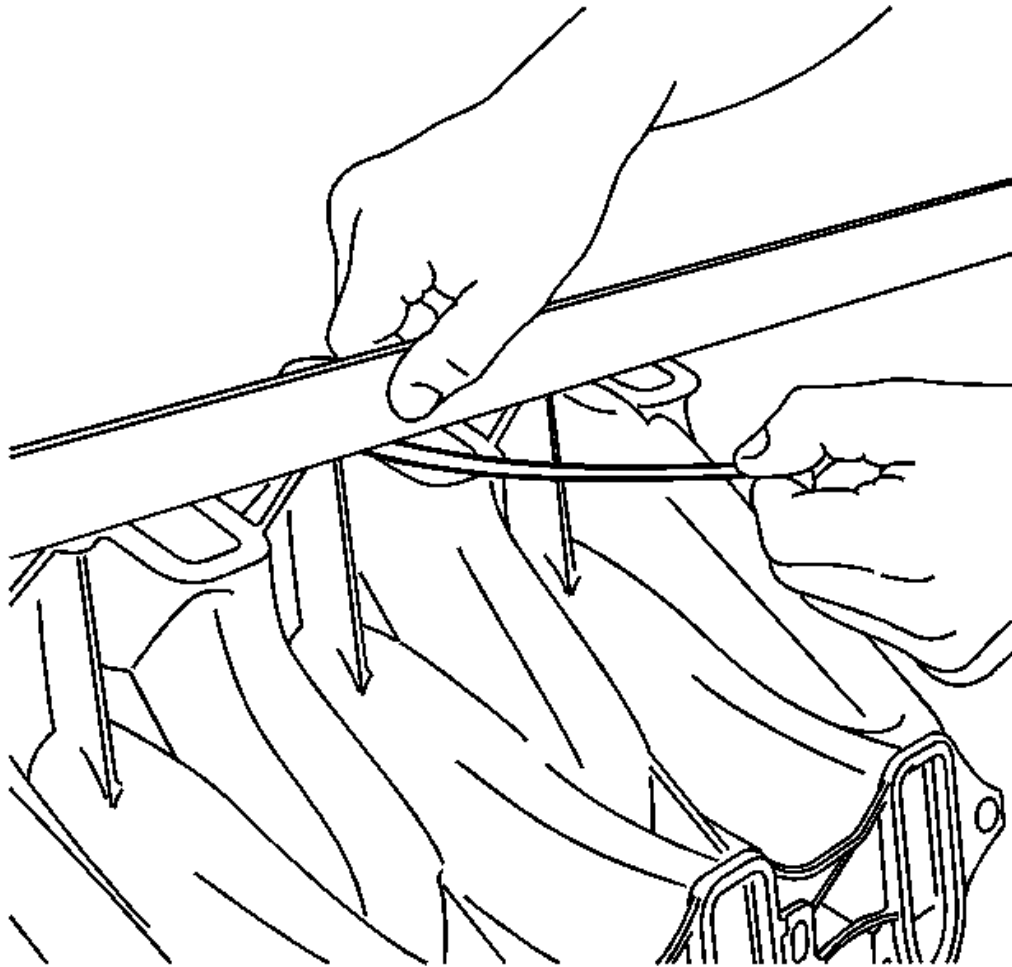


Fig. 129: Inspecting Intake Manifold Cylinder Head Deck For Warpage
Courtesy of GENERAL MOTORS CORP.

2. Inspect the intake manifold cylinder head deck for warpage.
 1. Locate a straight edge across the intake manifold cylinder head deck surface.

Position the straight edge across a minimum of two runner port openings.

2. Insert a feeler gage between the intake manifold and the straight edge.

An intake manifold with warpage in excess of 3 mm (0.118 in) over a 200 mm (7.87

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

in) area is warped and should be replaced.

EXHAUST MANIFOLD CLEANING AND INSPECTION

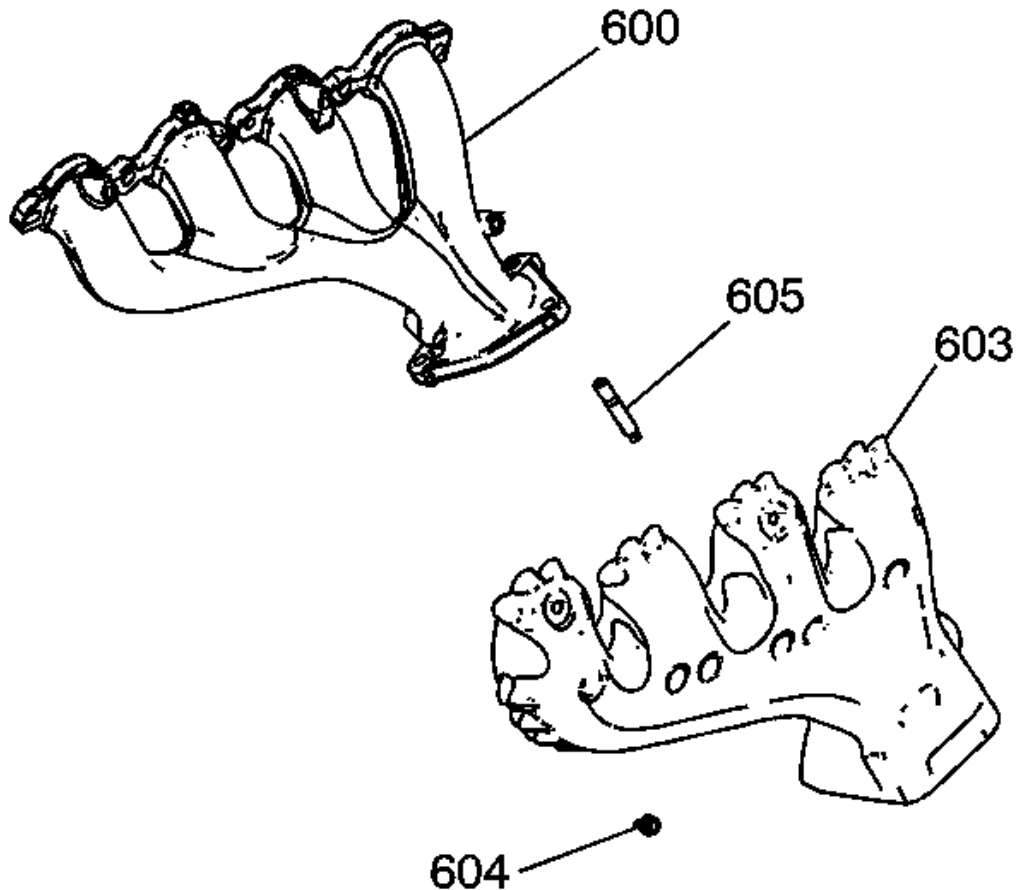


Fig. 130: Exhaust Manifold

Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not use the exhaust manifold-to-cylinder head gaskets again. Upon installation of the exhaust manifold, install a **NEW** gasket. An improperly installed gasket or leaking exhaust system may affect on-board diagnostics (OBD) II system performance.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Clean the exhaust manifold (600) and heat shield (603) in solvent.

CAUTION: Refer to Safety Glasses Caution .

2. Dry the exhaust manifold with compressed air.
3. Inspect the exhaust manifold-to-cylinder head gasket surface for excessive scratches or gouging.
4. Inspect for a loose, damaged, or cracked heat shield (603).
5. Inspect the studs (605) for damaged threads.

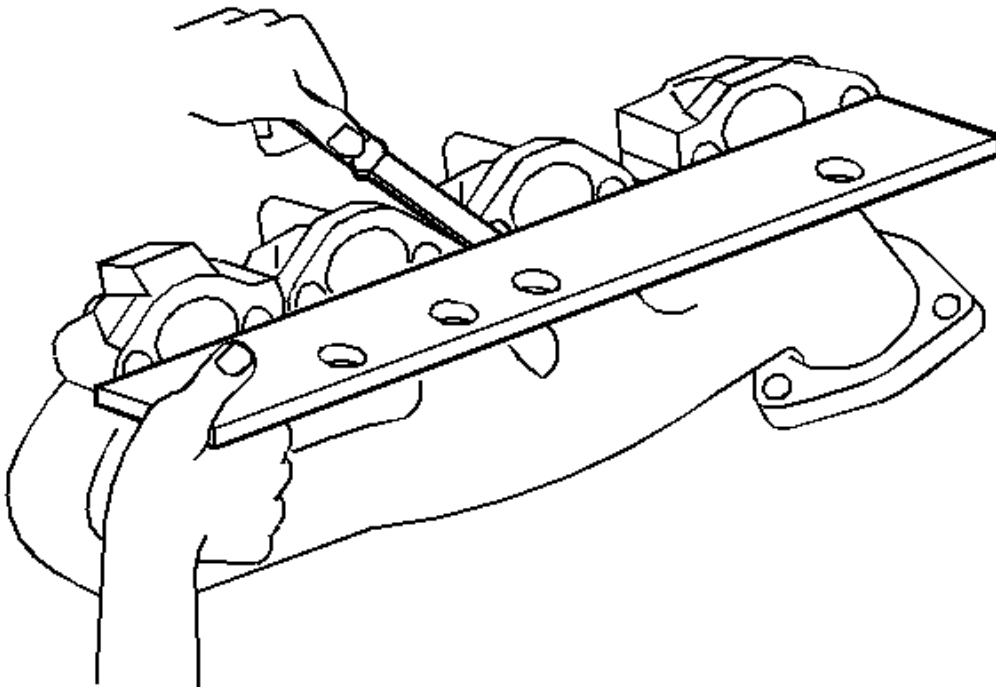


Fig. 131: Measuring Exhaust Manifold To Cylinder Head Surface For Warpage
Courtesy of GENERAL MOTORS CORP.

6. Use a straight edge and a feeler gage and measure the exhaust manifold cylinder head deck for warpage.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

An exhaust manifold deck with warpage in excess of 0.25 mm (0.01 in) within the 2 front or 2 rear runners or 0.5 mm (0.02 in) overall, may cause an exhaust leak and may affect OBD II system performance. Exhaust manifolds not within specifications must be replaced.

ENGINE COOLANT AIR BLEED PIPE AND HOLE COVER CLEANING AND INSPECTION

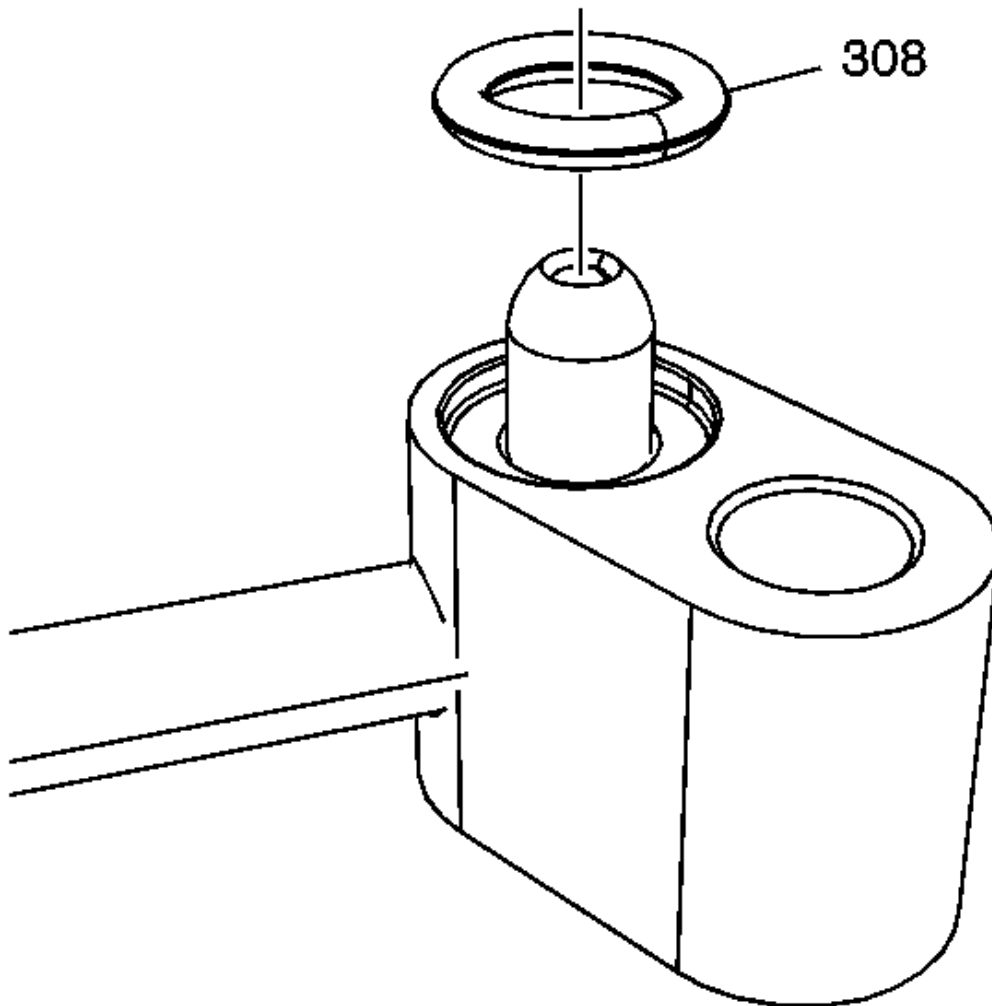


Fig. 132: View Of Coolant Air Bleed Pipe Seal
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not use the engine coolant air bleed pipe and cover seals

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

again. Upon installation of the pipe and covers, install NEW seals.

1. Remove the seals (308) from the pipe and covers.

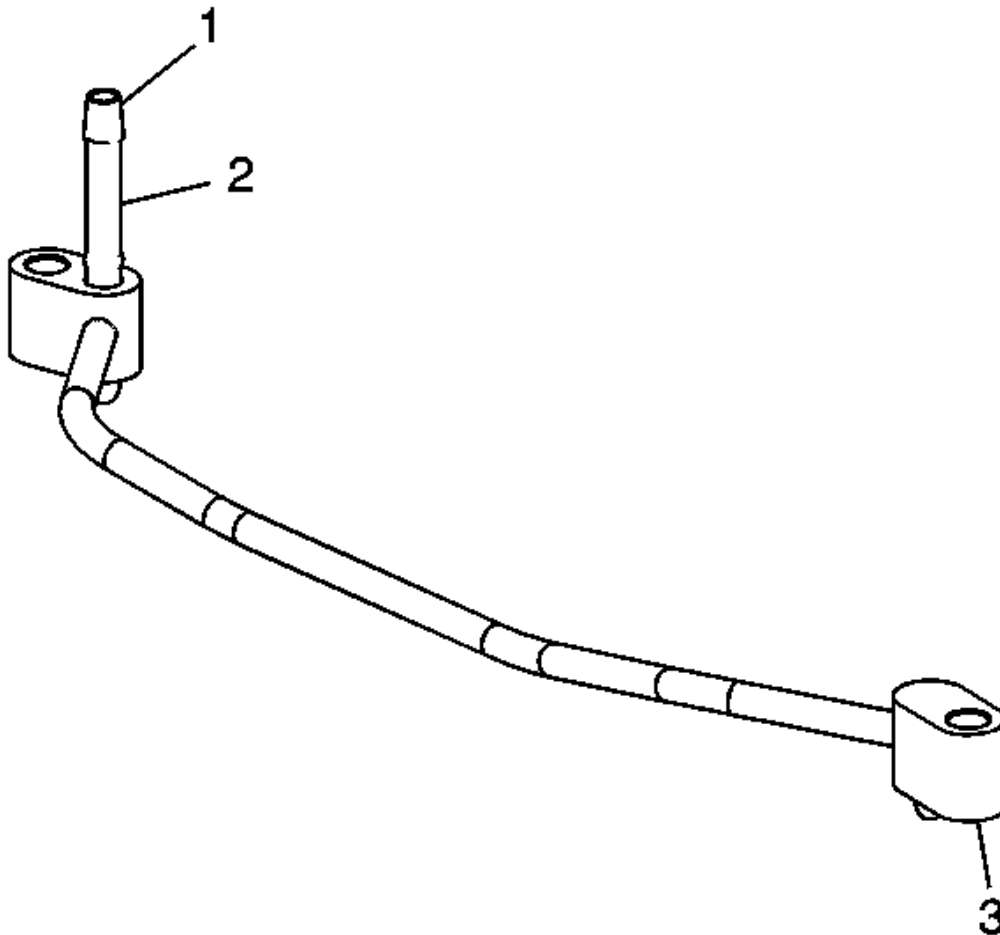


Fig. 133: View Of Coolant Air Bleed Pipe Components
Courtesy of GENERAL MOTORS CORP.

2. Clean the pipe and covers in solvent.

CAUTION: Refer to Safety Glasses and Compressed Air Caution .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

3. Dry the pipe and covers with compressed air.
4. Inspect the pipe and covers for restrictions within the pipe (1) or damaged sealing surfaces (2, 3).

WATER PUMP CLEANING AND INSPECTION

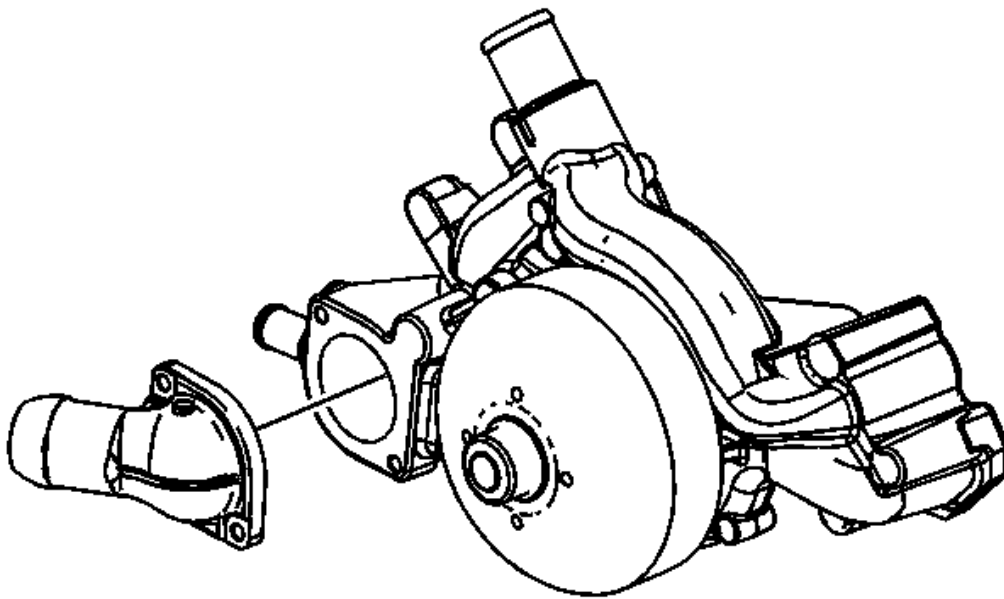


Fig. 134: View Of Water Pump
Courtesy of GENERAL MOTORS CORP.

1. Remove the old gasket from the water pump sealing surfaces. Refer to **Replacing Engine Gaskets** .
2. Clean all excess dirt and debris from the water pump housing.
3. Inspect the water pump for the following conditions:
 - Gasket and hose sealing surfaces for excessive scratches or gouging
 - Restrictions within the internal coolant passages
 - Excessive side-to-side play in the pulley shaft
 - Leakage at the water inlet housing or rear cover

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- Leakage at the water pump vent hole

A stain around the vent hole is acceptable. If leakage, dripping, occurs with the engine running and the cooling system pressurized, replace the water pump.

- Wear or damage in the belt tracking area of the pulley

THREAD REPAIR

Tools Required

- **J 42385-100** Head/Main Bolt Thread Repair Kit. See **Special Tools** .
- **J 42385-200** Common Thread Repair Kit. See **Special Tools** .
- **J 42385-300** Fixtures and Hardware Kit. See **Special Tools** .

General Thread Repair

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

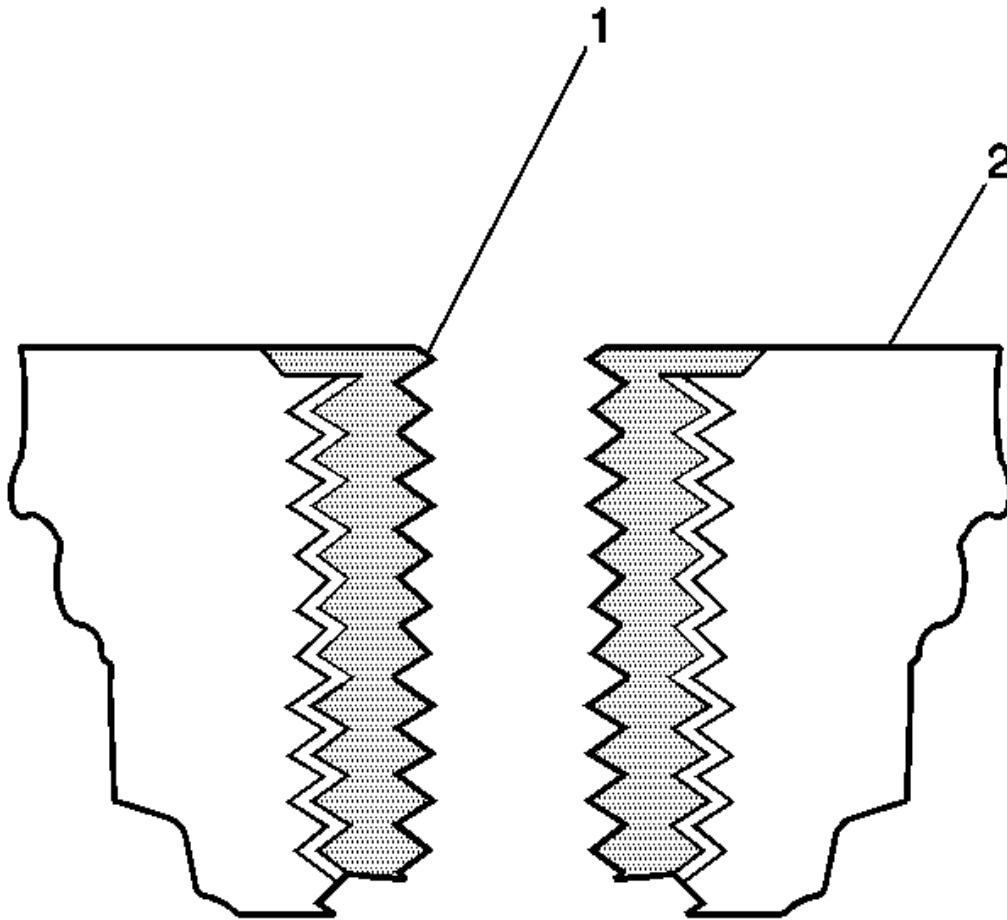


Fig. 135: View Of Bushing Type Insert & Base Material
Courtesy of GENERAL MOTORS CORP.

The thread repair process involves a solid, thin walled, self-locking, carbon steel, bushing type insert (1). During the bushing installation process, the driver tool expands the bottom external threads of the insert into the base material (2). This action mechanically locks the insert in place. Also, when installed to the proper depth, the flange of the insert will be seated against the counterbore of the repaired hole.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

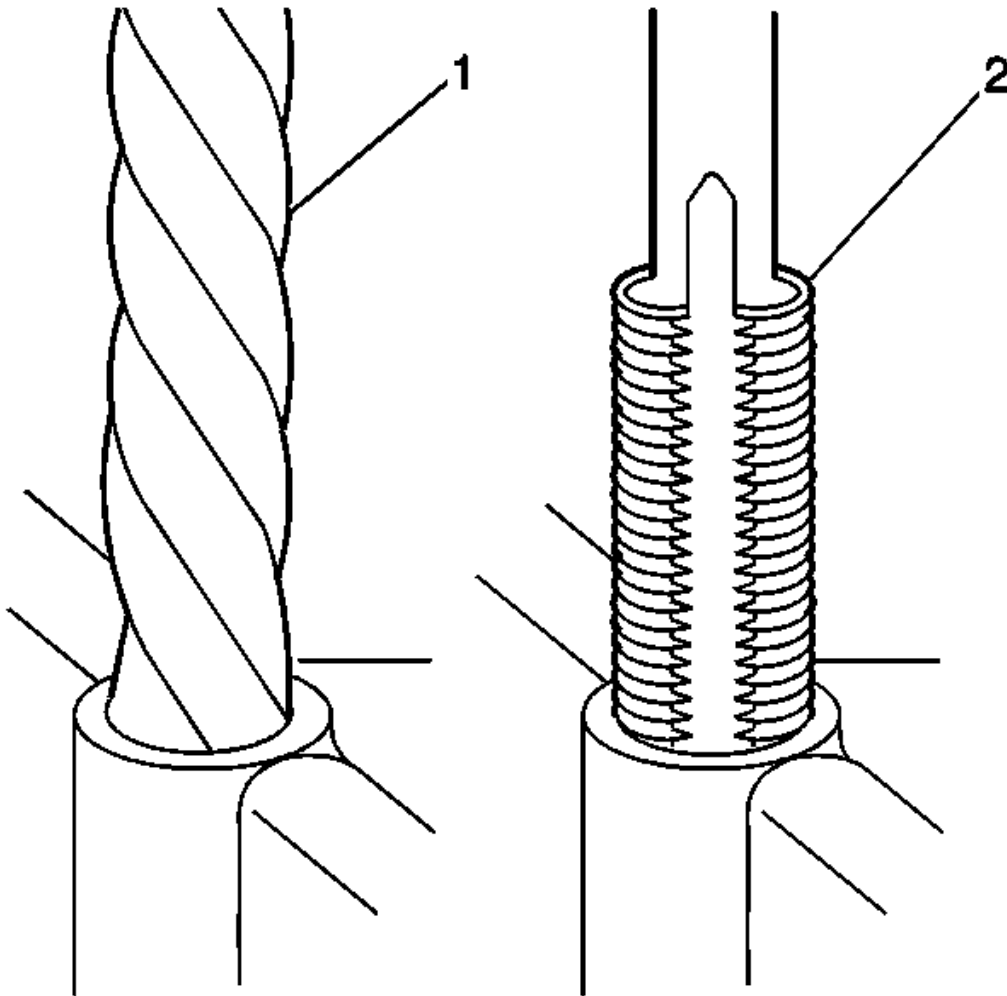


Fig. 136: Drilling & Tapping Threads
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to Safety Glasses Caution .

IMPORTANT:

- The use of a cutting type fluid GM P/N 1052864 (Canadian P/N 992881), WD 40®, or equivalent, is recommended when performing the drilling, counterboring, and tapping procedures.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- **Driver oil MUST be used on the installer driver tool.**
 - **The tool kits are designed for use with either a suitable tap wrench or drill motor.**
1. Drill out the threads of the damaged hole (1).
 - M6 inserts require a minimum drill depth of 15 mm (0.59 in).
 - M8 inserts require a minimum drill depth of 20 mm (0.79 in).
 - M10 inserts require a minimum drill depth of 23.5 mm (0.93 in).
 2. Using compressed air, clean out any chips.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

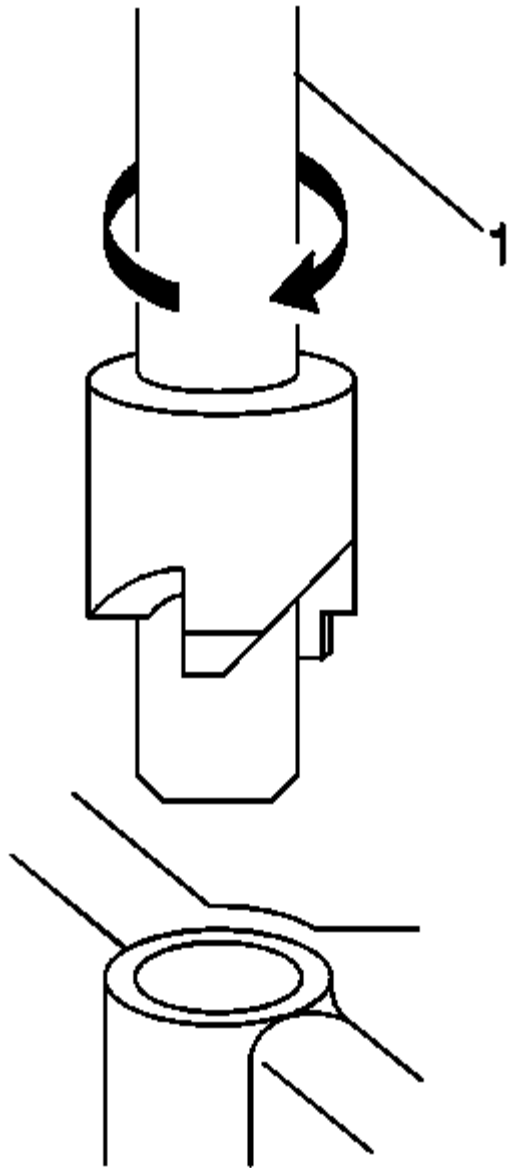


Fig. 137: View Of Counterbore Drill
Courtesy of GENERAL MOTORS CORP.

3. Counterbore the hole to the full depth permitted by the tool (1).
4. Using compressed air, clean out any chips.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

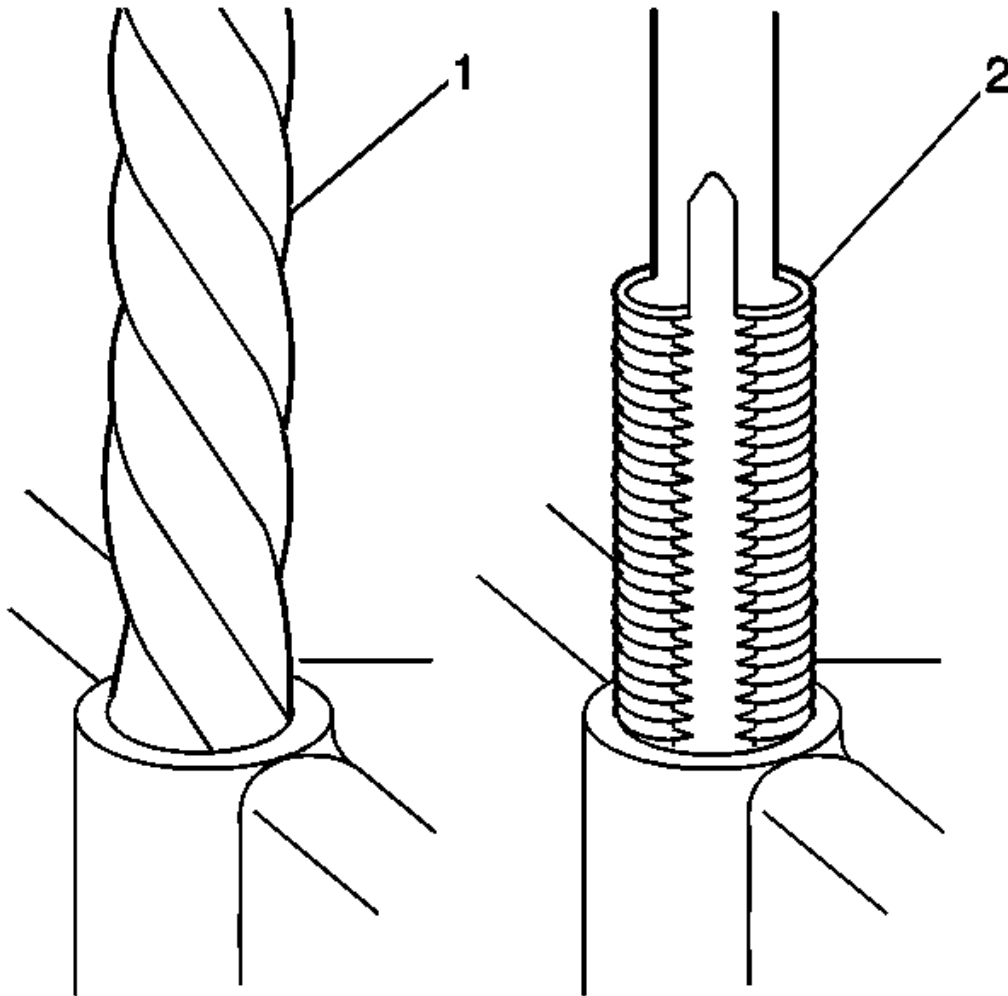


Fig. 138: Drilling & Tapping Threads
Courtesy of GENERAL MOTORS CORP.

5. Using a tap wrench (2), tap the threads of the drilled hole.
 - M6 inserts require a minimum tap depth of 15 mm (0.59 in).
 - M8 inserts require a minimum tap depth of 20 mm (0.79 in).
 - M10 inserts require a minimum tap depth of 23.5 mm (0.93 in).
6. Using compressed air, clean out any chips.
7. Spray cleaner GM P/N 12346139, GM P/N 12377981 (Canadian P/N 10953463), or

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

equivalent, into the hole.

8. Using compressed air, clean any cutting oil and chips out of the hole.

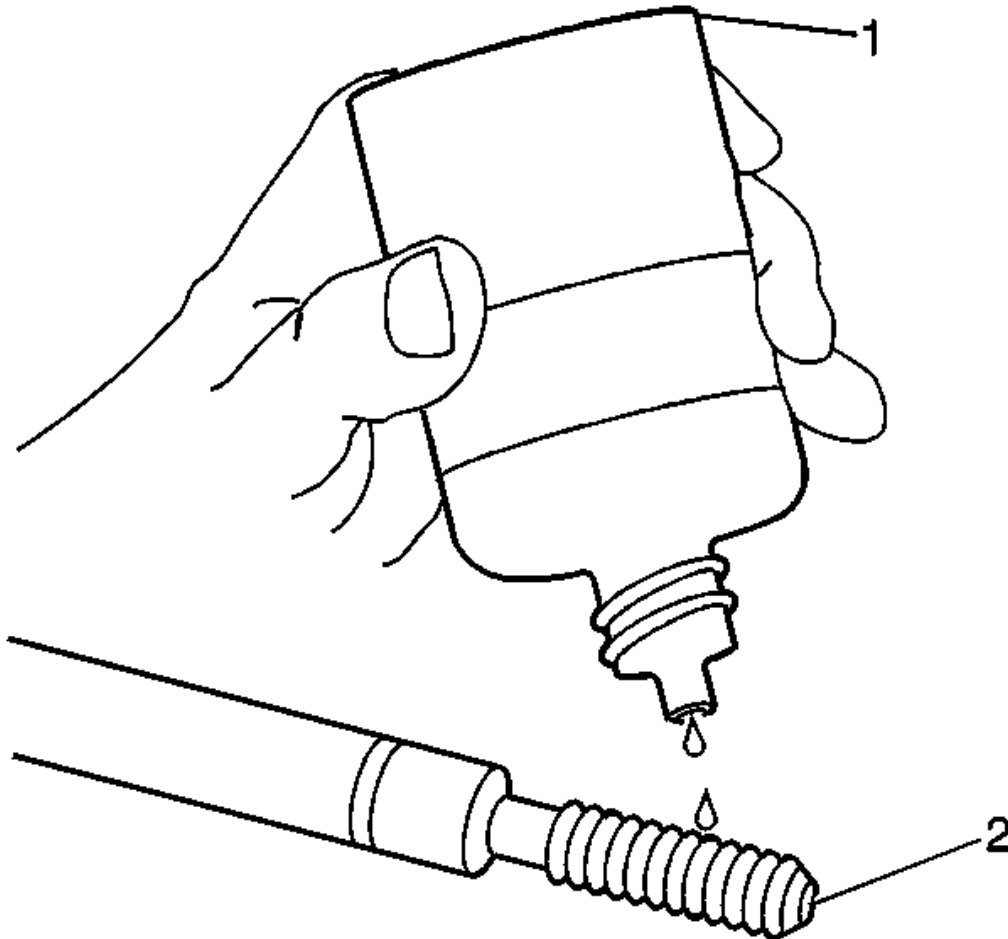


Fig. 139: Lubricating Installer Tool Using Driver Oil
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not allow oil or other foreign material to contact the outside diameter (OD) of the insert.

9. Lubricate the threads of the installer tool (2) with the driver oil (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

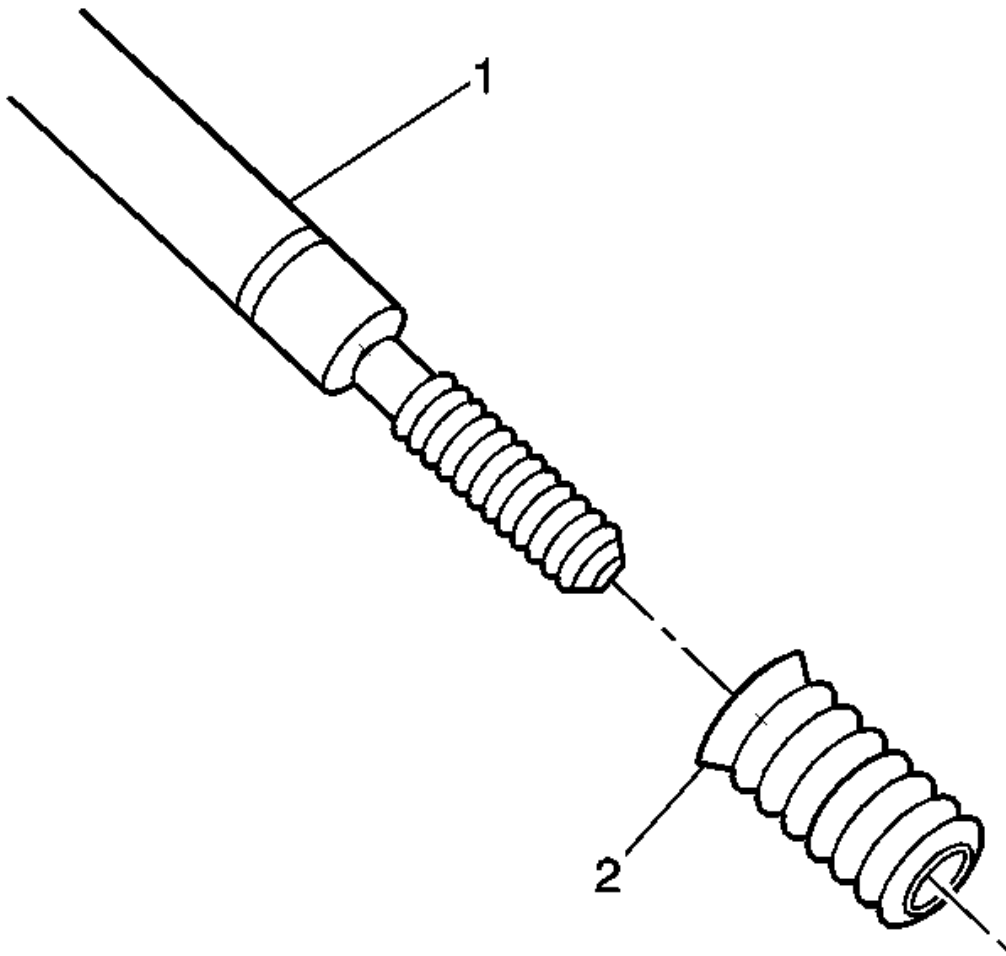


Fig. 140: View of Bushing Type Insert
Courtesy of GENERAL MOTORS CORP.

10. Install the insert (2) onto the driver tool (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

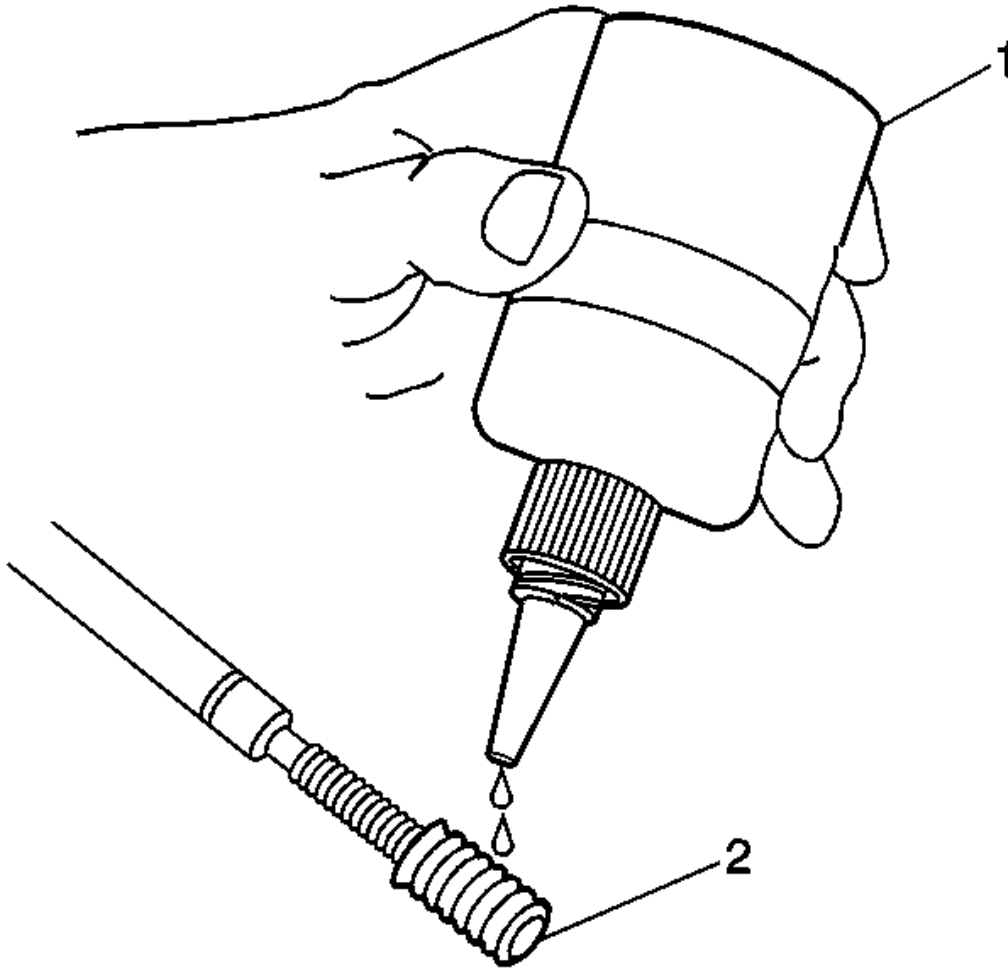


Fig. 141: Applying Threadlock To Insert
Courtesy of GENERAL MOTORS CORP.

11. Apply threadlock LOCTITE™ 277, J 42385-109 (1), or equivalent, to the insert OD threads (2).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

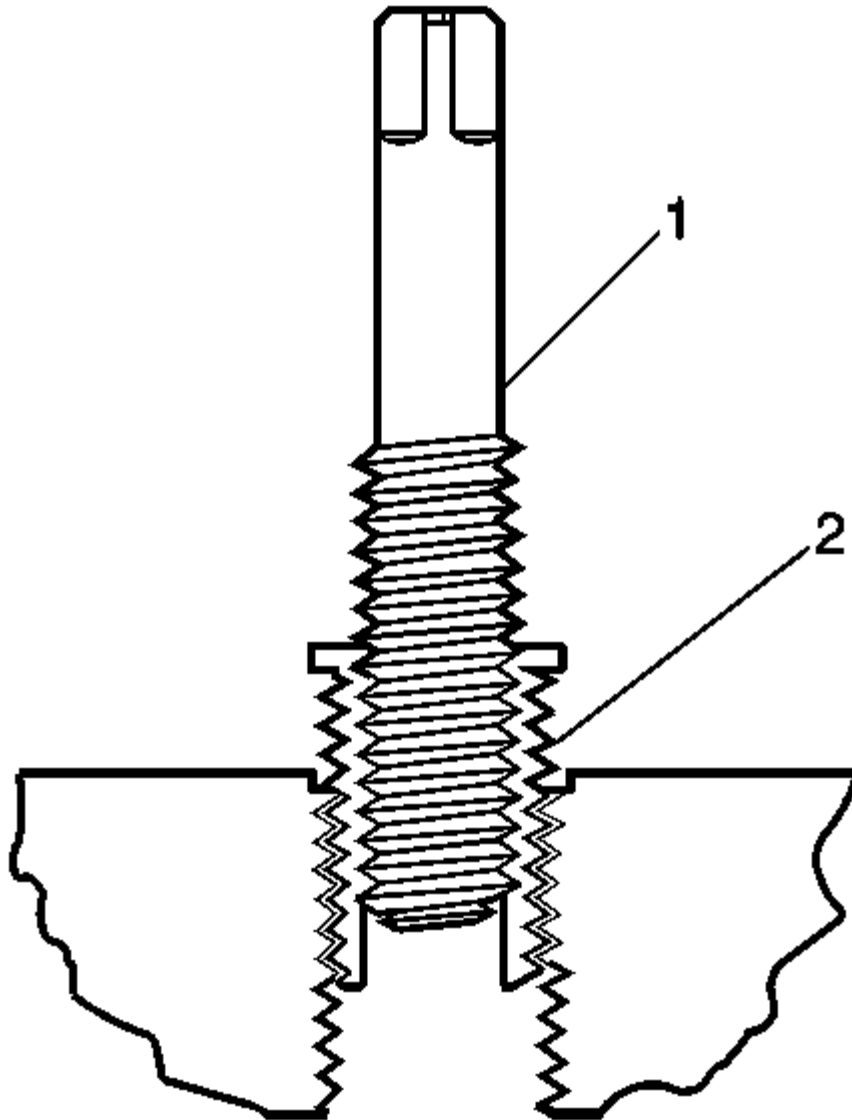


Fig. 142: Installing Insert Into Tapped Bolt Hole
Courtesy of GENERAL MOTORS CORP.

12. Install the insert (2) into the hole.

Install the insert until the flange of the insert contacts the counterbored surface. Continue to rotate the installer tool (1) through the insert.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

The installer tool will tighten up before screwing completely through the insert. This is acceptable. You are forming the bottom threads of the insert and mechanically locking the insert to the base material threads.

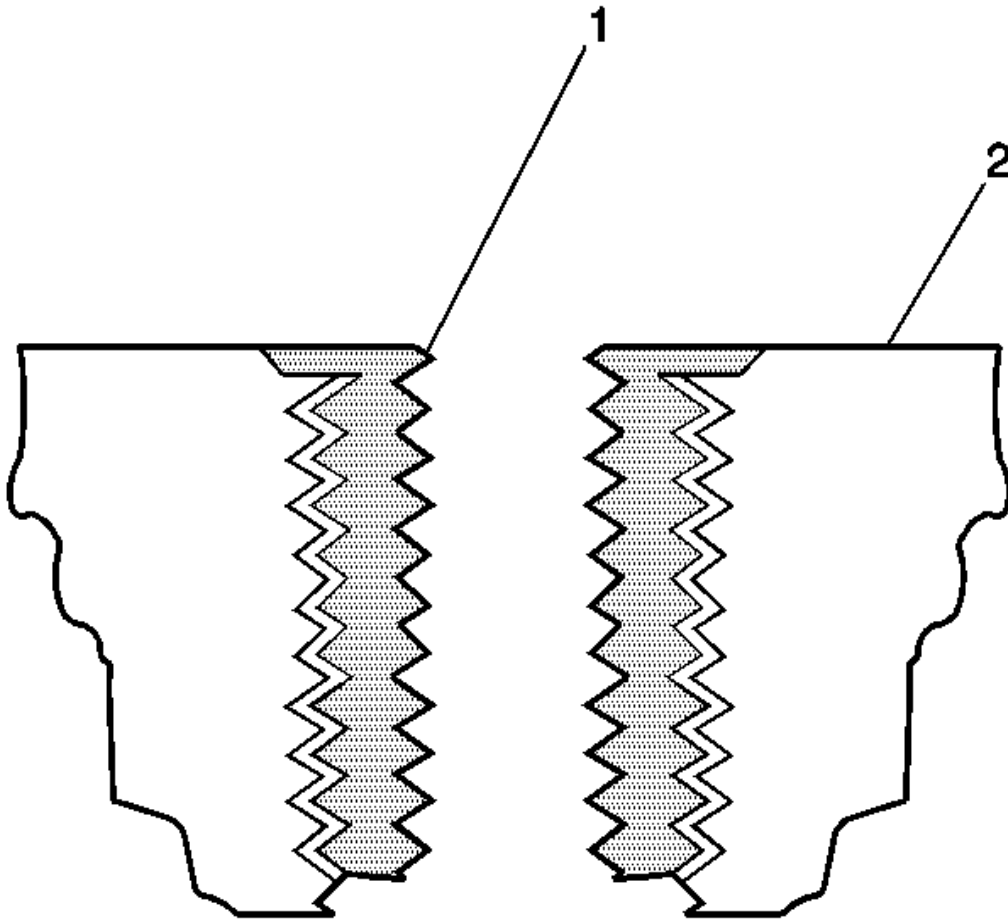


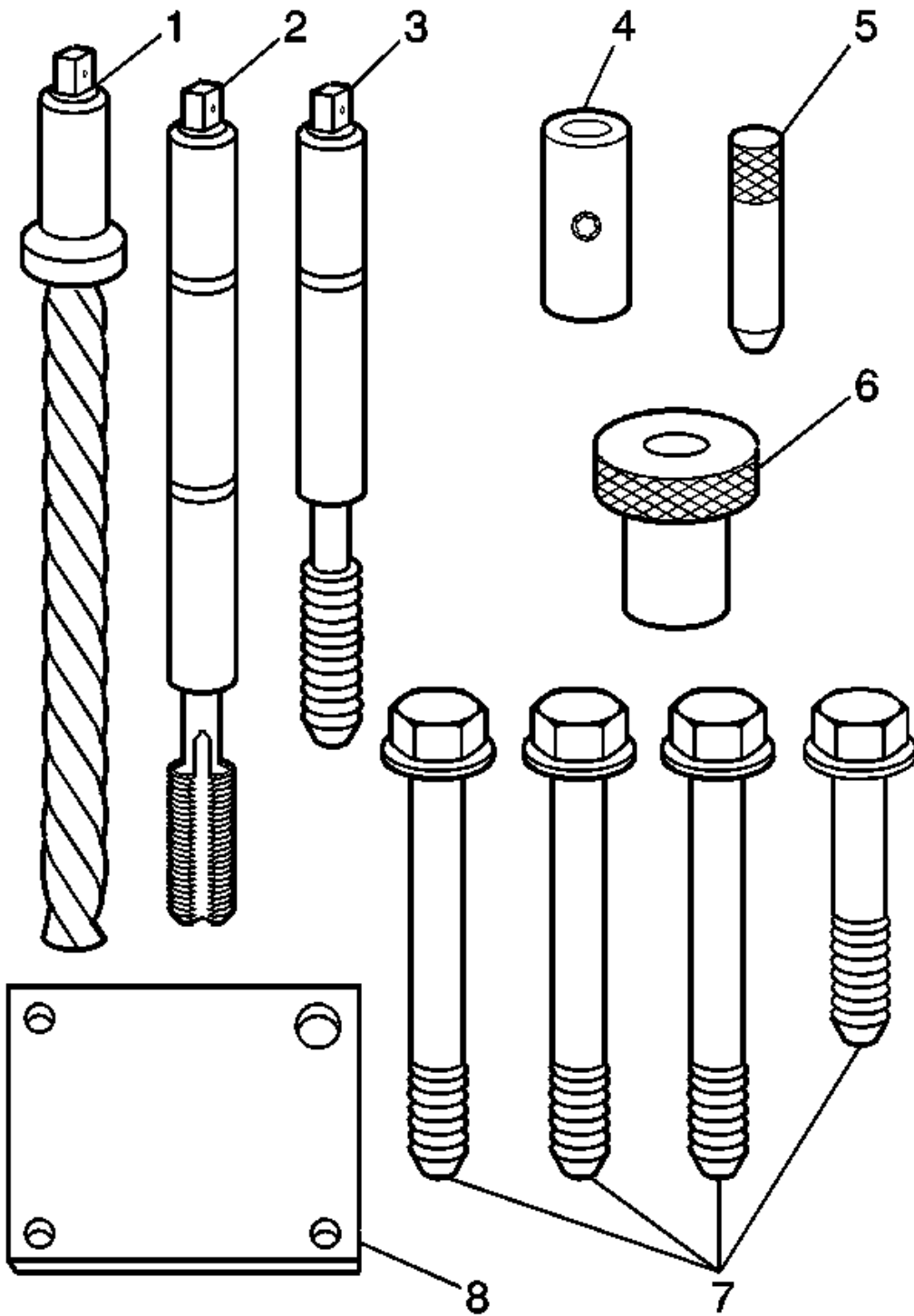
Fig. 143: View Of Bushing Type Insert & Base Material
Courtesy of GENERAL MOTORS CORP.

13. Inspect the insert for proper installation into the hole.

A properly installed insert (1) will be either flush or slightly below flush with the surface of the base material (2).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado



2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Fig. 144: Identifying Thread Repair Kit Components **Courtesy of GENERAL MOTORS CORP.**

1. The cylinder head bolt hole thread repair kit consists of the following items:
 - The drill (1)
 - The tap (2)
 - The installer (3)
 - The sleeve (4)
 - The alignment pin (5)
 - The bushing (6)
 - The bolts (7)
 - The fixture plate (8)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

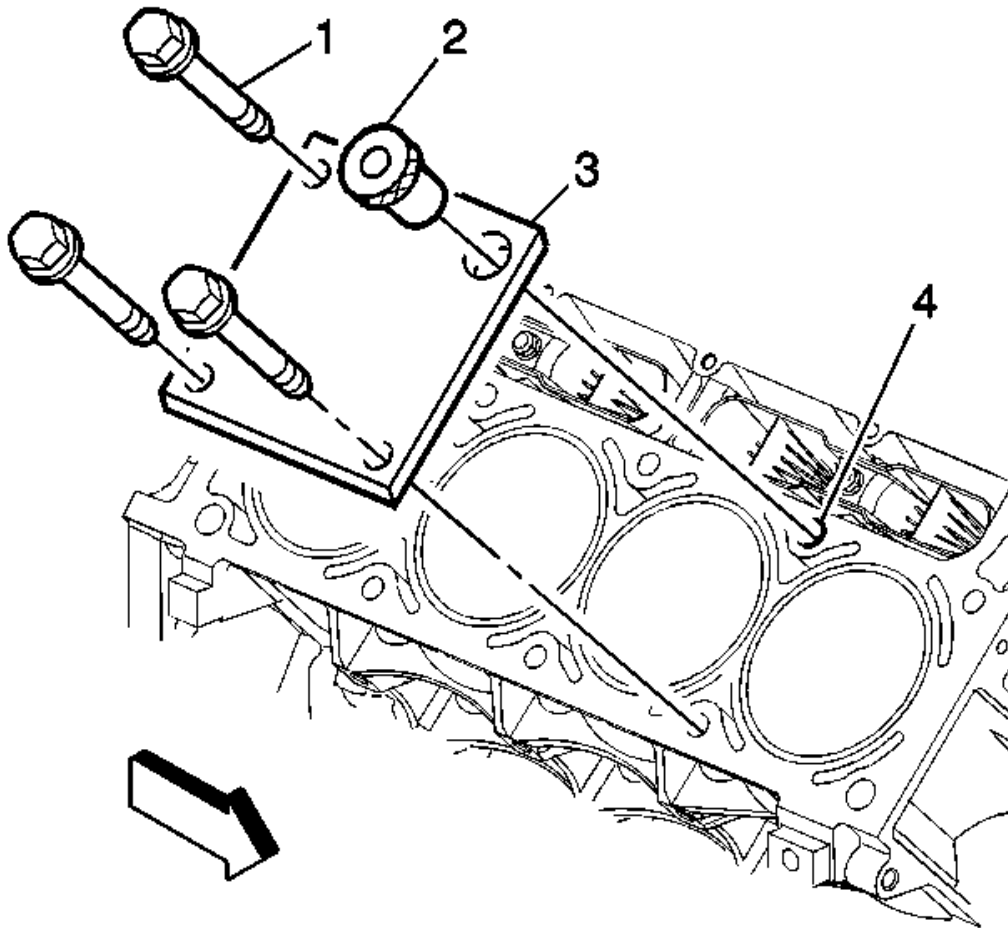


Fig. 145: View Of Fixture Plate, Bolts, Bushing & Cylinder Hole
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to Safety Glasses Caution .

IMPORTANT:

- The use of a cutting type fluid GM P/N 1052864 (Canadian P/N 992881), WD 40®, or equivalent, is recommended when performing the drilling and tapping procedures.
- Driver oil **MUST** be used on the installer driver tool.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- **The tool kits are designed for use with either a suitable tap wrench or drill motor.**

2. Install the fixture plate (3), bolts (1), and bushing (2) onto the engine block deck.

Position the fixture plate and bushing over the hole that is to be repaired (4).

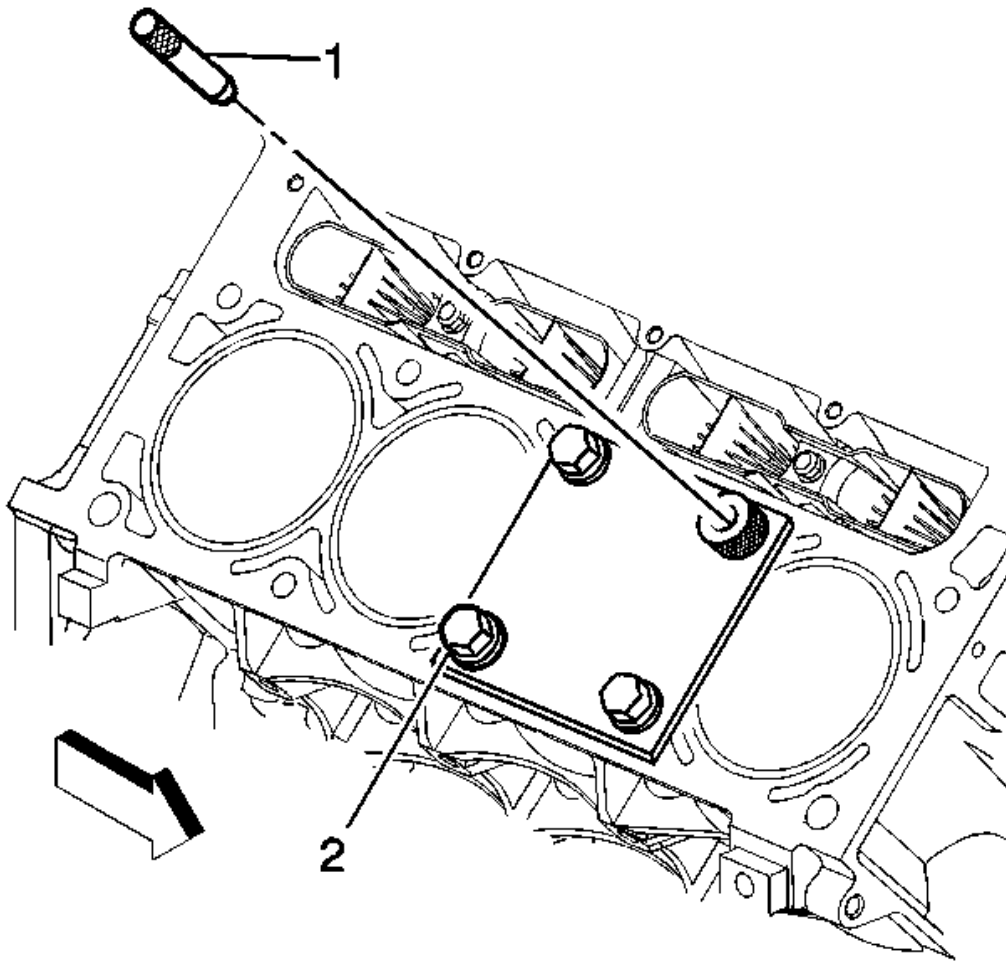


Fig. 146: View Of Alignment Pin & Fixture Retaining Bolts
Courtesy of GENERAL MOTORS CORP.

3. Position the alignment pin (1) through the bushing and into the hole.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

4. With the alignment pin in the desired hole, tighten the fixture retaining bolts (2).
5. Remove the alignment pin from the hole.

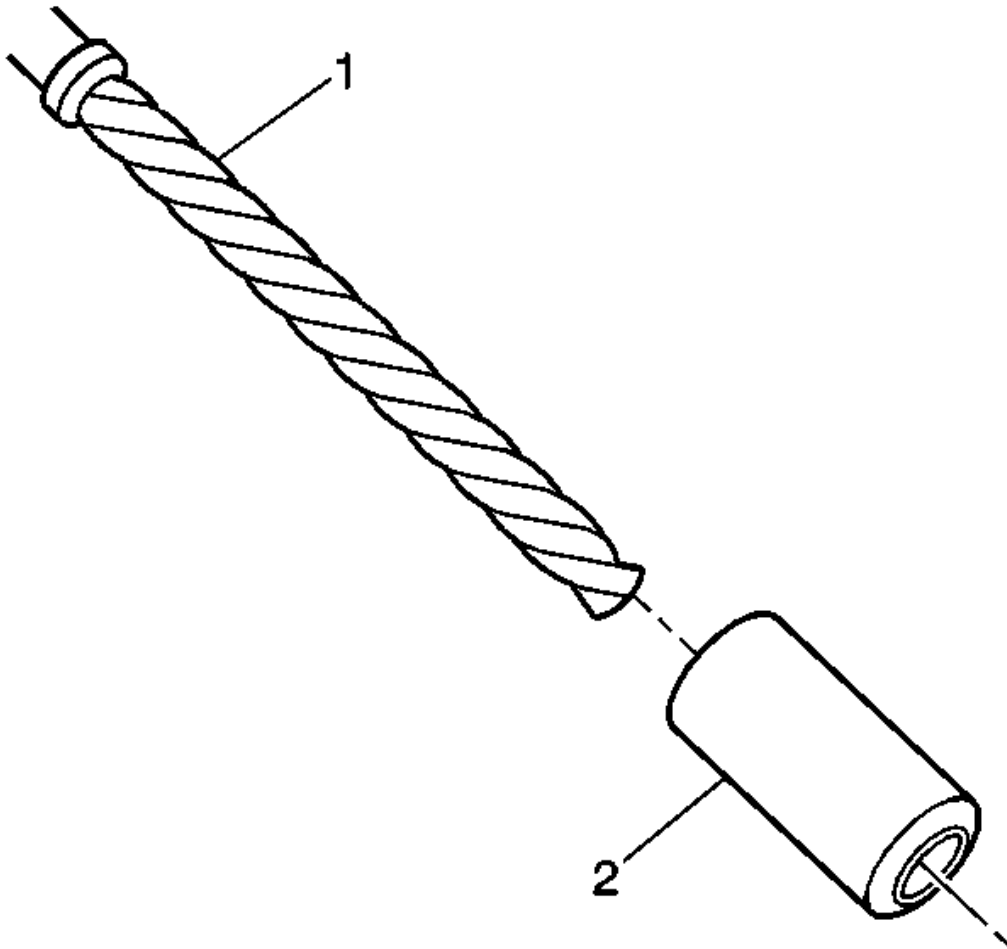


Fig. 147: View Of Stop Collar & Counterbore Drill
Courtesy of GENERAL MOTORS CORP.

6. Install the sleeve (2) onto the drill (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

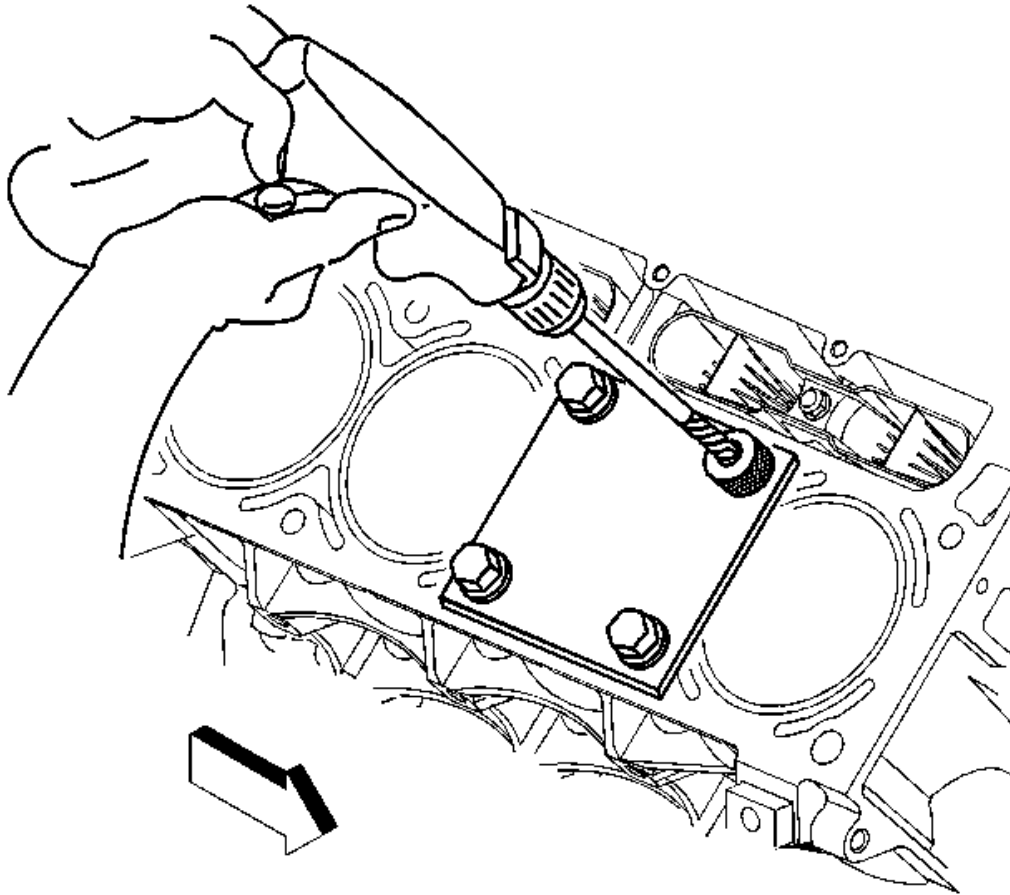


Fig. 148: Drilling Cylinder Head Bolt Hole
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: During the reaming process, it is necessary to repeatedly remove the drill and clean the chips from the hole.

7. Drill out the threads of the damaged hole.

Drill the hole until the stop collar of the drill bit or the sleeve contacts the bushing.

8. Using compressed air, clean out any chips.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

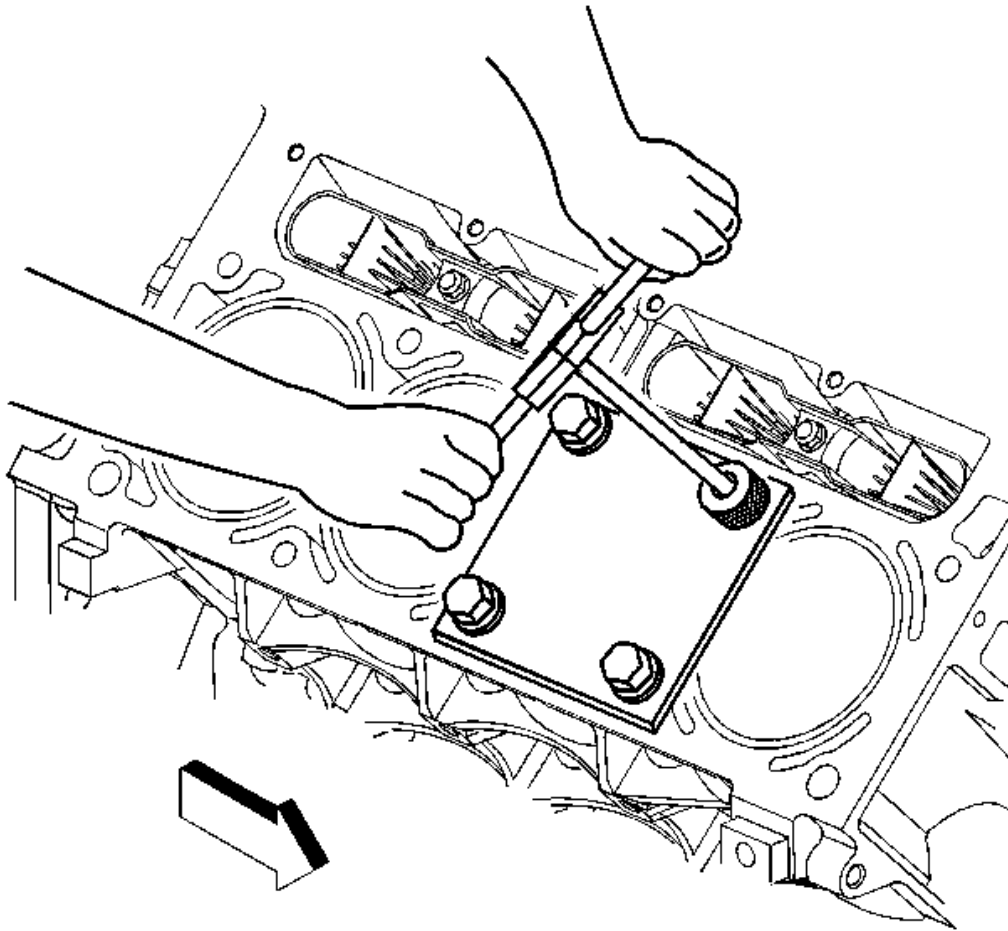


Fig. 149: Tapping Threads Of Drilled Hole Using Tapping Wrench
Courtesy of GENERAL MOTORS CORP.

9. Using a tap wrench, tap the threads of the drilled hole.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

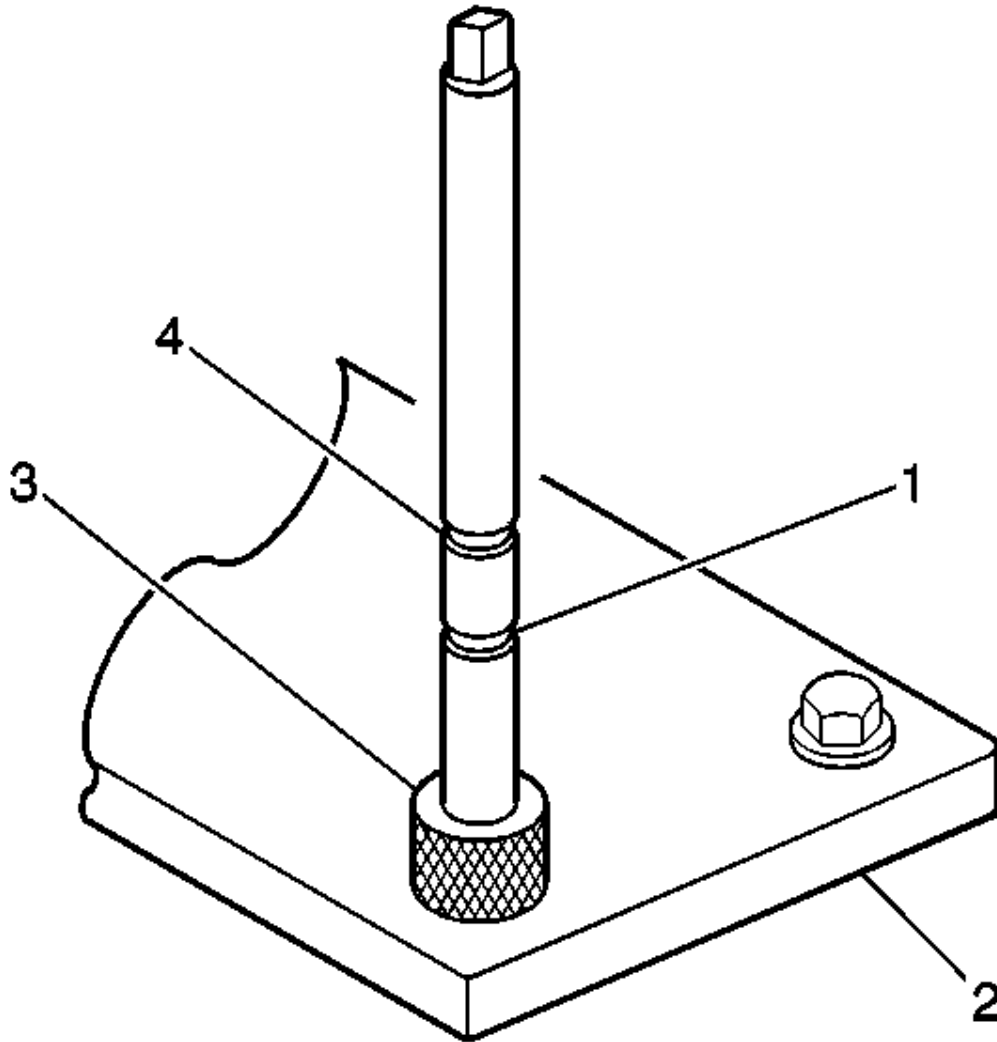


Fig. 150: View Of Tap Upper & Lower Marks, Fixture Plate & Bushing
Courtesy of GENERAL MOTORS CORP.

10. In order to tap the new threads to the proper depth, rotate the tap into the hole until the mark (1) on the tap aligns with the top of the drill bushing (3).
11. Remove the fixture plate (2), bushing (3), and bolts.
12. Using compressed air, clean out any chips.
13. Spray cleaner GM P/N 12346139, GM P/N 12377981 (Canadian P/N 10953463), or

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

equivalent, into the hole.

14. Using compressed air, clean any cutting oil and chips out of the hole.

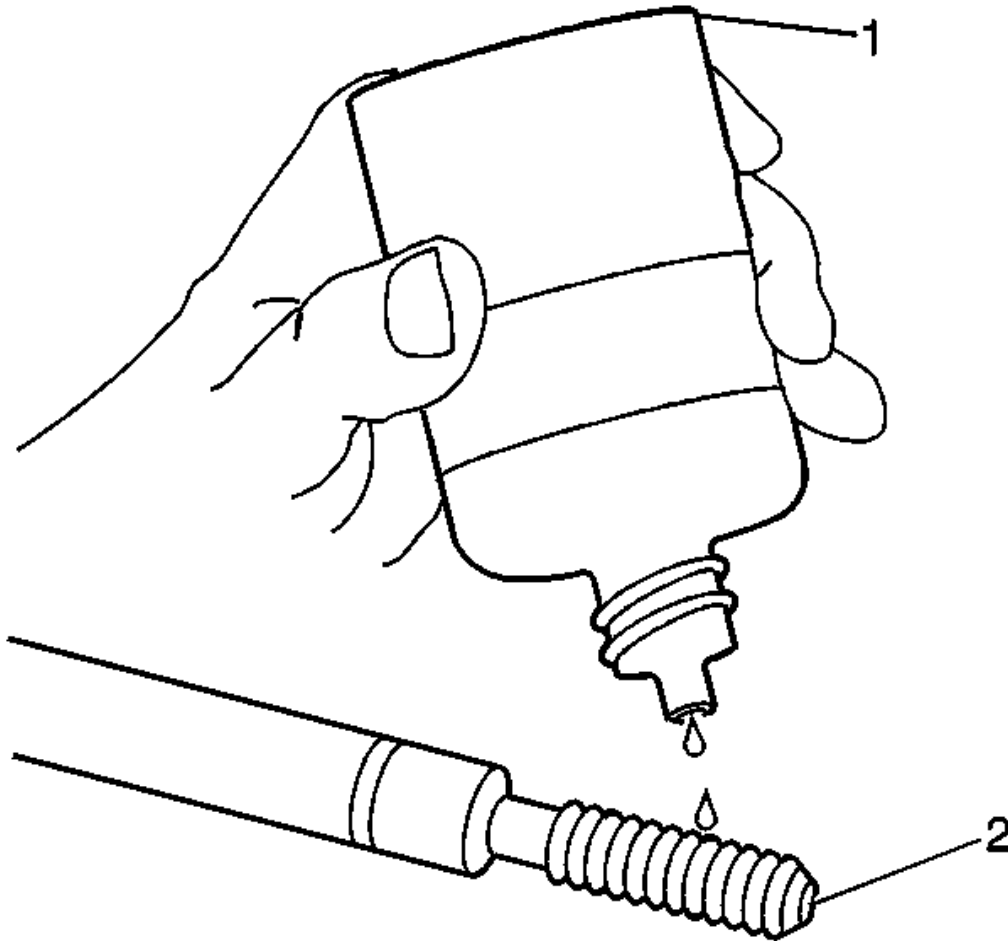


Fig. 151: Lubricating Installer Tool Using Driver Oil
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not allow oil or foreign material to contact the OD of the insert.

15. Lubricate the threads of the installer tool (2) with the driver oil (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado,
Sierra & Silverado

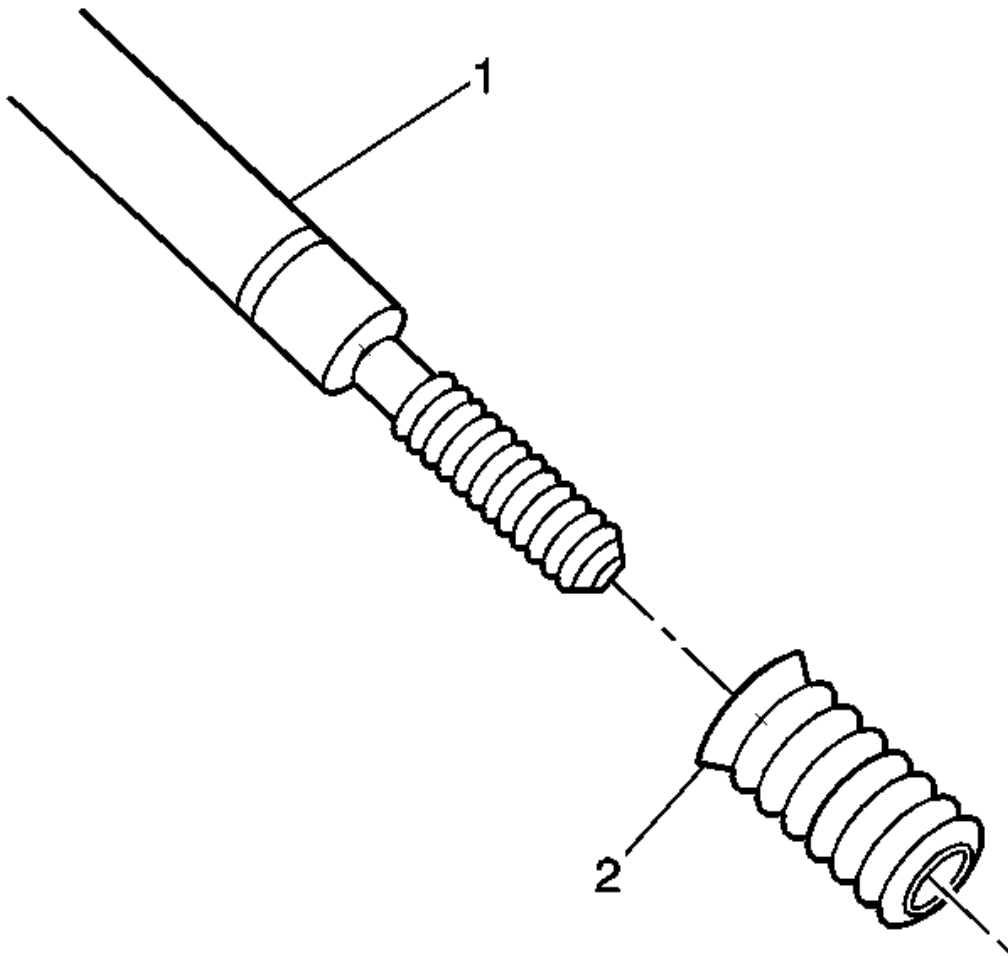


Fig. 152: View of Bushing Type Insert
Courtesy of GENERAL MOTORS CORP.

16. Install the insert (2) onto the driver tool (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

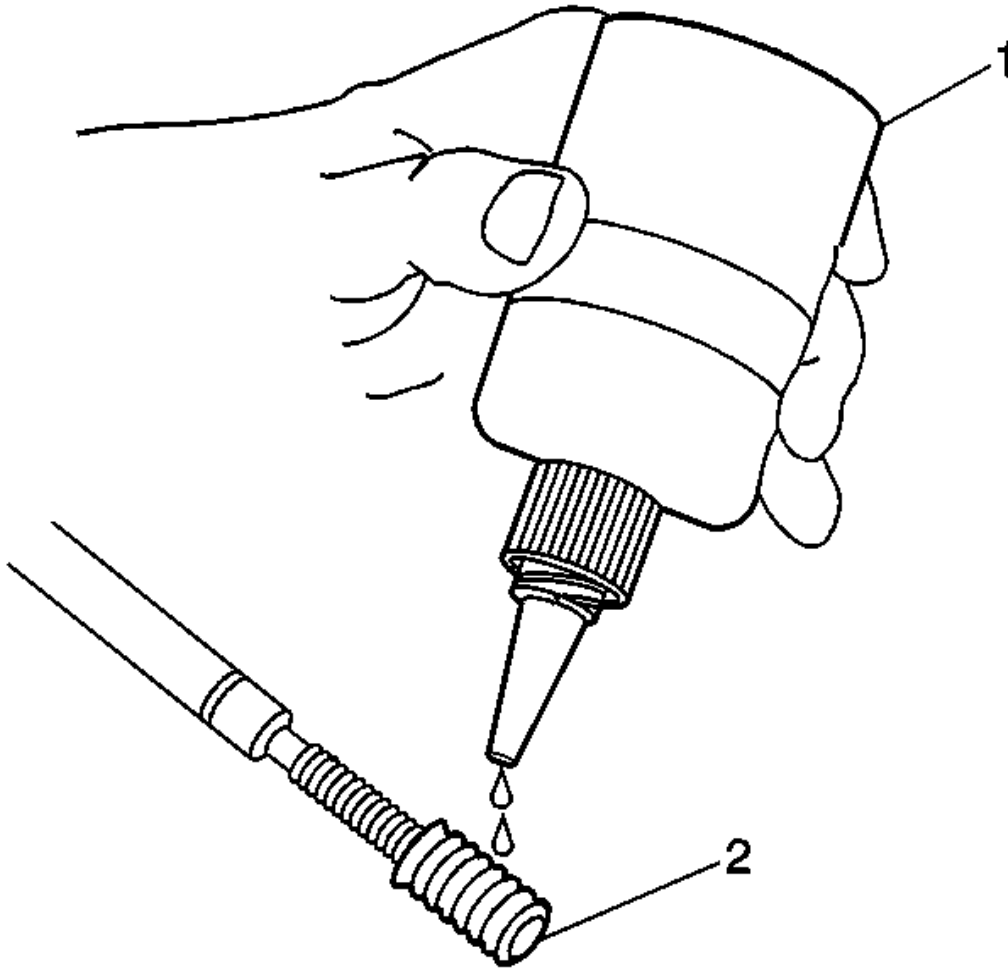


Fig. 153: Applying Threadlock To Insert
Courtesy of GENERAL MOTORS CORP.

17. Apply threadlock LOCTITE™ 277, J 42385-109 (1), or equivalent, to the insert OD threads (2).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

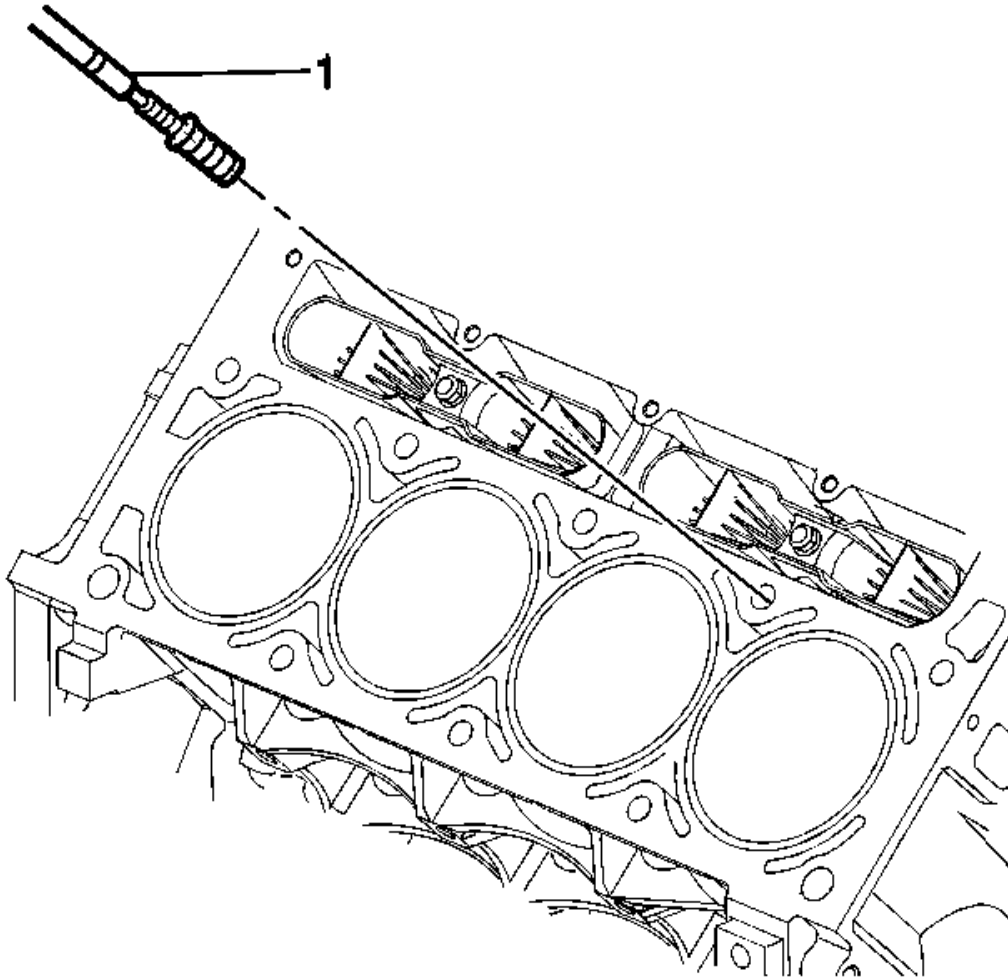


Fig. 154: Installing Insert & Driver Into Cylinder Bolt Hole
Courtesy of GENERAL MOTORS CORP.

18. Install the insert and driver (1) into the hole.

Rotate the driver tool until the mark on the tool aligns with the deck surface of the engine block.

The installer tool will tighten up before screwing completely through the insert. This is acceptable. You are forming the bottom threads of the insert and mechanically locking the insert to the base material threads.

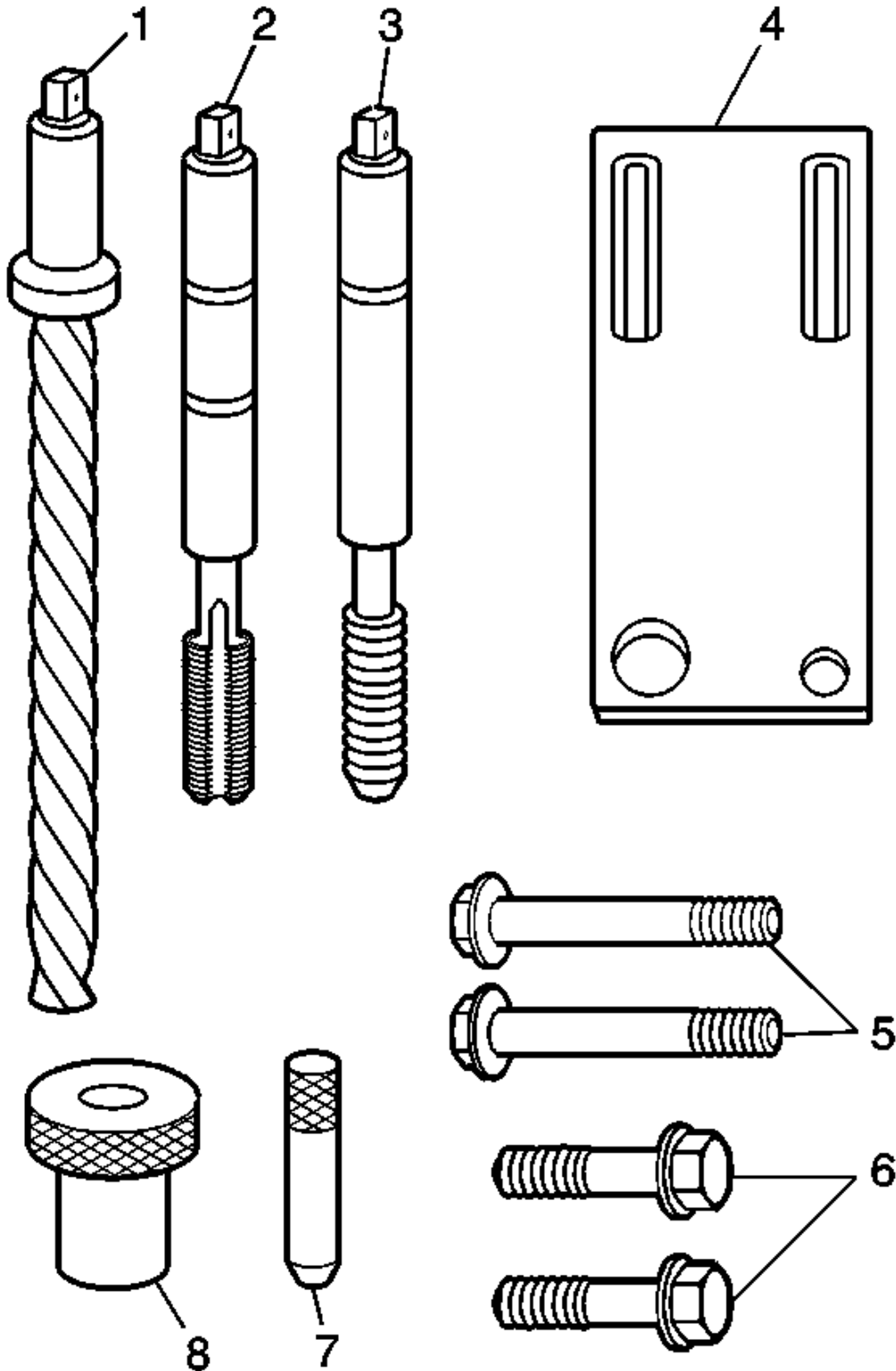
2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Main Cap Bolt Hole Thread Repair

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado



2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Fig. 155: Identifying Thread Repair Kit Components **Courtesy of GENERAL MOTORS CORP.**

1. The main cap bolt hole thread repair kit consists of the following items:
 - The drill (1)
 - The tap (2)
 - The installer (3)
 - The fixture plate (4)
 - The long bolts (5)
 - The short bolts (6)
 - The alignment pin (7)
 - The bushing (8)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

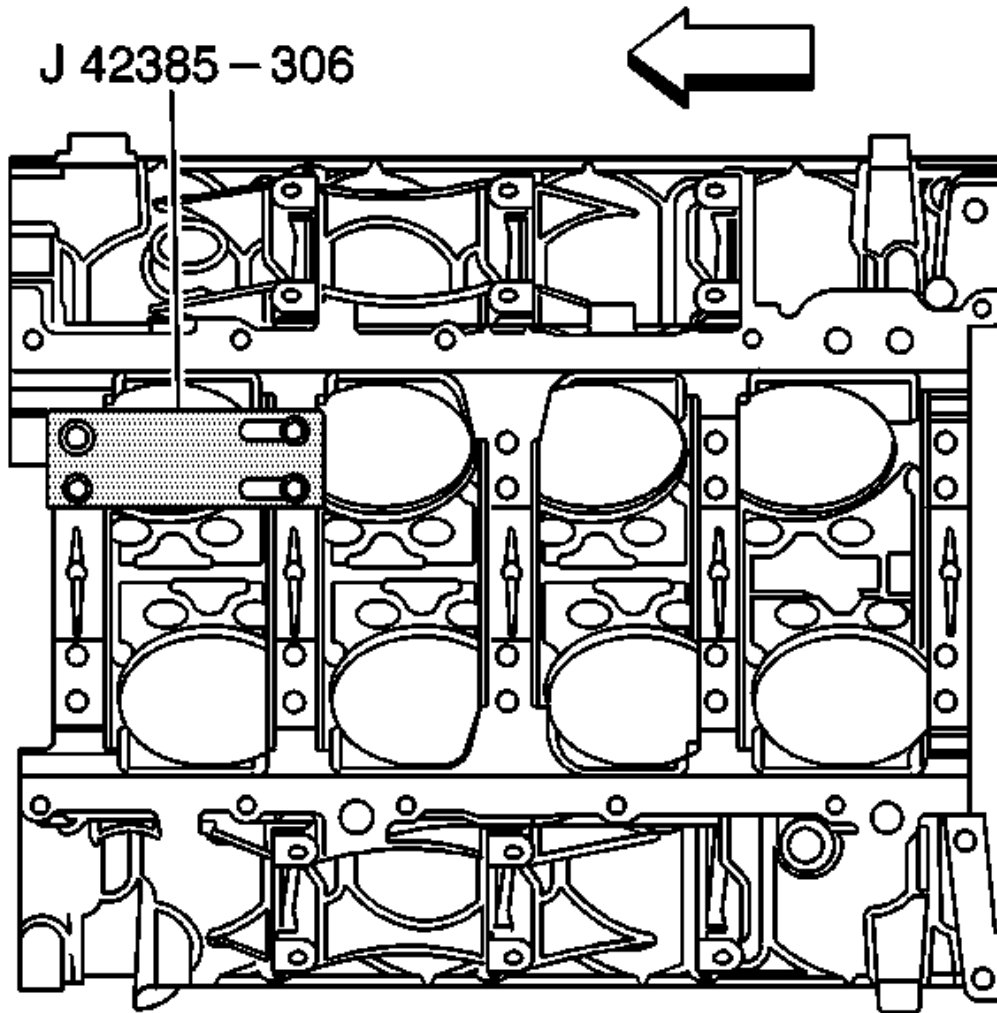


Fig. 156: View Of Fixture Plate, Bolt & Bushing
Courtesy of GENERAL MOTORS CORP.

2. Install the fixture plate, bolt, and bushing onto the engine block.
Position the fixture plate and bushing over the hole that is to be repaired.
3. Position the alignment pin in the desired hole and tighten the fixture retaining bolts.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

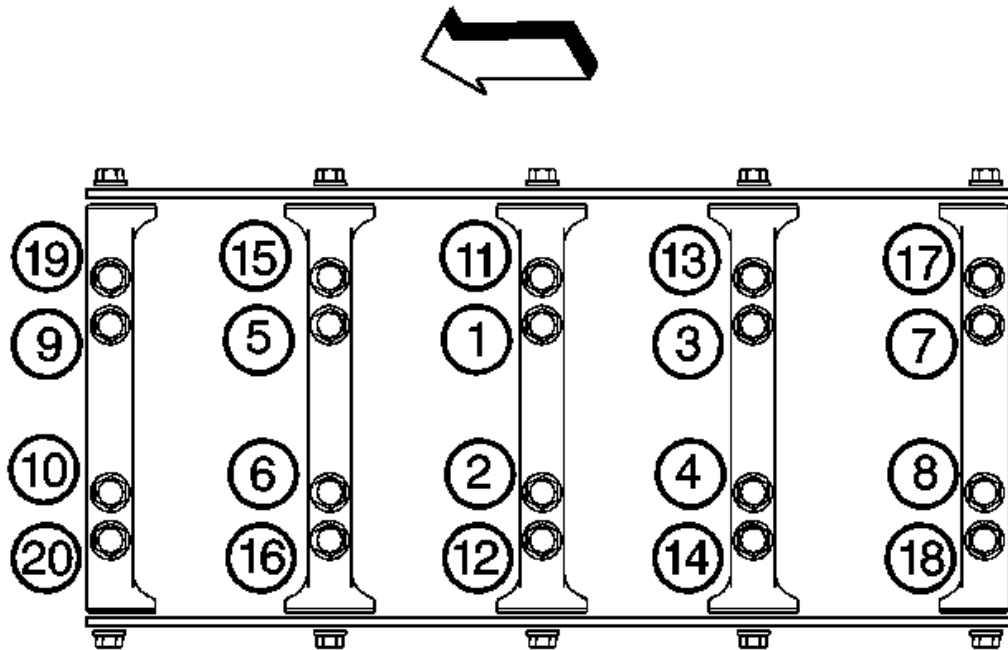


Fig. 157: Crankshaft Main Bearing Cap Bolt Tightening Sequence
Courtesy of GENERAL MOTORS CORP.

4. Drill out the damaged hole.

The outer bolt hole locations 11-20 have the shallower counterbores. Use sleeve J 42385-316 with the drill.

Drill until the stop collar of the drill bit or the sleeve contacts the bushing.

5. Using compressed air, clean out any chips.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

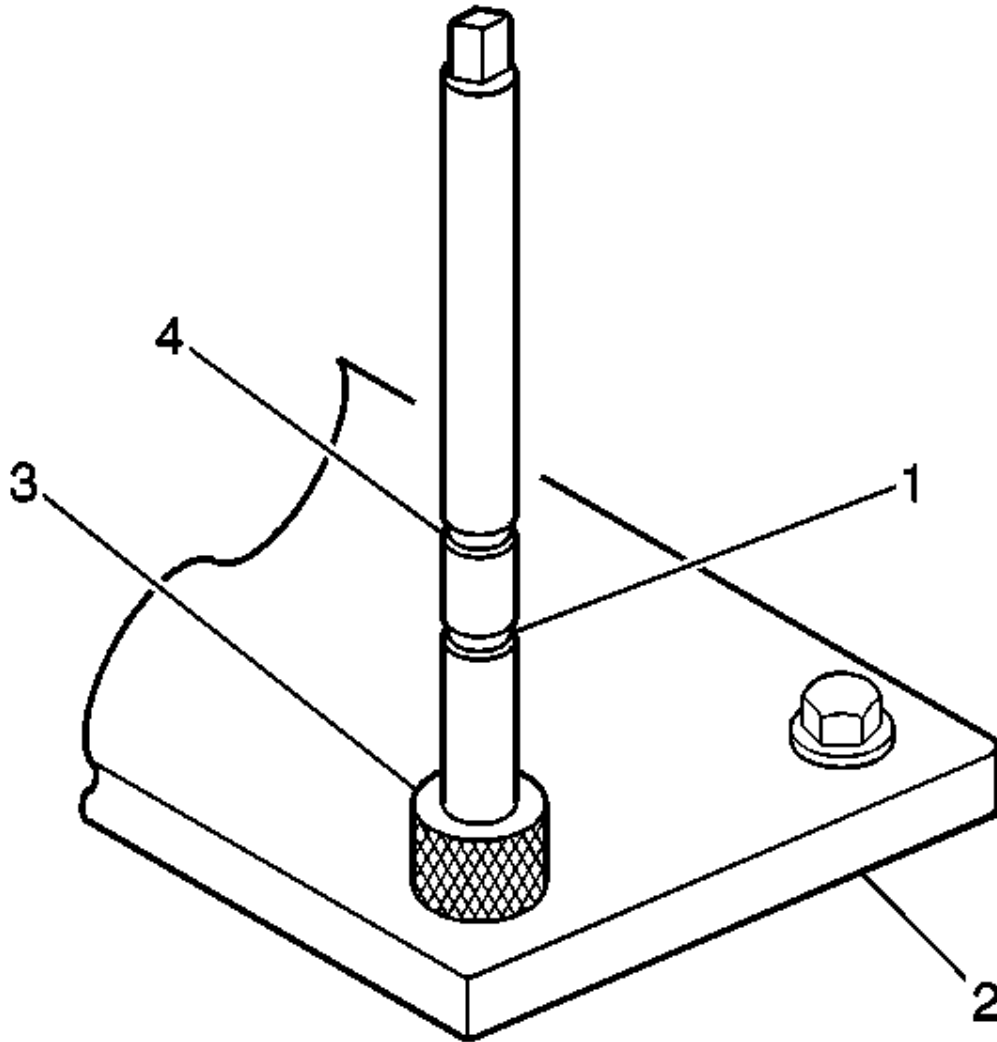


Fig. 158: View Of Tap Upper & Lower Marks, Fixture Plate & Bushing
Courtesy of GENERAL MOTORS CORP.

6. Using a tap wrench, tap the threads of the drilled hole.

In order to tap the new threads to the proper depth, rotate the tap into the hole until the mark on the tap aligns with the top of the bushing.

For the deeper main cap holes 1-10, rotate the tap until the upper mark (4) on the tap aligns

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

with the top of the bushing (3).

For the shallower main cap holes 11-20, rotate the tap until the lower mark (1) on the tap aligns with top of the bushing (3).

7. Using compressed air, clean out any chips.
8. Spray cleaner GM P/N 12346139 (Canadian P/N 10953463), or equivalent, into the hole.
9. Using compressed air, clean any cutting oil and chips out of the hole.

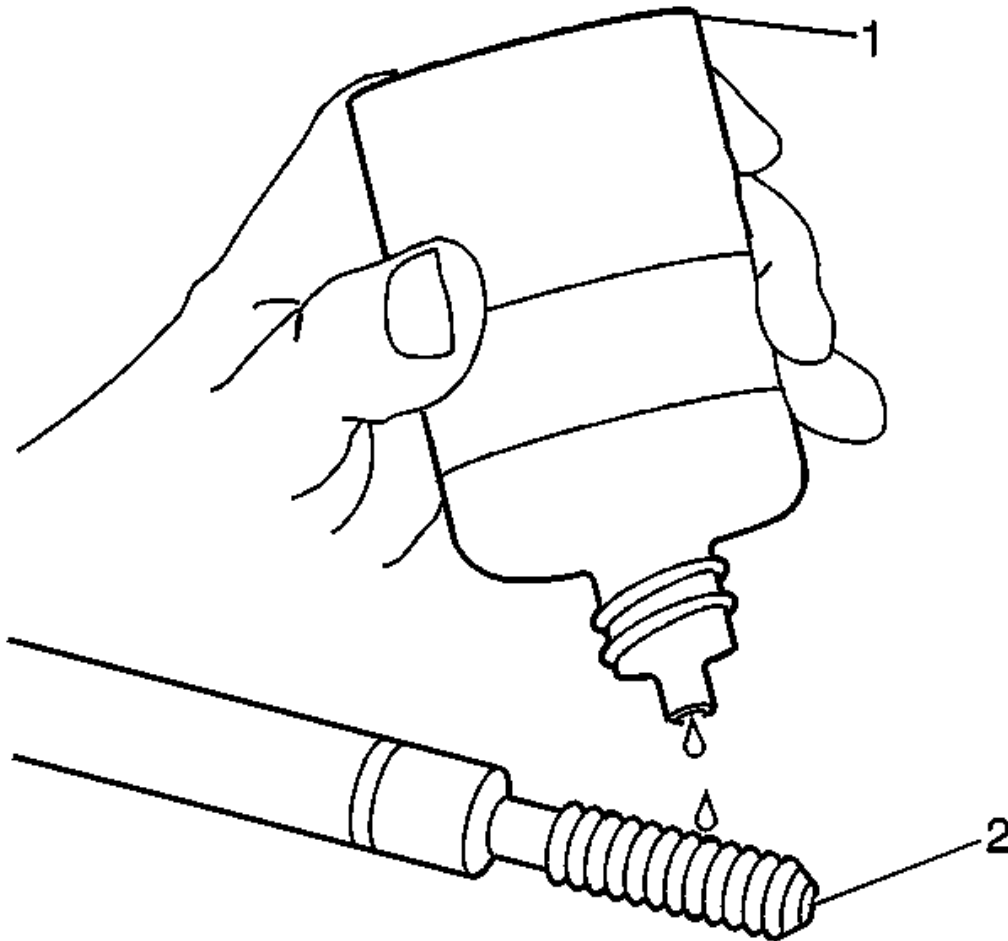


Fig. 159: Lubricating Installer Tool Using Driver Oil
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

IMPORTANT: Do not allow oil or foreign material to contact the OD of the insert.

10. Lubricate the threads of the installer tool (2) with the driver oil (1).

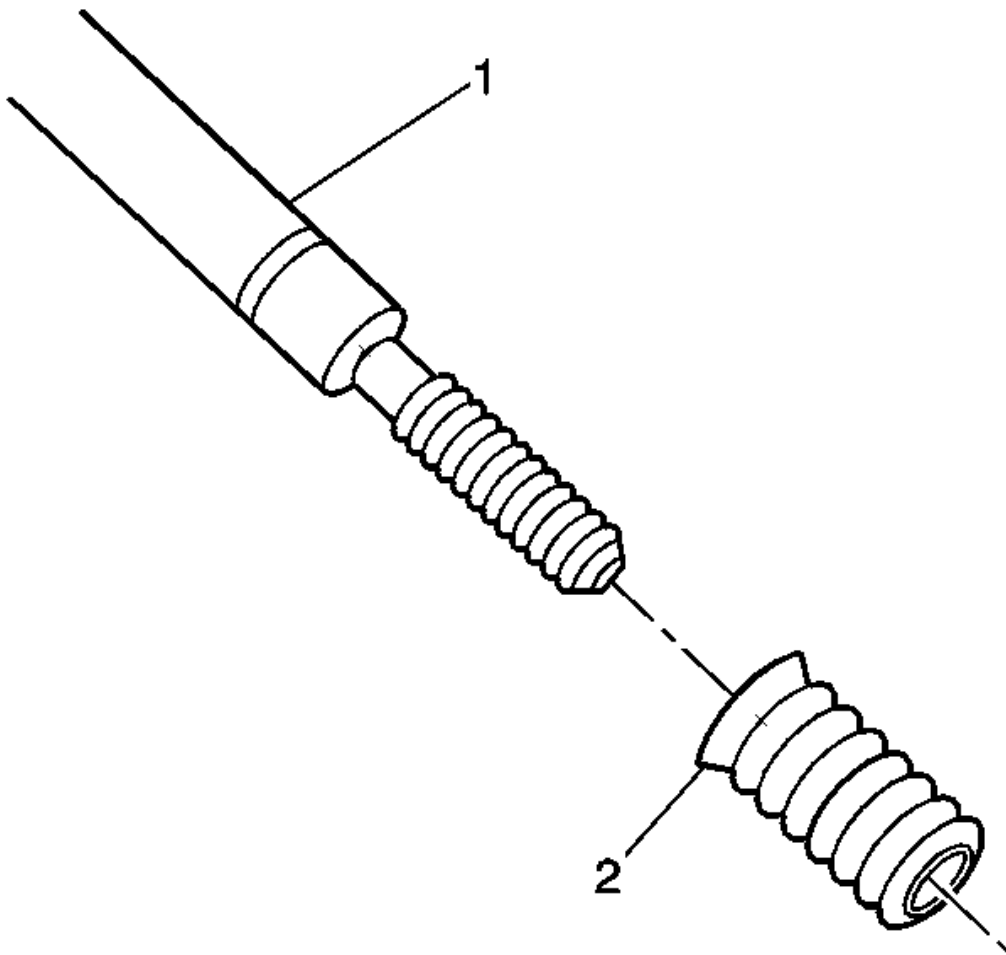


Fig. 160: View of Bushing Type Insert
Courtesy of GENERAL MOTORS CORP.

11. Install the insert (2) onto the driver tool (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

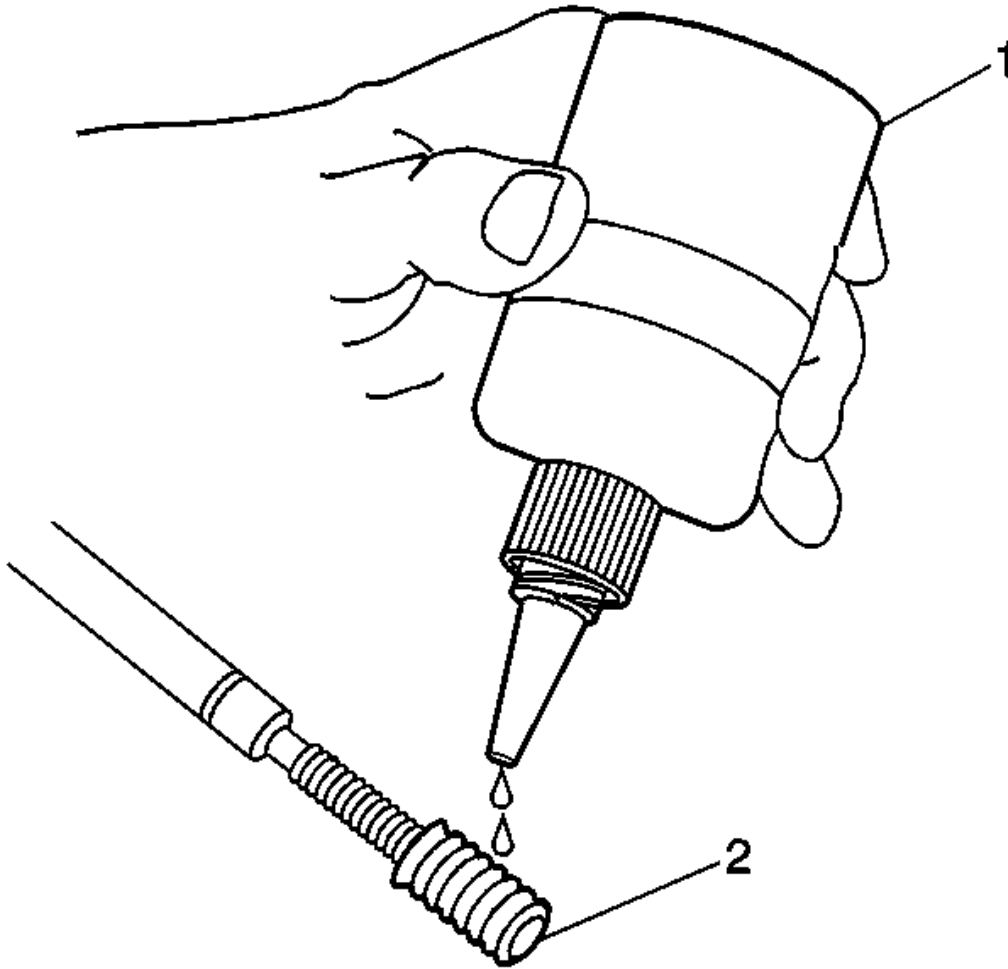


Fig. 161: Applying Threadlock To Insert
Courtesy of GENERAL MOTORS CORP.

12. Apply threadlock LOCTITE™ 277, J 42385-109 (1), or equivalent, to the insert OD threads (2).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

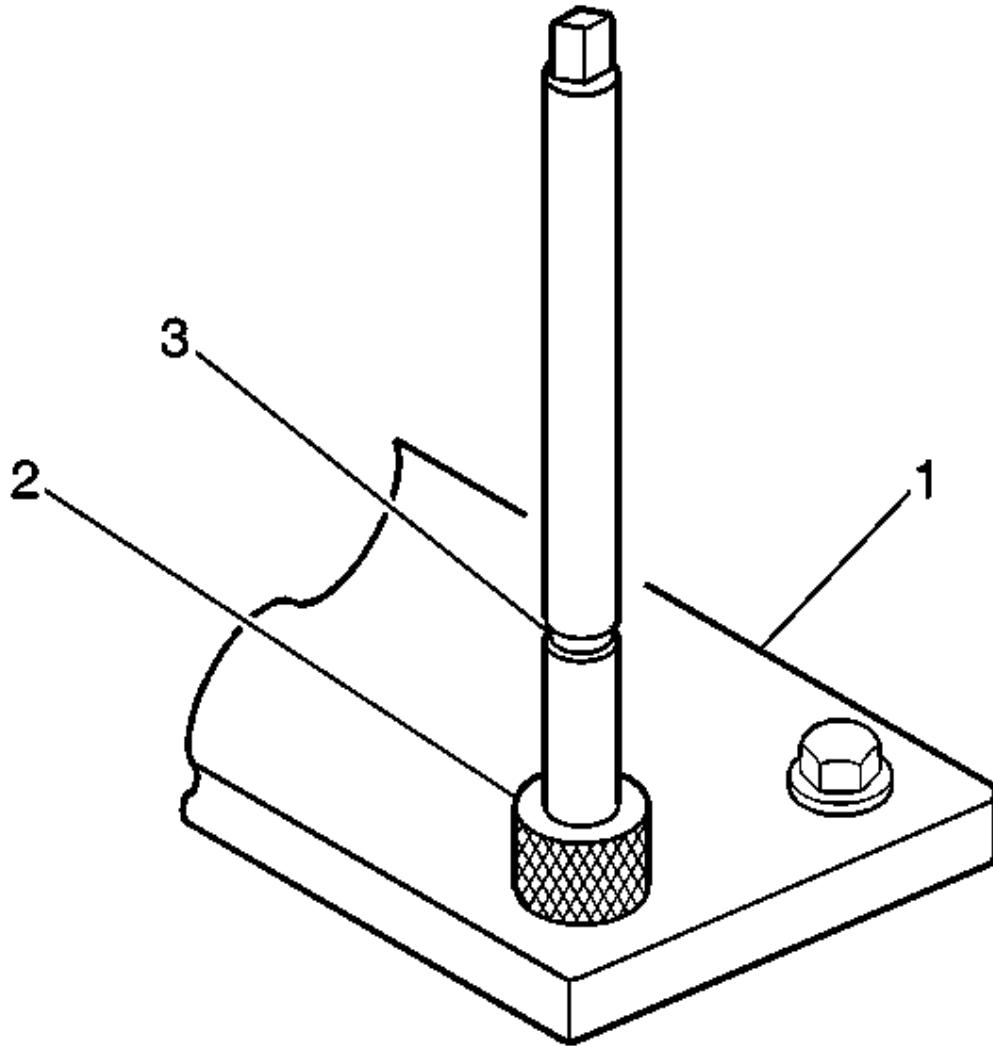


Fig. 162: View Of Fixture Plate, Drill Bushing & Tool Marking
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The fixture plate and bushing remains installed onto the engine block during the insert installation procedure.

13. Install the insert and driver (1) through the fixture plate and bushing and into the hole.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Rotate the driver tool until the mark on the tool (3) aligns with the top of the bushing (2).

The installer tool will tighten up before screwing completely through the insert. This is acceptable. You are forming the bottom threads of the insert and mechanically locking the insert to the base material threads.

SERVICE PRIOR TO ASSEMBLY

- Dirt or debris will cause premature wear of the rebuilt engine. Clean all components. Refer to **Cleanliness and Care** .
- Use the proper tools to measure components when inspecting for excessive wear. Components that are not within the manufacturers specifications must be repaired or replaced.
- When the components are installed into an engine, return the components to their original location, position and direction. Refer to **Separating Parts** .
- During assembly, lubricate all moving parts with clean engine oil. This provides initial lubrication when the engine is first started.

ENGINE BLOCK PLUG INSTALLATION

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

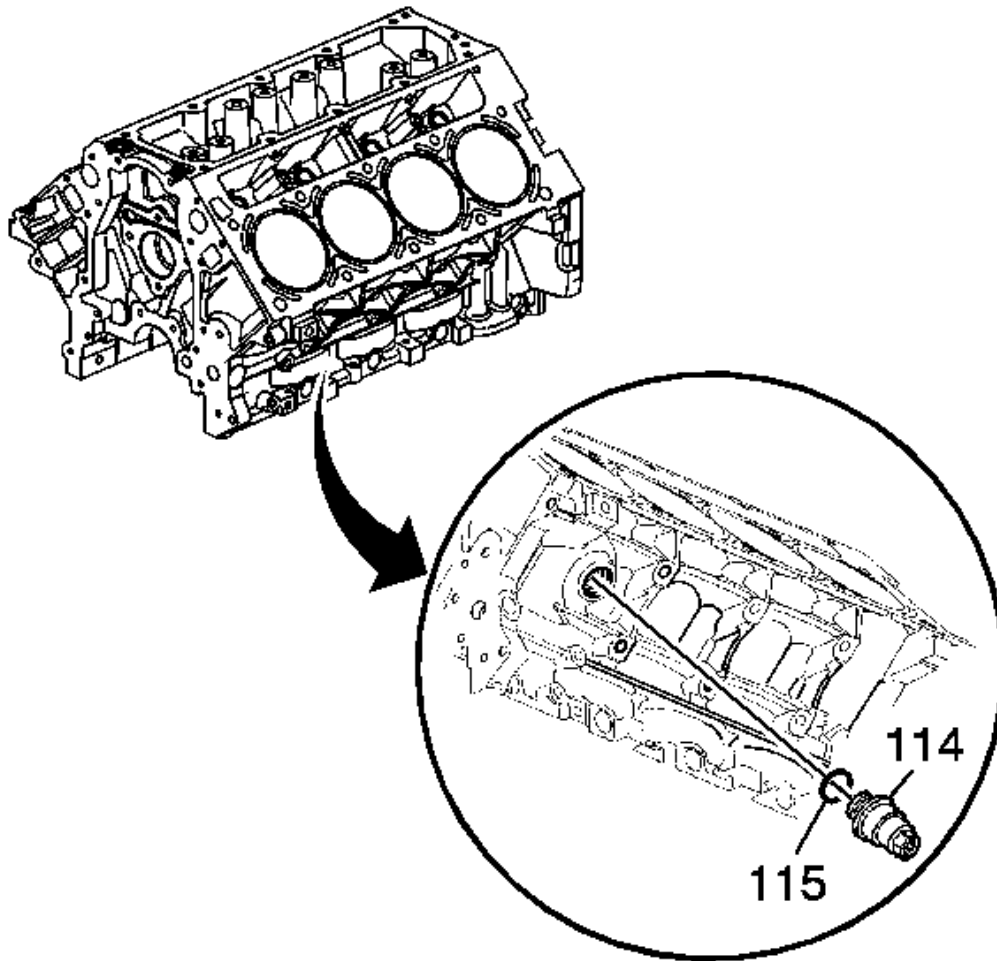


Fig. 163: Identifying Engine Block Coolant Heater
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Engine block plug, oil gallery, and coolant sealing washers may be used again if not bent, scored or otherwise damaged.

1. Apply a 3.175 mm (0.125 in) bead of sealant GM P/N 12346004 (Canadian P/N 10953480) to the engine block coolant heater sealing washer (115), if applicable. Refer to **Sealers, Adhesives, and Lubricants** .

NOTE: Refer to Fastener Notice .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Install the engine block coolant heater (114) to the engine block.

Tighten: Tighten the engine block coolant heater to 50 N.m (37 lb ft).

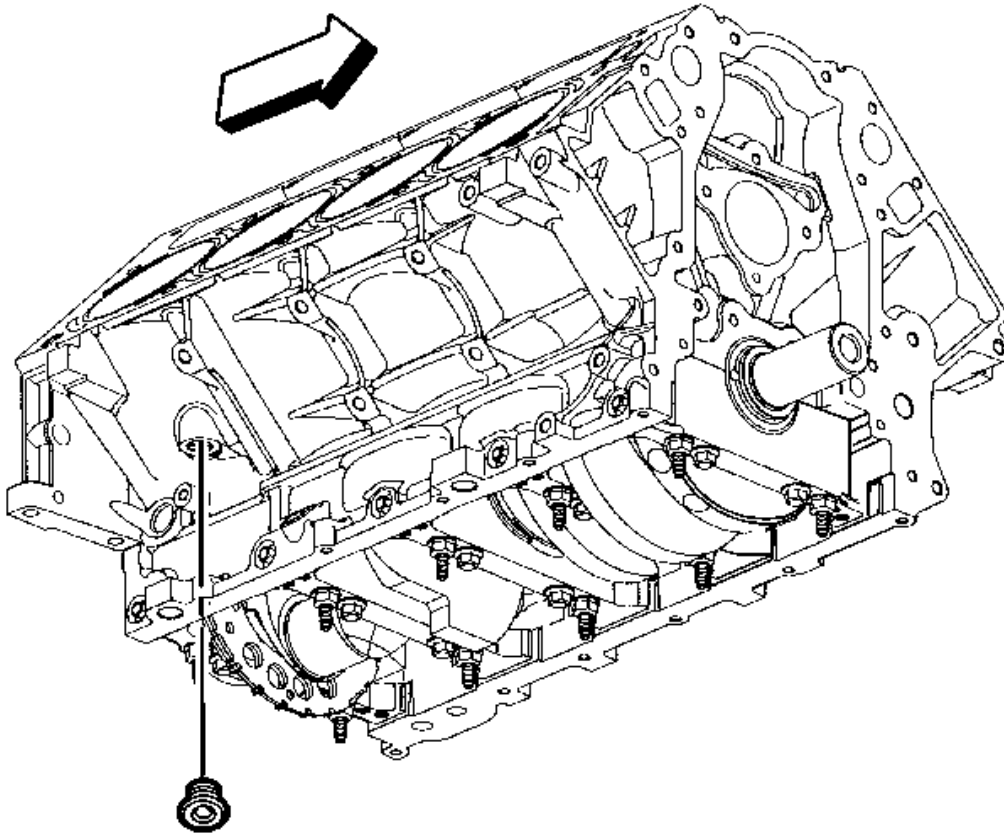


Fig. 164: Identifying Plug Location On Underside Of Block
Courtesy of GENERAL MOTORS CORP.

3. Apply a 3.175 mm (0.125 in) bead of sealant GM P/N 12346004 (Canadian P/N 10953480) to the engine block right rear coolant drain hole plug sealing washer.
4. Install the engine block right rear coolant drain hole plug.

Tighten: Tighten the engine block right rear coolant drain hole plug to 60 N.m (44 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

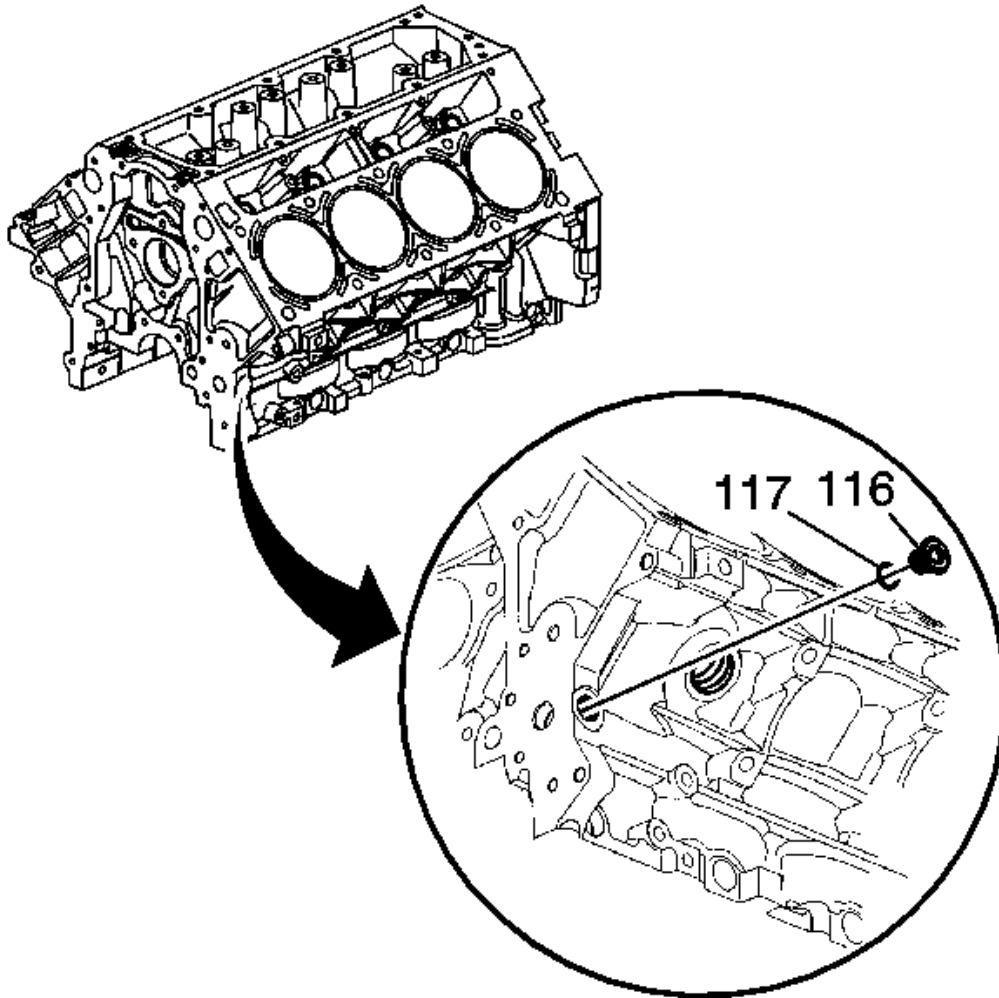


Fig. 165: Locating Engine Block Left Front Oil Gallery Plug & Seal
Courtesy of GENERAL MOTORS CORP.

5. Apply a 3.175 mm (0.125 in) bead of sealant GM P/N 12346004 (Canadian P/N 10953480) to the engine block left front oil gallery plug sealing washer (117).
6. Install the engine block left front oil gallery plug (116).

Tighten: Tighten the engine block left front oil gallery plug to 60 N.m (44 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

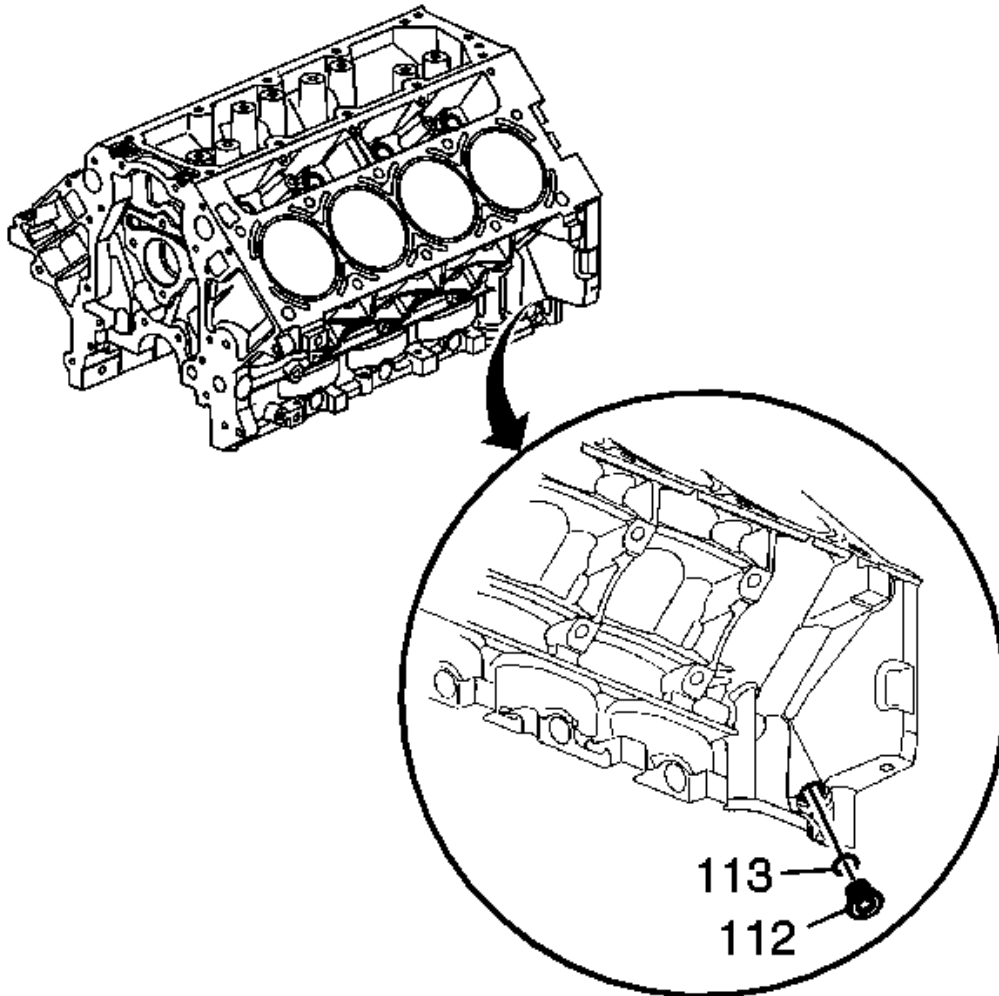


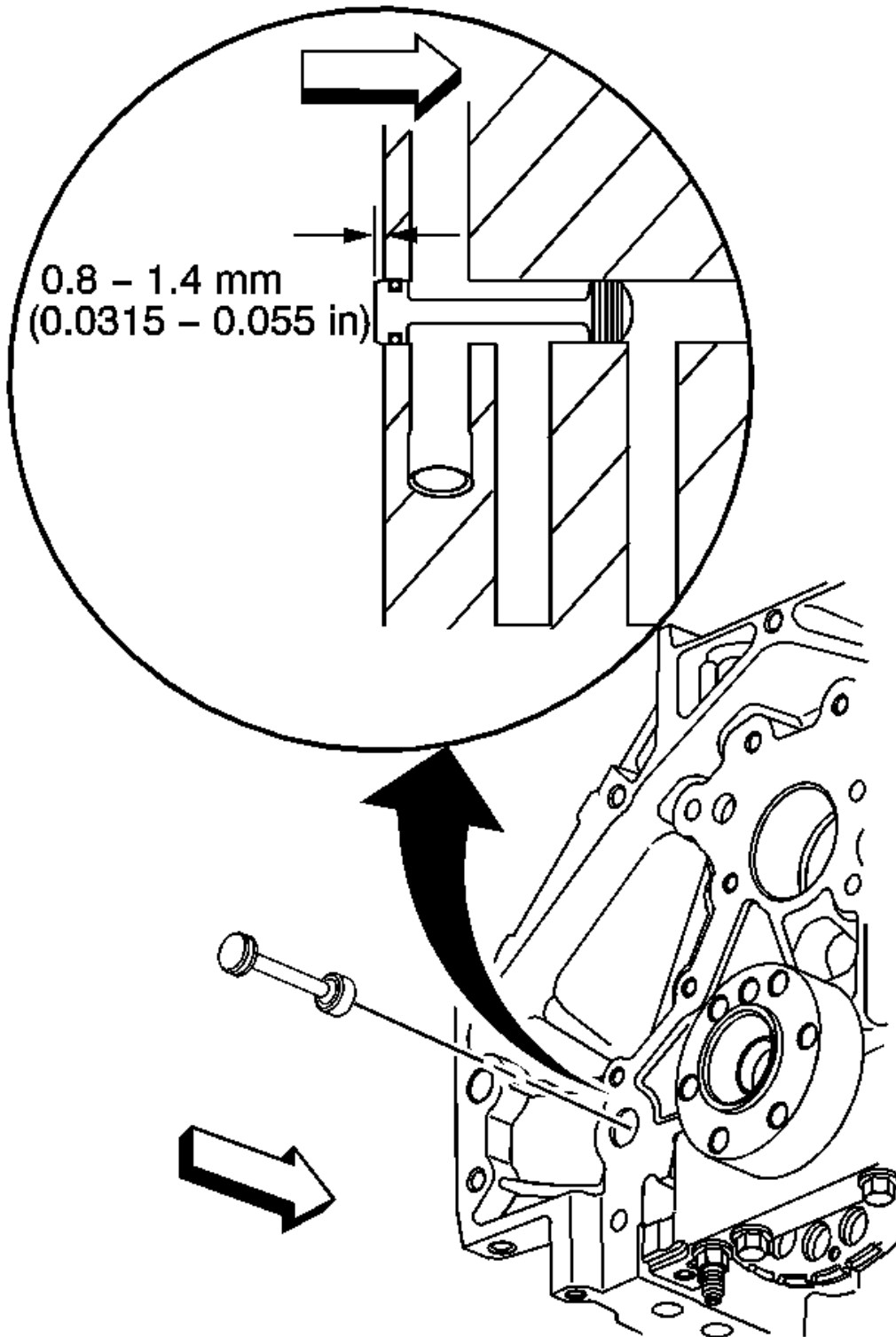
Fig. 166: Locating Engine Block Left Rear Oil Gallery Plug & Seal
Courtesy of GENERAL MOTORS CORP.

7. Apply a 3.175 mm (0.125 in) bead of sealant GM P/N 12346004 (Canadian P/N 10953480) to the engine block left rear oil gallery plug sealing washer (113).
8. Install the engine block left rear oil gallery plug (112).

Tighten: Tighten the engine block left rear oil gallery plug to 60 N.m (44 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

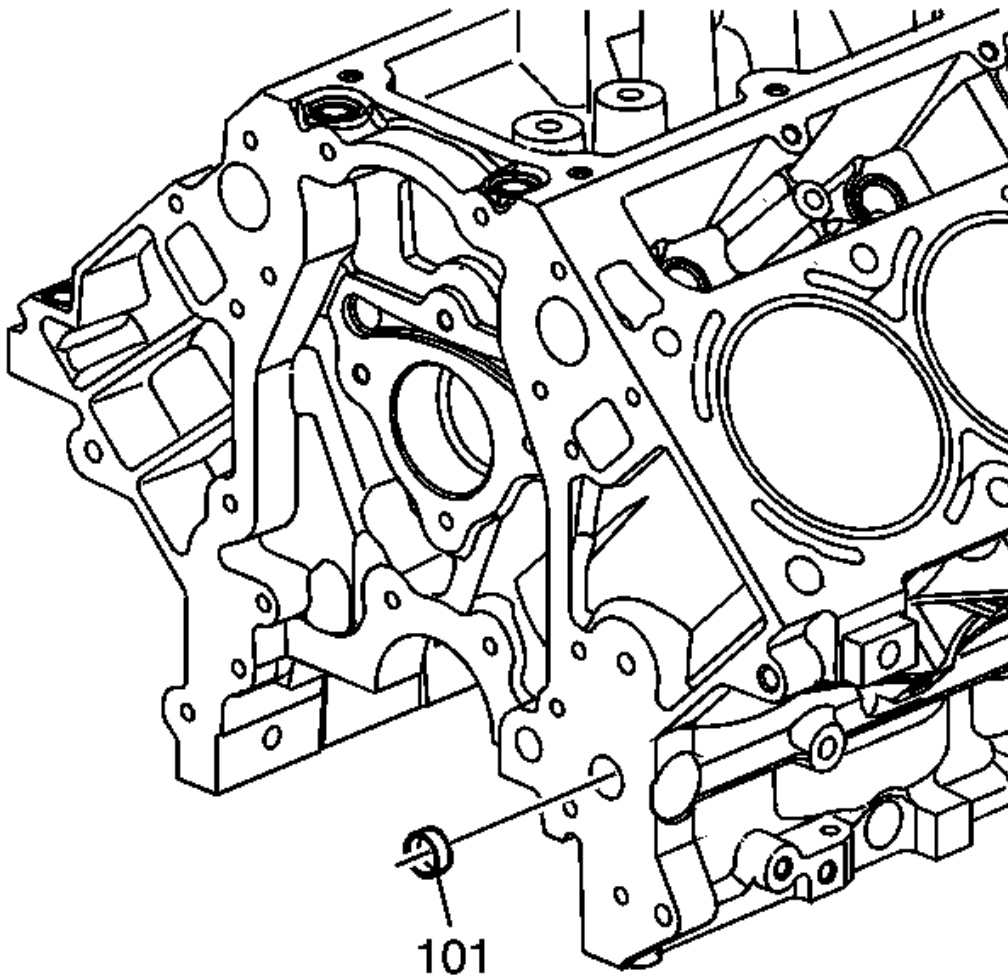


2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Fig. 167: View Of Engine Block Rear Oil Gallery Plug **Courtesy of GENERAL MOTORS CORP.**

9. Inspect the engine block rear oil gallery plug and O-ring seal. If the O-ring seal on the plug is not cut or damaged, the rear oil gallery plug may be used again.
10. Lubricate the O-ring seal with clean engine oil.
11. Install the O-ring seal onto the plug.
12. Install the engine block rear oil gallery plug into the oil gallery bore. A properly installed block plug will protrude 0.8-1.4 mm (0.0315-0.055 in) beyond the rear face of the block.



2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Fig. 168: View Of Engine Block Front Oil Gallery Plug
Courtesy of GENERAL MOTORS CORP.

13. Apply threadlock GM P/N 12345382 (Canadian P/N 10953489) to the sides of the NEW front oil gallery plug (101).

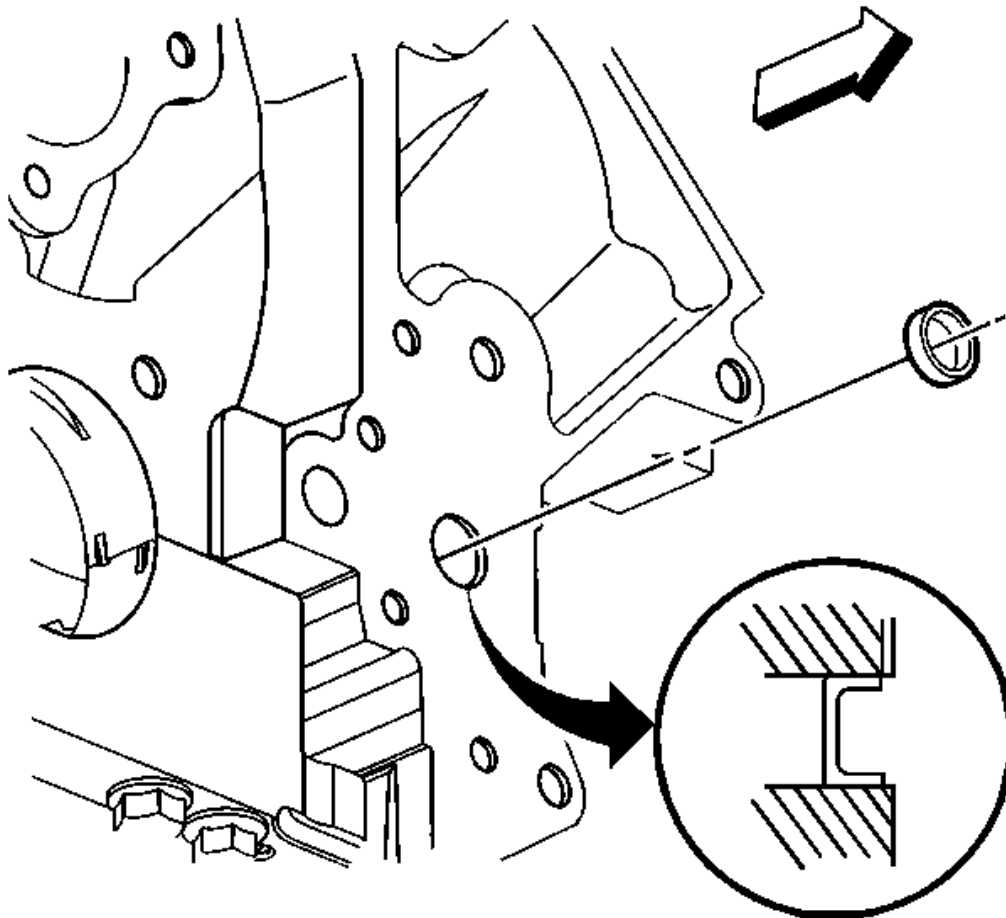


Fig. 169: View Of Engine Block Front Oil Gallery Plug
Courtesy of GENERAL MOTORS CORP.

14. Install a NEW engine block front oil gallery plug. Install the plug into the oil gallery bore 2.2-2.8 mm (0.0086-0.011 in) below flush.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

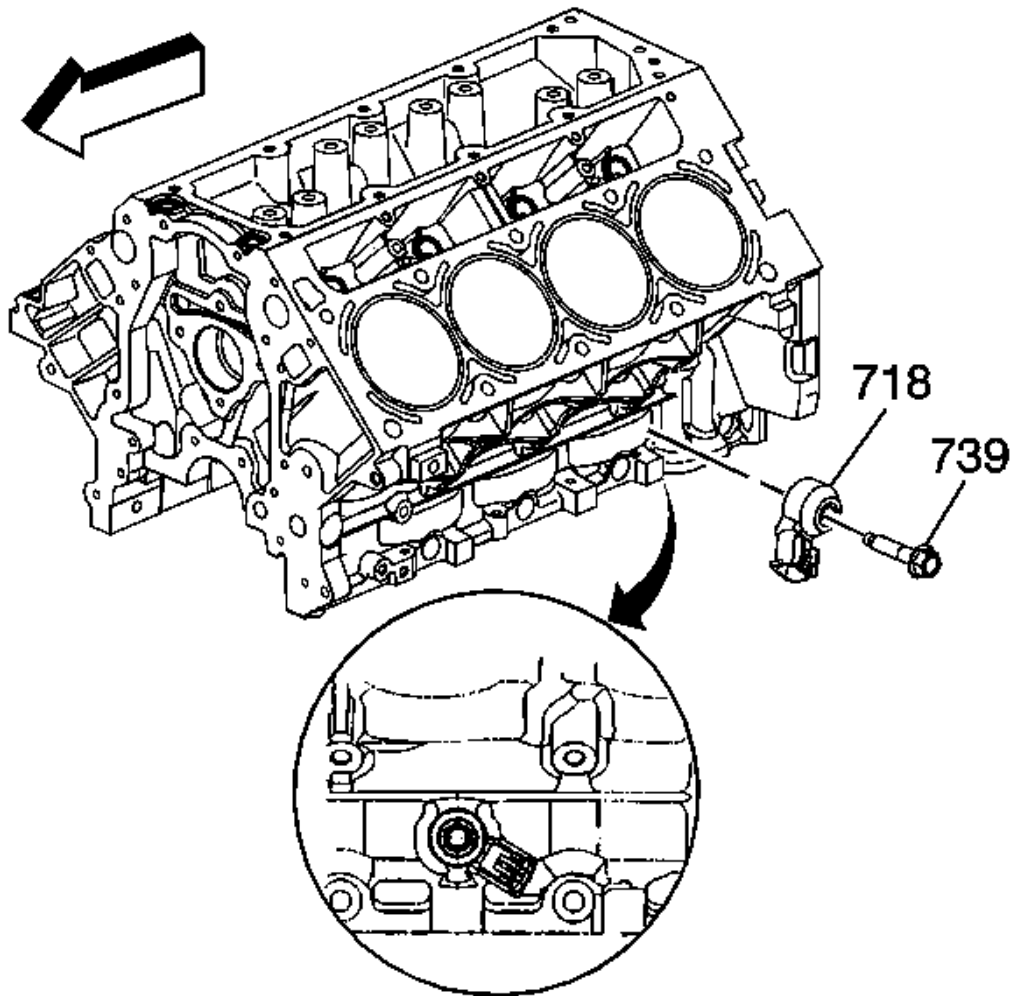


Fig. 170: Left Side Knock Sensor & Bolt
Courtesy of GENERAL MOTORS CORP.

15. Install the left side knock sensor (718) and bolt (739).

Tighten: Tighten the bolt to 20 N.m (15 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

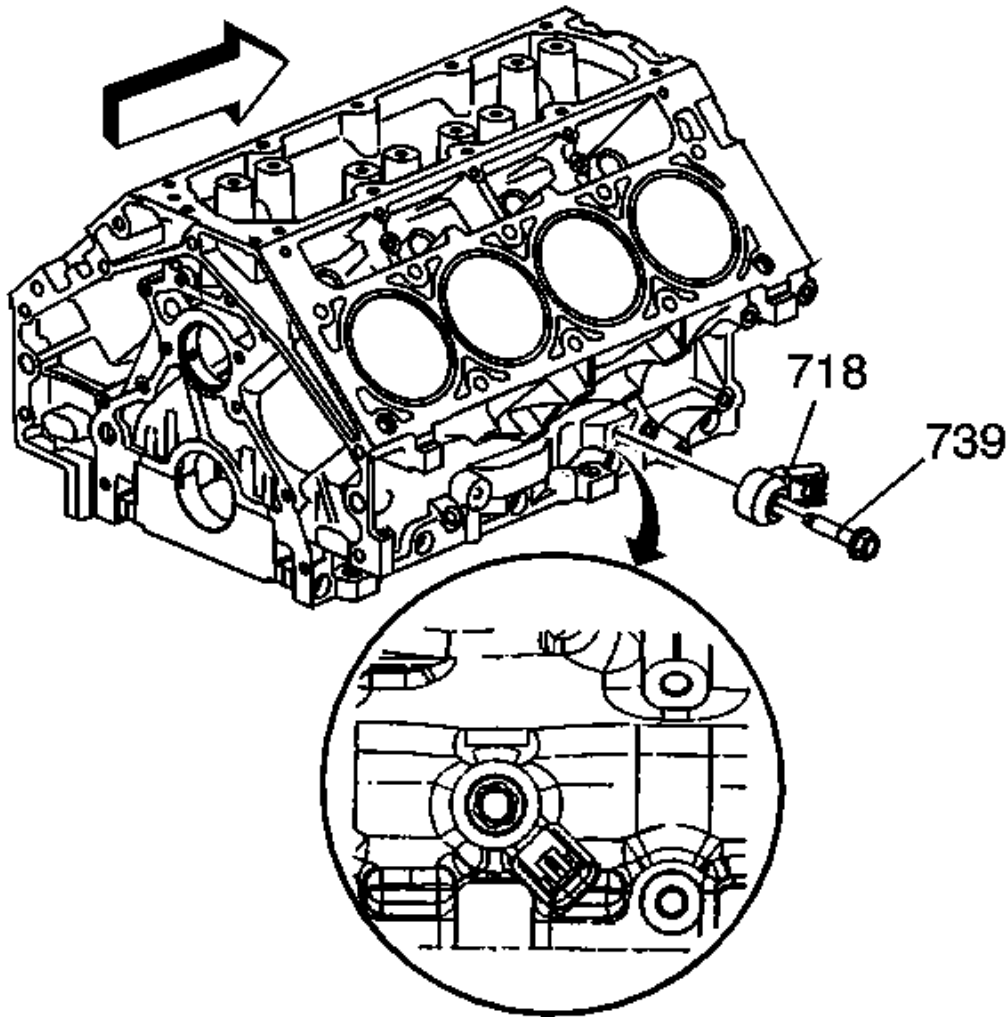


Fig. 171: Right Side Knock Sensor & Bolt
Courtesy of GENERAL MOTORS CORP.

16. Install the right side knock sensor (718) and bolt (739).

Tighten: Tighten the bolt to 20 N.m (15 lb ft).

CRANKSHAFT AND BEARING INSTALLATION

Tools Required

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

J 45059 Angle Meter

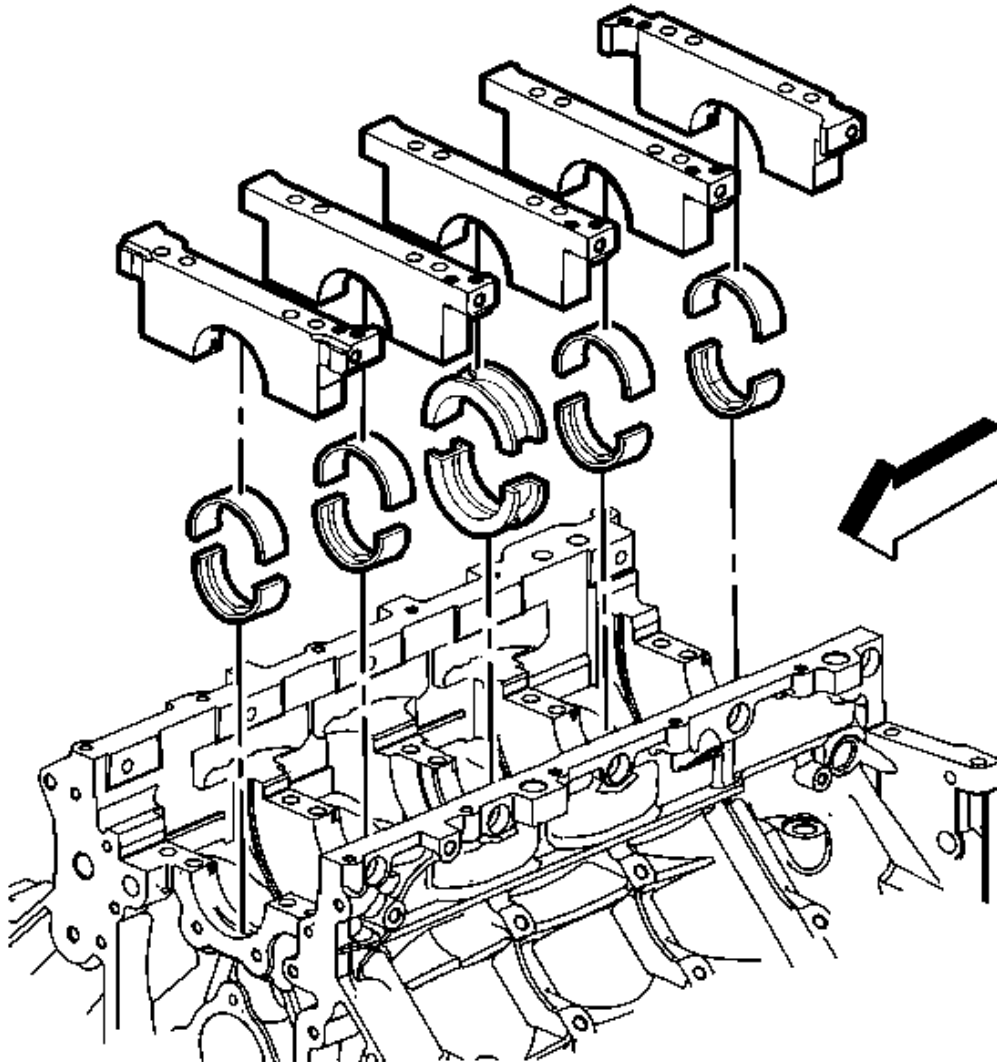


Fig. 172: View Of Crankshaft Bearings & Bearing Caps
Courtesy of GENERAL MOTORS CORP.

- IMPORTANT:**
- Crankshaft bearing clearances are critical. Excessive crankshaft bearing clearance may affect crankshaft position (CKP) sensor signals and/or on-board

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

diagnostic (OBD) II system performance.

- **Crankshaft bearing caps must be installed to the proper location and direction.**
- **When installing the crankshaft bearings, align the locating tabs on the bearings with the locating notches in the engine block journal bore and the bearing cap.**
- **Always install crankshaft bearings with their machined partner. Do not file bearings or mix bearing halves.**
- **In order to prevent engine block oil leakage, install NEW M8 crankshaft bearing cap side bolts.**

The crankshaft bearing cap M8 side bolts have a pre-applied sealant patch applied to the bolt flange.

1. Install the crankshaft bearings to the engine block and bearing caps. The thrust bearings are to be installed into center journal.
2. Lubricate the bearing surfaces and crankshaft journals with clean engine oil.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

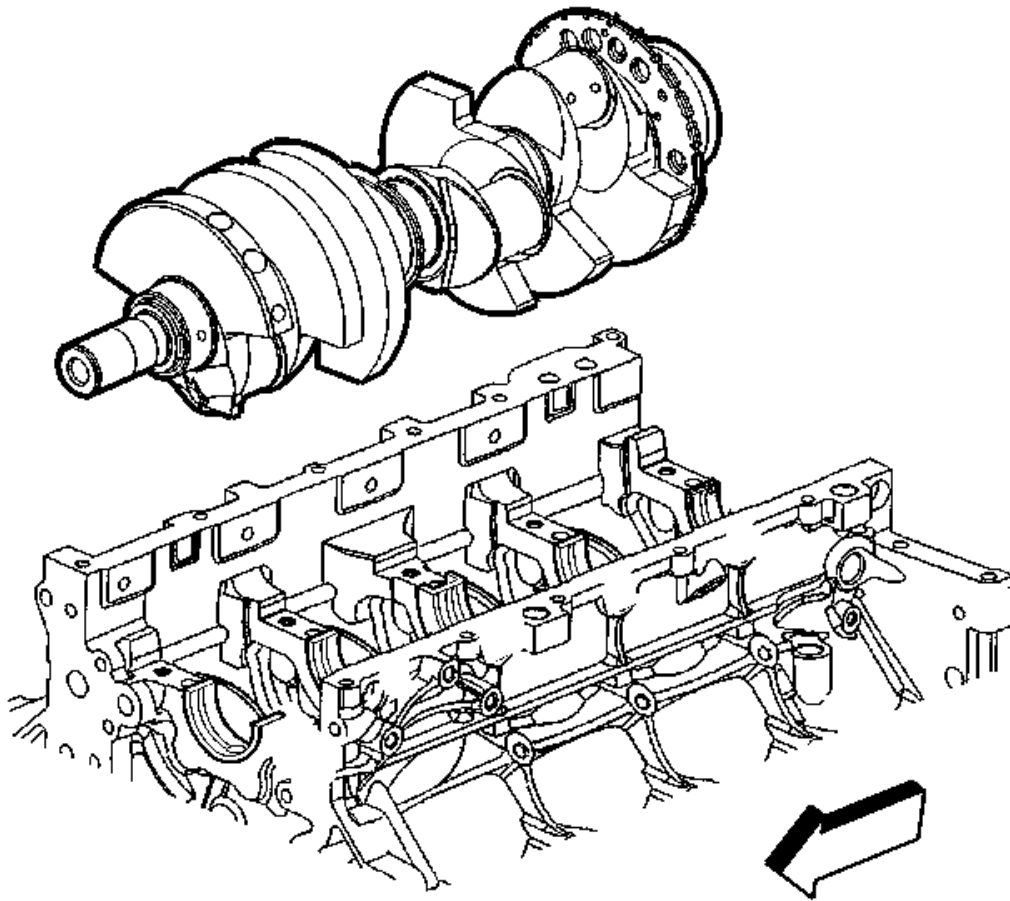


Fig. 173: View Of Crankshaft & Engine Block
Courtesy of GENERAL MOTORS CORP.

NOTE: To maintain proper crankshaft end play, use extreme care during crankshaft installation. Avoid scoring or damaging the thrust bearing.

3. Install the crankshaft.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

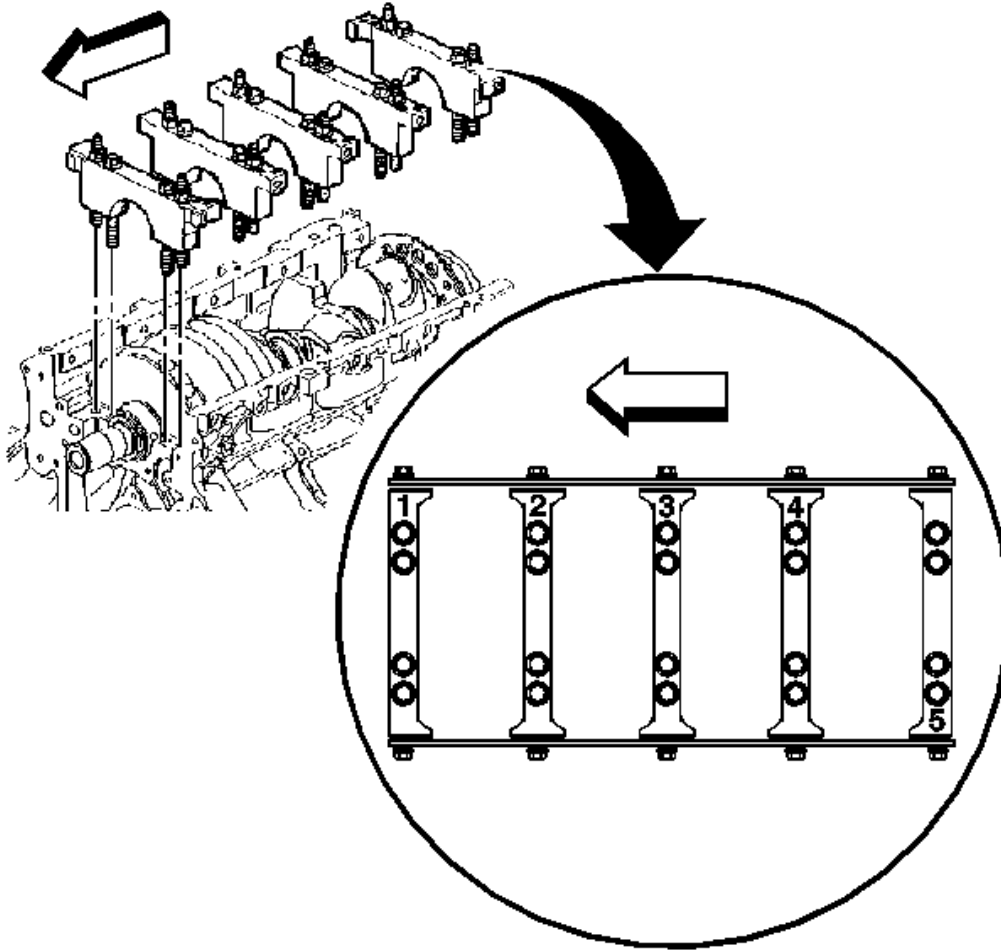


Fig. 174: View of Proper Bearing Cap Installation
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The bearing caps must be installed in the proper location and direction.

4. Install the crankshaft bearing caps, with bearings, into the engine block.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

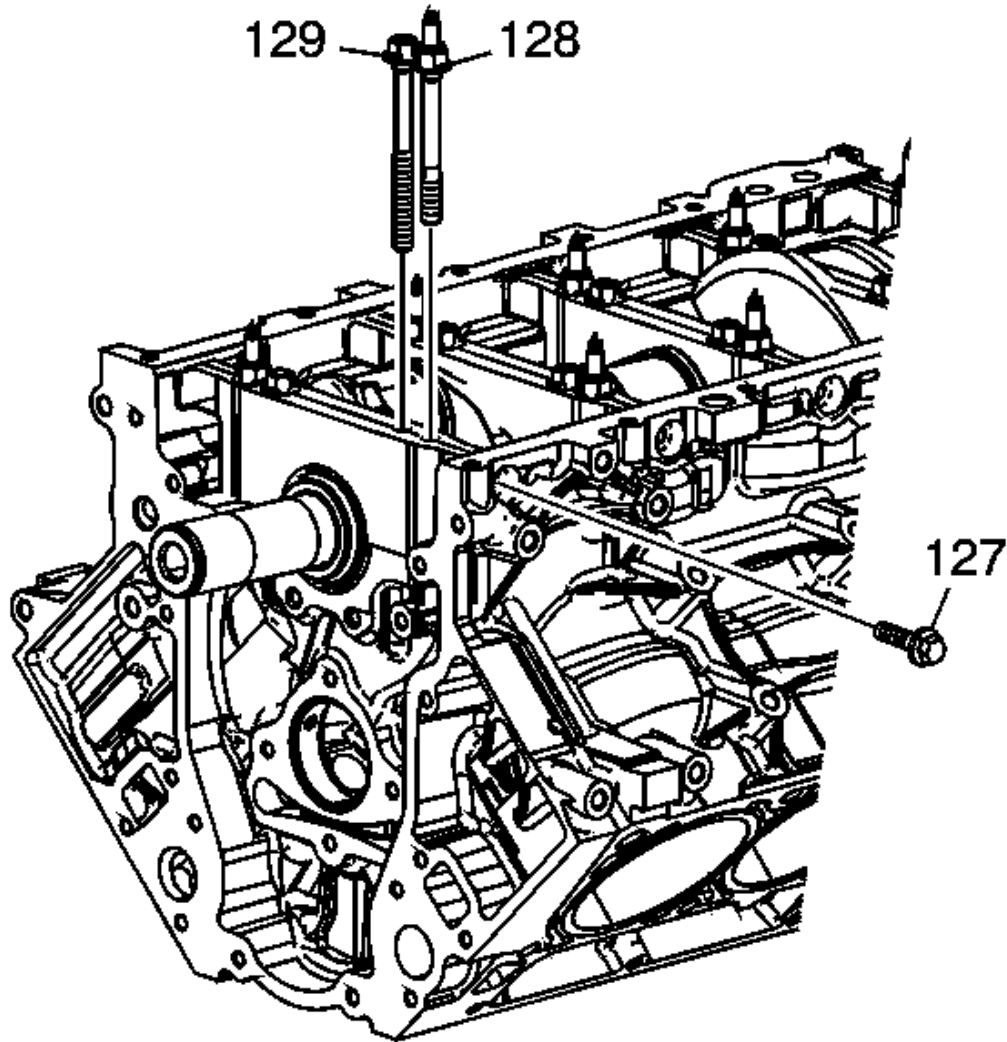


Fig. 175: Identifying Bearing Cap Bolts & Studs
Courtesy of GENERAL MOTORS CORP.

5. Install the M10 bolts (129) and studs (128).
6. Using a plastic-face hammer, tap the bearing caps into place.
7. Install the NEW M8 bearing cap side bolts (127).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

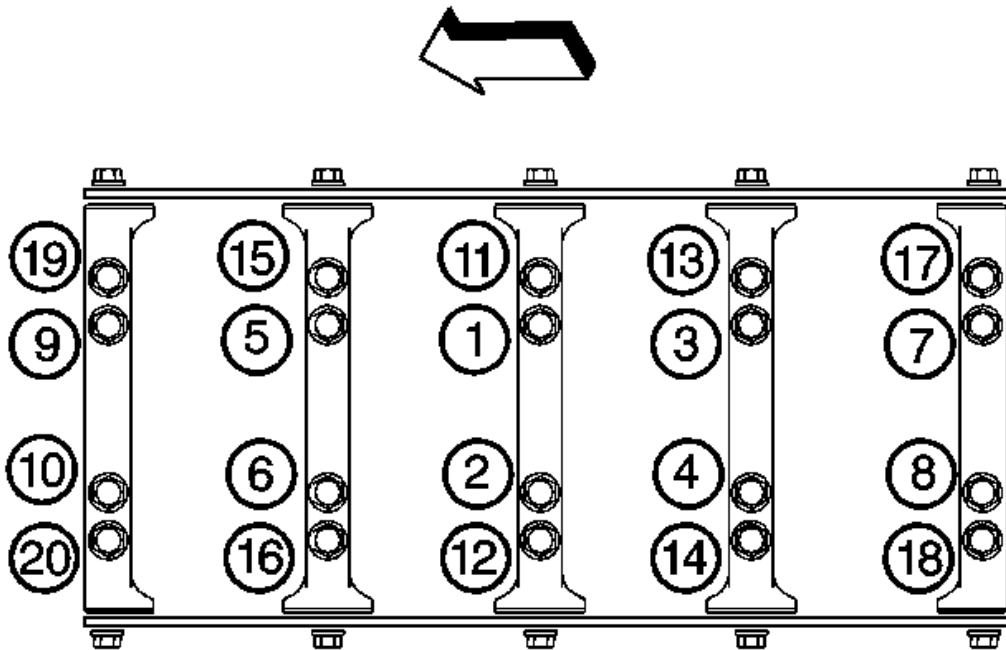


Fig. 176: Crankshaft Main Bearing Cap Bolt Tightening Sequence
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

8. Tighten the bearing cap M10 bolts (1-10).

Tighten: Tighten the M10 bearing cap bolts (1-10) a first pass in sequence to 20 N.m (15 lb ft).

IMPORTANT: To properly align the crankshaft thrust bearings, the final thrust of the crankshaft **MUST** be in the forward direction.

9. Using a plastic-face hammer, tap the crankshaft rearward, then forward in order to align the thrust bearings.

Tighten:

1. Tighten the M10 bolts (1-10) a final pass in sequence 80 degrees using the **J 45059** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Tighten the M10 studs (11-20) a first pass in sequence to 20 N.m (15 lb ft).
3. Tighten the M10 studs (11-20) a final pass in sequence 51 degrees using the **J 45059**.
4. Tighten the bearing cap side M8 bolts to 25 N.m (18 lb ft).

Tighten the bolt on 1 side of the bearing cap and then tighten the bolt on the opposite side of the same bearing cap.

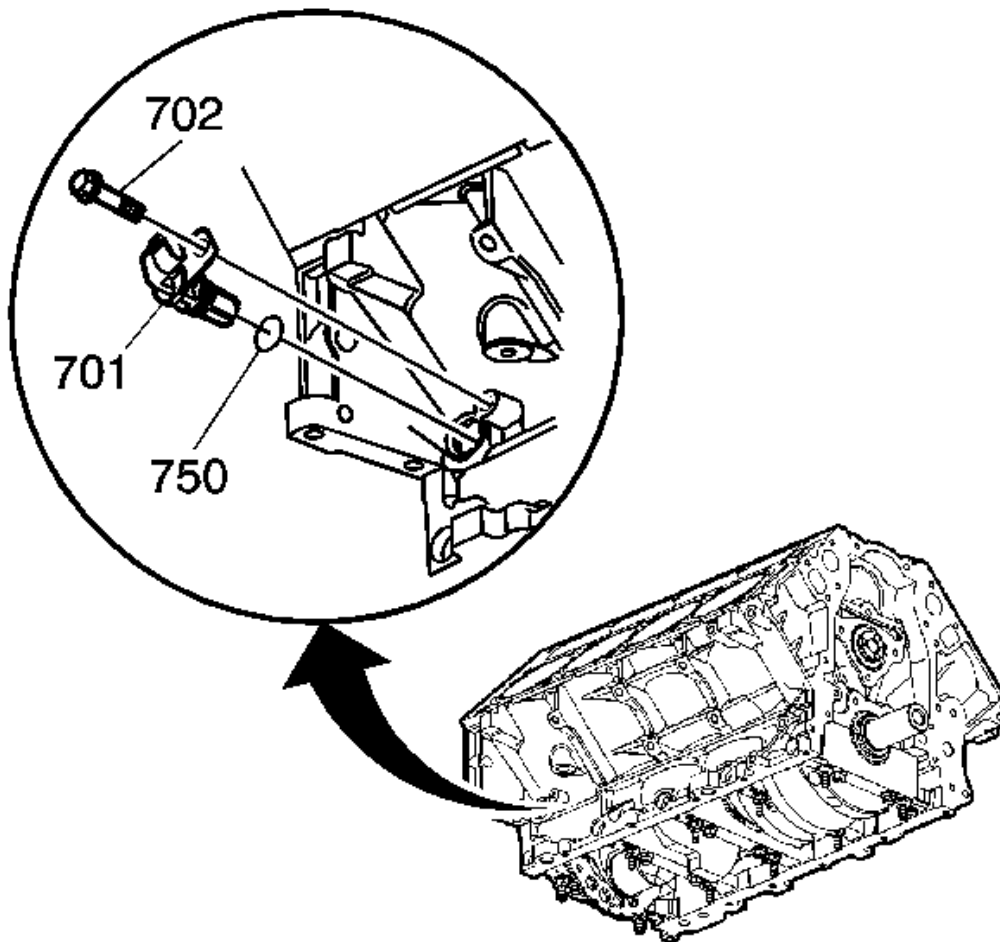


Fig. 177: CKP Sensor, Bolt & O-Ring
Courtesy of GENERAL MOTORS CORP.

10. Install the CKP sensor.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Inspect the CKP sensor O-ring seal (750). If the O-ring seal is not cut or damaged, it may be used again.
2. Coat the O-ring seal with clean engine oil.
3. Install the O-ring onto the sensor.
4. Install the sensor (701). Rotate the sensor until the locating hole in the bracket aligns with the bolt hole in the block.
5. Install the sensor bolt (702).

Tighten: Tighten the CKP sensor bolt to 25 N.m (18 lb ft).

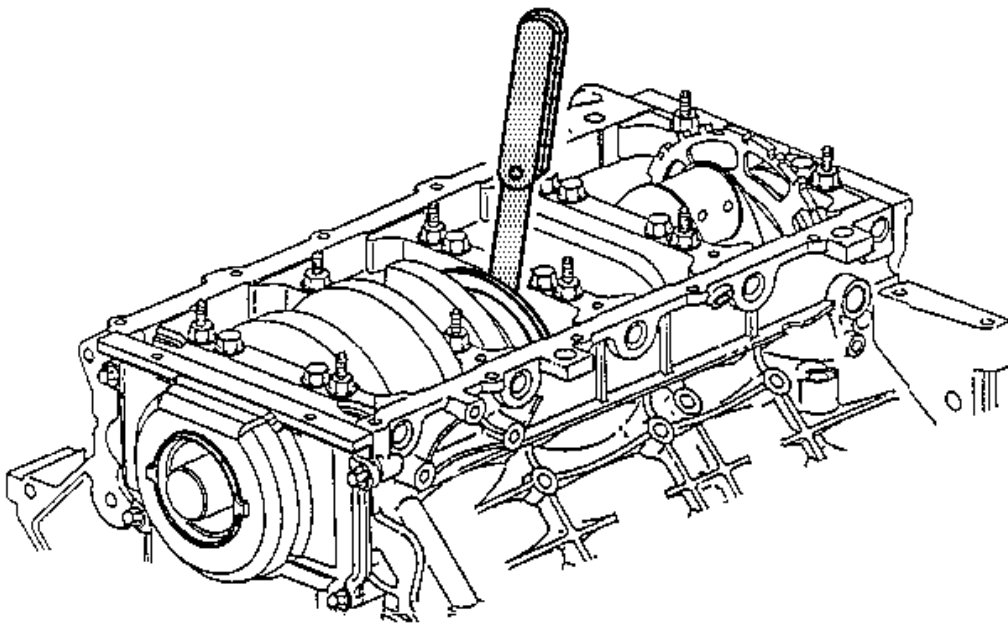


Fig. 178: Measuring Crankshaft End Play
Courtesy of GENERAL MOTORS CORP.

11. Measure the crankshaft end play.
 1. Thrust the crankshaft forward or rearward.
 2. Insert a feeler gage between the center crankshaft bearing and the bearing surface of the crankshaft and measure the bearing clearance.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

The proper crankshaft end play clearance is 0.04-0.2 mm (0.0015-0.0078 in).

3. If the bearing clearance is not within specifications, inspect the thrust surfaces for nicks, gouges or raised metal. Minor imperfections may be removed with a fine stone.

PISTON, CONNECTING ROD, AND BEARING INSTALLATION

Tools Required

- **J 8037** Piston Ring Compressor
- **J 8087** Cylinder Bore Gage
- **J 41556** Connecting Rod Guide. See Special Tools .
- **J 45059** Angle Meter

Piston Selection

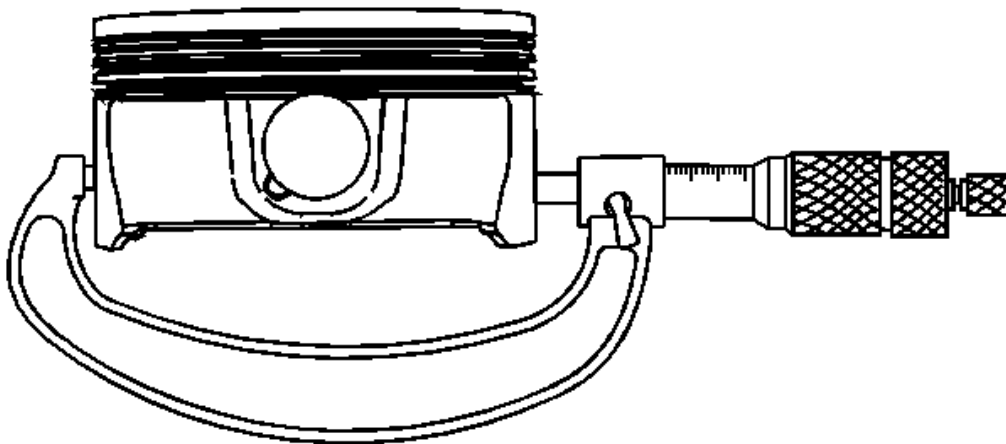


Fig. 179: Measuring Piston Outside Diameter
Courtesy of GENERAL MOTORS CORP.

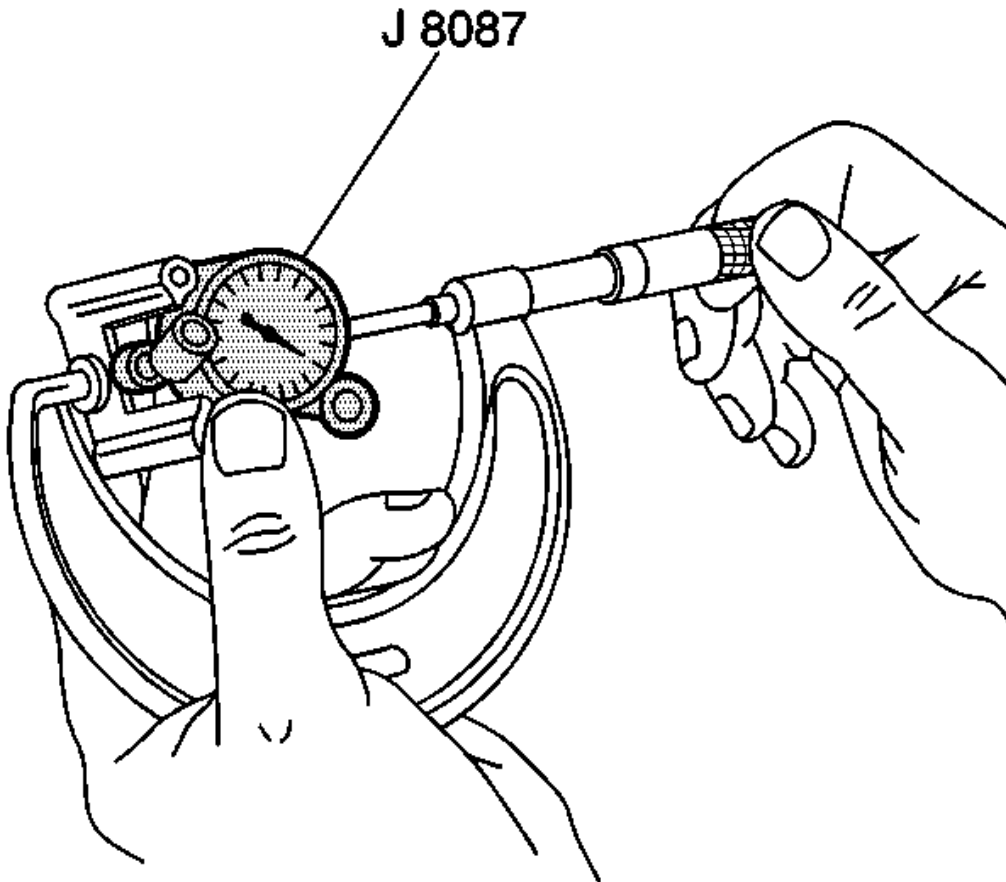
IMPORTANT: Measurements of all components should be taken with the components at normal room temperature. For proper piston fit, the engine block cylinder bores must not have excessive wear or taper. A used piston, pin, and connecting rod

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

assembly may be installed if, after inspection is within specifications.

1. With a micrometer at a right angle, measure the piston outside diameter (OD). Measure the diameter 43 mm (1.69 in) from the top of the piston. Refer to **Engine Mechanical Specifications (RPO LY5 VIN J)** or **Engine Mechanical Specifications (RPO LC9 VIN 3)** or **Engine Mechanical Specifications (RPO LY2 VIN C)** or **Engine Mechanical Specifications (RPO LH6 VIN M)** or **Engine Mechanical Specifications (RPO LMG VIN 0)** or **Engine Mechanical Specifications (RPO LY6 VIN K)** or **Engine Mechanical Specifications (RPO L76 VIN Y)** or **Engine Mechanical Specifications (RPO L92 VIN 8)** .
2. Record the piston OD.



2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Fig. 180: Measuring Bore Gauge With Micrometer **Courtesy of GENERAL MOTORS CORP.**

3. Adjust the micrometer to the recorded piston OD.
4. Insert the **J 8087** into the micrometer and zero the gage dial.

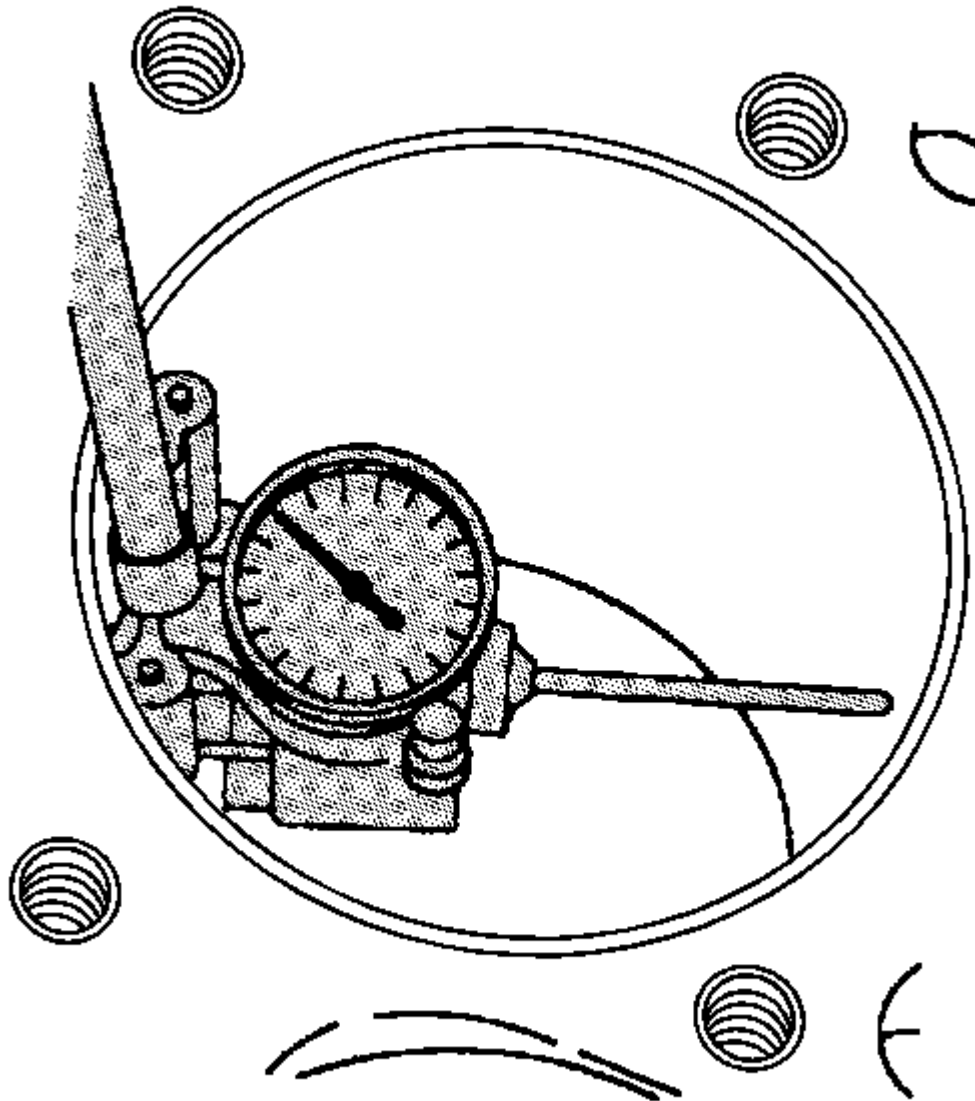


Fig. 181: Measuring Cylinder Bore

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Courtesy of GENERAL MOTORS CORP.

5. Using the **J 8087** , measure the cylinder bore inside diameter (ID). Measure at a point 64 mm (2.5 in) from the top of the cylinder.
6. Record the cylinder bore ID.
7. Subtract the piston OD from the cylinder bore ID in order to determine the piston-to-bore clearance. Refer to **Engine Mechanical Specifications (RPO LY5 VIN J)** or **Engine Mechanical Specifications (RPO LC9 VIN 3)** or **Engine Mechanical Specifications (RPO LY2 VIN C)** or **Engine Mechanical Specifications (RPO LH6 VIN M)** or **Engine Mechanical Specifications (RPO LMG VIN 0)** or **Engine Mechanical Specifications (RPO LY6 VIN K)** or **Engine Mechanical Specifications (RPO L76 VIN Y)** or **Engine Mechanical Specifications (RPO L92 VIN 8)** .
8. If the proper clearance cannot be obtained, select another piston and pin assembly and measure the clearances again. If the proper fit cannot be obtained, the cylinder bore may require honing for an oversize piston.

Piston, Pin, and Connecting Rod Installation

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

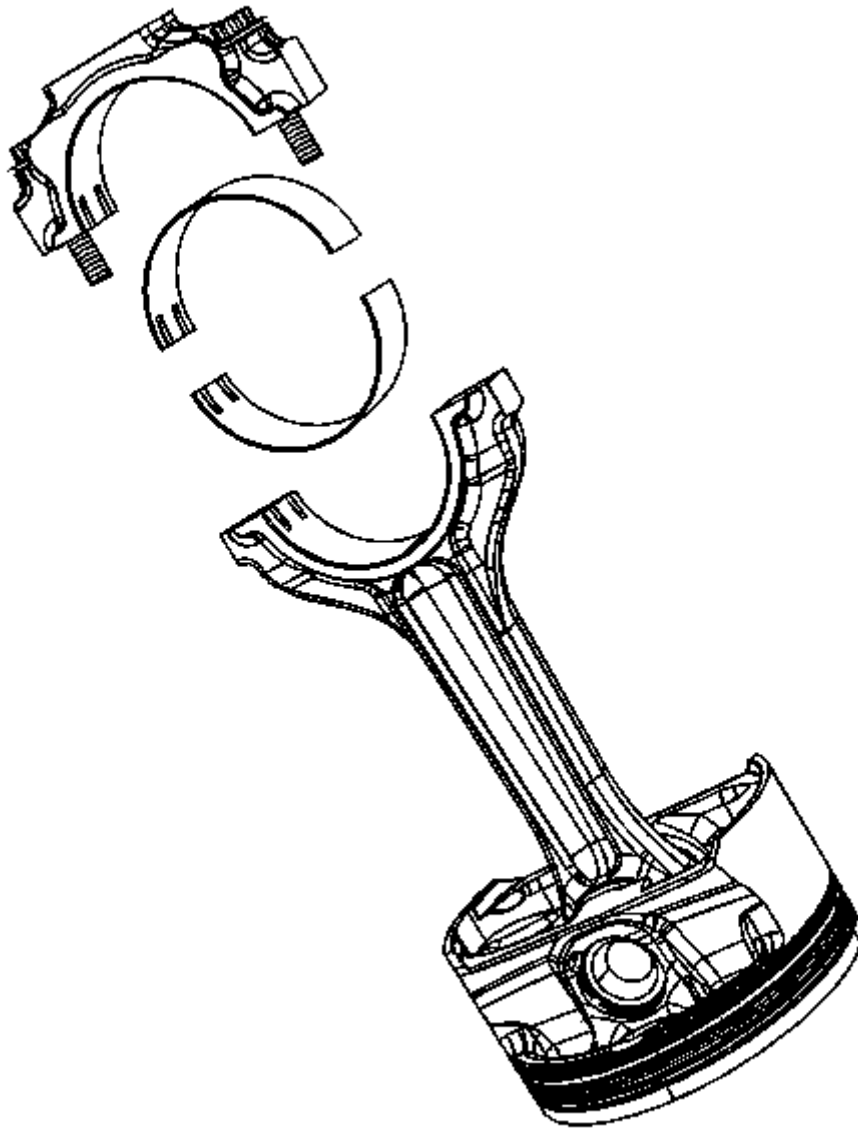


Fig. 182: View Of Piston, Connecting Rod & Bearing Assembly
Courtesy of GENERAL MOTORS CORP.

1. Lubricate the following components with clean engine oil:
 - Piston
 - Piston rings

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- Cylinder bore
 - Bearings and bearing surfaces
2. Install the bearings to the connecting rod and cap.
 3. Position the oil control ring end gaps a minimum of 25 mm (1.0 in) from each other.
 4. Position the compression ring end gaps 180 degrees opposite each other.

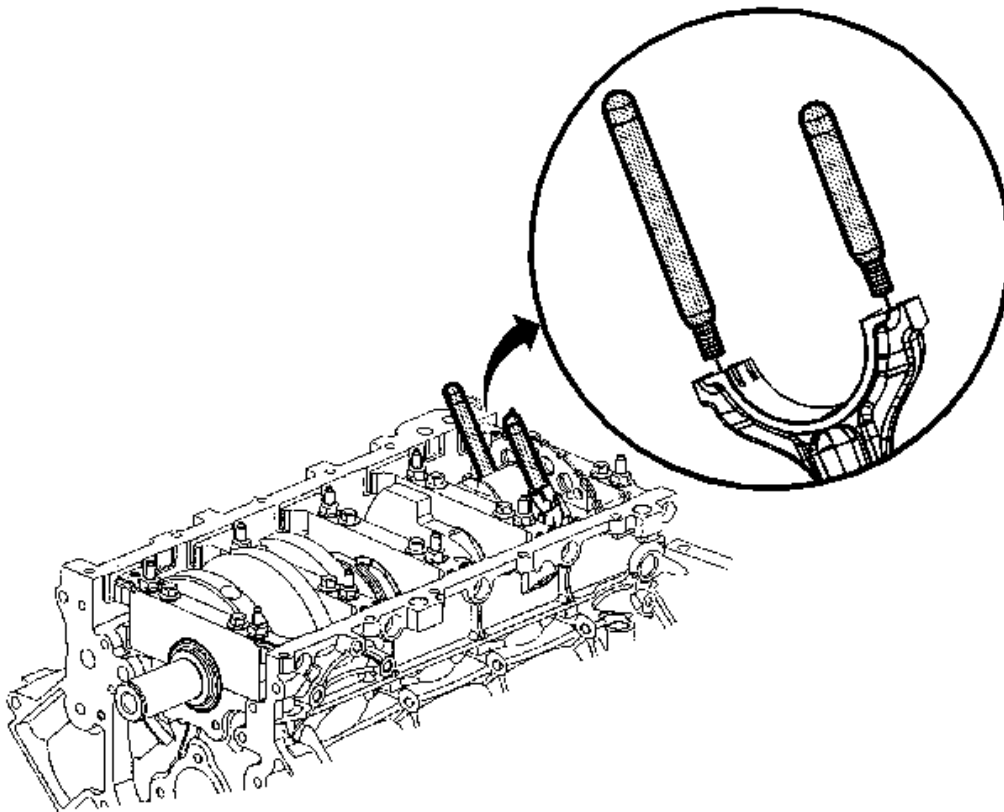


Fig. 183: Installing Piston & Connecting Rod Assembly
Courtesy of GENERAL MOTORS CORP.

5. Install the **J 41556** to the connecting rod. See **Special Tools** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

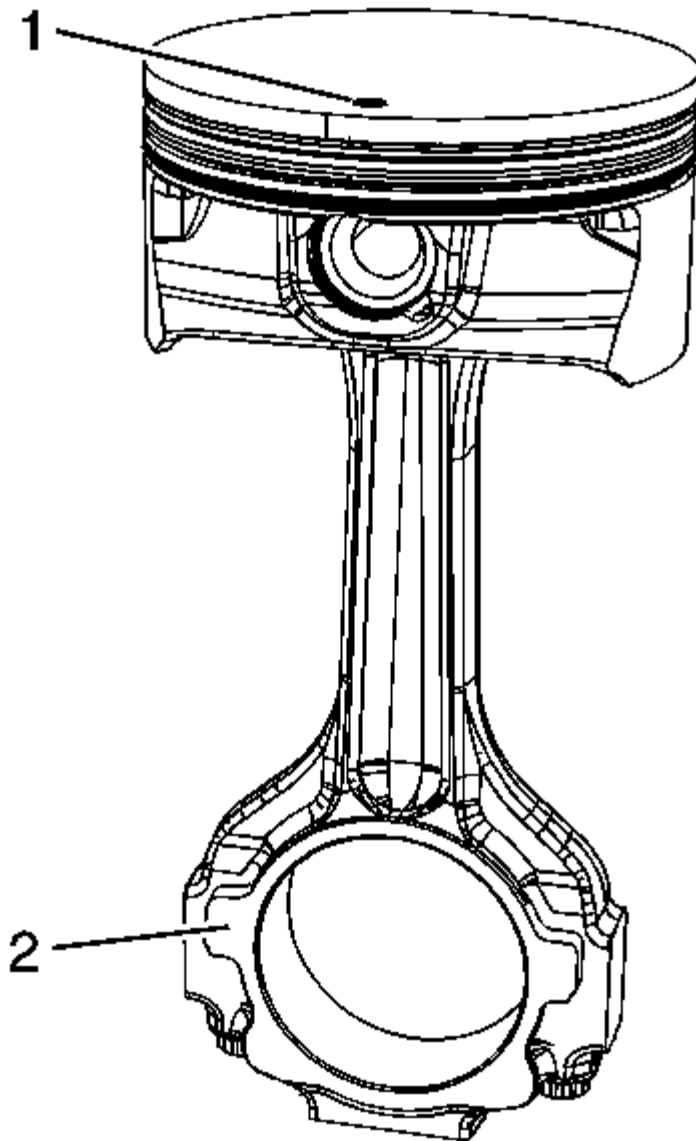


Fig. 184: View of Mark On Top Of Piston & Connecting Rod Tab
Courtesy of GENERAL MOTORS CORP.

6. Identify the proper installation direction of the piston and connecting rod assembly. When installing the piston and connecting rod assembly, the mark on the top of the piston (1) and the tab (2) on the side of the connecting rod should face the front of the engine.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

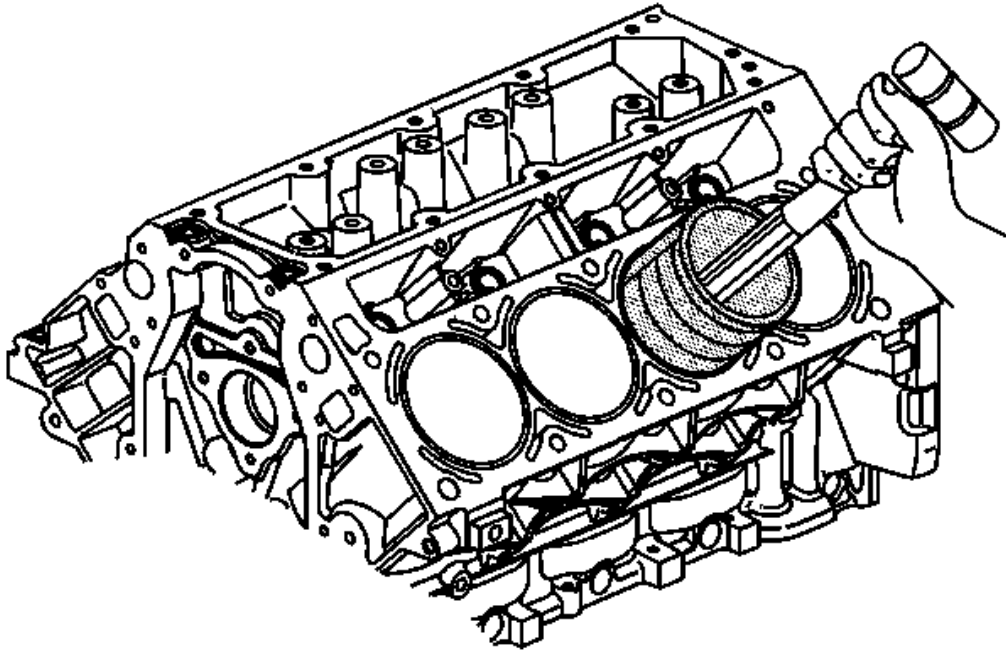


Fig. 185: Installing Piston
Courtesy of GENERAL MOTORS CORP.

7. Install the **J 8037** onto the piston and compress the piston rings.

IMPORTANT: The piston alignment mark **MUST** face the front of the engine block.

8. Install the piston, pin, and connecting rod assembly into the cylinder bore. Hold the piston ring compressor firmly against the engine block. Using a wooden hammer handle, lightly tap the top of the piston until all piston rings have entered the cylinder bore.
9. Use the **J 41556** to guide the connecting rod onto the crankshaft journal. See **Special Tools** .
10. Remove the **J 41556** from the connecting rod. See **Special Tools** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

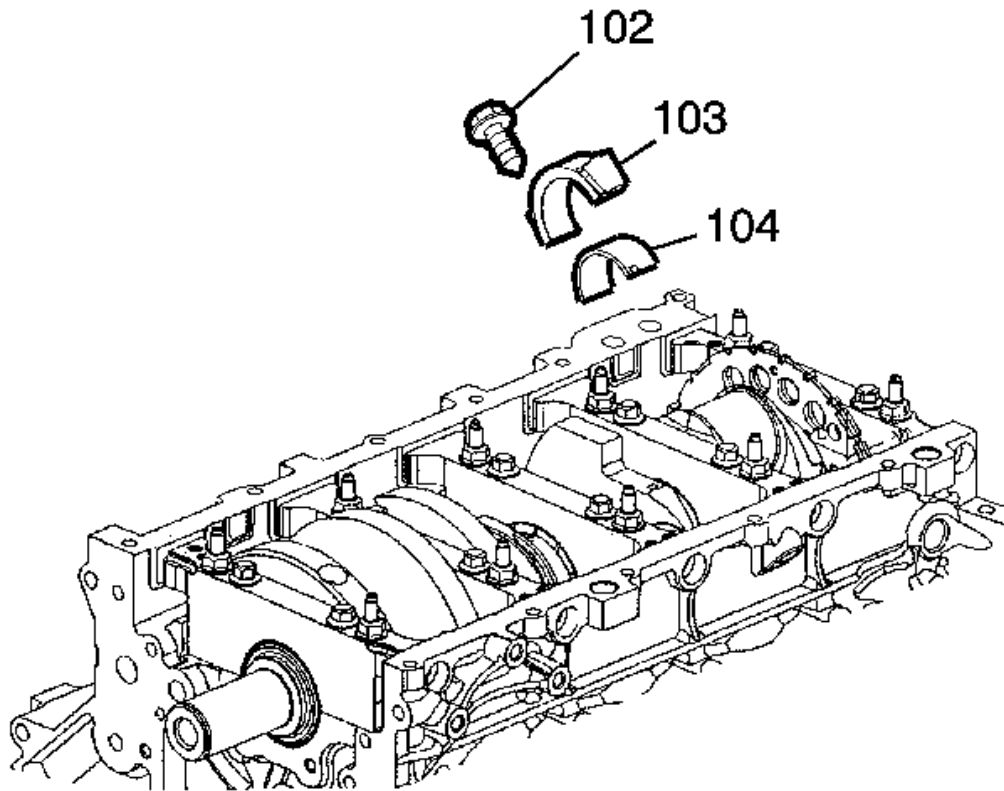


Fig. 186: Connecting Rod Bolt, Cap & Bearing

Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

IMPORTANT: The connecting rod and cap must be assembled with the mating surfaces properly aligned.

11. Install the bearing cap (103), bearing (104), and bolts (102).

Tighten:

1. Tighten the bolts a first pass to 20 N.m (15 lb ft).
2. Tighten the bolts a final pass to 85 degrees using the **J 45059** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

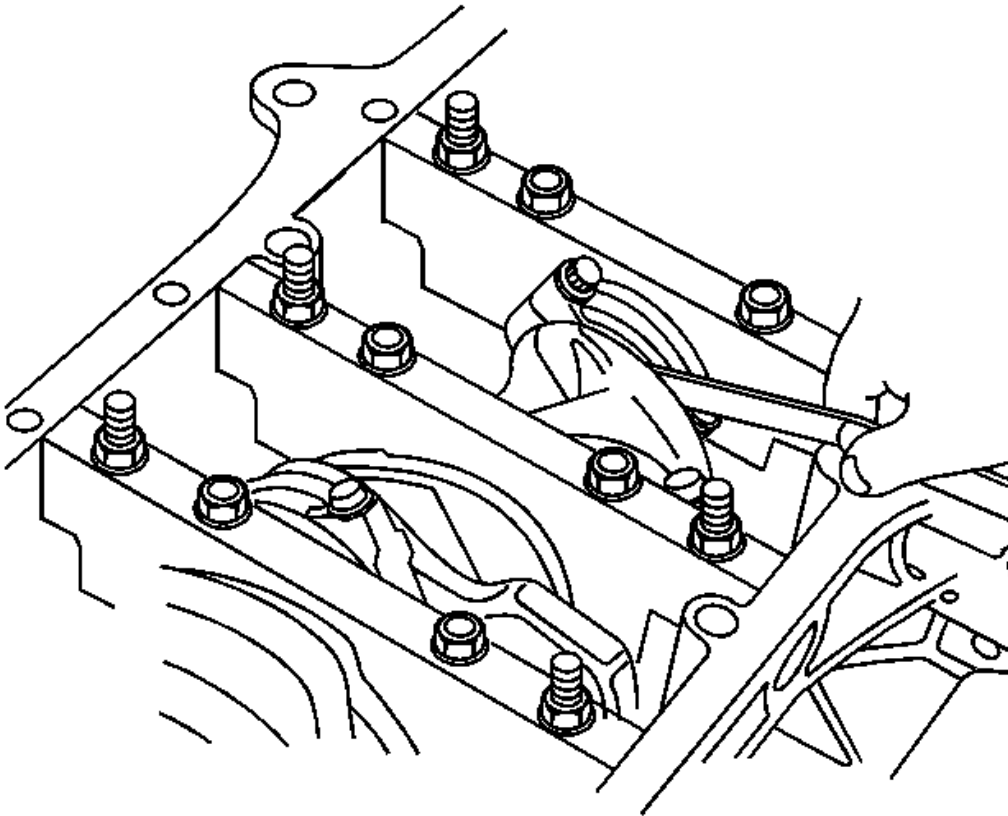


Fig. 187: Measuring Connecting Rod Side Clearance
Courtesy of GENERAL MOTORS CORP.

12. Measure the connecting rods for the proper side clearance. Refer to **Engine Mechanical Specifications (RPO LY5 VIN J)** or **Engine Mechanical Specifications (RPO LC9 VIN 3)** or **Engine Mechanical Specifications (RPO LY2 VIN C)** or **Engine Mechanical Specifications (RPO LH6 VIN M)** or **Engine Mechanical Specifications (RPO LMG VIN 0)** or **Engine Mechanical Specifications (RPO LY6 VIN K)** or **Engine Mechanical Specifications (RPO L76 VIN Y)** or **Engine Mechanical Specifications (RPO L92 VIN 8)** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

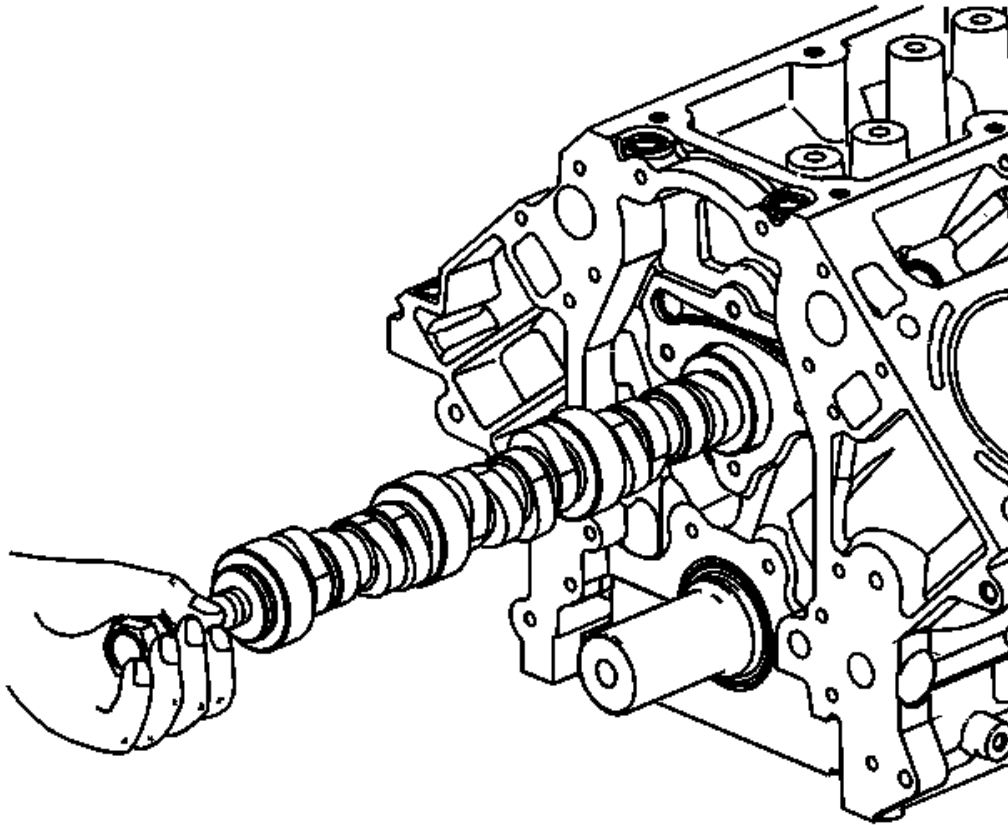


Fig. 188: View Of Camshaft
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: If camshaft replacement is required, the valve lifters must also be replaced.

1. Lubricate the camshaft journals and the bearings with clean engine oil.
2. Install the camshaft sprocket bolt into the camshaft front bolt hole.

NOTE: All camshaft journals are the same diameter, so care must be used in removing or installing the camshaft to avoid damage to the camshaft bearings.

3. Using the bolt as a handle, carefully install the camshaft into the engine block.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

4. Remove the bolt from the front of the camshaft.

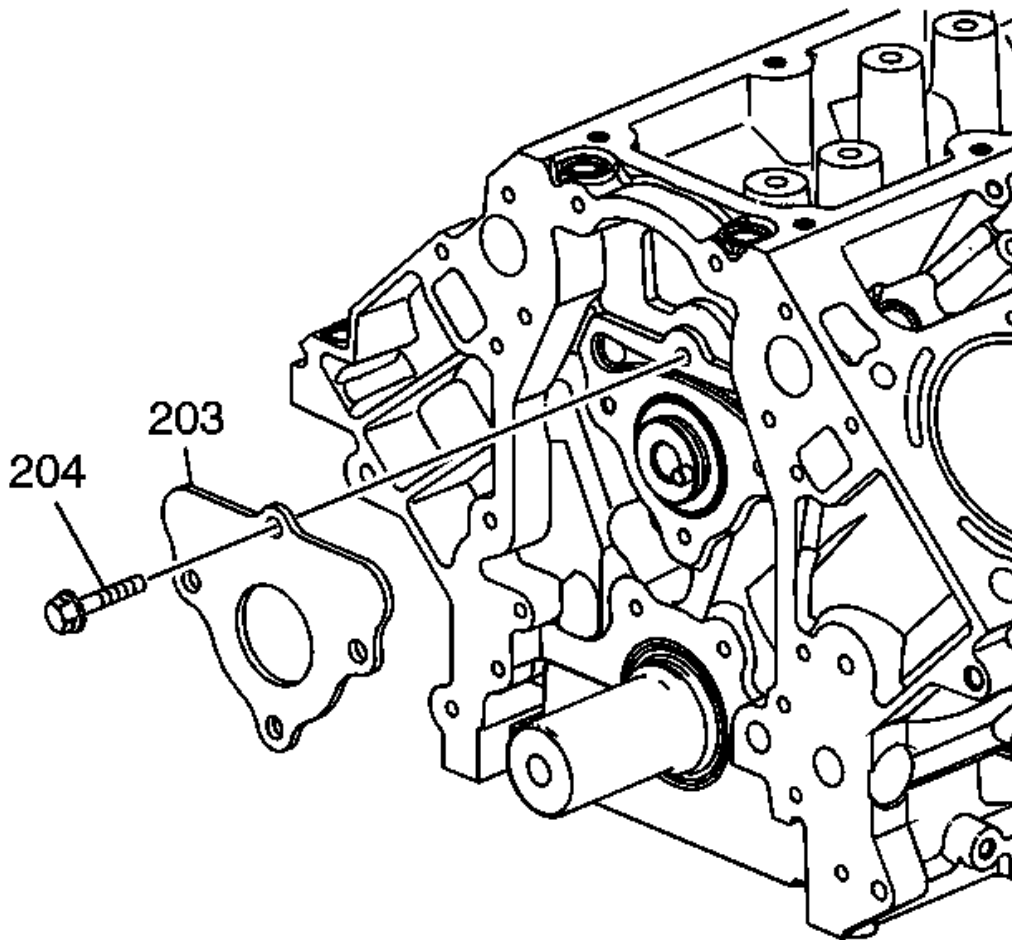


Fig. 189: View Of Camshaft Retainer & Retainer Bolt
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The gasket surface on the engine block should be clean and free of dirt or debris.

5. Install the camshaft retainer (203) and the bolts (204). Install the retainer with the sealing gasket facing the front of the engine block.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

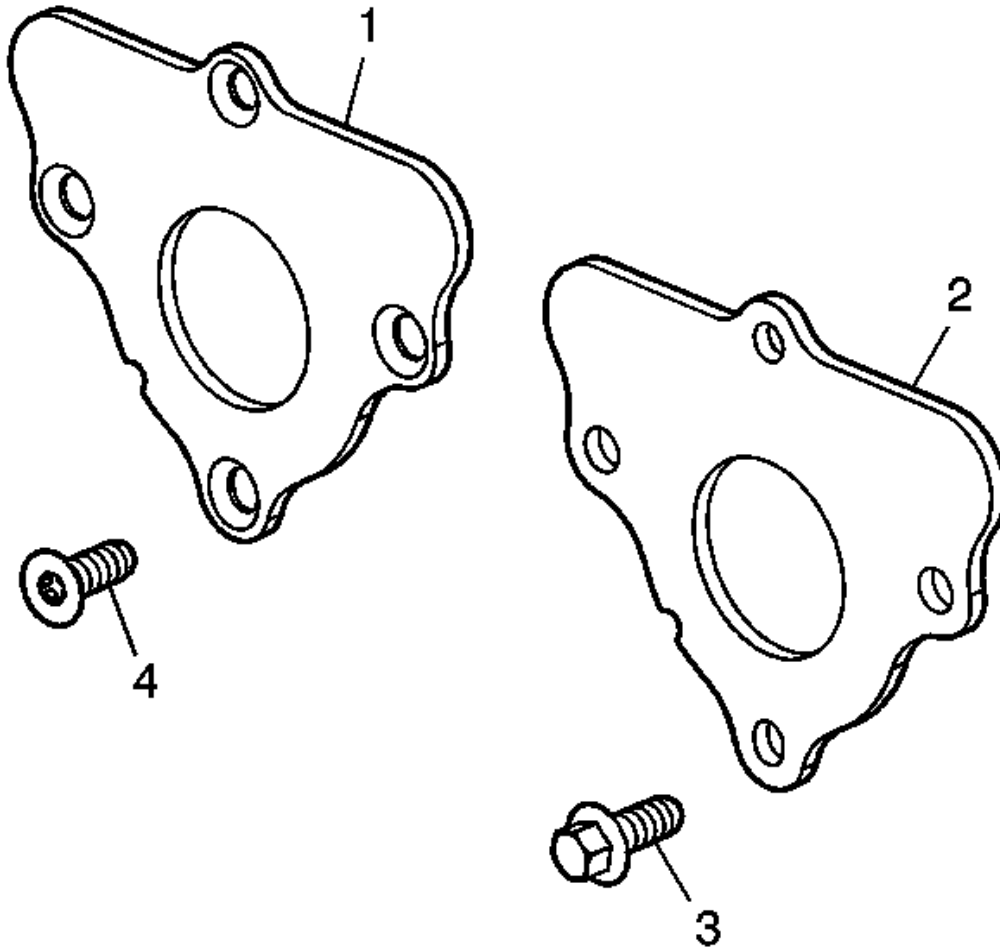


Fig. 190: Identifying Camshaft Retainer Bolts
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

6. Tighten the camshaft retainer bolts.

Tighten:

- Tighten the first design hex head bolts (3) to 25 N.m (18 lb ft).
- Tighten the second design TORX® head bolts (4) to 15 N.m (11 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

CAMSHAFT POSITION ACTUATOR AND SOLENOID VALVE INSTALLATION

Tools Required

- **EN 46330** Timing Belt Tensioner Retaining Pin. See **Special Tools** .
- **J 41478** Crankshaft Front Oil Seal Installer. See **Special Tools** .
- **J 41665** Crankshaft Balancer and Sprocket Installer. See **Special Tools** .
- **J 42386-A** Flywheel Holding Tool. See **Special Tools** .
- **J 45059** Angle Meter

Installation

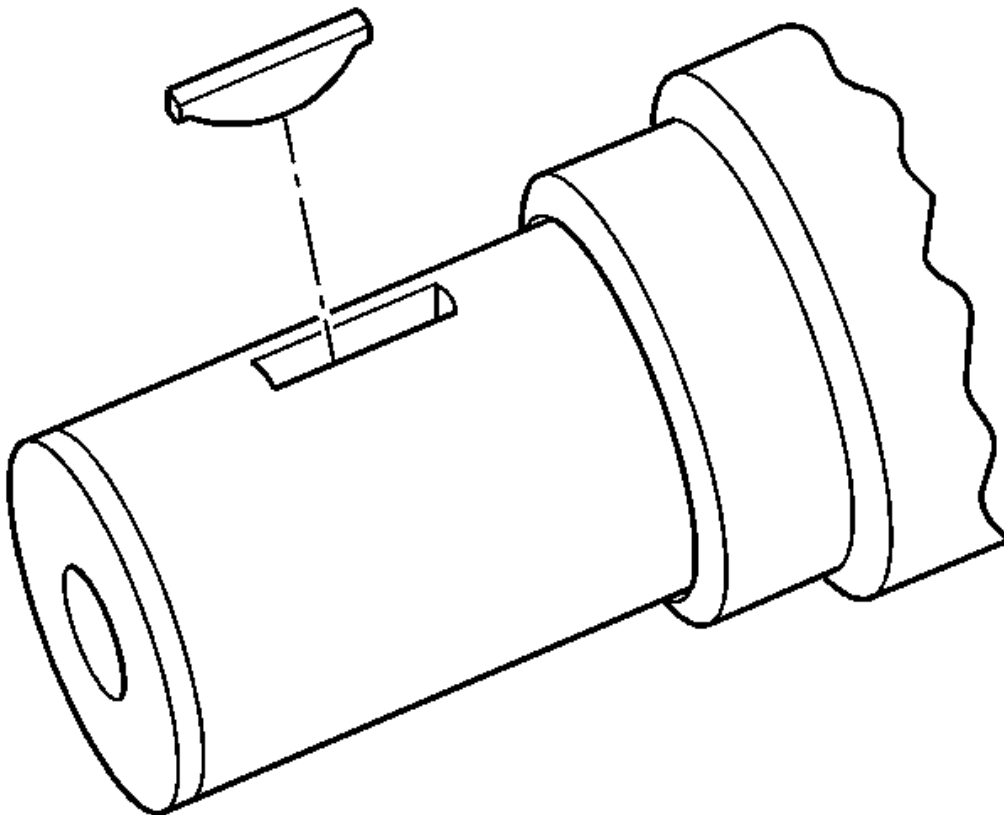


Fig. 191: View Of Crankshaft Key & Keyway
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Install the key into the crankshaft keyway, if previously removed.

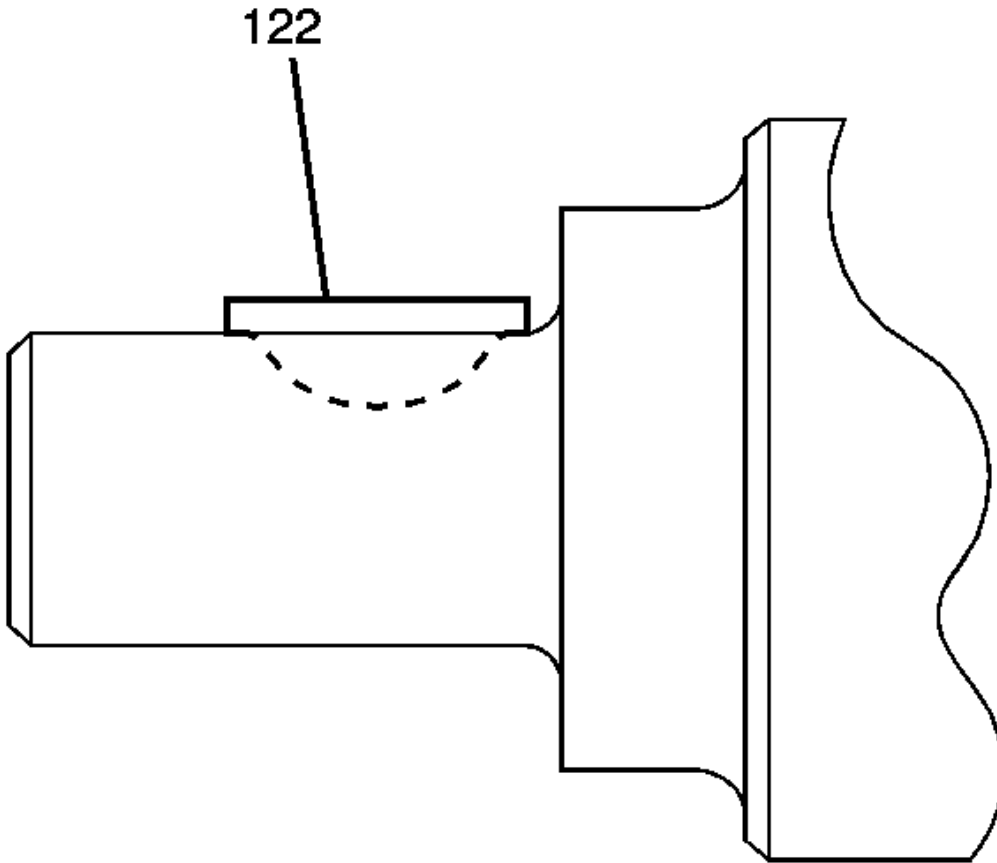


Fig. 192: View Of Installed Crankshaft Key
Courtesy of GENERAL MOTORS CORP.

2. Tap the key (122) into the keyway until both ends of the key bottom onto the crankshaft.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

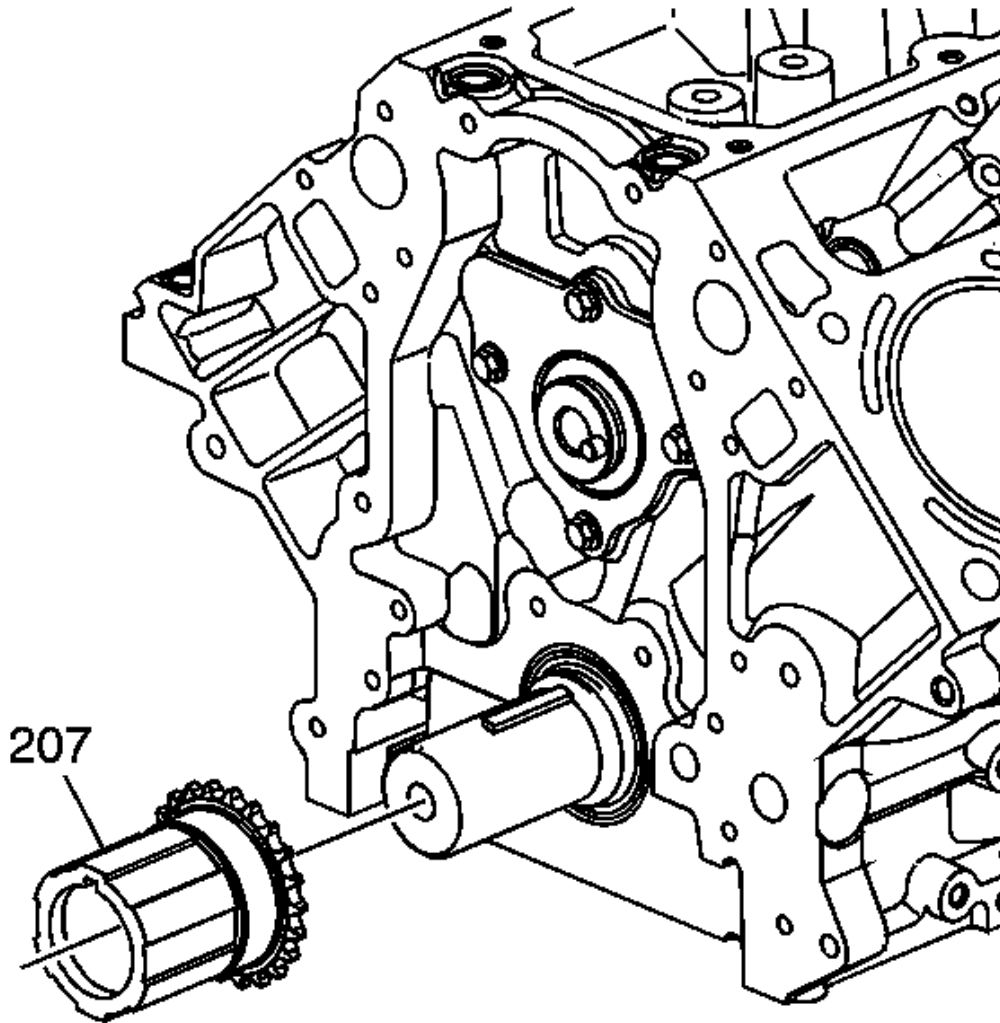


Fig. 193: View Of Crankshaft Sprocket
Courtesy of GENERAL MOTORS CORP.

3. Install the crankshaft sprocket (207) onto the front of the crankshaft. Align the crankshaft key with the crankshaft sprocket keyway.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

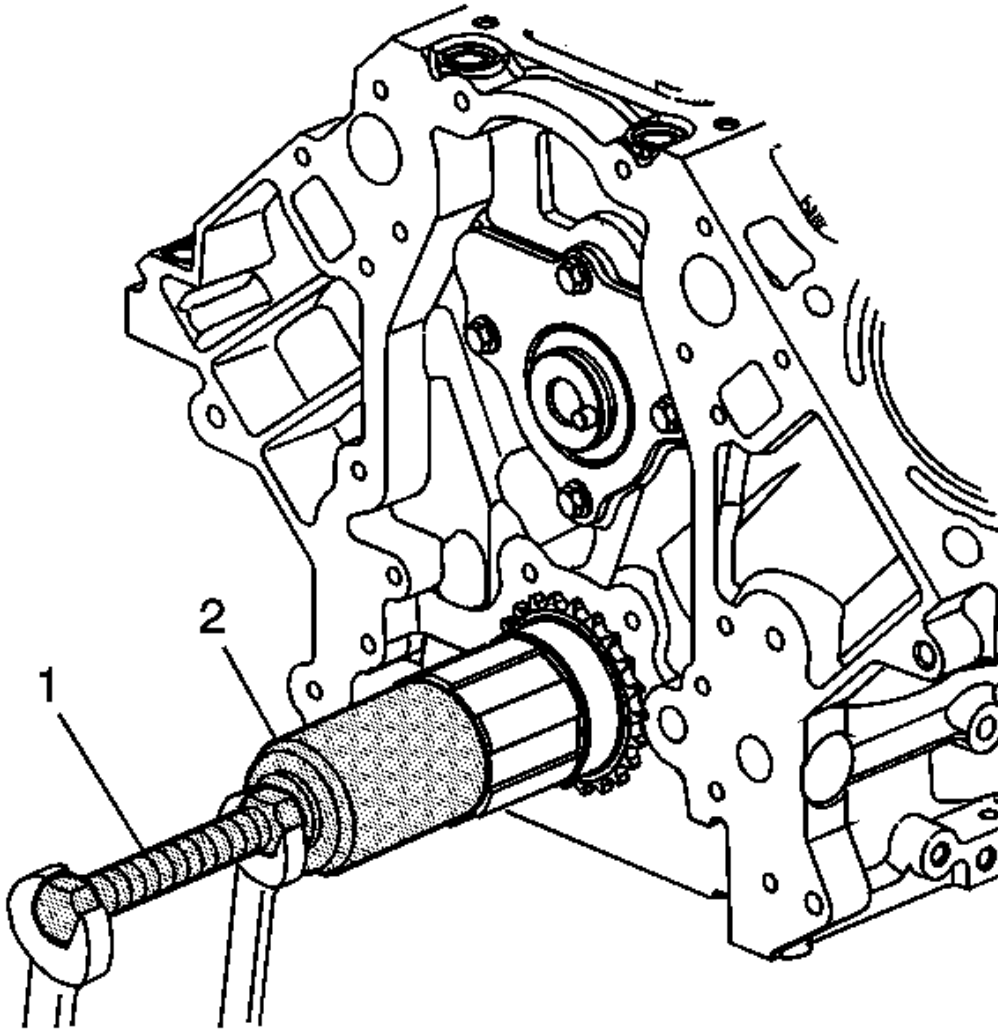


Fig. 194: View Of Crankshaft Sprocket & Installer
Courtesy of GENERAL MOTORS CORP.

4. Use the **J 41478** (1) and the **J 41665** (2) in order to install the crankshaft sprocket. See **Special Tools** . Install the sprocket onto the crankshaft until fully seated against the crankshaft flange.
5. Rotate the crankshaft sprocket until the sprocket alignment mark is in the 12 o'clock position.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

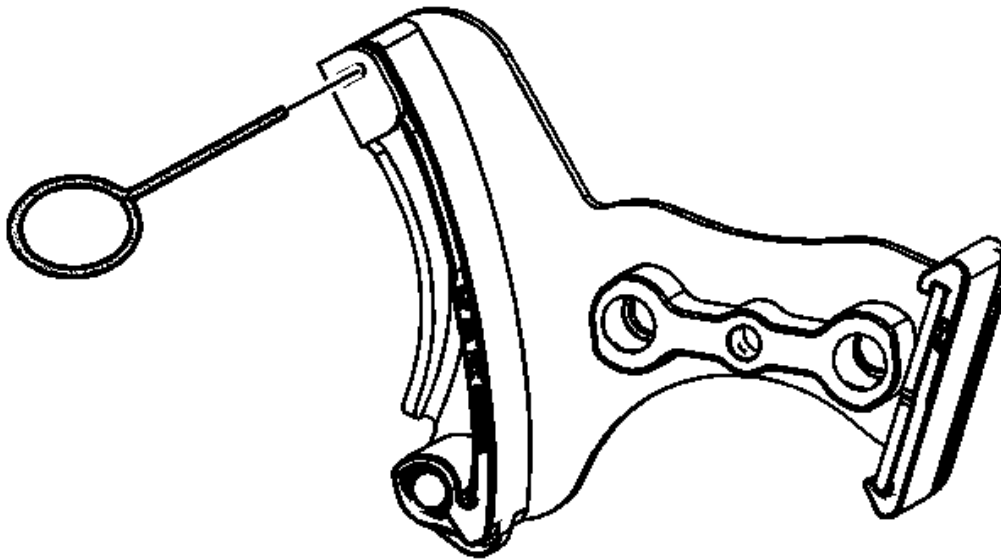


Fig. 195: View Of Compressed Tensioner
Courtesy of GENERAL MOTORS CORP.

6. Compress the timing chain tensioner guide and install the **EN 46330** . See **Special Tools** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

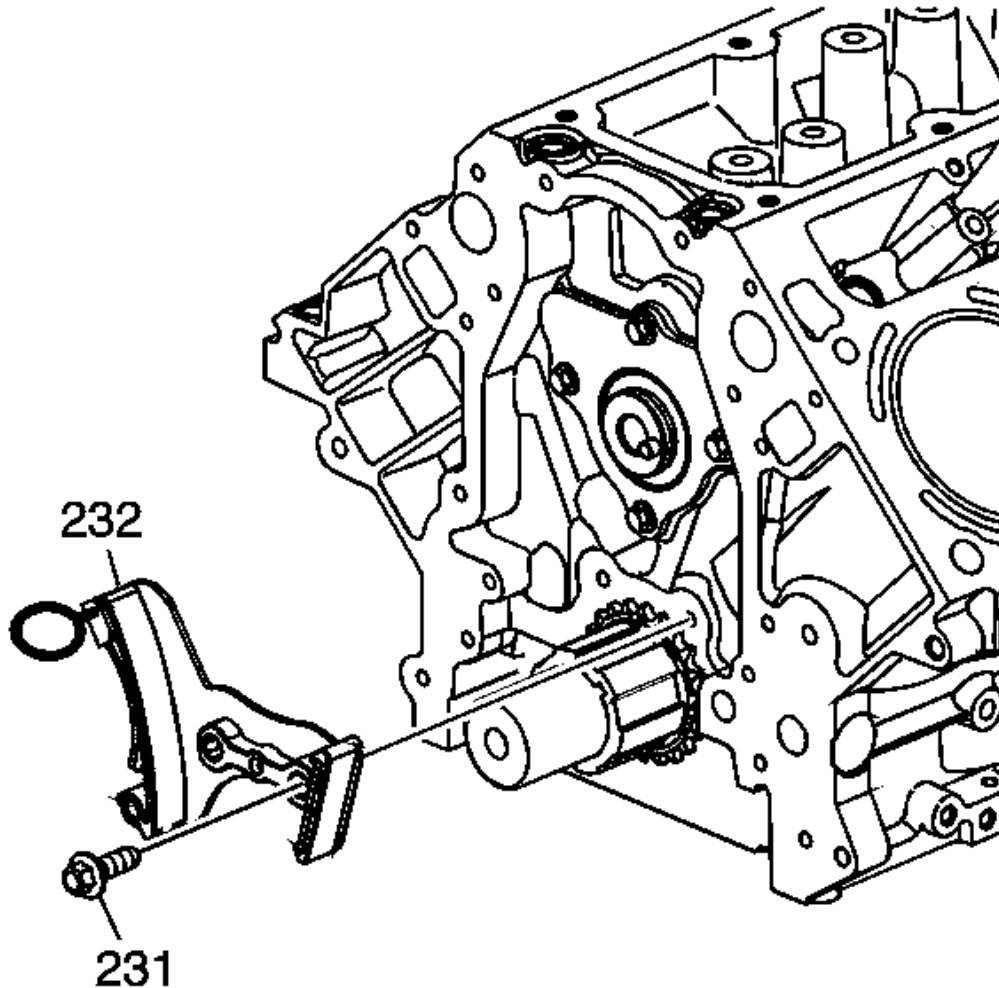


Fig. 196: View Of Timing Chain Tensioner & Left Side Bolt
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

7. Install the timing chain tensioner (232) and left side bolt (231). Do not install the right side bolt at this time. The right side bolt will be installed after the camshaft position (CMP) actuator and chain have been installed onto the engine.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

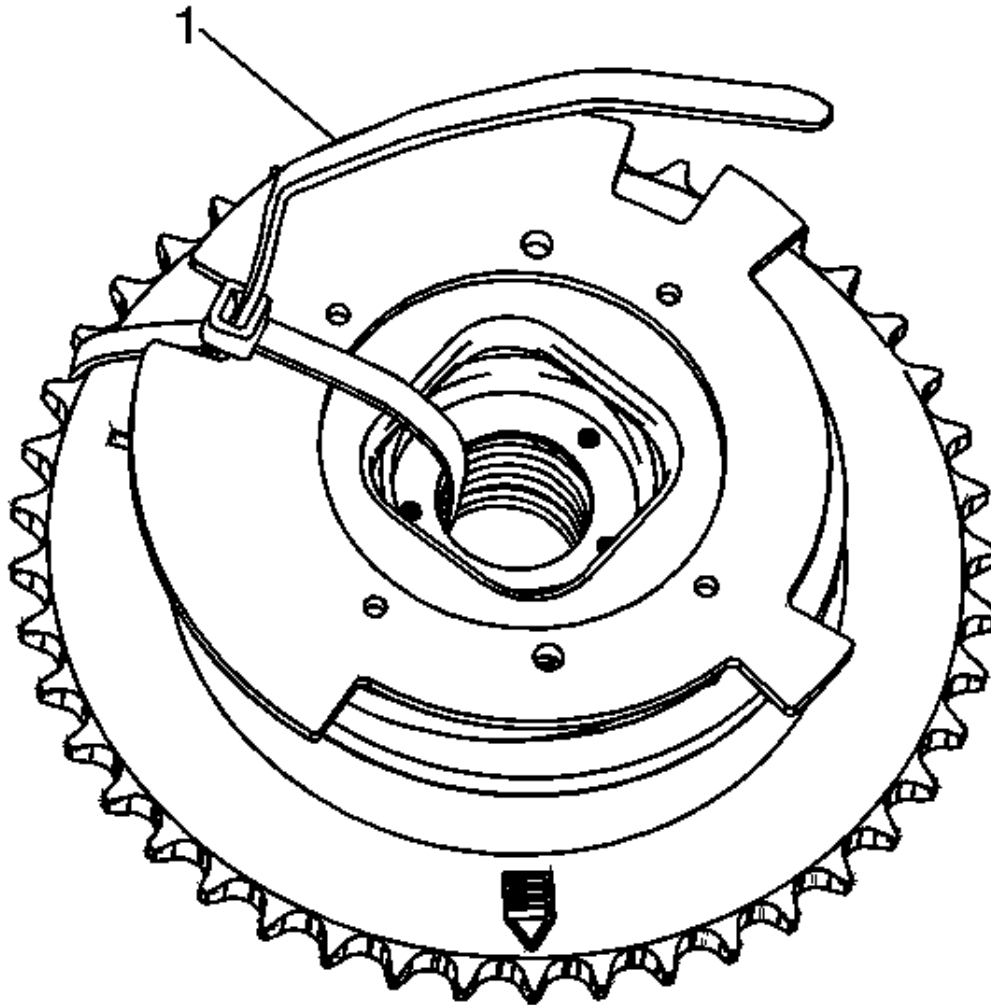


Fig. 197: View Of Tie Strap Through Center Of Actuator
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to Camshaft Position Actuator Removal and Installation Caution .

8. Remove the tie strap (1) from the actuator.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

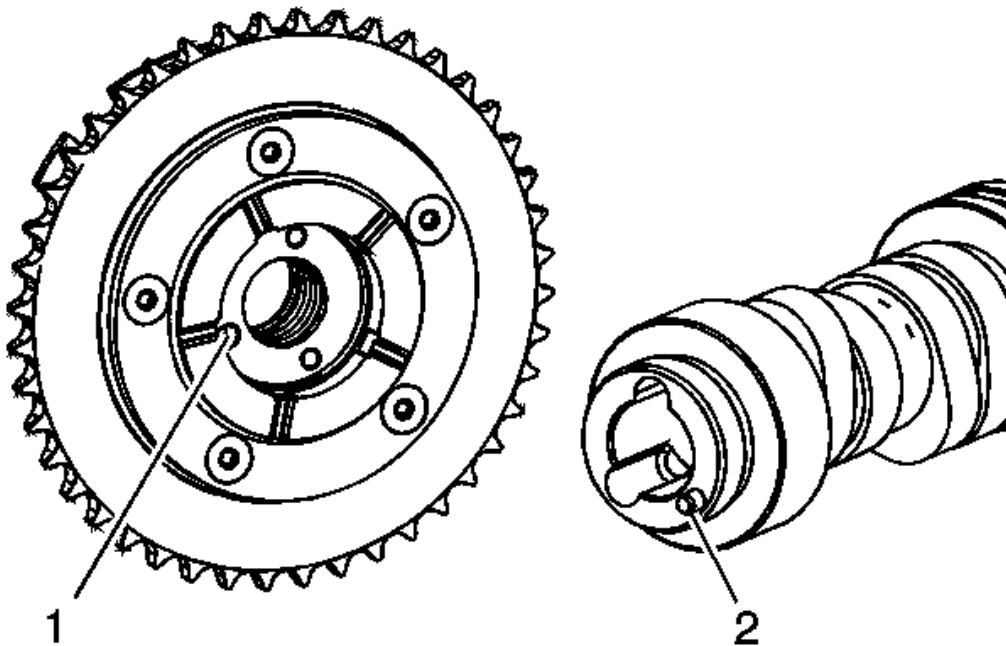


Fig. 198: Identifying Alignment Hole & Locating Pin
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- Properly locate the CMP actuator onto the locating pin of the camshaft.
- The sprocket teeth and timing chain must mesh.
- The camshaft and the crankshaft sprocket alignment marks **MUST** be aligned properly.
- Do not use the CMP solenoid valve again. Install a **NEW** valve during assembly.

9. Identify the alignment hole (1) in the rear face of the CMP actuator and the locating pin (2) on the front face of the camshaft.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

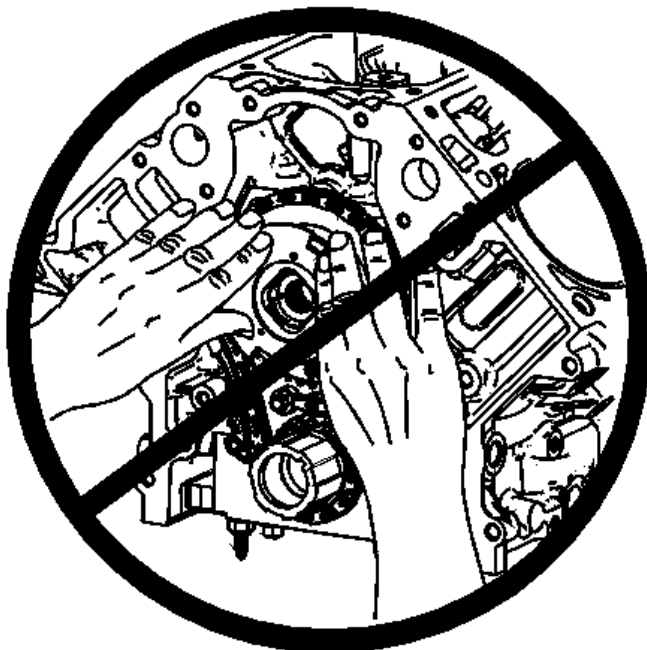
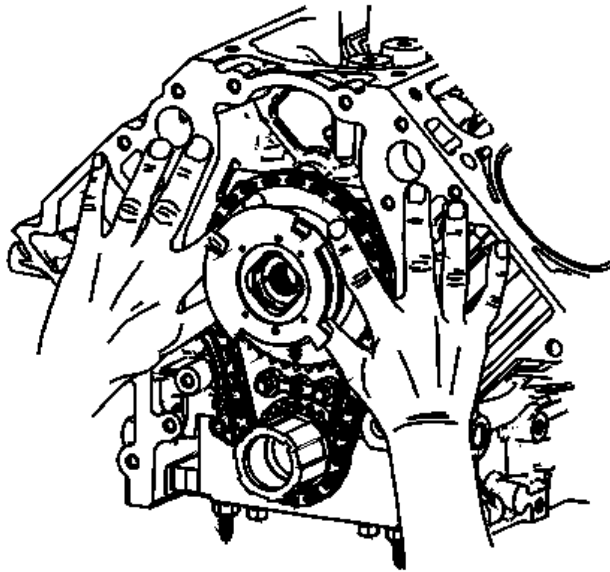


Fig. 199: Proper Installation Of CMP Actuator
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

CAUTION: Refer to Camshaft Position Actuator Removal and Installation Caution .

10. Install the CMP actuator and timing chain. Align the hole in the rear face of the CMP actuator with the locating pin on the front face of the camshaft. If necessary, rotate the camshaft or crankshaft sprockets in order to align the timing marks. Use care to install the actuator completely onto the front of the camshaft. Position fingers onto the face of the actuator sprocket and push the actuator onto the front of the camshaft. Never push on the reluctor wheel when attempting to install the actuator.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

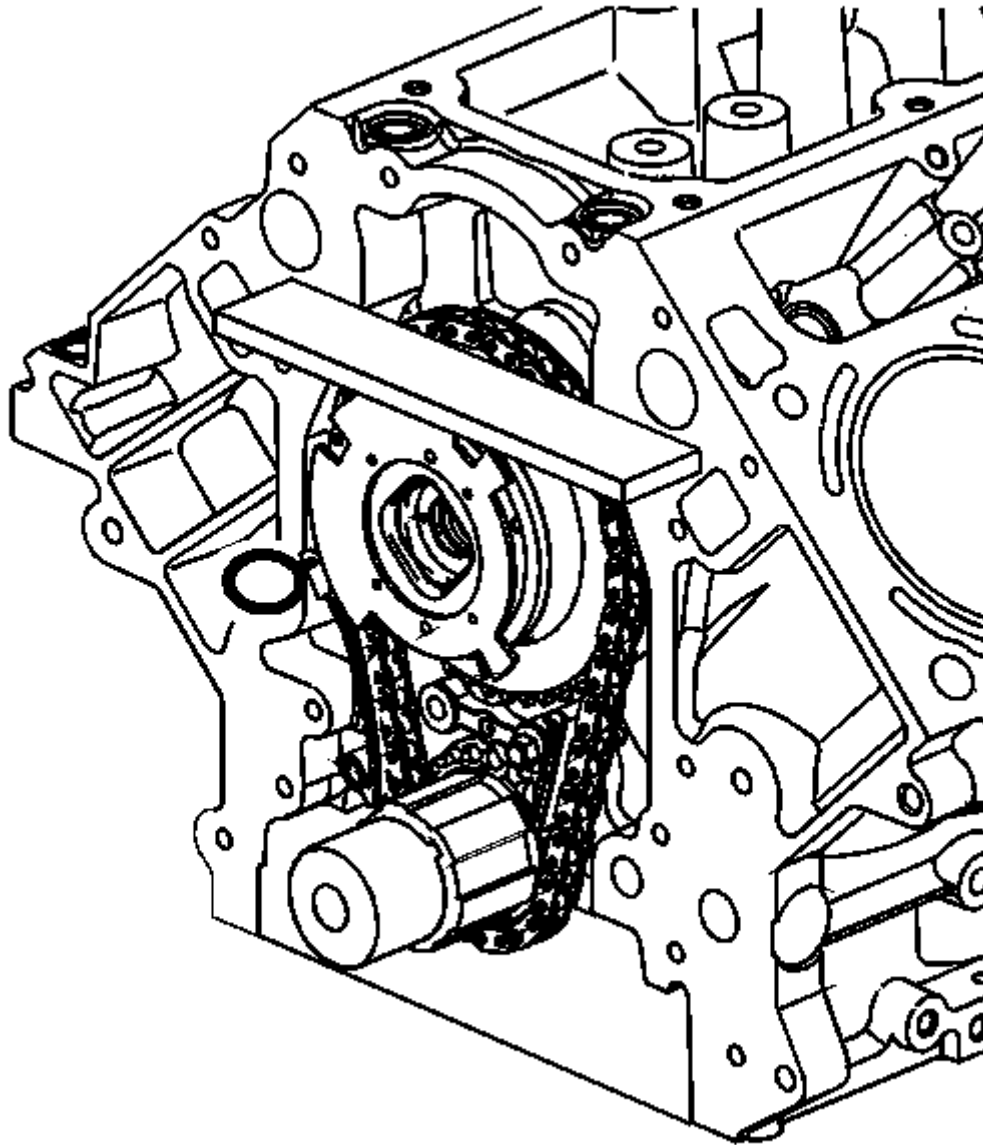


Fig. 200: Inspecting For Proper Installation Of CMP Actuator & Timing Chain
Courtesy of GENERAL MOTORS CORP.

11. Locate a straight edge across the front face of the engine block and inspect for proper installation of the CMP actuator and timing chain. With the CMP actuator properly and completely installed onto the front of camshaft, the timing chain will not protrude beyond

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

the front face of engine block.

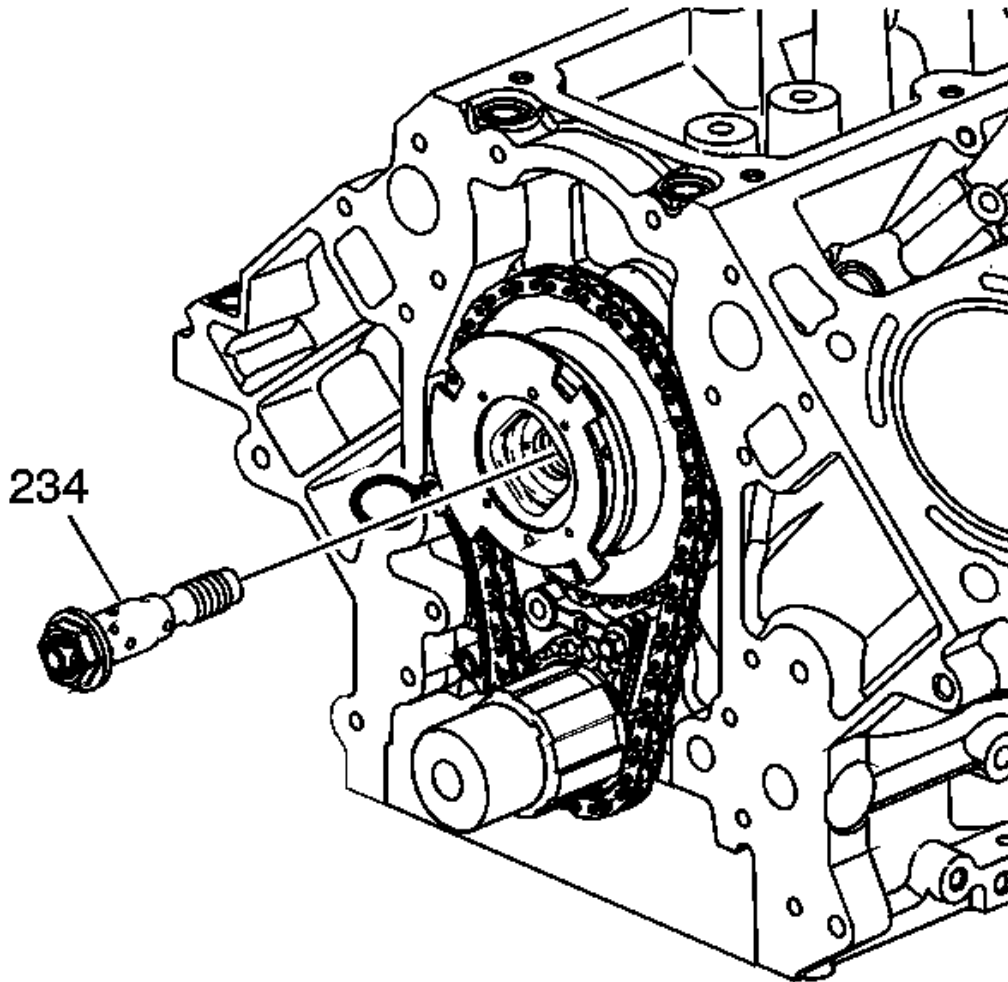


Fig. 201: View Of CMP Actuator Solenoid Valve
Courtesy of GENERAL MOTORS CORP.

12. Install a NEW CMP actuator solenoid valve (234). With the CMP actuator properly positioned onto the camshaft, the CMP actuator solenoid valve can be threaded completely into the camshaft using light hand pressure. Tighten by hand until snug.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

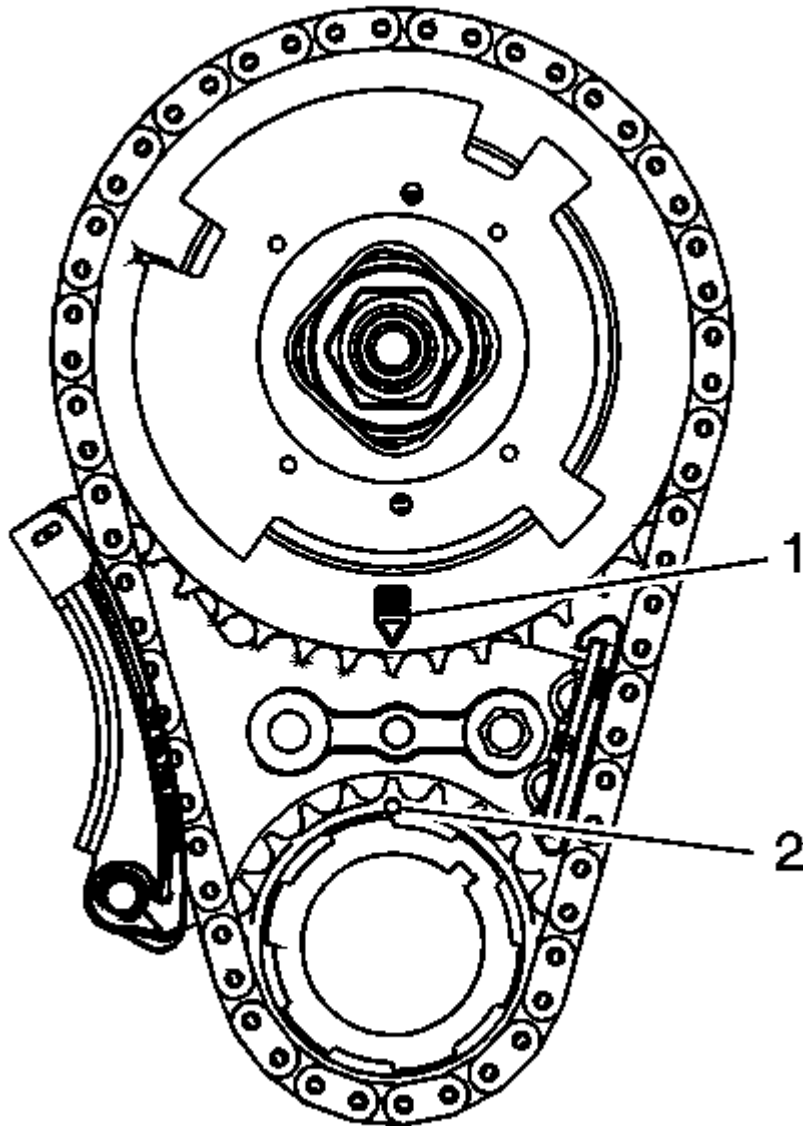


Fig. 202: View Of CMP Actuator Alignment Mark & Crankshaft Sprocket Alignment Mark

Courtesy of GENERAL MOTORS CORP.

13. Inspect the sprockets for proper alignment. The mark on the CMP actuator sprocket (1) should be located in the 6 o'clock position and the mark on the crankshaft sprocket (2)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

should be located in the 12 o'clock position.

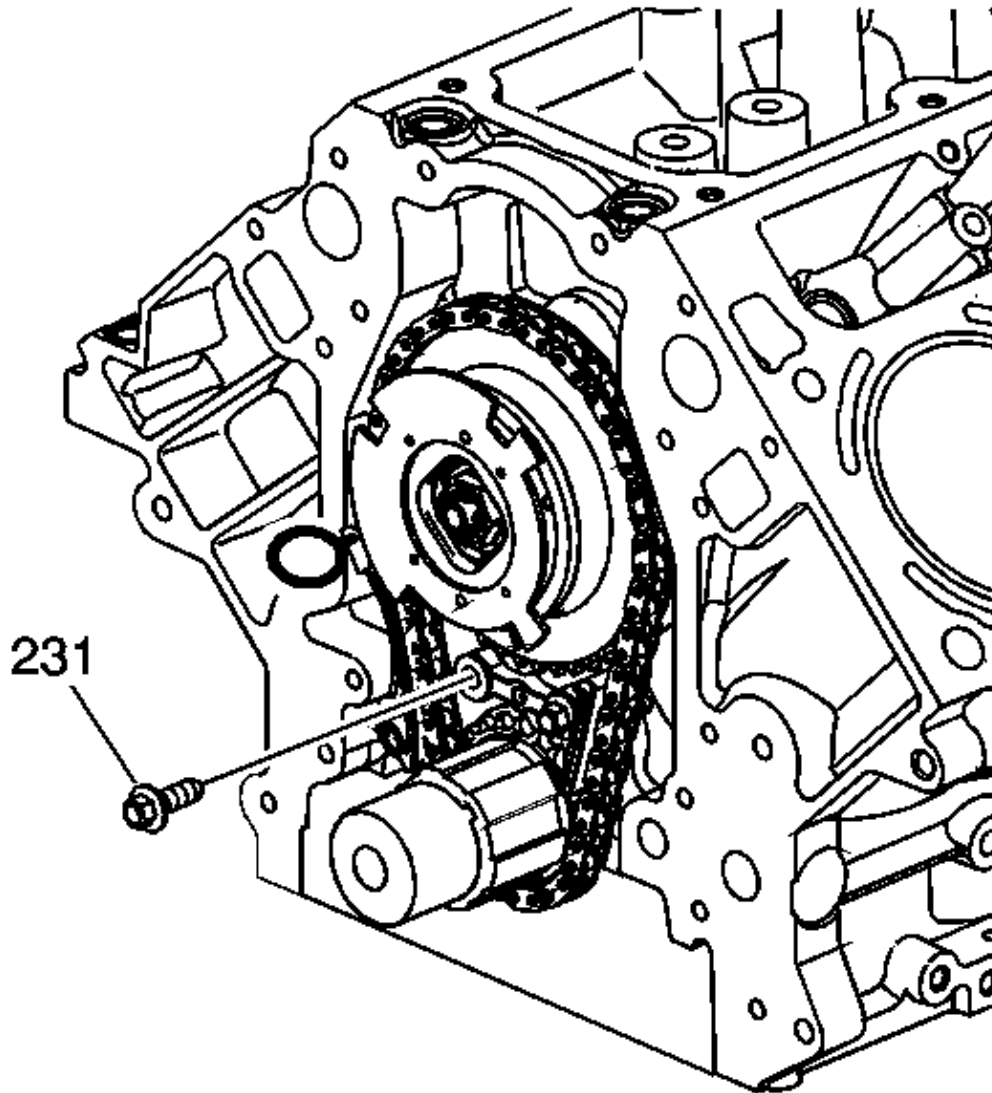


Fig. 203: View Of Timing Chain Tensioner Bolt
Courtesy of GENERAL MOTORS CORP.

14. Install the right side bolt (231) into the timing chain tensioner.

Tighten: Tighten the timing chain tensioner bolts to 25 N.m (18 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

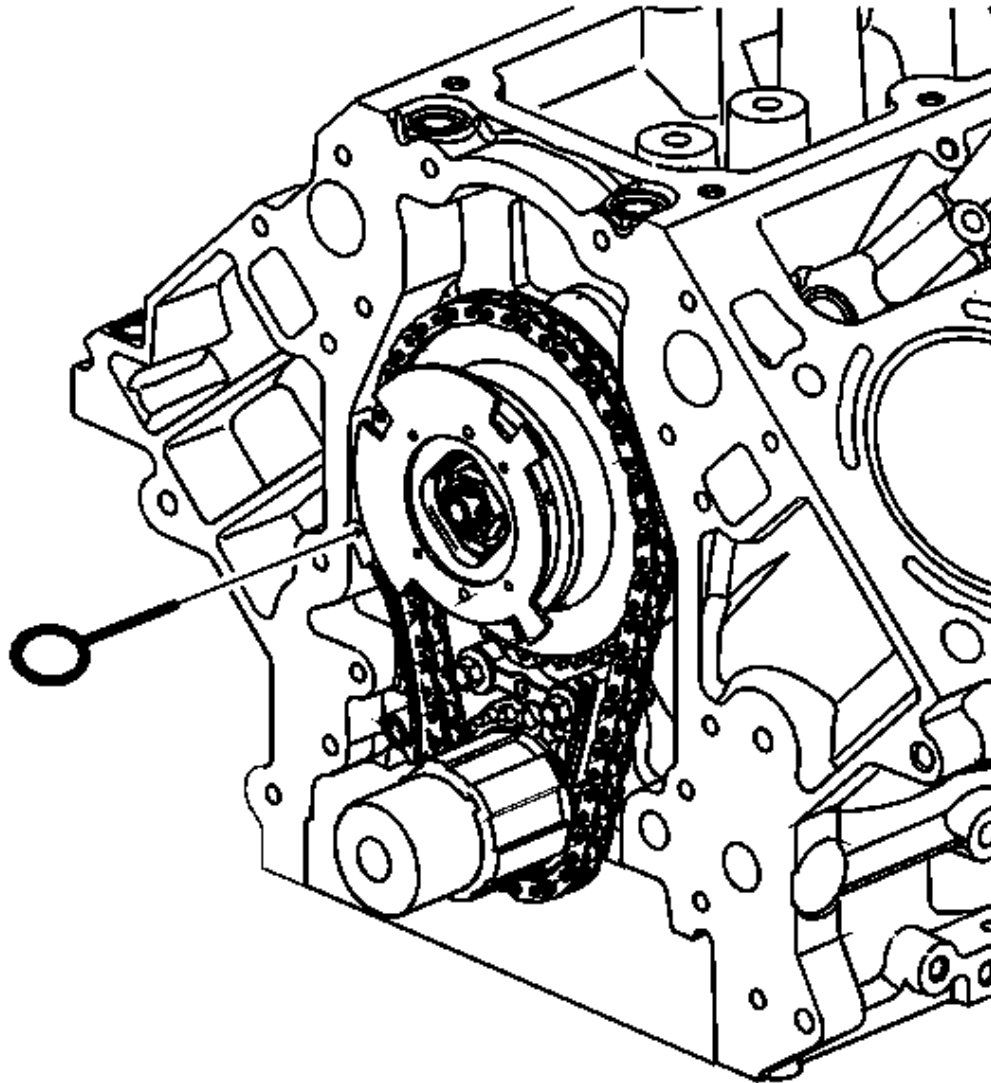


Fig. 204: View Of Special Tool EN 46330
Courtesy of GENERAL MOTORS CORP.

15. Remove the EN 46330 . See Special Tools .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

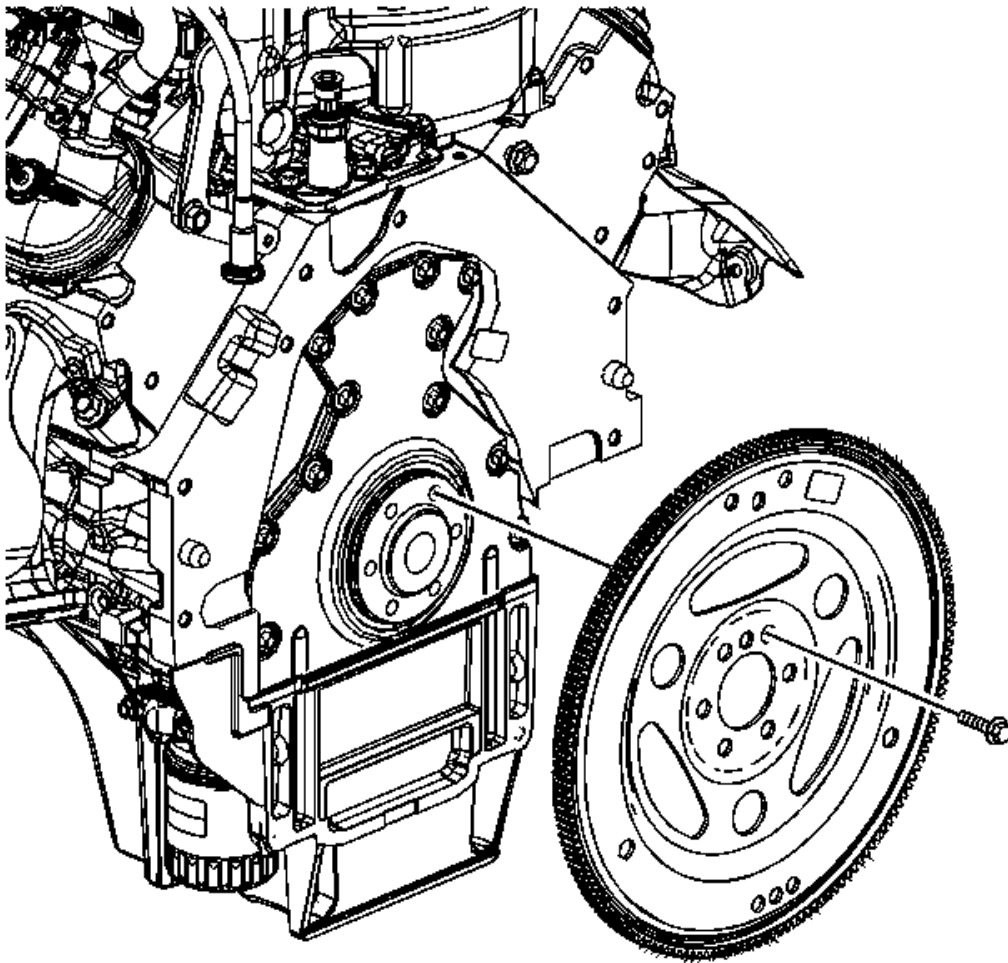


Fig. 205: View Of Flex Plate & Bolts
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not apply threadlock to the flex plate bolts at this time.

16. Temporarily install the automatic transmission flex plate and bolts. Refer to [Automatic Transmission Flex Plate Installation](#) .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

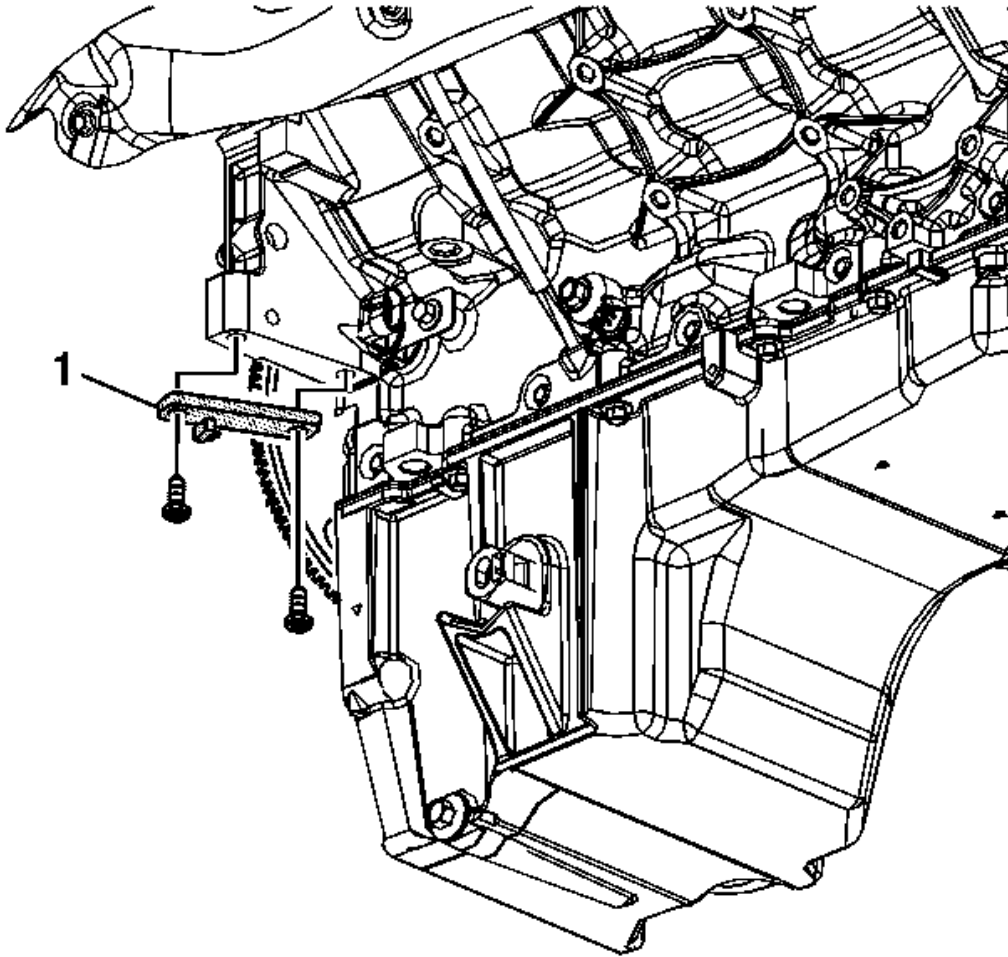


Fig. 206: View Of Special Tool & Bolts
Courtesy of GENERAL MOTORS CORP.

17. Install the **J 42386-A** (1) and bolts. See **Special Tools** . Use 1 M10 - 1.5 x 120 mm and 1 M10 - 1.5 x 45 mm bolt for proper tool operation.

Tighten: Tighten the **J 42386-A** bolts to 50 N. See **Special Tools** .m (37 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

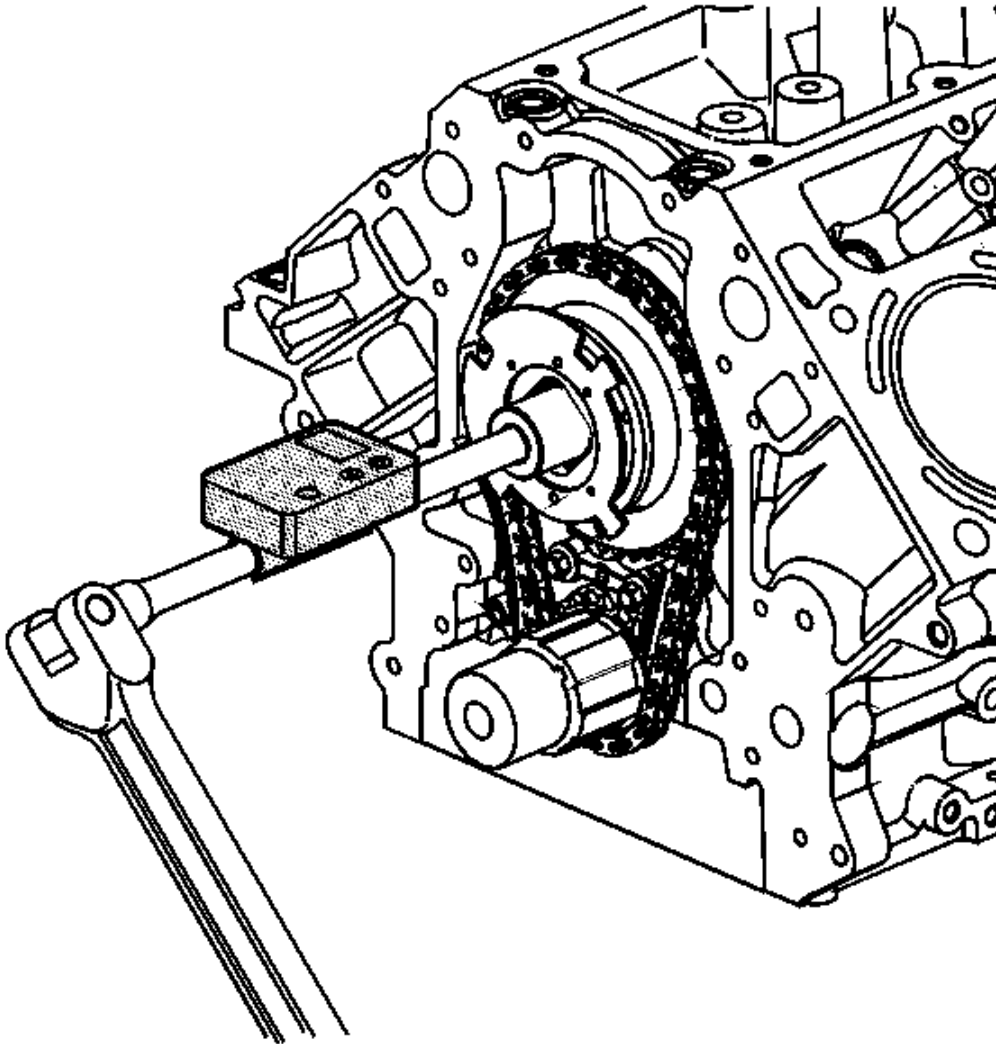


Fig. 207: Tightening CMP Actuator Solenoid Valve
Courtesy of GENERAL MOTORS CORP.

18. Tighten the CMP actuator solenoid valve.

Tighten:

1. Tighten the CMP actuator solenoid valve a first pass to 65 N.m (48 lb ft).
2. Tighten the CMP actuator solenoid valve a final pass an additional 90 degrees using

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

the **J 45059** .

19. Remove the **J 42386-A** and bolts. See **Special Tools** .
20. Remove the automatic transmission flex plate and bolts. Refer to **Automatic Transmission Flex Plate Removal** .

TIMING CHAIN AND SPROCKETS INSTALLATION

Tools Required

- **EN 46330** Timing Belt Tensioner Retaining Pin. See **Special Tools** .
- **J 41478** Crankshaft Front Oil Seal Installer. See **Special Tools** .
- **J 41665** Crankshaft Balancer and Sprocket Installer. See **Special Tools** .
- **J 42386-A** Flywheel Holding Tool. See **Special Tools** .
- **J 45059** Angle Meter

Installation

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

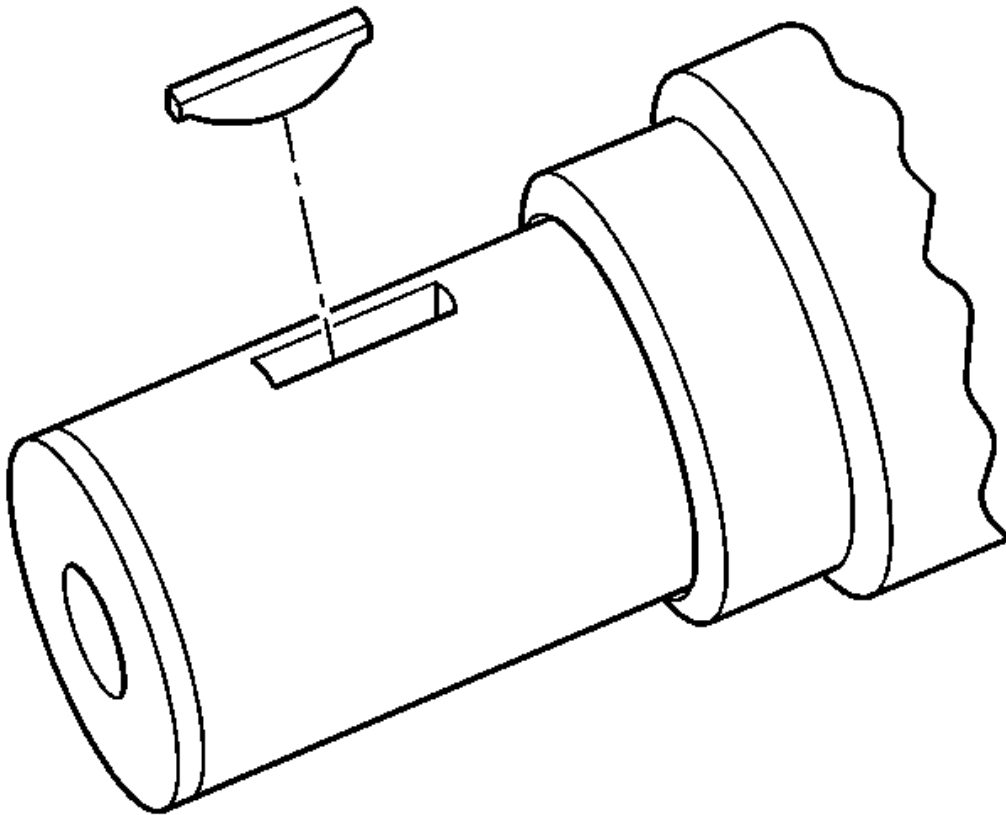


Fig. 208: View Of Crankshaft Key & Keyway
Courtesy of GENERAL MOTORS CORP.

1. Install the key into the crankshaft keyway, if previously removed.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

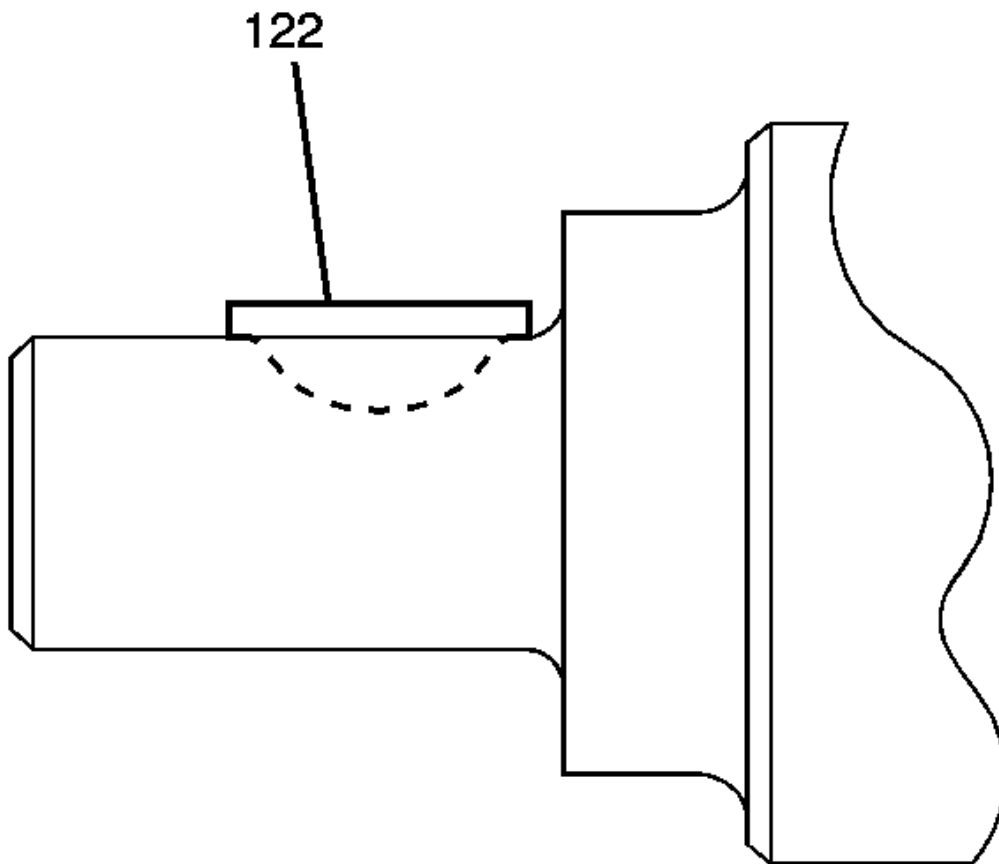


Fig. 209: View Of Installed Crankshaft Key
Courtesy of GENERAL MOTORS CORP.

2. Tap the key (122) into the keyway until both ends of the key bottom onto the crankshaft.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

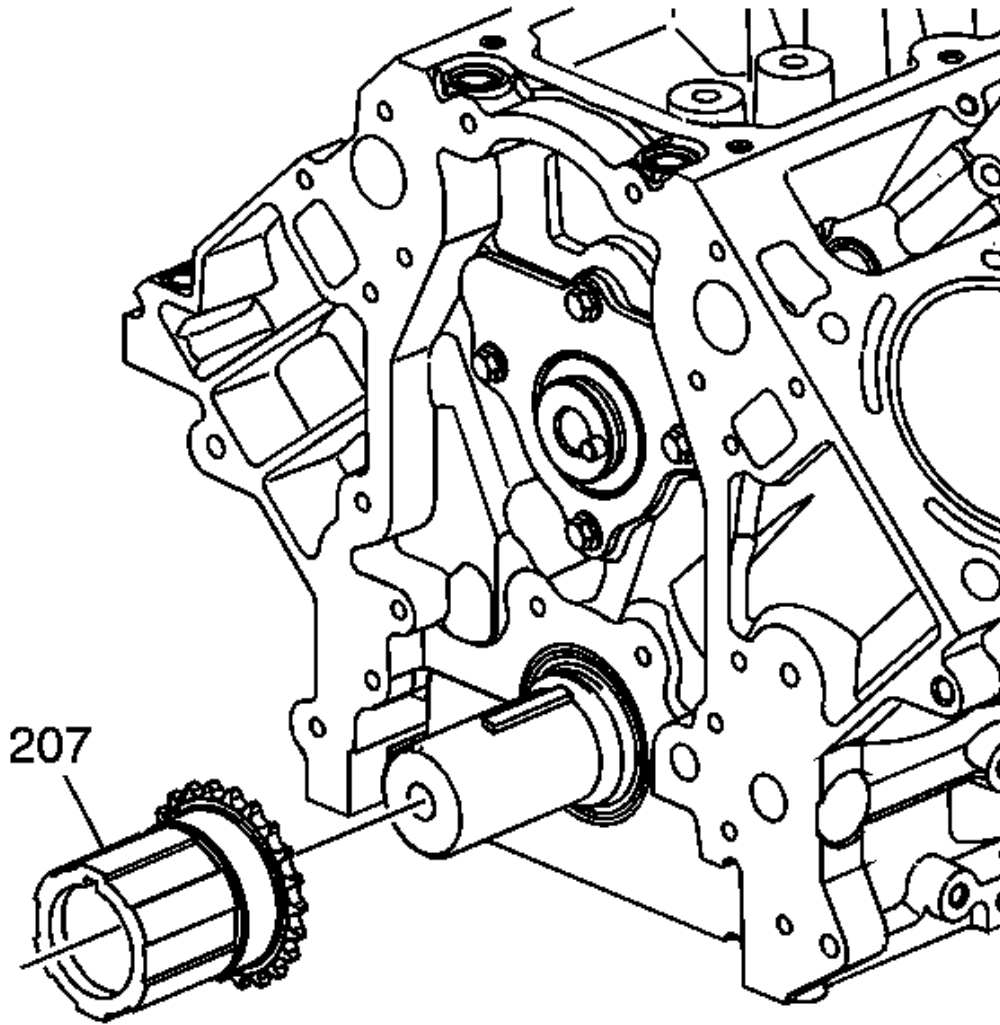


Fig. 210: View Of Crankshaft Sprocket
Courtesy of GENERAL MOTORS CORP.

3. Install the crankshaft sprocket (207) onto the front of the crankshaft. Align the crankshaft key with the crankshaft sprocket keyway.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

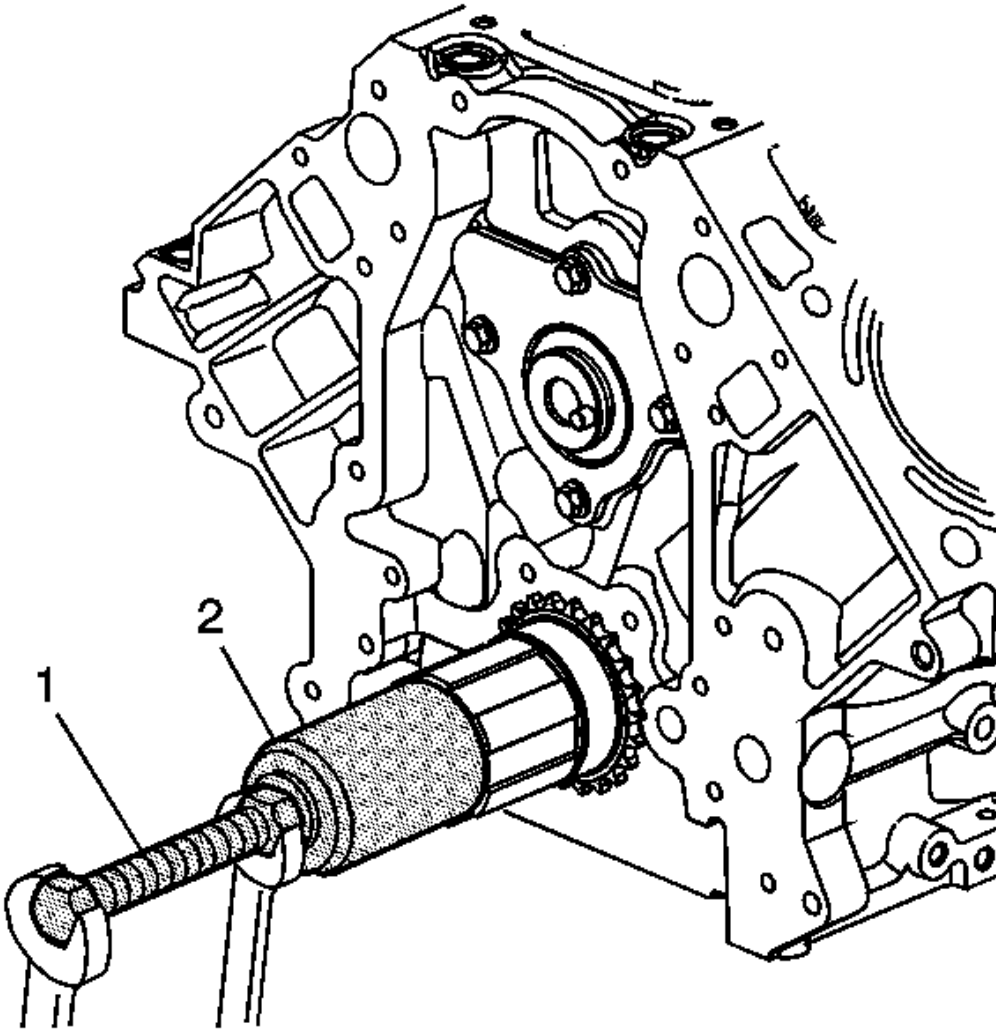


Fig. 211: View Of Crankshaft Sprocket & Installer
Courtesy of GENERAL MOTORS CORP.

4. Use the **J 41478** (1) and the **J 41665** (2) in order to install the crankshaft sprocket. See **Special Tools** .

Install the sprocket onto the crankshaft until fully seated against the crankshaft flange.

5. Rotate the crankshaft sprocket until the alignment mark is in the 12 o'clock position.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

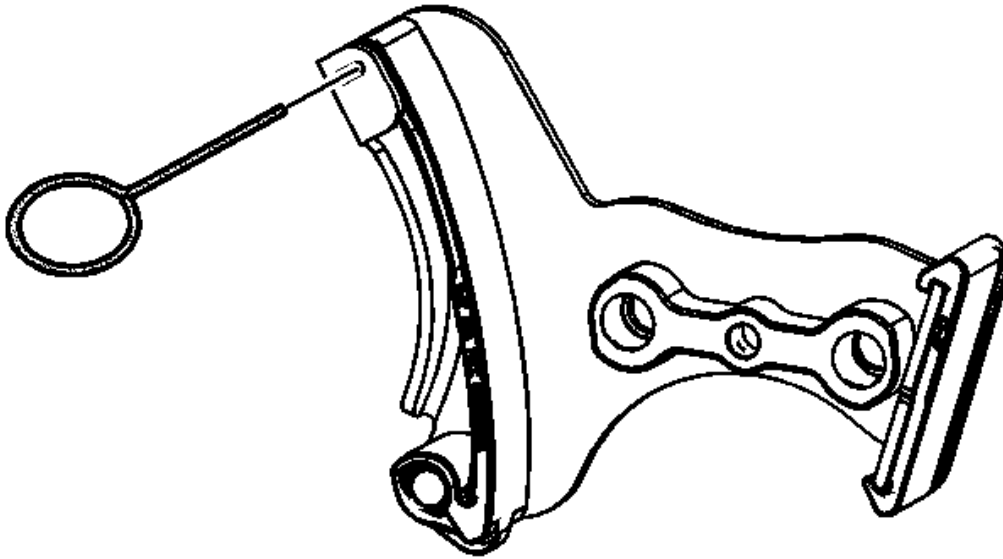


Fig. 212: View Of Compressed Tensioner
Courtesy of GENERAL MOTORS CORP.

6. Compress the timing chain tensioner guide and install the **EN 46330** . See **Special Tools** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

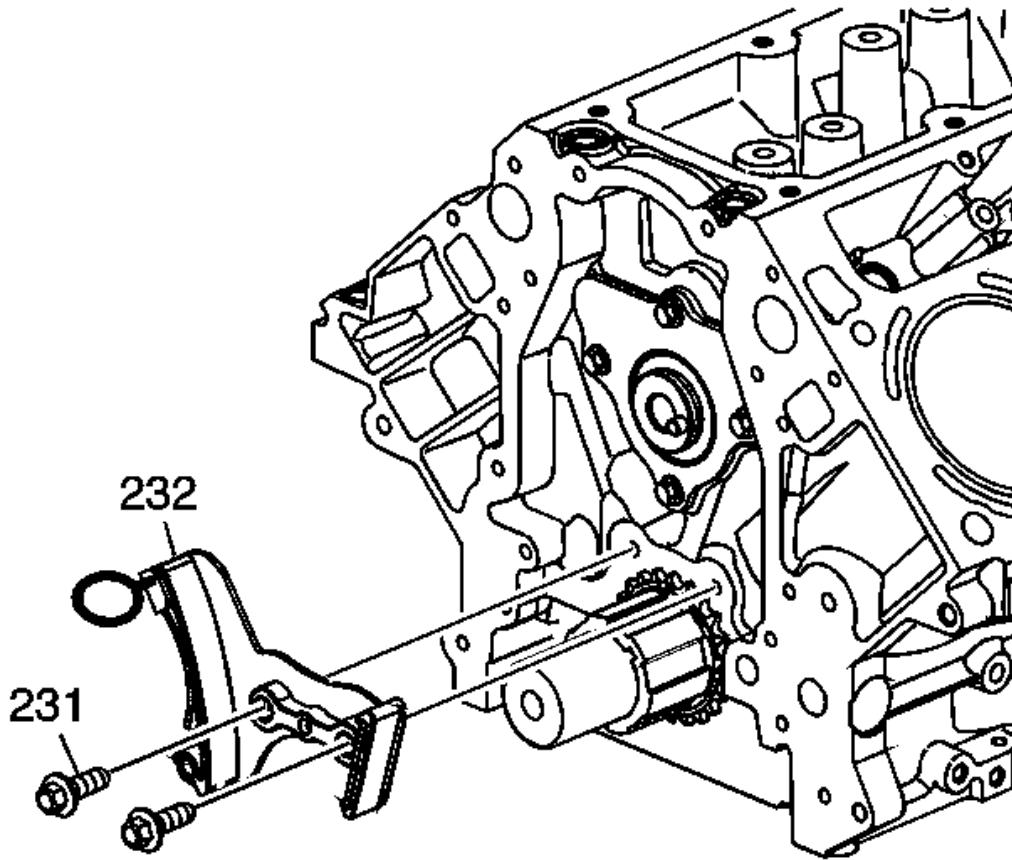


Fig. 213: View Of Timing Chain Tensioner
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

7. Install the timing chain tensioner (232) and bolts (231).

Tighten: Tighten the timing chain tensioner bolts to 25 N.m (18 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

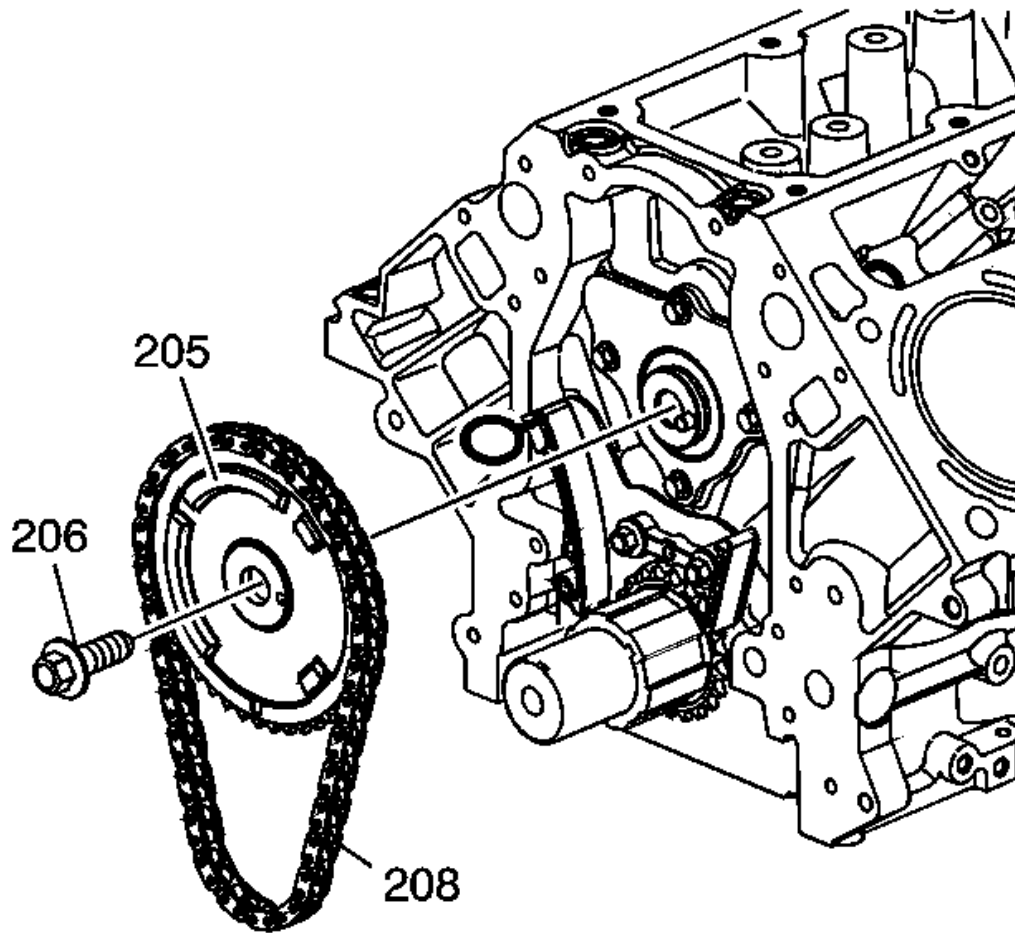


Fig. 214: View Of Camshaft Sprocket, Timing Chain & Bolt
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- Do not use the camshaft sprocket bolt again. Install a NEW bolt during assembly.
- The sprocket teeth and timing chain must mesh.
- The camshaft and the crankshaft sprocket alignment marks **MUST** be aligned properly.

8. Install the camshaft sprocket (205), timing chain (208), and NEW bolt (206).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

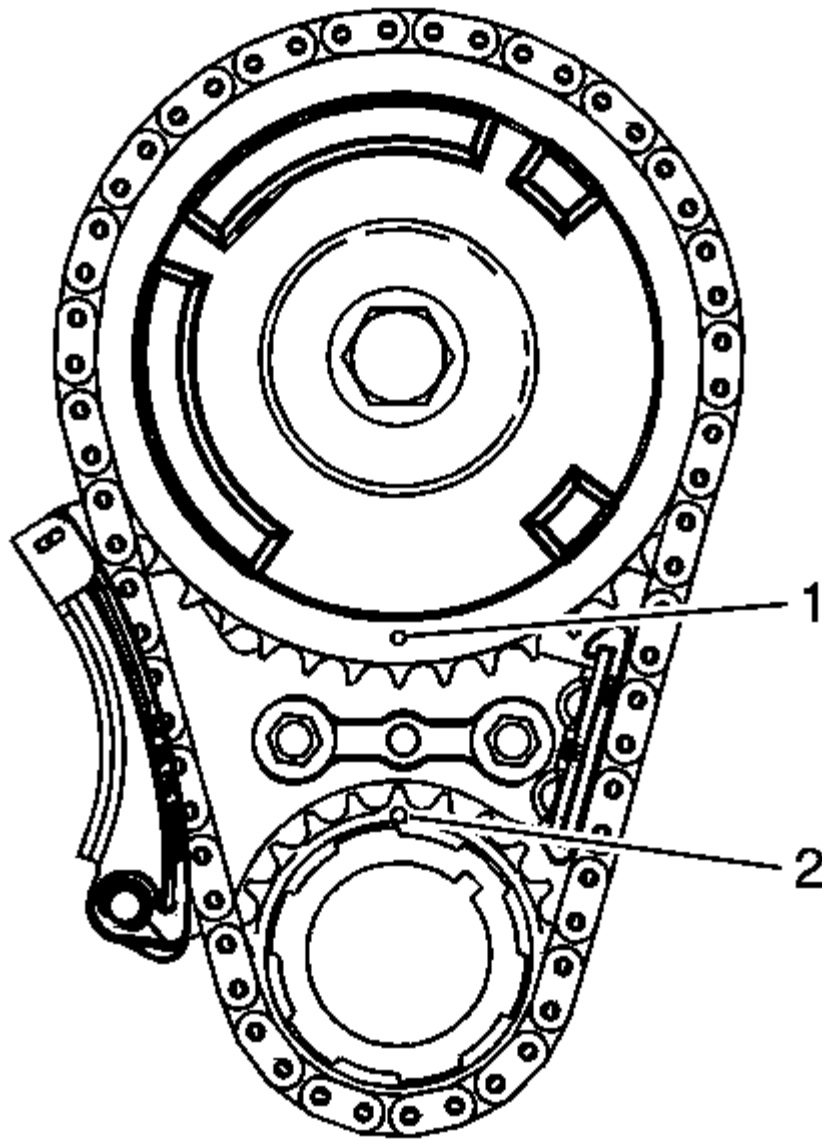


Fig. 215: Identifying Camshaft & Crankshaft Marks
Courtesy of GENERAL MOTORS CORP.

9. Inspect the sprockets for proper alignment. The mark on the camshaft sprocket (1) should be located in the 6 o'clock position and the mark on the crankshaft sprocket (2) should be located in the 12 o'clock position.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

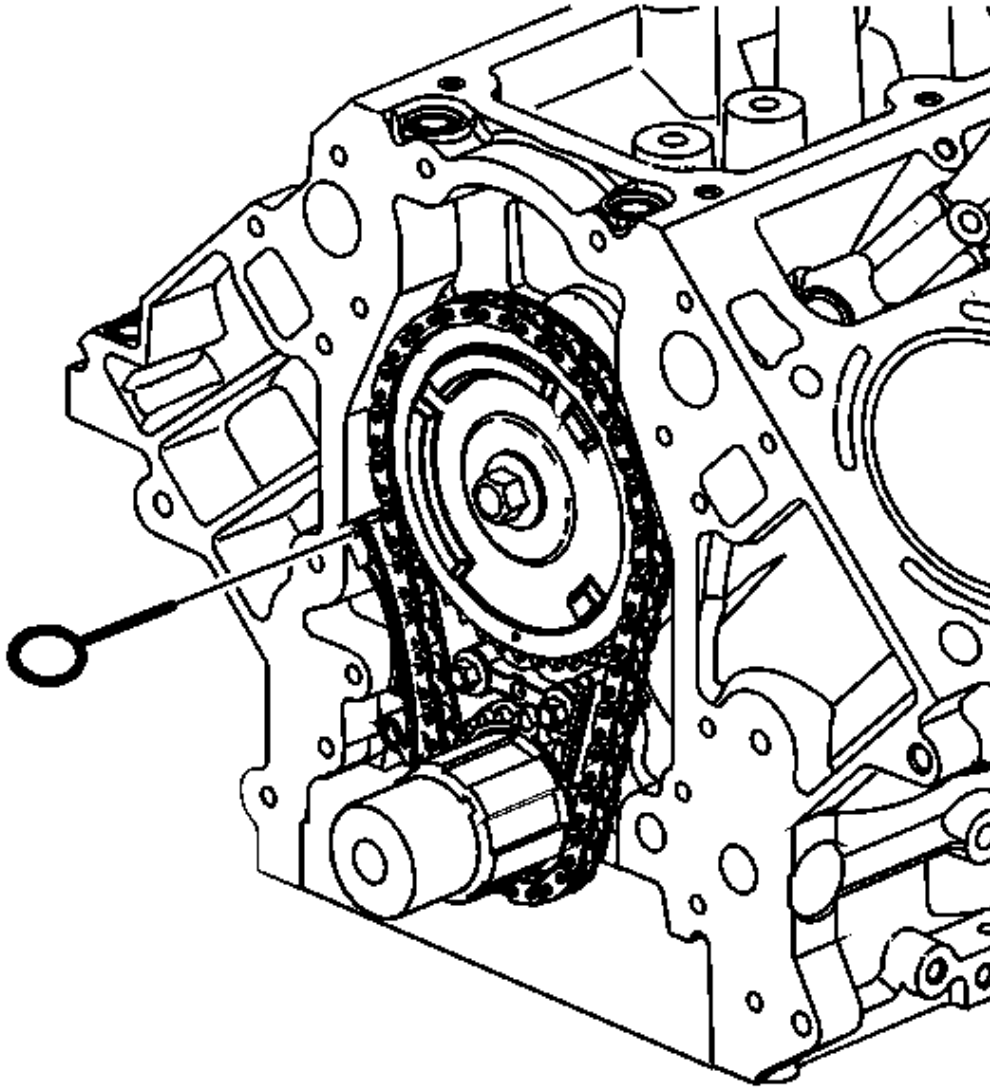


Fig. 216: Locating Tensioner Pin
Courtesy of GENERAL MOTORS CORP.

10. Remove the EN 46330 . See Special Tools .

IMPORTANT: Do not apply threadlock to the flex plate bolts at this time.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

11. Temporarily install the automatic transmission flex plate and bolts. Refer to **Automatic Transmission Flex Plate Installation** .

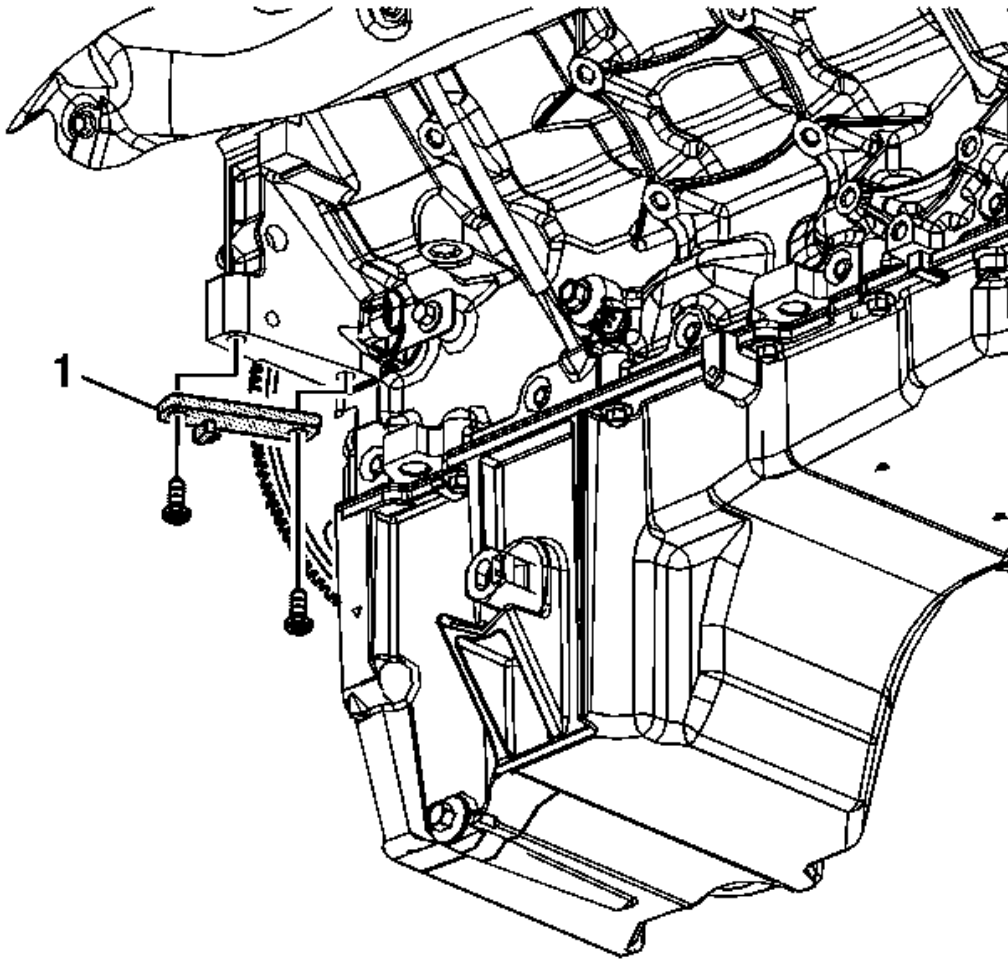


Fig. 217: View Of Special Tool & Bolts
Courtesy of GENERAL MOTORS CORP.

12. Install the **J 42386-A** (1) and bolts. See **Special Tools** . Use 1 M10-1.5 x 120 mm bolt and 1 M10-1.5 x 45 mm bolt for proper tool operation.

Tighten: Tighten the **J 42386-A** bolts to 50 N. See **Special Tools** .m (37 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

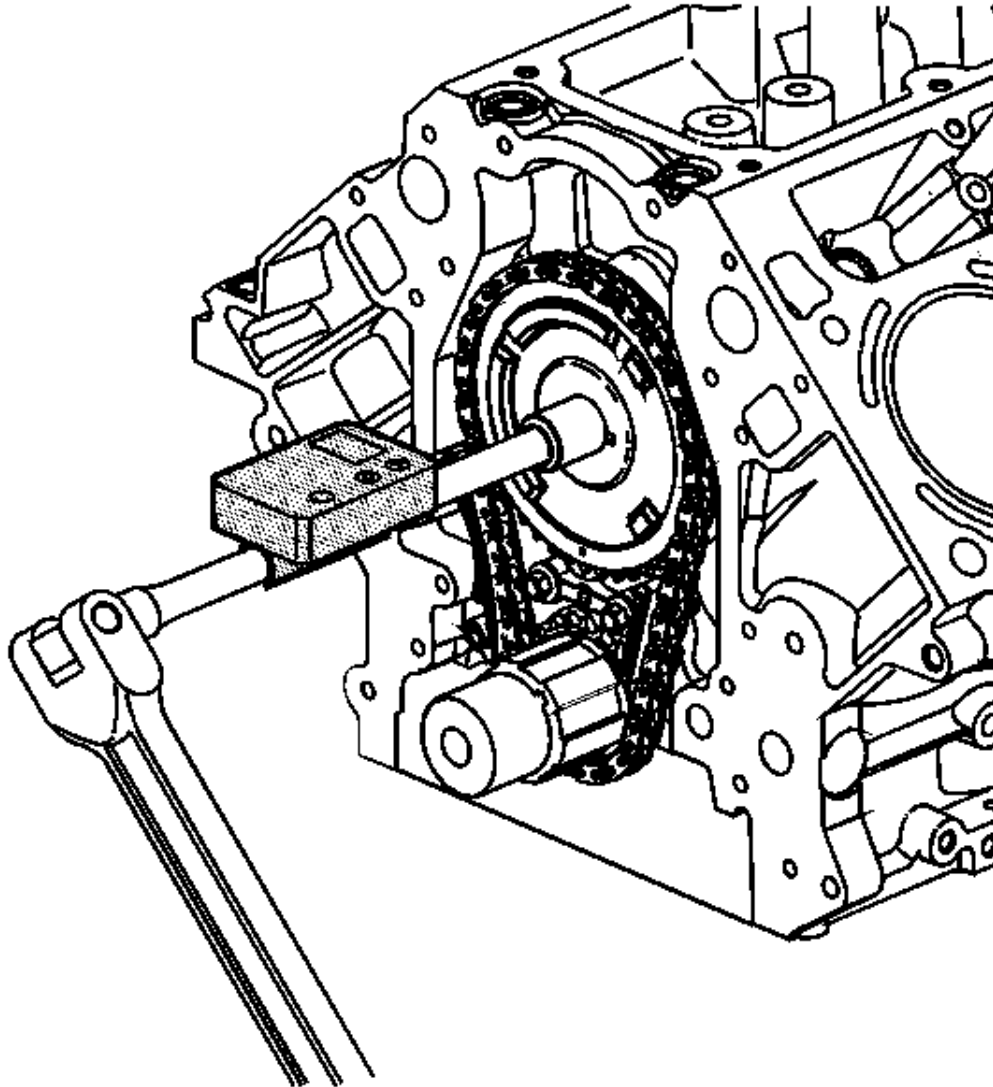


Fig. 218: Identifying Camshaft Sprocket Bolt Tightening Sequence
Courtesy of GENERAL MOTORS CORP.

13. Tighten the camshaft sprocket bolt.

Tighten:

1. Tighten the camshaft sprocket bolt a first pass to 75 N.m (55 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Tighten the camshaft sprocket bolt a final pass an additional 50 degrees using the **J 45059** .
14. Remove the **J 42386-A** and bolts. See **Special Tools** .
15. Remove the automatic transmission flex plate and bolt. Refer to **Automatic Transmission Flex Plate Removal** .

OIL PUMP, SCREEN AND CRANKSHAFT OIL DEFLECTOR INSTALLATION (RPO LY2/LH6/LMG/LY5/LC9)

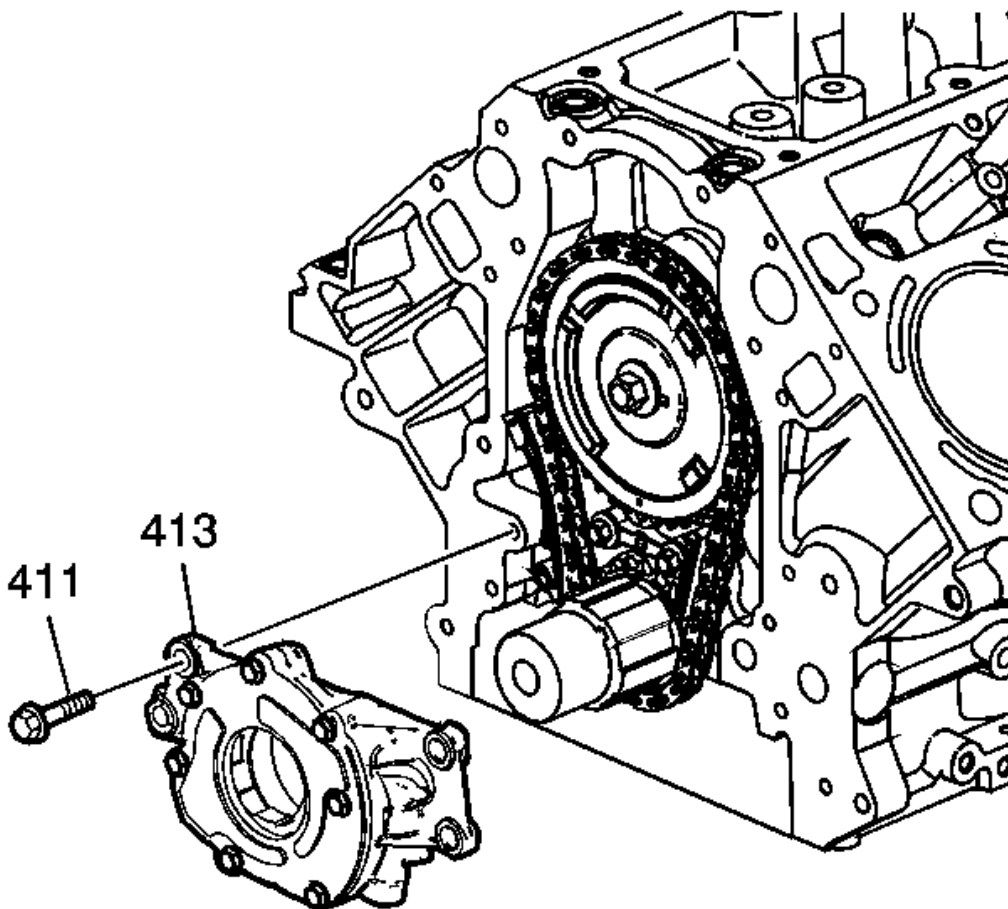


Fig. 219: View Of Oil Pump & Bolts
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

IMPORTANT: Inspect the oil pump and engine block oil gallery passages. These surfaces must be clear and free of debris or restrictions.

1. Align the splined surfaces of the crankshaft sprocket and the oil pump drive gear and install the oil pump (413).
2. Install the oil pump (413) onto the crankshaft sprocket until the pump housing contacts the face of the engine block.

NOTE: Refer to Fastener Notice .

3. Install the oil pump bolts (411).

Tighten: Tighten the oil pump bolts to 25 N.m (18 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

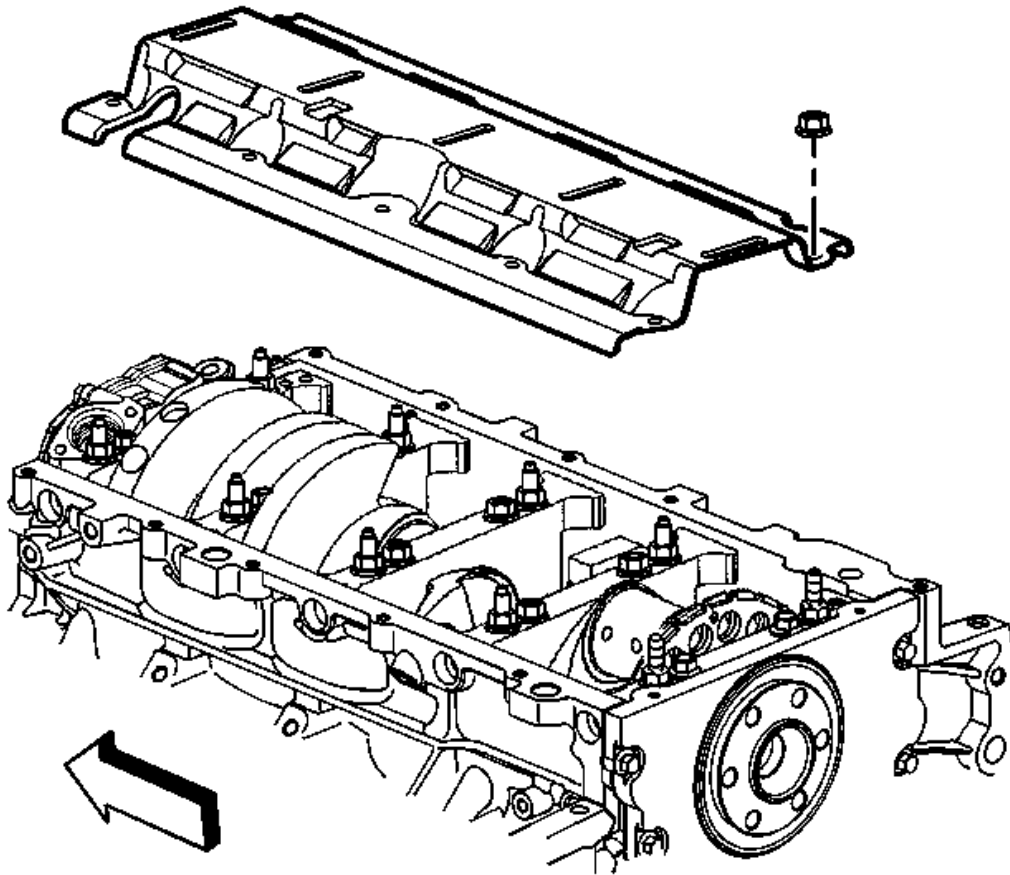


Fig. 220: View Of Crankshaft Oil Deflector
Courtesy of GENERAL MOTORS CORP.

4. Install the crankshaft oil deflector (425) and nuts (403).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

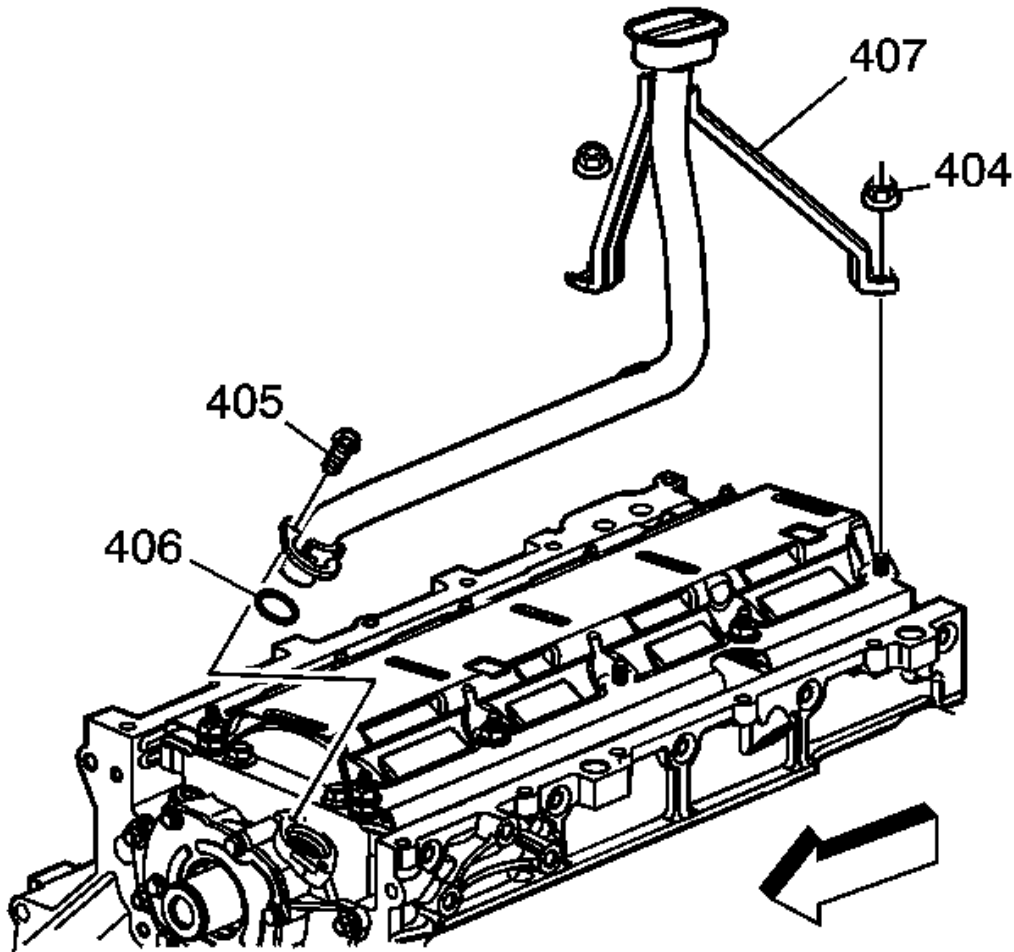


Fig. 221: View Of Oil Pump Screen, Bolt, Nuts, & O-Ring Seal
Courtesy of GENERAL MOTORS CORP.

5. Lubricate a NEW oil pump screen O-ring seal (406) with clean engine oil.
6. Install the NEW O-ring seal onto the oil pump screen.

IMPORTANT:

- Push the oil pump screen tube completely into the oil pump prior to tightening the bolt. Do not allow the bolt to pull the tube into the pump.
- Align the oil pump screen mounting brackets with the

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

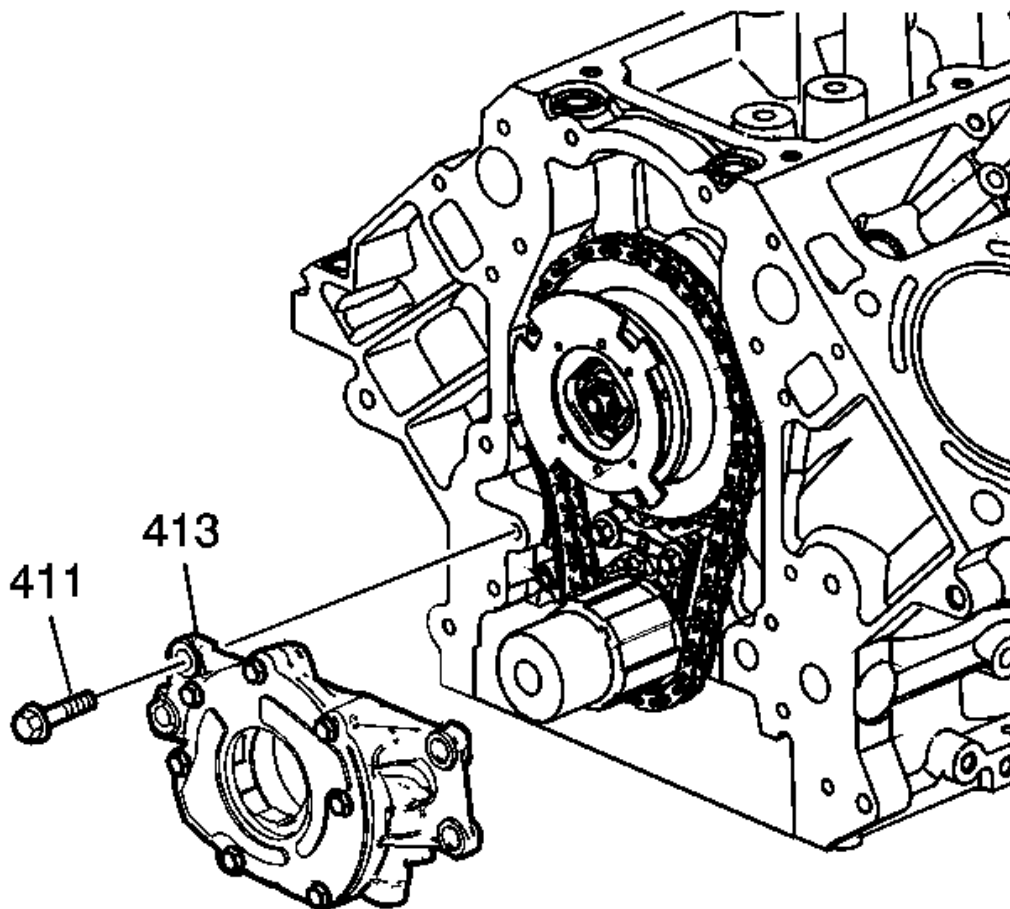
correct crankshaft bearing cap bolt/studs.

7. Install the oil pump screen (407).
8. Install the oil pump screen bolt (405) and the nut (404).

Tighten:

1. Tighten the oil pump screen bolt to 12 N.m (106 lb in).
2. Tighten the crankshaft oil deflector nut to 25 N.m (18 lb ft).

OIL PUMP, SCREEN AND CRANKSHAFT OIL DEFLECTOR INSTALLATION (RPO LY6/LY6/L76/L92)



2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Fig. 222: View Of Oil Pump & Bolts **Courtesy of GENERAL MOTORS CORP.**

IMPORTANT: Inspect the oil pump and engine block oil gallery passages. These surfaces must be clear and free of debris or restrictions.

1. Align the splined surfaces of the crankshaft sprocket and the oil pump drive gear and install the oil pump (413).
2. Install the oil pump (413) onto the crankshaft sprocket until the pump housing contacts the face of the engine block.

NOTE: Refer to Fastener Notice .

3. Install the oil pump bolts (411).

Tighten: Tighten the oil pump bolts to 25 N.m (18 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

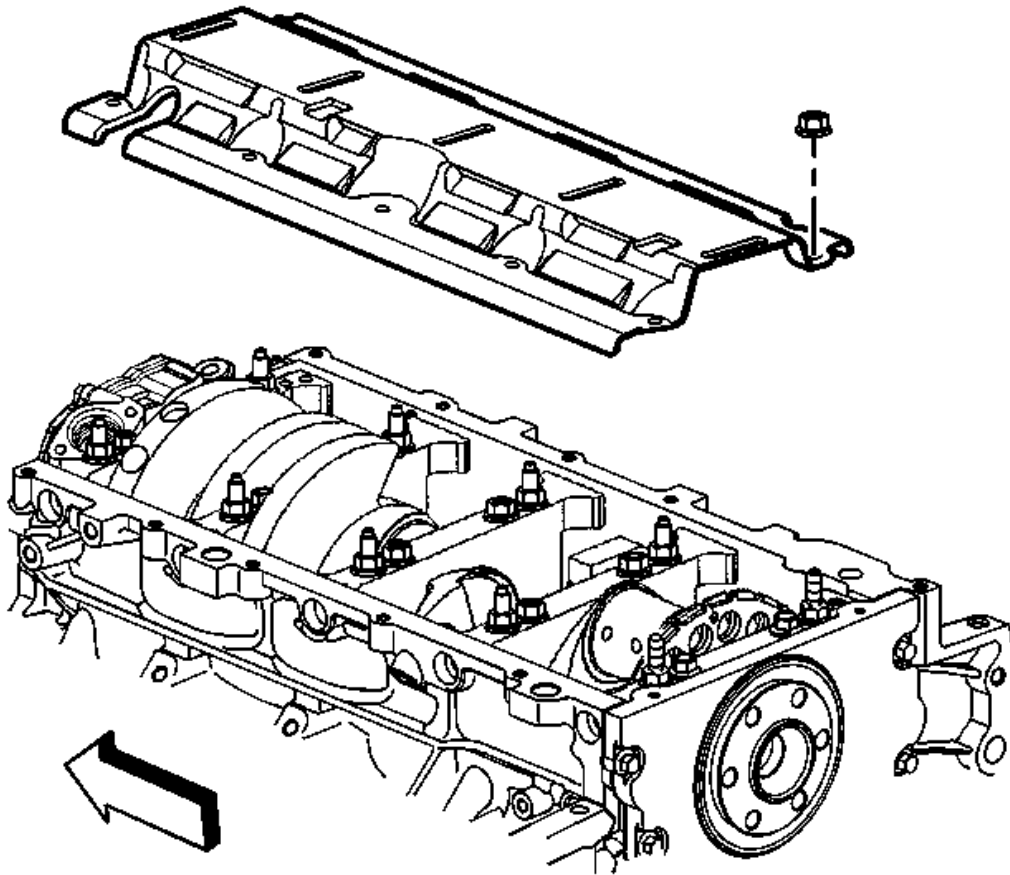


Fig. 223: View Of Crankshaft Oil Deflector
Courtesy of GENERAL MOTORS CORP.

4. Install the crankshaft oil deflector (425) and nuts (403).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

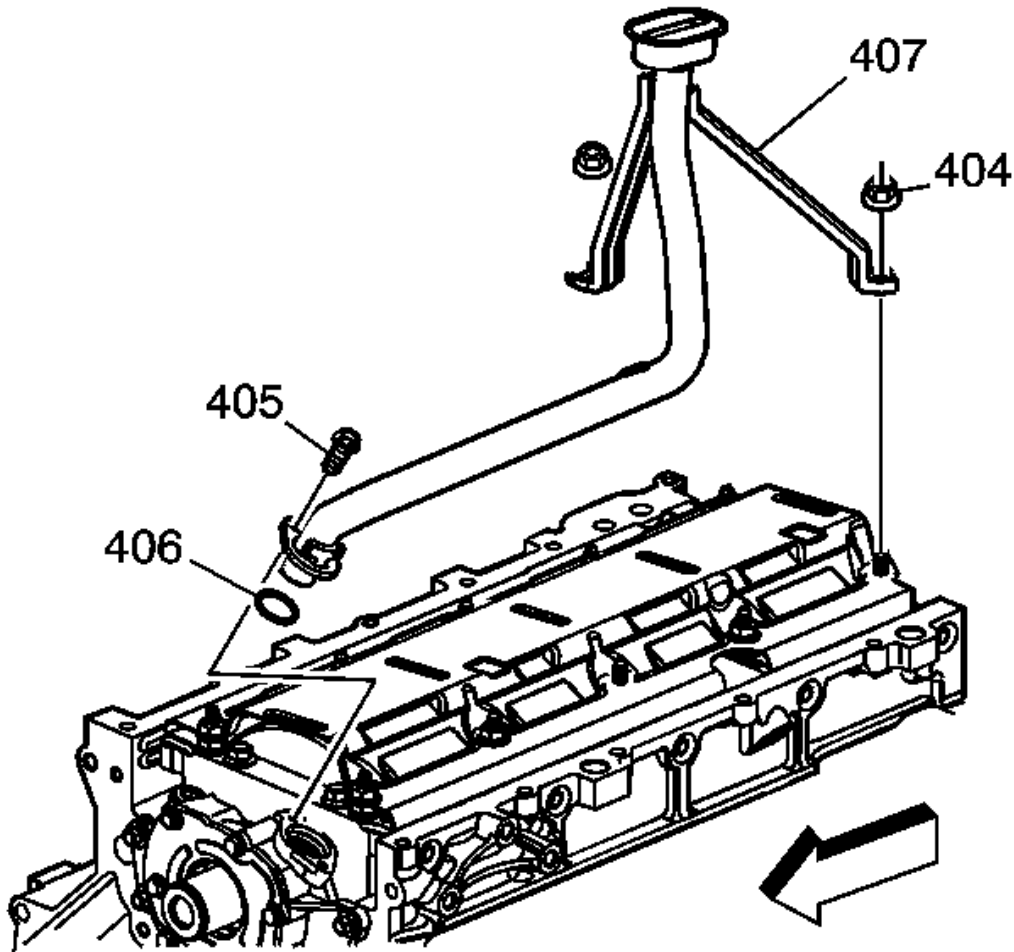


Fig. 224: View Of Oil Pump Screen, Bolt, Nuts, & O-Ring Seal
Courtesy of GENERAL MOTORS CORP.

5. Lubricate a NEW oil pump screen O-ring seal (406) with clean engine oil.
6. Install the NEW O-ring seal onto the oil pump screen.

IMPORTANT:

- Push the oil pump screen tube completely into the oil pump prior to tightening the bolt. Do not allow the bolt to pull the tube into the pump.
- Align the oil pump screen mounting brackets with the

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

correct crankshaft bearing cap bolt/studs.

7. Install the oil pump screen (407).
8. Install the oil pump screen bolt (405) and the nut (404).

Tighten:

1. Tighten the oil pump screen bolt to 12 N.m (106 lb in).
2. Tighten the crankshaft oil deflector nut to 25 N.m (18 lb ft).

CRANKSHAFT REAR OIL SEAL HOUSING INSTALLATION (WITH SEAL IN HOUSING)

Special Tools

- **J 41479-2A** Crankshaft Rear Oil Seal Installation Guide
- **J 41480** Front and Rear Cover Alignment. See **Special Tools** .

Installation

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

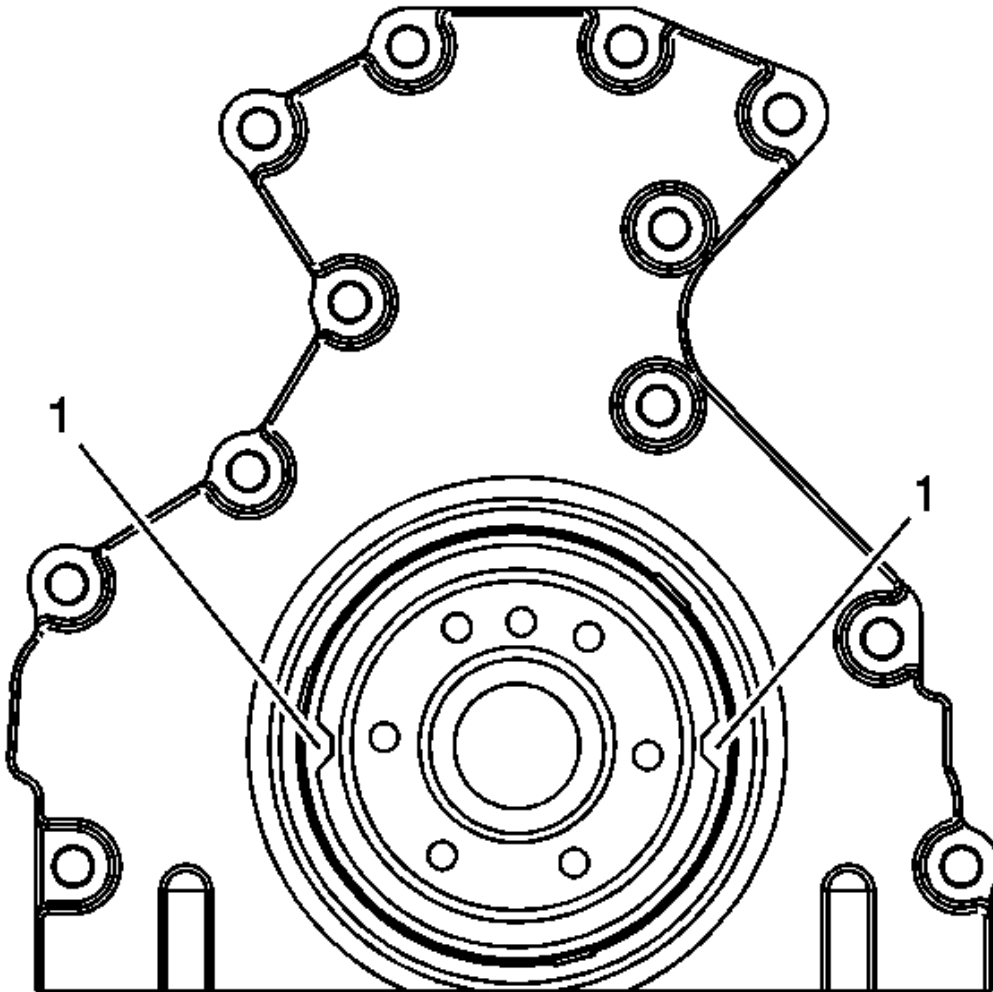


Fig. 225: View Of Rear Housing Alignment Tabs
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- Do not use the crankshaft rear oil seal or the engine rear housing gasket again.
- Do not apply any type of sealant to the rear housing gasket, unless specified.
- The special tool in this procedure is used to properly align the engine rear housing at the oil pan surface.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- **First design rear housings do not have alignment tabs for alignment of the housing horizontally. J 41476 is required to properly align first design rear housings. See Special Tools . The rear oil seal must be removed from the housing for proper use of the tool.**
- **Second design rear housings have alignment tabs for alignment of the housing horizontally. J 41476 is not required for proper alignment of second design rear housings. See Special Tools . The housing may be installed and aligned with the seal already installed into the housing.**

1. Inspect the rear housing to identify for alignment tabs (1).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

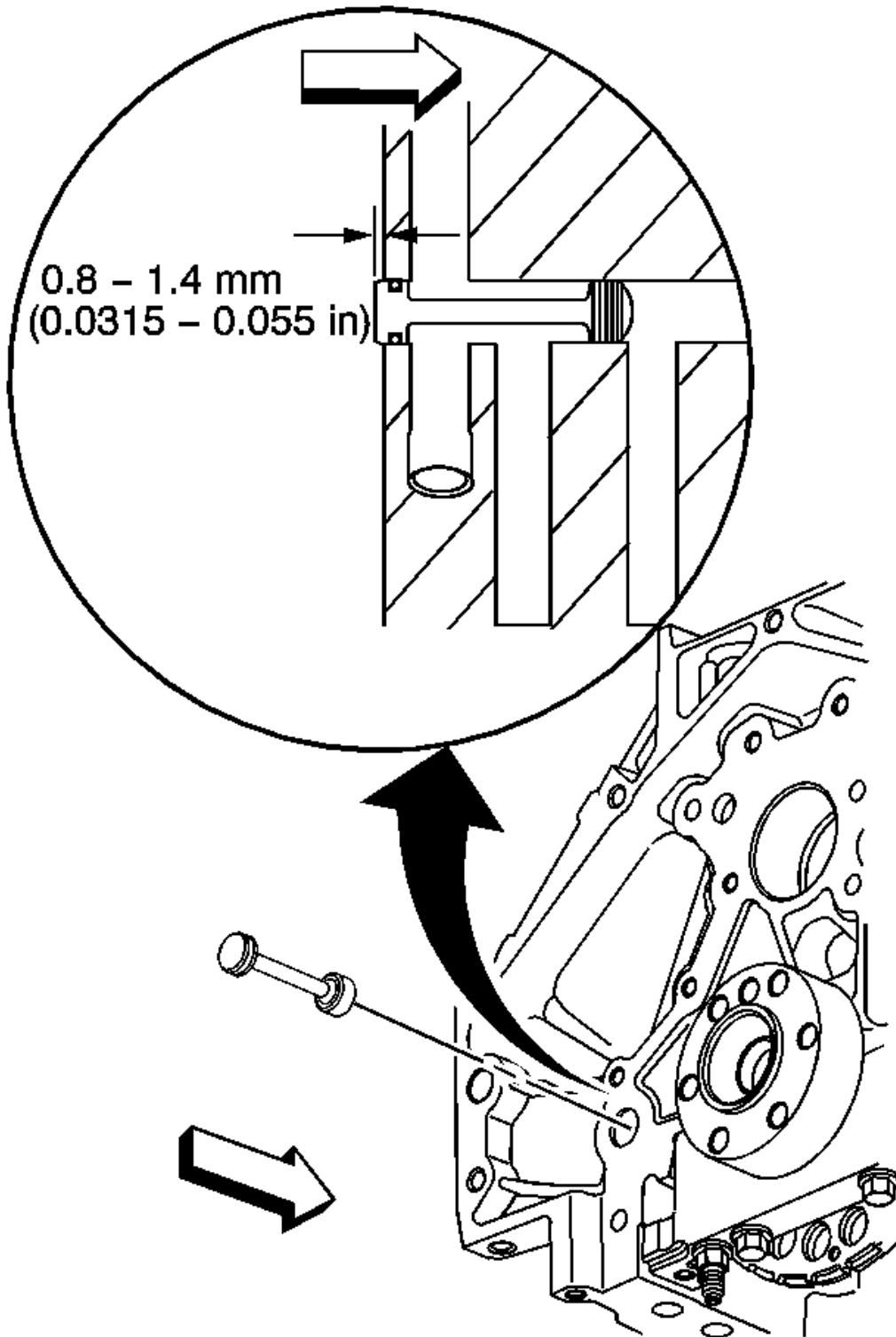


Fig. 226: View Of Engine Block Rear Oil Gallery Plug
Courtesy of GENERAL MOTORS CORP.

2. Inspect the rear oil gallery plug for proper installation.

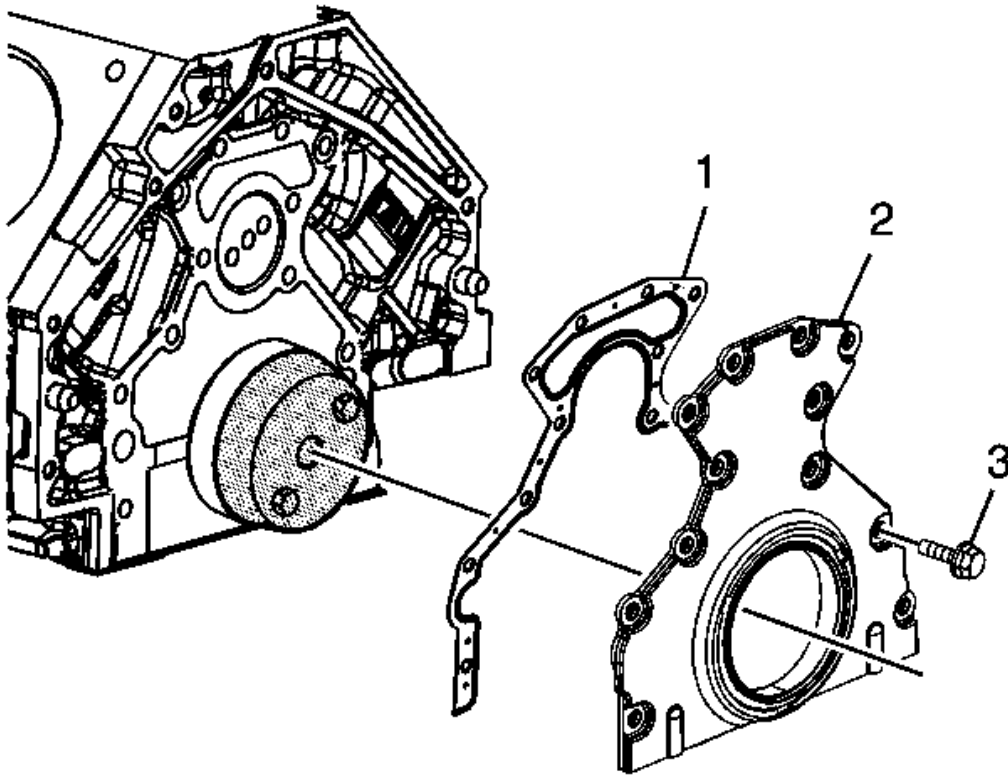


Fig. 227: View Of Rear Housing Gasket, Rear Housing With Seal And Bolts
Courtesy of GENERAL MOTORS CORP.

3. Install the **J 41479-2A** cone and bolts onto the rear of the crankshaft.
4. Tighten the bolts until snug. Do not overtighten.
5. Install the rear housing gasket (1), rear housing with seal (2), and bolts (3).
6. Tighten the bolts finger tight. Do not overtighten.
7. Remove the **J 41479-2A** and bolts.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

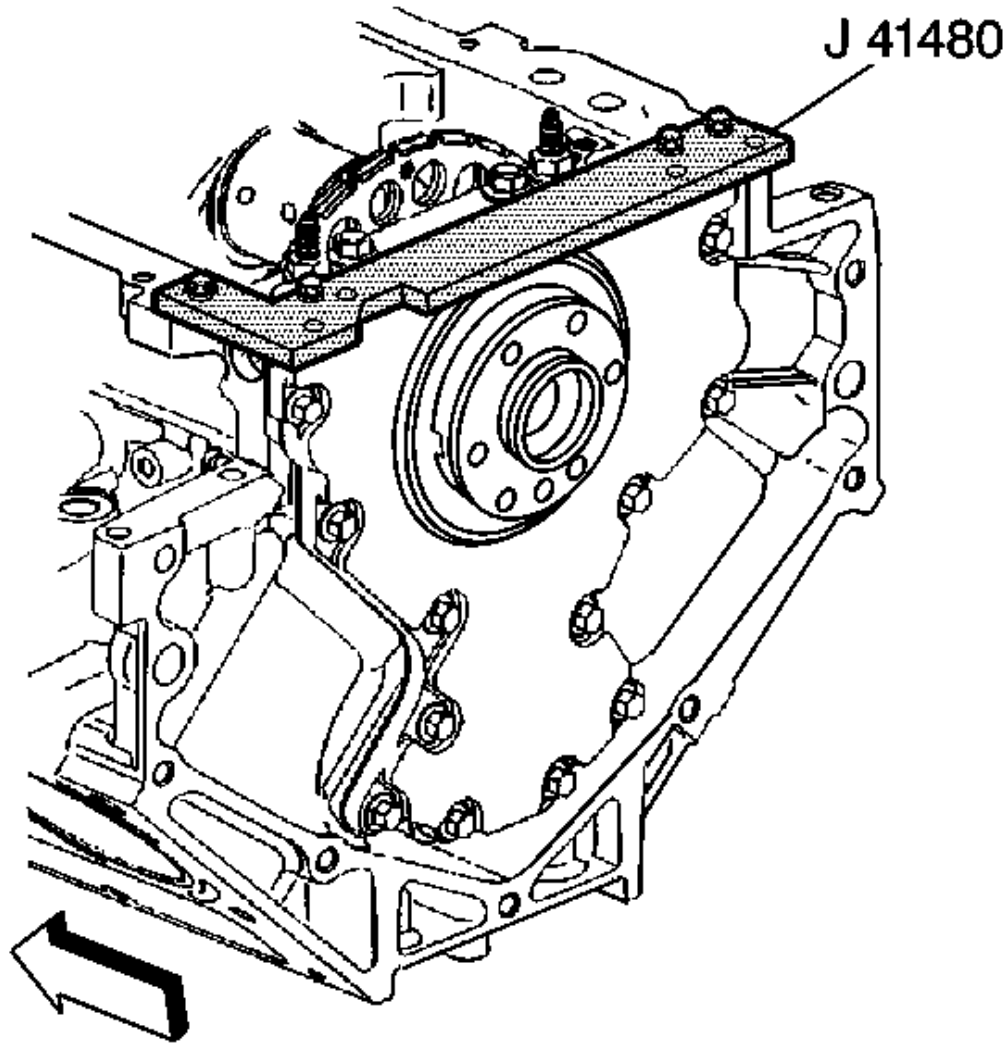


Fig. 228: View Of J 41480 Installed To Engine Block
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

8. Install the **J 41480** and bolts. See Special Tools .

Tighten:

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Tighten the tool-to-engine block bolts to 25 N.m (18 lb ft).
 2. Tighten the **J 41480** tool-to-rear housing bolts evenly to 12 N. See **Special Tools** .m (106 lb in).
 3. Tighten the rear housing-to-engine block bolts to 25 N.m (18 lb ft).
9. Remove the **J 41480** and bolts. See **Special Tools** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

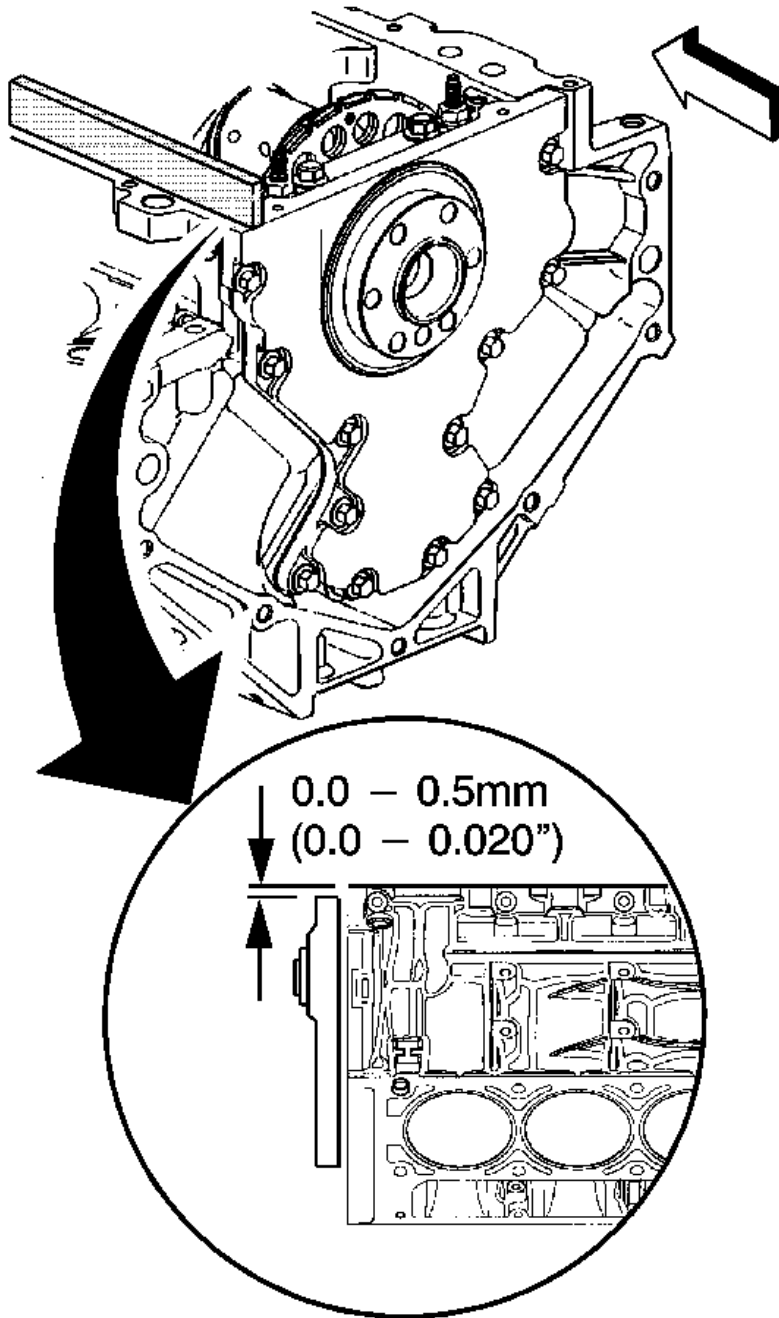


Fig. 229: Checking Rear Cover-To-Engine Block Proper Installation Position
Courtesy of GENERAL MOTORS CORP.

10. Measure the rear housing-to-engine block oil pan surface for flatness.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Place a straight edge onto the engine block and rear housing oil pan sealing surfaces.

Avoid contact with the portion of the gasket that protrudes into the oil pan surface.

2. Insert a feeler gage between the rear housing and the straight edge. The housing must be flush with the oil pan or no greater than 0.5 mm (0.02 in) below flush.
11. If the rear housing-to-engine block oil pan surface alignment is not within specifications, repeat the housing alignment procedure.
12. If the correct rear housing-to-engine block alignment at the oil pan surface cannot be obtained, replace the rear housing.

CRANKSHAFT REAR OIL SEAL HOUSING INSTALLATION (WITHOUT SEAL IN HOUSING)

Special Tools

- **J 41476** Front and Rear Cover Alignment Tool. See **Special Tools** .
- **J 41480** Front and Rear Cover Alignment. See **Special Tools** .

Installation

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

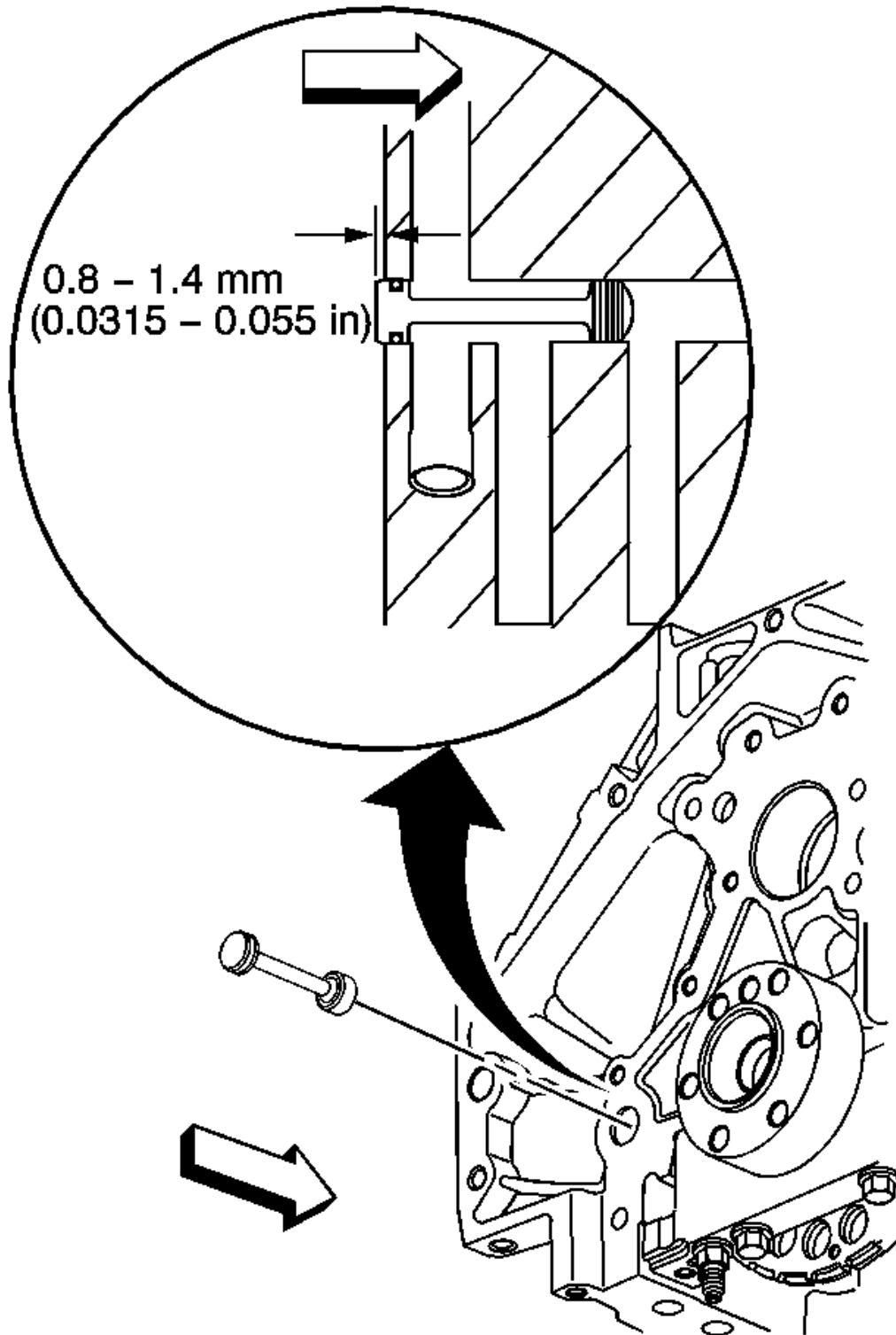


Fig. 230: View Of Engine Block Rear Oil Gallery Plug
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- Do not use the crankshaft rear oil seal or the engine rear housing gasket again.
- Do not apply any type of sealant to the rear housing gasket, unless specified.
- The special tools in this procedure are used to properly align the engine rear housing at the oil pan surface and to center the crankshaft rear oil seal.
- The crankshaft rear oil seal will be installed after the rear housing has been installed and aligned. Install the rear housing without the crankshaft oil seal.
 - The crankshaft rear oil seal **MUST** be centered in relation to the crankshaft.
 - The oil pan sealing surface at the rear housing, and the engine block, **MUST** be aligned within specifications.
 - An improperly aligned rear housing may cause premature rear oil seal wear and/or engine assembly oil leaks.

1. Inspect the rear oil gallery plug for proper installation.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

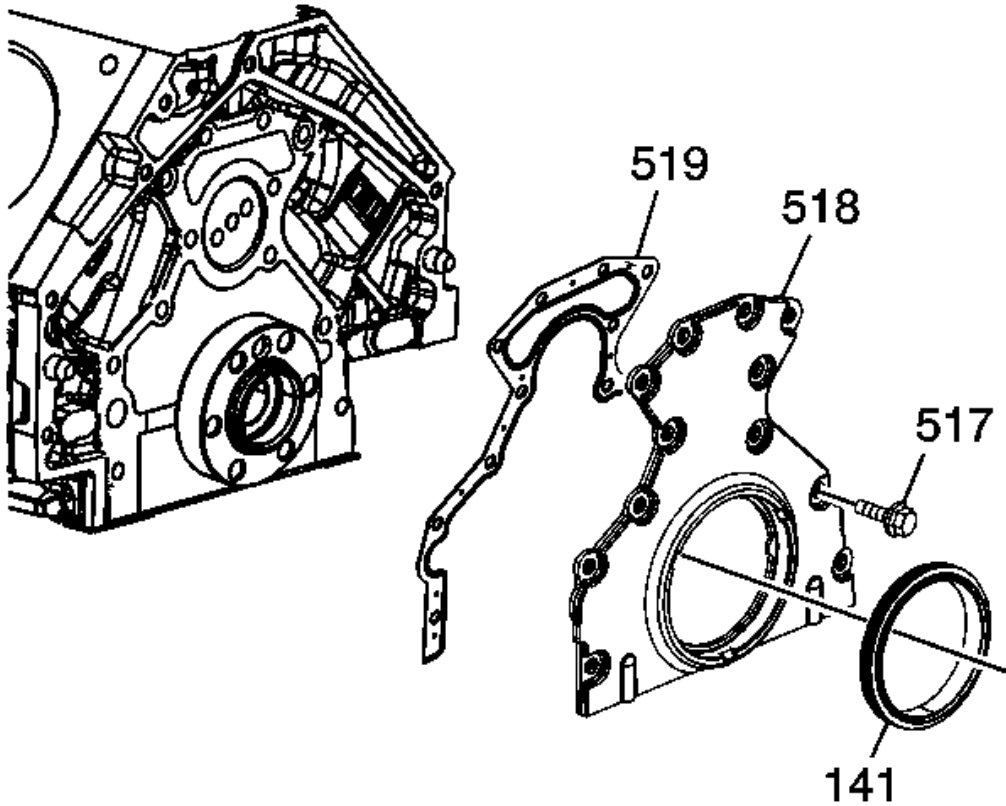


Fig. 231: View of Rear Housing, Gasket and Seal
Courtesy of GENERAL MOTORS CORP.

2. Install the rear housing gasket (519), rear housing (518), and bolts (517).
3. Tighten the bolts finger tight. Do not overtighten.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

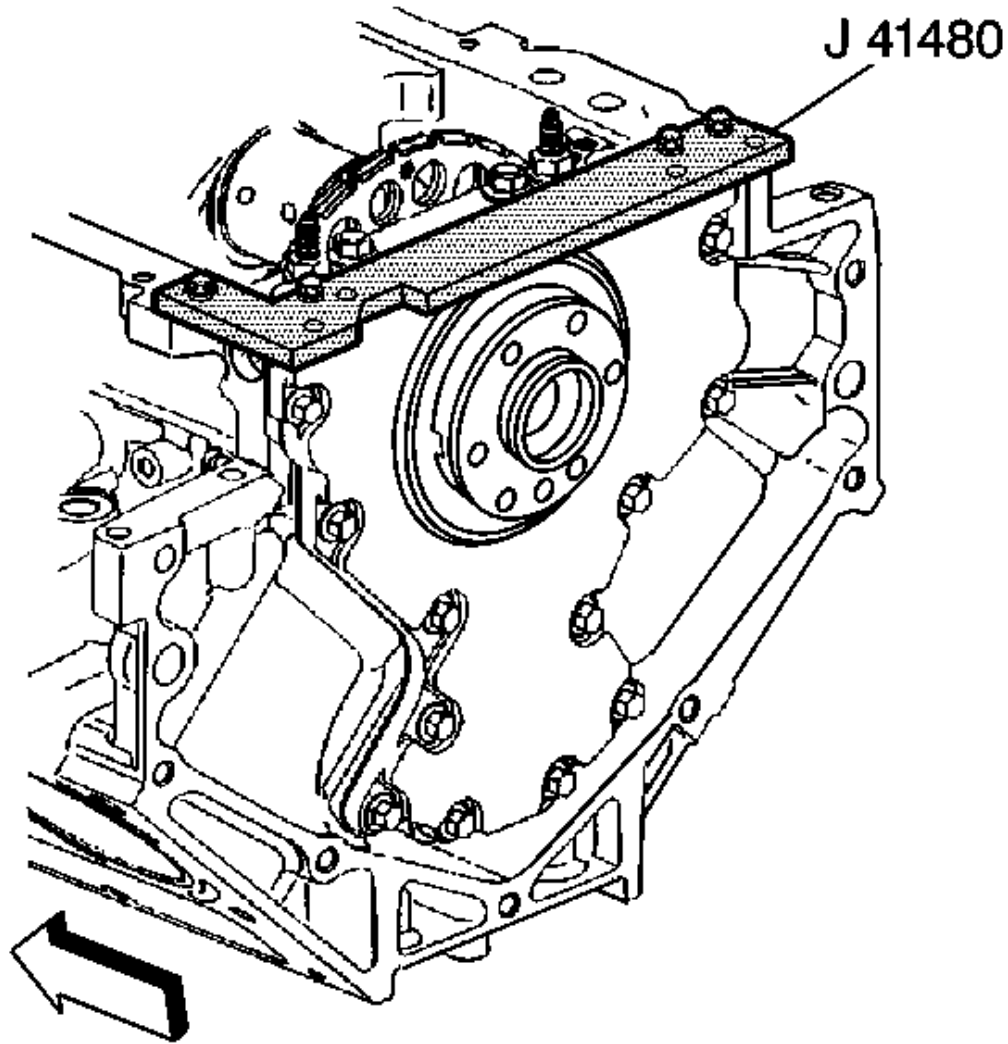


Fig. 232: View Of J 41480 Installed To Engine Block
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

IMPORTANT: Start the J 41480 tool-to-rear housing bolts. See Special Tools . Do not tighten the bolts at this time.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

4. Install the **J 41480** and bolts. See **Special Tools** .

Tighten: Tighten the tool-to-engine block bolts to 25 N.m (18 lb ft).

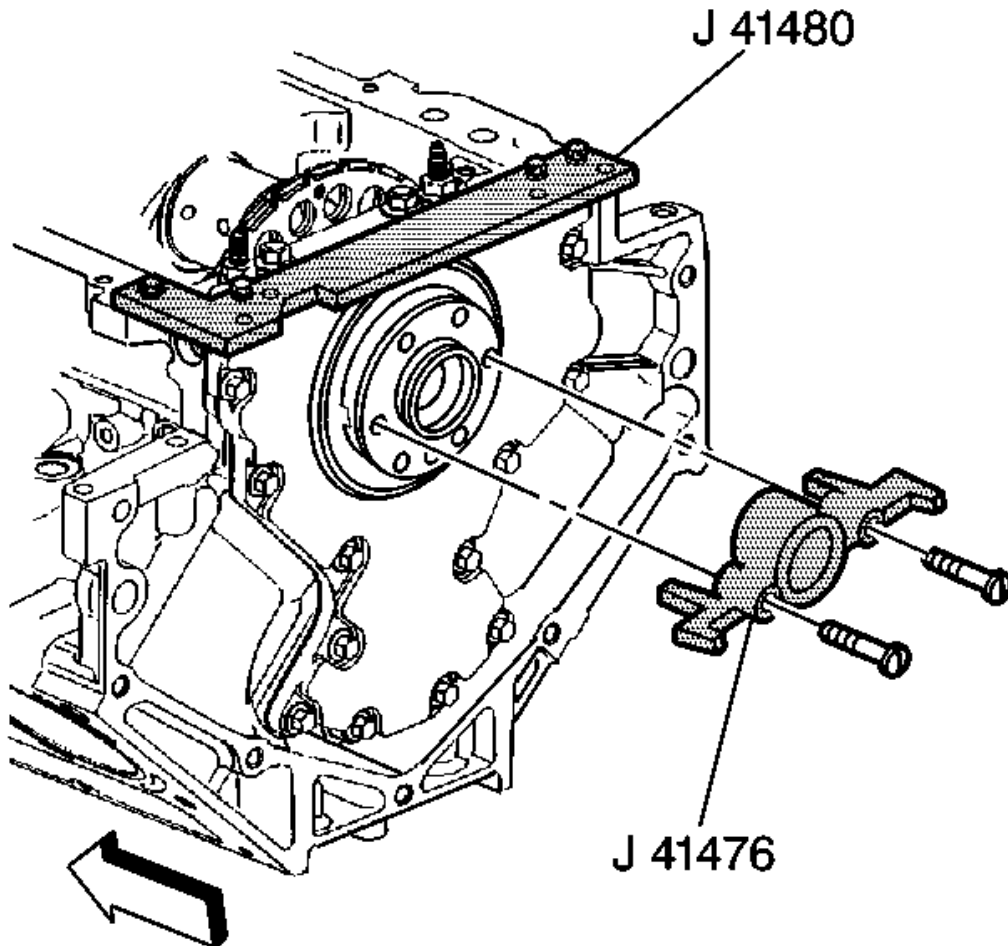


Fig. 233: View Of J 41480 & J 41476
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: To properly align the rear housing, the J 41476 must be installed onto the rear of the crankshaft with the tool mounting bolts parallel to the oil pan surface. See **Special Tools** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

5. Rotate the crankshaft until 2 opposing flywheel bolt holes are parallel to the oil pan surface.

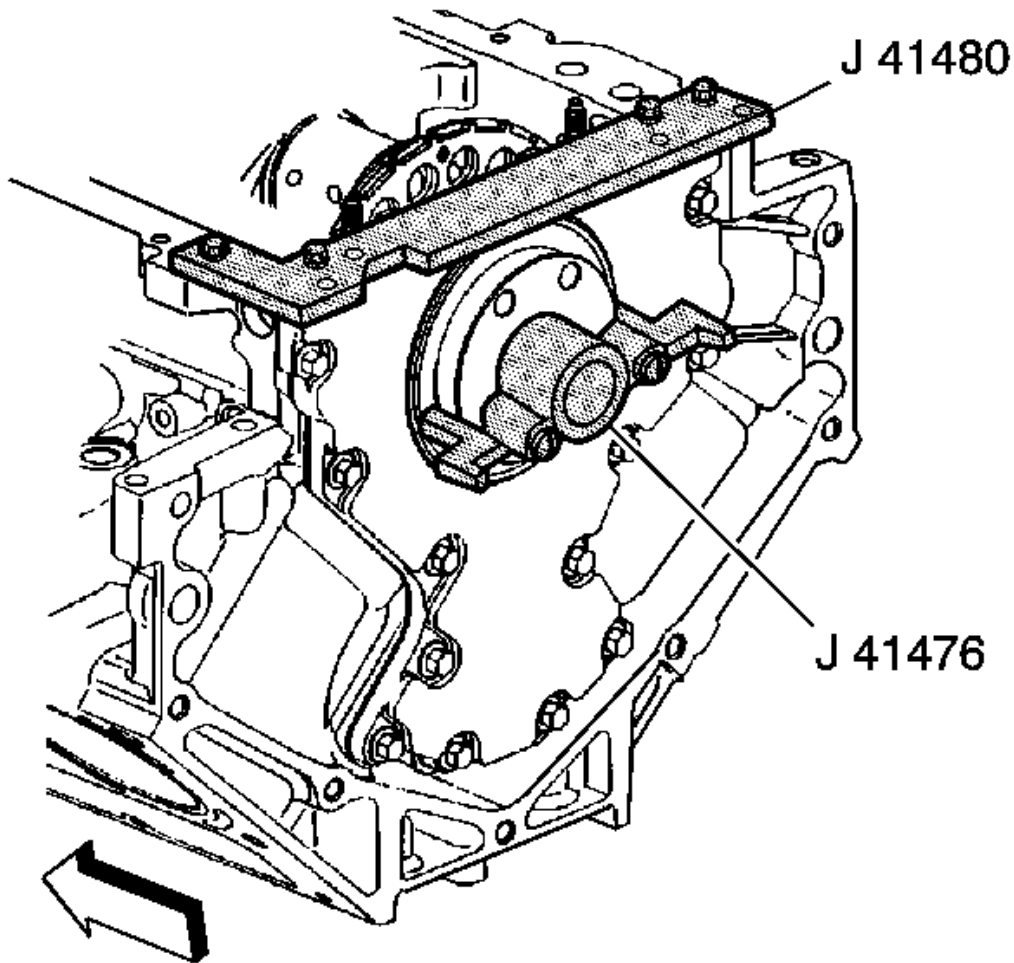


Fig. 234: View Of J 41480 & J 41476 Installed
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The tapered legs of the alignment tool must enter the rear housing oil seal bore.

6. Install the **J 41476** and bolts onto the rear of the crankshaft. See **Special Tools** .

Tighten:

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Tighten the tool mounting bolts until snug. Do not overtighten.
 2. Tighten the **J 41480** tool-to-rear housing bolts evenly to 12 N. See **Special Tools** .m (106 lb in).
 3. Tighten the rear housing bolts to 30 N.m (22 lb ft).
7. Remove the tools.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

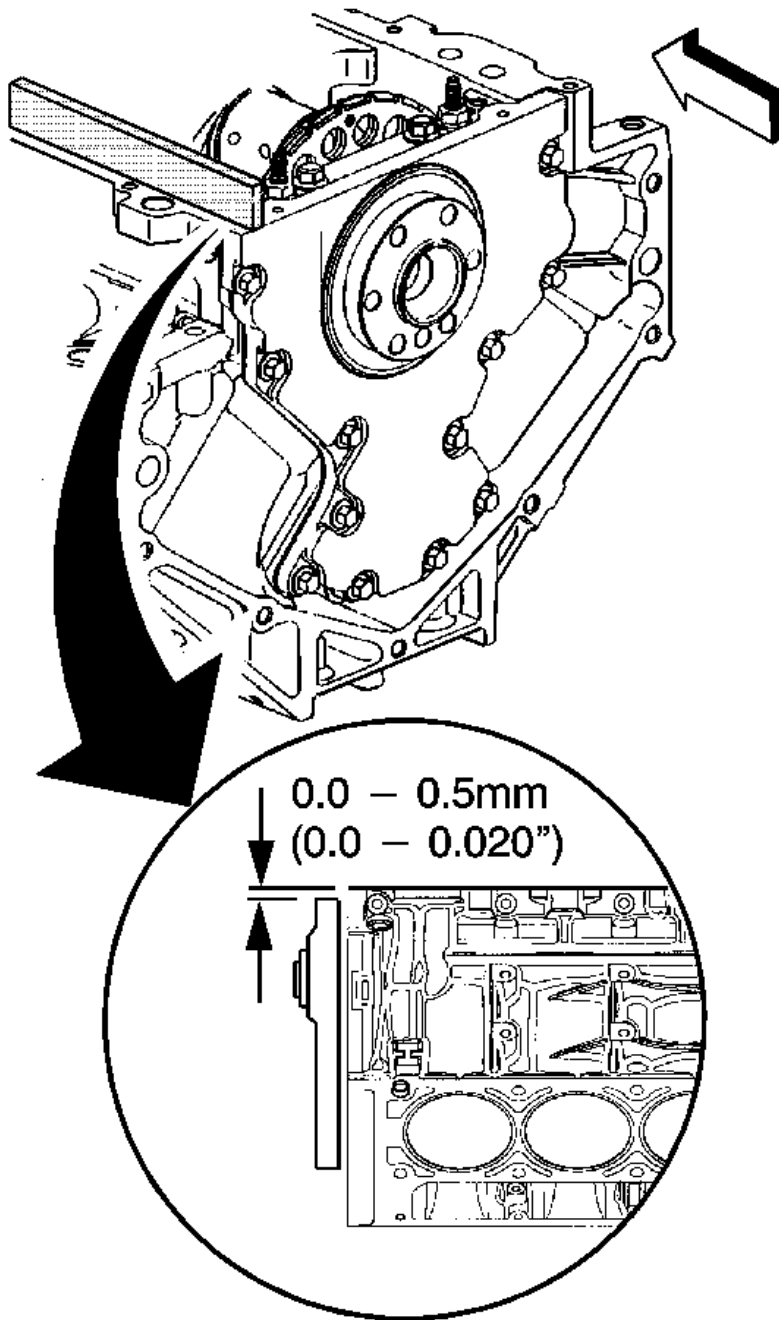


Fig. 235: Checking Rear Cover-To-Engine Block Proper Installation Position
Courtesy of GENERAL MOTORS CORP.

8. Measure the rear housing-to-engine block oil pan surface for flatness.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Place a straight edge onto the engine block and rear housing oil pan sealing surfaces.

Avoid contact with the portion of the gasket that protrudes into the oil pan surface.

2. Insert a feeler gage between the rear housing and the straight edge. The housing must be flush with the oil pan or no greater than 0.5 mm (0.02 in) below flush.
9. If the rear housing-to-engine block oil pan surface alignment is not within specifications, repeat the housing alignment procedure.
10. If the correct rear housing-to-engine block alignment at the oil pan surface cannot be obtained, replace the rear housing.

CRANKSHAFT REAR OIL SEAL INSTALLATION

Special Tools

- **J 41479** Crankshaft Rear Oil Seal Installer. See **Special Tools** .
- **J 41479-2A** Crankshaft Rear Oil Seal Installation Guide

Installation

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

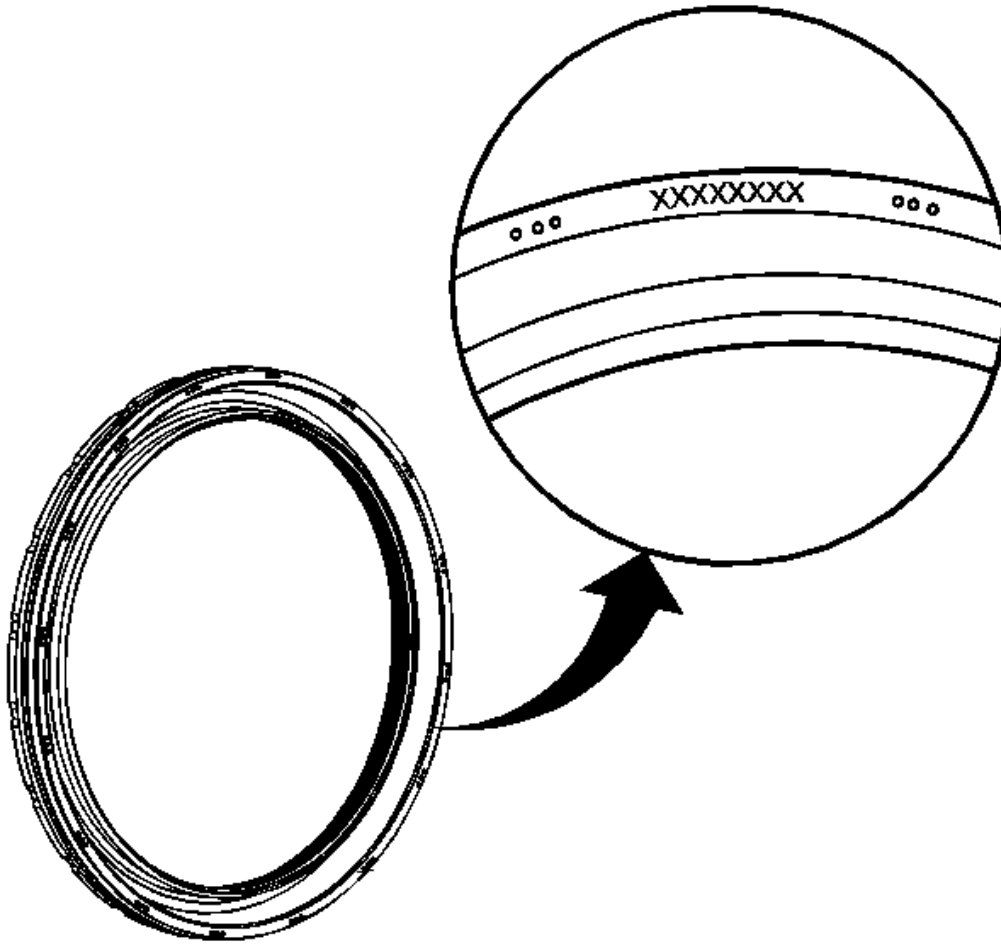


Fig. 236: Identifying Oil Seal
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: For proper orientation, note the installation direction of the oil seal. The oil seal is a reverse-lip design. The part number is applied to the outside face of the seal, as shown.

1. Inspect the seal and identify the part number markings for proper orientation.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

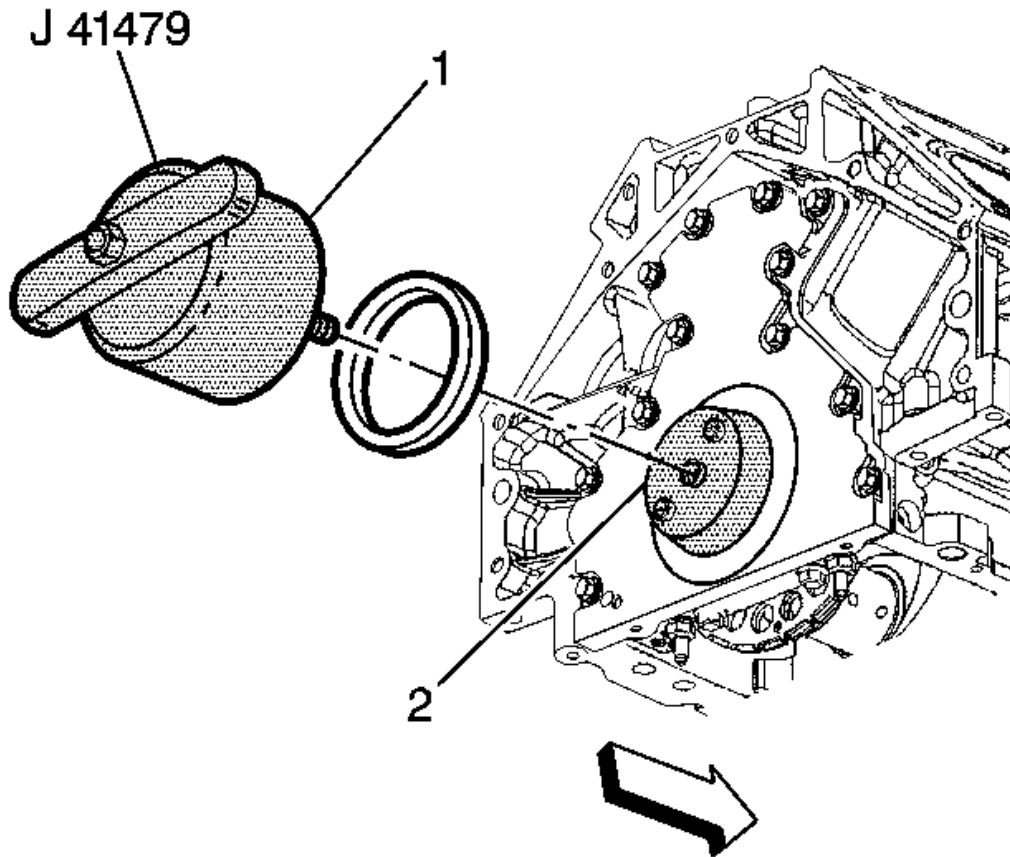


Fig. 237: Installing Crankshaft Rear Oil Seal Using J 41479
Courtesy of GENERAL MOTORS CORP.

2. Install the **J 41479** or the **J 41479-2A** cone (2) and bolts onto the rear of the crankshaft. The **J 41479-2A** may be required for manual transmission or 5.3L LS4 applications.
3. Tighten the bolts until snug. Do not overtighten.
4. Install the rear oil seal onto the tapered cone (2) and push the seal to the rear seal bore. Install the oil seal with the part number markings facing away from the engine.
5. Thread the **J 41479** threaded rod into the tapered cone until the tool (1) contacts the oil seal. See **Special Tools**.
6. Align the oil seal onto the tool (1).
7. Rotate the handle of the tool (1) clockwise until the seal enters the rear housing and bottoms into the seal bore.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

8. Remove the tool.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2008 ENGINE

Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

OFF-VEHICLE REPAIR INFORMATION (CONT.)

ENGINE FRONT COVER INSTALLATION (RPO LY2/LH6/LMG/LY5/LC9)

Tools Required

- **J 41476** Front and Rear Cover Alignment Tool. See Special Tools .
- **J 41480** Front and Rear Cover Alignment. See Special Tools .

Installation

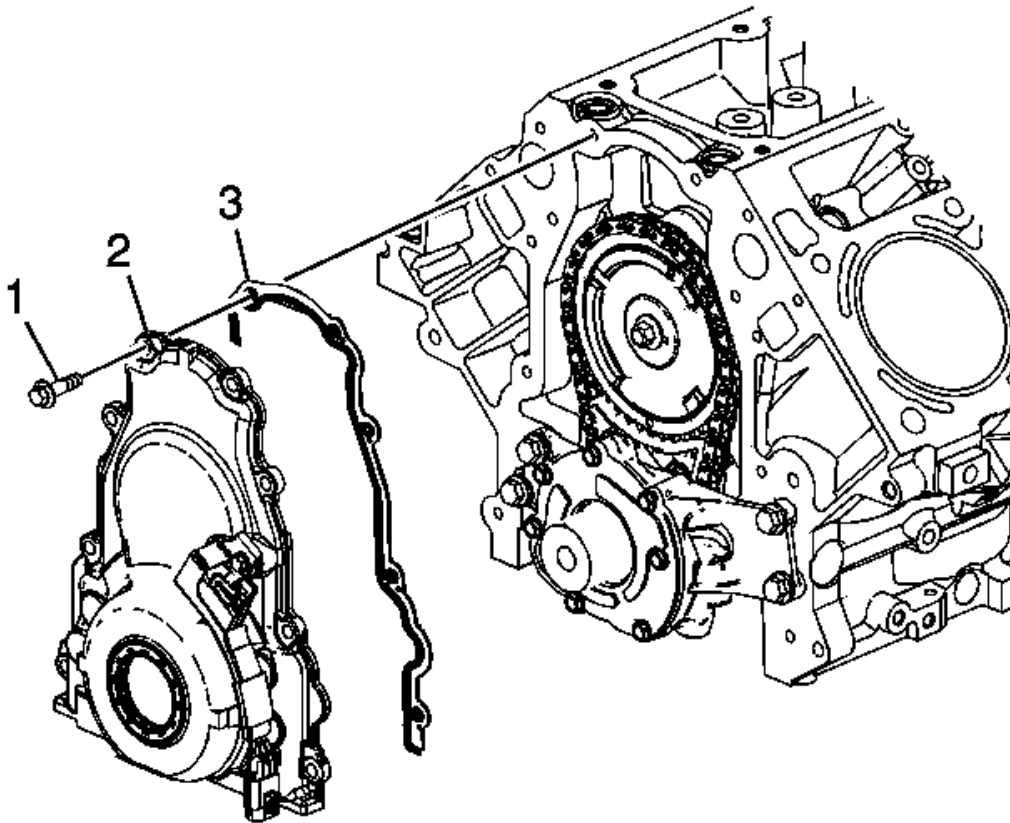


Fig. 1: View Of Front Cover & Gasket
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- Do not use the crankshaft oil seal or the engine front cover gasket again.
- Do not apply any type of sealant to the front cover gasket, unless specified.
- The special tools in this procedure are used to properly align the engine front cover at the oil pan surface and to center the crankshaft front oil seal.
 - All gasket surfaces should be free of oil or other foreign material during assembly.

The crankshaft front oil seal **MUST** be centered in relation to the crankshaft.

- The oil pan sealing surface at the front cover and engine block **MUST** be aligned within specifications.
- An improperly aligned front cover may cause premature front oil seal wear and/or engine assembly oil leaks.

1. Install the front cover gasket (3), front cover (2), and bolts (1).
2. Tighten the cover bolts finger tight. Do not overtighten.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

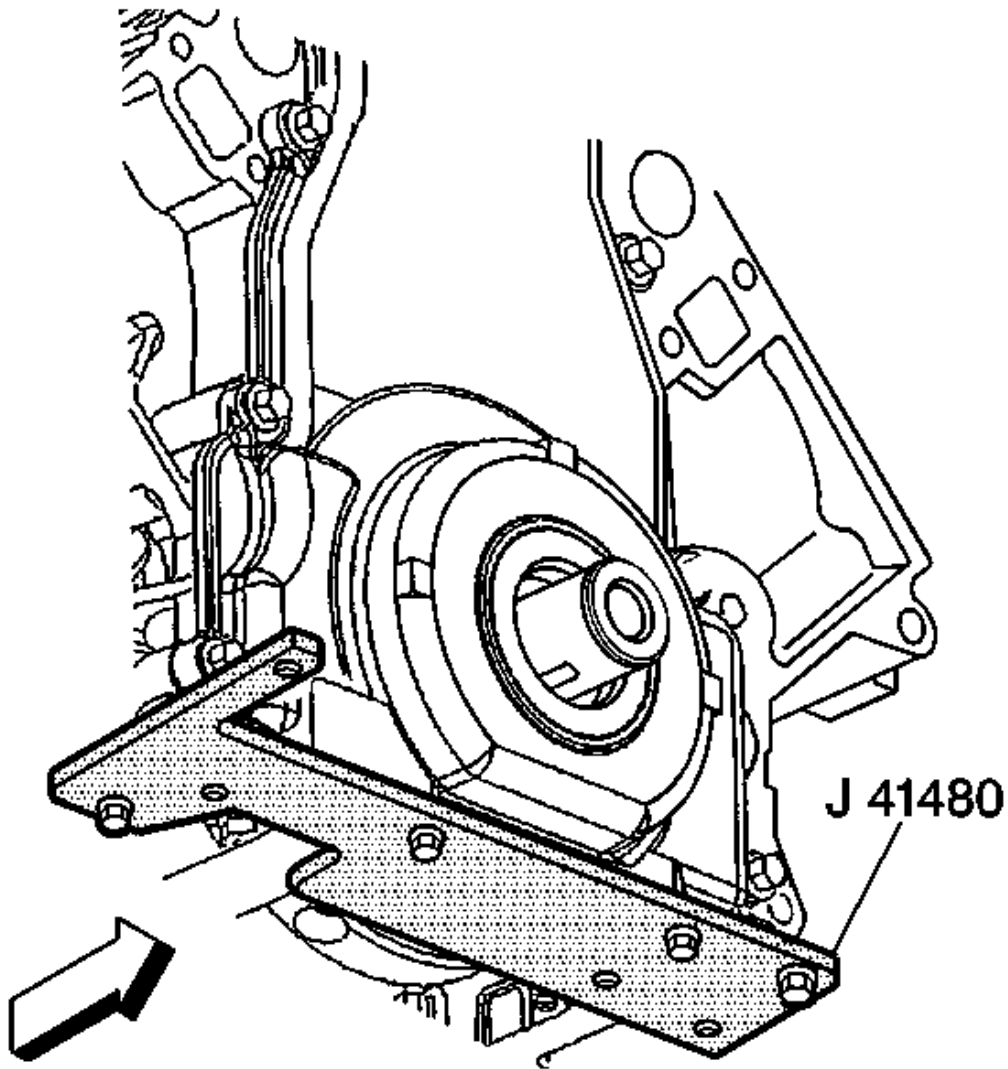


Fig. 2: View Of J 41480 Installed On Engine Block
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

IMPORTANT: Start the tool-to-front cover bolts. Do not tighten the bolts at this time.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

3. Install the **J 41480** . See **Special Tools** .

Tighten: Tighten the tool-to-engine block bolts to 25 N.m (18 lb ft).

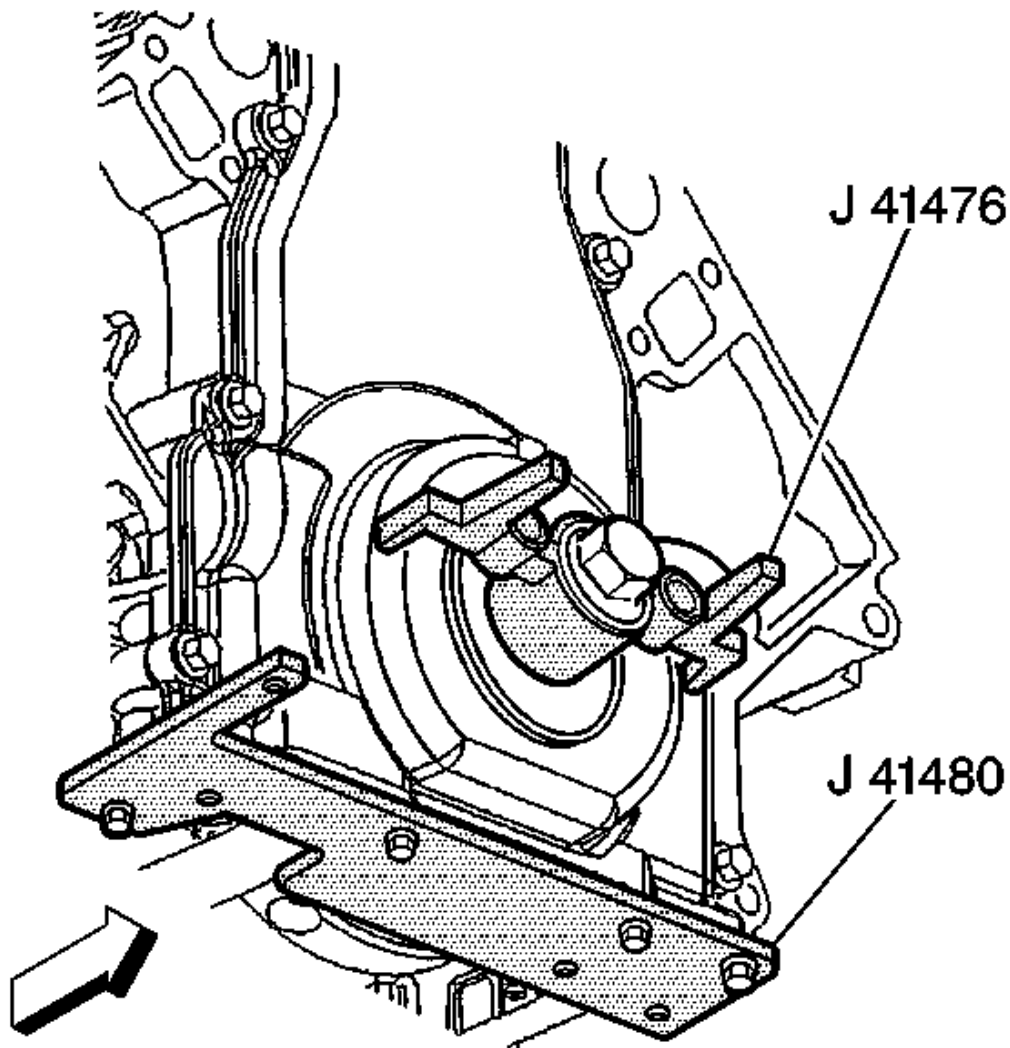


Fig. 3: View Of J 41476 & J 41480 Installed On Engine
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Align the tapered legs of the tool with the machined

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

alignment surfaces on the front cover.

4. Install the **J 41476** . See **Special Tools** .
5. Install the crankshaft balancer bolt.

Tighten:

1. Tighten the crankshaft balancer bolt by hand until snug. Do not overtighten.
 2. Tighten the **J 41480** . See **Special Tools** .
 3. Tighten the engine front cover bolts to 25 N.m (18 lb ft).
6. Remove the tools.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

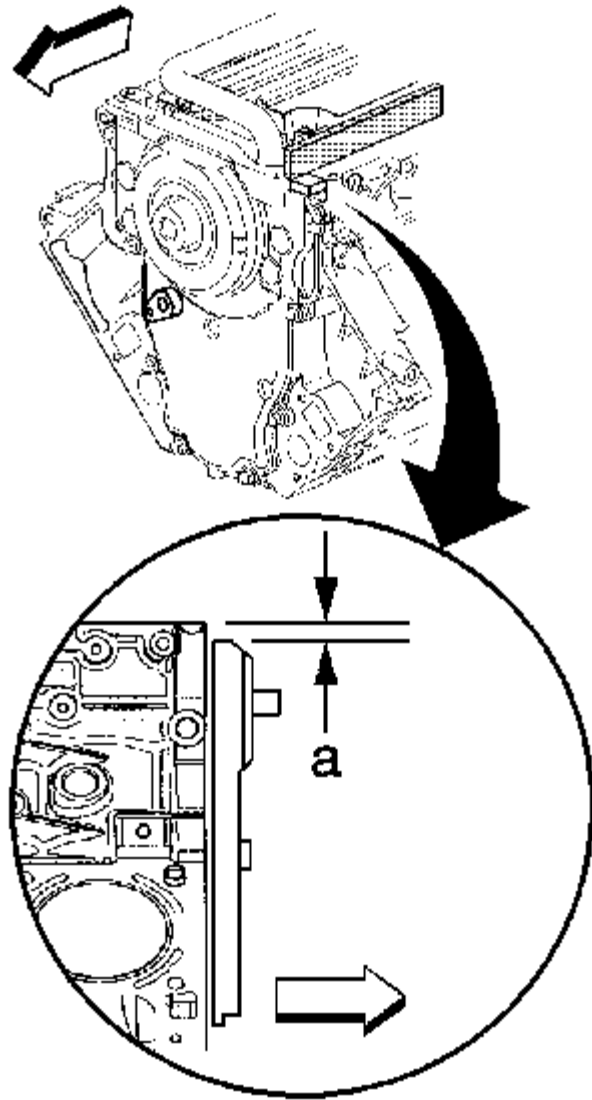


Fig. 4: Measuring Oil Pan Surface Flatness & Front Cover-To-Engine Block
Courtesy of GENERAL MOTORS CORP.

7. Measure the oil pan surface flatness, front cover-to-engine block.
 1. Place a straight edge across the engine block and front cover oil pan sealing surfaces.

Avoid contact with the portion of the gasket that protrudes into the oil pan surface.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Insert a feeler gage between the front cover and the straight edge tool. The cover must be flush with the oil pan surface or no greater than 0.5 mm (0.02 in) (a) below flush.
8. If the front cover-to-engine block oil pan surface alignment is not within specifications, repeat the cover alignment procedure.
9. If the correct front cover-to-engine block alignment cannot be obtained, replace the front cover.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

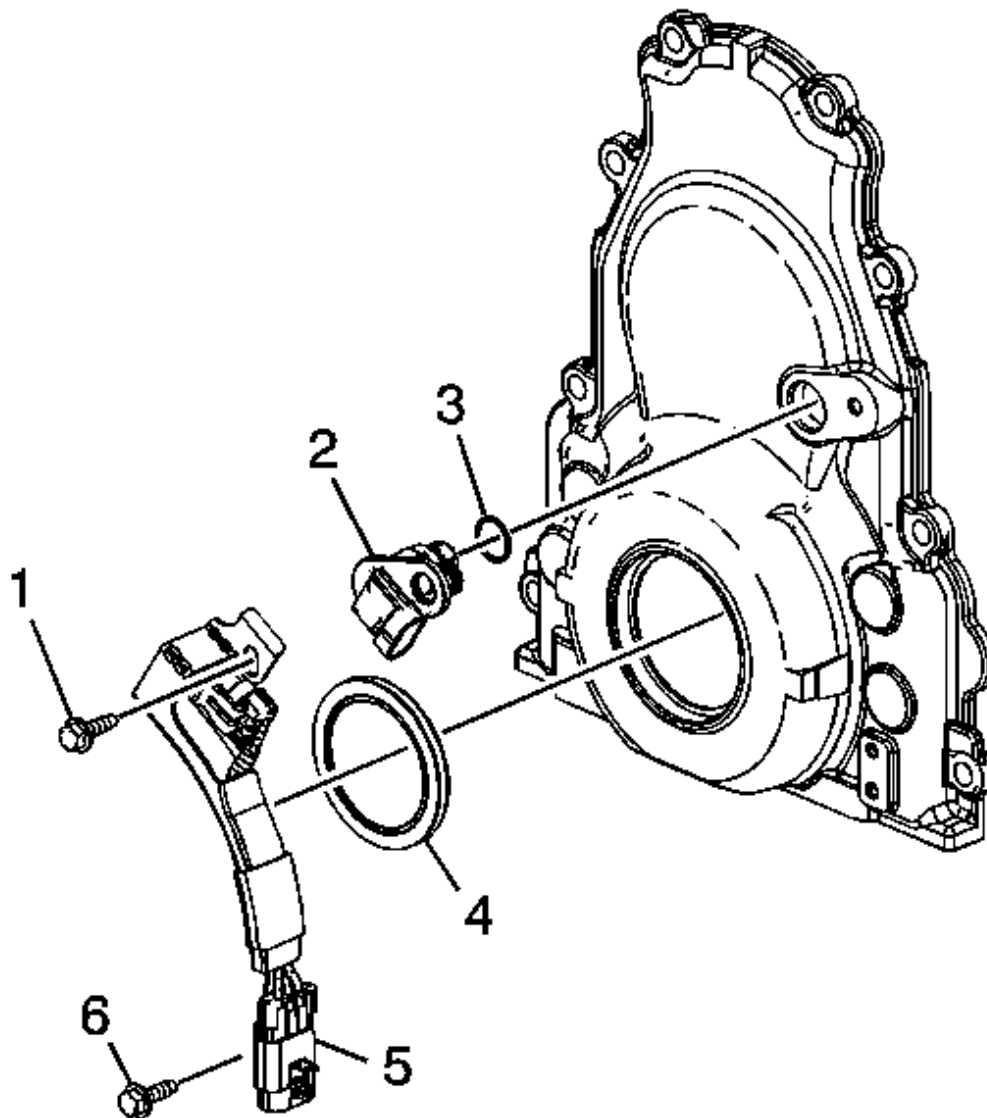


Fig. 5: View Of Front Cover, Oil Seal, Camshaft Position Sensor, Bracket & O Ring
Courtesy of GENERAL MOTORS CORP.

10. Inspect the camshaft position (CMP) sensor O-ring seal (3) for cuts or damage. If the seal is not cut or damaged, it may be used again.
11. Lubricate the O-ring seal with clean engine oil.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

12. Install the O-ring seal onto the sensor (2).
13. Install the sensor to the cover.
14. Install the CMP sensor wire harness (5) and bolts (1, 6).

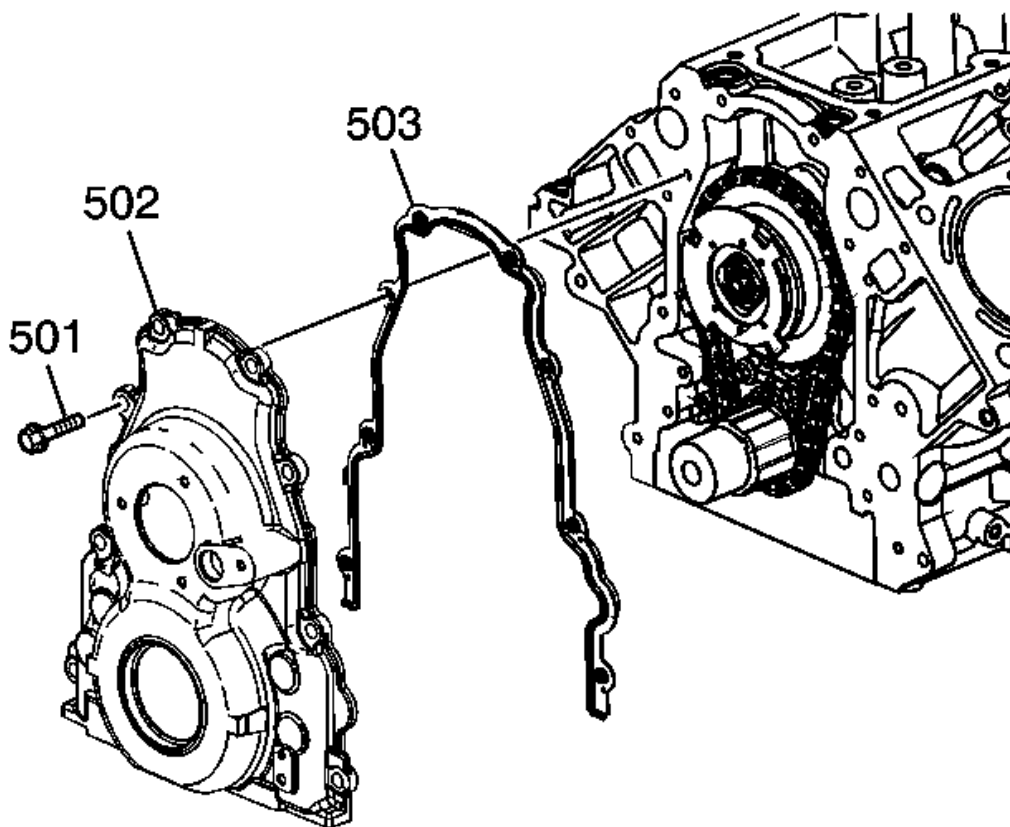
Tighten: Tighten the bolts to 12 N.m (106 lb in).

ENGINE FRONT COVER INSTALLATION (RPO LY6/L76/L92)

Tools Required

- **J 41476** Front and Rear Cover Alignment Tool. See Special Tools .
- **J 41480** Front and Rear Cover Alignment. See Special Tools .

Installation



2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Fig. 6: Engine Front Cover Components Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

- IMPORTANT:**
- Do not use the crankshaft oil seal or the engine front cover gasket again.
 - Do not apply any type of sealant to the front cover gasket, unless specified.
 - The special tools in this procedure are used to properly align the engine front cover at the oil pan surface and to center the crankshaft front oil seal.
 - All gasket surfaces should be free of oil or other foreign material during assembly.

The crankshaft front oil seal **MUST** be centered in relation to the crankshaft.

- The oil pan sealing surface at the front cover and engine block **MUST** be aligned within specifications.
- An improperly aligned front cover may cause premature front oil seal wear and/or engine assembly oil leaks.

1. Install the front cover gasket (503), front cover (502), and bolts (501).
2. Tighten the cover bolts finger tight. Do not overtighten.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

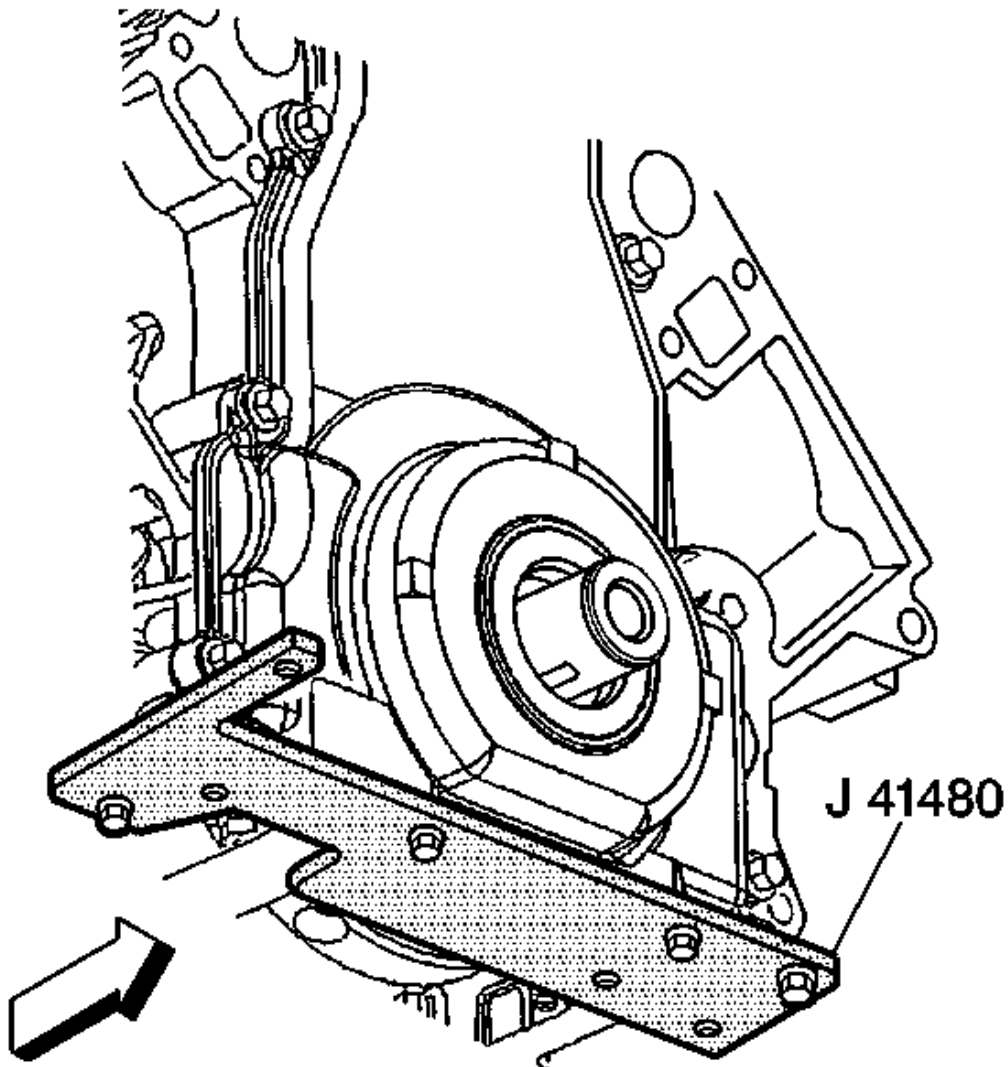


Fig. 7: View Of J 41480 Installed On Engine Block
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Start the tool-to-front cover bolts. Do not tighten the bolts at this time.

3. Install the **J 41480** . See Special Tools .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Tighten: Tighten the tool-to-engine block bolts to 25 N.m (18 lb ft).

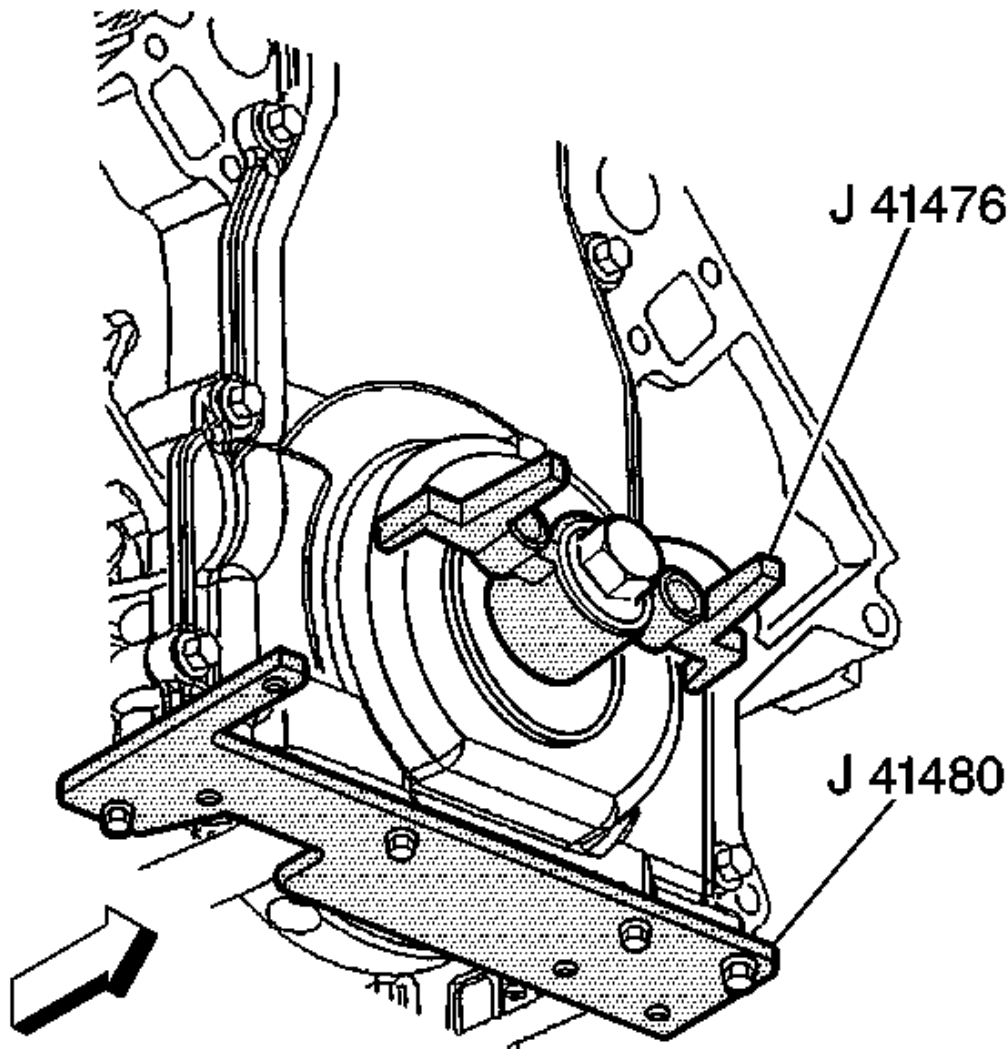


Fig. 8: View Of J 41476 & J 41480 Installed On Engine
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Align the tapered legs of the tool with the machined alignment surfaces on the front cover.

4. Install the J 41476 . See **Special Tools** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

5. Install the crankshaft balancer bolt.

Tighten:

1. Tighten the crankshaft balancer bolt by hand until snug. Do not overtighten.
2. Tighten the **J 41480** . See **Special Tools** .
3. Tighten the engine front cover bolts to 25 N.m (18 lb ft).

6. Remove the tools.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

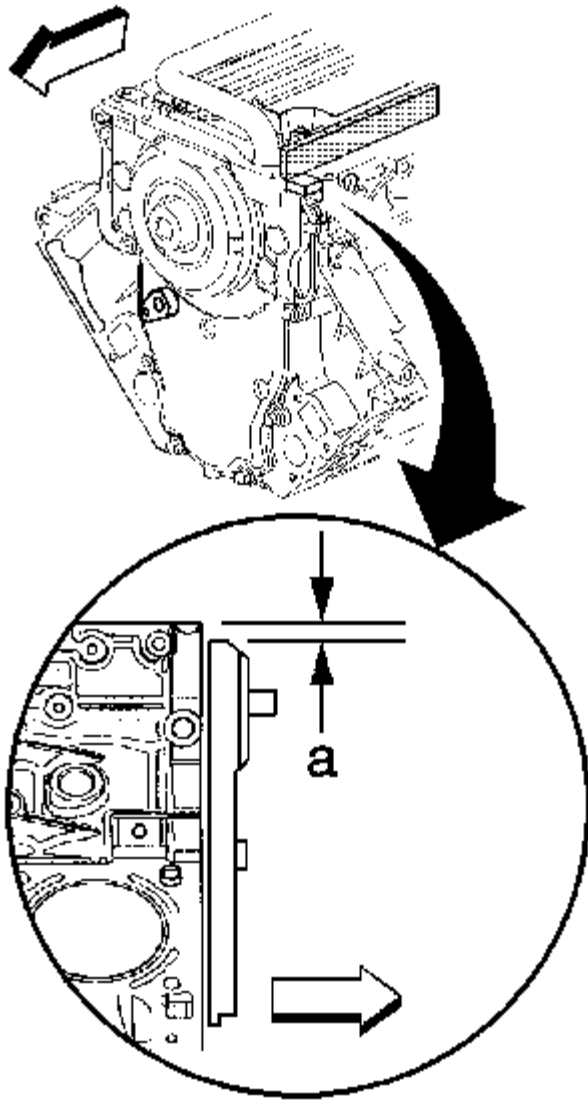


Fig. 9: Measuring Oil Pan Surface Flatness & Front Cover-To-Engine Block
Courtesy of GENERAL MOTORS CORP.

7. Measure the oil pan surface flatness, front cover-to-engine block.
 1. Place a straight edge across the engine block and front cover oil pan sealing surfaces.

Avoid contact with the portion of the gasket that protrudes into the oil pan surface.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Insert a feeler gage between the front cover and the straight edge tool. The cover must be flush with the oil pan surface or no greater than 0.5 mm (0.02 in) (a) below flush.
8. If the front cover-to-engine block oil pan surface alignment is not within specifications, repeat the cover alignment procedure.
9. If the correct front cover-to-engine block alignment cannot be obtained, replace the front cover.

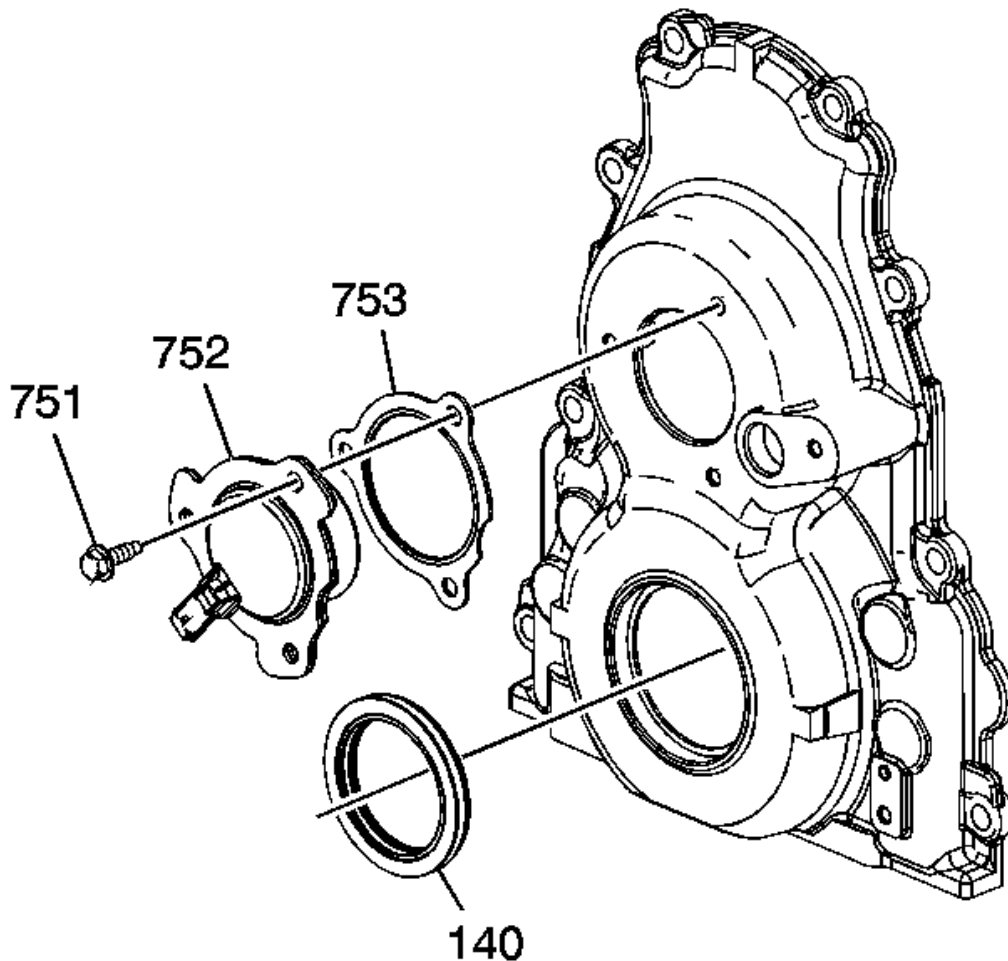


Fig. 10: View Of CMP Actuator Magnet, Bolts, Gasket & Oil Seal
Courtesy of GENERAL MOTORS CORP.

10. Install the camshaft position (CMP) actuator magnet (752), gasket (753), and bolts (751).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Tighten: Tighten the bolts to 12 N.m (106 lb in).

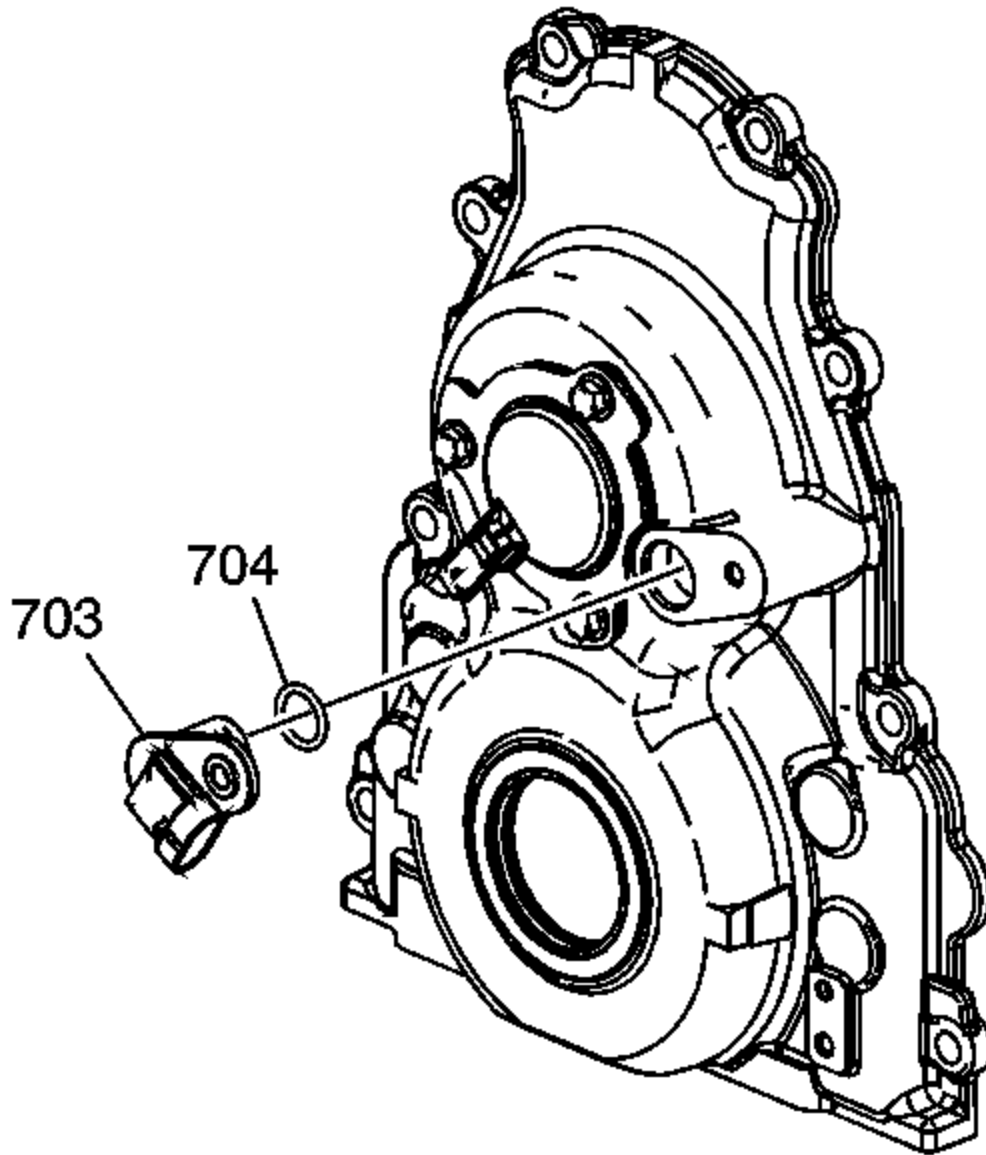


Fig. 11: View Of CMP Sensor & O-Ring
Courtesy of GENERAL MOTORS CORP.

11. Install the CMP sensor (703) and O-ring (704).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

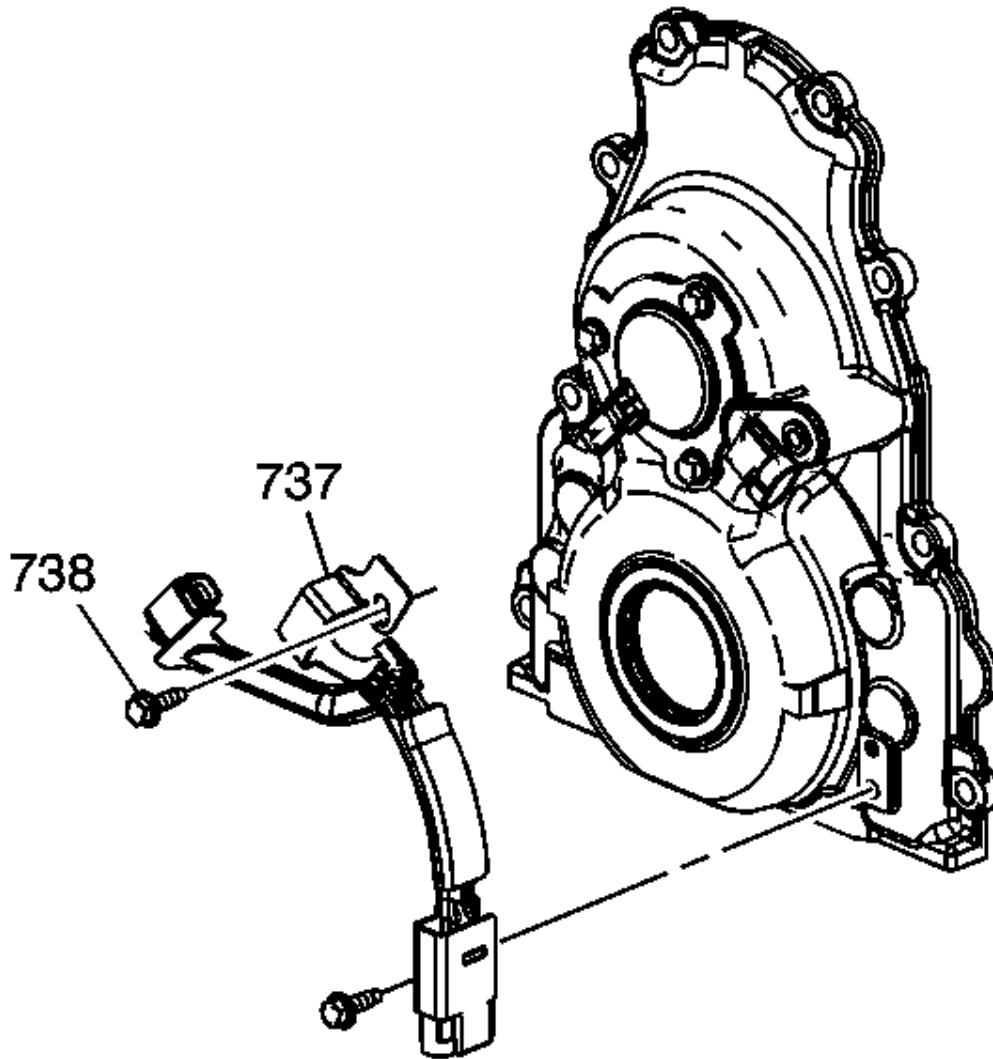


Fig. 12: View Of CMP Sensor Wire Harness & Bolts
Courtesy of GENERAL MOTORS CORP.

12. Install the CMP sensor wire harness (737) and bolts (738).

Tighten: Tighten the bolts to 12 N.m (106 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Tools Required

J 41478 Crankshaft Front Oil Seal Installer. See **Special Tools** .

Installation

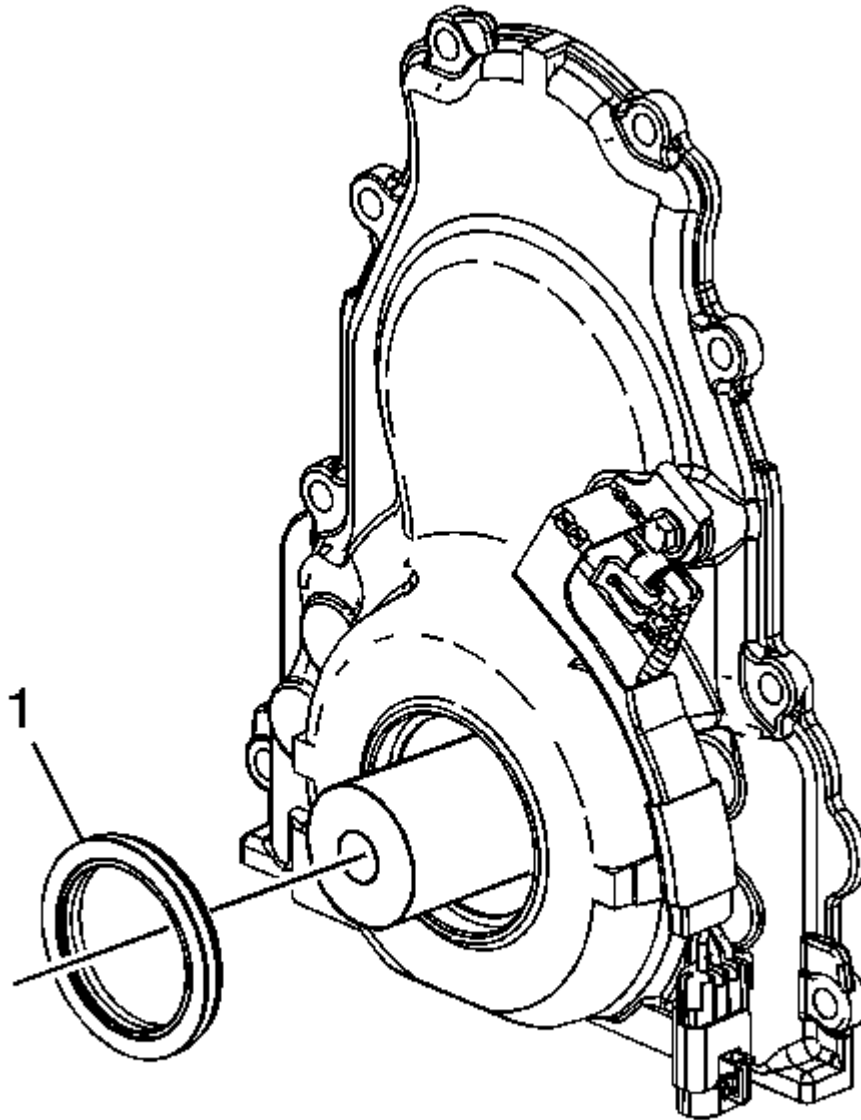


Fig. 13: View Of Crankshaft Front Oil Seal

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Courtesy of GENERAL MOTORS CORP.

- IMPORTANT:**
- Do not lubricate the oil seal sealing surface.
 - Do not use the crankshaft front oil seal again.

1. Lubricate the outer edge of the oil seal (1) with clean engine oil.
2. Lubricate the front cover oil seal bore with clean engine oil.

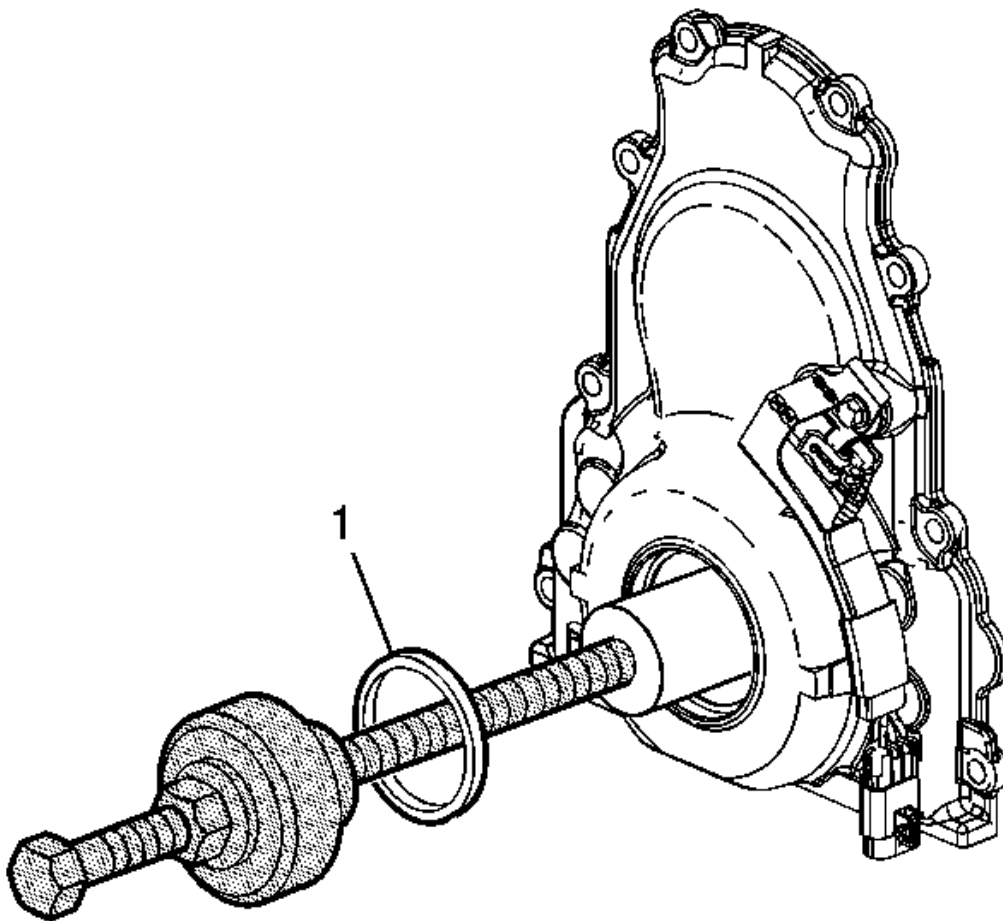


Fig. 14: View Of Crankshaft Front Oil Seal Installation
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

3. Install the crankshaft front oil seal (1) onto the **J 41478** . See **Special Tools** .
4. Install the **J 41478** threaded rod, with nut, washer, guide, and oil seal, into the end of the crankshaft. See **Special Tools** .
5. Use the **J 41478** in order to install the oil seal into the cover bore. See **Special Tools** .
 1. Use a wrench and hold the hex on the installer bolt.
 2. Use a second wrench and rotate the installer nut clockwise until the seal bottoms in the cover bore.
 3. Remove the tool.
 4. Inspect the oil seal for proper installation. The oil seal should be installed evenly and completely into the front cover bore.

CRANKSHAFT FRONT OIL SEAL INSTALLATION (RPO LY6/L76/L92)

Tools Required

J 41478 Crankshaft Front Oil Seal Installer. See **Special Tools** .

Installation

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

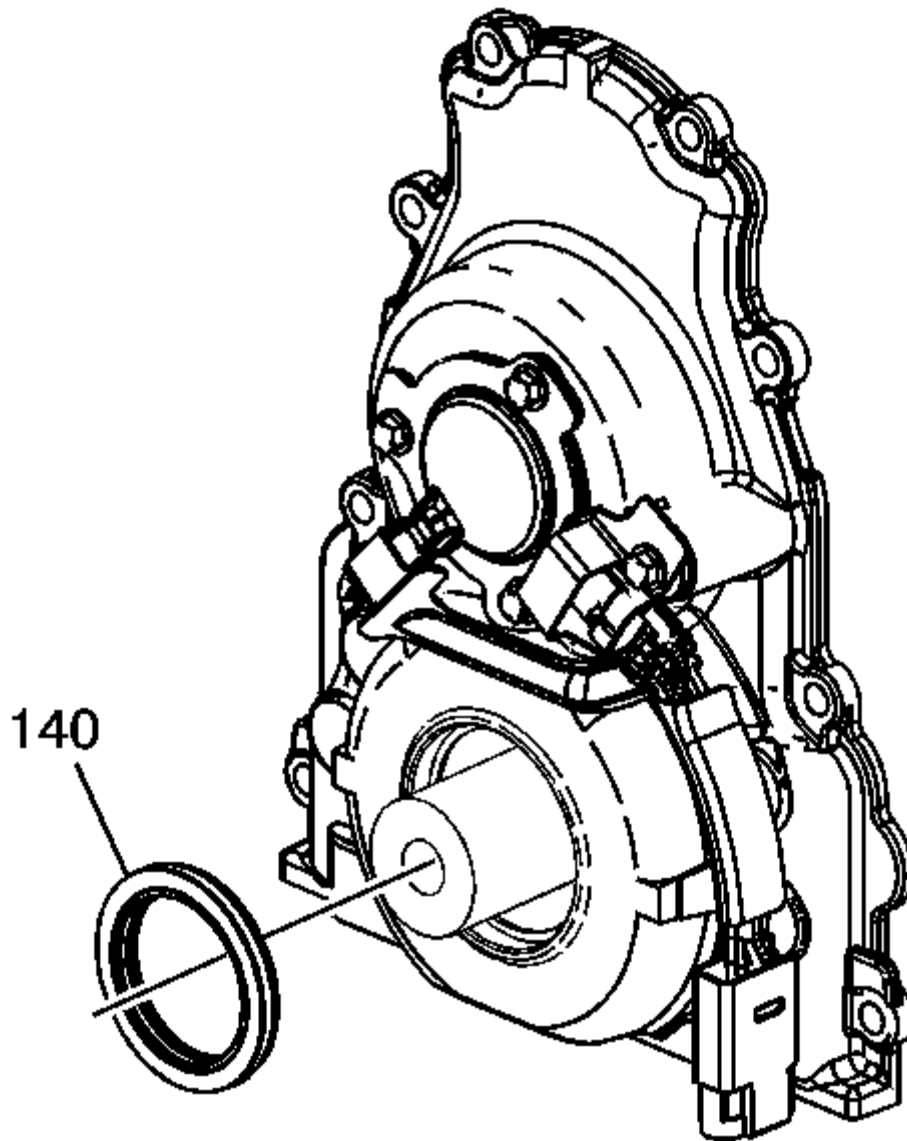


Fig. 15: View Of Oil Seal
Courtesy of GENERAL MOTORS CORP.

- IMPORTANT:**
- Do not lubricate the oil seal sealing surface.
 - Do not use the crankshaft front oil seal again.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Lubricate the outer edge of the oil seal (140) with clean engine oil.
2. Lubricate the front cover oil seal bore with clean engine oil.

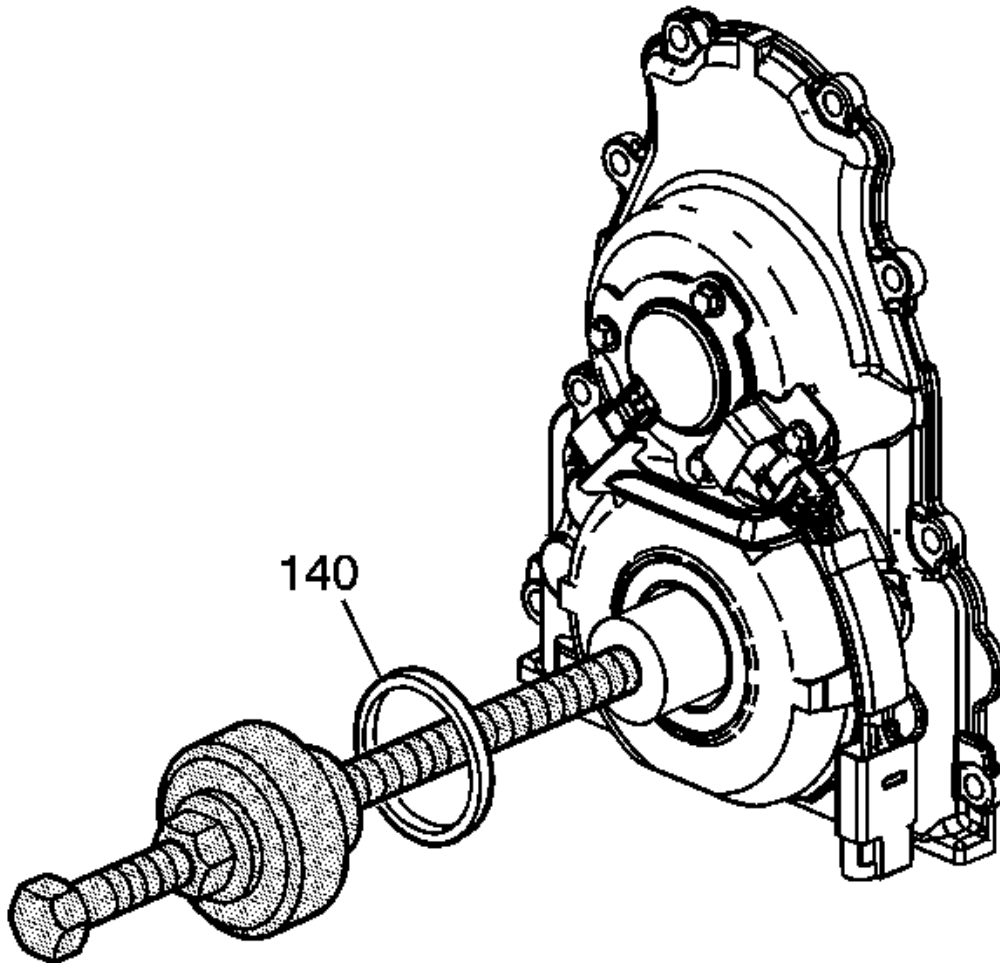


Fig. 16: View Of Front Oil Seal & Special Tool
Courtesy of GENERAL MOTORS CORP.

3. Install the crankshaft front oil seal (140) onto the **J 41478** . See **Special Tools** .
4. Install the **J 41478** threaded rod, with nut, washer, guide, and oil seal, into the end of the crankshaft. See **Special Tools** .
5. Use the **J 41478** in order to install the oil seal into the cover bore. See **Special Tools** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Use a wrench and hold the hex on the installer bolt.
2. Use a second wrench and rotate the installer nut clockwise until the seal bottoms in the cover bore.
3. Remove the tool.
4. Inspect the oil seal for proper installation. The oil seal should be installed evenly and completely into the front cover bore.

OIL PAN INSTALLATION

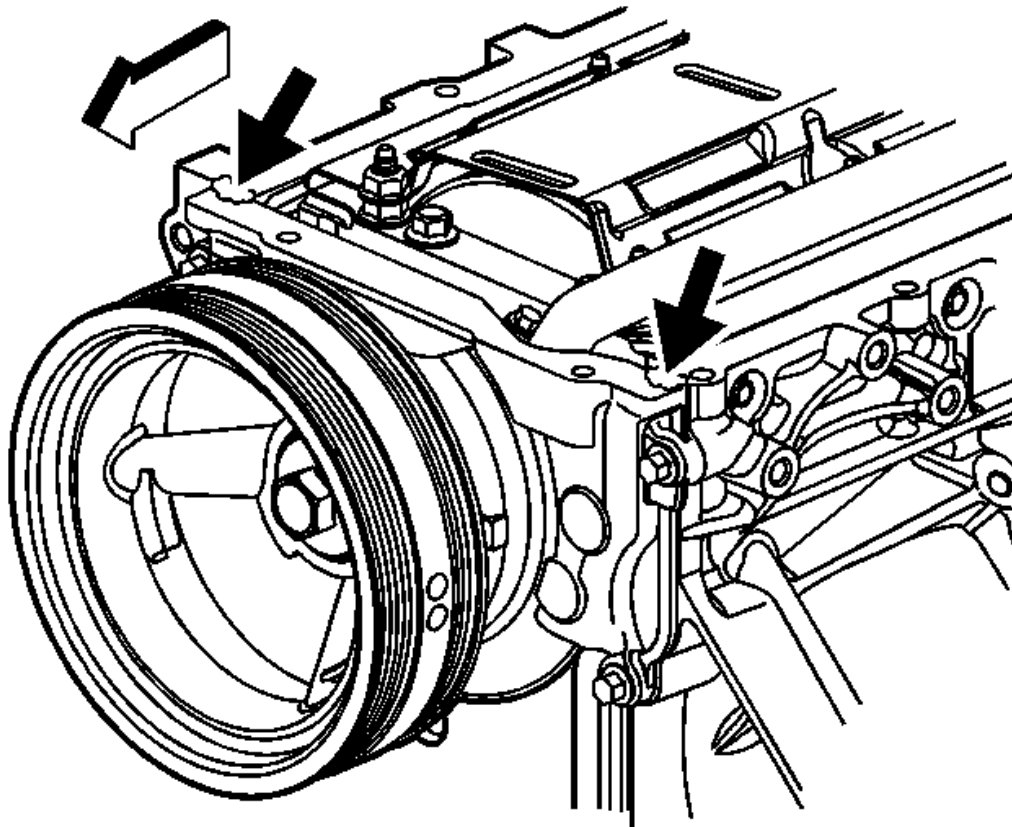


Fig. 17: View Of Sealant On Engine Front Cover Gasket Tabs
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: • The alignment of the structural oil pan is critical. The

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

rear bolt hole locations of the oil pan provide mounting points for the transmission housing. To ensure the rigidity of the powertrain and correct transmission alignment, it is important that the rear of the block and the rear of the oil pan are flush or even. The rear of the oil pan must NEVER protrude beyond the engine block and transmission housing plane.

- **Do not use the oil pan gasket again.**
 - **It is not necessary to rivet the NEW gasket to the oil pan.**
 - **It is not necessary to remove the oil level sensor prior to oil pan installation.**
1. Apply a 5 mm (0.2 in) bead of sealant GM P/N 12378521 (Canadian P/N 88901148), or equivalent, 20 mm (0.8 in) long to the engine block. Apply the sealant directly onto the tabs of the front cover gasket that protrude into the oil pan surface. Refer to **Sealers, Adhesives, and Lubricants** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

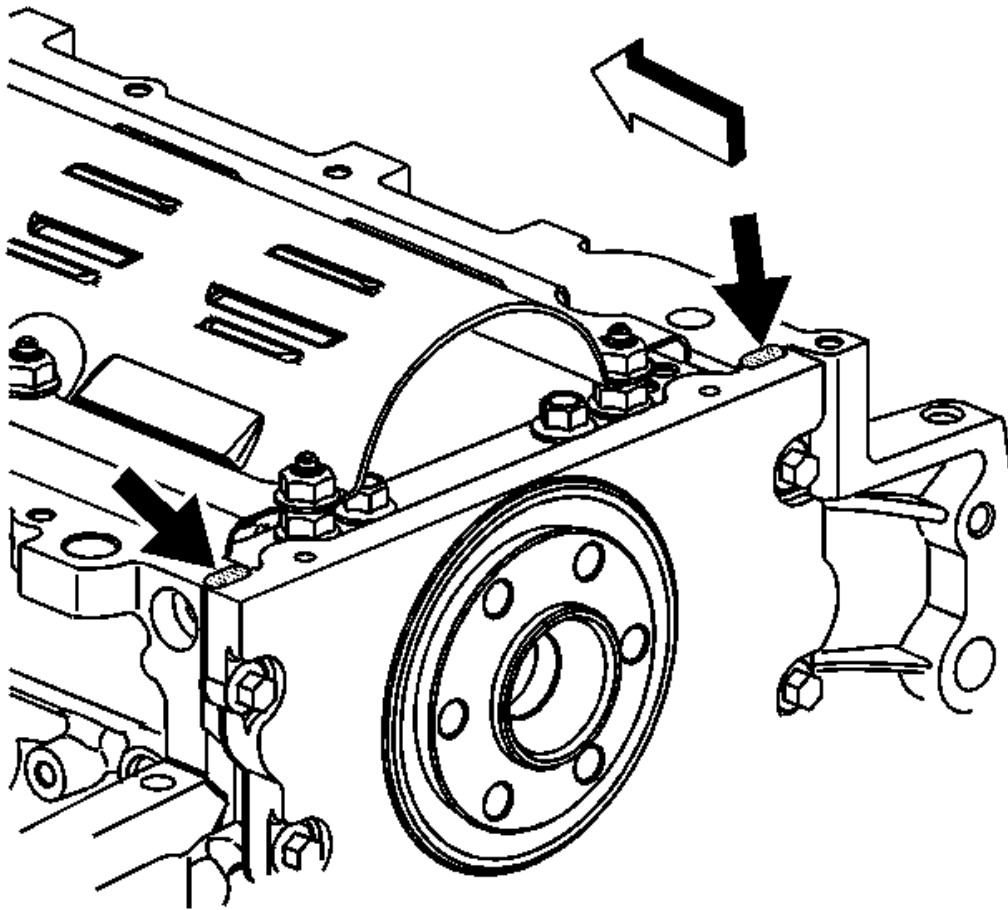


Fig. 18: View Of Sealant On Engine Rear Cover Gasket Tabs
Courtesy of GENERAL MOTORS CORP.

2. Apply a 5 mm (0.2 in) bead of sealant GM P/N 12378521 (Canadian P/N 88901148), or equivalent, 20 mm (0.8 in) long to the engine block. Apply the sealant directly onto the tabs of the rear housing gasket that protrude into the oil pan surface.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

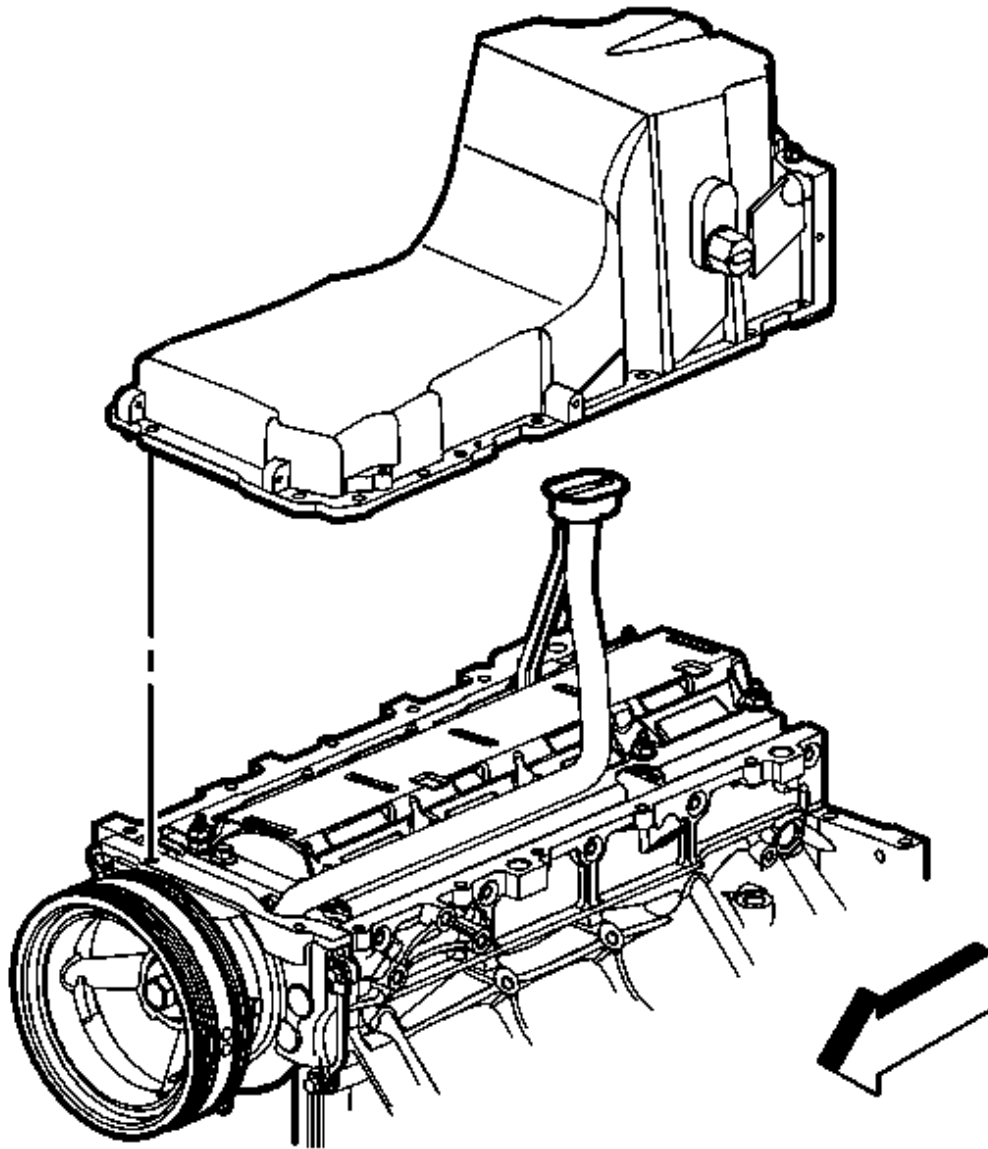


Fig. 19: View Of Oil Pan

Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Be sure to align the oil gallery passages in the oil pan and engine block properly with the oil pan gasket.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

3. Pre-assemble the oil pan gasket to the pan.
 1. Install the gasket onto the oil pan.
 2. Install the oil pan bolts to the pan and through the gasket.
4. Install the oil pan, gasket, and bolts to the engine block.
5. Tighten the bolts finger tight. Do not overtighten.
6. Place a straight edge across the rear of the engine block and the rear of the oil pan at the transmission housing mounting surfaces.

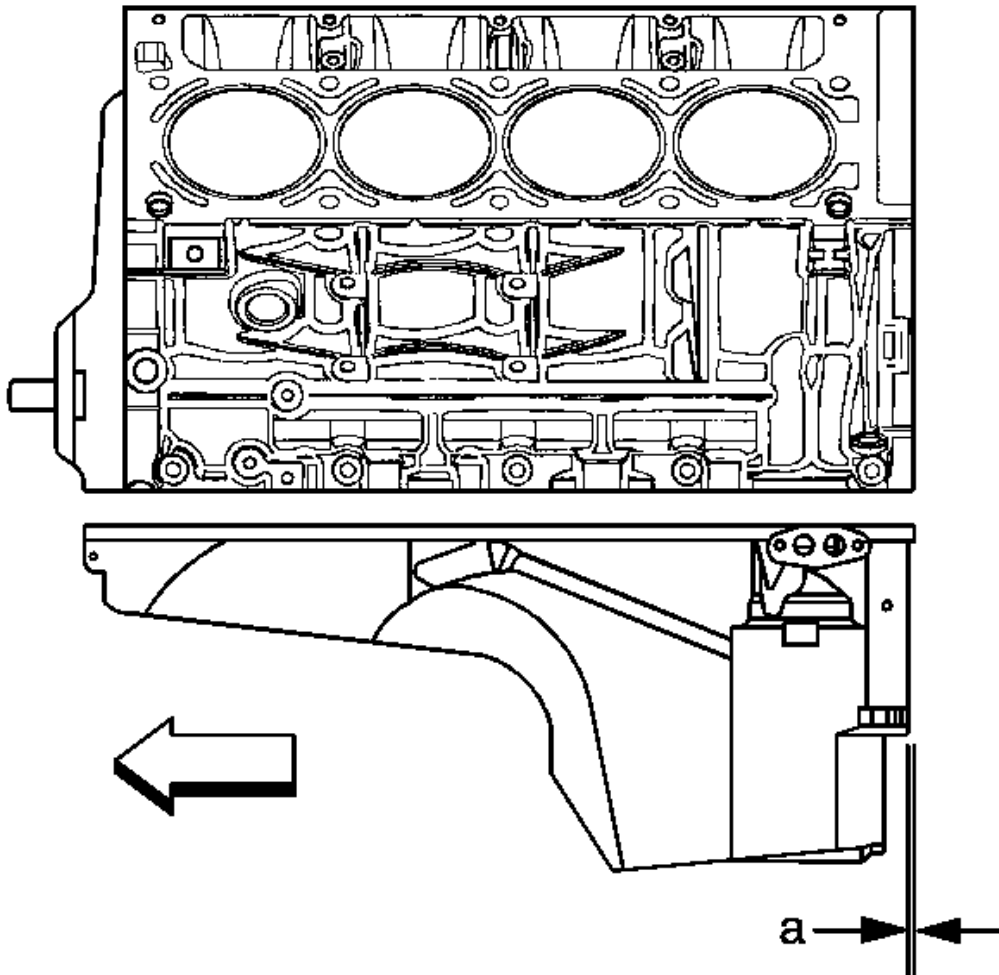


Fig. 20: Align Oil Pan Until Rear Of Engine Block And Rear Of Oil Pan Are Flush

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Courtesy of **GENERAL MOTORS CORP.**

NOTE: Refer to Fastener Notice .

7. Align the oil pan until the rear of engine block and rear of oil pan are flush or even.

Tighten:

1. Tighten the oil pan-to-block and oil pan-to-front cover bolts to 25 N.m (18 lb ft).
 2. Tighten the oil pan-to-rear cover bolts to 12 N.m (106 lb in).
8. Measure the oil pan-to-engine block alignment (a).
 1. Place a straight edge across the rear of the engine block and rear of oil pan at the transmission housing mounting surfaces.

IMPORTANT: The rear of the oil pan must NEVER protrude beyond the engine block and transmission housing mounting surfaces.

2. Insert a feeler gage between the straight edge and the oil pan transmission housing mounting surface and measure to ensure that there is no greater than a 0.1 mm (0.004 in) gap between the pan and straight edge.
3. If the oil pan alignment is not within specifications, remove the oil pan and repeat the above procedure.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

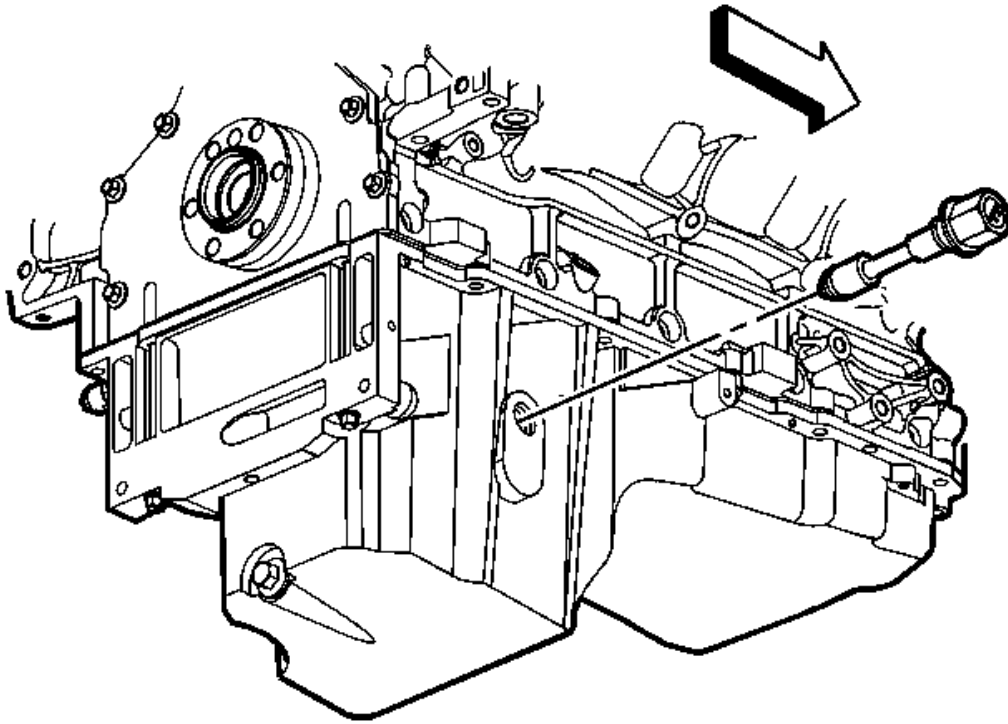


Fig. 21: View Of Oil Level Sensor
Courtesy of GENERAL MOTORS CORP.

9. Install the oil level indicator switch.

Tighten: Tighten the oil level indicator switch to 20 N.m (15 lb in).

OIL FILTER INSTALLATION

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

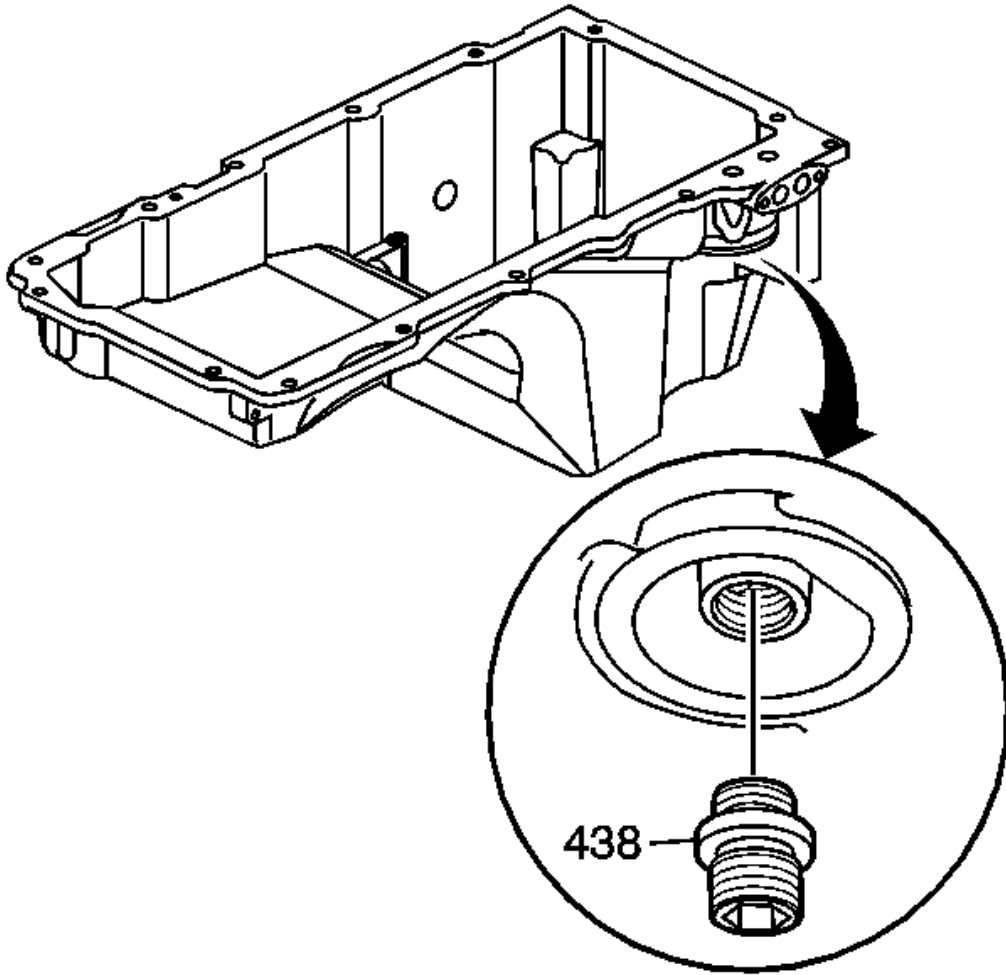


Fig. 22: View Of Oil Filter Fitting
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

1. Install the oil filter fitting (438).

Tighten: Tighten the oil filter fitting to 55 N.m (40 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

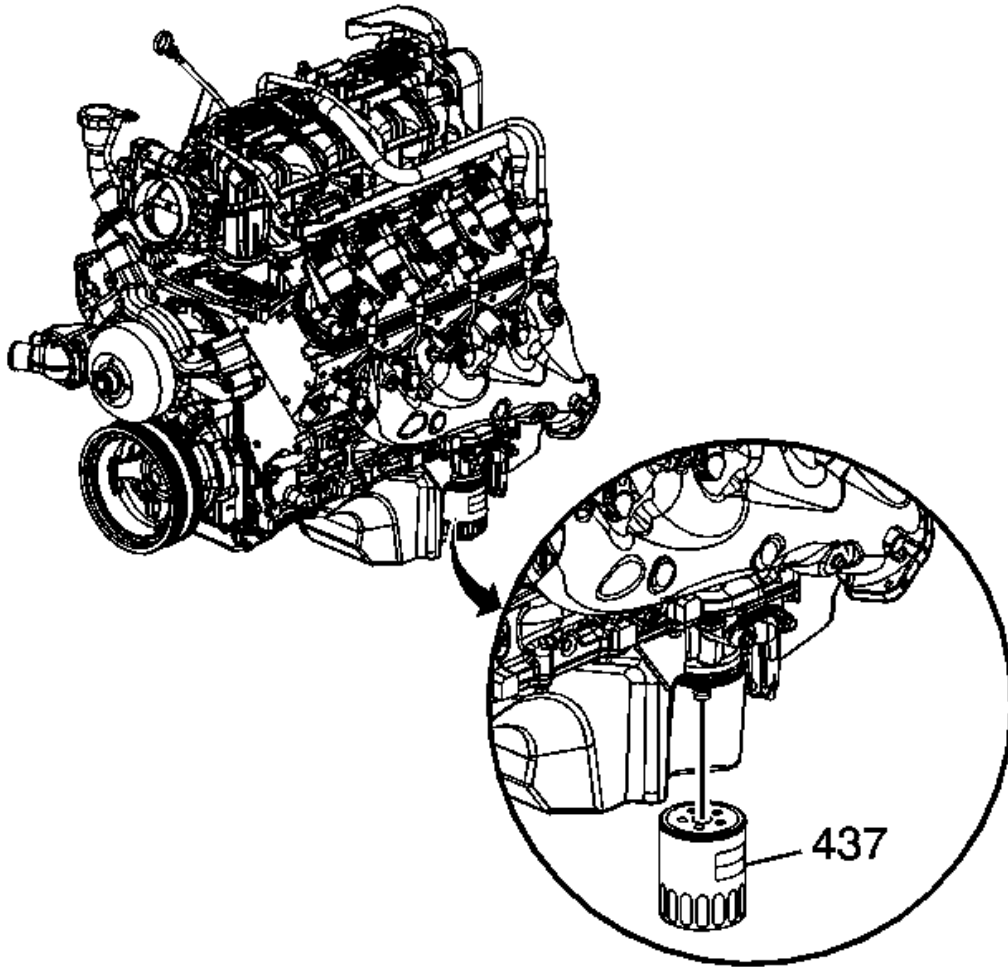


Fig. 23: View Of Engine Oil Filter
Courtesy of GENERAL MOTORS CORP.

2. Lubricate the oil filter seal with clean engine oil.
3. Install the oil filter (437).

Tighten: Tighten the oil filter to 30 N.m (22 lb ft).

VALVE LIFTER INSTALLATION (RPO LY2/LY6/L92)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

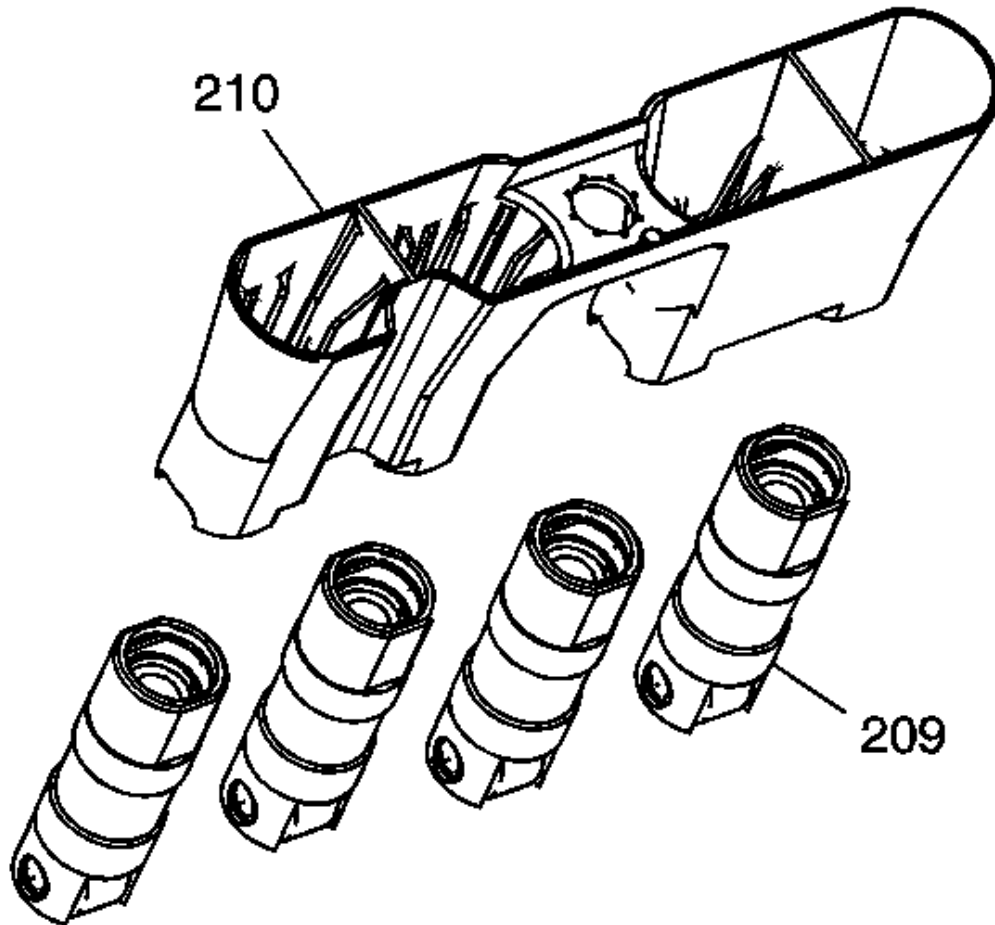


Fig. 24: Valve Lifter Guides & Bolts
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- When using the valve lifters again, install the lifters to their original locations.
- If camshaft replacement is required, the valve lifters must also be replaced.

1. Lubricate the valve lifters (209) and engine block valve lifter bores with clean engine oil.
2. Insert the valve lifters into the lifter guides (210).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Align the flat area on the top of the lifter with the flat area in the lifter guide bore. Push the lifter completely into the guide bore.

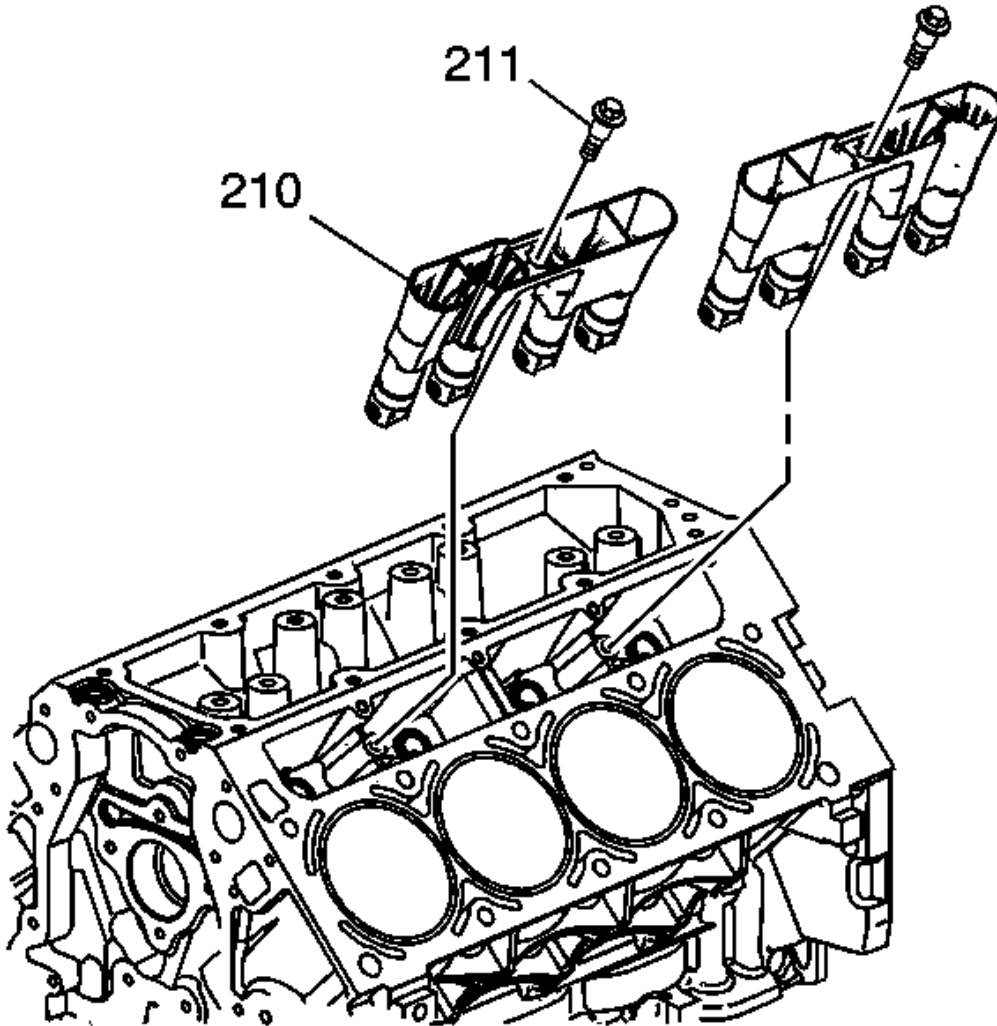


Fig. 25: Valve Lifter Guides, Cylinder Head & Bolts
Courtesy of GENERAL MOTORS CORP.

3. Install the valve lifters and guide assembly (210) to the engine block.

NOTE: Refer to Fastener Notice .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

4. Install the valve lifter guide bolts (211).

Tighten: Tighten the valve lifter guide bolts to 10 N.m (89 lb in).

VALVE LIFTER INSTALLATION (RPO LH6/LMG/LY5/LC9/L76)

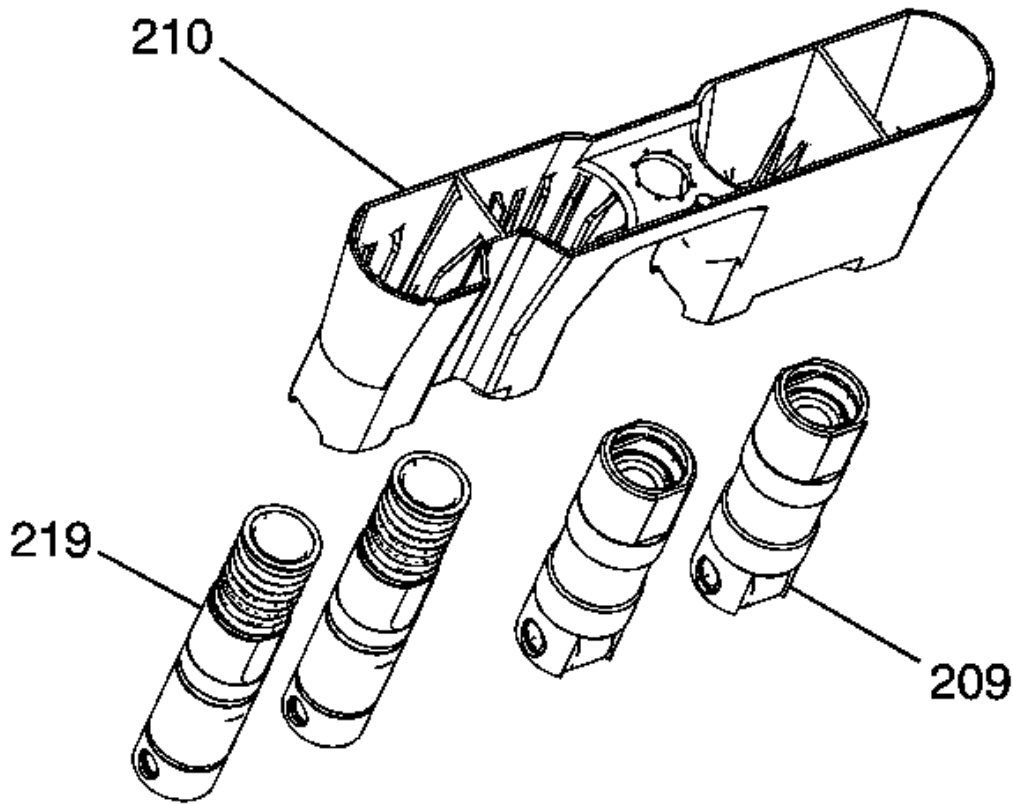


Fig. 26: Exploded View Of Lifter Guides & Lifters
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- When using the valve lifters again, install the lifters to their original locations.
- If camshaft replacement is required, the valve lifters must also be replaced.
- Each of the 4 valve guide assemblies will contain 2

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

active fuel management valve lifters and 2 non-active fuel management valve lifters.

- **With the lifters and guides properly installed, cylinders 1, 4, 6, and 7 lifter bores will each contain 2 active fuel management valve lifters.**

1. Lubricate the valve lifters (209, 219) and engine block valve lifter bores with clean engine oil.

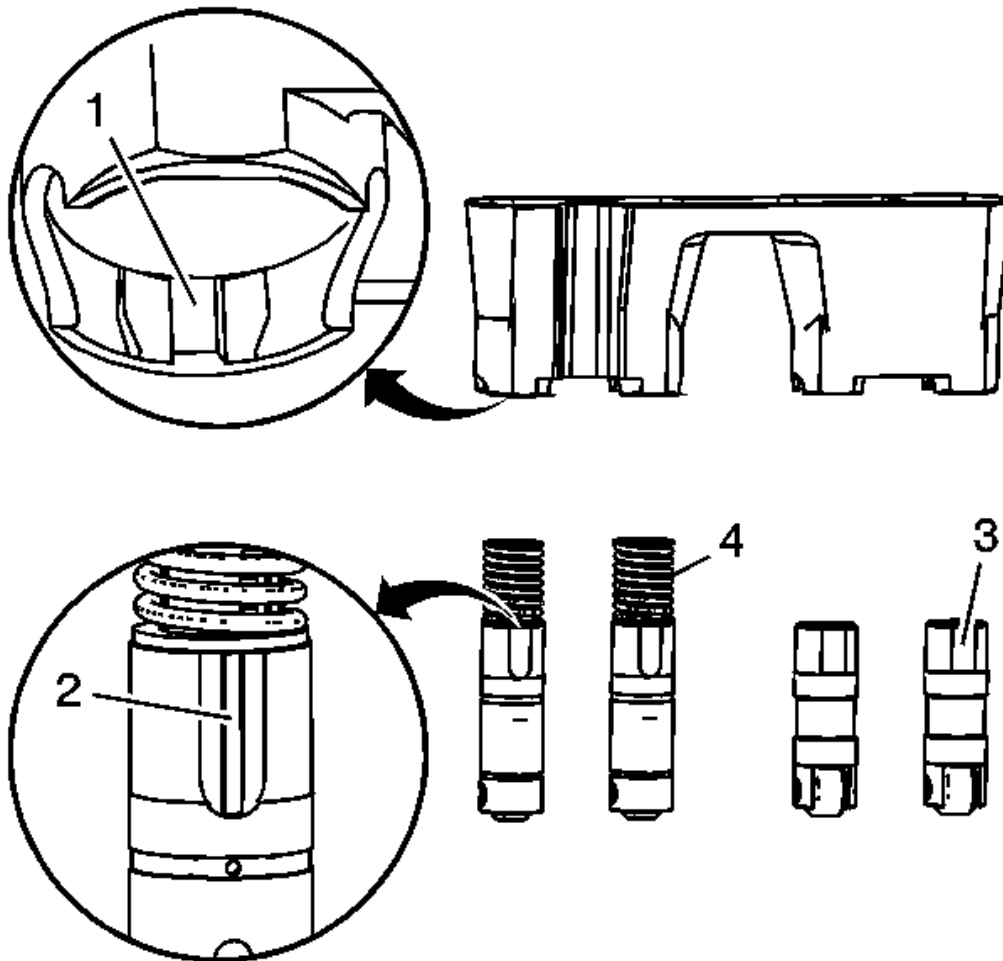


Fig. 27: Inserting Valve Lifters Into Lifter Guides
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Insert the valve lifters into the lifter guides.

- Align the flat area (3) on the top of the non-active fuel management lifter with the flat area in the lifter guide bore. Push the lifter completely into the guide bore.
- The active fuel management lifters (4) are to be installed into the guide, with the notch in the guide (1) aligned with the raised area (2) of the lifter.

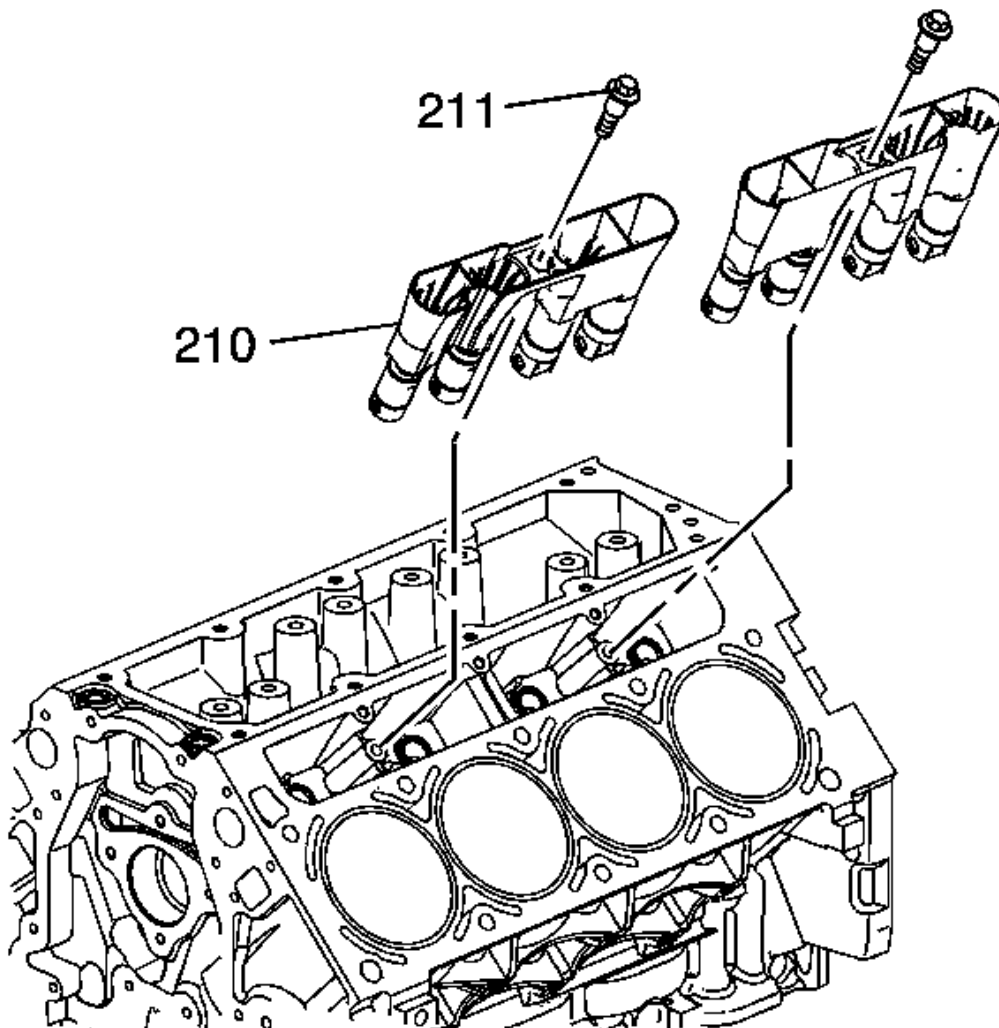


Fig. 28: View Of Lifter Guides & Lifters
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

3. Install the valve lifters and guide assembly (210) to the engine block.

NOTE: Refer to Fastener Notice .

4. Install the valve lifter guide bolts (211).

Tighten: Tighten the valve lifter guide bolts to 10 N.m (89 lb in).

CYLINDER HEAD INSTALLATION - LEFT SIDE

Tools Required

- **J 42385-100** Head/Main Bolt Thread Repair Kit. See Special Tools .
- **J 45059** Angle Meter

Installation

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

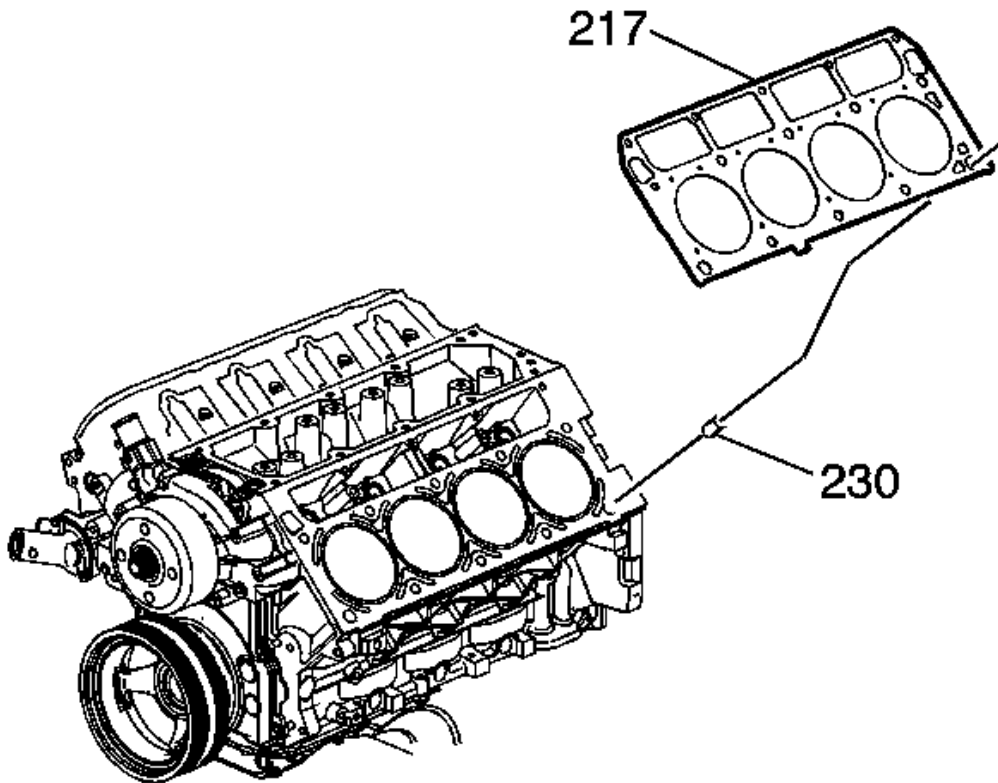


Fig. 29: View Of Cylinder Head Gasket & Locating Pins
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to Safety Glasses Caution .

NOTE: Clean all dirt, debris, and coolant from the engine block cylinder head bolt holes. Failure to remove all foreign material may result in damaged threads, improperly tightened fasteners or damage to components.

IMPORTANT:

- Do not use the cylinder head bolts again. Install **NEW** cylinder head bolts during assembly.
- Do not use any type of sealant on the cylinder head

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

gasket, unless specified.

1. Clean the engine block cylinder head bolt holes, if required.

Thread repair tool J 42385-107 may be used to clean the threads of old threadlocking material.

2. Spray cleaner GM P/N 12346139 (Canadian P/N 10953463), GM P/N 12377981 (Canadian P/N 10953463), or equivalent, into the hole.
3. Clean the cylinder head bolt holes with compressed air.
4. Install the cylinder head locating pins (230).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

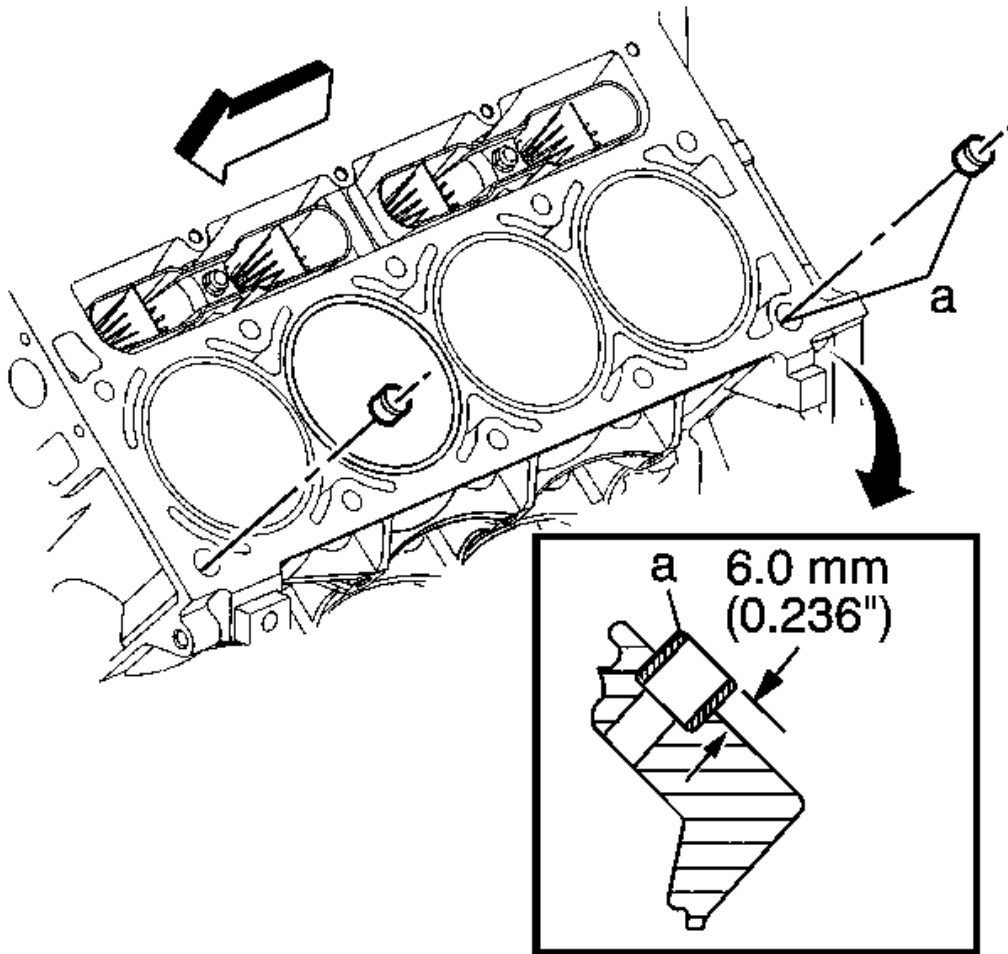


Fig. 30: Identifying Cylinder Head Locating Pins Installation Position
Courtesy of GENERAL MOTORS CORP.

5. Inspect the locating pins for proper installation.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

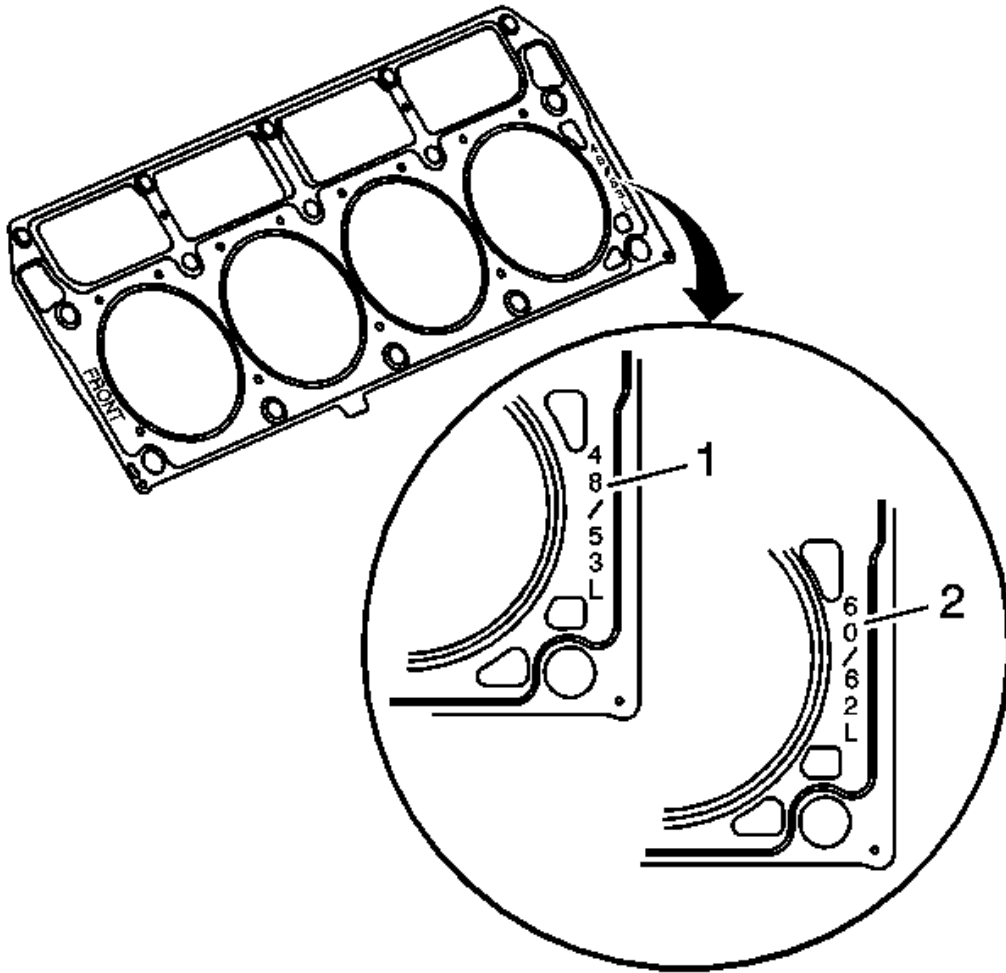


Fig. 31: View Of Displacement Markings On Gasket
Courtesy of GENERAL MOTORS CORP.

6. Inspect the displacement markings (1, 2) on the gasket, for proper usage.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

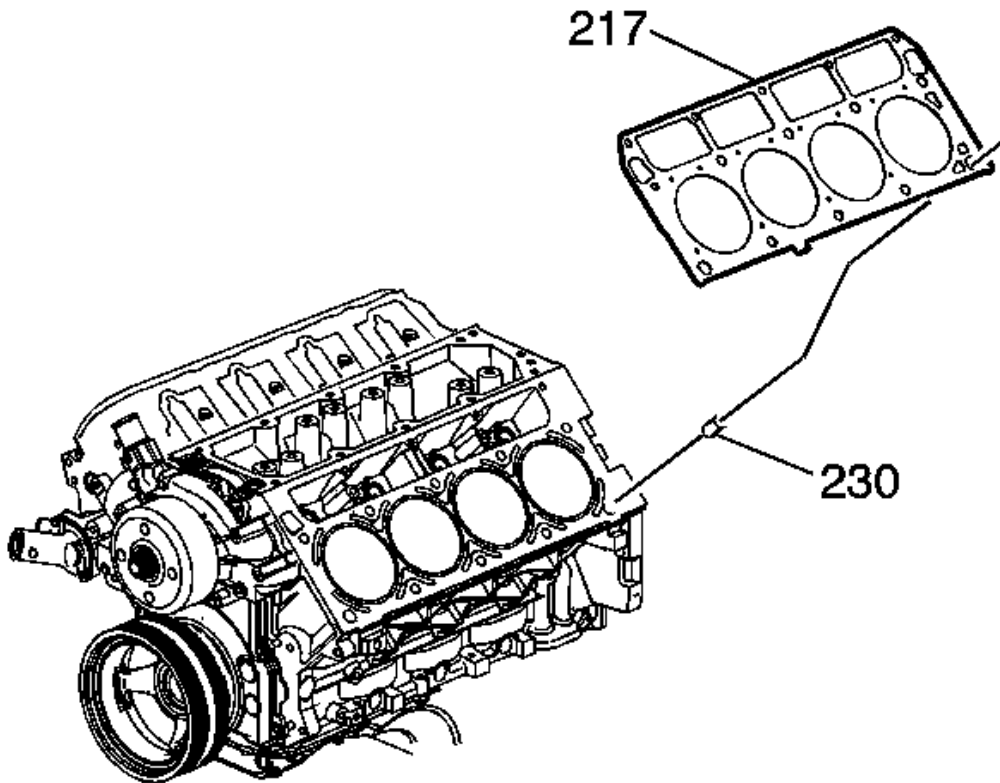


Fig. 32: View Of Cylinder Head Gasket & Locating Pins
Courtesy of GENERAL MOTORS CORP.

7. Install the NEW cylinder head gasket (217) onto the locating pins.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

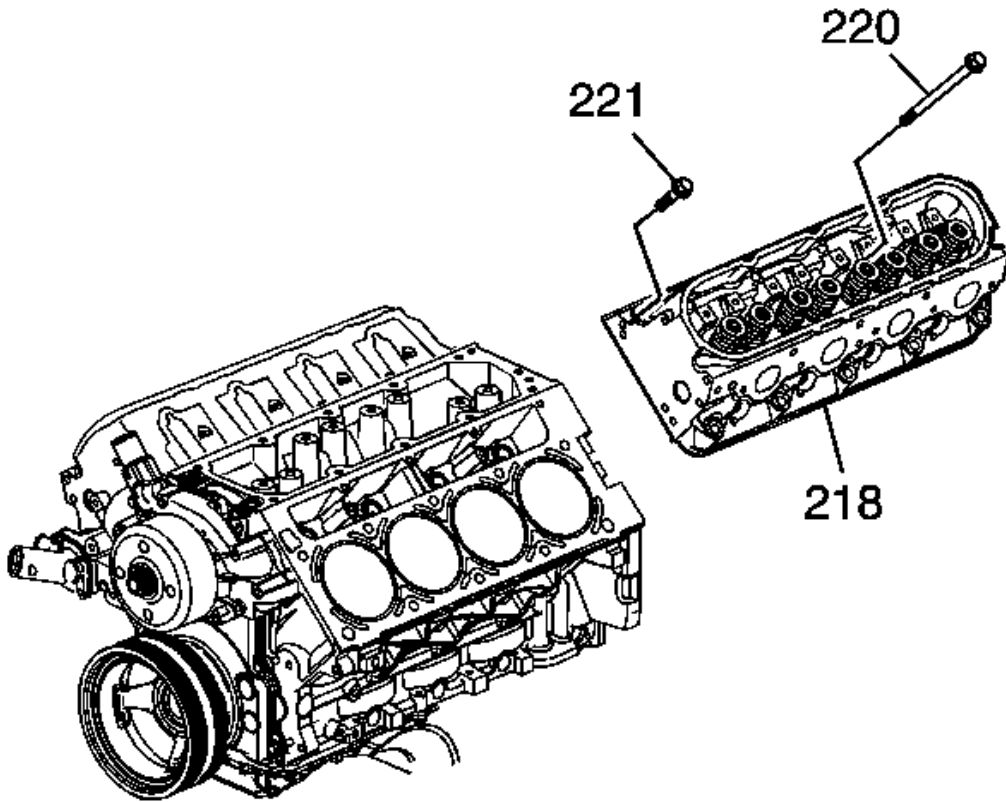


Fig. 33: View Of Cylinder Head & Bolts
Courtesy of GENERAL MOTORS CORP.

8. Install the cylinder head (218) onto the locating pins and the gasket.
9. Install the NEW cylinder head bolts (220, 221).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

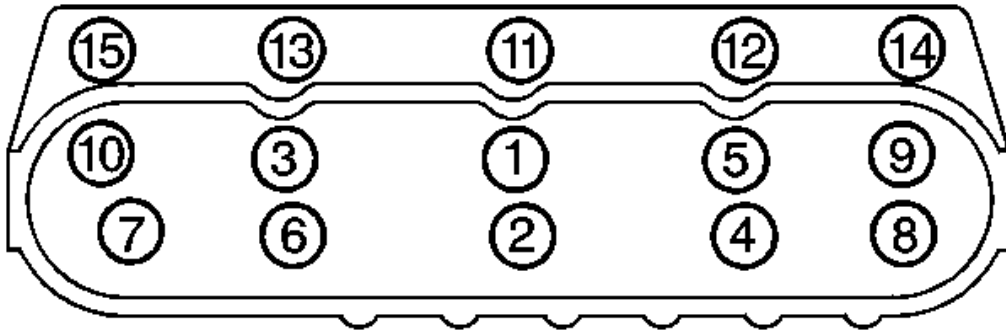


Fig. 34: Cylinder Head Bolt Tightening Sequence
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

10. Tighten the cylinder head bolts.

Tighten:

1. Tighten the M11 cylinder head bolts (1-10) a first pass in sequence to 30 N.m (22 lb ft).
2. Tighten the M11 cylinder head bolts (1-10) a second pass in sequence to 90 degrees using the **J 45059** .
3. Tighten the M11 cylinder head bolts (1-10) a final pass in sequence to 70 degrees using the **J 45059** .
4. Tighten the M8 cylinder head bolts (11-15) to 30 N.m (22 lb ft). Begin with the center bolt (11) and alternating side-to-side, work outward tightening all of the bolts.

CYLINDER HEAD INSTALLATION - RIGHT SIDE

Tools Required

- **J 42385-100** Head/Main Bolt Thread Repair Kit. See Special Tools .
- **J 45059** Angle Meter

Installation

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

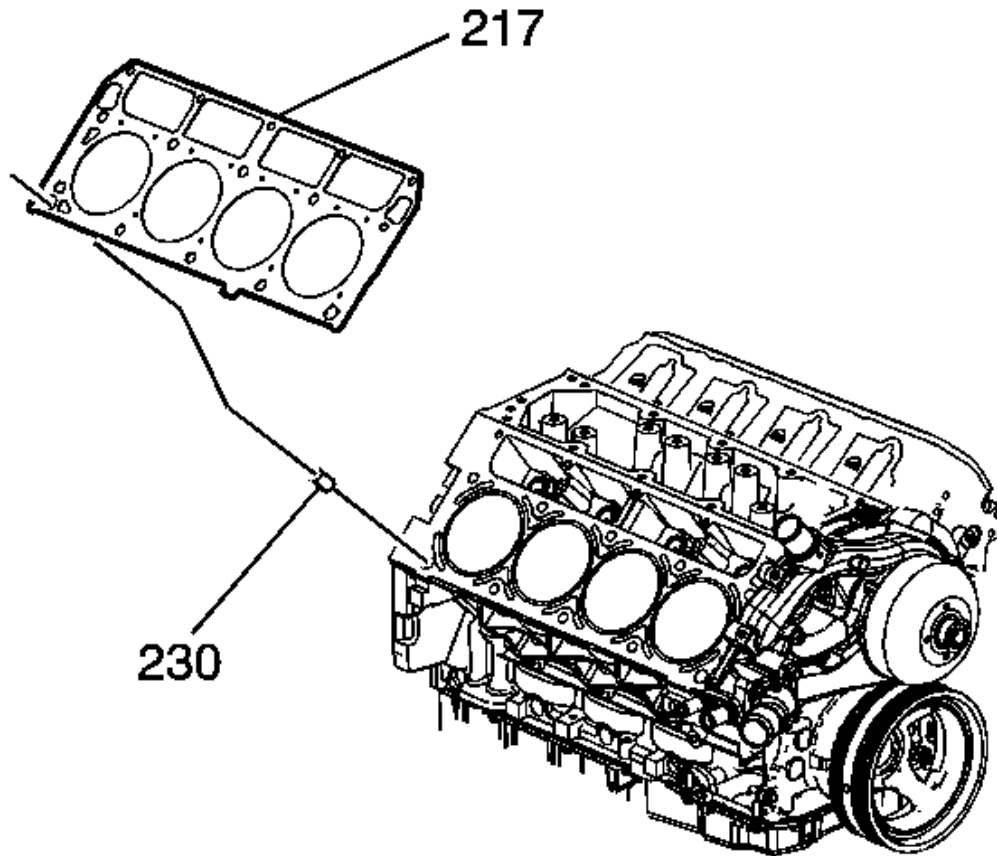


Fig. 35: View Of Cylinder Head Gasket & Locating Pins
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to Safety Glasses Caution .

NOTE: Clean all dirt, debris, and coolant from the engine block cylinder head bolt holes. Failure to remove all foreign material may result in damaged threads, improperly tightened fasteners or damage to components.

IMPORTANT: • Do not use the cylinder head bolts again. Install **NEW**

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

cylinder head bolts during assembly.

- **Do not use any type of sealant on the cylinder head gasket, unless specified.**

1. Clean the engine block cylinder head bolt holes, if required.

Thread repair tool J 42385-107 may be used to clean the threads of old threadlocking material.

2. Spray cleaner GM P/N 12346139 (Canadian P/N 10953463), GM P/N 12377981 (Canadian P/N 10953463), or equivalent, into the hole.
3. Clean the cylinder head bolt holes with compressed air.
4. Install the cylinder head locating pins (230).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

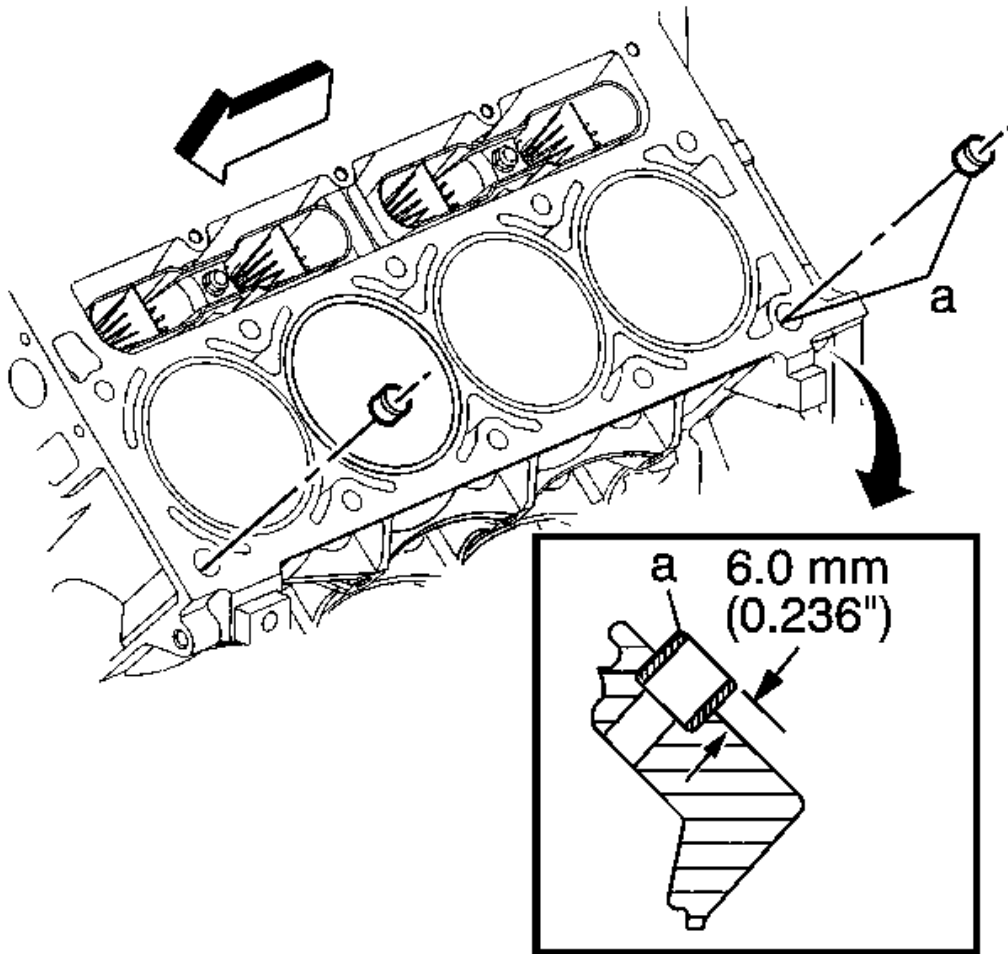


Fig. 36: Identifying Cylinder Head Locating Pins Installation Position
Courtesy of GENERAL MOTORS CORP.

5. Inspect the locating pins for proper installation.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

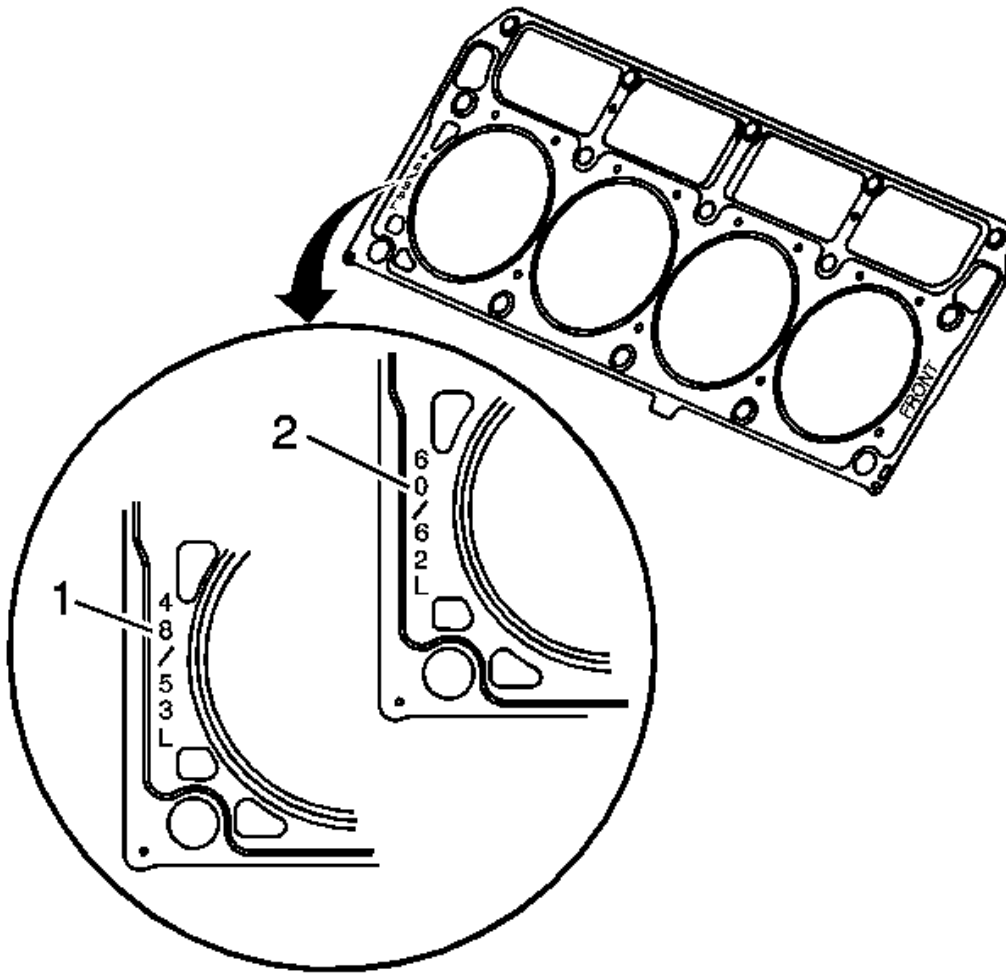


Fig. 37: View Of Displacement Markings On Gasket
Courtesy of GENERAL MOTORS CORP.

6. Inspect the displacement markings (1, 2) on the gasket, for proper usage.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

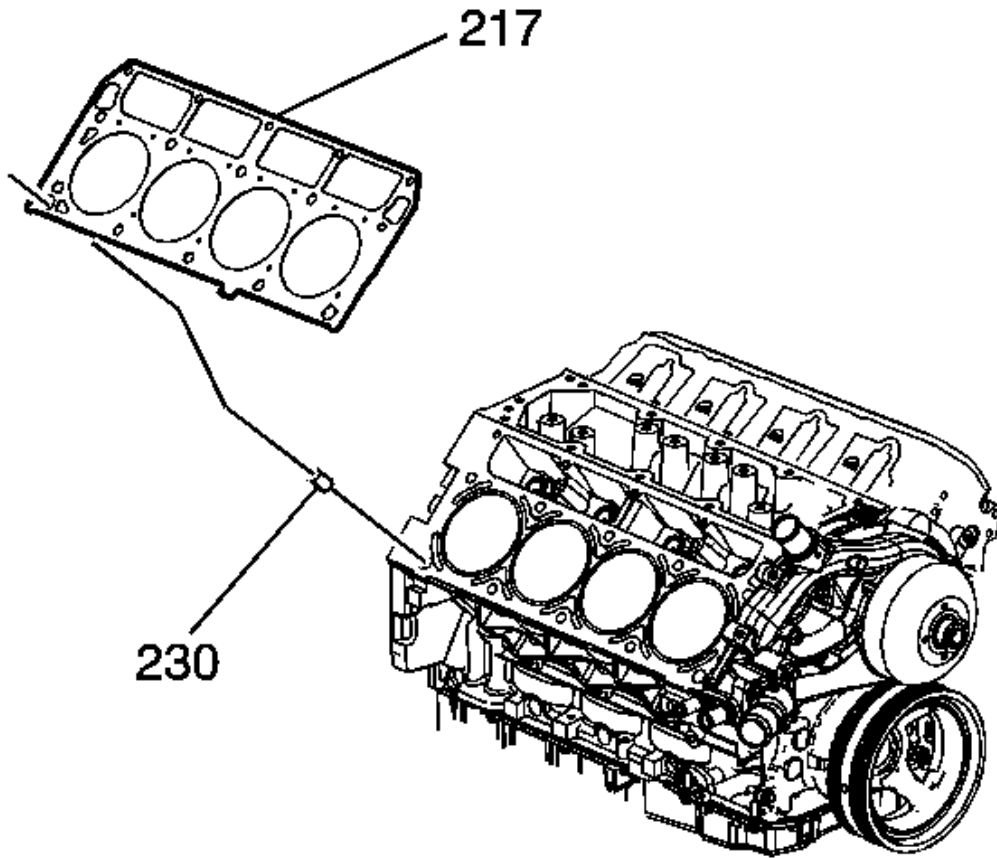


Fig. 38: View Of Cylinder Head Gasket & Locating Pins
Courtesy of GENERAL MOTORS CORP.

7. Install the NEW cylinder head gasket (217) onto the locating pins.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

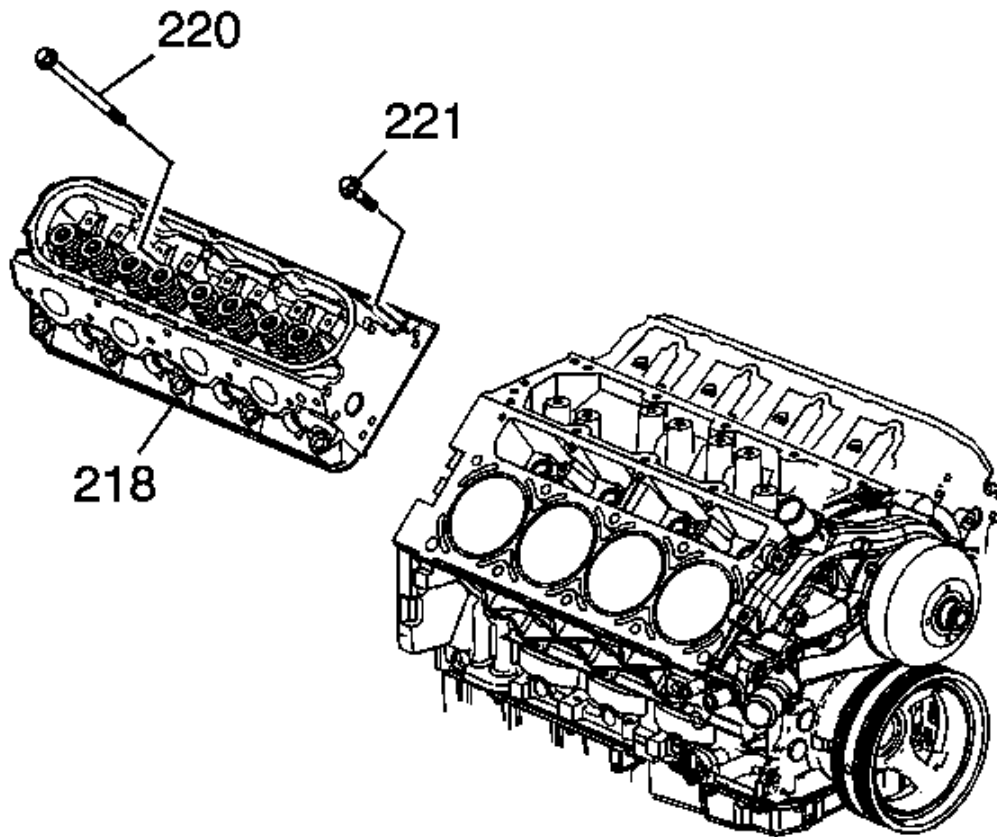


Fig. 39: View Of Cylinder Head & Bolts
Courtesy of GENERAL MOTORS CORP.

8. Install the cylinder head (218) onto the locating pins and the gasket.
9. Install the NEW cylinder head bolts (220, 221).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

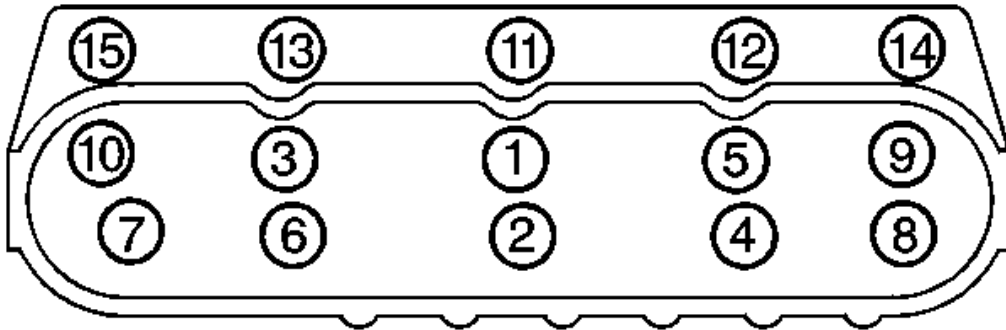


Fig. 40: Cylinder Head Bolt Tightening Sequence
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

10. Tighten the cylinder head bolts.

Tighten:

1. Tighten the M11 cylinder head bolts (1-10) a first pass in sequence to 30 N.m (22 lb ft).
2. Tighten the M11 cylinder head bolts (1-10) a second pass in sequence to 90 degrees using the **J 45059** .
3. Tighten the M11 cylinder head bolts (1-10) a final pass in sequence to 70 degrees using the **J 45059** .
4. Tighten the M8 cylinder head bolts (11-15) to 30 N.m (22 lb ft). Begin with the center bolt (11) and alternating side-to-side, work outward tightening all of the bolts.

VALVE ROCKER ARM AND PUSH ROD INSTALLATION (RPO LY2/LH6/LMG/LY5/LC9)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

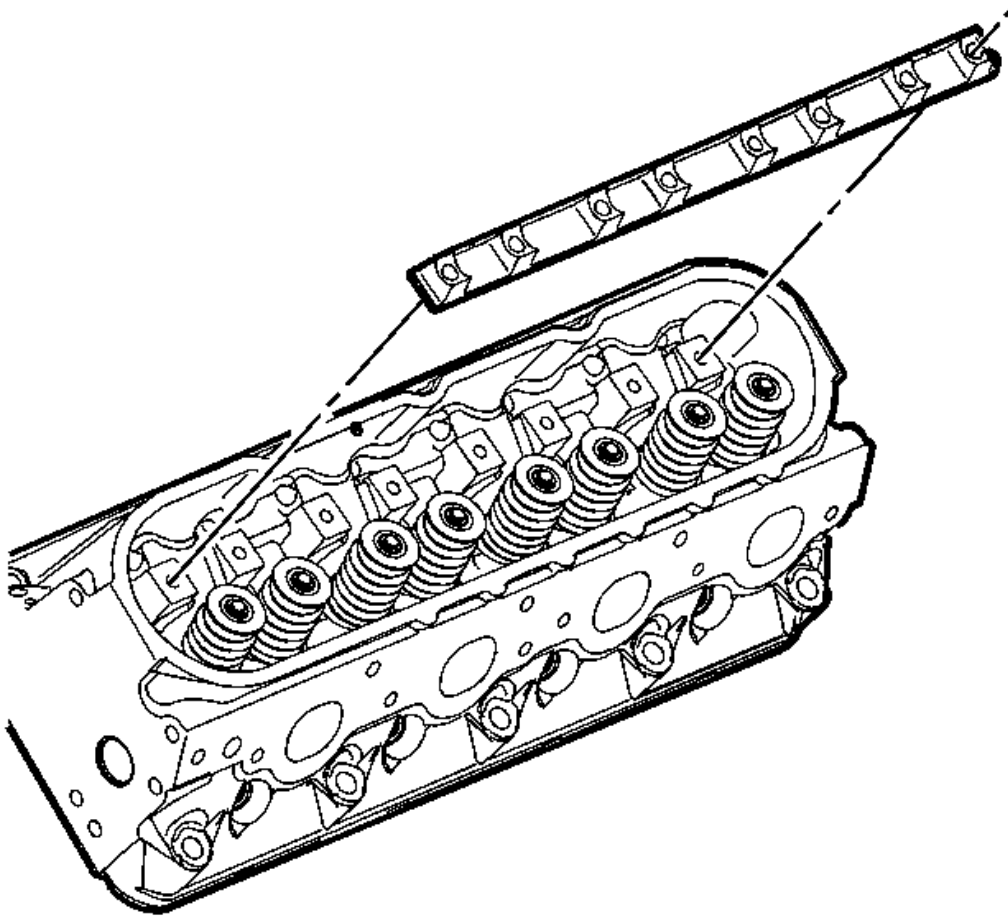


Fig. 41: View Of Valve Rocker Arm Pivot Support
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- When using the valve train components again, always install the components to the original location and position.
- Valve lash is net build. No valve adjustment is required.

1. Lubricate the valve rocker arms and pushrods with clean engine oil.
2. Lubricate the flange of the valve rocker arm bolts with clean engine oil.
3. Install the valve rocker arm pivot support.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

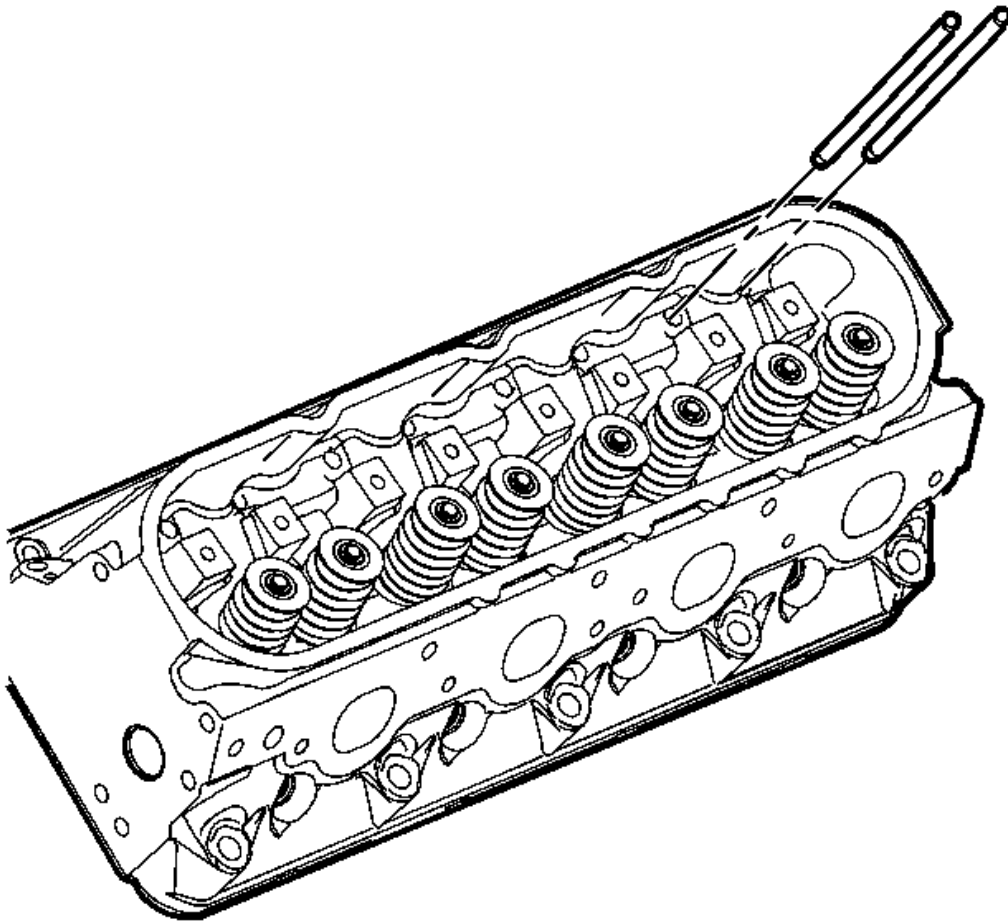


Fig. 42: View Of Pushrods

Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Ensure the pushrods seat properly to the valve lifter sockets.

4. Install the pushrods.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

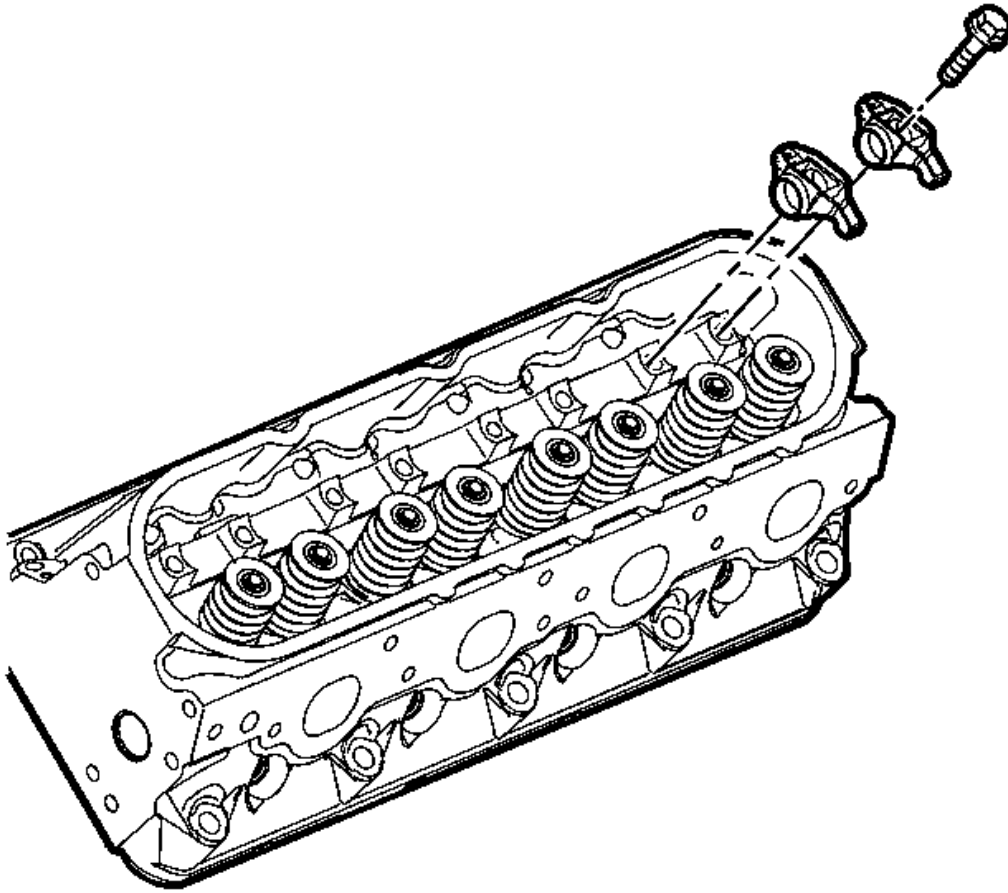


Fig. 43: View Of Rocker Arms & Bolts
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- Ensure the pushrods seat properly to the ends of the rocker arms.
- **DO NOT** tighten the rocker arm bolts at this time.

5. Install the rocker arms and bolts.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

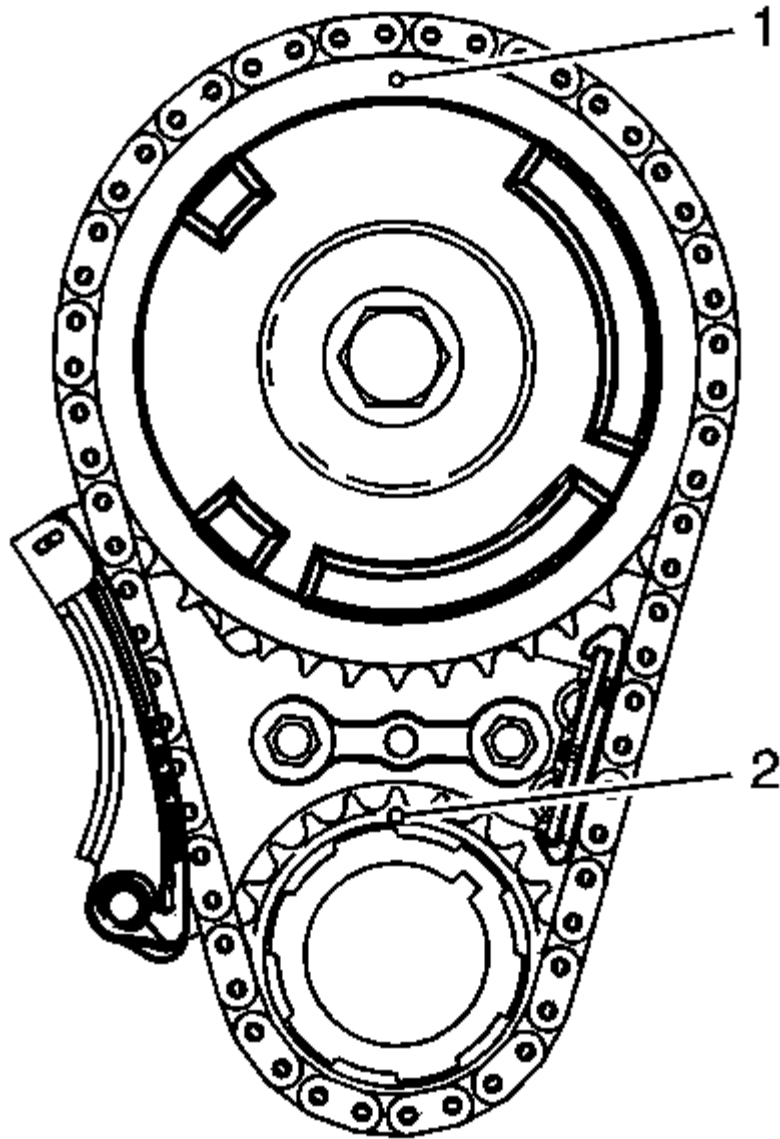


Fig. 44: View Of Camshaft & Crankshaft Sprocket Alignment Marks In 12 O'clock Position

Courtesy of GENERAL MOTORS CORP.

6. Rotate the crankshaft until number 1 piston is at top dead center of compression stroke.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

In this position, cylinder number 1 rocker arms will be off lobe lift, and the crankshaft sprocket key will be at the 1:30 position. The camshaft and crankshaft sprocket alignment marks (1, 2) will be in the 12 o'clock position. If viewing from the rear of the engine, the additional crankshaft pilot hole, non-threaded, will be in the 10:30 position.

The engine firing order is 1, 8, 7, 2, 6, 5, 4, 3.

Cylinders 1, 3, 5 and 7 are left bank.

Cylinders 2, 4, 6, and 8 are right bank.

NOTE: Refer to Fastener Notice .

7. With the engine in the number 1 firing position, tighten the following valve rocker arm bolts:

Tighten:

- Tighten the exhaust valve rocker arm bolts 1, 2, 7, and 8 to 30 N.m (22 lb ft).
- Tighten the intake valve rocker arm bolts 1, 3, 4, and 5 to 30 N.m (22 lb ft).

8. Rotate the crankshaft 360 degrees.
9. Tighten the following valve rocker arm bolts:

Tighten:

- Tighten the exhaust valve rocker arm bolts 3, 4, 5, and 6 to 30 N.m (22 lb ft).
- Tighten the intake valve rocker arm bolts 2, 6, 7, and 8 to 30 N.m (22 lb ft).

VALVE ROCKER ARM AND PUSH ROD INSTALLATION (RPO L92/LY6/L76)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

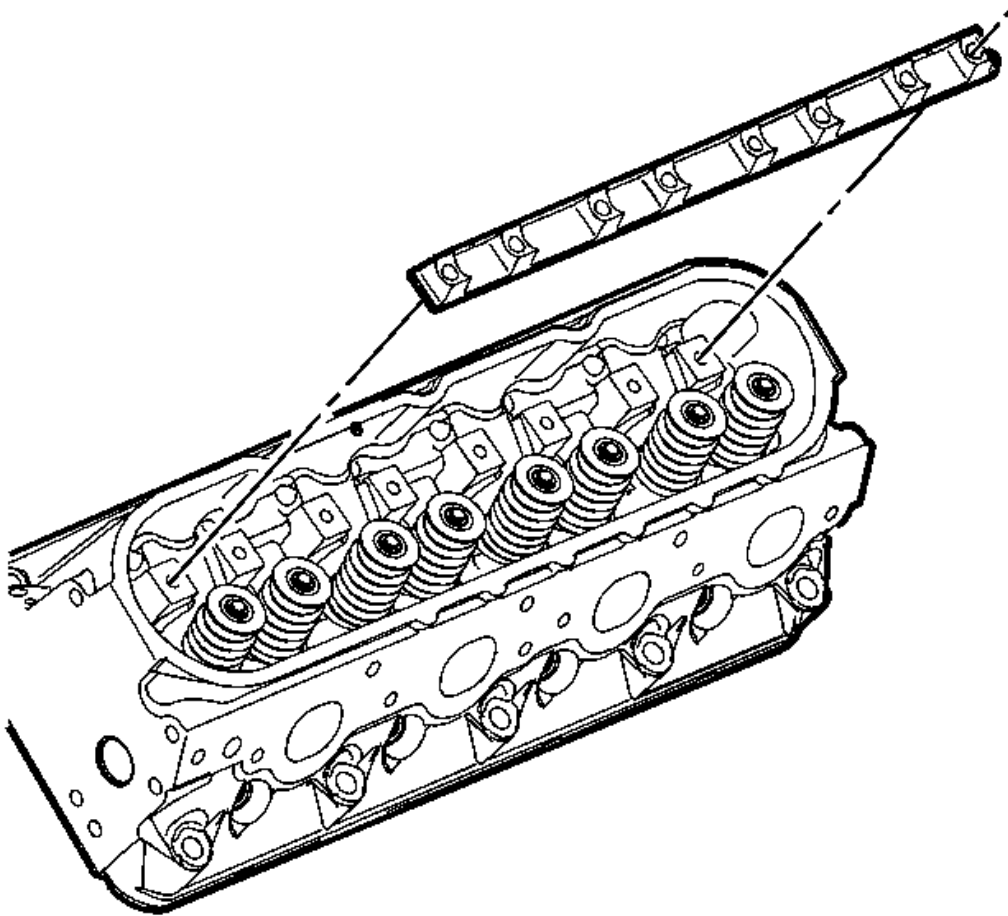


Fig. 45: View Of Valve Rocker Arm Pivot Support
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- When using the valve train components again, always install the components to the original location and position.
- Valve lash is net build. No valve adjustment is required.

1. Lubricate the valve rocker arms and pushrods with clean engine oil.
2. Lubricate the flange of the valve rocker arm bolts with clean engine oil.
3. Install the valve rocker arm pivot support.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

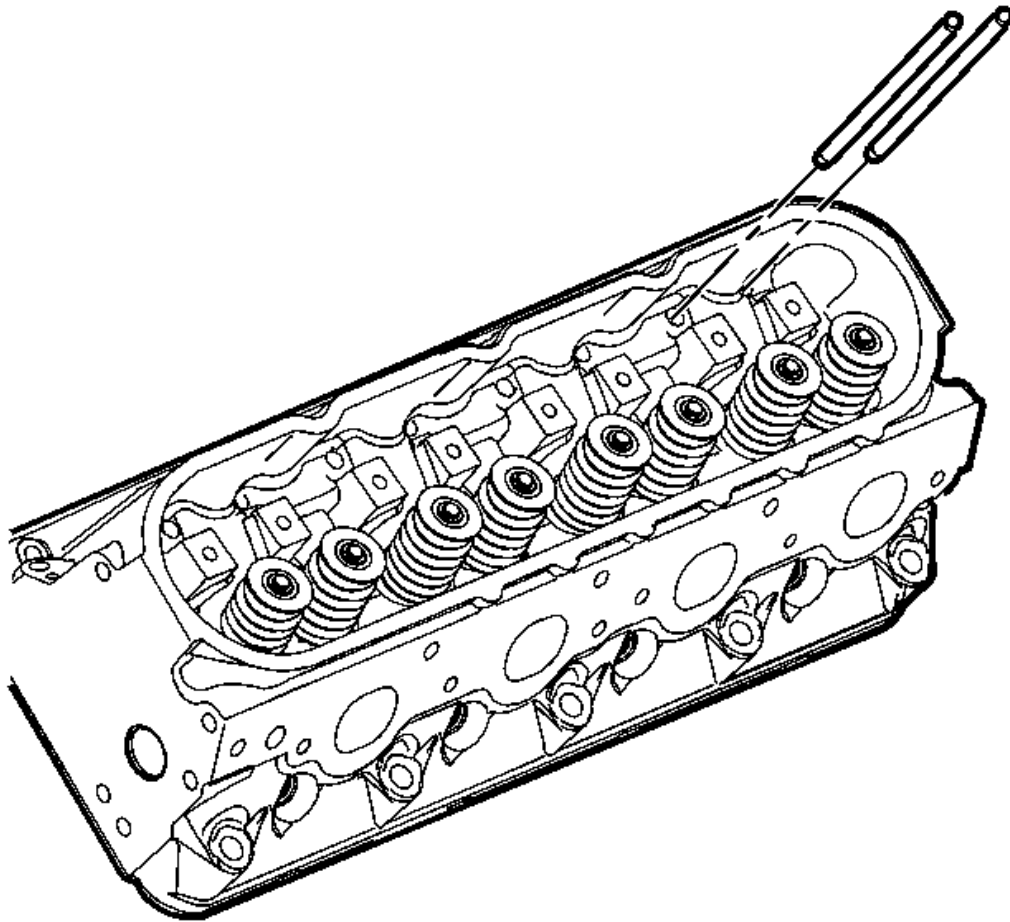


Fig. 46: View Of Pushrods

Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Ensure the pushrods seat properly to the valve lifter sockets.

4. Install the pushrods.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

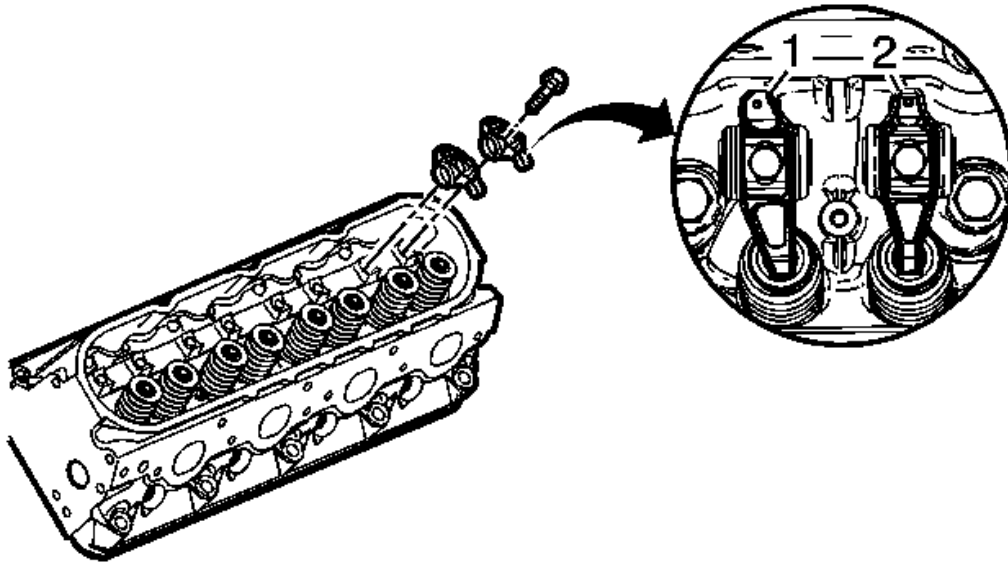


Fig. 47: Identifying Offset Intake Rocker Arm & Non-Offset Rocker Arm
Courtesy of GENERAL MOTORS CORP.

- IMPORTANT:**
- Ensure the pushrods seat properly to the ends of the rocker arms.
 - **DO NOT** tighten the rocker arm bolts at this time.

5. Install the rocker arms and bolts.

The intake rocker arms (1) have an offset design.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

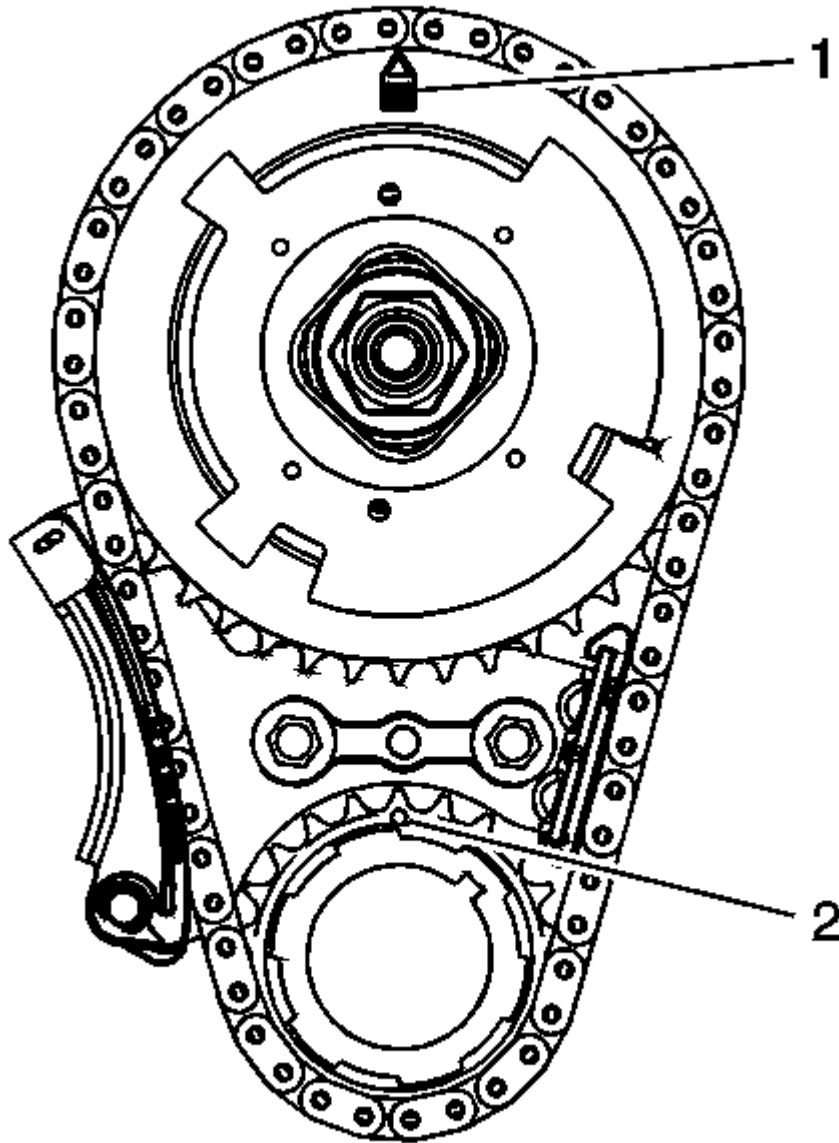


Fig. 48: View Of Camshaft & Crankshaft Sprocket Alignment Marks
Courtesy of GENERAL MOTORS CORP.

6. Rotate the crankshaft until number 1 piston is at top dead center of compression stroke.

In this position, cylinder number 1 rocker arms will be off lobe lift, and the crankshaft

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

sprocket key will be at the 1:30 position. The camshaft and crankshaft sprocket alignment marks (1, 2) will be in the 12 o'clock position. If viewing from the rear of the engine, the additional crankshaft pilot hole, non-threaded, will be in the 10:30 position.

The engine firing order is 1, 8, 7, 2, 6, 5, 4, 3.

Cylinders 1, 3, 5 and 7 are left bank.

Cylinders 2, 4, 6, and 8 are right bank.

NOTE: Refer to Fastener Notice .

7. With the engine in the number 1 firing position, tighten the following valve rocker arm bolts:

Tighten:

- Tighten the exhaust valve rocker arm bolts 1, 2, 7, and 8 to 30 N.m (22 lb ft).
- Tighten the intake valve rocker arm bolts 1, 3, 4, and 5 to 30 N.m (22 lb ft).

8. Rotate the crankshaft 360 degrees.
9. Tighten the following valve rocker arm bolts:

Tighten:

- Tighten the exhaust valve rocker arm bolts 3, 4, 5, and 6 to 30 N.m (22 lb ft).
- Tighten the intake valve rocker arm bolts 2, 6, 7, and 8 to 30 N.m (22 lb ft).

VALVE ROCKER ARM COVER INSTALLATION - LEFT SIDE

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

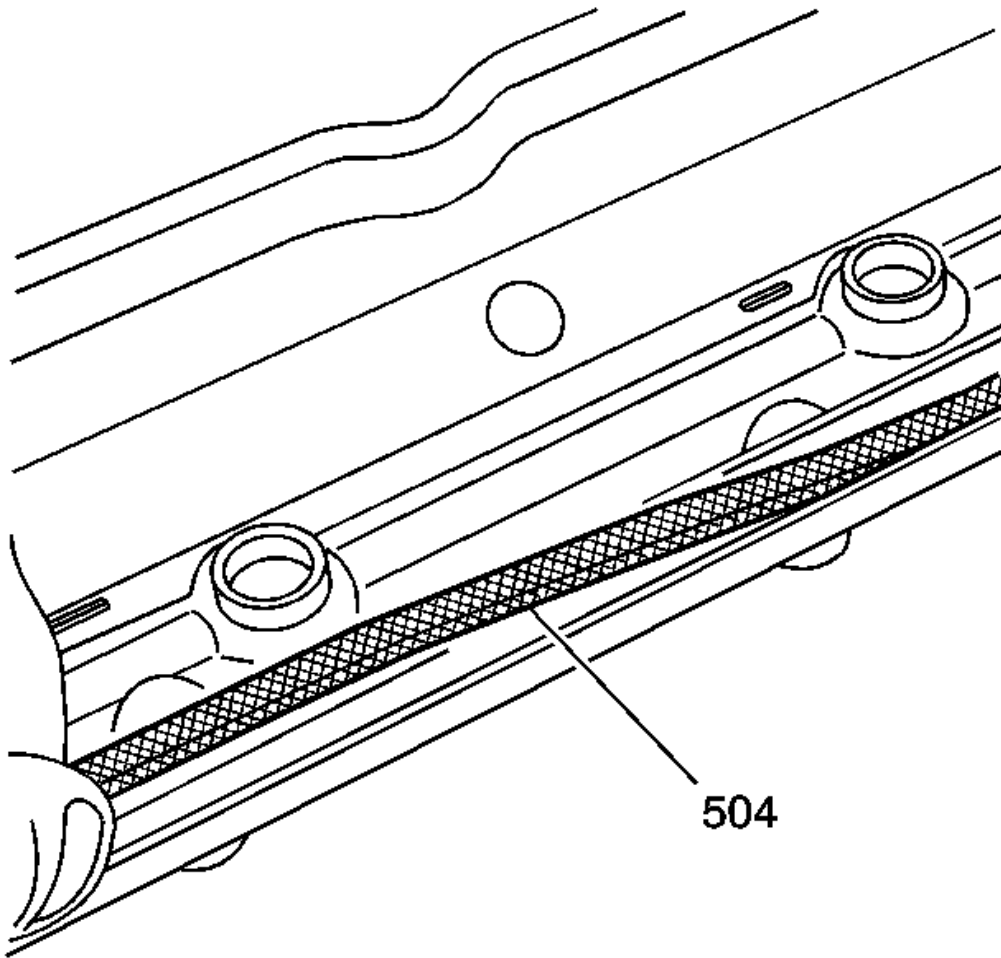


Fig. 49: View Of Valve Rocker Arm Cover Gasket
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- All gasket surfaces should be free of oil or other foreign material during assembly.
- DO NOT use the valve rocker arm cover gasket again.
- The valve rocker arm cover bolt grommets may be used again if not damaged.

1. Install a NEW gasket (504) into the valve rocker arm cover.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

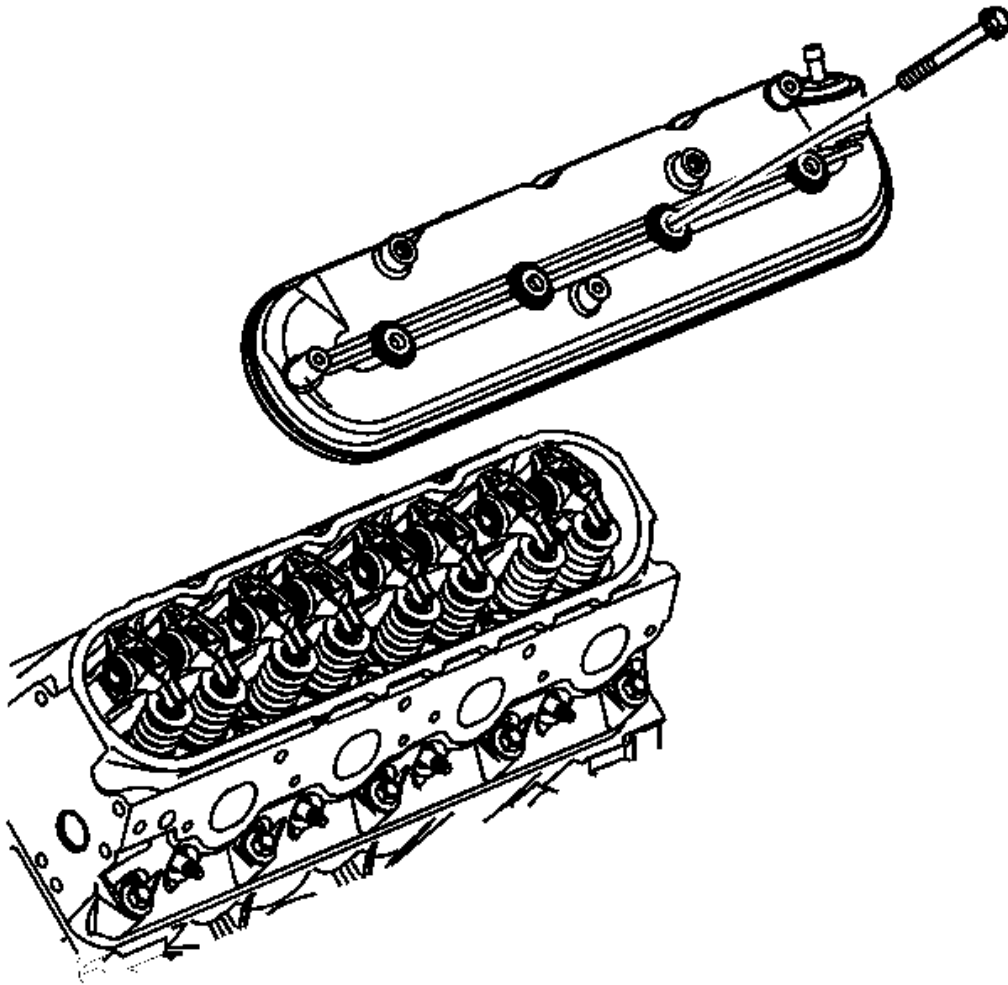


Fig. 50: View Of Valve Rocker Arm Cover
Courtesy of GENERAL MOTORS CORP.

2. Install the valve rocker arm cover onto the cylinder head.

NOTE: Refer to Fastener Notice .

3. Install the cover bolts with grommets.

Tighten: Tighten the valve rocker arm cover bolts to 12 N.m (106 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

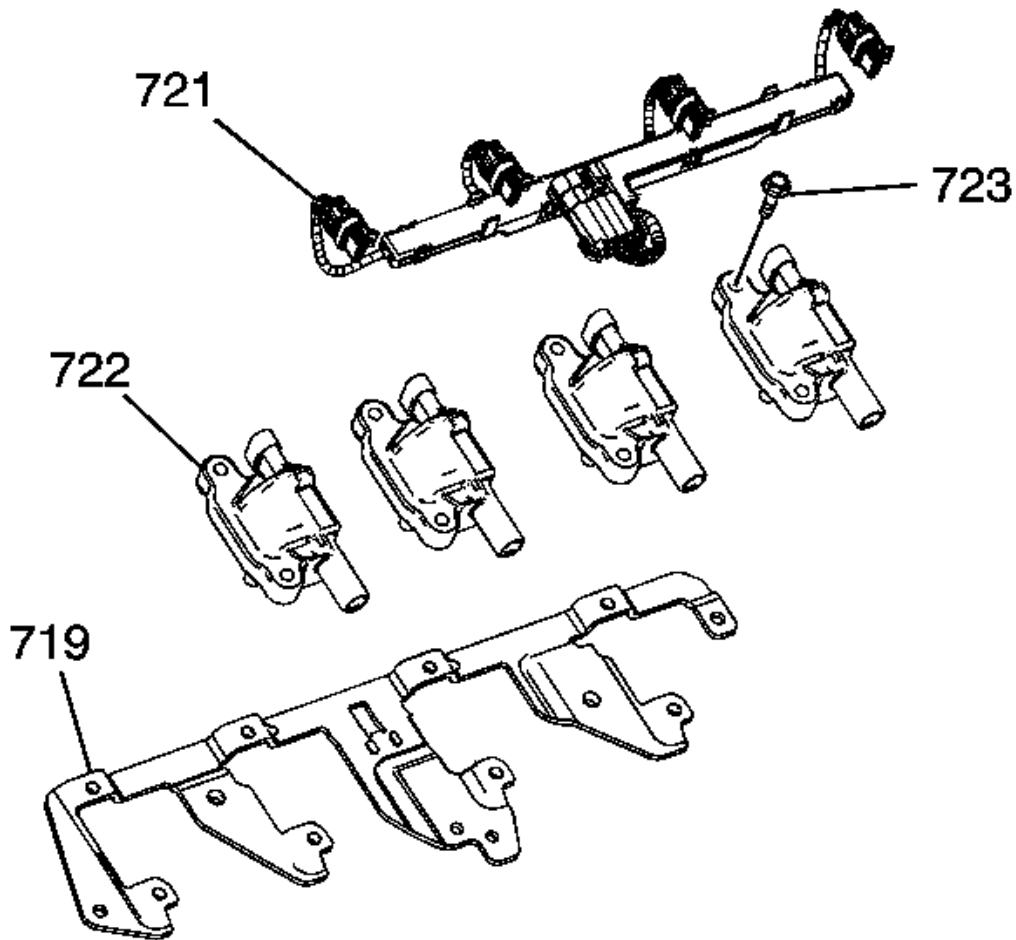


Fig. 51: View Of Bracket, Bolts, Coils & Wire Harness
Courtesy of GENERAL MOTORS CORP.

4. Apply threadlock GM P/N 12345382 (Canadian P/N 10953489), or equivalent, to the threads of the ignition coil bolts (723).
5. Install the ignition coils (722), wire harness (721), and bolts (723) to the bracket (719).

Tighten: Tighten the ignition coil bolts to 10 N.m (89 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

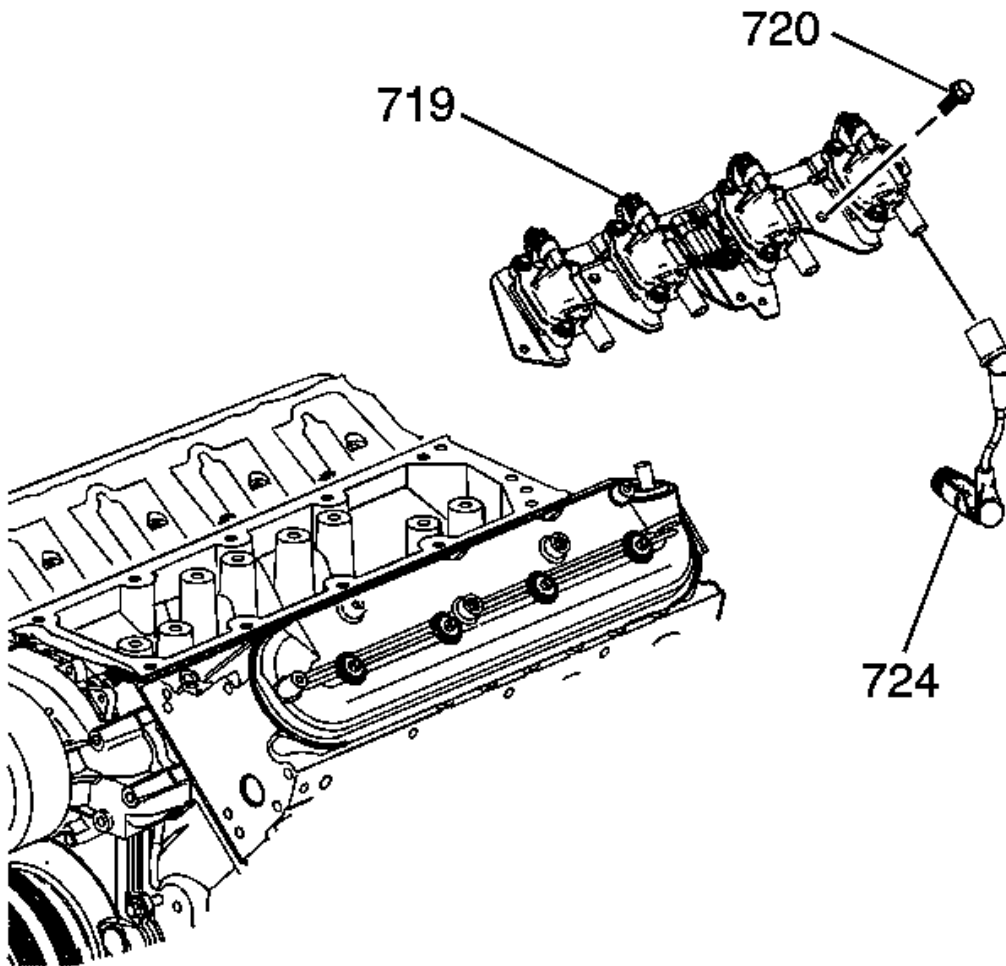


Fig. 52: Ignition Coils & Bracket
Courtesy of GENERAL MOTORS CORP.

6. Apply threadlock GM P/N 12345382 (Canadian P/N 10953489), or equivalent, to the threads of the ignition coil bracket studs (720).
7. Install the ignition coil and bracket assembly (719) and studs (720).

Tighten: Tighten the bracket studs to 12 N.m (106 lb in).

VALVE ROCKER ARM COVER INSTALLATION - RIGHT SIDE

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

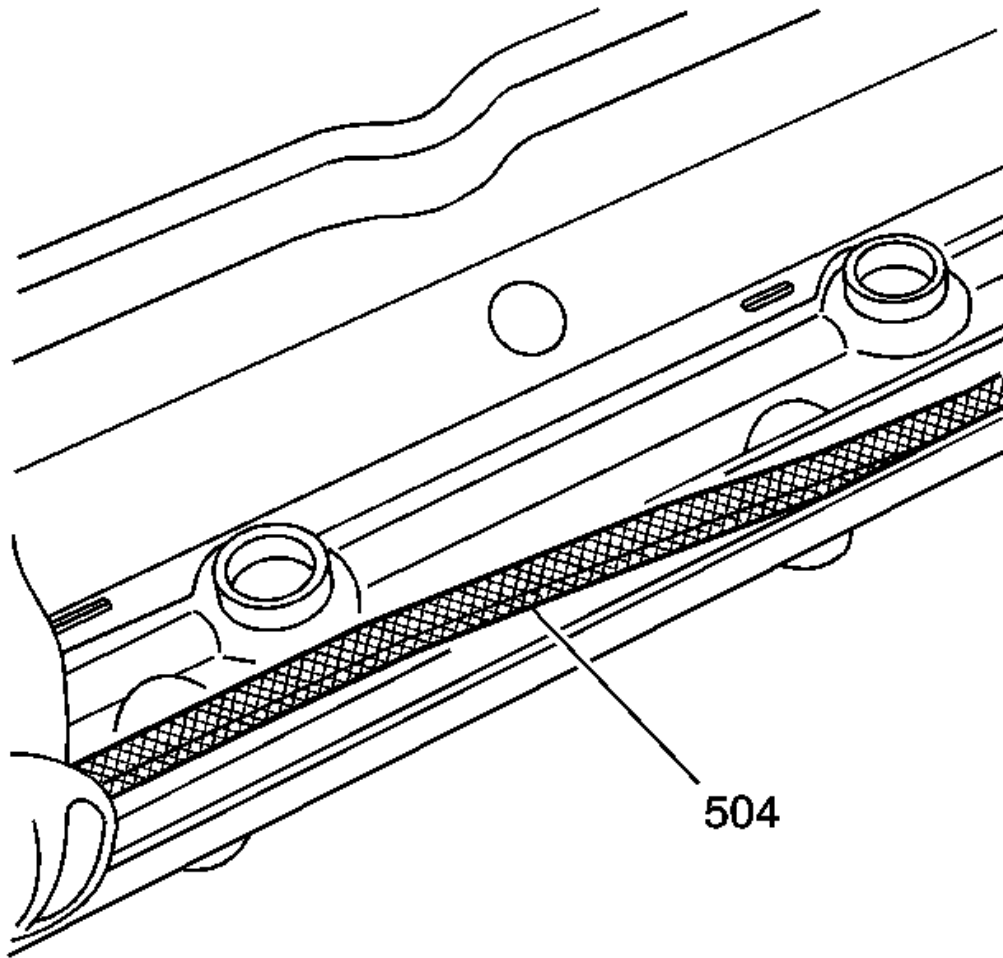


Fig. 53: View Of Valve Rocker Arm Cover Gasket
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- All gasket surfaces should be free of oil or other foreign material during assembly.
- DO NOT use the valve rocker arm cover gasket again.
- The valve rocker arm cover bolt grommets may be used again if not damaged.

1. Install a NEW gasket (504) into the valve rocker arm cover.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

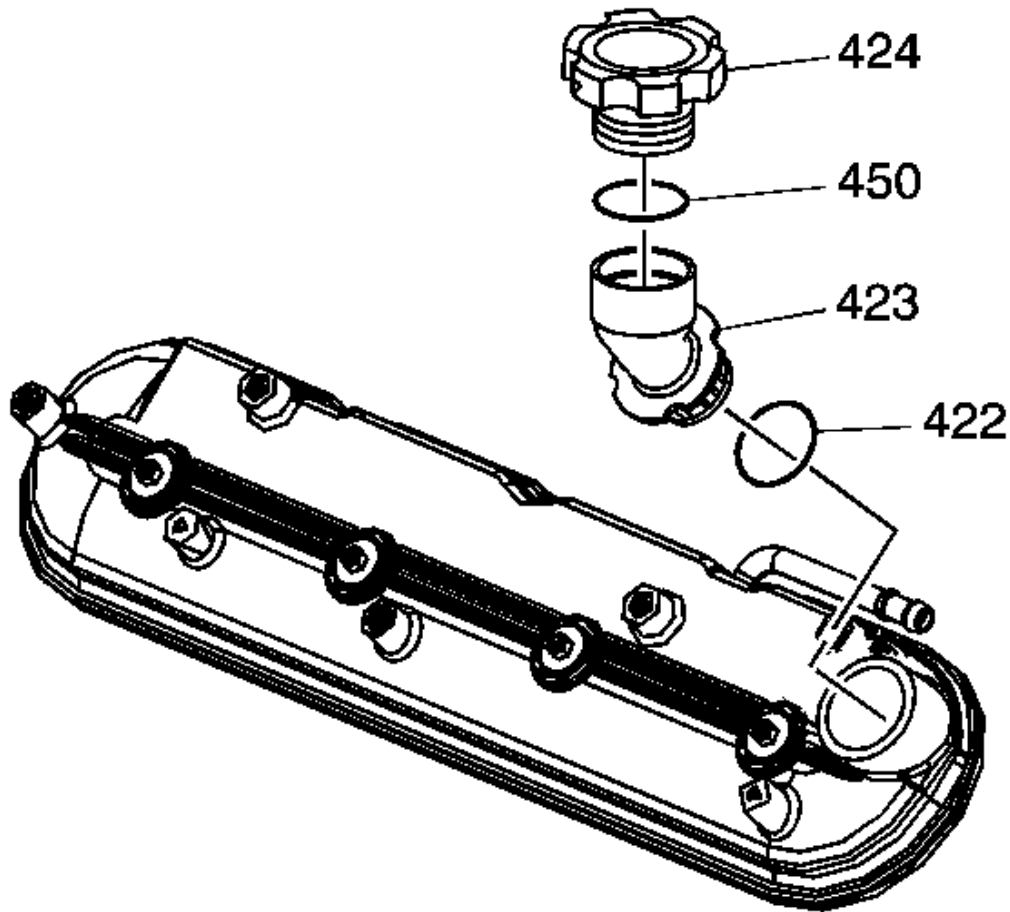


Fig. 54: Oil Fill Cap & Oil Fill Tube
Courtesy of GENERAL MOTORS CORP.

2. Install a NEW oil fill tube (423) to the valve rocker arm cover.
3. Install the oil fill cap (424).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

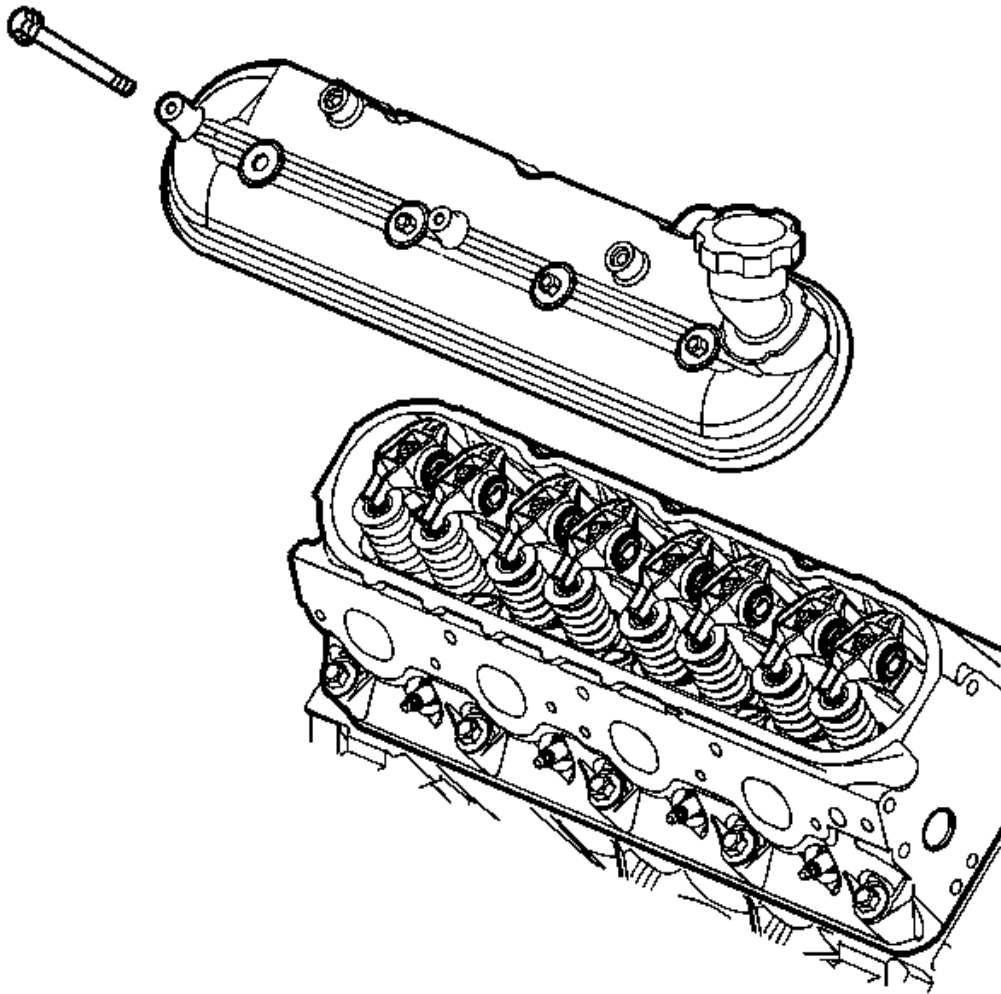


Fig. 55: View Of Valve Rocker Arm Cover & Bolts (Right)
Courtesy of GENERAL MOTORS CORP.

4. Install the valve rocker arm cover onto the cylinder head.

NOTE: Refer to **Fastener Notice** .

5. Install the cover bolts with grommets.

Tighten: Tighten the valve rocker arm cover bolts to 12 N.m (106 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

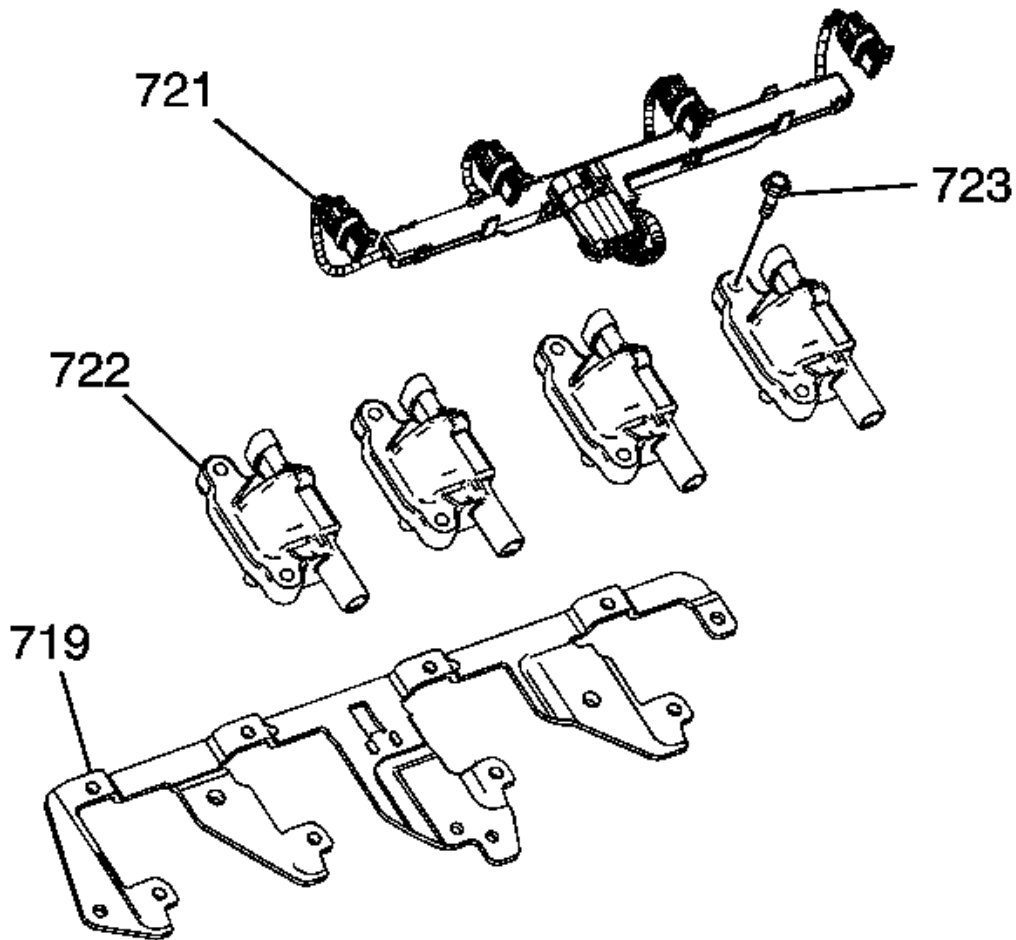


Fig. 56: View Of Bracket, Bolts, Coils & Wire Harness
Courtesy of GENERAL MOTORS CORP.

6. Apply threadlock GM P/N 12345382 (Canadian P/N 10953489), or equivalent, to the threads of the ignition coil bolts (723).
7. Install the ignition coils (722), wire harness (721), and bolts (723) to the bracket (719).

Tighten: Tighten the ignition coil bolts to 10 N.m (89 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

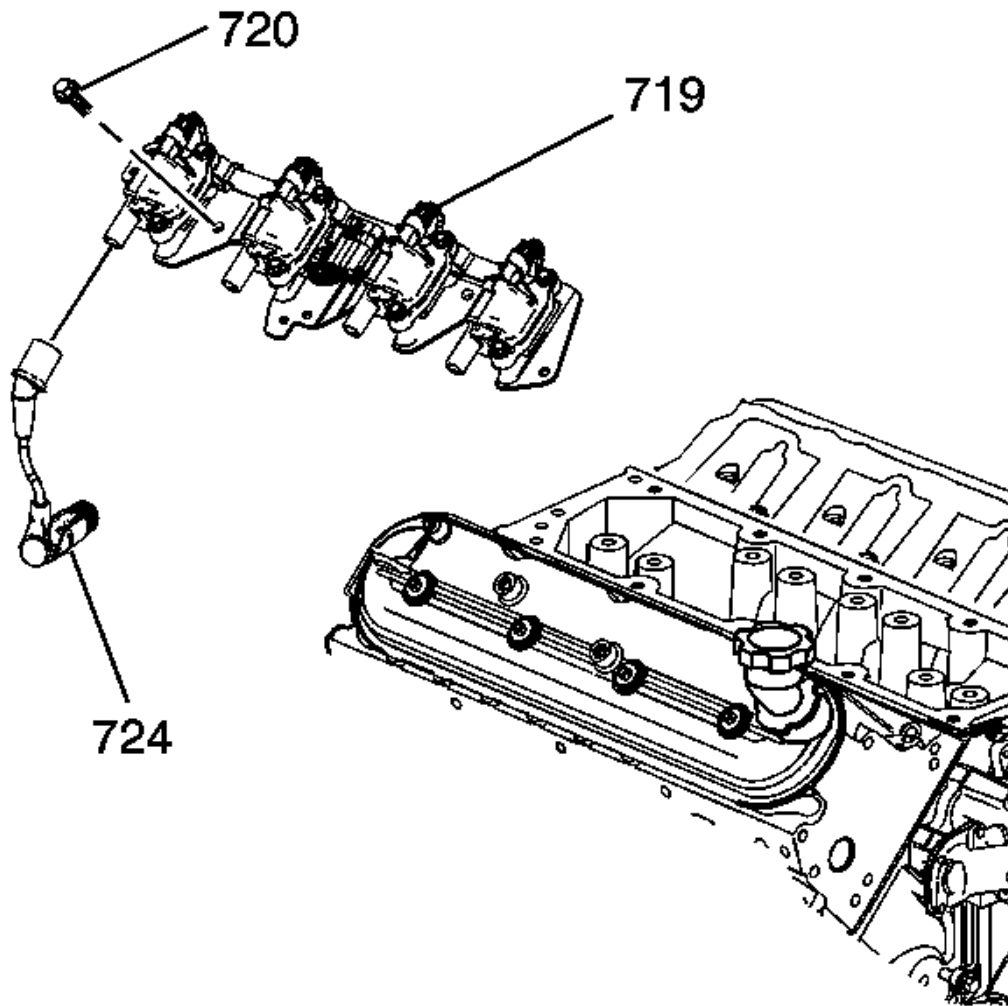


Fig. 57: Ignition Coils & Bracket

Courtesy of GENERAL MOTORS CORP.

8. Apply threadlock GM P/N 12345382 (Canadian P/N 10953489), or equivalent, to the threads of the ignition coil bracket studs (720).
9. Install the ignition coil and bracket assembly (719) and studs (720).

Tighten: Tighten the bracket studs to 12 N.m (106 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

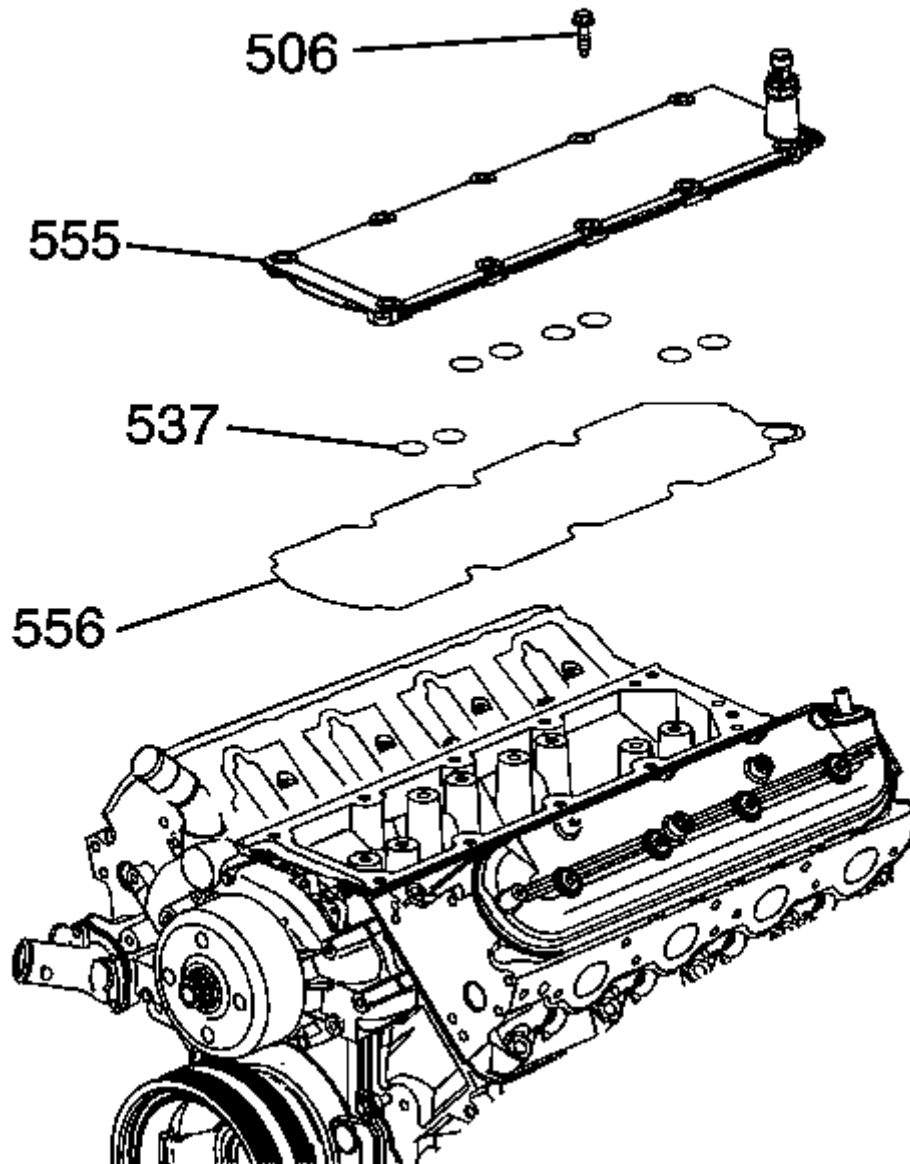


Fig. 58: Removing/Installing Engine Valley Cover
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: All gasket surfaces should be free of oil or other foreign material during assembly.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Lubricate the O-ring seals with clean engine oil.
2. Install the O-ring seals (537) to the cover (555).

NOTE: Refer to Fastener Notice .

3. Install the cover (555), gasket (556), and bolts (506).

Tighten: Tighten the manifold bolts to 25 N.m (18 lb ft).

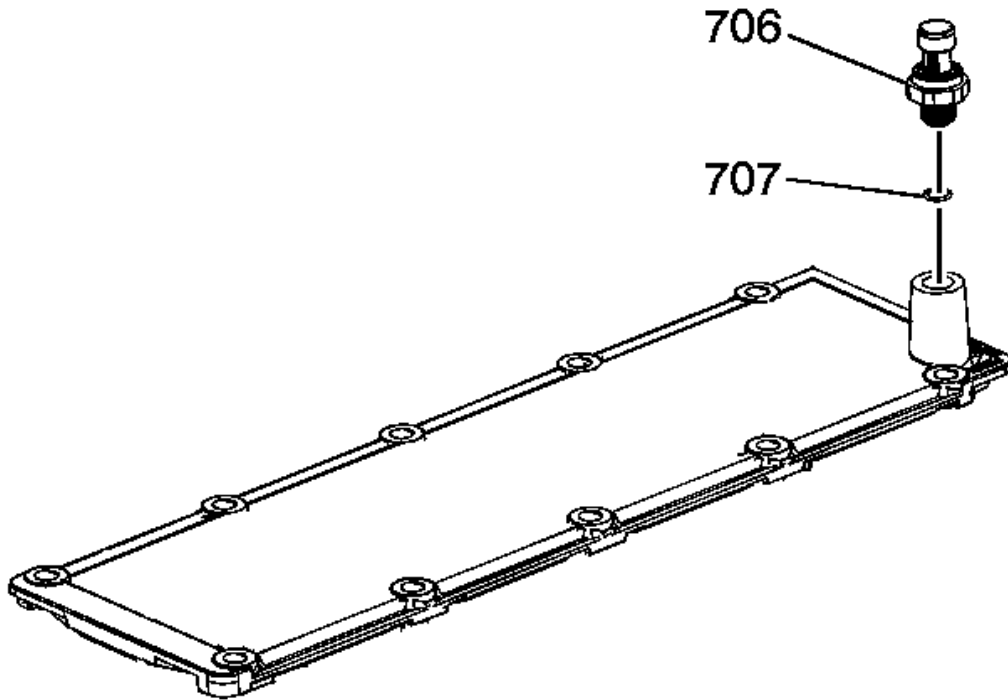


Fig. 59: Removing/Installing Oil Pressure Sensor & Washer
Courtesy of GENERAL MOTORS CORP.

4. Apply sealant GM P/N 12346004 (Canadian P/N 10953480), or equivalent, to the threads of the sensor.
5. Install the oil pressure sensor (706) and sealing washer (707).

Tighten: Tighten the sensor to 35 N.m (26 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

VALVE LIFTER OIL FILTER INSTALLATION

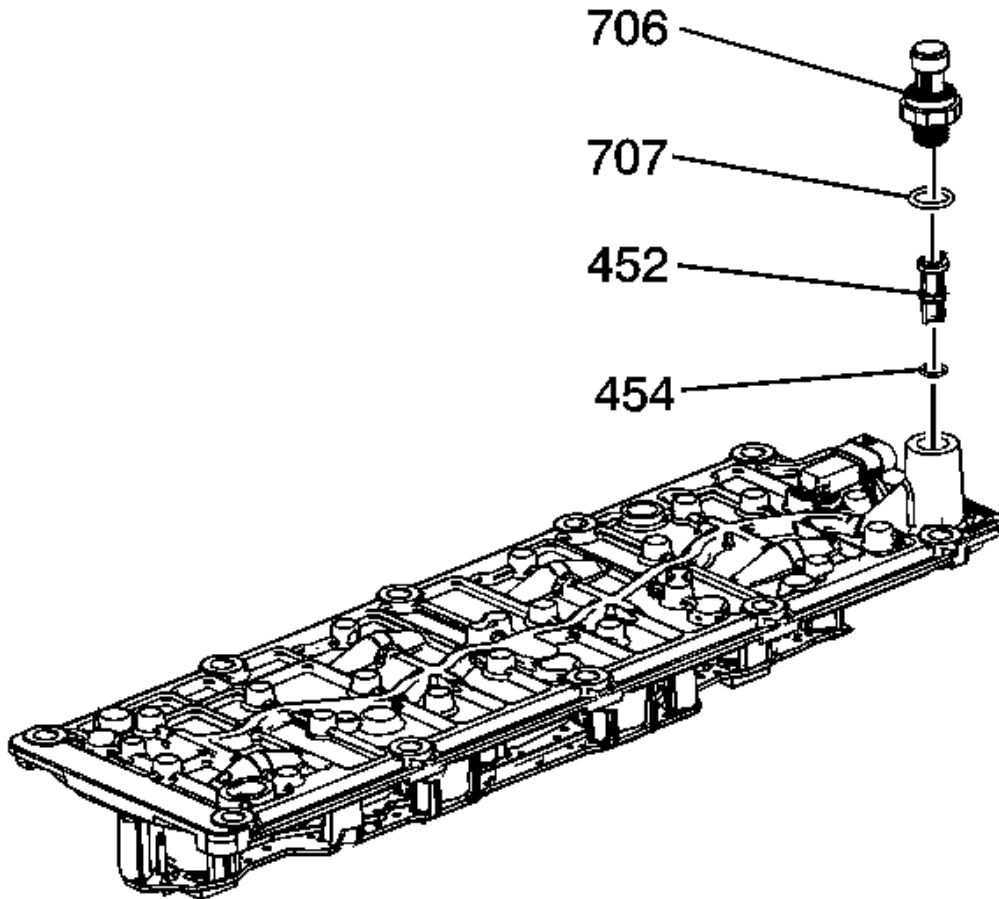


Fig. 60: View Of Oil Pressure Sensor, Washer And Valve Lifter Oil Filter
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not allow dirt or debris to enter the oil passages of the manifold. Plug, as required.

1. Install a NEW oil filter (452) and O-ring (454) assembly.
2. Apply sealant GM P/N 12346004 (Canadian P/N 10953480) to the threads of the sensor.

NOTE: Refer to Fastener Notice .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

3. Install the oil pressure sensor (706) and washer (707).

Tighten: Tighten the oil pressure sensor to 35 N.m (26 lb ft).

VALVE LIFTER OIL MANIFOLD INSTALLATION

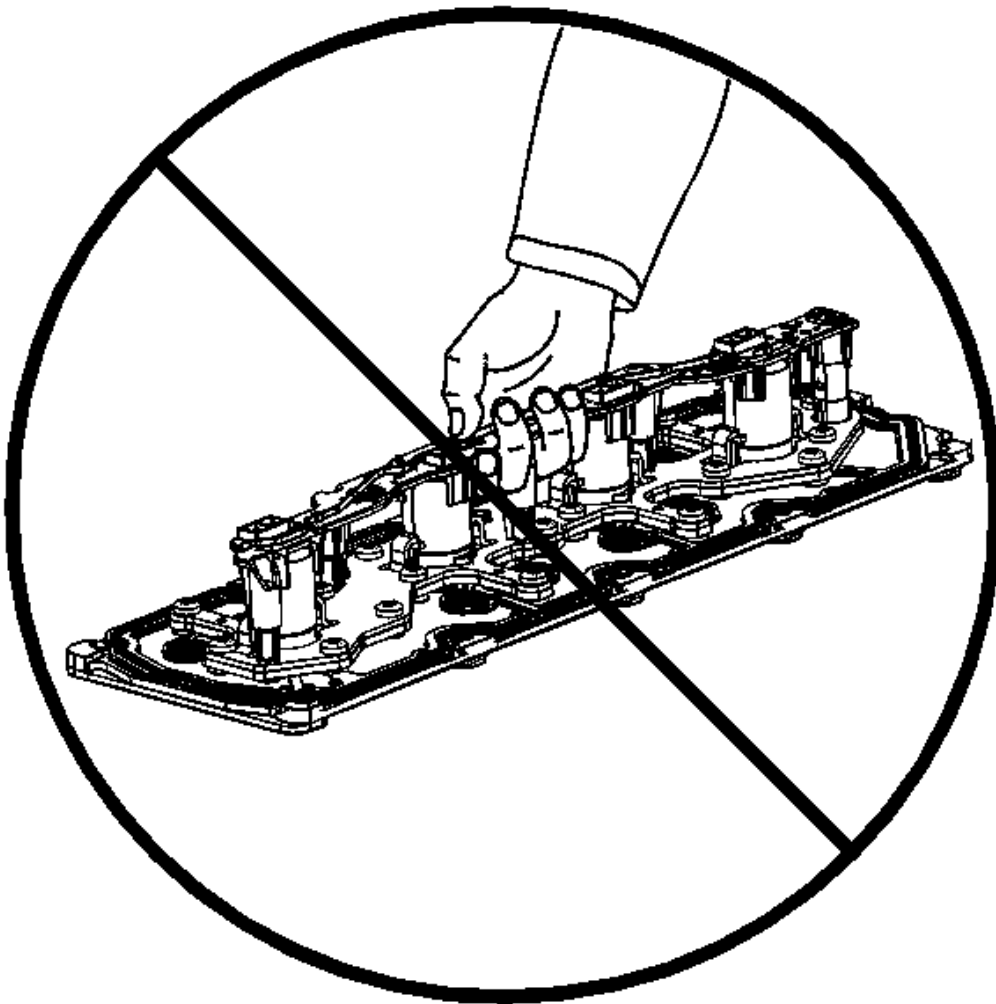


Fig. 61: Valve Lifter Oil Manifold
Courtesy of GENERAL MOTORS CORP.

1. Do not lift the manifold assembly by the electrical lead frame.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

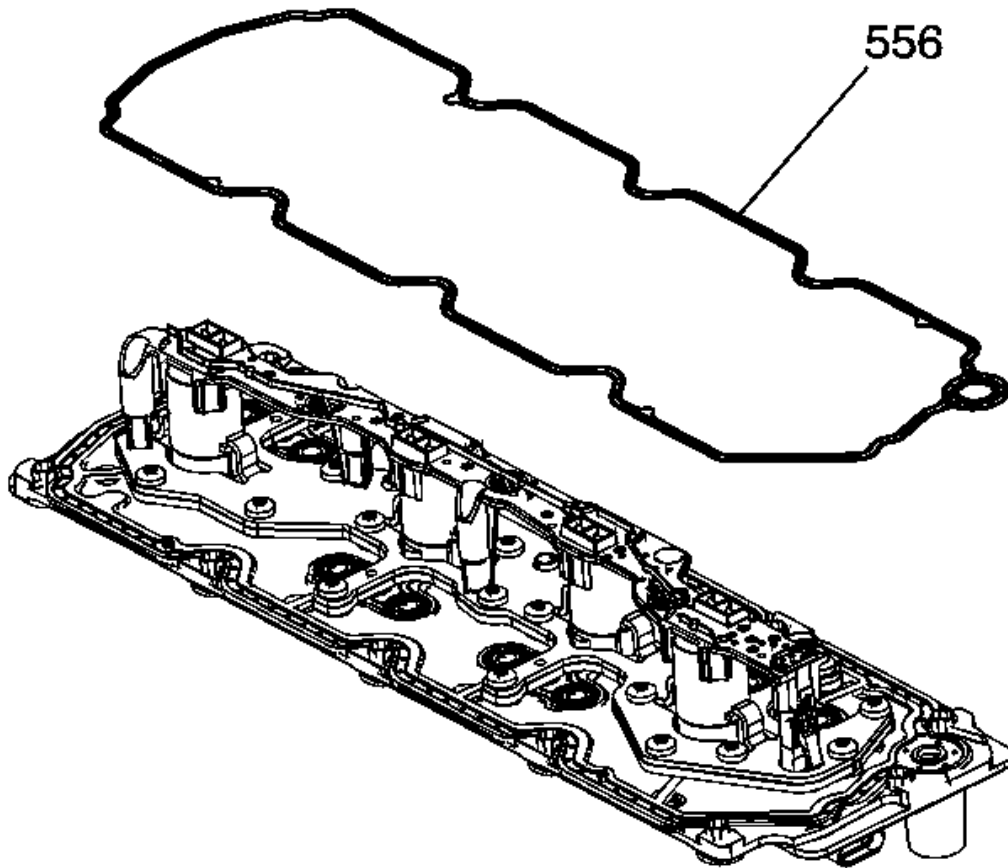


Fig. 62: View Of Outer Gasket
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- All gasket surfaces should be free of oil or other foreign material during assembly.
- Do not allow dirt or debris to enter the manifold. Plug, as required.

2. Install the service gasket (556) onto the manifold.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

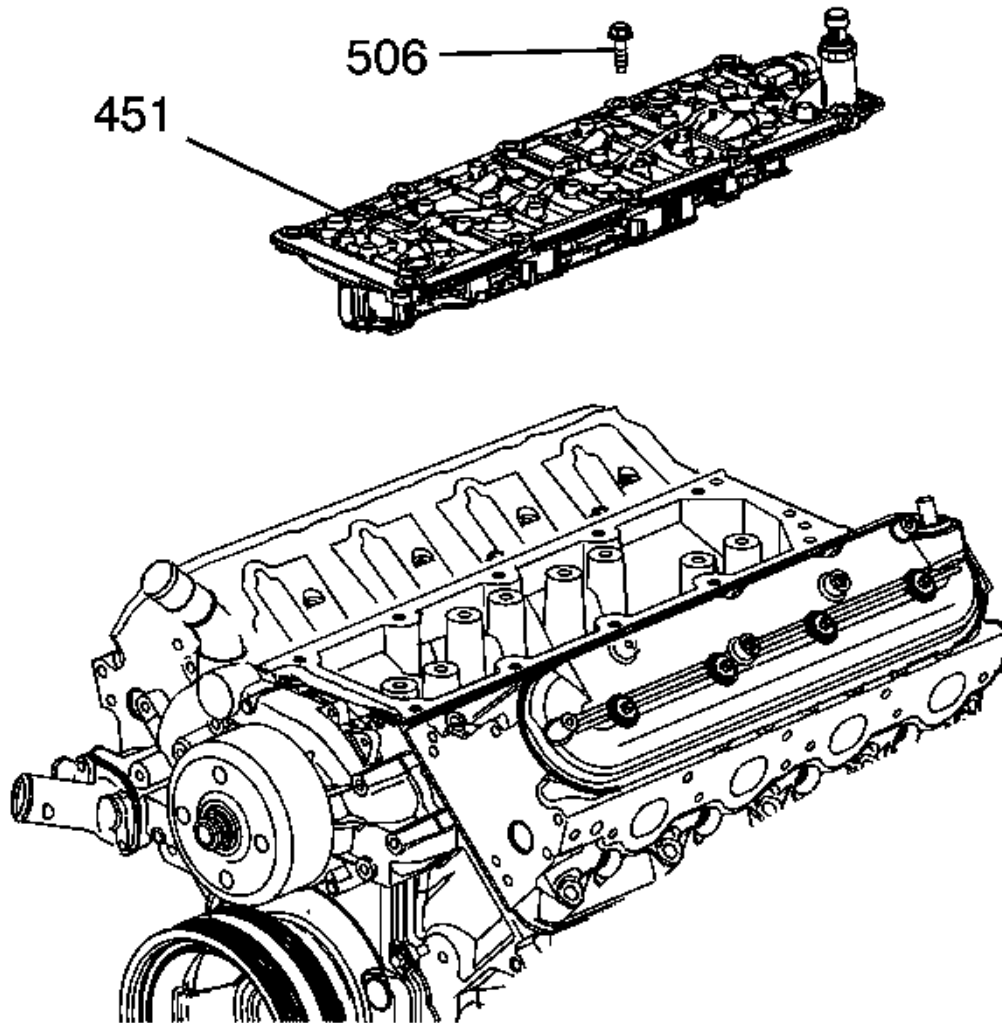


Fig. 63: View Of Valve Lifter Oil Manifold
Courtesy of GENERAL MOTORS CORP.

3. Install the manifold (451) with gasket.

NOTE: Refer to Fastener Notice .

4. Install the manifold bolts (506).

Tighten: Tighten the manifold bolts to 25 N.m (18 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

ENGINE COOLANT AIR BLEED PIPE AND HOLE COVER INSTALLATION (RPO LY2/LY2/LY6/L92)

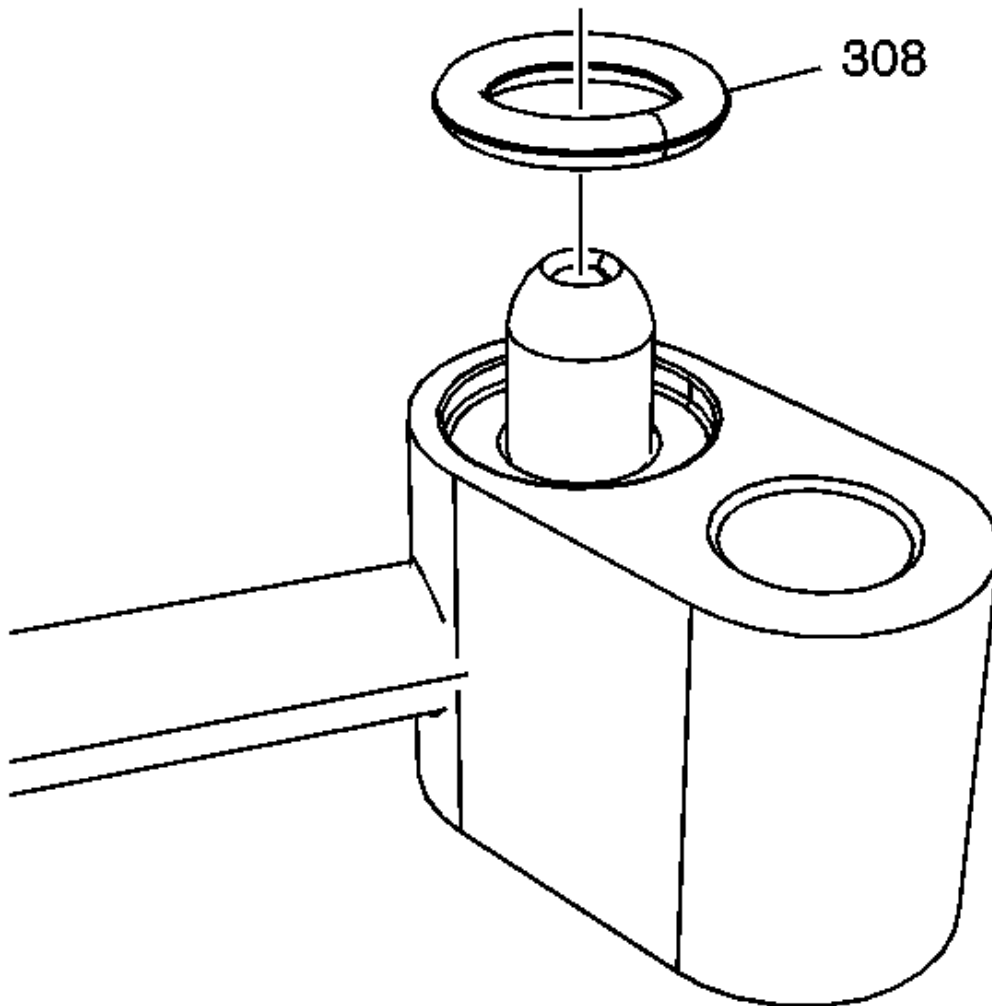


Fig. 64: View Of Coolant Air Bleed Pipe Seal
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Position the gasket O-ring seal (308) onto the nipple portion of the pipe.

1. Install the seals onto the engine coolant air bleed pipe and covers.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

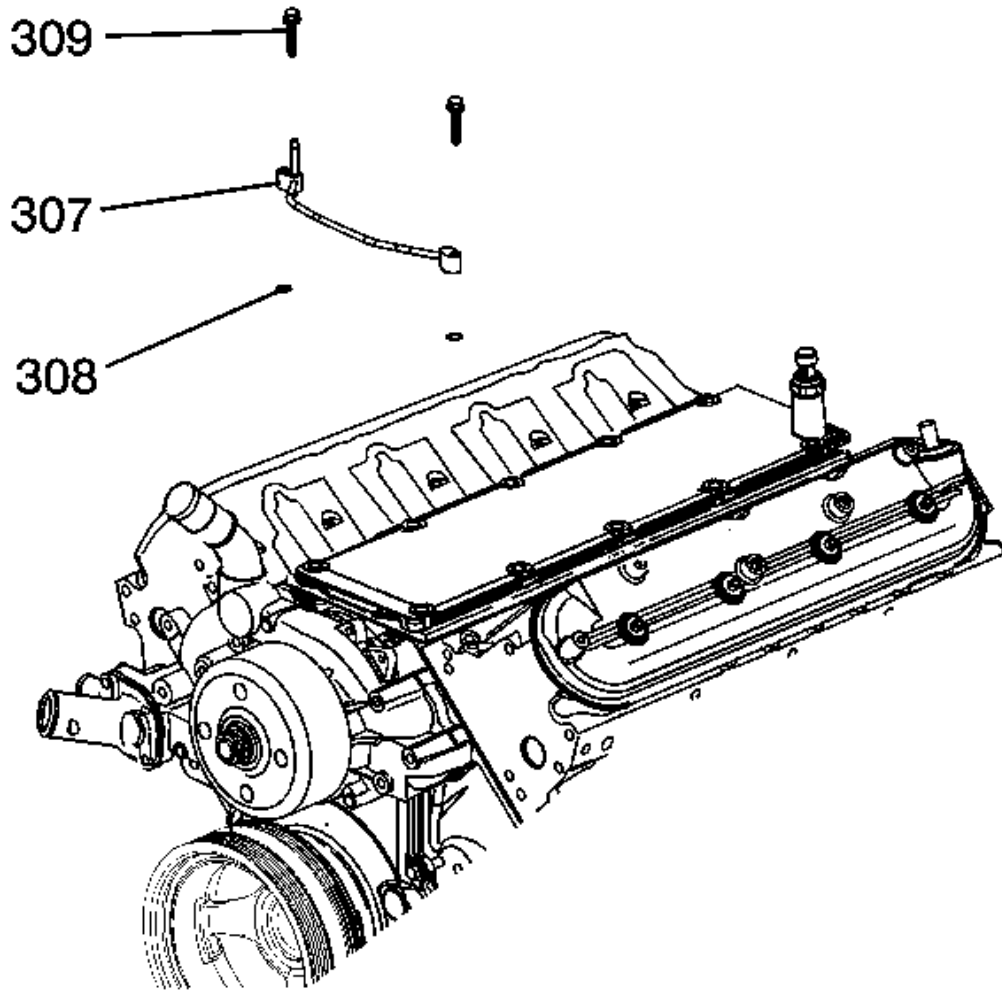


Fig. 65: Removing/Installing Engine Coolant Air Bleed Pipe
Courtesy of GENERAL MOTORS CORP.

2. Install the pipe (307) and seals (308).

NOTE: Refer to Fastener Notice .

3. Install the bolts (309).

Tighten: Tighten the bolts to 12 N.m (106 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

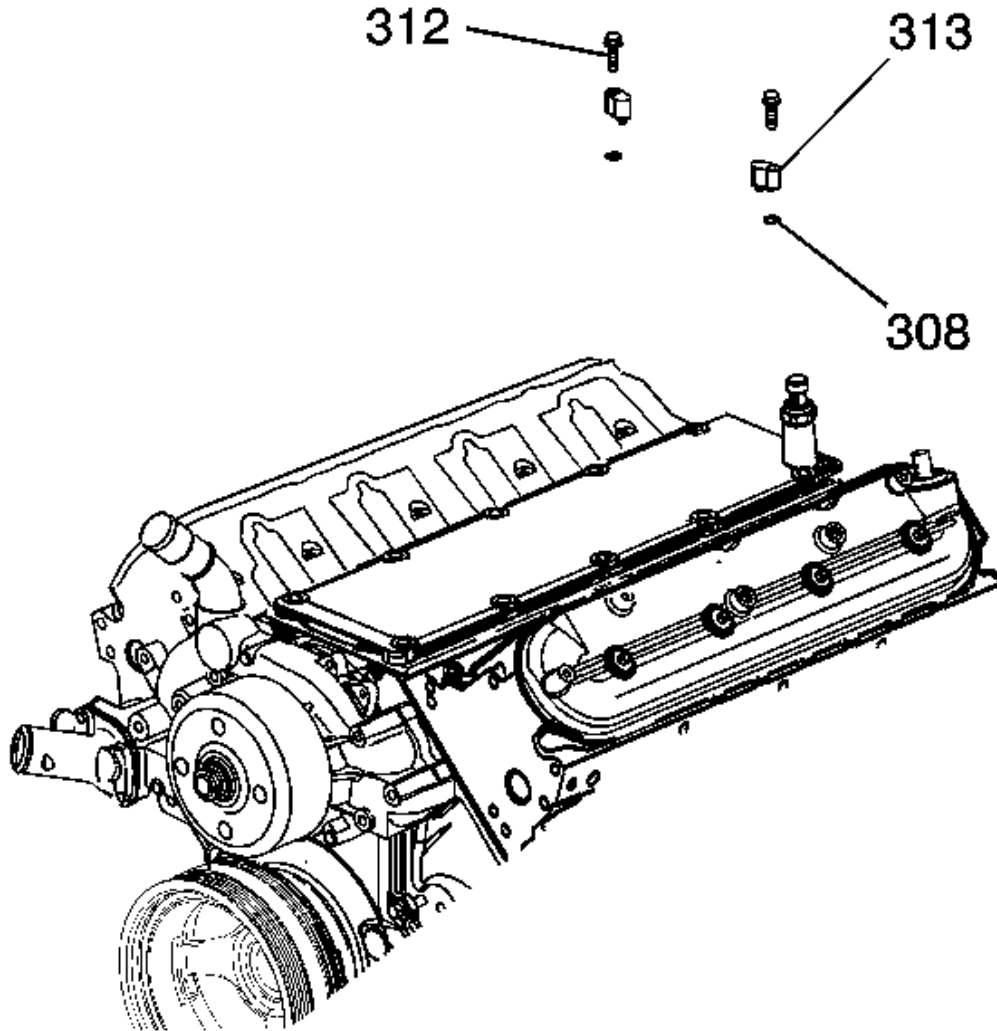


Fig. 66: Removing/Installing Coolant Air Bleed Cover Bolts
Courtesy of GENERAL MOTORS CORP.

4. Install the covers (313) and seals (308).
5. Install the bolts (312).

Tighten: Tighten the cover bolts to 12 N.m (106 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

LH6/LMG/LY5/LC9/L76)

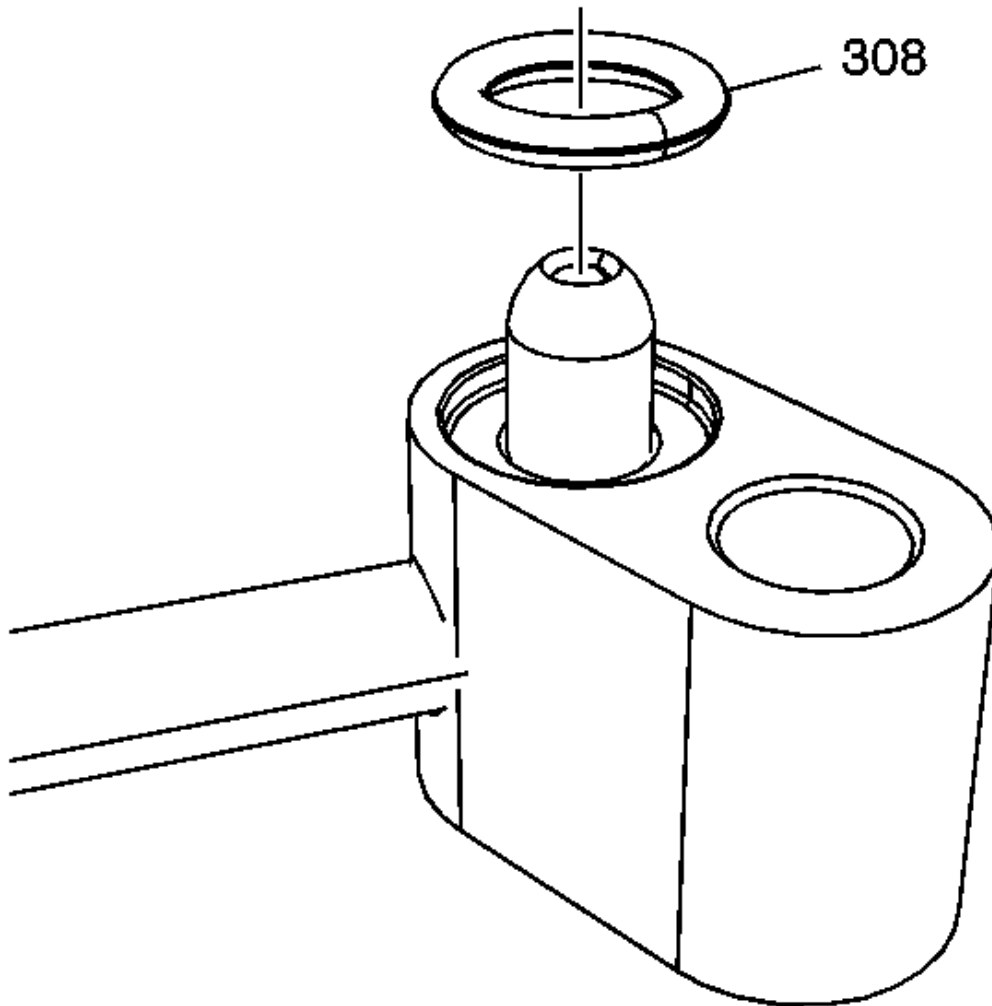


Fig. 67: View Of Coolant Air Bleed Pipe Seal
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Position the O-ring seal onto the nipple portion of the pipe.

1. Install the seals (308) onto the engine coolant air bleed pipe and covers.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

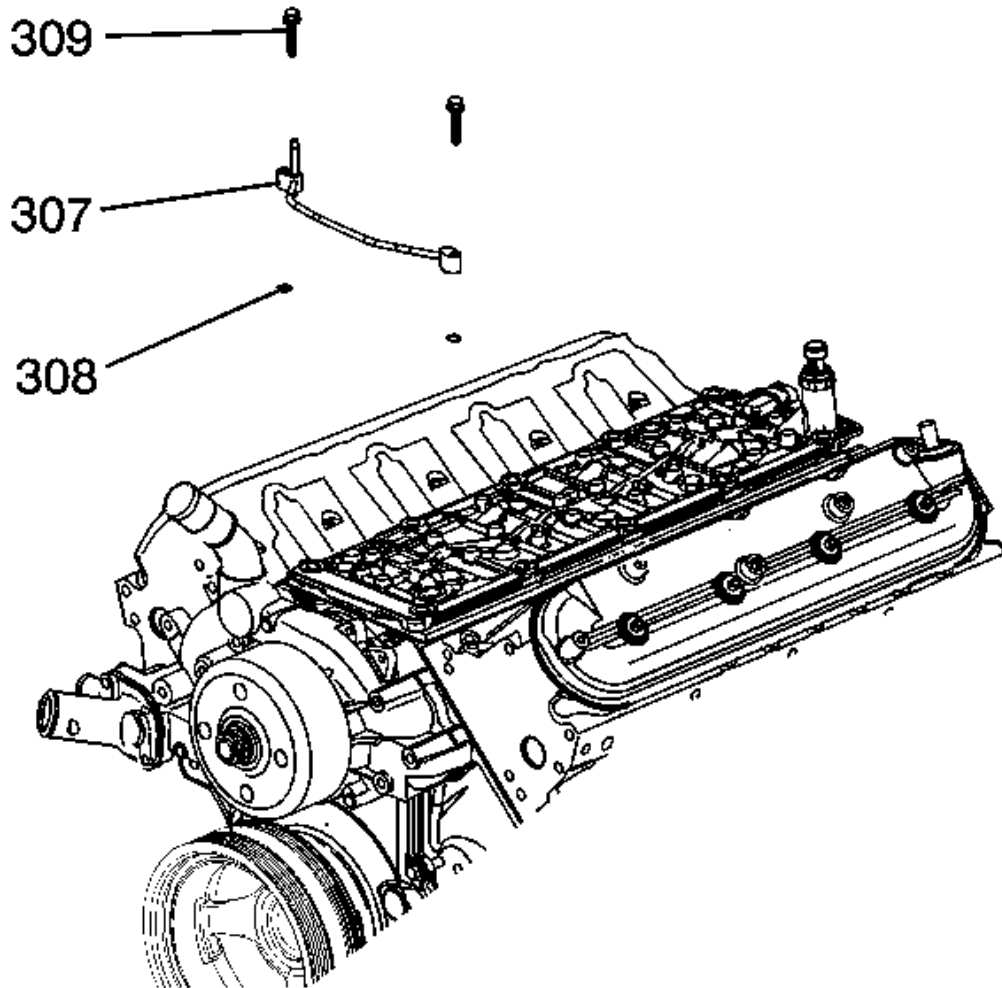


Fig. 68: Engine Coolant Air Bleed Pipe
Courtesy of GENERAL MOTORS CORP.

2. Install the pipe (307) and seals (308).

NOTE: Refer to Fastener Notice .

3. Install the bolts (309).

Tighten: Tighten the bolts to 12 N.m (106 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

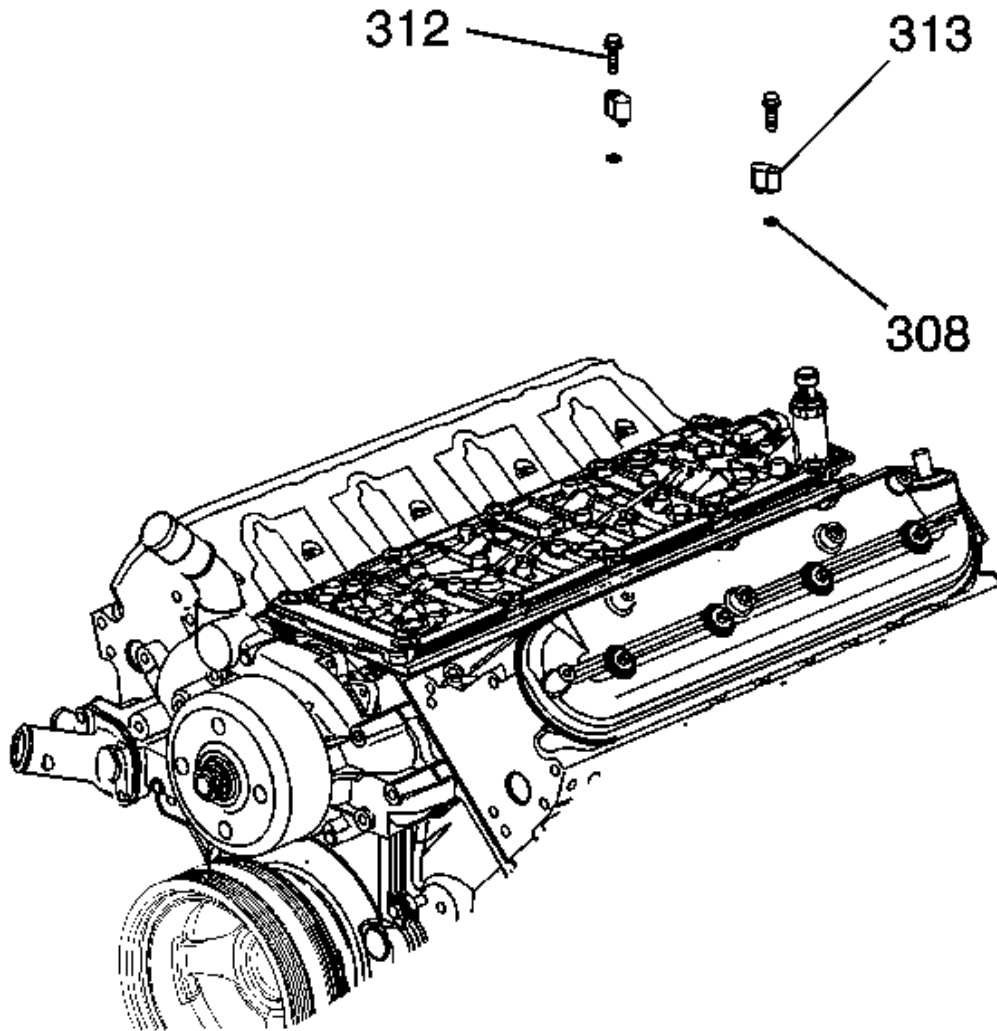


Fig. 69: Engine Coolant Air Bleed Cover Bolts
Courtesy of GENERAL MOTORS CORP.

4. Install the covers (313) and seals (308).
5. Install the bolts (312).

Tighten: Tighten the cover bolts to 12 N.m (106 lb in).

INTAKE MANIFOLD INSTALLATION (RPO LY2/LY6/L92)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

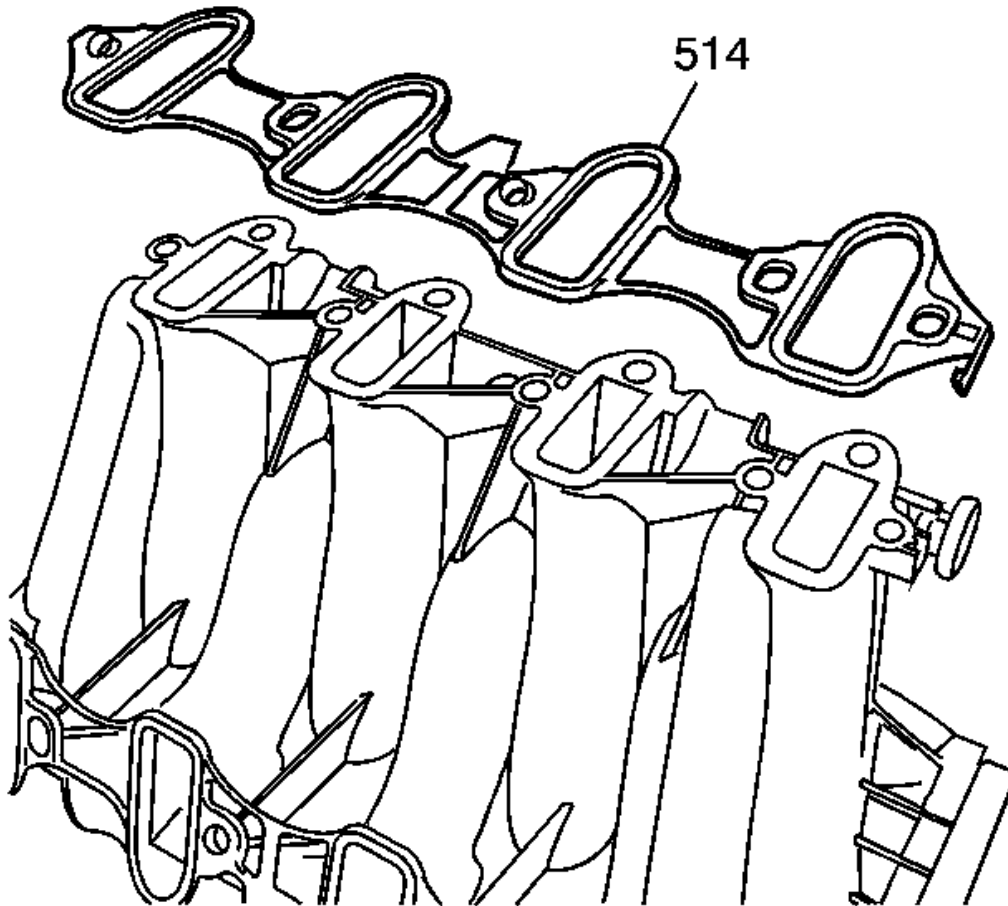


Fig. 70: View Of Intake Manifold-To-Cylinder Head Gasket
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- The intake manifold, throttle body, fuel injection rail, and fuel injectors may be removed as an assembly. If not servicing the individual components, install the intake manifold as a complete assembly.
- **DO NOT** use the intake manifold gaskets again. Install **NEW** intake manifold-to-cylinder head gaskets.

1. Install NEW intake manifold-to-cylinder head gaskets (514).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

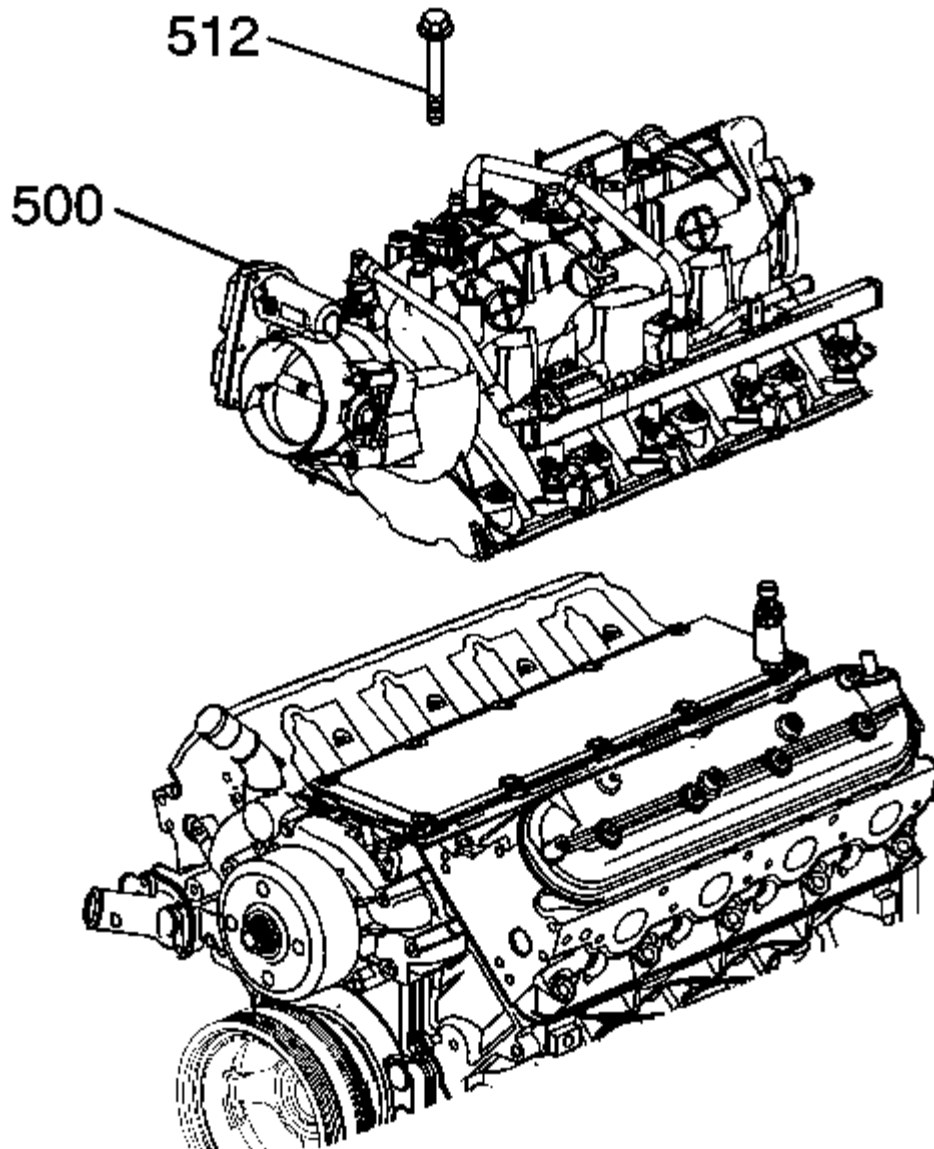


Fig. 71: Removing/Installing Intake Manifold Bolts
Courtesy of GENERAL MOTORS CORP.

2. Install the intake manifold (500).
3. Apply a 5 mm (0.20 in) band of threadlock GM P/N 12345382 (Canadian P/N 10953489)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

to the threads of the intake manifold bolts (512). Refer to **Sealers, Adhesives, and Lubricants** .

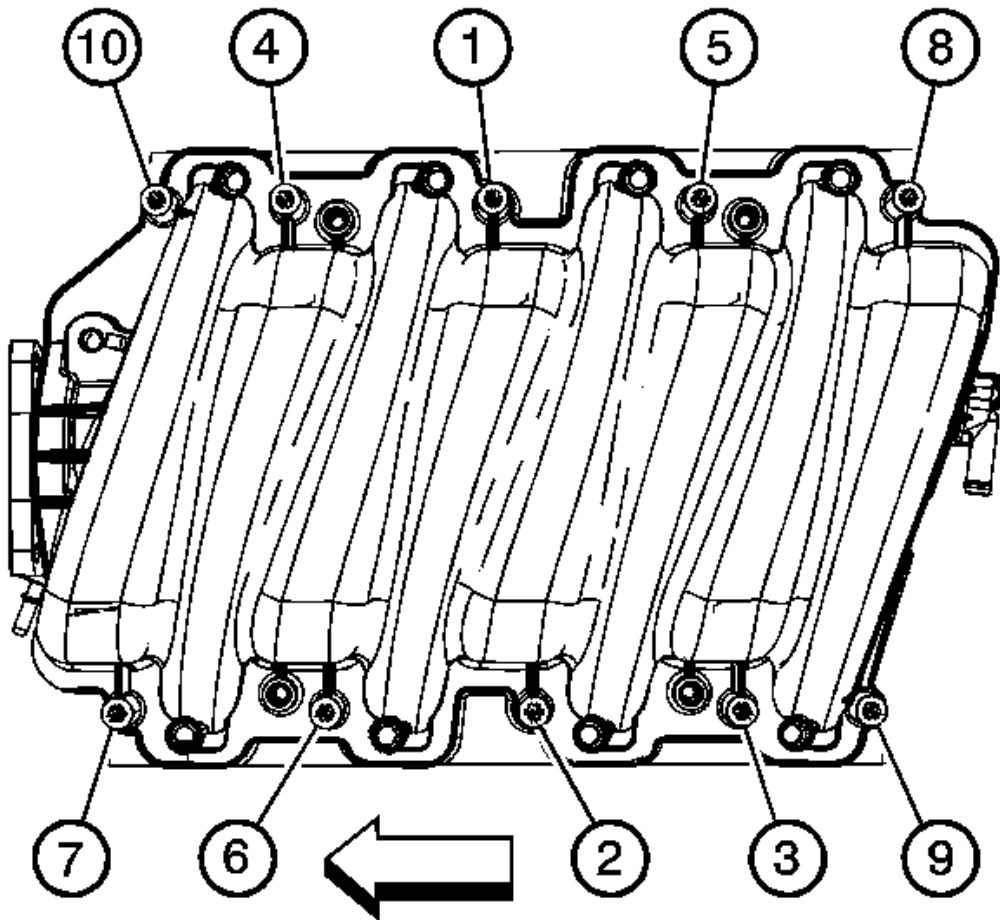


Fig. 72: Identifying Intake Manifold Bolt Tightening Sequence
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to **Fastener Notice** .

4. Install the intake manifold bolts.

Tighten:

1. Tighten the intake manifold bolts (1-10) a first pass in sequence to 5 N.m (44 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Tighten the intake manifold bolts (1-10) a final pass in sequence to 10 N.m (89 lb in).

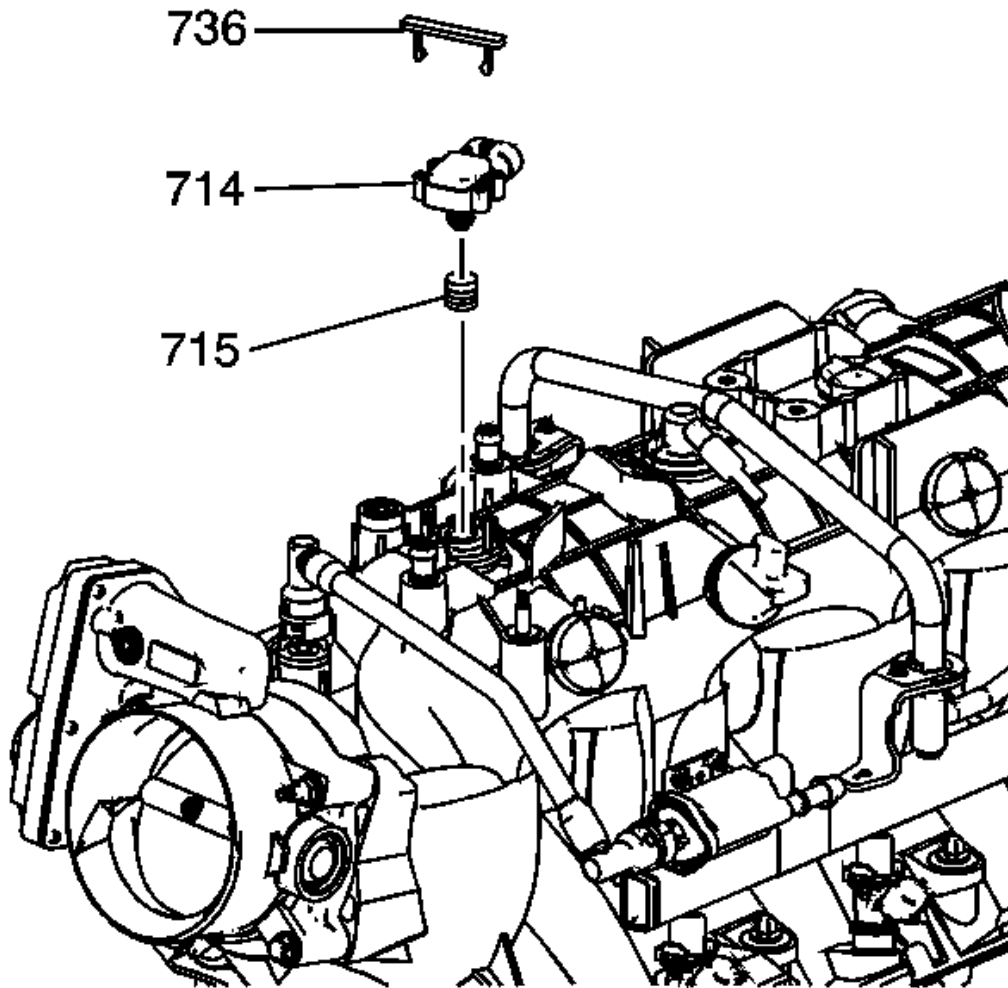


Fig. 73: MAP Sensor
Courtesy of GENERAL MOTORS CORP.

5. Install the fuel rail. Refer to **Fuel Rail and Injectors Installation**.
6. Lubricate the manifold absolute pressure (MAP) sensor grommet (715) with clean engine oil.
7. Install the grommet onto the MAP sensor (714).
8. Install the MAP sensor and retainer (736).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

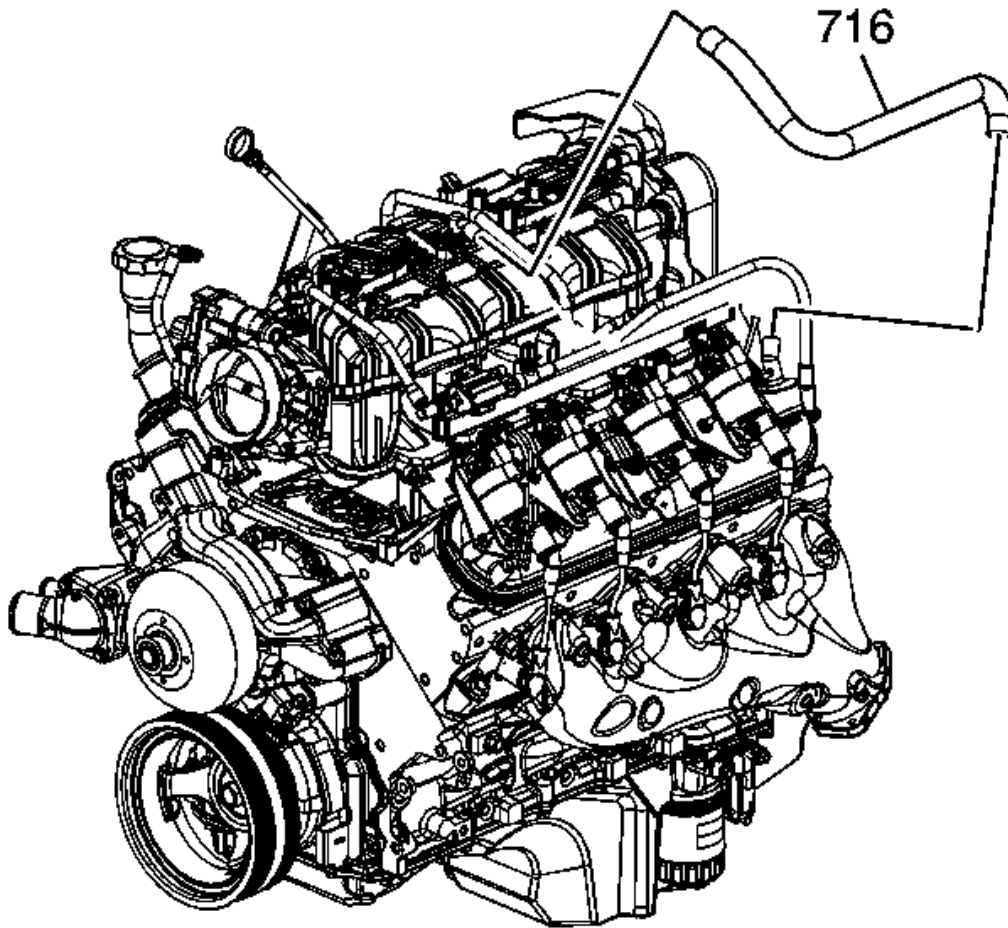


Fig. 74: View Of PCV Dirty-Air Hose
Courtesy of GENERAL MOTORS CORP.

9. Install the positive crankcase ventilation (PCV) hose - dirty air (716).

INTAKE MANIFOLD INSTALLATION (RPO LH6/LMG/LY5/LC9/L76)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

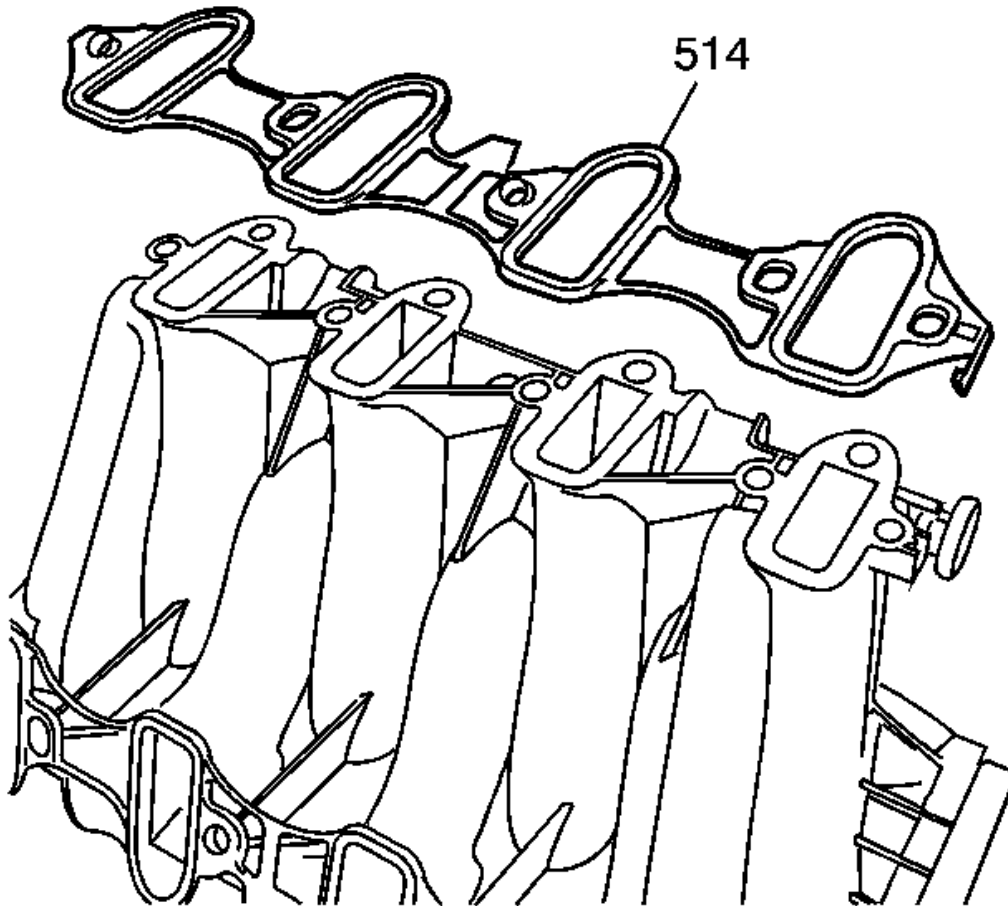


Fig. 75: View Of Intake Manifold-To-Cylinder Head Gasket
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- The intake manifold, throttle body, fuel injection rail, and fuel injectors may be removed as an assembly. If not servicing the individual components, install the intake manifold as a complete assembly.
- **DO NOT** use the intake manifold gaskets again. Install **NEW** intake manifold-to-cylinder head gaskets.

1. Install NEW intake manifold-to-cylinder head gaskets (514).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

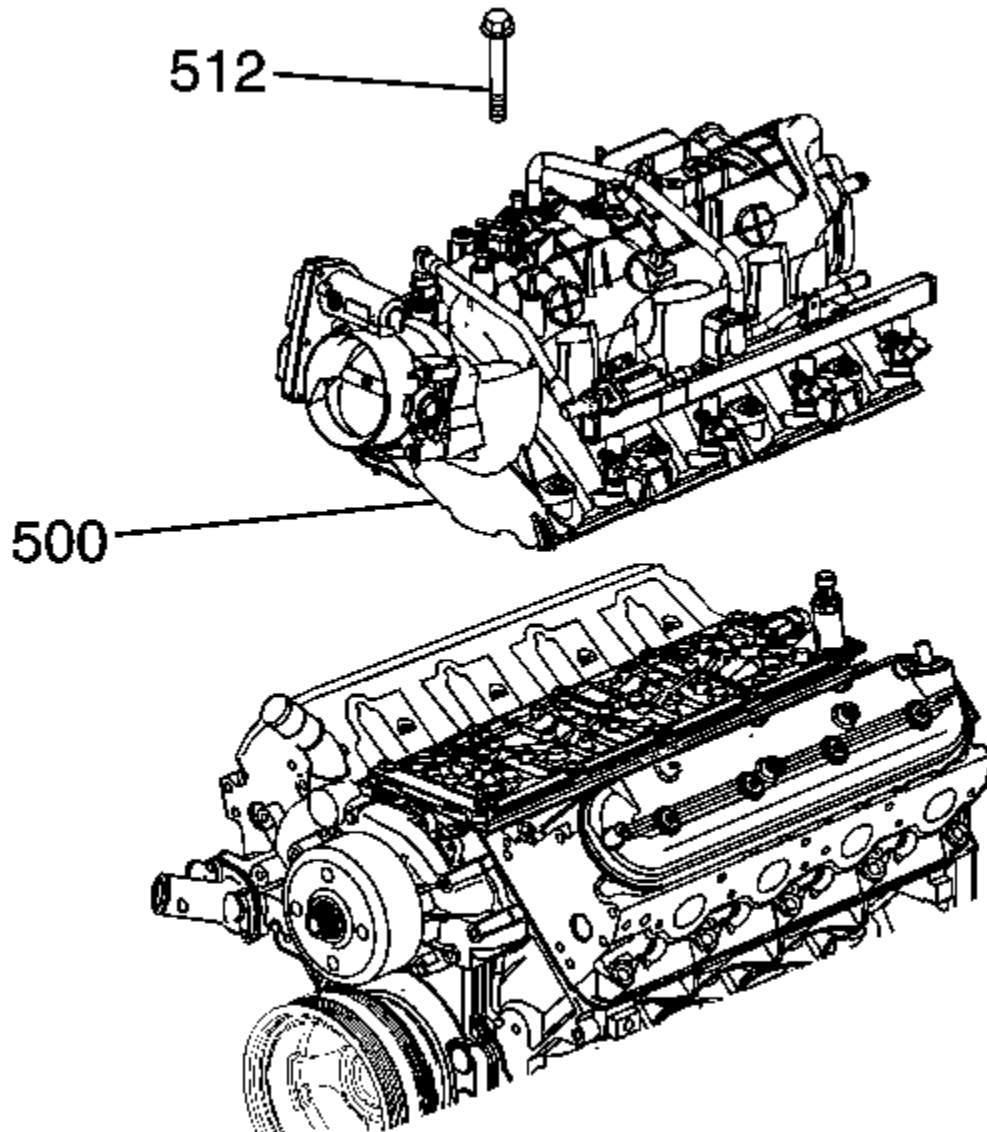


Fig. 76: Intake Manifold

Courtesy of GENERAL MOTORS CORP.

2. Install the intake manifold (500).
3. Apply a 5 mm (0.20 in) band of threadlock GM P/N 12345382 (Canadian P/N 10953489) to the threads of the intake manifold bolts (512). Refer to **Sealers, Adhesives, and**

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Lubricants .

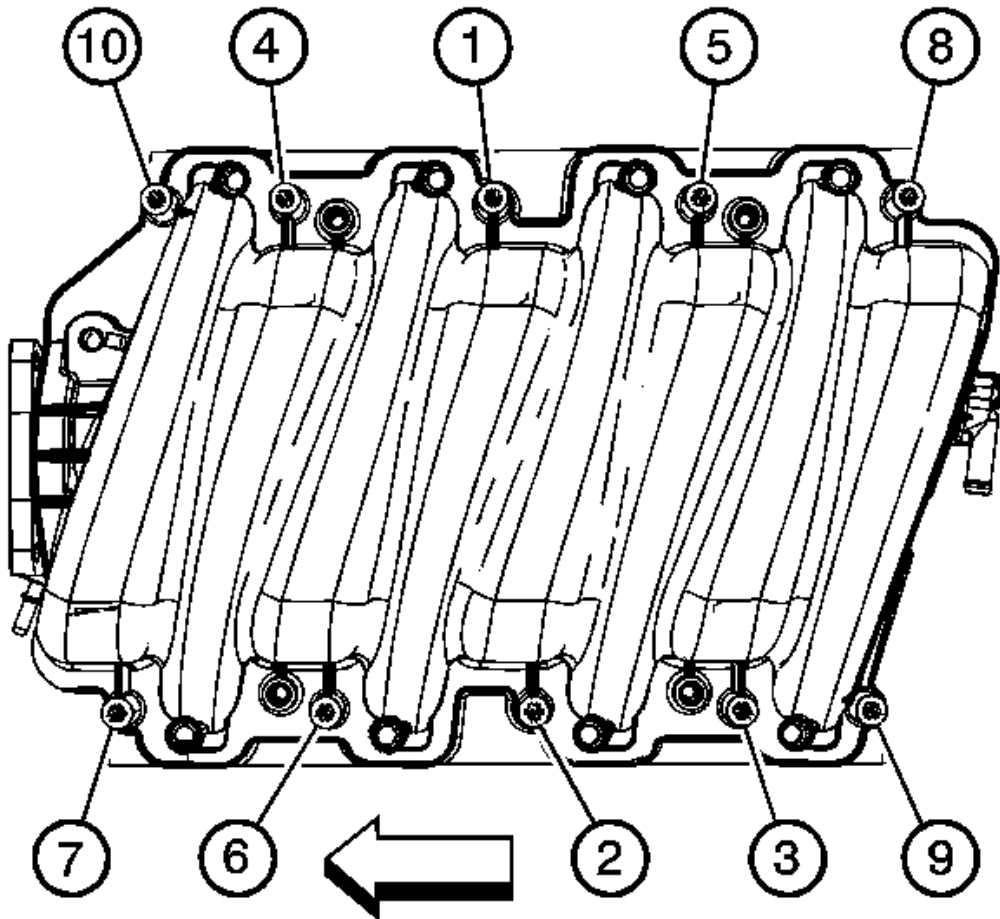


Fig. 77: Identifying Intake Manifold Bolt Tightening Sequence
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

4. Install the intake manifold bolts.

Tighten:

1. Tighten the intake manifold bolts (1-10) a first pass in sequence to 5 N.m (44 lb in).
2. Tighten the intake manifold bolts (1-10) a final pass in sequence to 10 N.m (89 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

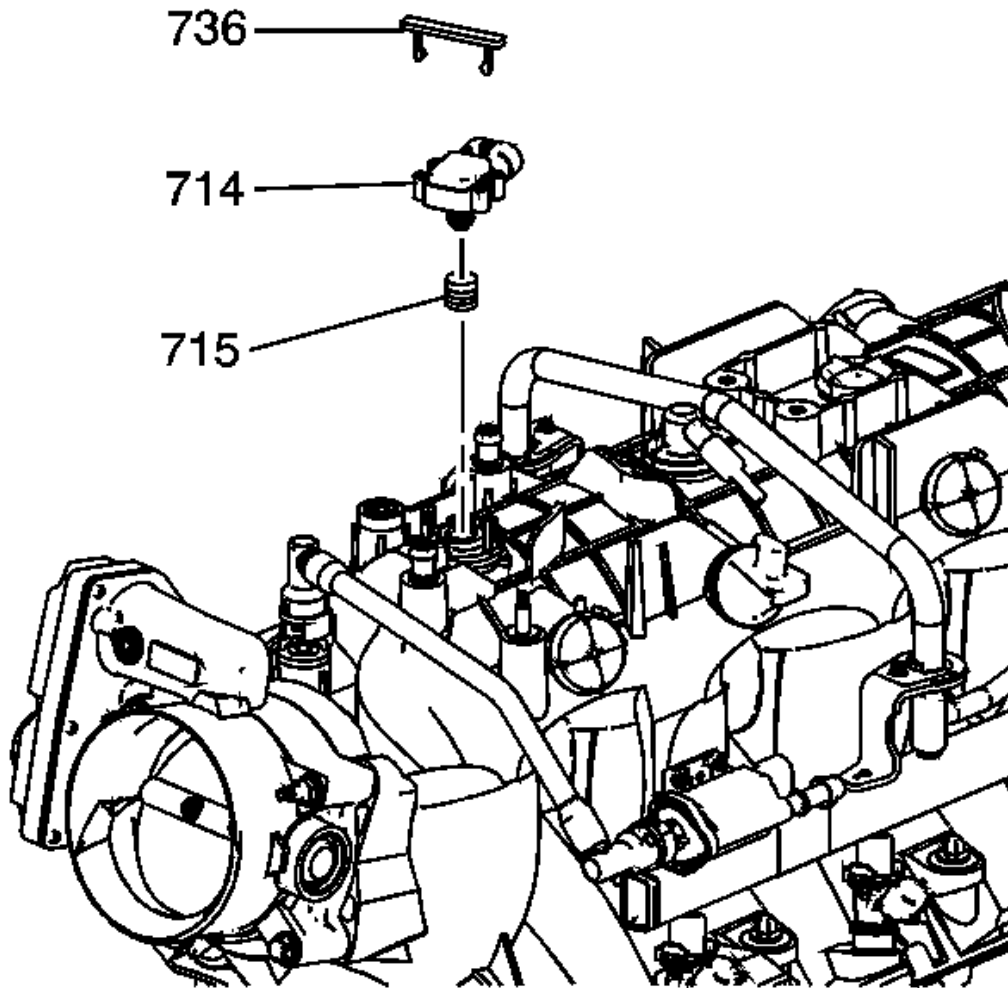


Fig. 78: MAP Sensor
Courtesy of GENERAL MOTORS CORP.

5. Install the fuel rail. Refer to **Fuel Rail and Injectors Installation**.
6. Lubricate the manifold absolute pressure (MAP) sensor grommet (715) with clean engine oil.
7. Install the grommet onto the MAP sensor (714).
8. Install the MAP sensor and retainer (736).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

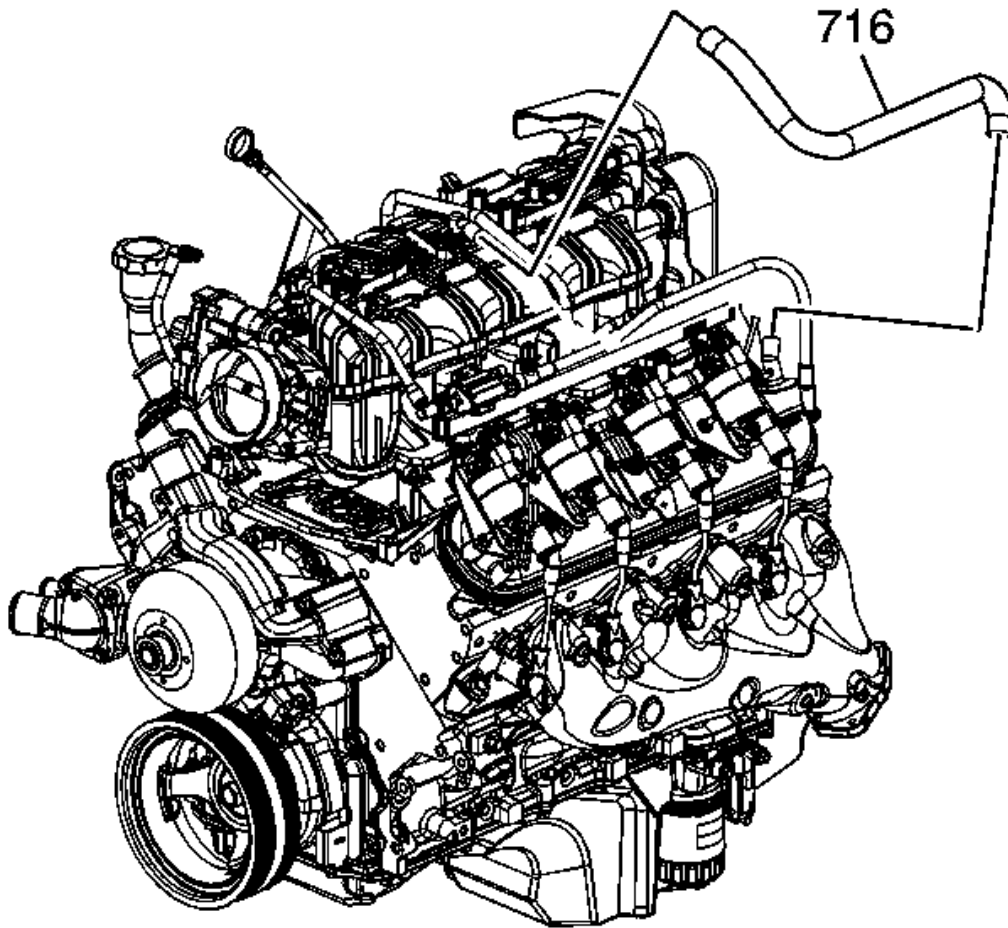


Fig. 79: View Of PCV Dirty-Air Hose
Courtesy of GENERAL MOTORS CORP.

9. Install the positive crankcase ventilation (PCV) hose - dirty air (716).

FUEL RAIL AND INJECTORS INSTALLATION

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

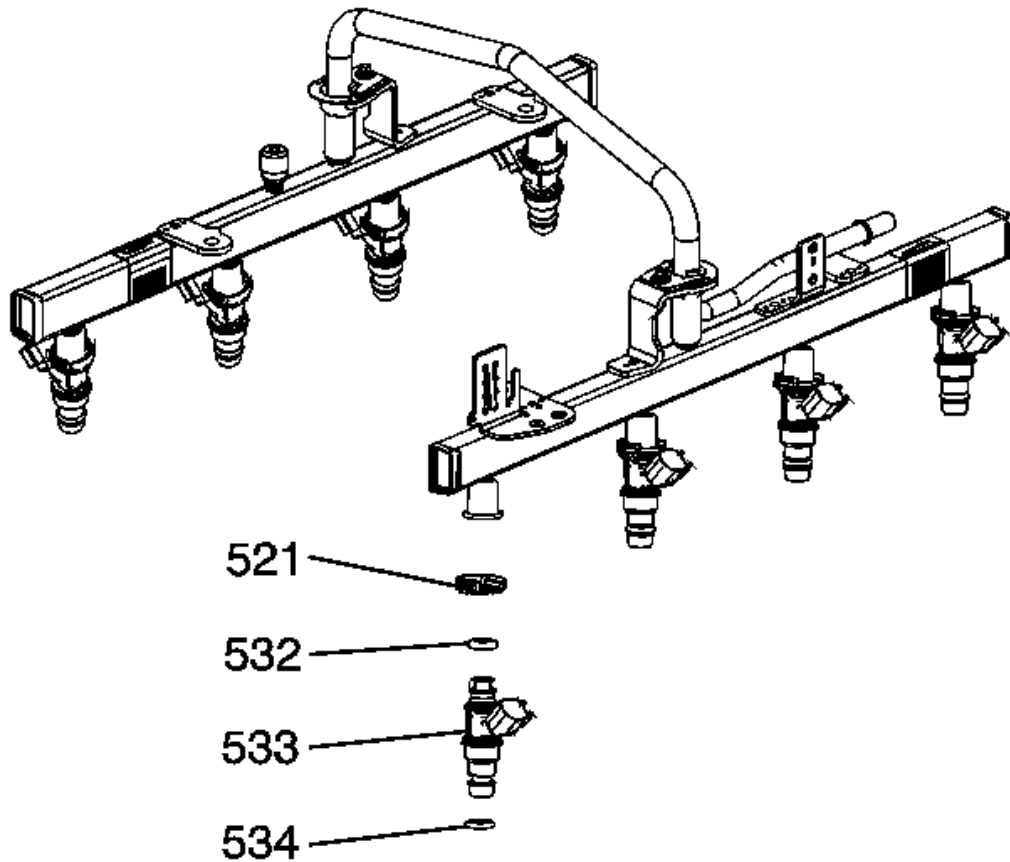


Fig. 80: Fuel Rail & Injectors
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to Fuel Rail Stop Bracket Installation Caution .

IMPORTANT: DO NOT use the fuel injector O-ring seals again. Install NEW fuel injector O-ring seals during assembly.

1. Lubricate the NEW fuel injector O-ring seals (532, 534) with clean engine oil.
2. Install the O-ring seals to the fuel injectors.
3. Install the fuel injectors (533) and retainers (521).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

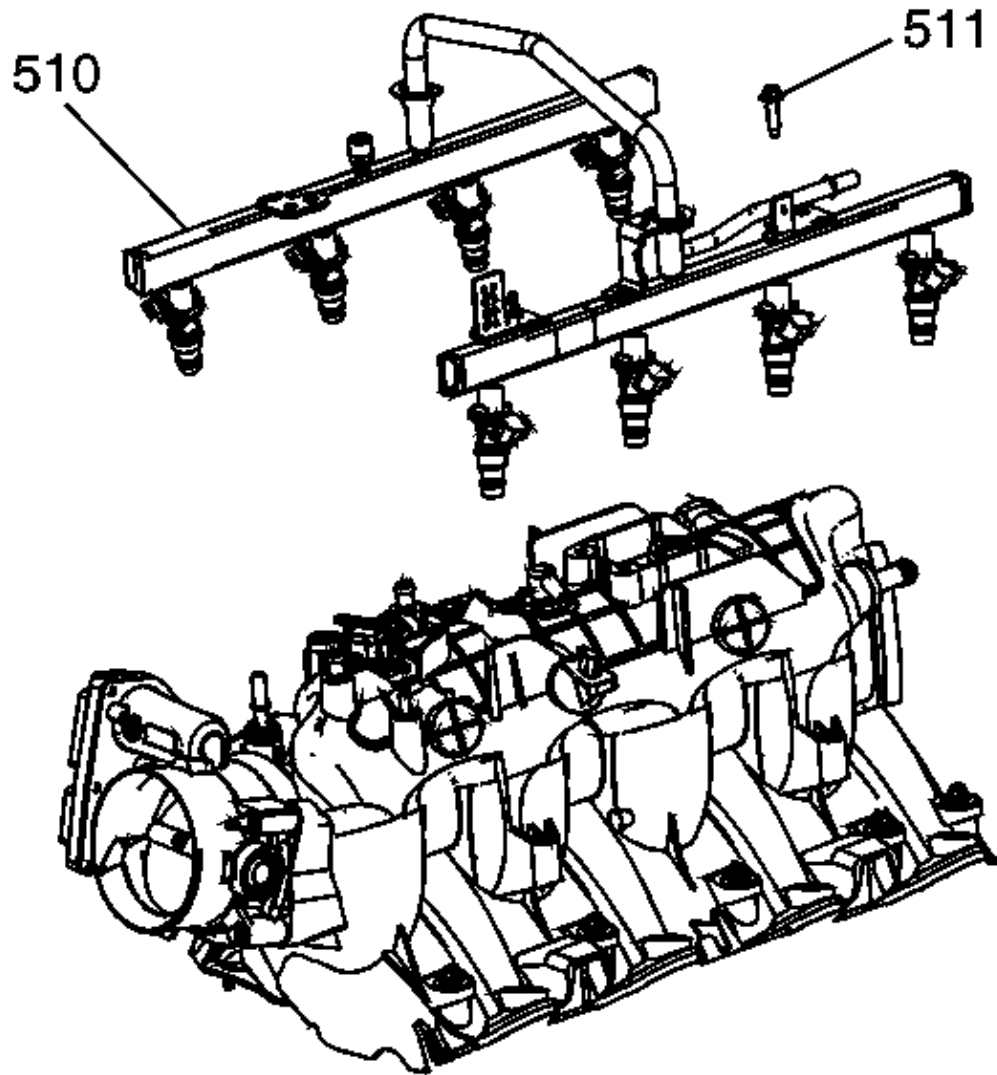


Fig. 81: Fuel Rail

Courtesy of GENERAL MOTORS CORP.

4. Install the fuel rail assembly (510) to the manifold. Push firmly on both sides of the rail until all the injectors have entered their bores.
5. Apply a 5 mm (0.2 in) band of threadlock GM P/N 12345382 (Canadian P/N 10953489), or equivalent, to the threads of the fuel rail bolts. Refer to **Sealers, Adhesives, and Lubricants** .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

NOTE: Refer to Fastener Notice .

6. Install the fuel rail bolts (511).

Tighten: Tighten the fuel rail bolts to 10 N.m (89 lb in).

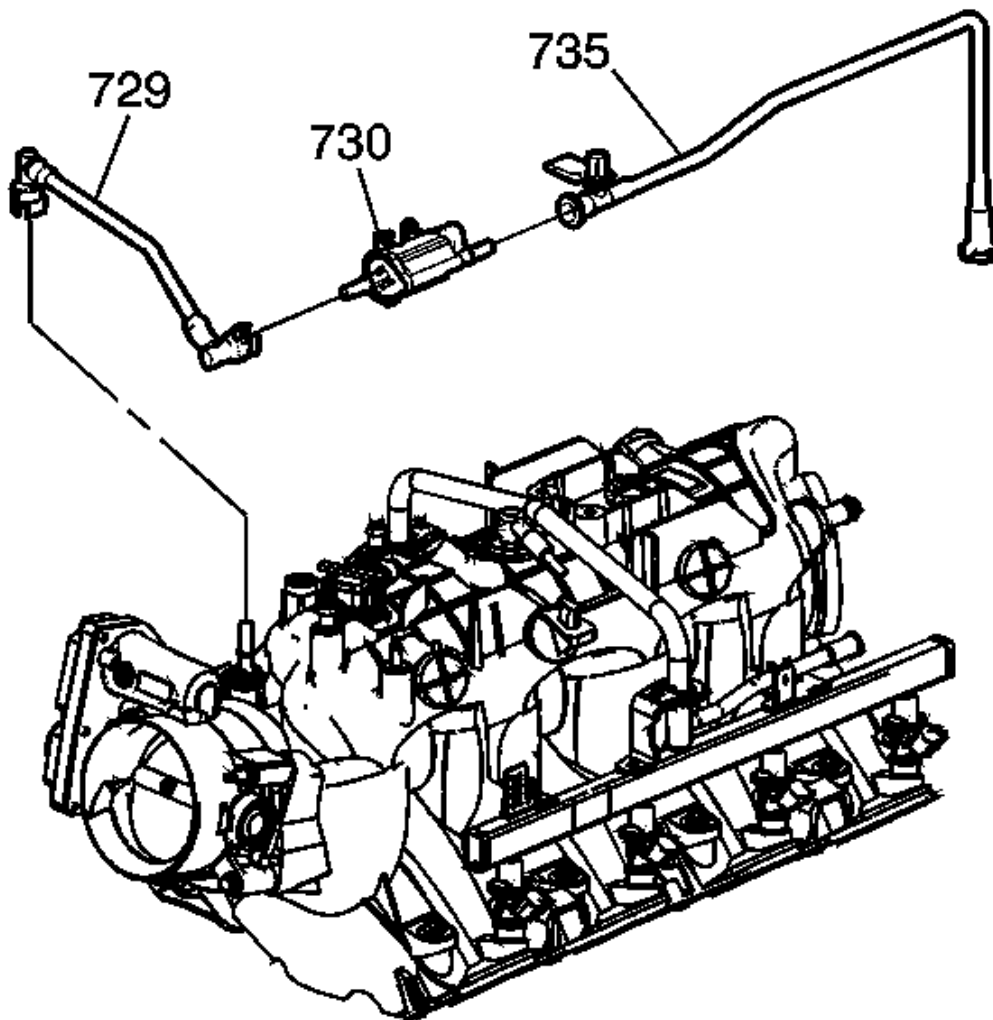


Fig. 82: EVAP Purge Valve & Tubes
Courtesy of GENERAL MOTORS CORP.

7. Install the evaporative emission (EVAP) canister purge solenoid valve (730) and tubes (729).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

735).

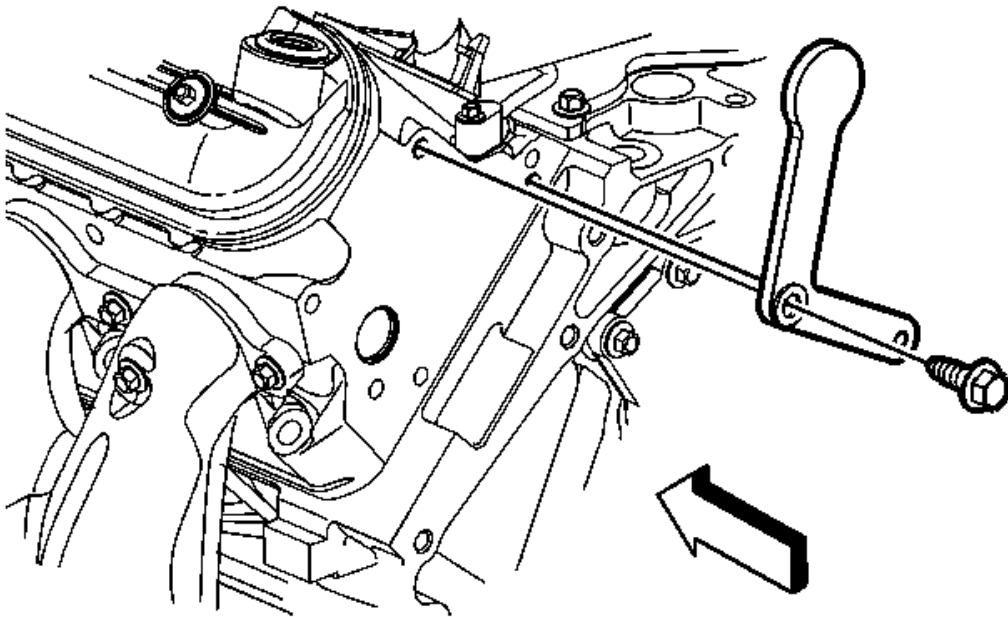


Fig. 83: View Of Fuel Rail Stop Bracket & Bolt
Courtesy of GENERAL MOTORS CORP.

8. Install the fuel rail stop bracket and bolt.

Tighten: Tighten the fuel rail stop bracket bolt to 50 N.m (37 lb ft).

THROTTLE BODY INSTALLATION

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

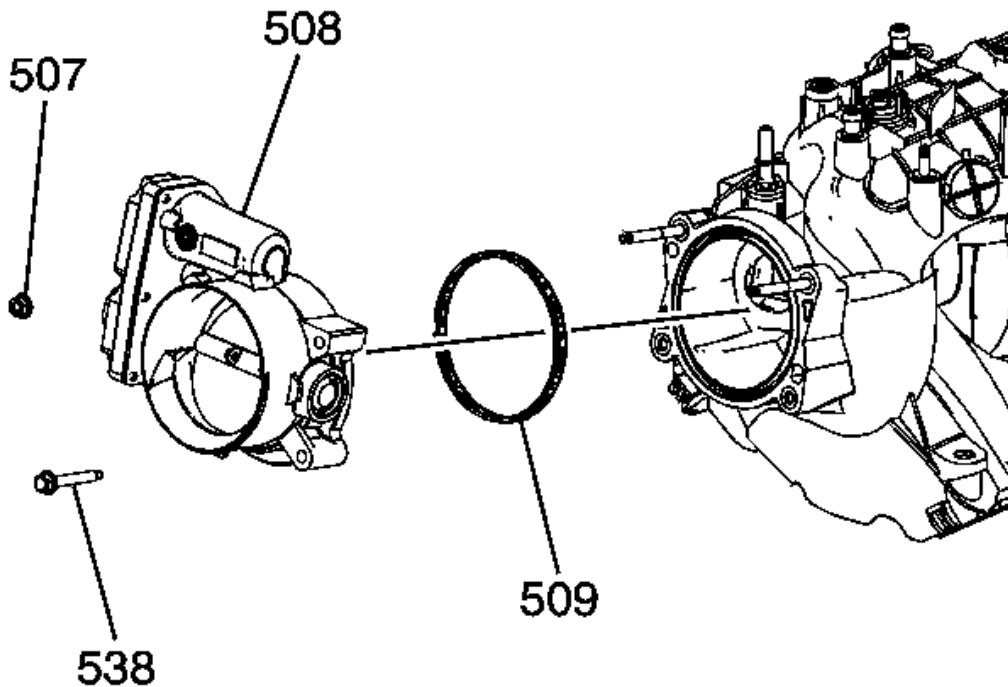


Fig. 84: Throttle Body Assembly
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

1. Install the throttle body studs, as required.

Tighten: Tighten the throttle body studs to 6 N.m (53 lb in).

IMPORTANT: DO NOT use the throttle body gasket again. Install a NEW gasket during assembly.

2. Install the throttle body gasket (509) to the intake manifold. Align the locating tab of the gasket with the notch in the manifold.
3. Install the throttle body (508), bolts (538), and nuts (507).

Tighten: Tighten the throttle body nuts and bolts to 10 N.m (89 lb in).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

WATER PUMP INSTALLATION (RPO LY2/LH6/LMG/LY5/LC9)

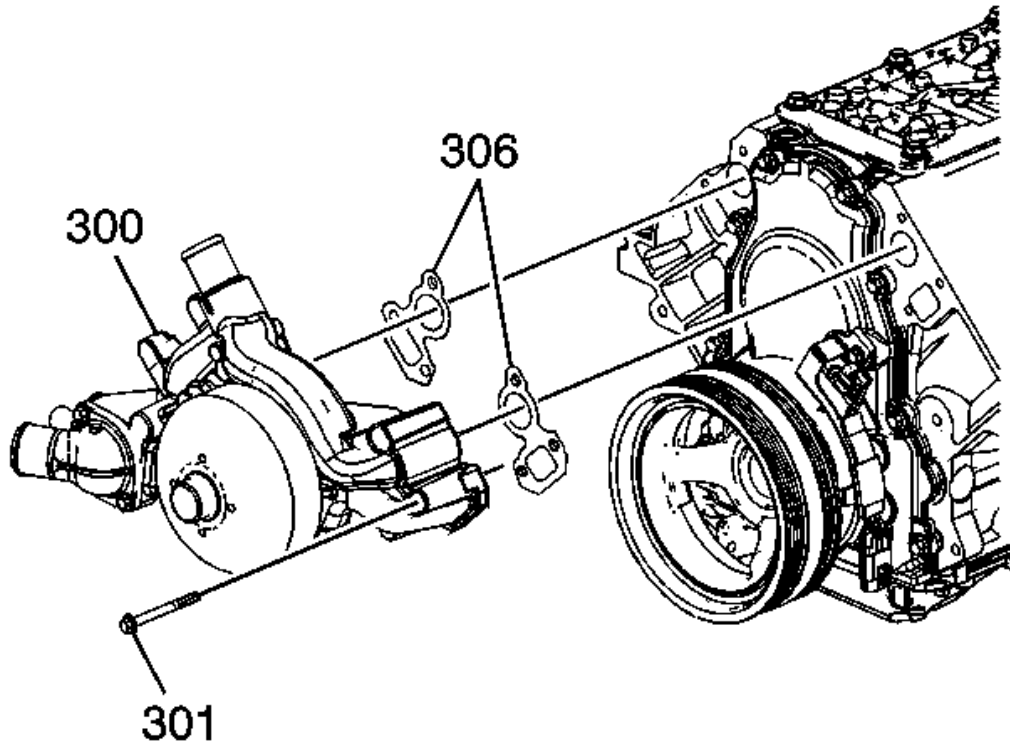


Fig. 85: View Of Water Pump, Bolts & Gaskets
Courtesy of GENERAL MOTORS CORP.

NOTE: DO NOT use cooling system seal tabs, or similar compounds, unless otherwise instructed. The use of cooling system seal tabs, or similar compounds, may restrict coolant flow through the passages of the cooling system or the engine components. Restricted coolant flow may cause engine overheating and/or damage to the cooling system or the engine components/assembly.

IMPORTANT: All gasket surfaces are to be free of oil or other foreign material during assembly.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

1. Install the water pump (300) and NEW gaskets (306).

NOTE: Refer to Fastener Notice .

2. Install the water pump bolts (301).

Tighten:

1. Tighten the water pump bolts a first pass to 15 N.m (11 lb ft).
2. Tighten the water pump bolts a final pass to 30 N.m (22 lb ft).

WATER PUMP INSTALLATION (RPO LY6/L76/L92)

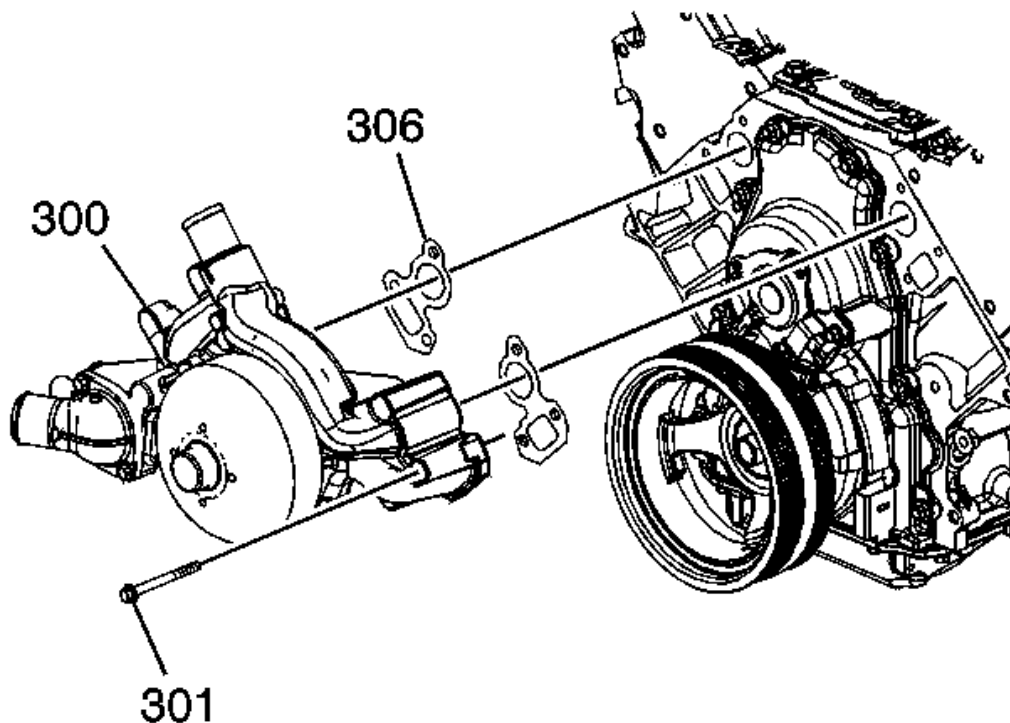


Fig. 86: View Of Water Pump, Bolts & Gaskets
Courtesy of GENERAL MOTORS CORP.

NOTE: DO NOT use cooling system seal tabs, or similar compounds,

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

unless otherwise instructed. The use of cooling system seal tabs, or similar compounds, may restrict coolant flow through the passages of the cooling system or the engine components. Restricted coolant flow may cause engine overheating and/or damage to the cooling system or the engine components/assembly.

IMPORTANT: All gasket surfaces are to be free of oil or other foreign material during assembly.

1. Install the water pump (300) and NEW gaskets (306).

NOTE: Refer to Fastener Notice .

2. Install the water pump bolts (301).

Tighten:

1. Tighten the water pump bolts a first pass to 15 N.m (11 lb ft).
2. Tighten the water pump bolts a final pass to 30 N.m (22 lb ft).

EXHAUST MANIFOLD INSTALLATION - LEFT SIDE

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

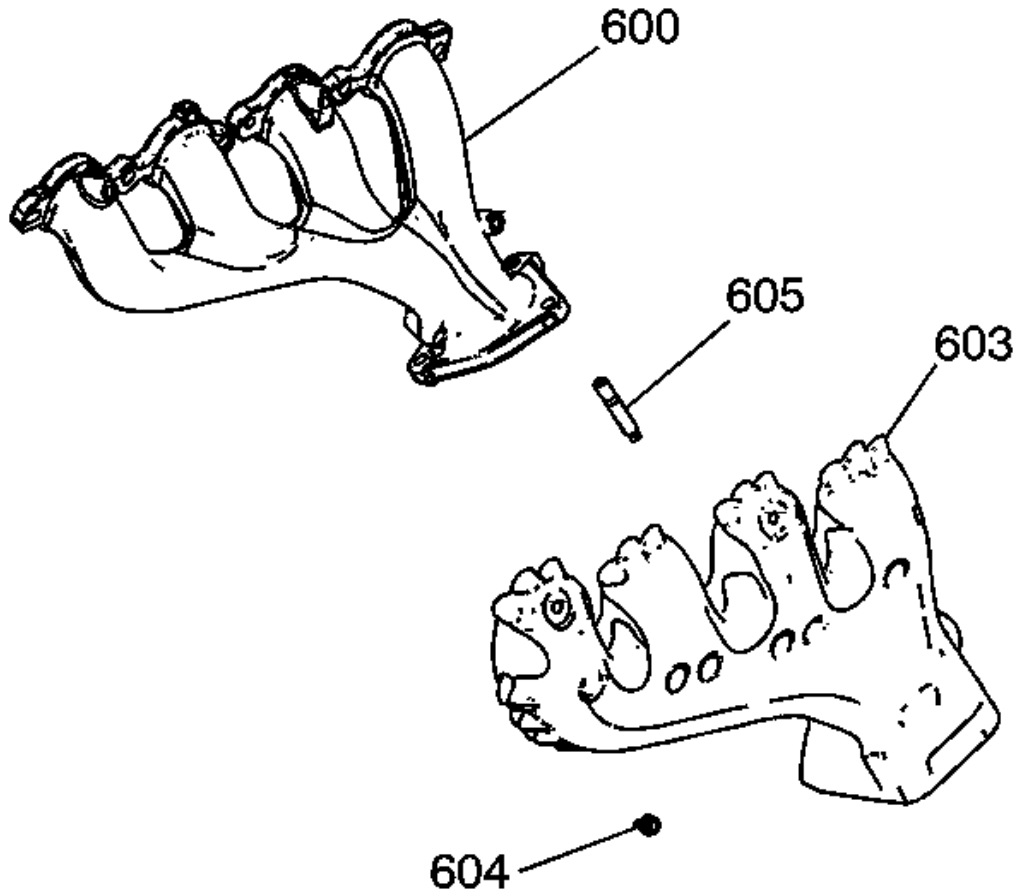


Fig. 87: Exhaust Manifold

Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

IMPORTANT:

- Tighten the exhaust manifold bolts as specified in the service procedure. Improperly installed and/or leaking exhaust manifold gaskets may affect vehicle emissions and/or on-board diagnostic (OBD) II system performance.
- The cylinder head exhaust manifold bolt hole threads must be clean and free of debris or threadlocking material.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

- **Do not apply sealant to the first 3 threads of the bolt.**

1. Install the heat shield (603) and bolts (604).

Tighten: Tighten the heat shield bolts to 9 N.m (80 lb in).

2. Install the exhaust pipe studs (605).

Tighten: Tighten the studs to 20 N.m (15 lb ft).

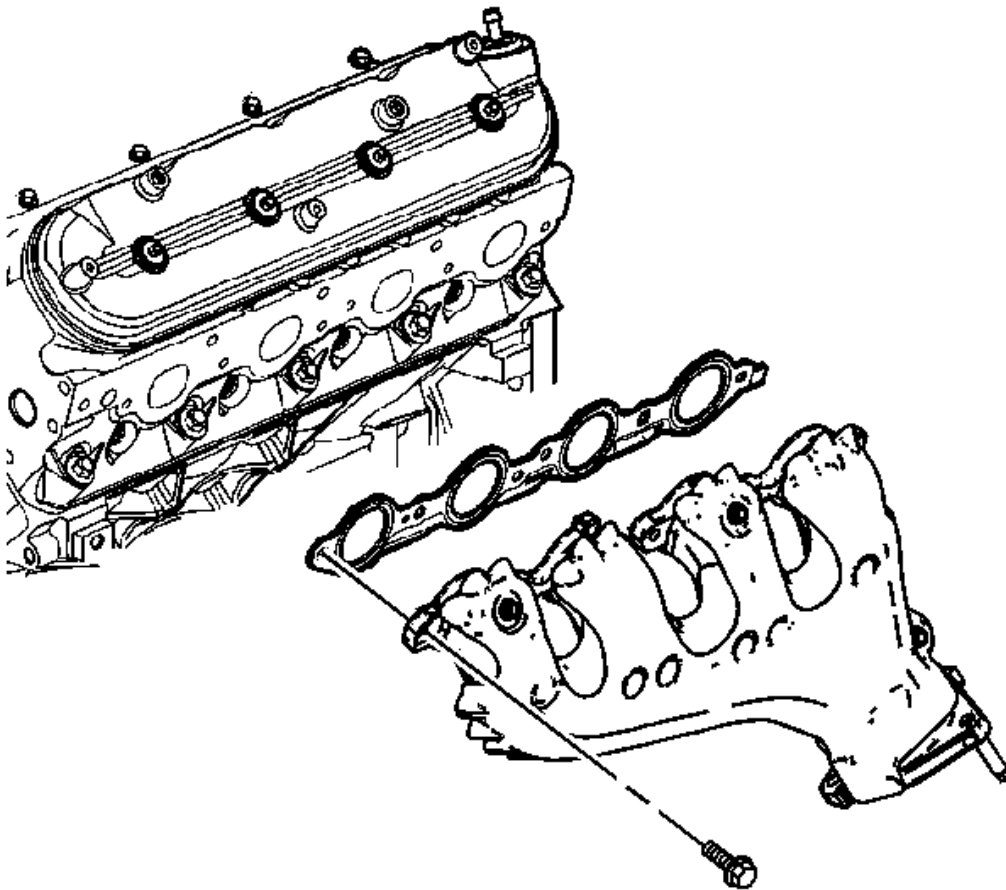


Fig. 88: Exhaust Manifold
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

3. Apply a 5 mm (0.2 in) wide band of threadlock GM P/N 12345493 (Canadian P/N 10953488), or equivalent, to the threads of the exhaust manifold bolts. Refer to **Sealers, Adhesives, and Lubricants** .
4. Install the exhaust manifold, NEW gasket, and bolts.

Tighten:

1. Tighten the exhaust manifold bolts a first pass to 15 N.m (11 lb ft). Tighten the exhaust manifold bolts beginning with the center 2 bolts. Alternate from side-to-side, and work toward the outside bolts.
 2. Tighten the exhaust manifold bolts a final pass to 20 N.m (15 lb ft). Tighten the exhaust manifold bolts beginning with the center 2 bolts. Alternate from side-to-side, and work toward the outside bolts.
5. Using a flat punch, bend over the exposed edge of the exhaust manifold gasket at the rear of the left cylinder head.

EXHAUST MANIFOLD INSTALLATION - RIGHT SIDE

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

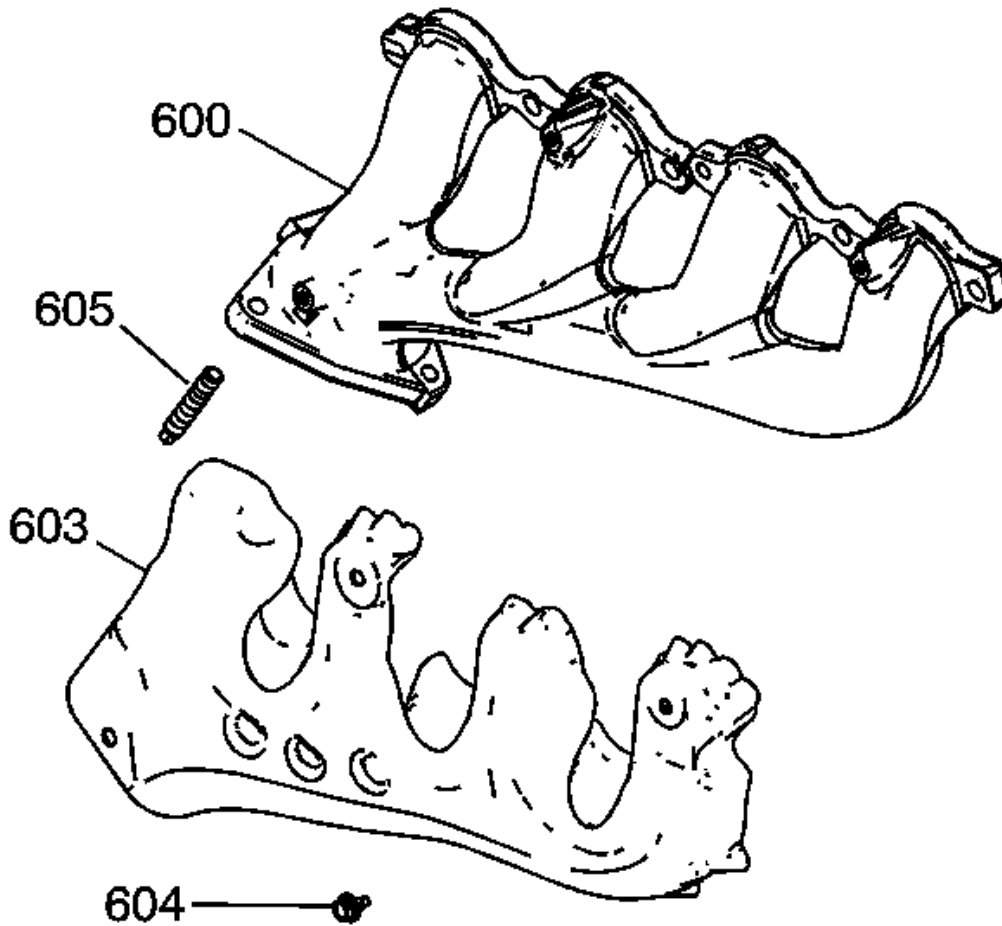


Fig. 89: Exhaust Manifold

Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

IMPORTANT:

- Tighten the exhaust manifold bolts as specified in the service procedure. Improperly installed and/or leaking exhaust manifold gaskets may affect vehicle emissions and/or on-board diagnostic (OBD) II system performance.
- The cylinder head exhaust manifold bolt hole threads must be clean and free of debris or threadlocking

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

material.

- **Do not apply sealant to the first 3 threads of the bolt.**

1. Install the heat shield (603) and bolts (604).

Tighten: Tighten the heat shield bolts to 9 N.m (80 lb in).

2. Install the exhaust pipe studs (605).

Tighten: Tighten the studs to 20 N.m (15 lb ft).

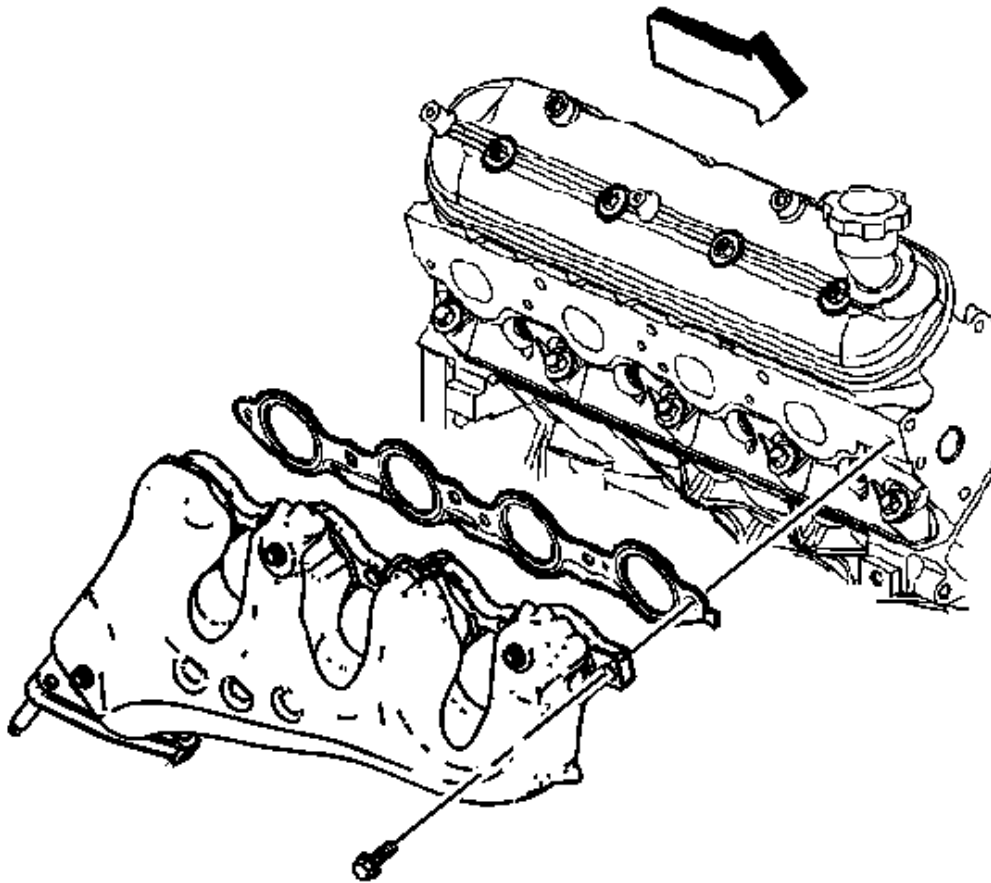


Fig. 90: Exhaust Manifold

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Courtesy of GENERAL MOTORS CORP.

3. Apply a 5 mm (0.2 in) wide band of threadlock GM P/N 12345493 (Canadian P/N 10953488), or equivalent, to the threads of the exhaust manifold bolts. Refer to **Sealers, Adhesives, and Lubricants**.
4. Install the exhaust manifold, NEW gasket and bolts.

Tighten:

1. Tighten the exhaust manifold bolts a first pass to 15 N.m (11 lb ft). Tighten the exhaust manifold bolts beginning with the center 2 bolts. Alternate from side-to-side, and work toward the outside bolts.
 2. Tighten the exhaust manifold bolts a final pass to 20 N.m (15 lb ft). Tighten the exhaust manifold bolts beginning with the center 2 bolts. Alternate from side-to-side, and work toward the outside bolts.
5. Using a flat punch, bend over the exposed edge of the exhaust manifold gasket at the rear of the left cylinder head.

OIL LEVEL INDICATOR AND TUBE INSTALLATION

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

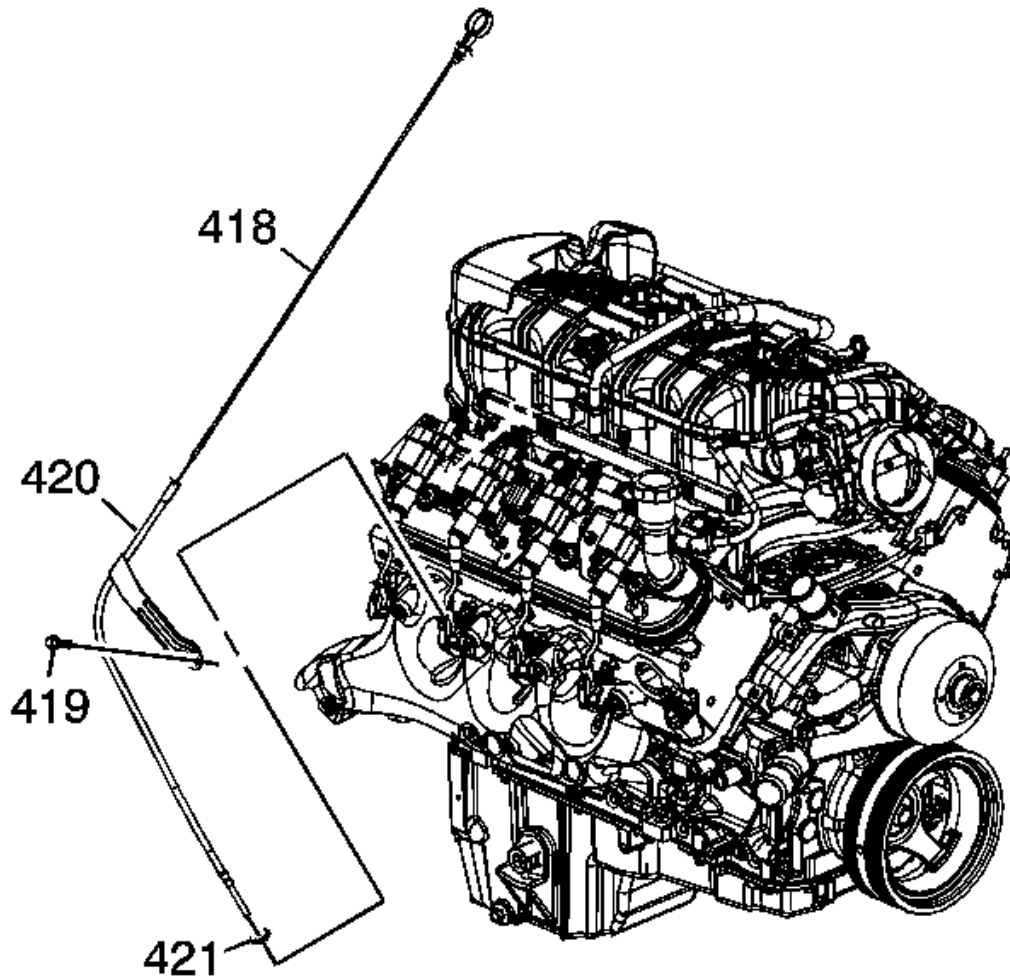


Fig. 91: View Of Oil Level Indicator, Tube Bolt, Indicator Tube & O-Ring Seal
Courtesy of GENERAL MOTORS CORP.

1. Inspect the O-ring seal (421) for cuts or damage. If the oil level indicator tube O-ring seal is not cut or damaged, it may be used again.
2. Lubricate the O-ring seal with clean engine oil.
3. Install the O-ring seal onto the oil level indicator tube (420).
4. Install the oil level indicator tube into the engine block and rotate into proper position.

NOTE: Refer to Fastener Notice .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

5. Install the tube bolt (419).

Tighten: Tighten the oil level indicator tube bolt to 25 N.m (18 lb ft).

6. Install the oil level indicator (418) into the tube.

AUTOMATIC TRANSMISSION FLEX PLATE INSTALLATION

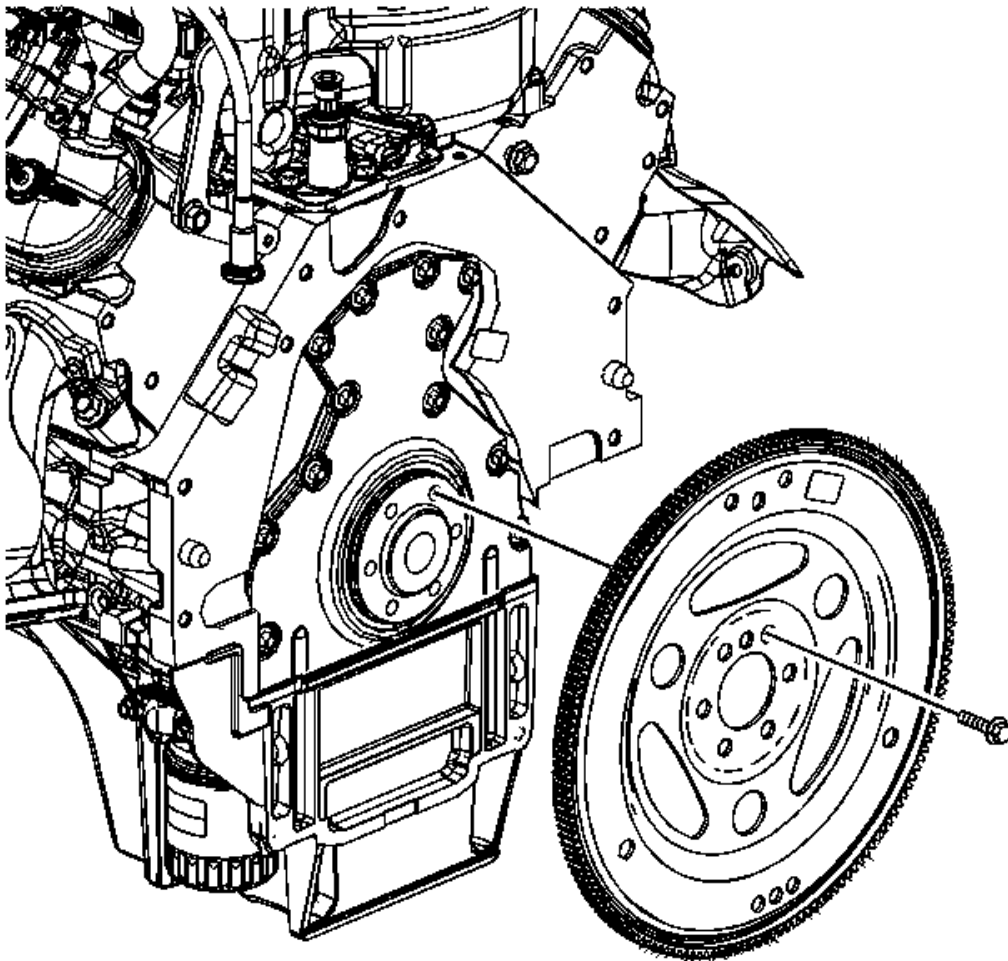


Fig. 92: View Of Flex Plate & Bolts
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

IMPORTANT: The flex plate does not use a locating pin for alignment and will not initially seat against the crankshaft flange, but will be pulled onto the crankshaft by the engine flex plate bolts. This procedure requires a 3 stage tightening process.

1. Install the flex plate to the crankshaft.
2. Apply threadlock GM P/N 12345382 (Canadian P/N 10953489), or equivalent, to the threads of the flex plate bolts.

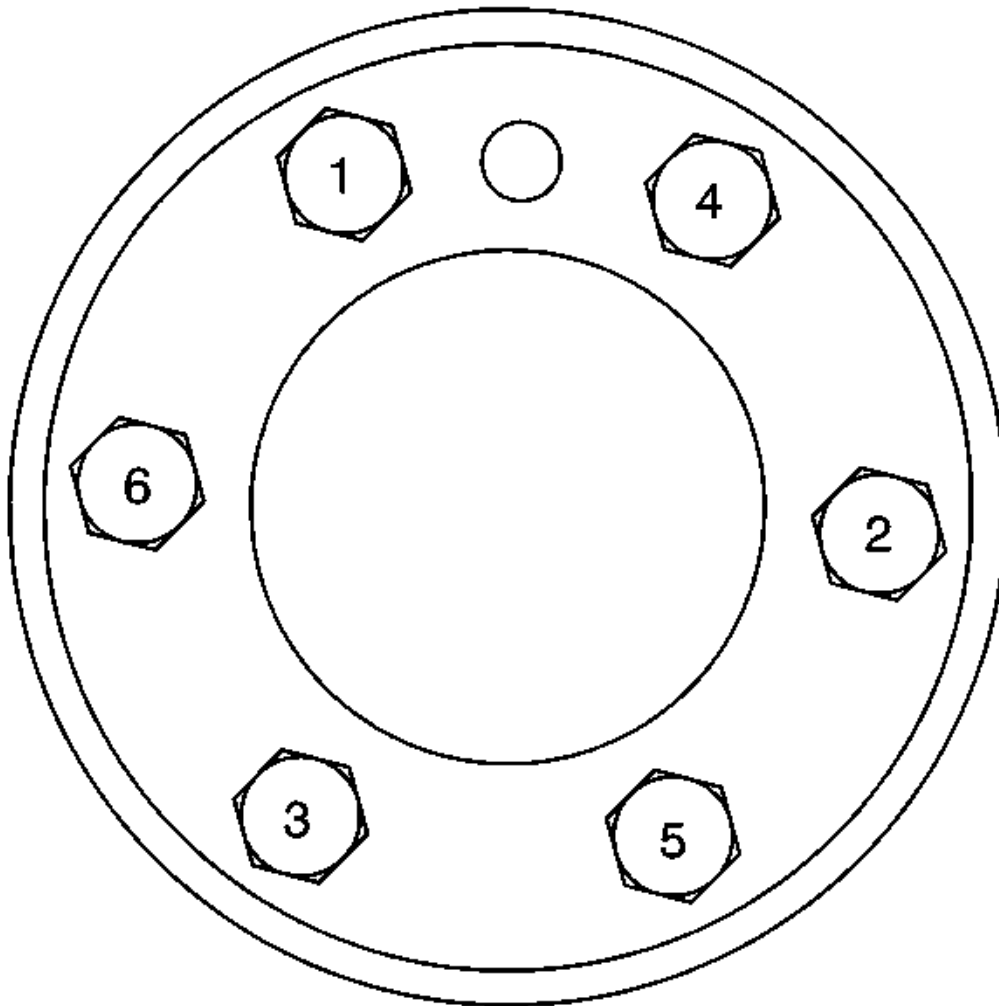


Fig. 93: Identifying Flywheel Bolt Tightening Sequence

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Courtesy of **GENERAL MOTORS CORP.**

NOTE: Refer to **Fastener Notice** .

3. Install the engine flex plate bolts.

Tighten:

1. Tighten the engine flex plate bolts (1-6) a first pass in sequence to 20 N.m (15 lb ft).
2. Tighten the engine flex plate bolts (1-6) a second pass in sequence to 50 N.m (37 lb ft).
3. Tighten the engine flex plate bolts (1-6) a final pass in sequence to 100 N.m (74 lb ft).

CRANKSHAFT BALANCER INSTALLATION

Tools Required

- **J 41478** Crankshaft Front Oil Seal Installer. See **Special Tools** .
- **J 41665** Crankshaft Balancer and Sprocket Installer. See **Special Tools** .
- **J 42386-A** Flywheel Holding Tool. See **Special Tools** .
- **J 45059** Angle Meter

Installation

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

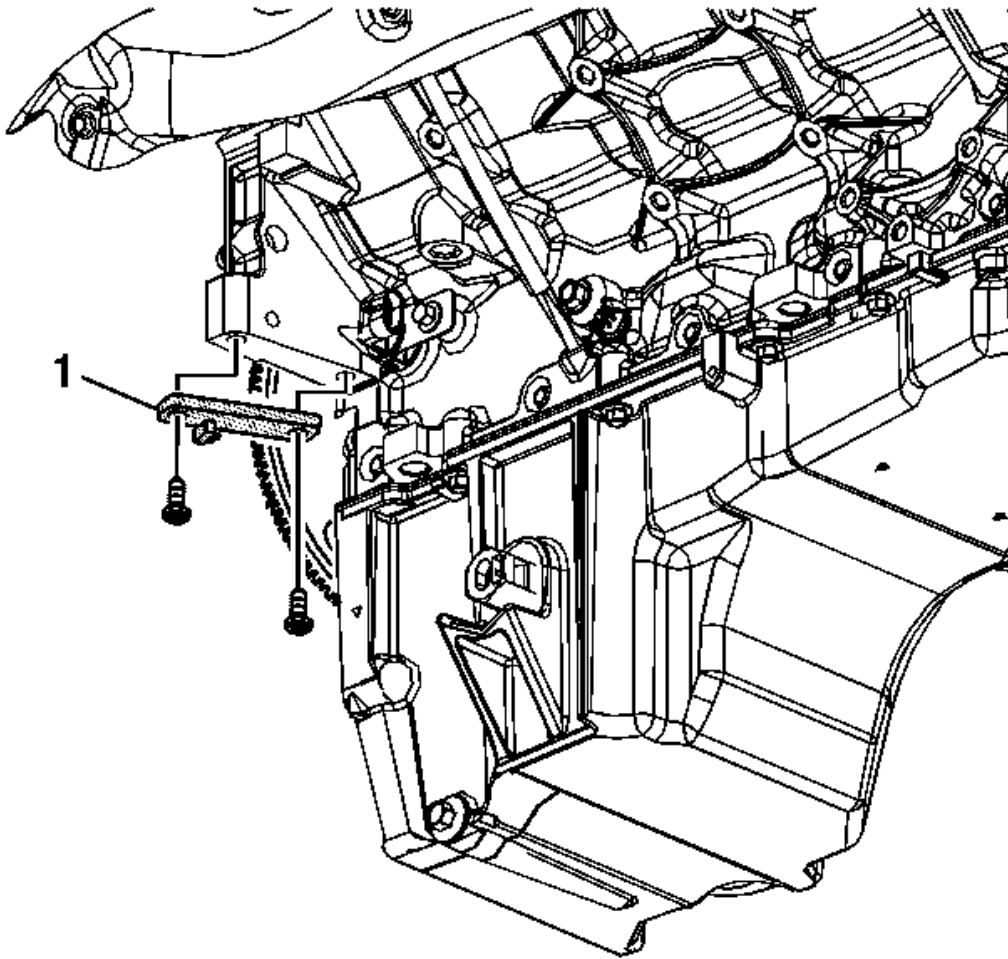


Fig. 94: View Of Special Tool & Bolts
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

- IMPORTANT:**
- The crankshaft balancer is balanced as an individual component. It is not necessary to mark the balancer prior to removal.
 - The crankshaft balancer installation and bolt tightening involves a 4 stage tightening process. The first pass

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

ensures that the balancer is installed completely onto the crankshaft. The second, third, and fourth passes tighten the NEW bolt to the proper torque.

- **The used crankshaft balancer bolt is used only during the first pass of the balancer installation procedure. Install a NEW crankshaft balancer bolt and tighten as described in the second, third, and fourth passes of the balancer bolt tightening procedure.**
- **Ensure the teeth of the tool engage the engine flywheel teeth.**

1. Install the **J 42386-A** (1) and bolts. See **Special Tools** .

Use 1 M10 - 1.5 x 120 mm and 1 M10 - 1.5 x 45 mm bolt for proper tool operation.

Tighten: Tighten the **J 42386-A** bolts to 50 N. See **Special Tools** .m (37 lb ft).

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

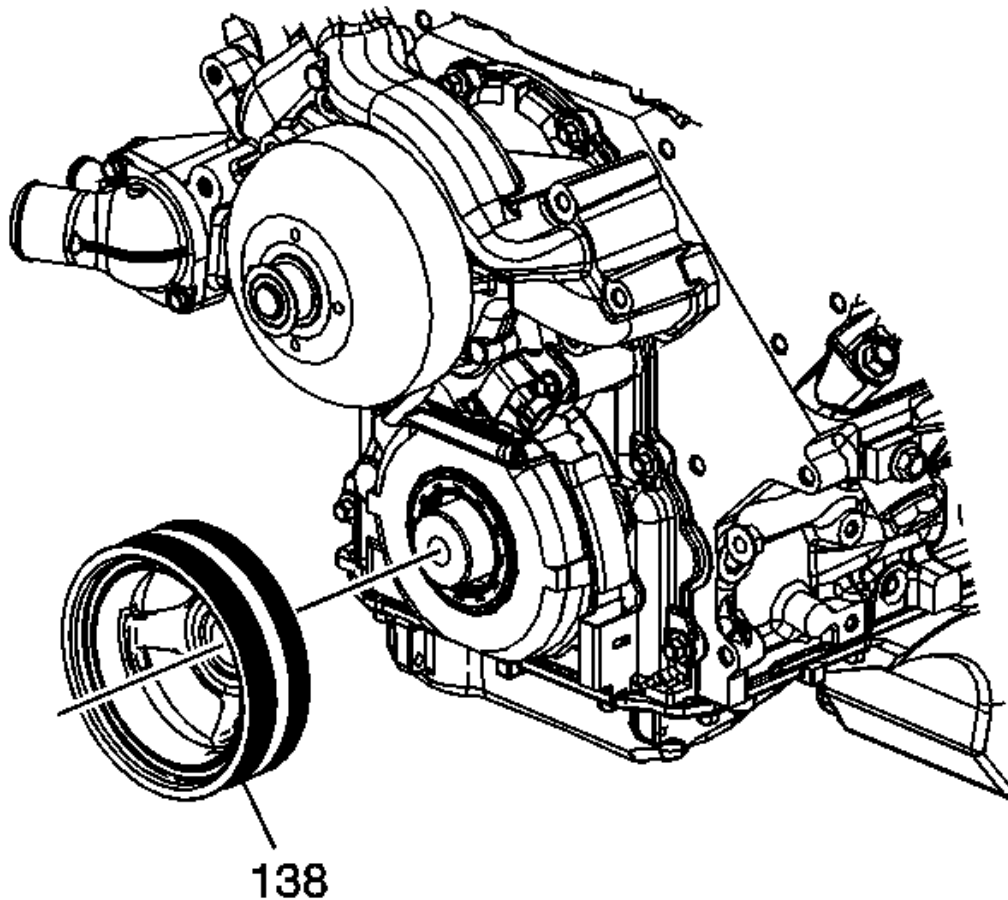


Fig. 95: View Of Crankshaft Balancer
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The balancer should be positioned onto the end of the crankshaft as straight as possible prior to tool installation.

2. Position the balancer (138) onto the end of the crankshaft.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

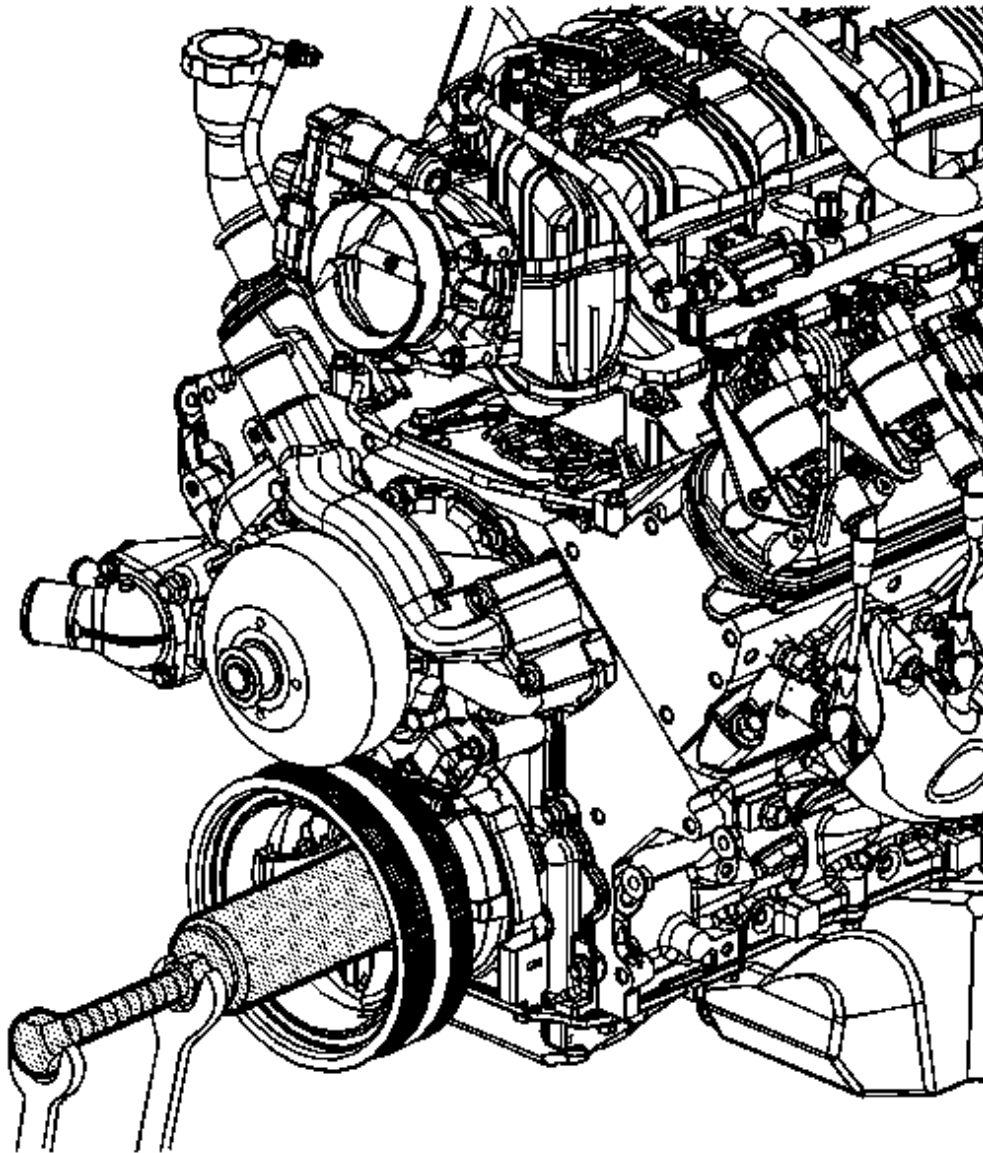


Fig. 96: View Of Balancer Installation Special Tools
Courtesy of GENERAL MOTORS CORP.

3. Use the **J 41665** and the **J 41478** in order to install the balancer. See **Special Tools** .
 1. Assemble the **J 41478** threaded rod, nut, washer and the **J 41665** installer. See

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Special Tools .

Insert the smaller end of the installer into the front of the balancer.

2. Use a wrench and hold the hex end of the threaded rod.
3. Use a second wrench and rotate the installation tool nut clockwise until the balancer is started onto the crankshaft.
4. Remove the tool and reverse the installation tool.

Position the larger end of the installer against the front of the balancer.

5. Use a wrench and hold the hex end of the threaded rod.
6. Use a second wrench and rotate the installation tool nut clockwise until the balancer is installed onto the crankshaft.
7. Remove the balancer installation tools.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

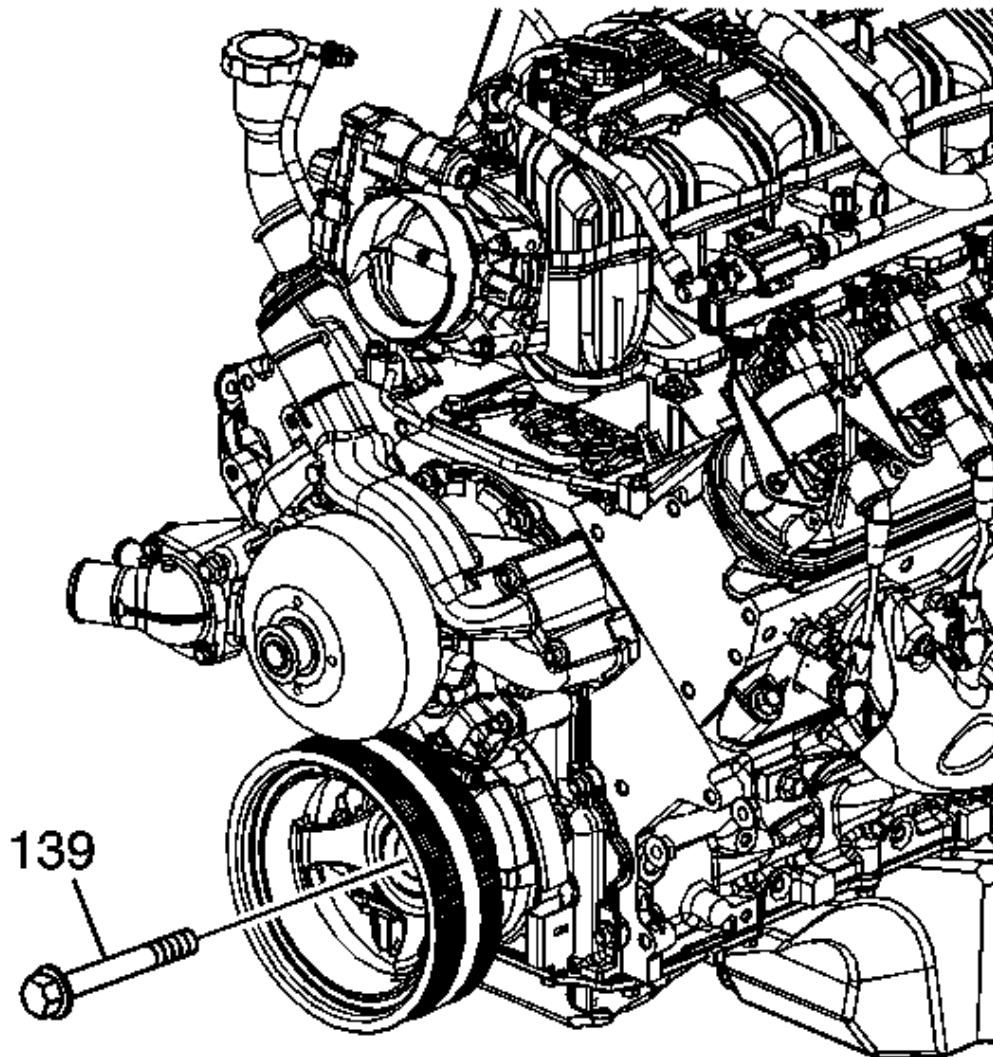


Fig. 97: View Of Crankshaft Balancer Bolt
Courtesy of GENERAL MOTORS CORP.

4. Install the used crankshaft balancer bolt (139).

Tighten: Tighten the crankshaft balancer bolt to 330 N.m (240 lb ft).

5. Remove the used crankshaft balancer bolt.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

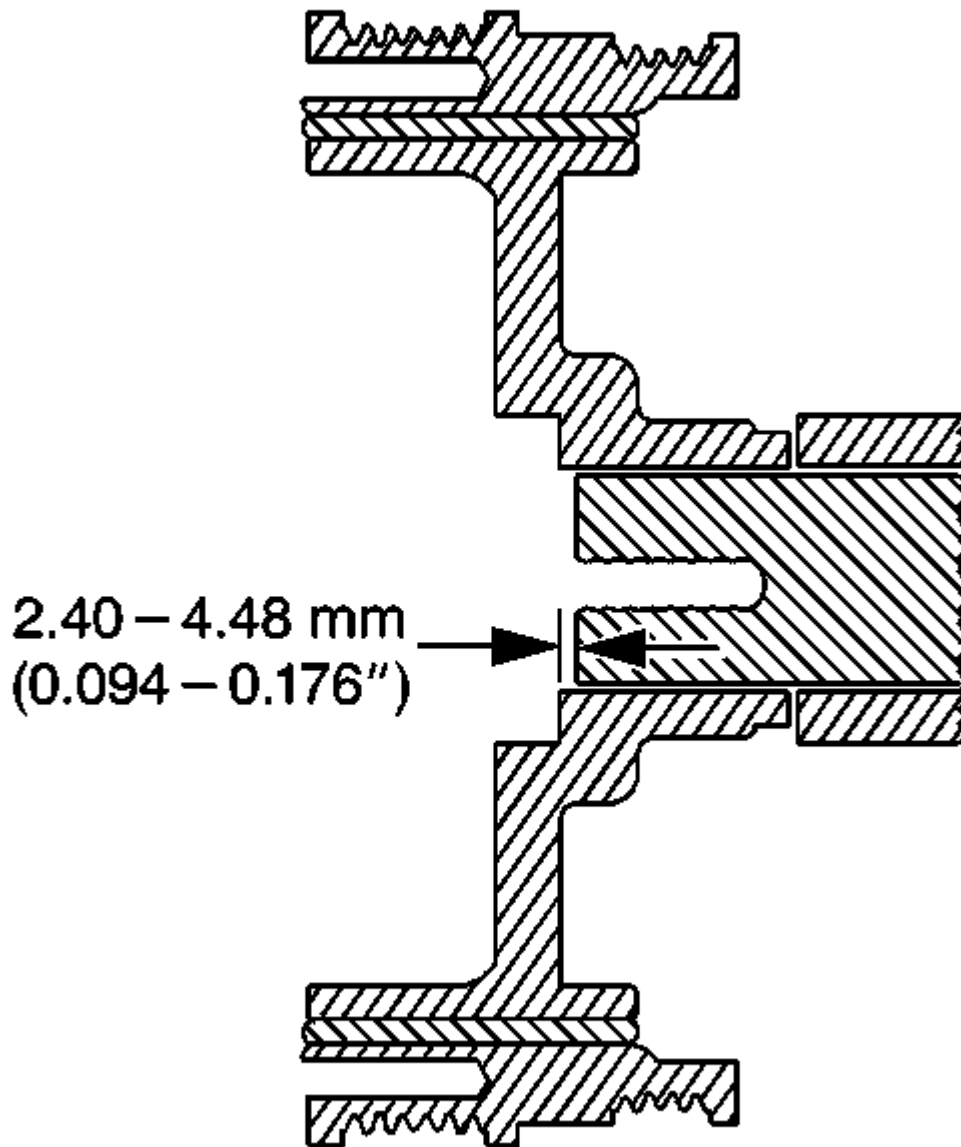


Fig. 98: Identifying Hub To Crankshaft Distance
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The nose of the crankshaft should be recessed 2.4-4.48 mm (0.094-0.176 in) into the balancer bore.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

6. Measure for a correctly installed balancer.

If the balancer is not installed to the proper dimensions, install the **J 41665** and repeat the installation procedure. See **Special Tools** .

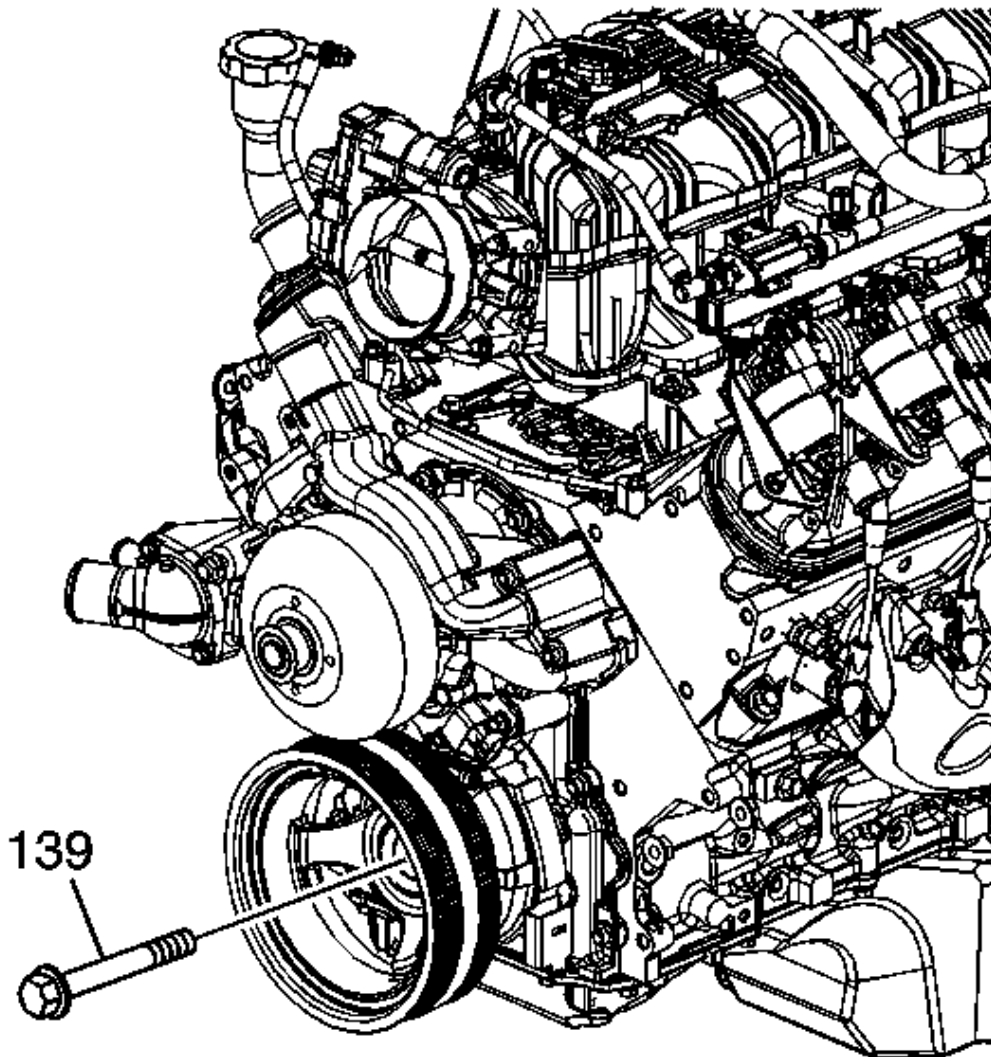


Fig. 99: View Of Crankshaft Balancer Bolt
Courtesy of GENERAL MOTORS CORP.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

7. Install the NEW crankshaft balancer bolt (139).

Tighten:

1. Tighten the crankshaft balancer bolt a first pass to 50 N.m (37 lb ft).
2. Tighten the crankshaft balancer bolt a second pass to 140 degrees using the **J 45059** .

8. Remove the **J 42386-A** . See **Special Tools** .

ENGINE PRELUBING

Tools Required

J 45299 Engine Preluber

Prelube

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

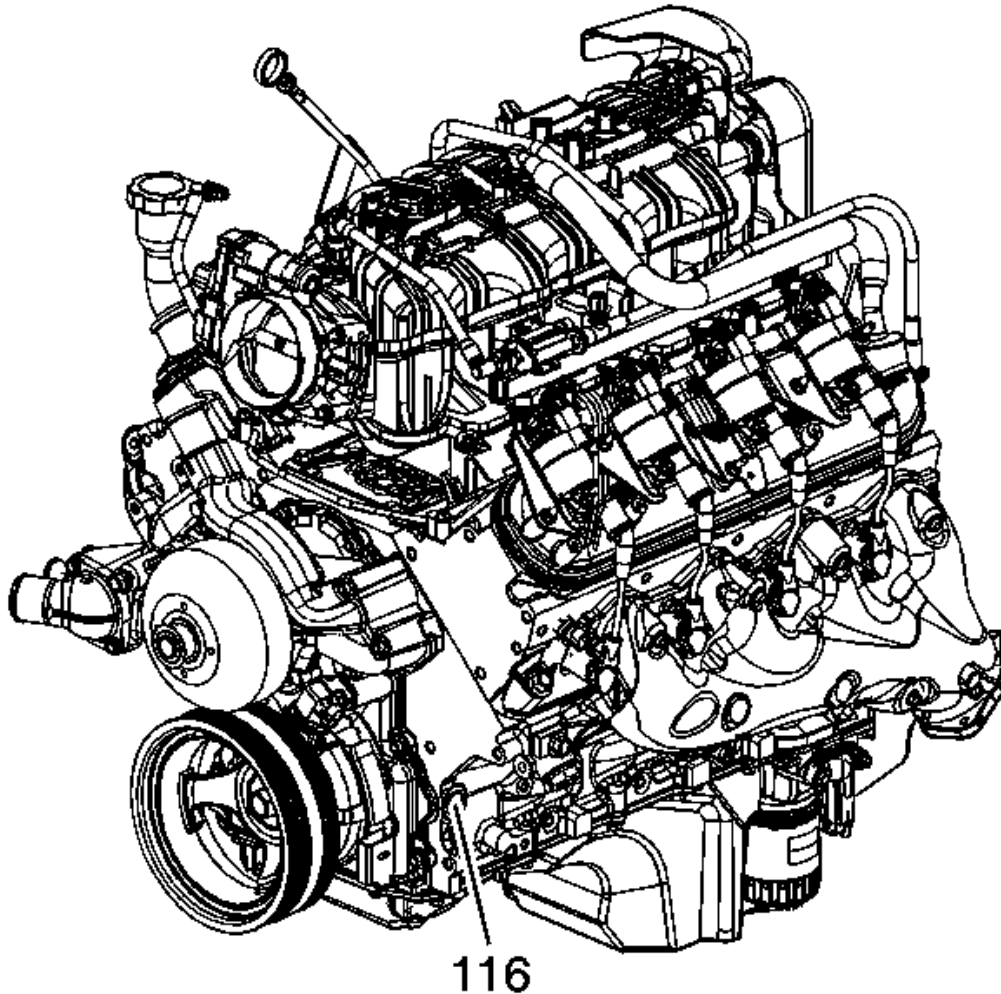


Fig. 100: View Of Engine Block Left Front Oil Gallery Plug
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: A constant and continuous flow of clean engine oil is required in order to properly prime the engine. Use an approved engine oil as specified in the owners manual.

1. Remove the engine oil filter and fill with clean engine oil.

NOTE: Refer to Fastener Notice .

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2. Install the oil filter.

Tighten: Tighten the oil filter to 30 N.m (22 lb ft).

3. Locate the engine block left front oil gallery plug (116).

4. Install the M16 x 1.5 adapter P/N 509375.

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

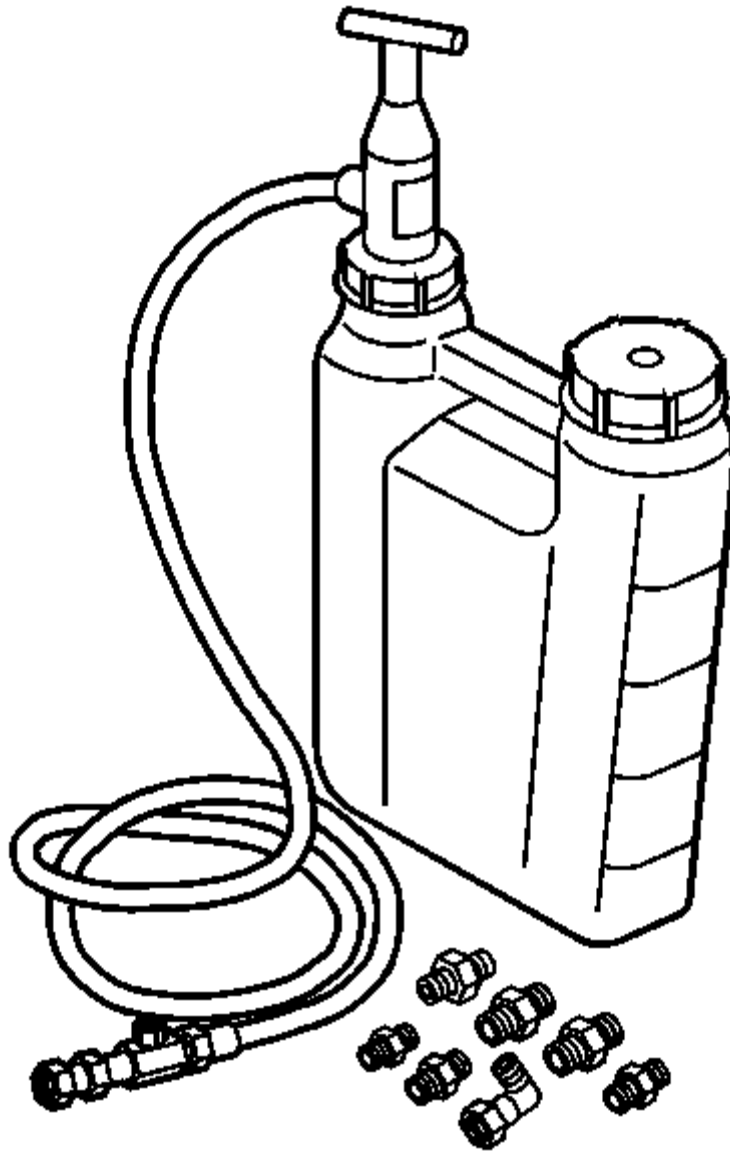


Fig. 101: Identifying Engine Preluber J 45299
Courtesy of GENERAL MOTORS CORP.

5. Install the flexible hose to the adapter and open the valve.
6. Pump the handle on the **J 45299** in order to flow a minimum of 1-1.9 liters (1-2 quarts)

2008 Chevrolet Silverado 1500

2008 ENGINE Engine Mechanical - 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

engine oil. Observe the flow of engine oil through the flexible hose and into the engine assembly.

7. Close the valve and remove the flexible hose and adapter from the engine.
8. Install the gallery plug to the engine.

Tighten: Tighten the oil gallery plug to 60 N.m (44 lb ft).

9. Top-off the engine oil to the proper level.