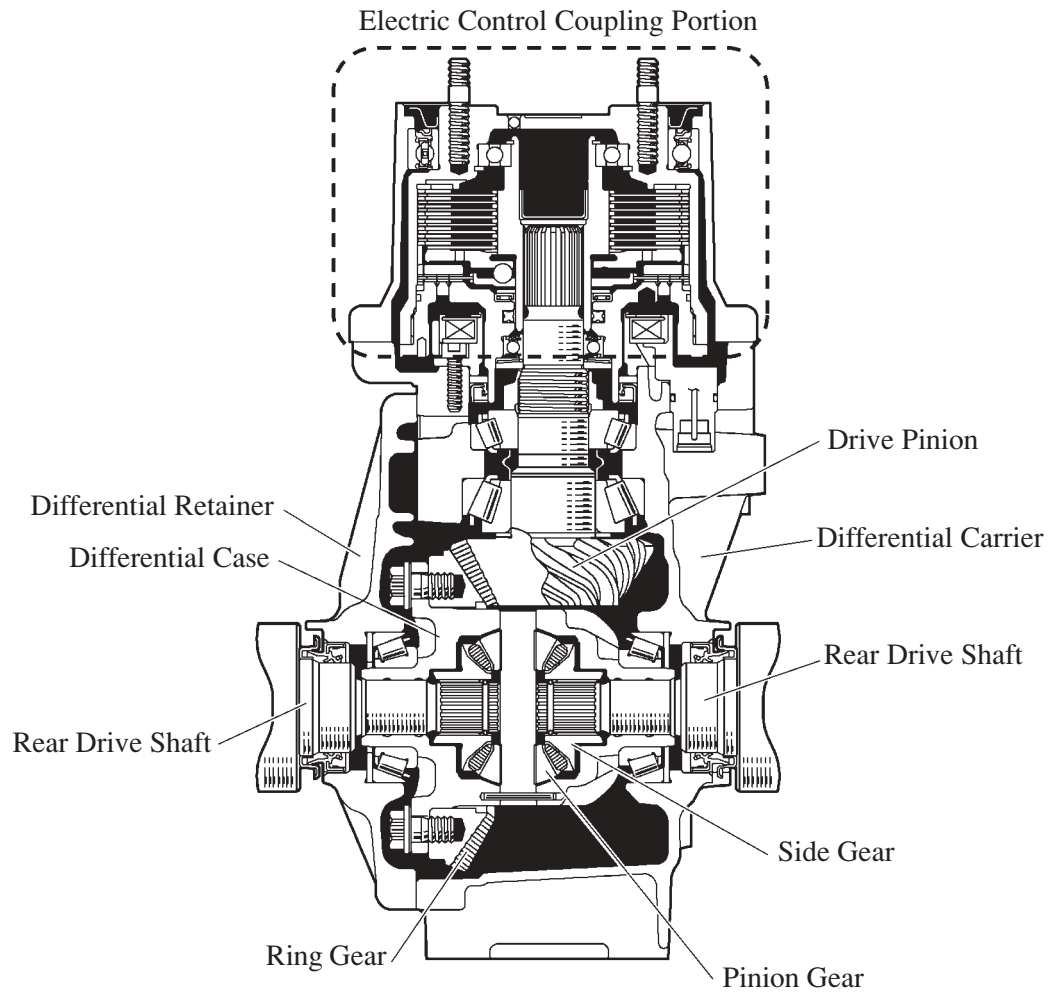


## ■ CONSTRUCTION

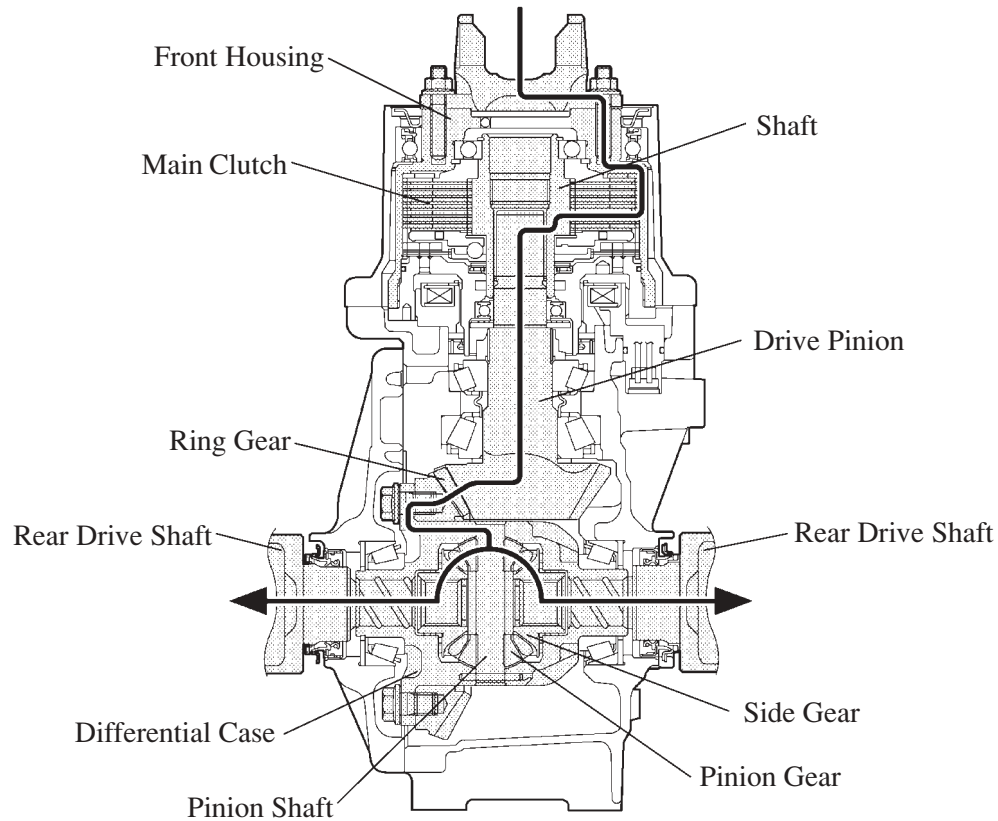
### 1. General

- The electric control coupling is placed forward of the differential.
- A carrier and a retainer made of aluminum are used for weight reduction.

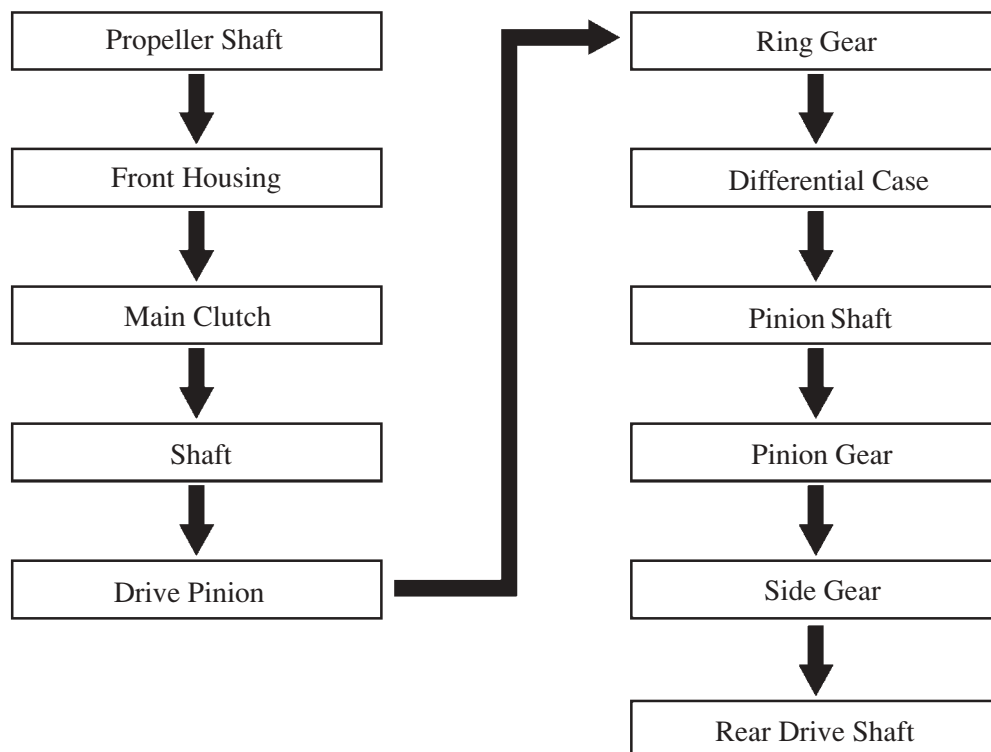


## 2. Rear Differential Power Flow

The illustration below shows the flow of power transmitted from the propeller shaft.



01NCH29Y

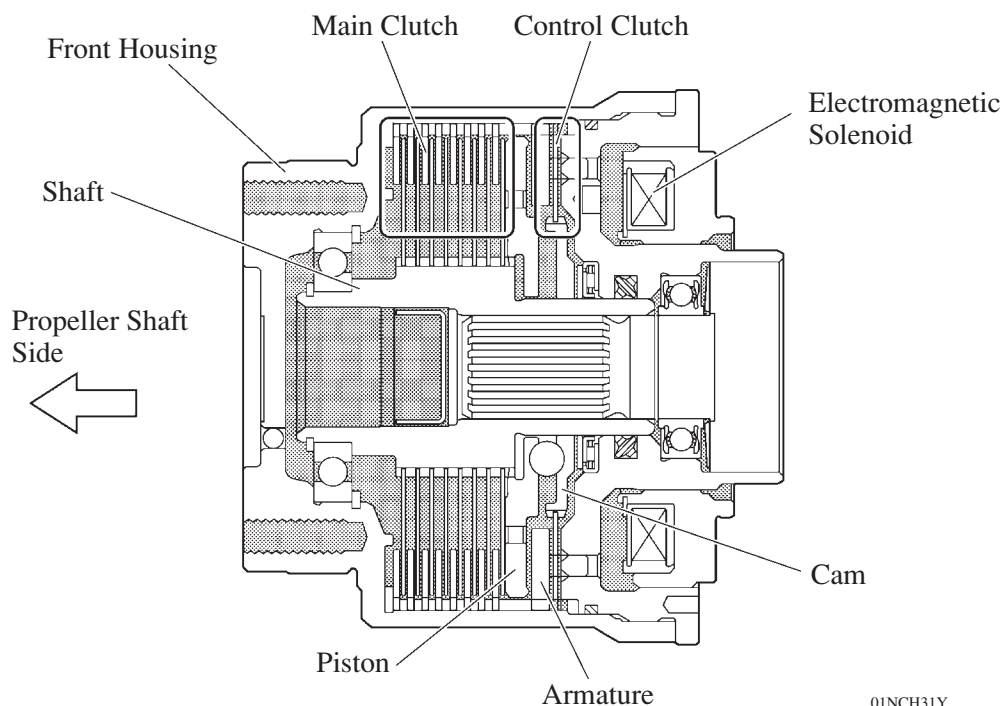


01NCH30Y

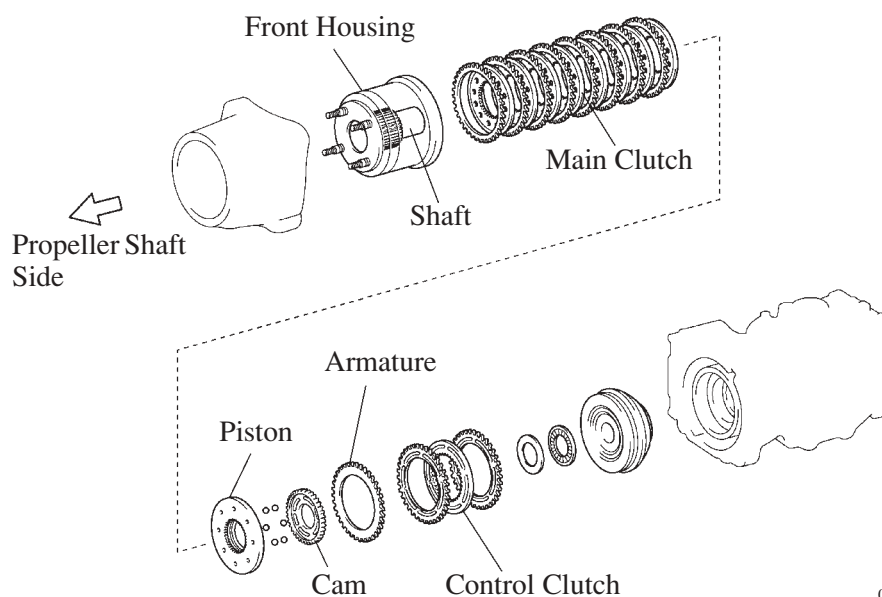
### 3. Electric Control Coupling

#### General

- The electric control coupling consists of a control clutch, main clutch, front housing, shaft, armature, cam, piston, and electromagnetic solenoid with a compact construction.
- The outer sides of the main clutch and control clutch are coupled to the front housing. The inner side of the main clutch is coupled to the shaft, and the inner side of the control clutch is coupled to the cam.
- The control clutch uses a multiple metal plate type clutch, and the main clutch uses a multiple wet plate type clutch.



01NCH31Y



01NCH81Y

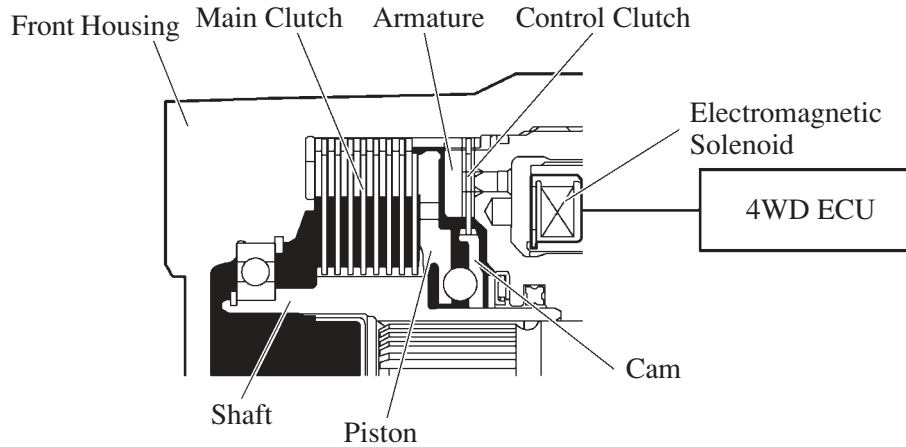
#### Service Tip

The electric control coupling cannot be disassembled. For replacement, replace the electric control coupling assembly. For details, refer to the RAV4 Repair Manual (Pub. No. RM01N0E).

## Operation

### 1) Not Operating

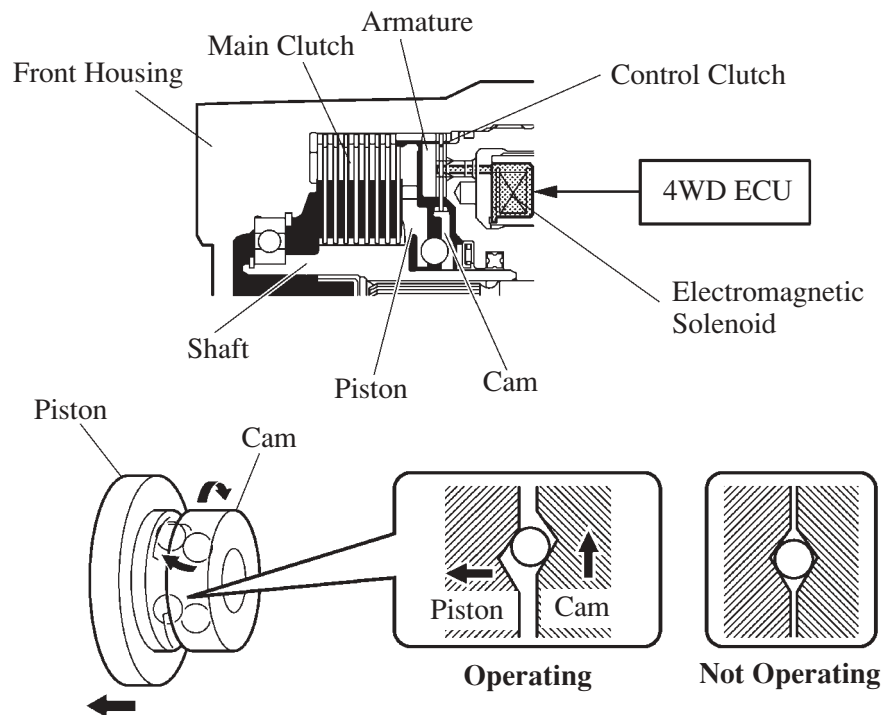
The drive force is transmitted from the propeller shaft to the front housing. When the electromagnetic solenoid is not operating, the drive force of the front housing is not transmitted to the shaft because the control clutch is not engaged. Accordingly, the drive force of the propeller shaft is not transmitted to the rear wheels.



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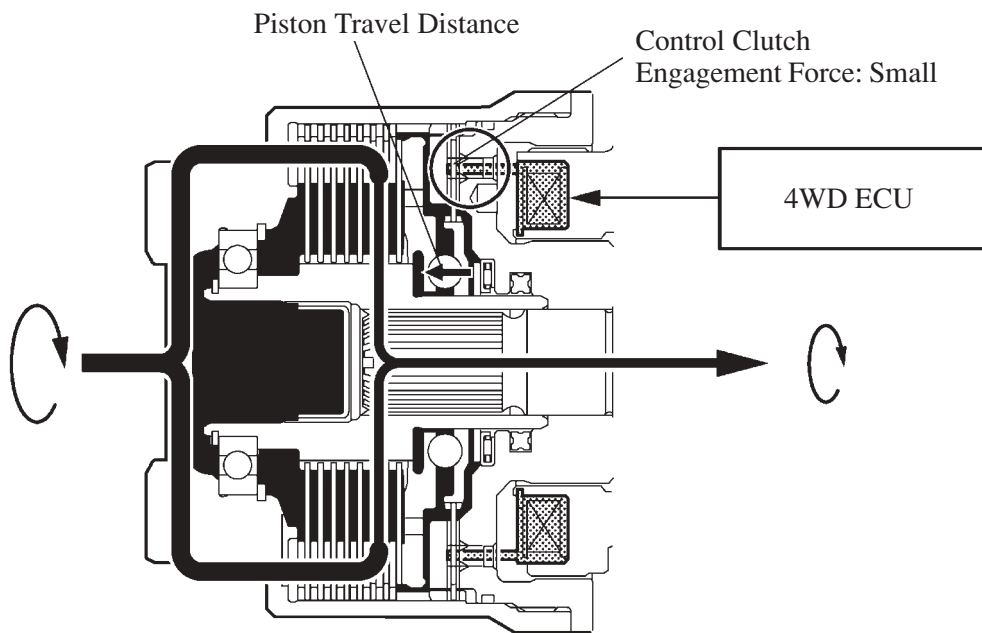
### 2) Operating

- When the 4WD ECU energizes the electromagnetic solenoid, it attracts the armature to the control clutch side. This causes the control clutch to engage and the cam to rotate.
- The rotational movement of the cam causes the piston to push on the main clutch, causing the main clutch to engage. Accordingly, the drive force of the propeller shaft is transmitted to the rear wheels.

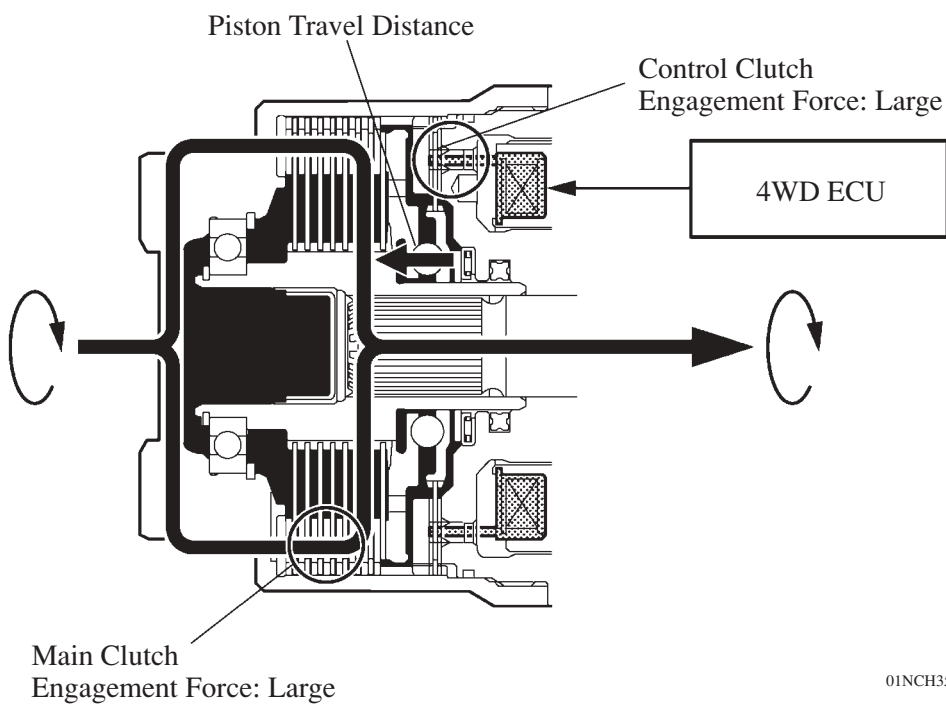


01NCH33Y

- The amount of drive force that is transmitted to the rear wheels is controlled steplessly by controlling the amperage that is applied to the electromagnetic solenoid.



01NCH34Y

**Low Amperage**

01NCH35Y

**High Amperage**