

Four-Wheel Drive Systems - Overview

Electronic Shift-On-The-Fly (ESOF) System

The electronic shift 4WD system consists of the following:

- Transfer case with synchronization clutch
- Transfer case shift motor
- TCCM (located in passenger side kick panel)
- HS-CAN
- MSS
- 4WD indicators and 4WD system messages in the IPC message center
- Constant Vacuum Hublocks (CVH)
- CVH vacuum solenoid and vacuum lines
- Vacuum pump (diesel engine only)

Electronic Shift-On-The-Fly (ESOF) System

Vehicles equipped with an electronic shift-On-the-fly (ESOF) system allow the operator to choose between 2WD and 2 different 4WD modes. The transfer case is shifted electronically by the electronic shift-On-the-fly (ESOF) based on the electronic shift-On-the-fly (ESOF) position. Under normal driving conditions, the transfer case is in 2H (4X2), but when desired, the operator can shift into 4H (4X4 HIGH) or 4L (4X4 LOW). The operator can shift between 2H and 4H at any speed. To shift into 4L, the vehicle must be stopped or rolling less than 5 km/h (3 mph) and the transmission must be in NEUTRAL.

The message center of the IPC displays 4X4 SHIFT IN PROGRESS during a shift, then displays the system mode selected. If shift conditions are not met, the message center displays Information guiding the operator through the correct shifting procedures. If the message center displays SHIFT DELAYED PULL FORWARD, transfer case gear tooth blockage is present. To alleviate the condition move the vehicle forward approximately 1.5 m (5 ft) and if the condition occurs during a 4L shift, place the transmission in neutral to allow the transfer case to complete the shift and fully engage.