

DESCRIPTION AND OPERATION

TRANSFER CASE

The Four-Wheel Drive (4WD) system consists of the following components:

- Electric shift motor
- Mode Select Switch (MSS)
- Transfer case
- 4X4 control module

Electronic Shift Control System

4WD mode is selected using a rotary switch located on the instrument panel. With the vehicle ignition on, the on-board controller verifies and matches the shift motor position to the switch.

To shift in and out of **4WD** low, 2 conditions must be met:

- The transmission must be placed in NEUTRAL for automatic transmissions or the clutch pedal must be fully depressed and the vehicle stopped for manual transmissions. The digital Transmission Range (TR) sensor completes the ground circuit in NEUTRAL (automatic transmissions). The Clutch Pedal Position (CPP) completes the sense signal to the speed control servo when the clutch pedal is fully depressed (manual transmissions).
- The vehicle speed must be less than 5 km/h (3 mph).

Transfer Case Power Flow

The Borg-Warner 13-54 Electric Shift Transfer Case provides LOW RANGE driving. This system has no selectable neutral.

In the 2-Wheel Drive (2WD) mode, torque from the transmission is transferred to the input shaft assembly, which in turn drives the rear output shaft that drives the rear axle assembly.

The **2WD - 4WD** shift is accomplished through the shifting of the lockup collar that engages the drive sprocket on the rear output shaft. The drive sprocket turns the drive chain, which turns the driven sprocket on the front output shaft assembly. The front output shaft assembly then drives the front driveshaft.

The high-low shift is accomplished when the reduction fork assembly moves the reduction hub to engage the complete carrier assembly to the output shaft. Torque from the input shaft assembly is then transmitted through the sun gear, which then turns the complete carrier assembly. The complete carrier assembly, now engaged to the output shaft, provides the reduction.

The unit is lubricated by a gerotor oil pump assembly that pumps the oil through the bore in the rear output shaft.