3. COMPONENTS OF IWE (INTEGRATED WHEEL END)

Front Hub Assembly

The front hub assembly is connected to the tire and it drives the wheel by receiving the rotation force from the drive shaft during 4WD mode. When the hub actuator is moved to the gear (vacuum pressure released), the 4WD mode is engaged. When the hub actuator is out of the gear (vacuum pressure applied), the 4WD mode is cancelled.

Rubber O-ring
Replace it with a new one when removing.
Function: preventing moisture and foreign matter from entering into gears.

Steel O-ring
Preventing the actuator hub from pressing against the wheel end hub

Apply the grease to the steel O-ring before installation.

NOTICE
• Rubber O-ring: Replace it with a new one when removing/installing the front hub.

Front Drive Shaft

The front drive shaft is the part that receives the power when the transfer case operates in 4WD mode. During the 2WD mode, the hub actuator is positioned at the drive shaft end, and during the 4WD mode, the hub actuator is interlocked to the drive shaft end gear and the front hub end gear.

Drive shaft end gear
The vacuum solenoid valve is installed at bottom of the battery tray and serves the function that allows to connect and block the vacuum pressure from vacuum pump to hub actuator. During the 2WD mode, a vacuum line is established between vacuum pump and hub actuator. During the 4WD mode, the TCCU applies 12V to the vacuum solenoid to block the vacuum pressure.

This device transfers or blocks the output from drive shaft to the front wheel end according to the vacuum pressure. Unlike the conventional systems, the vacuum pressure to the front wheel end operates only within the actuator.
2WD:
The locking hub actuator is out of the front wheel hub end gear when applying the vacuum pressure.

4WD:
The locking hub actuator is engaged with the front wheel hub end gear when releasing the vacuum pressure.
Front Wheel End in Vehicle with 4WD

Front Wheel End in Vehicle without 4WD