MAZDA/FORD GF4A-EL
NO REVERSE

COMPLAINT: Vehicles equipped with GF4A-EL transmissions may exhibit a "No Reverse condition, before or after overhaul.

CAUSE: The cause may be:

1. A faulty "Vehicle Speed Sensor," signaling the computer that the vehicle is in motion. At that point the computer may apply the 1-2 shift solenoid and block the passage to the "Low Reverse Clutch." (See Figure 1)

2. A stuck 1-2 shift valve or "leaky" bore plug at the end of the 1-2 shift valve, allowing the 1-2 shift valve to block the passage to the "Low Reverse Clutch." (See Figure 1) ***NOTE: This may also cause 2nd gear starts in Drive.***

3. A 1-2 solenoid that is stuck open, allowing the 1-2 shift valve to block the passage to the "Low Reverse Clutch." (See Figure 1) ***NOTE: This may also cause 2nd gear starts in Drive.***

4. A Low Reverse or Reverse clutch failure.

QUALIFICATION:

Unplug the harness connector from the Vehicle Speed Sensor and place the selector in the Reverse position (See Figure 2). If Reverse engages go to Correction 1, most likely possibilities. If Reverse does not engage go to Correction 2 , 3 and 4, most likely possibilities.

CORRECTION:

1. Replace the Vehicle Speed Sensor.

2. Inspect the 1-2 shift valve as shown in Figure 3 for free movement in its bore. Air check the 1-2 shift valve, from the hole where the 1-2 shift solenoid is placed. Listen for the sound of the 1-2 shift valve snapping back and forth and ensure ***no*** air leakage from the bore plug at the end of the 1-2 shift valve line up.

3. Apply air pressure to the 1-2 shift solenoid, as shown in Figure 4, and ensure that there is ***no*** leakage when there is no voltage applied to the solenoid, replace if necessary. ***NOTE: It may be necessary to apply 12 volts to the solenoid several times to ensure that the solenoid is closing every time the voltage is removed***. Inspect the O-ring on the solenoid and replace if necessary.

4. Inspect Low Reverse or Reverse clutch assembly's for wear and repair as needed.

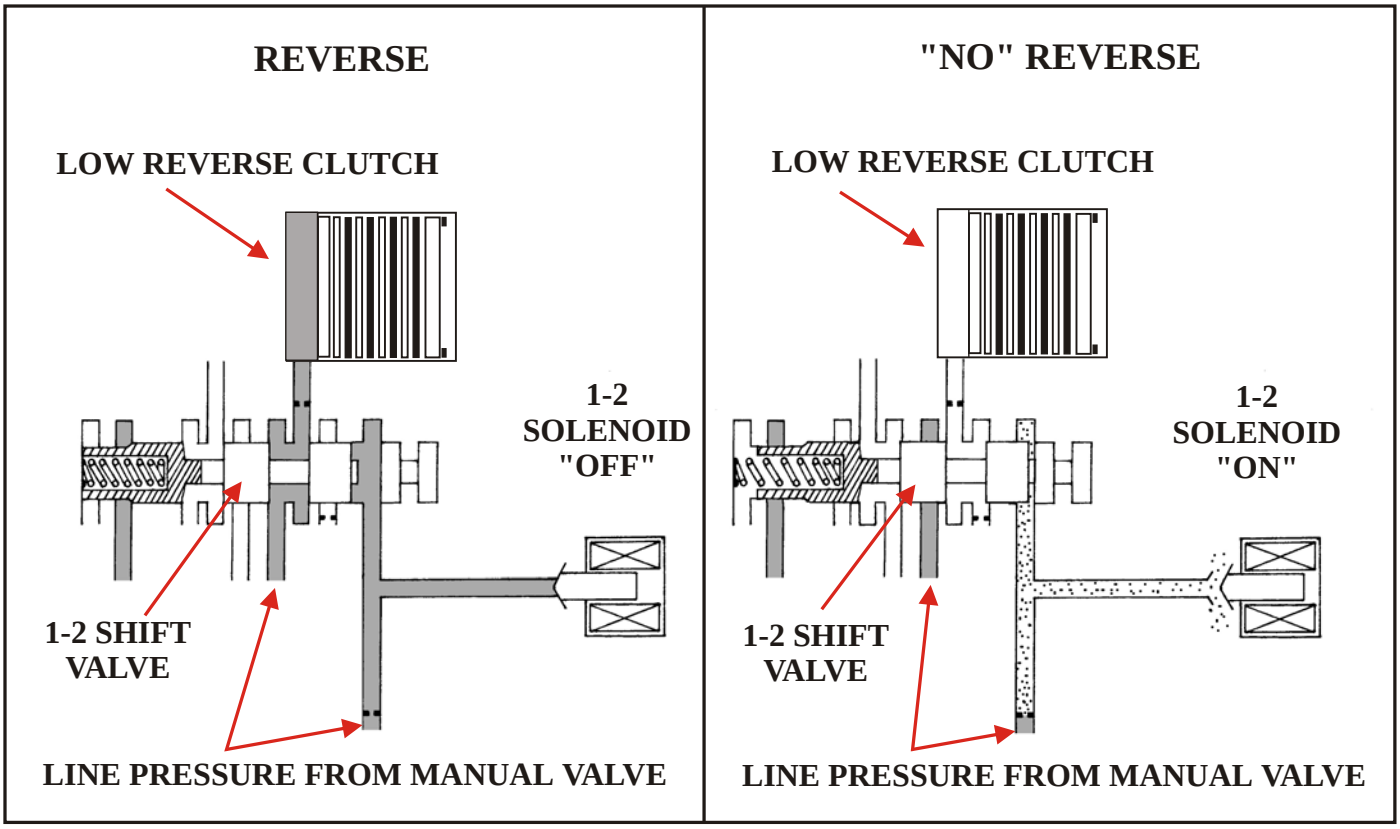

Figure 1

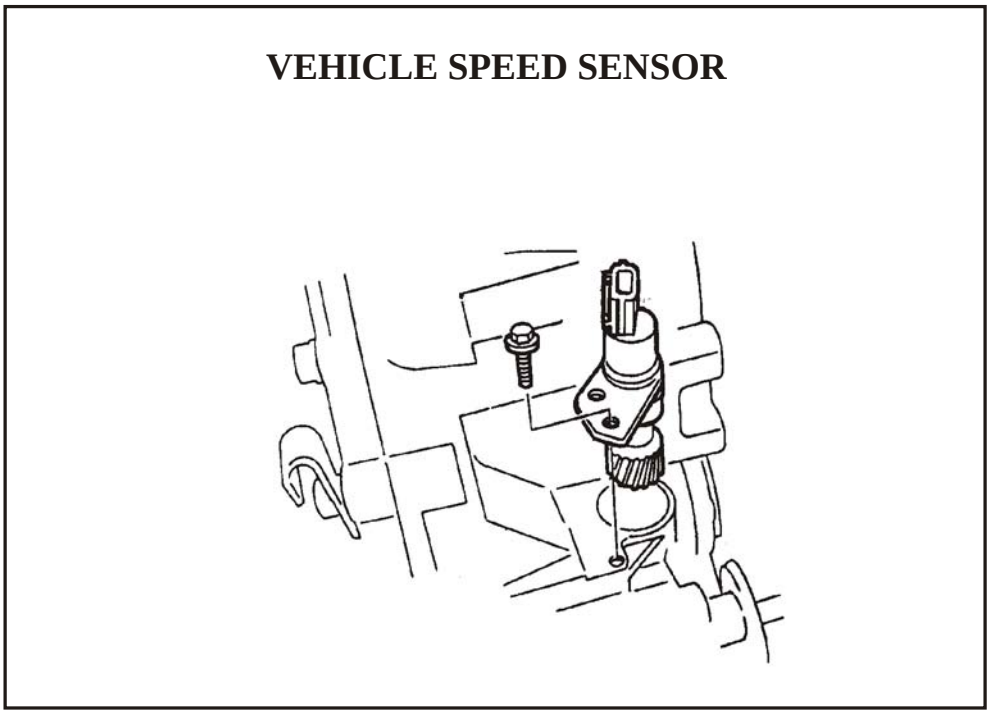

Figure 2

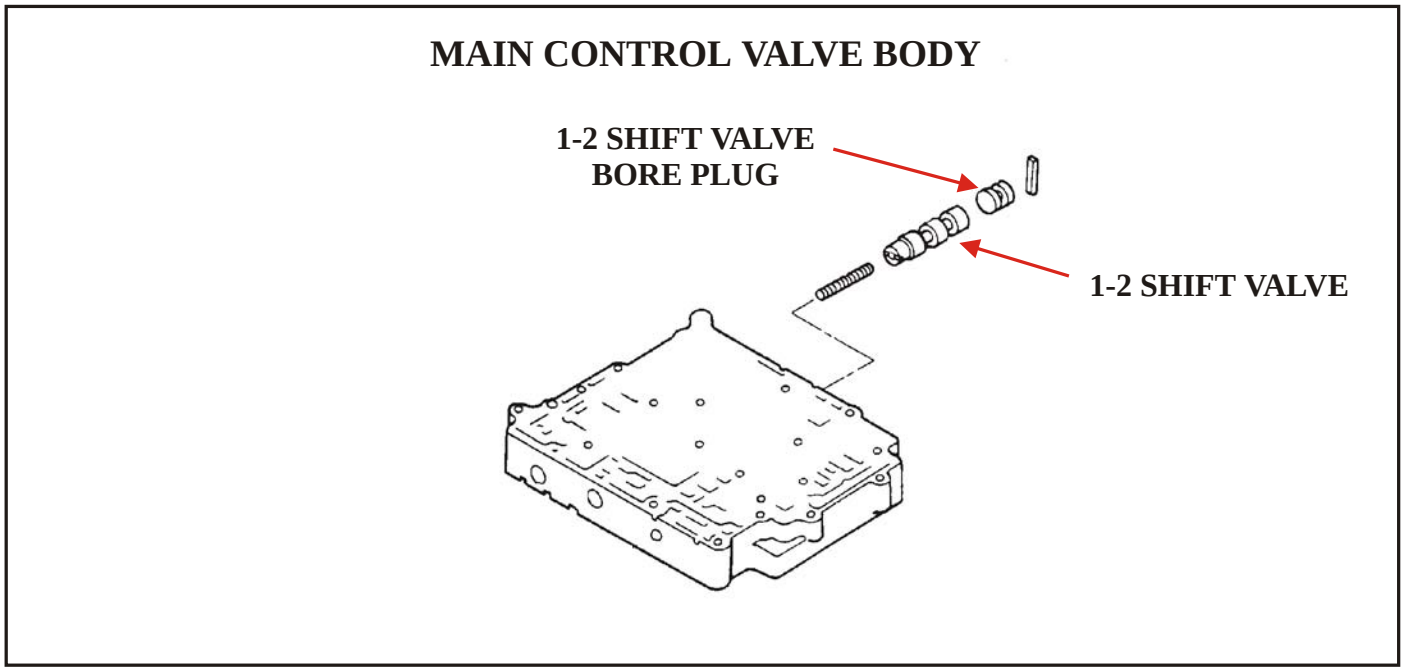

Figure 3

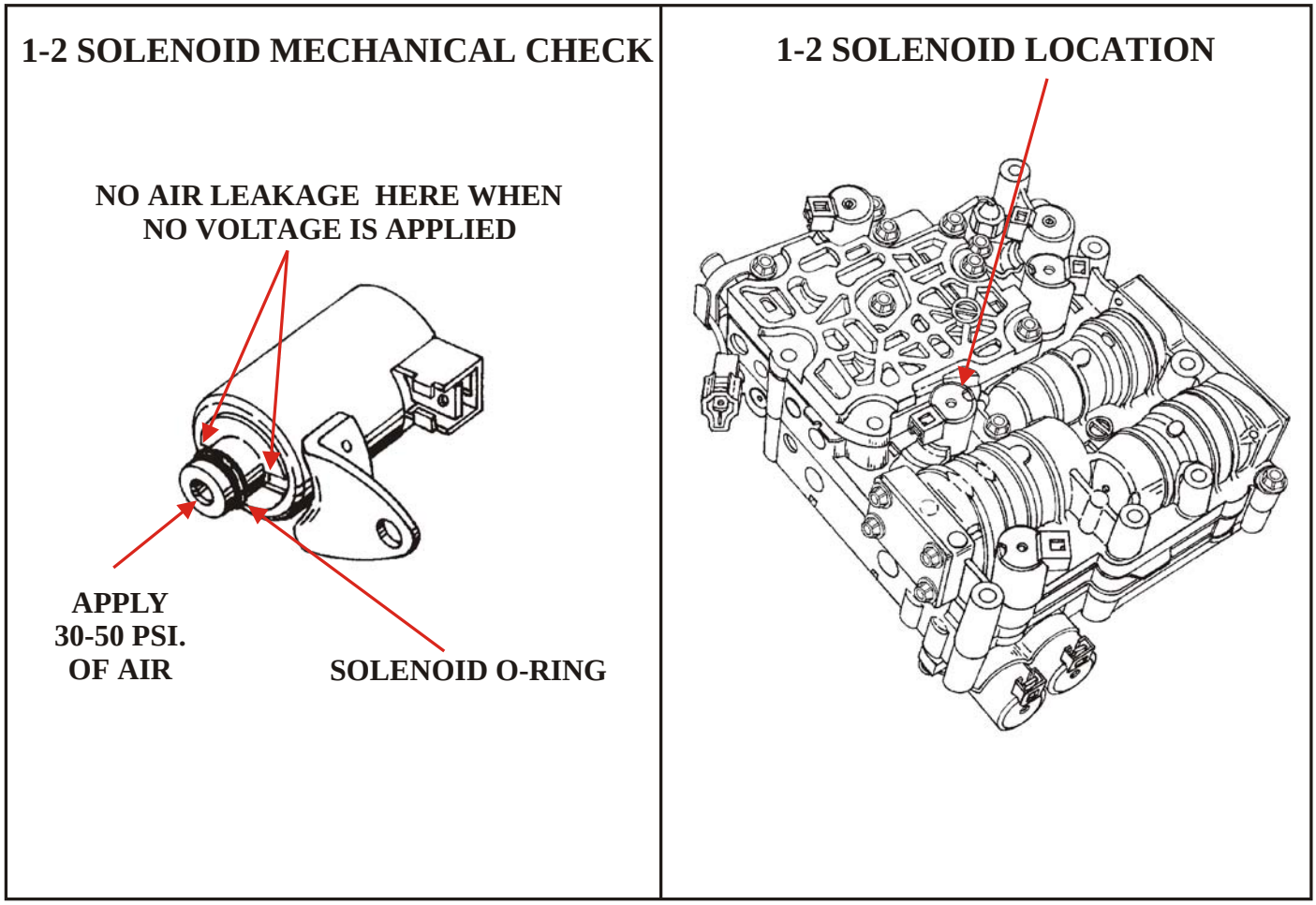

Figure 4