

# M/T Differential

## Limited Slip Differential Check

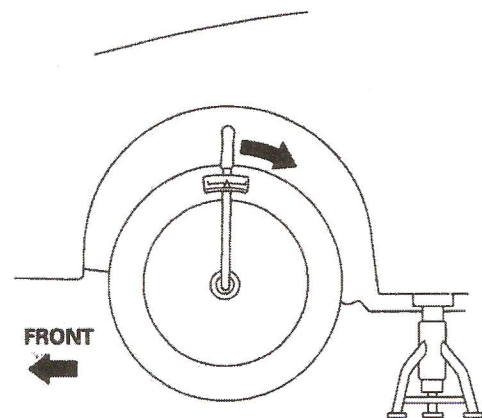
### Operational Check

**NOTE:** The helical type limited slip differential (LSD) distributes optimum power between the two driving axles according to difference in torque as demanded by the driving wheels. Under no circumstances should the engine be started with either wheel raised off the ground, such as when adjusting wheel balance or when transporting the vehicle in the event of accident.

1. Set the parking brake and block the rear wheels.
2. Raise the front of the vehicle, and support it with safety stands in the proper locations (see page 1-11).
3. With the engine off, shift the transmission into 1st gear.
4. Rotate either front wheel by hand and check that the other wheel rotates in the opposite direction.
5. If the opposite front wheel does not rotate, or if you cannot spin the front wheels at all, the limited slip differential is faulty and should be replaced.

### Rotating Torque Check

1. Setting parking brake and block the rear wheels.
2. Raise the front of the vehicle, and support it with safety stands in proper locations (see page 1-11).
3. With the engine off, shift the transmission into Neutral.
4. Measure the rotating torque with a beam — type torque wrench in the direction shown. Rotate the torque wrench more than two complete turns and take the maximum reading.



5. Shift the transmission into 1st gear and measure the rotating torque again.
6. Calculate the rotating torque.

**Service Limit:**

$$\frac{\text{Measurement from step 5}}{\text{Measurement from step 4}} \geq 2.5$$

**For example:**

$$\frac{7.8 \text{ N}\cdot\text{m} (0.8 \text{ kgf}\cdot\text{m})}{2.9 \text{ N}\cdot\text{m} (0.3 \text{ kgf}\cdot\text{m})} = 2.67 > 2.5$$

7. Repeat step 3 through 6 for the other wheel.
8. Replace the limited slip differential assembly if the rotating torque is lower than the service limit.