Speedometer

General

The speedometer indicates the speed of the vehicle, the total mileage, and trip mileage. A flexible shaft from the left front wheel brings the drive to the speedometer. The dial of the instrument is driven by a magnetic system. The magnet rotates at the speed of the wheels and drives the needle of the dial. The magnet rotates inside an aluminum shell which is attached to the dial needle but does not contact the magnet.

The speedometer drive is a flexible woven wire shaft in a flexible steel housing which connects the left front wheel to the speedometer. The shaft is driven from the wheel hub through the hollow stub axle.

The rotation of the magnet induces eddy currents in the aluminum shell and advances the speedometer needle against a spring. With increasing speed, the torque becomes greater moving the needle proportionally farther around the speed scale. The spring on the dial shaft is matched to the magnetic drive characteristics. This enables the speedometer to show the speed by means of the magnetic coupling whose transmitted torque increases with speed. The needle advances around the speed scale until the magnetic torque and the spring torque are equal.

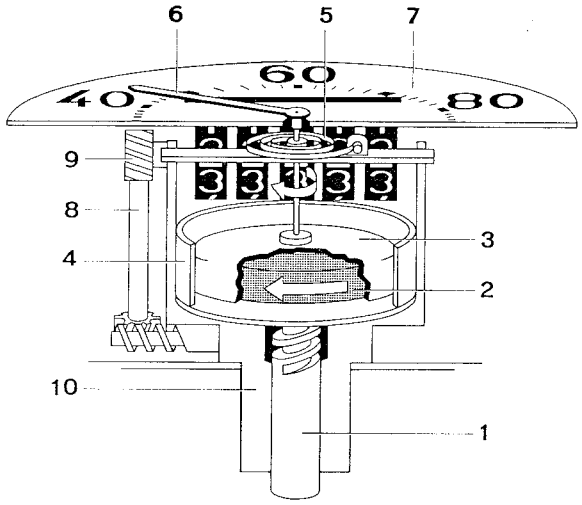

Fig. 70

The odometer is driven by a worm gear drive train and has five reels which record the total mileage. A four reel trip mileage odometer is located in the lower half of the speedometer face. The first reel on the right indicates tenths of miles giving a total capacity of up to one thousand miles for the four reels. The trip mileage may be turned to zero by means of a knob on the back of the speedometer.

① **Input shaft**
② **Magnet**
③ **Aluminum shell**
④ **Magnetic shield**
⑤ **Spiral spring**
⑥ **Speedometer hand**
⑦ **Dial**
⑧ **Worm drive shaft**
⑨ **Worm gear with counter**
⑩ **Bearing block**