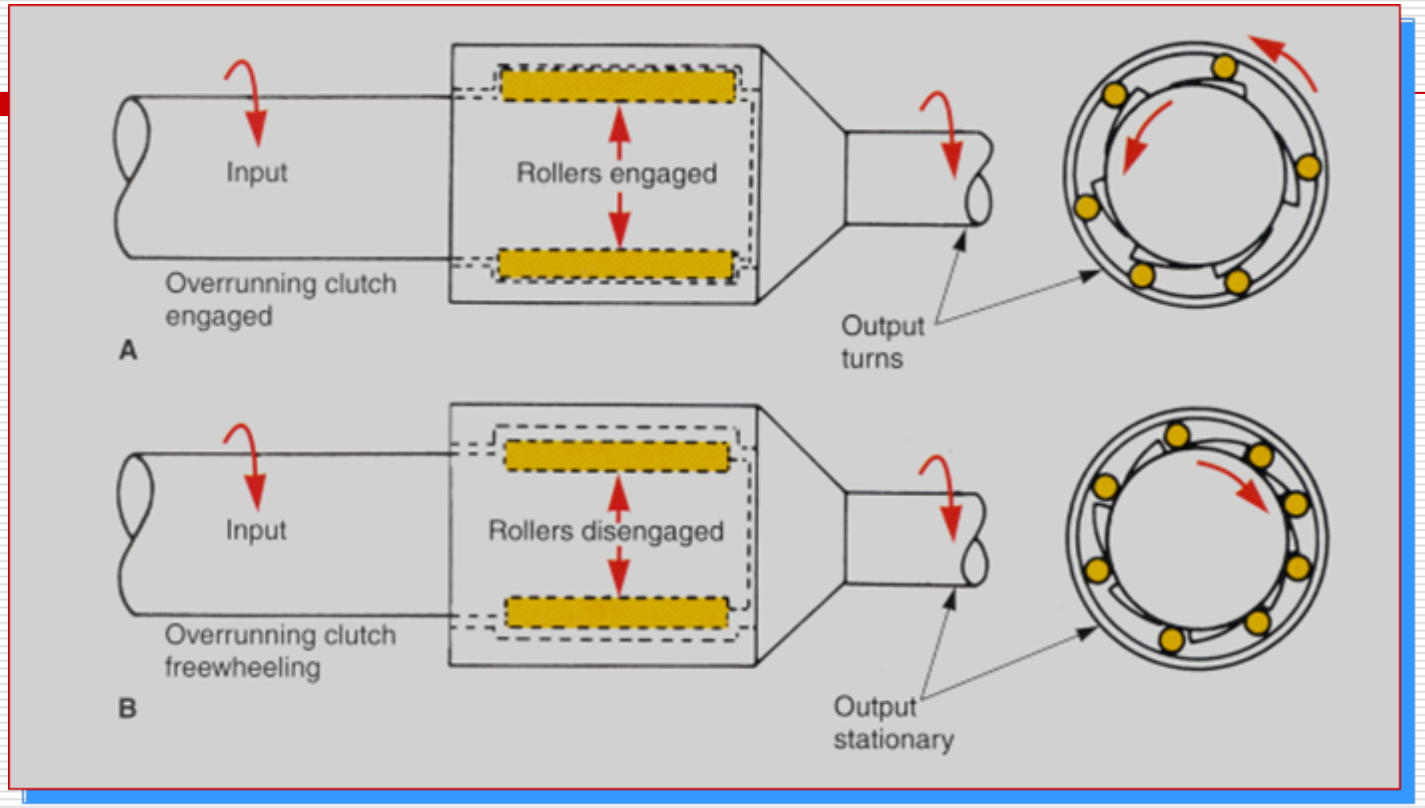
Automatic Transmission/Transaxle

Mid-Term Review

Automatic Transmission/Transaxle

- A failed torque converter one-way clutch will cause a low rpm stall test results.
- A failed one-way clutch can cause poor low speed acceleration.
- Incorrect band adjustment can cause, harsh shifts, early shifts, and slipping shifts.

Overrunning Clutches



A. This action can stop movement of planetary member

B. The two races are free to turn independently

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- The manual valve is connected to the gearshift linkage.
- A defective vacuum modulator can cause harsh downshifts and harsh or delayed upshifts.
- A defective vacuum modulator can also cause soft upshifts and downshifts as well as overheating and burnt fluid.

Automatic Transmission/Transaxle

- A pulse width modulation solenoid continuously switches on and off a fixed number of times per second.
- Clutch pack clearance specifications are 0.050 to 0.055 inch. A selective snap ring is used to adjust clearance. The assembled clutch pack measures 0.068 inch and the installed ring measures 0.045 inch. To correct, a new 0.060 inch snap ring should be installed.

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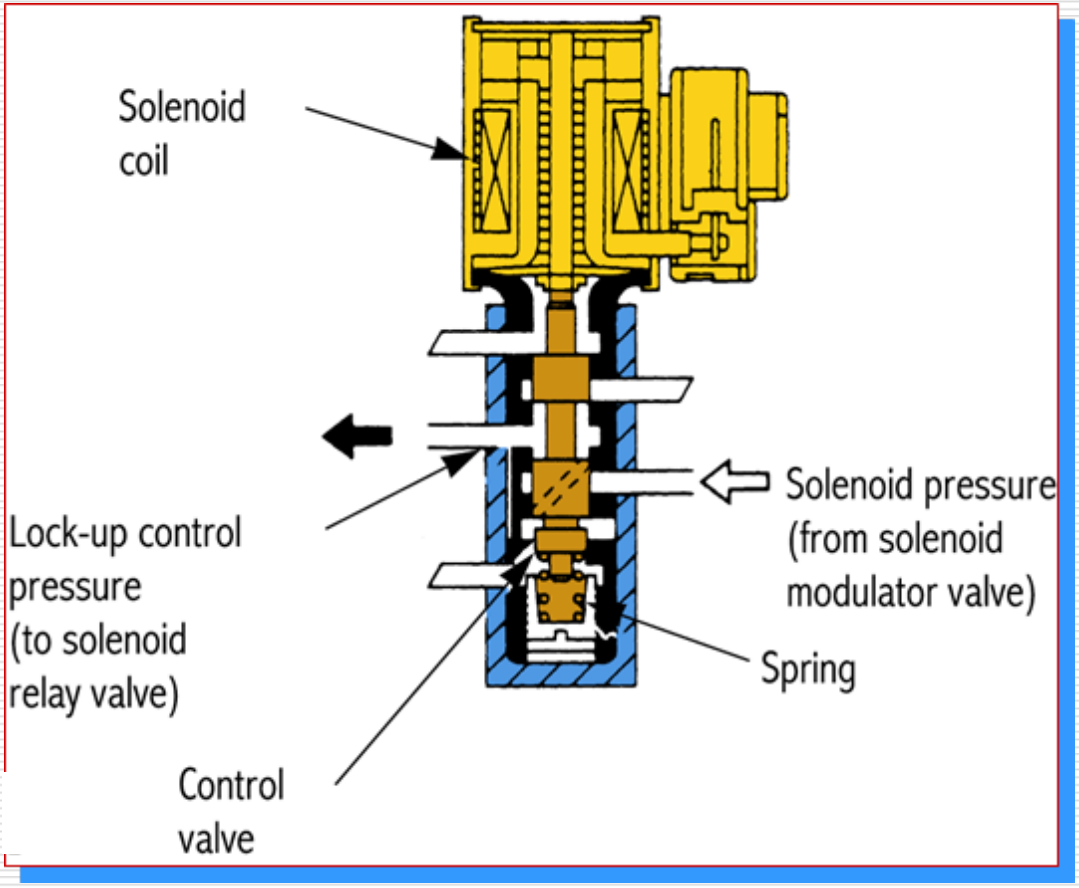

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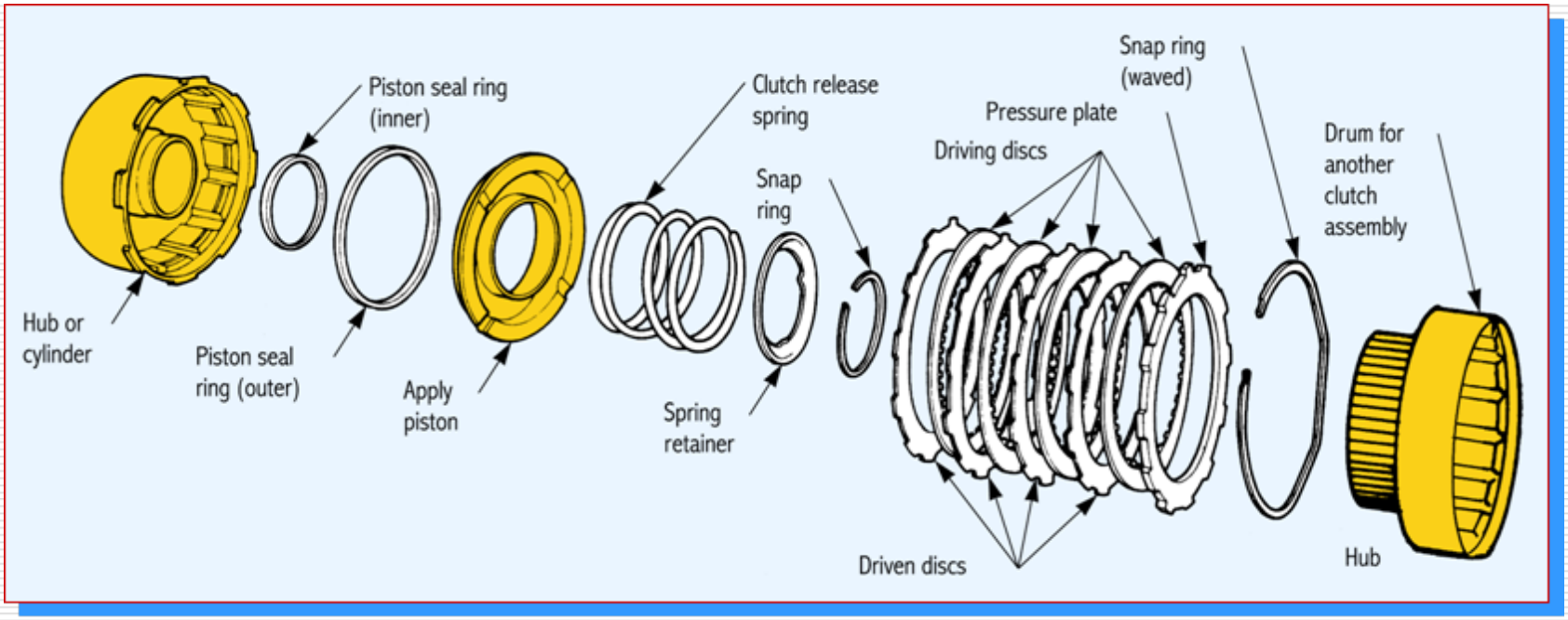
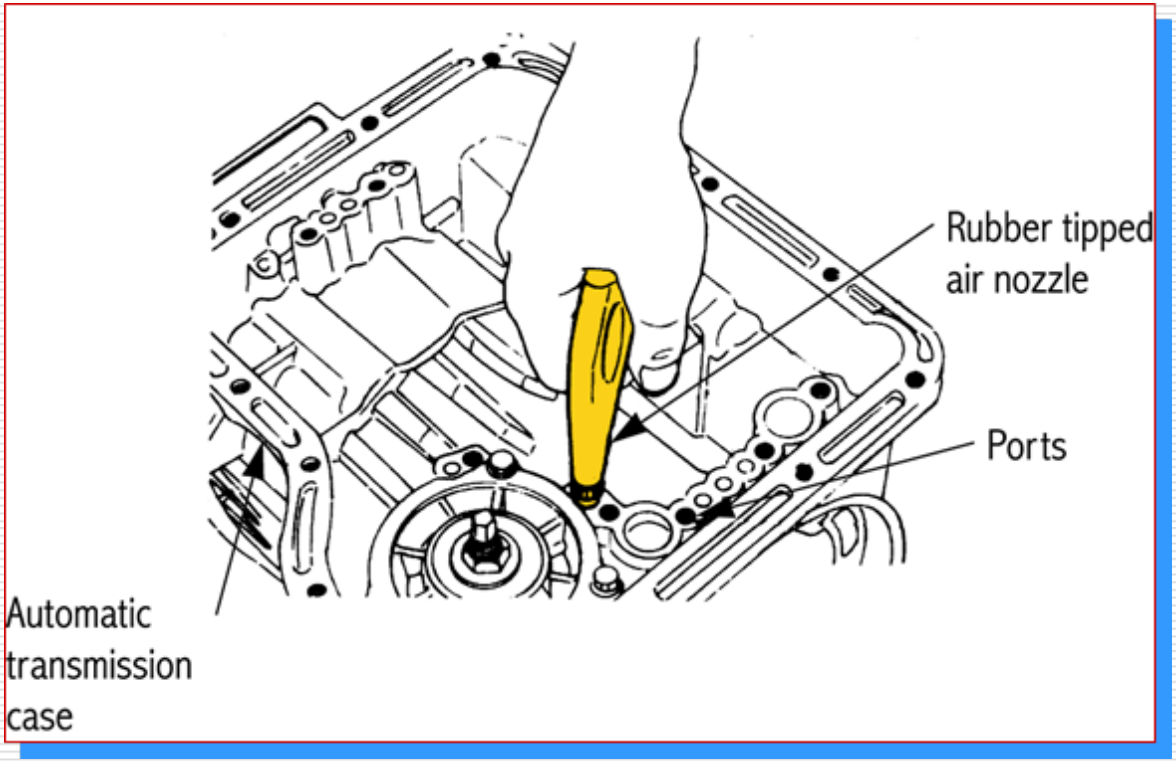


Automatic Transmission/Transaxle

- An air pressure test can check servo application, governor valve movement & clutch pack application.
- Milky pink ATF generally indicates water/coolant contamination.
- Severely overheated transmission fluid is usually dark brown with a pungent odor.

Performing an Air Test



A dull thud should be heard. Hissing sound indicates a leak

Automatic Transmission/Transaxle

- A pressure test is the best method to determining the cause of a transmission malfunction.
- A defective torque converter can cause slow acceleration from a stop, poor high speed performance and engine overheating.

Automatic Transmission/Transaxle

- Improperly adjusted bands can result in harsh shifts, burnt fluid or slippage during shifts.
- Some transmissions use a vacuum modulator to position the throttle valve.
- Incorrectly adjusted linkages can cause early or late shifts, harsh or slipping shifts & hunting between gears.

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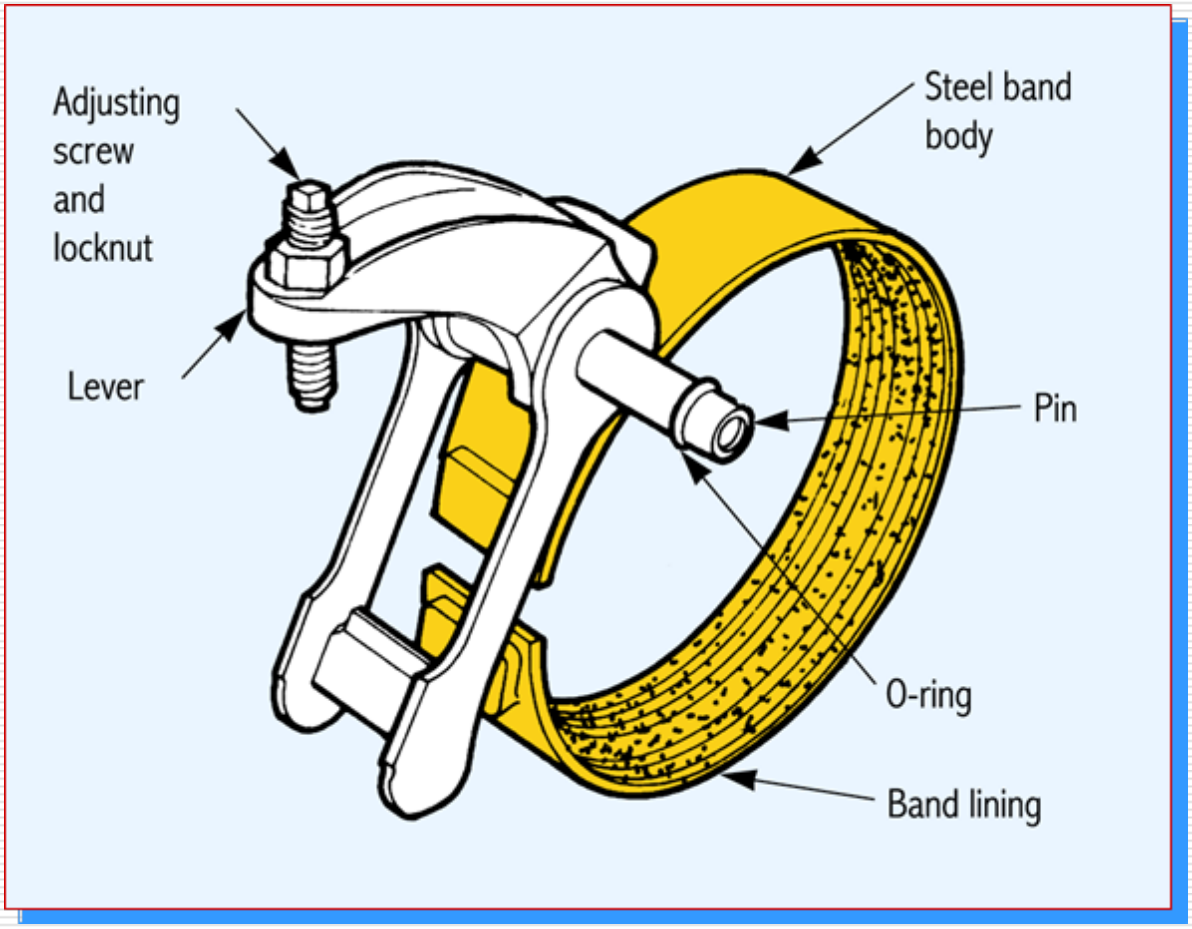

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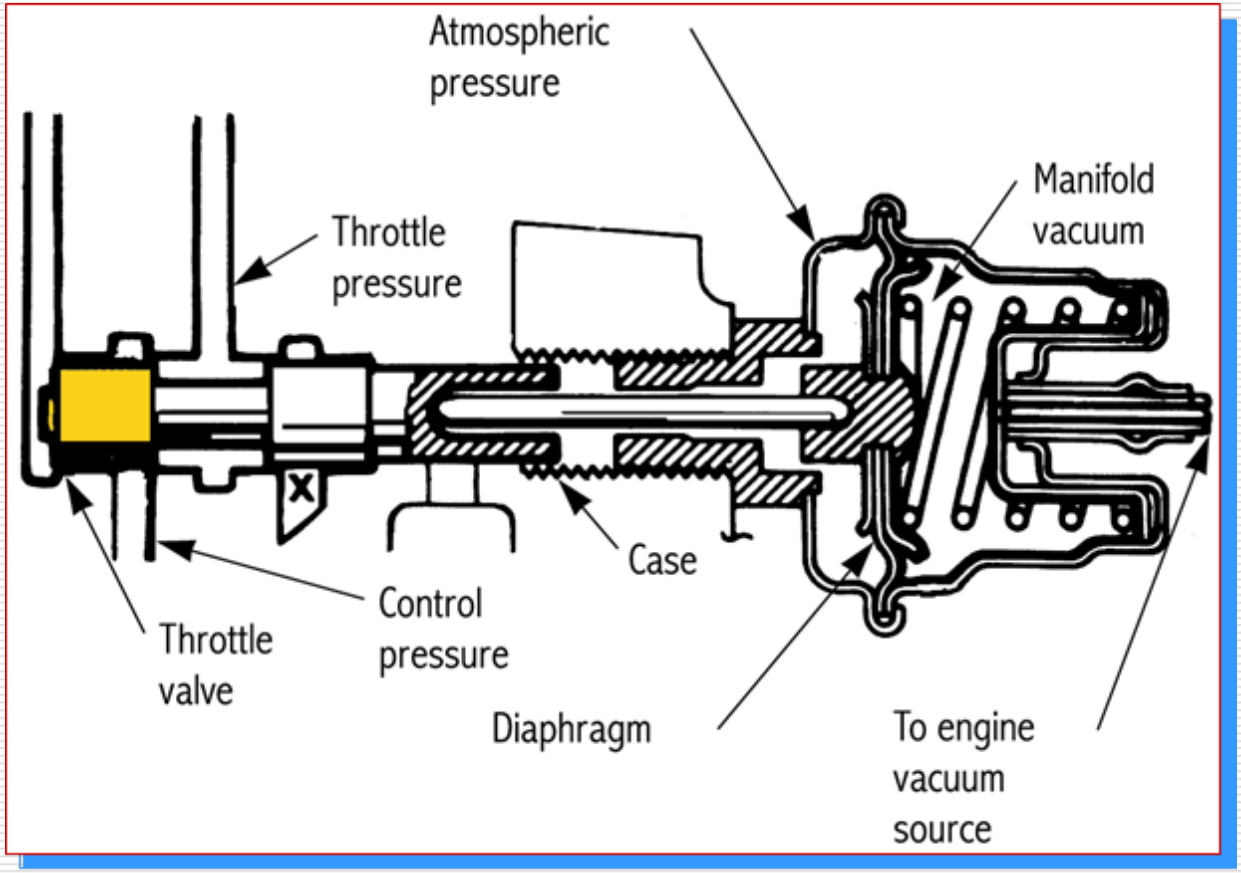
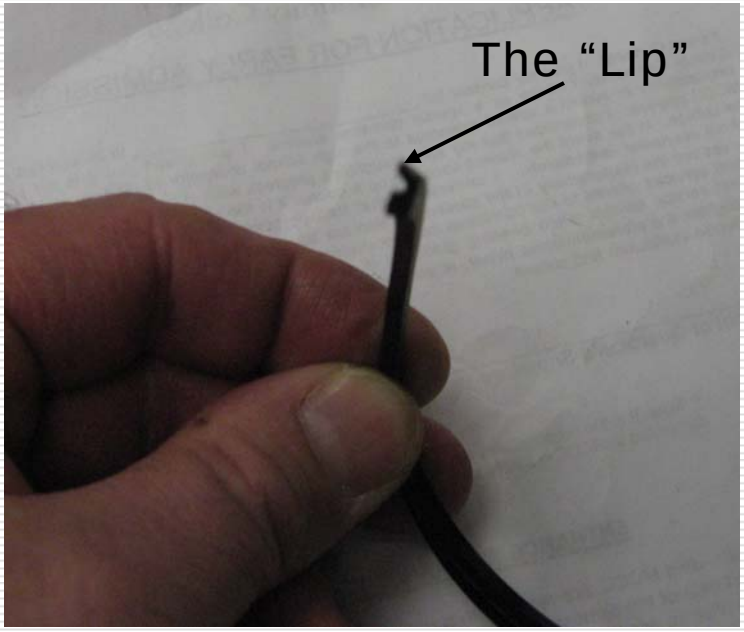


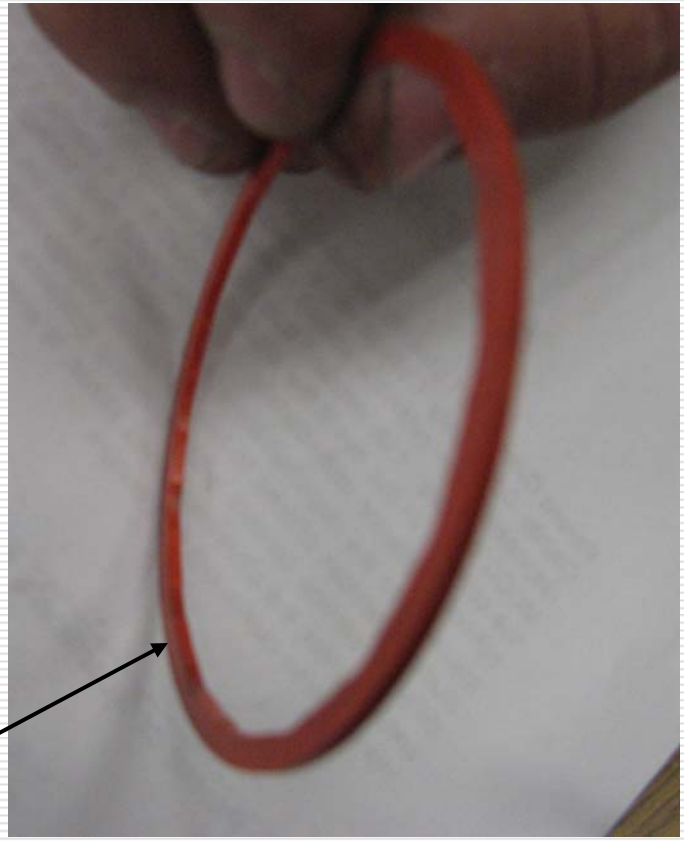
Automatic Transmission/Transaxle

- The most common type of front, rear and internal transmission seals are lip seals. The “lip” always faces the pressure.
- O-ring and square cut seals can be used where there is axial movement.
- The lines connecting the transmission to the cooler often have double flare fittings.

Automatic Transmission/ Transaxle

Automatic Transmission/Transaxle





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- The valve body is operated by shift lever and sensors which controls oil flow to the clutch packs, pistons and servos.
- The planetary gear sets provide different gear ratios and reverse gear.

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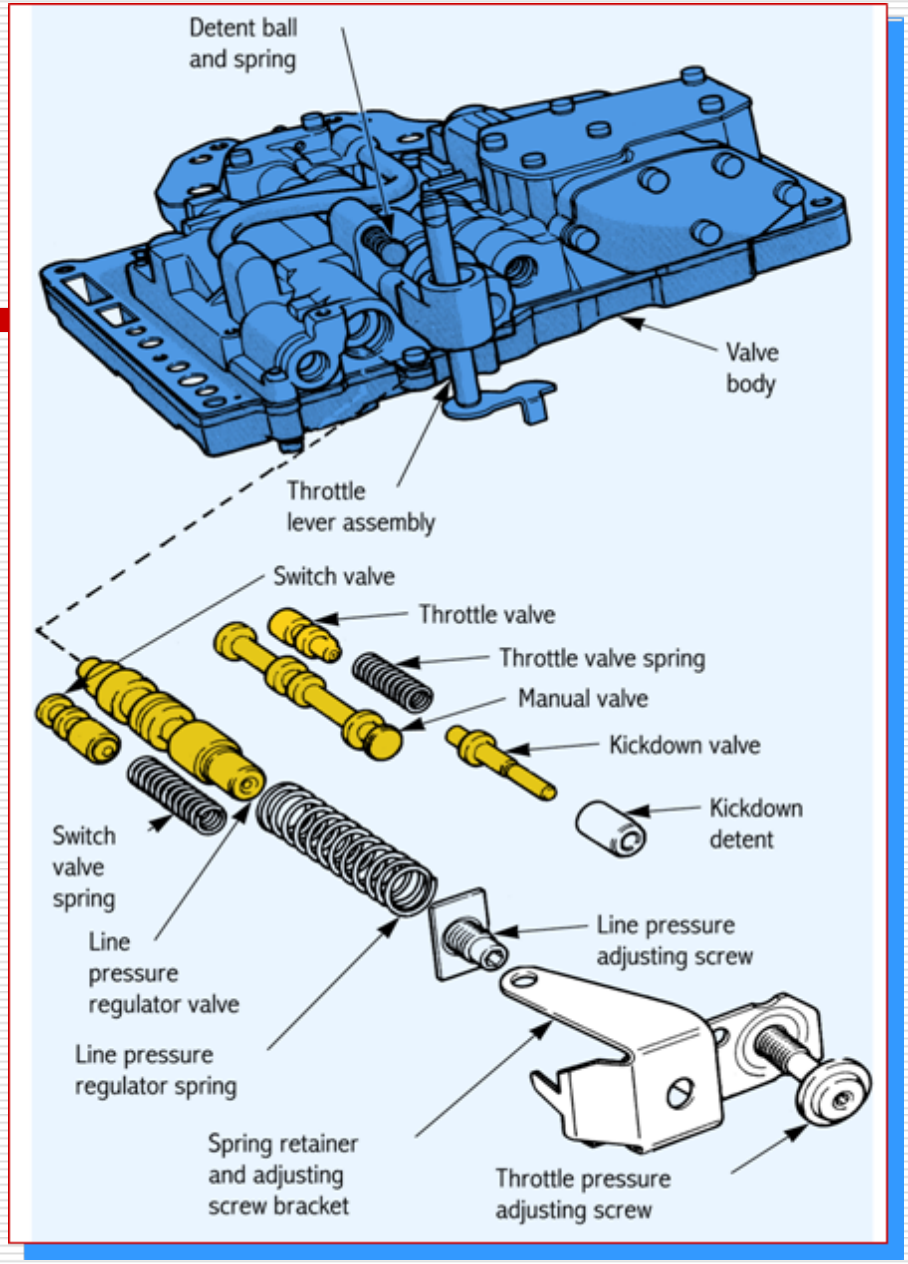

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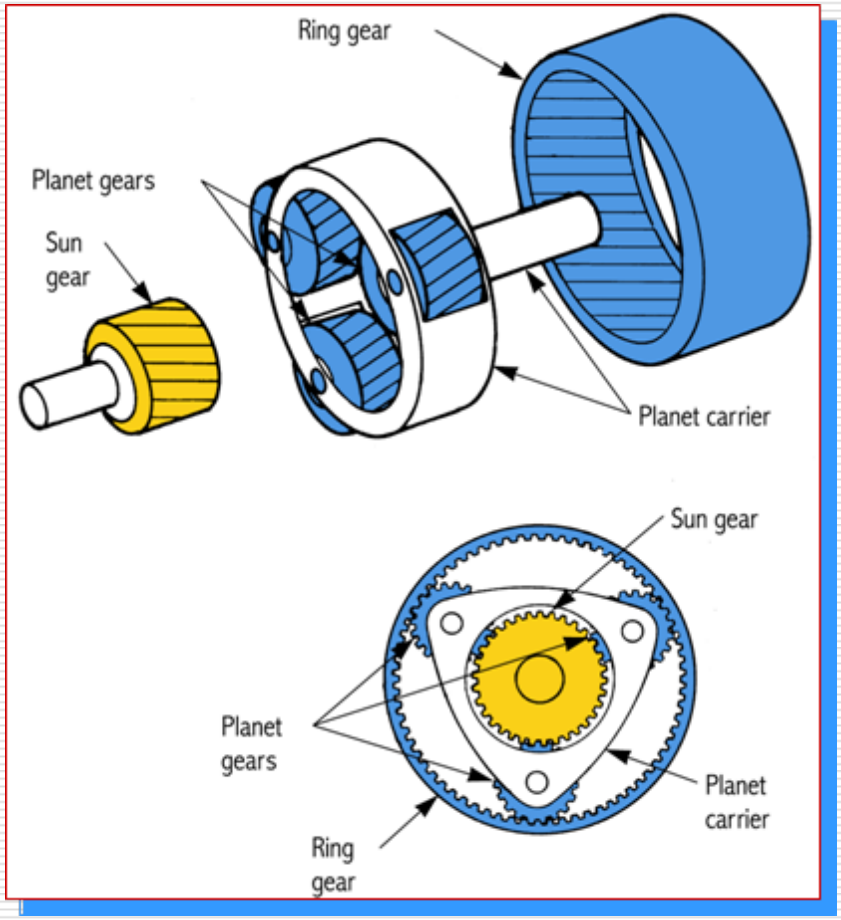

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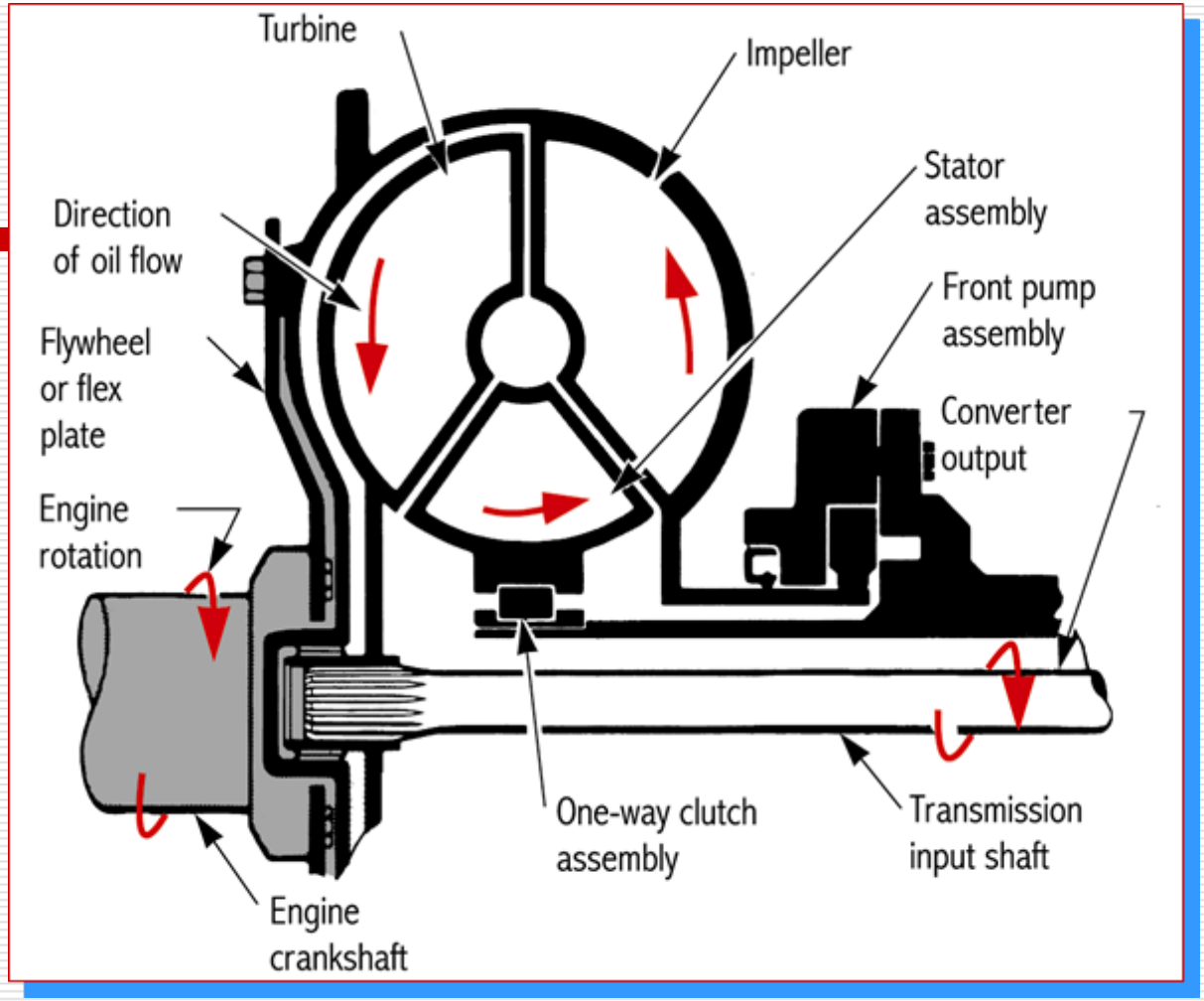
- The input shaft transfers power from torque converter to the internal drive members and gearsets.
- Bands and servos apply clamping or driving pressure on different parts of gearsets to operate them.

Input Shaft



Connects torque converter to the driving components in the transmission

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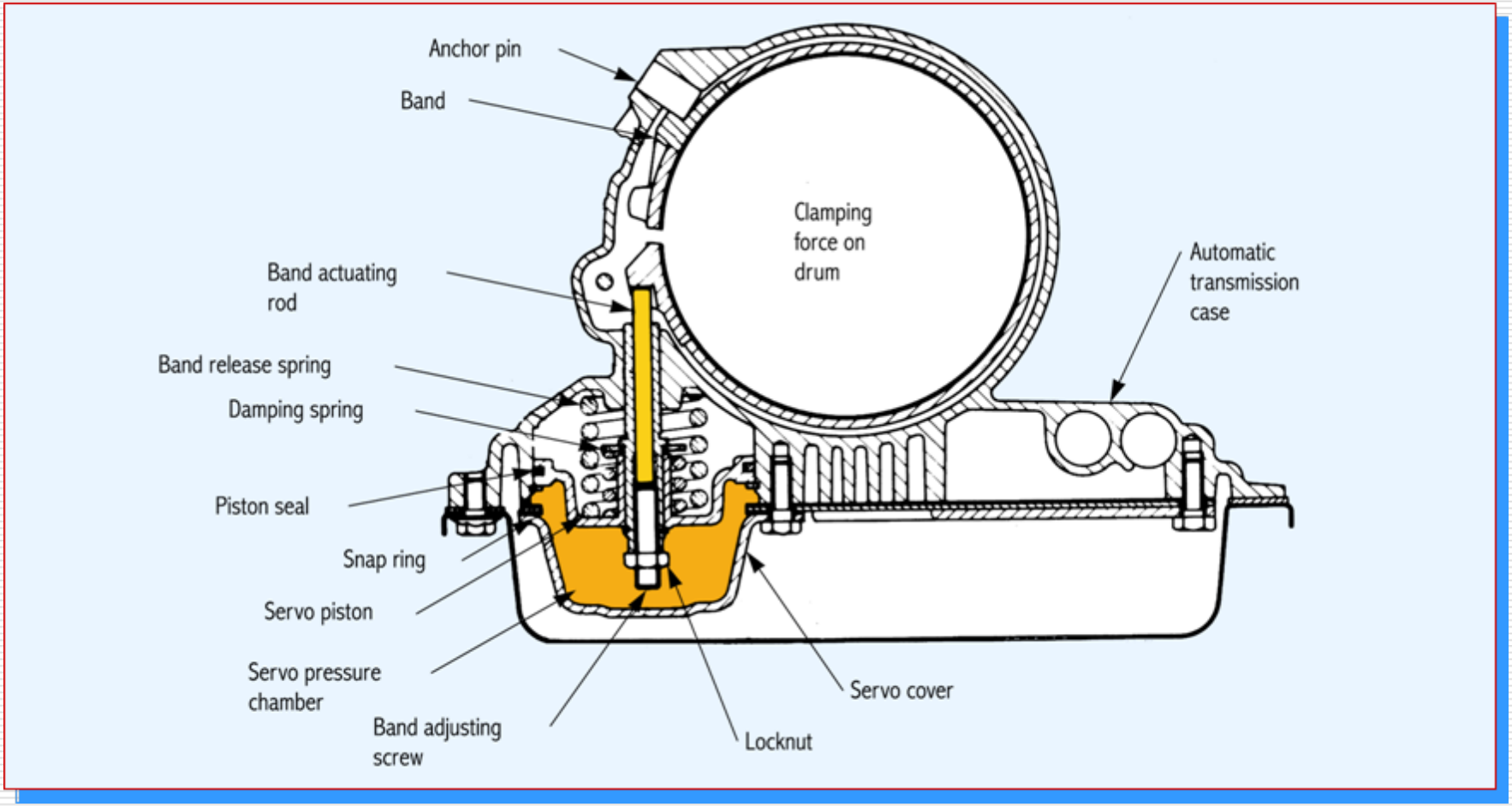
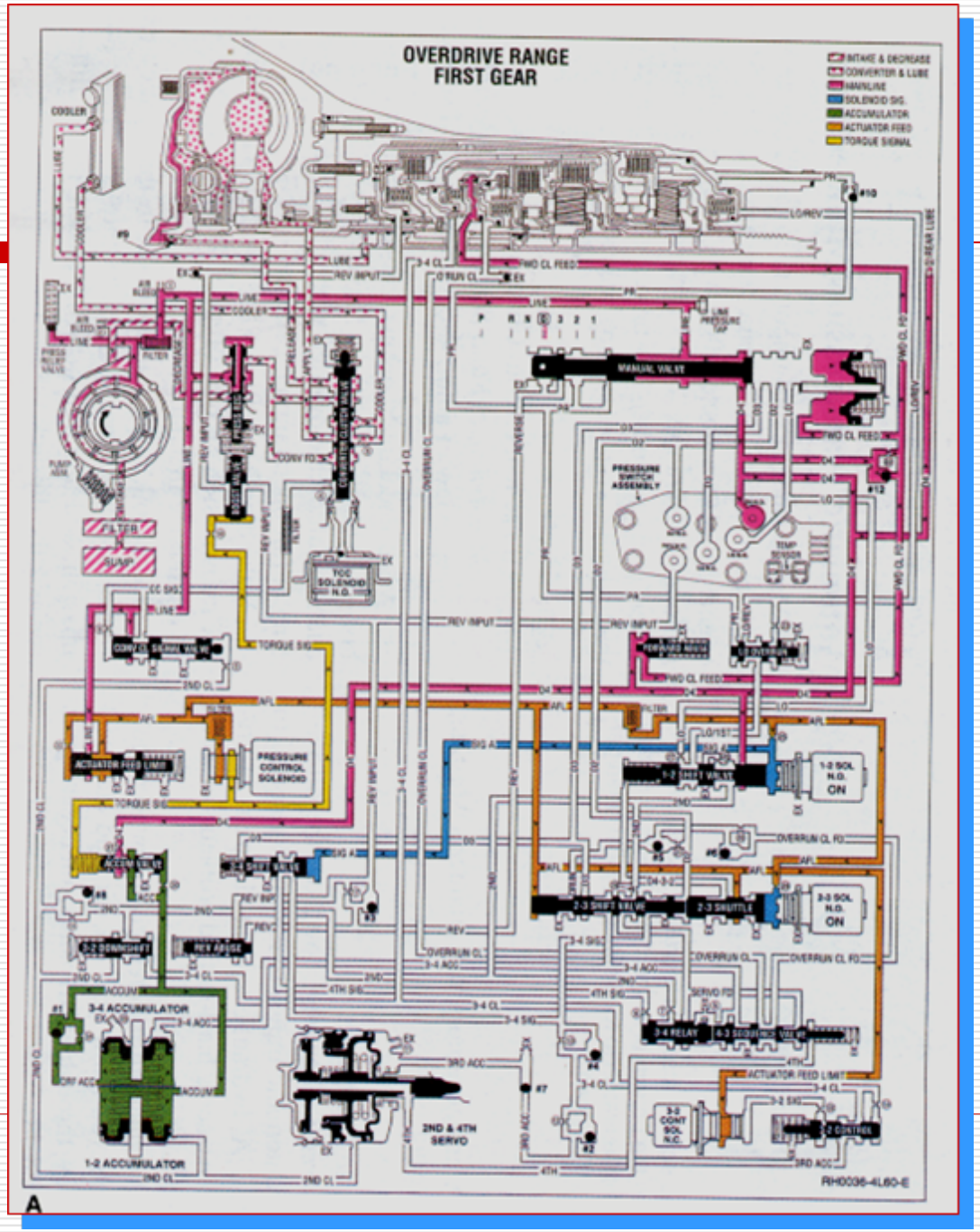


Automatic Transmission/Transaxle

- An air pressure test can be used to isolate problems in automatic transmission circuits.
- Hydraulic circuits show how the oil passages inside an automatic transmission are connected to each other.

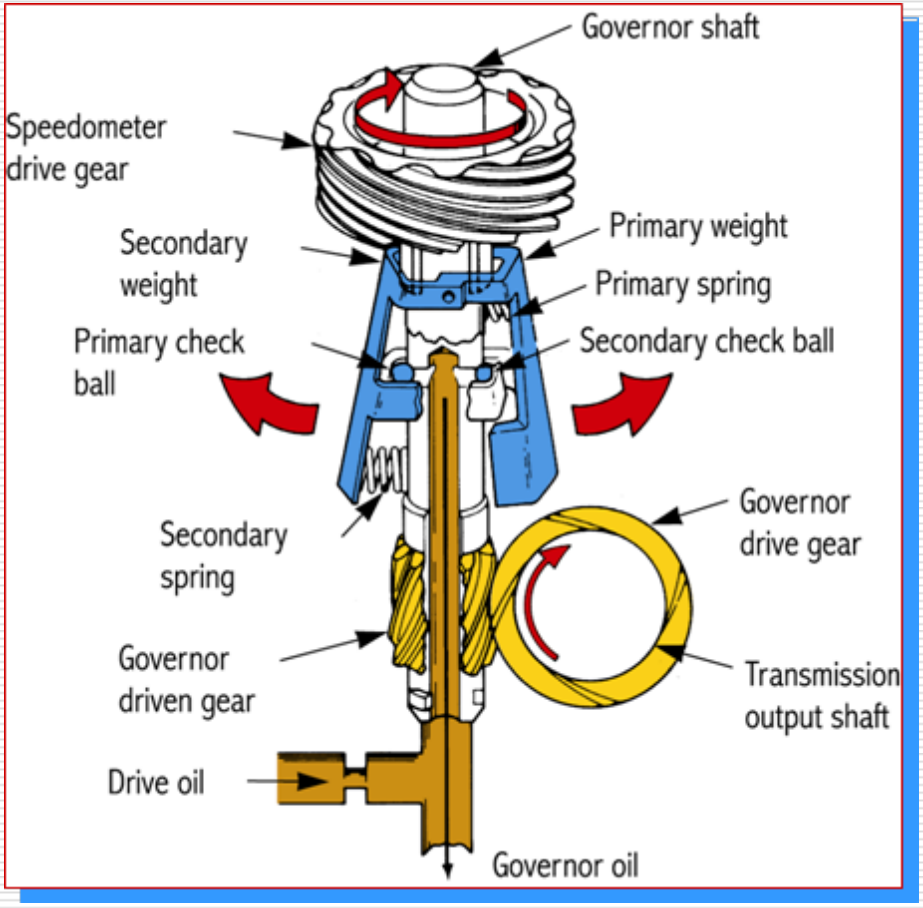
Hydraulic Circuit Diagram



Automatic Transmission/Transaxle

- Pressure tests can be used to determine whether oil pressures in the various transmission circuits are normal.
- Incorrect shift points can be caused by a faulty vacuum modulator circuit, engine performance problems, damaged governor, or trouble with hydraulic valves, servos, or pistons.

Governor Valve



Automatic Transmission/Transaxle

- A noisy transmission may result from planetary gear troubles, damaged bearings, faulty torque converter, or loose components.
- Burned transmission oil will be dark or black; and is normally caused by band and clutch friction material failure.