Automatic Transmission/Transaxle

Course Final Review
Automatic Transmission/Transaxle

- An automatic transmission’s torque converter connects and disconnects the engine and transmission.
- Pistons and servos, planetary gearsets & transmission bands are basic component of a modern automatic transmission.
Automatic Transmission/Transaxle

- An automatic transmission oil pump produces pressure to operate the transmission’s hydraulic components & to lubricate the transmission’s counter gears.

- A planetary gearset will act as a solid unit when two of its members are held.
Planetary Gearset

A planetary gearset will act as a solid unit when two of its members are held.
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- The vacuum modulator senses engine load and determines when the transmission should shift to a higher gear.
- When an engine lacks power you should check both the engine and automatic transmission for any malfunctions.
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☐ When diagnosing an automatic transmission slippage problem, always checks the transmission’s oil level first.

☐ Inspect the transmission’s vacuum modulator circuit if an automatic transmission shifts to early.

☐ Abnormal sound in all gears can be caused by an automatic transmission’s oil pump.
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- Automatic transmission troubleshooting procedures include checking the transmission oil level, linkage operation & engine operation.
- Always follow manufactures diagnostic procedures when conducting a stall test.
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- When performing a pressure test on an automatic transmission, connect the pressure gauge to the ports located on the outside of the transmission case.

- Transaxles are used on front-wheel-drive cars and certain types of rear engine cars.
Pressure Tests

Used to determine whether oil pressure in the circuits is normal. Ports are provided to install gauges.
Pressure Tests

Using pressure gauges to determine the transaxle condition
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- Front-wheel-drive cars equipped with a transaxle improve traction on slippery pavements & improves the safety of the passengers because there is increased mass in the front of the car.

- Most transaxles are designed so that the engine can be mounted sideways or transversely in the engine compartment.
Transaxle

Transaxles are designed so that the engine can be mounted sideways or transversely in the engine compartment.
Automatic Transmission/Transaxle

- A torque converter, planetary gearset & transaxle case are basic components of an automatic transaxle.

- During transaxle operation, the transmission transfers power into the differential.
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- To help diagnose a noisy transmission, ask your customer in which gear or under what conditions the noise is present & test drives the car in all gears at different speeds to determine what conditions the noise is present.

- Possible front wheel drive axle problems may be caused by worn CV-joint boots.
CV-Joints
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- To diagnose front wheel drive axle problems, drive the car in reverse with the wheels cut hard to the right and left.
- Checks the transaxle’s fluid level if an automatic transaxle slips when placed in gear.
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- Diagnose possible drive axle problems with the car raised on a lift with the engine off and the transaxle in park or neutral.

- Checks an automatic transaxle’s lubricant level while the lubricant is at operating temperature and with the engine running.
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- When changing automatic transmission fluid, warm the transaxle’s fluid to operating temperature before draining it.
- Before installing a new CV-joint, inspect the axle shift splines & condition of the axle shaft snap ring groove.
Changing Transmission Oil

Warm the transaxle’s fluid to operating temperature before removing the pan.
CV-Joint Assembly

Check snap ring groove

Chamfer should face correctly

Check splines
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- The transaxle can be disconnected from the engine and removed from the bottom of the engine compartment on most front-wheel drive cars.

- Air pressure tests can isolate problems in automatic transmission circuits.

- Hydraulic circuits show how the oil passages inside an automatic transmission are connected to each other.
Removing the Transaxle

Use an engine holding fixture to support the weight of the engine to remove the transaxle from the bottom of the vehicle.
Performing an Air Test

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