



AUTOMATIC TRANSMISSION AND TRANSAXLE

For every task in Automatic Transmission and Transaxle, the following safety requirement must be strictly enforced:

Comply with personal and environmental safety practices associated with clothing; eye protection; hand tools; power equipment; proper ventilation; and the handling, storage, and disposal of chemicals/materials in accordance with local, state, and federal safety and environmental regulations.

A. General Transmission and Transaxle Diagnosis			
1.	Identify and interpret transmission/transaxle concern; differentiate between engine performance and transmission/transaxle concerns; determine necessary action.	P-1	
2.	Research applicable vehicle and service information, such as fluid type, vehicle service history, service precautions, and technical service bulletins.	P-1	
3.	Diagnose fluid loss and condition concerns; determine necessary action.	P-1	
4.	Check fluid level in a transmission or a transaxle equipped with a dip-stick.	P-1	
5.	Check fluid level in a transmission or a transaxle not equipped with a dip-stick.	P-1	
6.	Perform pressure tests (including transmissions/transaxles equipped with electronic pressure control); determine necessary action.	P-1	
7.	Diagnose noise and vibration concerns; determine necessary action.	P-2	
8.	Perform stall test; determine necessary action.	P-3	
9.	Perform lock-up converter system tests; determine necessary action.	P-3	
10.	Diagnose transmission/transaxle gear reduction/multiplication concerns using driving, drive, and held member (power flow) principles.	P-1	
11.	Diagnose electronic transmission/transaxle control systems using appropriate test equipment and service information.	P-1	
12.	Diagnose pressure concerns in a transmission using hydraulic principles (Pascal's Law).	P-2	
B. In-Vehicle Transmission/Transaxle Maintenance and Repair			
1.	Inspect, adjust, and replace manual valve shift linkage, transmission range sensor/switch, and park/neutral position switch.	P-2	
2.	Inspect for leakage; replace external seals, gaskets and bushings.	P-2	



3.	Inspect, test, adjust, repair, or replace electrical/electronic components and circuits, including computers, solenoids, sensors, relays, terminals, connectors, switches, and harnesses.	P-1	
4.	Drain and replace fluid and filter(s)	P-1	
5.	Inspect, replace, and align powertrain mounts.	P-2	

C. Off-Vehicle Transmission and Transaxle Repair			
1.	Remove and reinstall transmission/transaxle and torque converter; inspect engine core plugs, rear crankshaft seal, dowel pins, dowel pin holes, and mating surfaces.	P-1	
2.	Inspect, leak test, and flush or replace transmission/transaxle oil cooler, lines, and fittings.	P-1	
3.	Inspect converter flex (drive) plate, converter attaching bolts, converter pilot, converter pump drive surfaces, converter end play, and crankshaft pilot bore.	P-2	
4.	Describe the operational characteristics of a continuously variable transmission (CVT).	P-3	
5.	Describe the operational characteristics of a hybrid vehicle drive train.	P-3	
6.	Disassemble, clean, and inspect transmission/transaxle.	P-2	
7.	Inspect, measure, clean and replace valve body (includes surfaces, bores, springs, valves, sleeves, retainers, brackets, check valves/balls, screens, spacers, and gaskets).	P-2	
8.	Inspect servo and accumulator bores, pistons, seals, pins, springs, and retainers; determine necessary action.	P-2	
9.	Assemble transmission/transaxle.	P-2	
10.	Inspect, measure, and reseal oil pump assembly and components.	P-2	
11.	Measure transmission/transaxle end play or preload; determine necessary action.	P-1	
12.	Inspect measure, and replace thrust washers and bearings.	P-2	
13.	Inspect oil delivery circuits, including seal rings, ring grooves, and sealing surface areas, feed pipes, orifices, and check valves/balls.	P-2	
14.	Inspect bushings; determine necessary action.	P-2	
15.	Inspect and measure planetary gear assembly components; determine necessary action.	P-2	
16.	Inspect case bores, passages, bushings, vents, and mating surfaces;	P-2	



	determine necessary action.		
17.	Diagnose and inspect transaxle drive, link chains, sprockets, gears, and bearings, and bushings; perform necessary action.	P-2	
18.	Inspect, measure, repair, adjust or replace transaxle final drive components.	P-2	
19.	Inspect clutch drum, piston, check-balls, springs, retainers, seals, and friction and pressure plates, bands and drums; determine necessary action.	P-2	
20.	Measure clutch pack clearance; determine necessary action.	P-1	
21.	Air test operation of clutch and servo assemblies.	P-1	
22.	Inspect roller and sprag clutch, races, rollers, sprags, springs, cages, retainers; determine necessary action.	P-2	