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| 12. | Inspect, test, and replace oil temperature and pressure switches and sensors. | P-2 |
| 13. | Perform oil and filter change. | P-1 |
| 14. | Identify causes of engine overheating. | P-1 |

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.

II. AUTOMATIC TRANSMISSION AND TRANSAXLE

A. General Transmission and Transaxle Diagnosis

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| 1. | Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction. | P-1 |
| 2. | Identify and interpret transmission/transaxle concern; differentiate between engine performance and transmission/transaxle concerns; determine necessary action. | P-1 |
| 3. | Research applicable vehicle and service information, such as transmission/transaxle system operation, fluid type, vehicle service history, service precautions, and technical service bulletins. | P-1 |
| 4. | Locate and interpret vehicle and major component identification numbers. | P-1 |
| 5. | Diagnose fluid loss and condition concerns; check fluid level in transmissions with and without dip-stick; determine necessary action. | P-1 |
| 6. | Perform pressure tests (including transmissions/transaxles equipped with electronic pressure control); determine necessary action. | P-1 |
| 7. | Perform stall test; determine necessary action. | P-3 |
| 8. | Perform lock-up converter system tests; determine necessary action. | P-3 |

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| 9. | Diagnose noise and vibration concerns; determine necessary action. | P-2 |
| 10. | Diagnose transmission/transaxle gear reduction/multiplication concerns using driving, driven, and held member (power flow) principles. | P-1 |
| 12. | Diagnose pressure concerns in a transmission using hydraulic principles (Pascal's Law). | P-2 |
| 13. | Diagnose electronic transmission/transaxle control systems using appropriate test equipment and service information. | P-1 |

II. AUTOMATIC TRANSMISSION AND TRANSAXLE

B. In-Vehicle Transmission/Transaxle Maintenance and Repair

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| 1. | Inspect, adjust, and replace manual valve shift linkage, transmission range sensor/switch, and park/neutral position switch. | P-2 |
| 2. | Inspect and 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. | Diagnose electronic transmission control systems using a scan tool; determine necessary action. | P-1 |
| 5. | Inspect, replace, and align powertrain mounts. | P-2 |
| 6. | Service transmission; perform visual inspection; replace fluid and filters. | P-1 |

II. AUTOMATIC TRANSMISSION AND TRANSAXLE

C. Off-Vehicle Transmission and Transaxle Repair

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| 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. | Disassemble, clean, and inspect transmission/transaxle. | P-1 |

3. Inspect, measure, clean, and replace valve body (includes surfaces, bores, springs, valves, sleeves, retainers, brackets, checkvalves/balls, screens, spacers, and gaskets). P-2
4. Inspect servo and accumulator bores, pistons, seals, pins, springs, and retainers; determine necessary action. P2
5. Assemble transmission/transaxle. P-1
6. Inspect, leak test, and flush or replace transmission/transaxle oil cooler, lines, and fittings. P-1
7. Inspect converter flex (drive) plate, converter attaching bolts, converter pilot, converter pump drive surfaces, converter end play, and crankshaft pilot bore. P-2
8. Install and seat torque converter to engage drive/splines. P-1
9. Inspect, measure, and reseal oil pump assembly and components. P-1
10. Measure transmission/transaxle end play or preload; determine necessary action. P-1
11. Inspect, measure, and replace thrust washers and bearings. P-2
12. Inspect oil delivery circuits, including seal rings, ring grooves, and sealing surface areas, feed pipes, orifices, and check valves/balls. P-2
13. Inspect bushings; determine necessary action. P-2
14. Inspect and measure planetary gear assembly components; determine necessary action. P-2
15. Inspect case bores, passages, bushings, vents, and mating surfaces; determine necessary action. P-2
16. Inspect transaxle drive, link chains, sprockets, gears, bearings, and bushings; perform necessary action. P-2
17. Inspect, measure, repair, adjust or replace transaxle final drive components. P-2
18. Inspect clutch drum, piston, check-balls, springs, retainers, seals, and friction and pressure plates; determine necessary action. P-2
19. Measure clutch pack clearance; determine necessary action. P-1

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| 20. | Air test operation of clutch and servo assemblies. | P-1 |
| 21. | Inspect roller and sprag clutch, races, rollers, sprags, springs, cages, and retainers; determine necessary action. | P-1 |
| 22. | Inspect bands and drums; determine necessary action. | P-2 |
| 23. | Describe the operational characteristics of a continuously variable transmission (CVT) | P-3 |
| 24. | Describe the operational characteristics of a hybrid vehicle drive train. | P-3 |

MANUAL DRIVE TRAIN AND AXLES

For every task in Manual Drive Train and Axles, 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.

III. MANUAL DRIVE TRAIN AND AXLES

A. General Drive Train Diagnosis

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| 1. | Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction. | P-1 |
| 2. | Identify and interpret drive train concern; determine necessary action. | P-1 |
| 3. | Research applicable vehicle and service information, such as drive train system operation, fluid type, vehicle service history, service precautions, and technical service bulletins. | P-1 |
| 4. | Locate and interpret vehicle and major component identification numbers. | P-1 |
| 5. | Diagnose fluid loss, level, and condition concerns; determine necessary action. | P-1 |
| 6. | Drain and fill manual transmission/transaxle and final drive unit. | P-1 |