

2008 NATEF AUTOMOBILE STANDARDS CORRELATIONS

AUTOMATIC TRANSMISSION & TRANSAXLE

For every task in Automatic Transmission & 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	Student Edition	Technical Applications
1. Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction. (P-1)	HB-48	Job Sheet AT-1
2. Identify and interpret transmission/transaxle concern; differentiate between engine performance and transmission/transaxle concerns; determine necessary action. (P-1)	AT-516 through AT-522, AT-536	Job Sheet AT-22
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)	HB-48, AT-402 through AT-465	Job Sheet HB-4
4. Locate and interpret vehicle and major component identification numbers. (P-1)	HB-48	Job Sheets HB-1, HB-2
5. Diagnose fluid loss and condition concerns; check fluid level in transmissions with and without dipstick; determine necessary action. (P-1)	AT-414 through AT-418	Diagnostic Sheet AT-1 Job Sheet AT-3
6. Perform pressure tests (including transmissions/transaxles equipped with electronic pressure control); determine necessary action. (P-1)	AT-403 through AT-404, AT-455 through AT-457, AT-473 through AT-474, AT-523 through AT-527	Job Sheet AT-22
7. Perform stall test; determine necessary action. (P-3)	AT-428 through AT-429	Job Sheet AT-13

A. General Transmission and Transaxle Diagnosis <i>(continued)</i>	Student Edition	Technical Applications
8. Perform lock-up converter system tests; determine necessary action. (P-3)	AT-434 through AT-436	Job Sheet AT-14
9. Diagnose noise and vibration concerns; determine necessary action. (P-2)	AT-434 through AT-436	Diagnostic Sheet AT-3 Job Sheet AT-15
10. Diagnose transmission/transaxle gear reduction/multiplication concerns using driving, driven, and held member (power flow) principles. (P-1)	AT-438 through AT-443	Job Sheet AT-19
12. Diagnose pressure concerns in the transmission using hydraulic principles. (Pascal’s Law). (P-2)	AT-447 through AT-450	Job Sheet AT-20
13. Diagnose electronic transmission/transaxle control systems using appropriate test equipment and service information. (P-1)	AT-467 through AT-483	Diagnostic Sheet AT-6 Job Sheet AT-26
B. In-Vehicle Transmission/Transaxle Maintenance and Repair	Student Edition	Technical Applications
1. Inspect, adjust, and replace manual valve shift linkage, transmission range sensor/switch, and park/neutral position switch. (P-2)	AT-407, AT-467 through AT-471	Job Sheets AT-2, AT-25
2. Inspect and replace external seals, gaskets, and bushings. (P-2)	AT-418 through AT-419, AT-544, AT-545	Job Sheets AT-6, AT-7, AT-8, AT-9, AT-47
3. Inspect, test, adjust, repair, or replace electrical/electronic components and circuits, including computers, solenoids, sensors, relays, terminals, connectors, switches, and harnesses. (P-1)	AT-507 through AT-527	Diagnostic Sheet AT-6 Job Sheets AT-26, AT-37, AT-38
4. Diagnose electronic transmission control systems using a scan tool; determine necessary action. (P-1)	AT-516 through AT-518, AT-551	Job Sheets AT-14, AT-38

B. In-Vehicle Transmission/Transaxle Maintenance and Repair <i>(continued)</i>	Student Edition	Technical Applications
5. Inspect, replace, and align powertrain mounts. (P-2)	AT-549	Job Sheet AT-50
6. Service transmission; perform visual inspection; replace fluids and filters. (P-1)	AT-414 through AT-418	Job Sheets AT-4, AT-5
C. Off-Vehicle Transmission and Transaxle Repair	Student Edition	Technical Applications
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)	ER-150 through ER-151, ER-253, ER-258, HA-298, AT-537 through AT-539, AT-549 through AT-551	Job Sheets AT-40, AT-41, AT-42
2. Disassemble, clean, and inspect transmission/transaxle. (P-1)	AT-540 through AT-545	Job Sheets AT-43, AT-44
3. Inspect, measure, clean, and replace valve body (includes surfaces, bores, springs, valves, sleeves, retainers, brackets, checkvalves/balls, screens, spacers, and gaskets). (P-2)	AT-461 through AT-463	Job Sheet AT-23
4. Inspect servo and accumulator bores, pistons, seals, pins, springs, and retainers; determine necessary action. (P-3)	AT-496 through AT-497, AT-498 through AT-503	Job Sheets AT-32, AT-33
5. Assemble transmission/transaxle. (P-1)	AT-546 through AT-548	Job Sheet AT-49
6. Inspect, leak test, and flush or replace transmission/transaxle cooler, lines, and fittings. (P-1)	AT-436 through AT-437	Job Sheets AT-16, AT-17, AT-18
7. Inspect converter flex (drive) plate, converter attaching bolts, converter pilot, converter pump drive surfaces, converter end play, and crankshaft pilot bore. (P-2)	AT-423 through AT-431	Job Sheets AT-11, AT-12
8. Install and seat torque converter to engage drive/splines. (P-1)	AT-427 through AT-431	Job Sheet AT-12

C. Off-Vehicle Transmission and Transaxle Repair (continued)	Student Edition	Technical Applications
9. Inspect, measure, and reseal oil pump assembly and components. (P-1)	AT-454 through AT-457	Job Sheet AT-21
10. Measure transmission/transaxle end play or preload; determine necessary action. (P-1)	AT-550	Job Sheet AT-51
11. Inspect, measure, and replace thrust washers and bearings. (P-2)	AT-545	Job Sheet AT-48
12. Inspect oil delivery circuits, including seal rings, ring grooves, and sealing surface areas, feed pipes, orifices, and check valves/balls. (P-2)	AT-418 through AT-419, AT-454 through AT-457	Job Sheet AT-10
13. Inspect bushings; determine necessary action. (P-2)	AT-544	Job Sheet AT-47
14. Inspect and measure planetary gear assembly components; determine necessary action. (P-2)	AT-441 through AT-442	Job Sheet AT-19
15. Inspect case bores, passages, bushings, vents, and mating surfaces; determine necessary action. (P-2)	AT-462 through AT-463	Diagnostic Sheet AT-4 Job Sheet AT-24
16. Inspect transaxle drive, link chains, sprockets, gears, bearings, and bushings; perform necessary action. (P-2)	AT-543 through AT-545	Job Sheet AT-45
17. Inspect, measure, repair, adjust or replace transaxle final drive components. (P-2)	AT-543 through AT-545	Job Sheet AT-46
18. Inspect clutch drum, piston, check-balls, springs, retainers, seals, and friction and pressure plates; determine necessary action. (P-2)	AT-498 through AT-503	Diagnostic Sheet AT-5 Job Sheet AT-31
19. Measure clutch pack clearance; determine necessary action. (P-1)	AT-501	Job Sheet AT-35

C. Off-Vehicle Transmission and Transaxle Repair (continued)	Student Edition	Technical Applications
20. Air test the operation of clutch and servo assemblies. (P-1)	AT-503	Job Sheet AT-36
21. Inspect roller and sprag clutch, races, rollers, sprags, springs, cages, and retainers; determine necessary action. (P-1)	AT-494	Job Sheet AT-30
22. Inspect bands and drums; determine necessary action. (P-2)	AT-498 through AT-503	Job Sheet AT-34
23. Describe the operational characteristics of a continuously variable transmission (CVT). (P-3)	AT-403 through AT-404	
24. Describe the operational characteristics of a hybrid vehicle drive train. (P-3)	The standard is not currently correlated to the textbook. For coverage of this standard, click on the standard number on the 2008 NATEF Automobile Standards Correlations page on the OLC.	