MANUAL DRIVE TRAIN AND AXLES

**A. General Drive Train Diagnosis**

AU325.1 Identify and interpret drive train concern; determine necessary action. .5

AU325.2 Diagnose fluid loss, level, and condition concerns; determine necessary action. .5

AU325.3 Drain and fill manual transmission/transaxle and final drive unit. 1.0

**B. Clutch Diagnosis and Repair**

AU325.4 Diagnose clutch noise, binding, slippage, pulsation, and chatter; determine necessary action. .5

AU325.5 Inspect clutch pedal linkage, cables, automatic adjuster mechanisms, brackets, bushings,

pivots, and springs; perform necessary action. .5

AU325.6 Inspect hydraulic clutch slave and master cylinders, lines, and hoses; determine necessary

action. .5

AU325.7 Inspect and replace clutch pressure plate assembly, clutch disc, release (throw-out) bearing

and linkage, and pilot bearing/bushing (as applicable). 3.0

AU325.8 Bleed clutch hydraulic system. .5

AU325.9 Measure flywheel runout and crankshaft end play; determine necessary action. .5

**C. Transmission/Transaxle Diagnosis and Repair**

AU325.10 Remove and reinstall transmission/transaxle. 2.0

AU325.11 Disassemble, clean, and reassemble transmission/transaxle components. 3.0

AU325.12 Inspect transmission/transaxle case, extension housing, case mating surfaces, bores,

bushings, and vents; perform necessary action. .5

AU325.13 Diagnose noise concerns using transmission/transaxle powerflow principles. .5

AU325.14 Diagnose hard shifting and jumping out of gear concerns; determine necessary action. .5

AU325.15 Inspect, adjust, and reinstall shift linkages, brackets, bushings, cables, pivots, and levers.

 .5

AU325.16 Inspect, replace, and align powertrain mounts. .5

AU325.17 Inspect and replace gaskets, seals, and sealants; inspect sealing surfaces. 1.0

AU325.18 Remove and replace transaxle final drive. 1.0

AU325.19 Diagnose transaxle final drive assembly noise and vibration concerns; determine necessary

action. .5

AU325.20 Remove, inspect, measure, adjust, and reinstall transaxle final drive pinion gears (spiders),

shaft, side gears, side bearings, thrust washers, and case assembly. 1.0

AU325.21 Inspect, test, and replace transmission/transaxle sensors and switches. 1.0

**D. Drive Shaft and Half Shaft, Universal and Constant-Velocity (CV) Joint Diagnosis**

**and Repair**

AU325.22 Diagnose constant-velocity (CV) joint noise and vibration concerns; determine necessary

action. .5

AU325.23 Diagnose universal joint noise and vibration concerns; perform necessary action. .5

AU325.24 Remove and replace front wheel drive (FWD) front wheel bearing. 1.0

AU325.25 Inspect, service, and replace shafts, yokes, boots, and CV joints. 1.0

AU325.26 Check shaft balance and phasing; measure shaft runout; measure and adjust driveline

angles. 1.0

**E. Drive Axle Diagnosis and Repair**

AU325.27 Diagnose noise and vibration concerns; determine necessary action. .5

AU325.28 Diagnose fluid leakage concerns; determine necessary action. .5

AU325.29 Inspect and replace companion flange and pinion seal; measure companion flange runout.

 .5

AU325.30 Inspect ring gear and measure runout; determine necessary action. .5

AU325.31 Remove, inspect, and reinstall drive pinion and ring gear, spacers, sleeves, and bearings.

 1.5

AU325.32 Measure and adjust drive pinion depth. .5

AU325.33 Measure and adjust drive pinion bearing preload. .5

AU325.34 Measure and adjust side bearing preload and ring and pinion gear total backlash and

backlash variation on a differential carrier assembly (threaded cup or shim types). .5

AU325.35 Check ring and pinion tooth contact patterns; perform necessary action. .5

AU325.36 Reassemble and reinstall differential case assembly; measure runout; determine necessary

action. 2.0

AU325.36b Drain and refill differential fluid. 1.0

**Limited Slip Differential**

AU325.37 Diagnose noise, slippage, and chatter concerns; determine necessary action. .5

AU325.38 Clean and inspect differential housing; refill with correct lubricant and/or additive. .5

AU325.39 Inspect and reinstall limited slip differential components. 1.0

AU325.40 Measure rotating torque; determine necessary action. .5

**3. Drive Axle Shaft**

AU325.41 Diagnose drive axle shafts, bearings, and seals for noise, vibration, and fluid leakage

concerns; determine necessary action. .5

AU325.42 Inspect and replace drive axle shaft wheel studs. .5

AU325.43 Remove and replace drive axle shafts. 1.0

AU325.44 Inspect and replace drive axle shaft seals, bearings, and retainers. 1.0

AU325.45 Measure drive axle flange runout and shaft end play; determine necessary action. .5

# Propeller Shaft

AU325.46 Remove and replace Universal joints (includes R&R axle shaft) 1.0

AU325.47 Measure prop shaft runout, determine necessary action. .5

**F. Four-wheel Drive/All-wheel Drive Component Diagnosis and Repair**

AU325.48 Diagnose noise, vibration, and unusual steering concerns; determine necessary action..5

AU325.49 Remove and replace 4WD hub assembly. 1.0

AU325.50 Disassemble and reassemble a transfer case. 2.0

Au325.51 Disassemble and reassemble a center differential. 2.0

Au325.52 Open

Au325.53 Open

Au325.54 Open

Au325.55 Open