

ASE Education Foundation
2025 ASE Correlation Chart
Manual Drivetrains and Axles (A3)

MLR- Maintenance & Light Repair

AST- Auto Service Technology (Includes MLR)

MAST- Master Auto Service Technology (Includes MLR and AST)

	Task	Priority	MLR	AST	MAST	Text Page #	Task Page #
A. General: Drive Train Diagnosis							
1.	Research vehicle service information such as fluid type, vehicle service history, service precautions, technical service bulletins, and recalls including xEVs and vehicles equipped with advanced driver assistance systems (ADAS).	P-1	✓	✓	✓	696-700; 1544; 1560; 1589-1590	
2.	Identify manual drive train and axles components and configurations.	P-1	✓	✓	✓	1513; 1533-1540; 1562-1567; 1574-1582; 1592-1601	
3.	Retrieve and record DTCs, OBD monitor status, and freeze frame data; clear codes and data when directed.	P-1	✓	✓	✓	1644-1645	
4.	Check fluid condition; check for leaks; determine needed action.	P-2	✓	✓	✓	1544; 1589-1600	

5.	Drain and refill manual transmission/transaxle; use proper fluid type per manufacturer specification.	P-2	✓	✓	✓	1544	
6.	Diagnose drive train concerns; determine needed action.	P-1		✓	✓	1540	
B. Clutch							
1.	Check and adjust clutch master cylinder fluid level; check for leaks; use proper fluid type per manufacturer specification.	P-2	✓	✓	✓	1523; 1527- 1528	
2.	Diagnose clutch noise, binding, slippage, pulsation, and chatter; determine needed action.	P-2		✓	✓	1523- 1527	
	Task	Priority	MLR	AST	MAST	Text Page #	Task Page #
3.	Inspect clutch pedal linkage, cables, automatic adjuster mechanisms, brackets, bushings, pivots, and springs; determine needed action.	P-3		✓	✓	1520- 1522	
4.	Inspect clutch pressure plate assembly, clutch disc, release (throw-out) bearing, linkage, and pilot bearing/bushing (as applicable).	P-2		✓	✓	1523- 1528	
5.	Bleed clutch hydraulic system.	P-2	✓	✓	✓	1527- 1528	
6.	Inspect flywheel and ring gear for wear, cracks, and discoloration; determine needed action.	P-2		✓	✓	1525	
7.	Measure flywheel runout and crankshaft end play; determine needed action.	P-2		✓	✓	1525	
8.	Describe the operation and service of a system that uses a dual mass flywheel.	P-3		✓	✓	1519	
C. Transmission/Transaxle							
1.	Inspect, adjust, lubricate, and/or replace shift linkages, brackets, bushings, cables, pivots, and levers.	P-2		✓	✓	1540- 1541	
2.	Diagnose noise concerns through the application of	P-2			✓	1536- 1540	

	transmission/transaxle powerflow principles; determine needed action.						
3.	Diagnose hard shifting and jumping out of gear concerns; determine needed action.	P-2			✓	1536-1537	
4.	Diagnose transaxle final drive assembly noise and vibration concerns; determine needed action.	P-2			✓	1540-1541; 1550	
5.	Disassemble, inspect clean, and reassemble internal transmission/transaxle components	P-3			✓	1545-1550	
	Task	Priority	MLR	AST	MAST	Text Page #	Task Page #
D. Drive Shaft and Half Shaft, Universal and Constant-Velocity (CV) (Front, Rear, All wheel drive, 4-wheel drive)							
1.	Inspect and/or remove/replace bearings, hubs, and seals.	P-1	✓ (P-2)	✓	✓	1133-1137	
2.	Inspect and/or service/replace shafts, yokes, boots, and universal/CV joints.	P-1	✓ (P-2)	✓	✓	1556-1560	
3.	Diagnose constant-velocity (CV) joint noise and vibration concerns; determine needed action.	P-1		✓	✓	1557-1560	
4.	Diagnose universal joint noise and vibration concerns; determine needed action.	P-1		✓	✓	1554-1555; 1616-1618	
6.	Check shaft balance and phasing; measure shaft runout; measure and adjust driveline angles; determine needed action.	P-2			✓	1554-1555; 1616-1618	
E. Differential and Drive Axles							
E.1 Ring and Pinion Gears and Differential Housing Assembly							
1.	Inspect differential housing; check for leaks; inspect housing vent.	P-1	✓	✓	✓	1583	
2.	Check and adjust differential housing fluid level; use proper	P-1	✓	✓	✓	1589-1590	

	fluid type per manufacturer specification.						
3.	Drain and refill differential housing; use proper fluid type per manufacturer specification	P-1	✓	✓	✓	1584; 1589- 1590	
4.	Inspect and replace companion flange and/or pinion seal; measure companion flange runout.	P-2		✓	✓	1589	
5.	Inspect ring gear and measure runout; determine needed action.	P-2		✓	✓	1583	
6.	Diagnose noise and vibration concerns; determine needed action.	P-2			✓	1583	
7.	Remove, inspect, reinstall, or replace drive pinion and ring gear, spacers, sleeves, and bearings.	P-2			✓	1586- 1589	
8.	Measure and adjust drive pinion depth.	P-2			✓	1584- 1587	
9.	Measure and adjust drive pinion bearing preload.	P-2			✓	1587- 1588	
10.	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).	P-2			✓	1587- 1588	
11.	Check ring and pinion tooth contact patterns; determine needed action.	P-2			✓	1585	
12.	Disassemble, inspect, measure, adjust, and/or replace differential pinion gears (spiders), shaft, side gears, side bearings, thrust washers, and case.	P-2			✓	1582- 1583	
13.	Reassemble and reinstall differential case assembly; measure runout; determine needed action.	P-2			✓	1583- 1587	

E.2 Drive Axles							
1.	Inspect and replace drive axle wheel studs.	P-2	✓	✓	✓	1226	
2.	Remove and replace drive axle shafts.	P-1		✓	✓	1567-1569	
3.	Inspect and replace drive axle shaft seals, bearings, and retainers.	P-2		✓	✓	1567-1572	
4.	Measure drive axle flange runout and shaft end play; determine needed action.	P-2		✓	✓	1614-1615	
5.	Diagnose drive axle shafts, bearings, and seals for noise, vibration, and fluid leakage concerns; determine needed action.	P-2			✓	1581-1582; 1616-1619	
E.3 Limited Slip Differential							
1.	Diagnose noise, slippage, and chatter concerns including electronically controlled systems; determine needed action.	P-3			✓	1578-1580	
2.	Measure rotating torque; determine needed action.	P-3			✓	1585-1587	
F. Four-Wheel Drive/All-Wheel Drive							
1.	Identify concerns related to variations in tire circumference and/or final drive ratios.	P-1	✓	✓	✓	1599-1600	
2.	Inspect, adjust, and repair shifting controls (mechanical, electrical, and vacuum), bushings, mounts, levers, and brackets.	P-2		✓	✓	1600-1603	
3.	Inspect axle locking mechanisms; determine needed action(s).	P-3		✓	✓	1592-1594; 1602	
4.	Check for leaks at drive assembly and transfer case seals; check vents; check fluid level; use proper fluid type per manufacturer specification.	P-2		✓	✓	1600-1603	
5.	Diagnose noise, vibration, and unusual steering concerns; determine needed action.	P-2			✓	1600-1602	
6.	Diagnose, test, adjust, and/or replace electrical/electronic	P-2			✓	1595-1601	

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	components of four-wheel drive/all-wheel drive systems.						
7.	Disassemble, service, and reassemble transfer case and components.	P-3			✓	1604-1607	