

## 2017 ASE Correlation Chart

**MLR-** Maintenance & Light Repair

**AST-** Auto Service Technology (Includes MLR)

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

	<b>Task</b>	<b>Priority</b>	<b>MLR</b>	<b>AST</b>	<b>MAST</b>	<b>Text Page #</b>	<b>Task Page #</b>
<b>BRAKES (A5)</b>							
<b>A. General: Brake Systems Diagnosis</b>							
1.	Identify and interpret brake system concerns; determine needed action.	P-1		✓	✓	85-89; 176; 211	9
2.	Research vehicle service information, including fluid type, vehicle service history, service precautions, and technical service bulletins.	P-1	✓	✓	✓	4	5
3.	Describe procedure for performing a road test to check brake system operation; including an anti-lock brake system (ABS).	P-1	✓	✓	✓	176; 211; 326	9
4.	Install wheel and torque lug nuts.	P-1	✓	✓	✓	415	48
<b>B. Hydraulic System Diagnosis and Repair</b>							
1.	Diagnose pressure concerns in the brake system using hydraulic principles (Pascal's Law).	P-1		✓	✓	75	13
2.	Measure brake pedal height, travel, and free play (as applicable); determine needed action.	P-1	✓	✓	✓	87-89	14

3.	Check master cylinder for internal/external leaks and proper operation; determine needed action.	P-1	✓	✓	✓	87	15
4.	Remove, bench bleed, and reinstall master cylinder.	P-1		✓	✓	89-91	16
5.	Diagnose poor stopping, pulling or dragging concerns caused by malfunctions in the hydraulic system; determine needed action.	P-1		✓	✓	87-89	17
6.	Inspect brake lines, flexible hoses, and fittings for leaks, dents, kinks, rust, cracks, bulging, wear; and loose fittings /supports; determine needed action.	P-1		✓	✓	114-121	24
7.	Replace brake lines, hoses, fittings, and supports.	P-2		✓	✓	114-121	25
8.	Fabricate brake lines using proper material and flaring procedures (double flare and ISO types).	P-2		✓	✓	117-121	26
9.	Select, handle, store, and fill brake fluids to proper level; use proper fluid type per manufacturer specification.	P-1	✓	✓	✓	109-114	27
10.	Inspect, test, and/or replace components of brake warning light system.	P-3	✓	✓	✓	94-96	21
11.	Identify components of hydraulic brake warning light system.	P-2	✓ (P-3)	✓	✓	94-96	18
12.	Bleed and/or flush brake system.	P-1	✓	✓	✓	124-135	29
13.	Test brake fluid for contamination.	P-1	✓	✓	✓	112	28
<b>C. Drum Brake Diagnosis and Repair</b>							
1.	Diagnose poor stopping, noise, vibration, pulling, grabbing, dragging or pedal pulsation concerns; determine needed action.	P-1		✓	✓	176	41

2.	Remove, clean, and inspect brake drum; measure brake drum diameter; determine serviceability.	P-1	✓	✓	✓	176-178	62
3.	Refinish brake drum and measure final drum diameter; compare with specifications.	P-1	✓	✓	✓	253-255	63
4.	Remove, clean, inspect, and/or replace brake shoes, springs, pins, clips, levers, adjusters/self-adjusters, other related brake hardware, and backing support plates; lubricate and reassemble.	P-1	✓	✓	✓	178-179	42,43,44,45
5.	Inspect wheel cylinders for leaks and proper operation; remove and replace as needed.	P-2	✓	✓	✓	181	46
6.	Pre-adjust brake shoes and parking brake; install brake drums or drum/hub assemblies and wheel bearings; perform final checks and adjustments.	P-1	✓	✓	✓	184	47
<b>D. Disc Brake Diagnosis and Repair</b>							
1.	Diagnose poor stopping, noise, vibration, pulling, grabbing, dragging, or pulsation concerns; determine needed action.	P-1		✓	✓	211-212	50
2.	Remove and clean caliper assembly; inspect for leaks, damage, wear; determine needed action.	P-1	✓	✓	✓	212-219	51
3.	Inspect caliper mounting and slides/pins for proper operation, wear, and damage; determine needed action.	P-1	✓	✓	✓	219-220	52
4.	Remove, inspect, and/or replace brake pads and retaining hardware; determine needed action.	P-1	✓	✓	✓	218-220	53
5.	Lubricate and reinstall caliper, brake pads, and related hardware; seat brake pads, inspect for leaks.	P-1	✓	✓	✓	218-220	54

6.	Clean and inspect rotor and mounting surface; measure rotor thickness, thickness variation, and lateral runout; determine needed action.	P-1	✓	✓	✓	259-262	55
7.	Remove and reinstall/replace rotor.	P-1	✓	✓	✓	212	65
8.	Refinish rotor on vehicle; measure final rotor thickness and compare with specifications.	P-1	✓	✓	✓	269	66
9.	Refinish rotor off vehicle; measure final rotor thickness and compare with specifications.	P-1	✓	✓	✓	263-268	67
10.	Retract and re-adjust caliper piston on an integrated parking brake system.	P-2	✓	✓	✓	220; 241-245	58
11.	Check brake pad wear indicator; determine needed action.	P-1	✓	✓	✓	211	56
12.	Describe importance of operating vehicle to burnish/break-in replacement brake pads according to manufacturer's recommendations.	P-1	✓	✓	✓	221	57
<b>E. Power-Assist Units Diagnosis and Repair</b>							
1.	Check brake pedal travel with, and without, engine running to verify proper power booster operation.	P-2	✓	✓	✓	299-300	68
2.	Identify components of the brake power assist system (vacuum and hydraulic); check vacuum supply (manifold or auxiliary pump) to vacuum-type power booster.	P-1	✓	✓	✓	295	69
3.	Inspect vacuum-type power booster unit for leaks; inspect the check-valve for proper operation; determine needed action.	P-1		✓	✓	295-299	70

4.	Inspect and test hydraulically-assisted power brake system for leaks and proper operation; determine needed action.	P-3		✓	✓	303	71
5.	Measure and adjust master cylinder pushrod length.	P-3		✓	✓	300	72
<b>F. Related (i.e. Wheel Bearings, Parking Brakes, Electrical, ETC.) Diagnosis and Repair</b>							
1.	Diagnose wheel bearing noises, wheel shimmy, and vibration concerns; determine needed action.	P-1		✓	✓	142	35
2.	Remove, clean, inspect, repack, and install wheel bearings; replace seals; install hub and adjust bearings.	P-2	✓	✓	✓	143-147	36
3.	Check parking system and components for wear, binding, and corrosion; clean, lubricate, adjust and/or replace as needed.	P-1	✓	✓	✓	242	59
4.	Check parking brake operation and parking brake indicator light system operation; determine needed action.	P-1	✓	✓	✓	234	60
5.	Check operation of brake stop light system.	P-1	✓	✓	✓	105-106	61
6.	Replace wheel bearing and race.	P-3	✓	✓	✓	143-147	37
7.	Remove, reinstall, and /or replace sealed wheel bearing assembly.	P-1		✓	✓	147	39
8.	Inspect and replace wheel studs.	P-1	✓	✓	✓	270	38
<b>G. Electronic Brake Control: Antilock Brake (ABS), Traction Control (TCS), and Electronic Stability Control Systems (ESC) Diagnosis and Repair</b>							
1.	Identify and inspect electronic brake control system components (ABS, TCS, ESC); determine needed action.	P-1	✓	✓	✓	326-335	74, 75
2.	Describe the operation of a regenerative braking system.	P-3	✓	✓	✓	351-360	85

3.	Diagnose poor stopping, wheel lock-up, abnormal pedal feel, unwanted application, and noise concerns associated with the electronic brake control system ; determine needed action.	P-2			✓	339	76
4.	Diagnose electronic brake control system electronic control(s) and components by retrieving diagnostic trouble codes, and/or using recommended test equipment; determine needed action.	P-2			✓	328-336	77, 78
5.	Depressurize high-pressure components of an electronic brake control system.	P-2			✓	336	79
6.	Bleed the electronic brake control system hydraulic circuits.	P-1			✓	336	80
7.	Test, diagnose, and service electronic brake control system speed sensors (digital and analog), toothed ring (tone wheel), and circuits using a graphing multimeter (GMM)/digital storage oscilloscope (DSO) (includes output signal, resistance, shorts to voltage/ground, and frequency data).	P-2			✓	328-336	82
8.	Diagnose electronic brake control system braking concerns caused by vehicle modifications (tire size, curb height, final drive ratio, etc.).	P-1			✓	326	83