

## 2021 ASE Correlation Chart

### Brakes (A5)

**MLR-** Maintenance & Light Repair

**AST-** Auto Service Technology

**MAST-** Master Auto Service Technology

	Task	MLR	AST	MAST	Text Page #	Task Page #
<b>A. General</b>						
1.	Research vehicle service information such as fluid type, vehicle service history, service precautions, technical service bulletins, and recalls including vehicles equipped with advanced driver assistance systems (ADAS).	P-1	P-1	P-1	2-4	5, 6
2.	Identify brake system components and configurations.	P-1	P-1	P-1	54-58	6, 10
3.	Retrieve and record DTCs, OBD monitor status, and freeze frame data; clear codes and data when directed.	P-1	P-1	P-1	328-333	77, 78
4.	Describe procedure for performing a road test to check brake system operation, including an anti-lock brake system (ABS).	P-1	P-1	P-1	326	57, 76
5.	Install wheel and torque lug nuts.	P-1	P-1	P-1	-	48

	<b>Task</b>	<b>MLR</b>	<b>AST</b>	<b>MAST</b>	<b>Text Page #</b>	<b>Task Page #</b>
<b>6.</b>	Identify and interpret brake system concerns; determine needed action.		P-1	P-1	176, 211-212	41, 50
<b>B. Hydraulic System</b>						
<b>1.</b>	Demonstrate understanding of hydraulic principals; diagnose pressure concerns in the brake system using hydraulic principles (Pascal's Law).	P-1 Under-standing only	P-1	P-1	75-79	13
<b>2.</b>	Describe and measure brake pedal height, travel, and free play (as applicable); determine needed action.	P-1 Describe only	P-1	P-1	88-89	14
<b>3.</b>	Check master cylinder for internal/external leaks and proper operation; determine needed action.	P-1 Check only	P-1	P-1	87	15
<b>4.</b>	Inspect brake lines, flexible hoses, and fittings for leaks, dents, kinks, rust, cracks, bulging, wear; and loose fittings /supports; determine needed action.	P-1 Inspect only	P-1	P-1	114-121	24
<b>5.</b>	Select, handle, store, and fill brake fluids to proper level; use proper fluid type per manufacturer specification.	P-1	P-1	P-1	109-111	27
<b>6.</b>	Identify components of hydraulic brake warning light system.	P-3	P-2	P-1	94-96	22
<b>7.</b>	Bleed and/or flush brake system.	P-1	P-1	P-1	94-96	29-34

	<b>Task</b>	<b>MLR</b>	<b>AST</b>	<b>MAST</b>	<b>Text Page #</b>	<b>Task Page #</b>
8.	Test brake fluid for contamination.	P-2	P-2	P-2	112-113	28
9.	Remove, bench bleed, and reinstall master cylinder.		P-1	P-1	124	16
10.	Diagnose poor stopping, pulling or dragging concerns caused by malfunctions in the hydraulic system; determine needed action.		P-2	P-1	87-89	17
11.	Replace brake lines, hoses, fittings, and supports.		P-2	P-2	117-121	25, 26
12.	Fabricate brake lines using proper material and flaring procedures.		P-2	P-2	118-119	26
13.	Inspect, test, and/or replace components of brake warning light system.		P-3	P-3	97	22
<b>C. Drum Brakes</b>						
1.	Remove, clean, and inspect brake drum; measure brake drum diameter; determine serviceability.	P-2	P-2	P-2	176-178; 252-253	42, 62
2.	Refinish brake drum and measure final drum diameter; compare with specifications.	P-3	P-2	P-2	253-256	62, 63
3.	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-3	P-2	P-2	178-181; 184-185	43-45
4.	Inspect wheel cylinders for leaks and proper operation; remove and replace as needed.	P-3	P-2	P-2	181-182	46
5.	Pre-adjust brake shoes and parking brake; install brake drums or drum/hub assemblies and wheel bearings; perform final checks and adjustments.	P-3	P-2	P-2	185	47

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<b>6.</b>	Diagnose poor stopping, noise, vibration, pulling, grabbing, dragging or pedal pulsation concerns; determine needed action.		P-2	P-2	176	41
<b>D. Disc Brakes</b>						
<b>1.</b>	Remove and clean caliper assembly; inspect for leaks, damage, wear; determine needed action.	P-1 Remove and inspect only	P-1	P-1	212-213	51
<b>2.</b>	Inspect caliper mounting and slides/pins for proper operation, wear, and damage; determine needed action.	P-1 Inspect only	P-1	P-1	219-220	52
<b>3.</b>	Remove, inspect, and/or replace brake pads and retaining hardware; determine needed action.	P-1 Remove and inspect only	P-1	P-1	219-220	53
<b>4.</b>	Lubricate and reinstall caliper, brake pads, and related hardware; seat brake pads, inspect for leaks.	P-1	P-1	P-1	219-220	52
<b>5.</b>	Clean and inspect rotor and mounting surface; measure rotor thickness, thickness variation, and lateral runout; determine needed action.	P-1 Clean and inspect only	P-1	P-1	269	64
<b>6.</b>	Remove and reinstall/replace rotor.	P-1	P-1	P-1	269	65
<b>7.</b>	Refinish rotor on vehicle; measure final rotor thickness and compare with specifications.	P-3	P-2	P-1	269	66
<b>8.</b>	Refinish rotor off vehicle; measure final rotor thickness and compare with specifications.	P-3	P-2	P-2	263-266	67
<b>9.</b>	Retract and re-adjust caliper piston on an integrated parking brake system.	P-2	P-1	P-1	220	58

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10.	Describe importance of operating vehicle to burnish/break-in replacement brake pads according to manufacturer's recommendations.	P-2	P-2	P-2	221	57
11.	Diagnose poor stopping, noise, vibration, pulling, grabbing, dragging, or pulsation concerns; determine needed action.		P-1	P-1	221	50
<b>E. Power-Assist Units</b>						
1.	Check brake pedal travel with, and without, engine running to verify proper power booster operation.	P-2	P-2	P-2	299	68
2.	Identify components of the brake power assist system (vacuum/ hydraulic/electric).	P-2	P-2	P-2	294-298; 301-303	68-70
3.	Inspect vacuum-type power booster unit for leaks; inspect the check-valve for proper operation; check vacuum supply (manifold or auxiliary pump) to vacuum-type power booster; determine needed action.		P-2	P-2	293-295	69
4.	Inspect and test hydraulically assisted power brake system for leaks and proper operation; determine needed action.		P-2	P-2	303	71
5.	Inspect electric power booster unit; determine needed action.			P-3	-	-
<b>F. Related (i.e., Wheel Bearings, Parking Brakes, Electrical)</b>						
1.	Remove, clean, inspect, repack, and install wheel bearings; replace seals; install hub and adjust bearings.	P-3	P-2	P-2	143-147	35-39
2.	Check parking system and components for wear, binding, and corrosion; clean, lubricate, adjust and/or replace as needed.	P-2	P-2	P-2	1249-1251	58-60

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3.	Check parking brake operation (including electric parking brakes); check parking brake indicator light system operation; determine needed action.	P-2 Check only	P-2	P-2	234; 242; 244	60, 61
4.	Check operation of brake stop light system.	P-1	P-1	P-1	105	23
5.	Inspect and replace wheel studs.	P-2	P-2	P-2	-	38
6.	Remove, reinstall, and /or replace sealed wheel bearing assembly.		P-2	P-1	147- 148	39
7.	Diagnose wheel bearing noises, wheel shimmy, and vibration concerns; determine needed action.		P-2	P-1	142- 143	35
<b>G. Electronic Brake Control Systems: Antilock Brake (ABS), Traction Control (TCS), and Electronic Stability Control Systems (ESC)</b>						
1.	Identify and inspect electronic brake control system components (ABS, TCS, ESC); determine needed action.	P-2	P-1	P-1	311- 321	74, 75
2.	Describe the operation of a regenerative braking system.	P-3	P-2	P-2	1050	85
3.	Bleed the electronic brake control system hydraulic circuits.		P-2	P-1	326- 328	80
4.	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	326	76, 78

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<b>5.</b>	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	328-331	76-78
<b>6.</b>	Depressurize high-pressure components of an electronic brake control system.			P-2	336	79
<b>7.</b>	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	333-335	82
<b>8.</b>	Diagnose electronic brake control system braking concerns caused by vehicle modifications (tire size, curb height, final drive ratio, etc.).			P-2	-	83