

2021 ASE Correlation Chart

Suspension and Steering (A4)

MLR- Maintenance & Light Repair

AST- Auto Service Technology

MAST- Master Auto Service Technology

	Task	MLR	AST	MAST	Text Page #	Task Page #
A. General						
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	2-3	2, 3
2.	Identify suspension and steering system components and configurations.	P-1	P-1	P-1	119-140; 210-223	17, 29, 31
3.	Retrieve and record DTCs, OBD monitor status, and freeze frame data; clear codes and data when directed.	P-1	P-1	P-1	208	26
4.	Disable and enable supplemental restraint system (SRS); verify indicator lamp operation.	P-2	P-1	P-1	210	28
5.	Identify and interpret suspension and steering system concerns; determine needed action.		P-1	P-1	146-149; 184-199; 234-237	18, 19, 26, 29, 31
B. Steering Systems						
1.	Inspect rack and pinion steering gear inner tie rod ends (sockets) and bellows boots; repair or replace as needed.	P-1 Inspect only	P-1	P-1	229-231; 241-242	32

	Task	MLR	AST	MAST	Text Page #	Task Page #
2.	Inspect power steering fluid level and condition.	P-2	P-2	P-2	260-262	36
3.	Drain and replace power steering system fluid; use proper fluid type per manufacturer specification.	P-2	P-2	P-2	260-262	36
4.	Inspect for power steering fluid leakage; determine needed action.	P-2 Inspect only	P-2	P-2	260-262	37
5.	Remove, inspect, replace, and/or adjust power steering pump drive belt.	P-2	P-2	P-2	259	38
6.	Inspect, remove and/or replace power steering hoses and fittings.	P-2	P-2	P-2	261	39
7.	Inspect, remove and/or replace pitman arm, relay (centerlink/intermediate) rod, idler arm and mountings, and steering linkage damper.	P-2 Inspect only	P-2	P-2	238-242	33
8.	Inspect, replace, and/or adjust tie rod ends (sockets), tie rod sleeves, and clamps (non-rack and pinion).	P-2 Inspect only	P-2	P-2	236-242	34
9.	Inspect and test electric power steering system; determine needed action.	P2 Inspect only	P-2	P-2	272-277	41
10.	Remove and replace steering wheel; center/time supplemental restraint system (SRS) coil (clock spring).		P-1	P-1	211	28
11.	Diagnose steering column noises, looseness, and binding concerns (including tilt/telescoping mechanisms); determine needed action.		P-2	P-2	238-241	29
12.	Diagnose power steering gear (non-rack and pinion) binding, uneven turning effort, looseness, hard steering, and noise concerns; determine needed action.		P-3	P-3	259-260	35

	Task	MLR	AST	MAST	Text Page #	Task Page #
13.	Diagnose power steering gear (rack and pinion) binding, uneven turning effort, looseness, hard steering, and noise concerns; determine needed action.		P-2	P-1	259-260	-
14.	Inspect steering shaft universal-joint(s), flexible coupling(s), collapsible column, lock cylinder mechanism, and steering wheel; perform needed action.		P-2	P-2	212-215	29
15.	Remove and replace rack and pinion steering gear; inspect mounting bushings and brackets.		P-2	P-2	266-268	30
16.	Remove and reinstall power steering pump.		P-2	P-2	263	38
17.	Remove and reinstall press fit power steering pump pulley; check pulley and belt alignment.		P-2	P-2	263-264	38
18.	Test power steering system pressure; determine needed action.			P-3	261-263	35
C. Suspension Systems						
1.	Inspect, remove, and/or replace upper and/or lower control arms, bushings, and shafts.	P-2 Inspect only	P-2	P-2	149-150; 164-165	20
2.	Inspect and replace rebound/jounce bumpers.	P-2 Inspect only			149	20
3.	Inspect, remove, and/or replace track bar, strut rods/radius arms, and related mounts and bushings.	P-2	P-2	P-2	160	21
4.	Inspect, remove, and/or replace upper and/or lower ball joints (with or without wear indicators).	P-2 Inspect only	P-3	P-2	153-155	-

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5.	Inspect, remove, and/or replace suspension system coil springs and spring insulators.	P-2 Inspect only	P-2	P-2	161-163	-
6.	Inspect, remove and/or replace torsion bars and mounts.	P-3 Inspect only	P-3	P-3	164	22
7.	Inspect, remove and/or replace front/rear stabilizer bar (sway bar) bushings, brackets, and links.	P-2 Inspect only	P-2	P-2	160	21
8.	Inspect, remove, and/or replace strut assembly, strut coil spring, insulators, and upper strut bearing mount.	P-2 Inspect only	P-2	P-2	158-159	23
9.	Inspect, remove, and/or replace components of suspension systems (Coil, Leaf, and Torsion).	P-1 Inspect only	P-1	P-1	146-165	20
10.	Inspect, remove, and/or replace components of electronically controlled suspension systems.	P-2 Inspect only	P-2	P-1	184-191	-
11.	Inspect, remove and/or replace steering knuckle assemblies.		P-2	P-1	143-145	-
12.	Diagnose suspension system noises, body sway, and uneven ride height concerns; determine needed action.		P-1	P-1	146-148	18, 19
D. Related Suspension and Steering Service						
1.	Inspect, remove, and/or replace shock absorbers; inspect mounts and bushings.	P-2	P-2	P-2	156-157	24
2.	Inspect, service, and/or replace front and rear wheel bearings.	P-1 Inspect only	P-1	P-1	284-292	43

	Task	MLR	AST	MAST	Text Page #	Task Page #
3.	Describe the function of electronically controlled suspension and steering systems and components, (i.e., active suspension and stability control).	P-2	P-2	P-2	201-207	27
E. Wheel Alignment						
1.	Perform pre-alignment inspection, measure vehicle ride height; determine needed action.	P-2 Inspect only	P-1	P-1	340-342	48
2.	Describe four-wheel alignment angles (camber, caster, and toe) and effects on vehicle handling/tire wear.	P-1	P-1	P-1	324-338; 351	46, 47
3.	Prepare vehicle for wheel alignment on alignment machine; perform four-wheel alignment by checking and adjusting front and rear wheel caster, camber; and toe as required; center steering wheel.		P-1	P-1	346-348	50
4.	Check toe-out-on-turns (turning radius); determine needed action.		P-2	P-2	347	51
5.	Check steering axis inclination (SAI) and included angle; determine needed action.		P-2	P-2	347	51
6.	Check rear wheel thrust angle; determine needed action.		P-1	P-1	350	52
7.	Check for front wheel setback; determine needed action.		P-2	P-2	337	52
8.	Identify front and/or rear cradle (subframe) misalignment; determine needed action.		P-2	P-2	364	52
9.	Reset steering angle sensor		P-1	P-1	364-365	53
10.	Diagnose vehicle wander, drift, pull, hard steering, bump steer, memory steer, torque steer, and steering return concerns; determine needed action.		P-1	P-1	342-344	47

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F. Wheels and Tires						
1.	Inspect tire condition; identify tire wear patterns; check for correct tire size, application (load and speed ratings) and air pressure as listed on the tire information placard/label.	P-1	P-1	P-1	92-95	9, 11
2.	Rotate tires according to manufacturer's recommendations including vehicles equipped with tire pressure monitoring systems (TPMS).	P-1	P-1	P-1	97-98	13
3.	Dismount, inspect, and remount tire on wheel (with/without TPMS); balance wheel and tire assembly.	P-1	P-1	P-1	100-103	15
4.	Inspect tire and wheel assembly for air loss; perform needed action.	P-1	P-1	P-1	92; 107-108	14
5.	Repair tire following vehicle manufacturer approved procedure.	P-1	P-1	P-1	107-109	16
6.	Identify indirect and direct tire pressure monitoring systems (TPMS); calibrate/relearn system; verify operation of instrument panel lamps.	P-1	P-1	P-1	80-82; 88	10
7.	Demonstrate knowledge of steps required to remove and replace sensors (per OEM/sensor manufacturer) in a tire pressure monitoring system (TPMS).	P-1	P-1	P-1	87-90	10
8.	Perform Road Force balance/match mounting.	P-3	P-2	P-1	106	-
9.	Diagnose wheel/tire vibration, shimmy, and noise; determine needed action.		P-1	P-1	103	12

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10.	Measure wheel, tire, axle flange, and hub runout; determine needed action.		P-2	P-2	98-100	14
11.	Diagnose tire pull problems; determine needed action.		P-1	P-1	64-64; 342	12