

## Suspension and Steering I

### Course Information

**Developers:** Automotive Technology State Curriculum Committee

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**KBOR Facilitators:** Shirley Antes/ April Henry

**Credit Hours:** 3

### Description:

In this course students will: document fundamental suspension systems concern; perform fundamental diagnostics of steering systems; perform fundamental repairs of suspension systems.

### Competencies:

- A. General
  - 1. Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins. P-1
  - 2. Disable and enable supplemental restraint system (SRS). P-1
- B. Related Suspension and Steering Service
  - 1. Inspect rack and pinion steering gear inner tie rod ends (sockets) and bellows boots. P-1
  - 2. Determine proper power steering fluid type; inspect fluid level and condition. P-1
  - 3. Flush, fill, and bleed power steering system. P-2
  - 4. Inspect for power steering fluid leakage; determine necessary action. P-1

5. Remove, inspect, replace, and adjust power steering pump drive belt. P-1
6. Inspect and replace power steering hoses and fittings. P-2
7. Inspect pitman arm, relay (centerlink/intermediate) rod, idler arm and mountings, and steering linkage damper. P-1
8. Inspect tie rod ends (sockets), tie rod sleeves, and clamps. P-1
9. Inspect upper and lower control arms, bushings, and shafts. P-1
10. Inspect and replace rebound and jounce bumpers. P-1
11. Inspect track bar, strut rods/radius arms, and related mounts and bushings. P-1
12. Inspect upper and lower ball joints (with or without wear indicators). P-1
13. Inspect suspension system cold springs and spring insulators (silencers). P-1
14. Inspect suspension system torsion bars and mounts. P-1
15. Inspect and replace front stabilizer bar (sway bar) bushings, brackets, and links. P-1
16. Inspect strut cartridge or assembly. P-1
17. Inspect front strut bearing and mount. P-1
18. Inspect rear suspension system lateral links/arms (track bars), control (trailing) arms. P-1
19. Inspect rear suspension system lead spring(s), spring insulators (silencers), shackles, brackets, bushings, center pins/bolts, and mounts. P-1
20. Inspect, remove, and replace shock absorbers; inspect mounts and bushings. P-1
21. Inspect electric power-assisted steering. P-3
22. Identify hybrid vehicle power steering system electrical circuits and safety precautions. P-2
23. Describe the function of the power steering pressure switch. P-3

#### C. Wheel Alignment

1. Perform prealignment inspection and measure vehicle ride height; determine necessary action. P-1

#### D. Wheels and Tires

1. Inspect tire condition; identify tire wear patterns; check for correct size and application (load and speed ratings) and adjust air pressure; determine necessary action. P-1
2. Rotate tires according to manufacturer's recommendations. P-1
3. Dismount, inspect, and remount tire on wheel; balance wheel and tire assembly (static and dynamic). P-1
4. Dismount, inspect, and remount tire on wheel equipped with tire pressure monitoring system sensor. P-2
5. Inspect tire and wheel assembly for air loss; perform necessary action. P-1
6. Repair tire using internal patch. P-1
7. Identify and test tire pressure monitoring systems (indirect and direct) for operation; verify operation of instrument panel lamps. P-2
8. Demonstrate knowledge of steps required to remove and replace sensors in a tire pressure monitoring system. P-2