



## NATEF Task List - Medium/Heavy Duty Truck Suspension and Steering

Name: \_\_\_\_\_

Date: \_\_\_\_\_

For every task in *Suspension and Steering* the following safety requirements must be strictly enforced: Comply with personal and environmental safety practices associated with clothing and the use of gloves; respiratory protection; eye protection; hand tools; power equipment; proper ventilation; and the handling, storage, and disposal of chemicals/materials in accordance with local, state, and federal safety and environmental regulations.

**The first task in Suspension and Steering is to listen to and verify the operator’s concern, review past maintenance and repair documents, and determine necessary action.**

IV. SUSPENSION AND STEERING		Week											
		1	2	3	4	5	6	7	8	9	10	11	12
<b>A. Steering Systems</b>													
<b>1. Steering Column</b>													
P-1	1. Identify causes of fixed and driver adjustable steering column and shaft noise, looseness, and binding problems; determine needed action.												
P-1	2. Inspect and service steering shaft U-joint(s), slip joints, bearings, bushings, and seals; phase shaft.												
P-2	3. Check cab mounting and adjust ride height.												
P-1	4. Remove the steering wheel (includes steering wheels equipped with electrical/electronic controls and components); install and center the steering wheel. Inspect, test, replace and calibrate steering angle sensor.												
P-1	5. Disable and enable supplemental restraint system (SRS) in accordance with manufacturers’ procedures.												

A. Steering Systems		Week											
		1	2	3	4	5	6	7	8	9	10	11	12
<b>2. Steering Units</b>													
P-1	1. Identify causes of power steering system noise, steering binding, darting/oversteer, reduced wheel cut, steering wheel kick, pulling, non-recovery, turning effort, looseness, hard steering, overheating, fluid leakage, and fluid aeration problems; determine needed action.												



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A. Steering Systems 2. Steering Units (continued)		Week											
		1	2	3	4	5	6	7	8	9	10	11	12
P-1	2. Determine recommended type of power steering fluid; check level and condition; determine needed action.												
P-2	3. Flush and refill power steering system; purge air from system.												
P-3	4. Perform power steering system pressure, temperature, and flow tests; determine needed action.												
P-2	5. Inspect, service, or replace power steering reservoir including filter, seals, and gaskets.												
P-3	6. Inspect power steering pump drive gear and coupling; replace as needed.												
P-3	7. Inspect, adjust, or replace power steering pump, mountings, and brackets.												
P-2	8. Inspect and replace power steering system cooler, lines, hoses, clamps/mountings, hose routings, and fittings.												
P-2	9. Inspect, adjust, repair, or replace integral type power steering gear(s) (single and/or dual) and mountings.												

A. Steering Systems 3. Steering Linkage		Week											
		1	2	3	4	5	6	7	8	9	10	11	12
P-1	1. Inspect and align pitman arm; replace as needed.												
P-1	2. Check and adjust steering (wheel) stops; verify relief pressures.												



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A. Steering Systems 3. Steering Linkage (continued)		Week											
		1	2	3	4	5	6	7	8	9	10	11	12
P-1	3. Inspect and lubricate steering components.												

B. Suspension Systems		Week											
		1	2	3	4	5	6	7	8	9	10	11	12
P-1	1. Inspect front axles and attaching hardware; determine needed action.												
P-1	2. Inspect and service kingpins, steering knuckle bushings, locks, bearings, seals, and covers; determine needed action.												
P-1	3. Inspect shock absorbers, bushings, brackets, and mounts; replace as needed.												
P-1	4. Inspect leaf springs, center bolts, clips, pins and bushings, shackles, U-bolts, insulators, brackets, and mounts; determine needed action.												
P-1	5. Inspect axle aligning devices such as radius rods, track bars, stabilizer bars, torque arms, related bushings, mounts, shims, and cams; determine needed action.												
P-3	6. Inspect tandem suspension equalizer components; determine needed action.												
P-1	7. Inspect and test air suspension pressure regulator and height control valves, lines, hoses, dump valves, and fittings; adjust, repair or replace as needed.												



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B. Suspension Systems (continued)		Week											
		1	2	3	4	5	6	7	8	9	10	11	12
P-1	8. Inspect air springs, mounting plates, springs, suspension arms, and bushings; replace as needed.												
P-1	9. Measure and adjust ride height; determine needed action.												
P-3	10. Identify rough ride problems; determine needed action.												
C. Wheel Alignment Diagnosis, Adjustment, and Repair		Week											
		1	2	3	4	5	6	7	8	9	10	11	12
P-1	1. Identify causes of vehicle wandering, pulling, shimmy, hard steering, and off-center steering wheel problems; adjust or repair as needed.												
P-2	2. Check camber; determine needed action.												
P-2	3. Check caster; adjust as needed.												
P-1	4. Check and adjust toe settings.												
P-2	5. Check rear axle(s) alignment (thrustline/centerline) and tracking; adjust or repair as needed.												
P-3	6. Identify turning/Ackerman angle (toe-out-on-turns) problems; determine needed action.												
P-2	7. Check front axle alignment (centerline); adjust or repair as needed.												



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D. Wheels and Tires		Week											
		1	2	3	4	5	6	7	8	9	10	11	12
P-1	1. Identify tire wear patterns; check tread depth and pressure determine needed action.												
P-2	2. Identify wheel/tire vibration, shimmy, pounding, hop (tramp) problems; determine needed action.												
P-1	3. Remove and install steering and drive axle wheel/tire assemblies; torque mounting hardware to specifications with torque wrench.												
P-2	4. Inspect tire for proper application, (size, load range, position, and tread design); determine needed action.												
P-2	5. Inspect wheel/rims for proper application, load range, size, and design; determine needed action.												
P-3	6. Check operation of tire pressure monitoring system (TPMS); determine needed action if applicable.												
E. Frame and Coupling Devices		Week											
		1	2	3	4	5	6	7	8	9	10	11	12
P-1	1. Inspect, service, and/or adjust fifth wheel, pivot pins, bushings, locking mechanisms, and mounting hardware.												
P-2	2. Inspect and service sliding fifth wheel, tracks, stops, locking systems, air cylinders, springs, lines, hoses, and controls.												
P-1	3. Inspect frame and frame members for cracks, breaks, corrosion, distortion, elongated holes, looseness, and damage; determine needed action.												



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E. Frame and Coupling Devices (continued)		Week												
		1	2	3	4	5	6	7	8	9	10	11	12	
P-3	4. Inspect, install, or repair frame hangers, brackets, and cross members in accordance with manufacturers' recommended procedures.													
P-2	5. Inspect, repair, or replace pintle hooks and draw bars, if applicable.													