



Pre-Trip Inspection Checklist

The online course Driver Vehicle Inspections: The Complete Process instructs you on how to conduct pre-trip, on-the-road, and post-trip inspections in order to improve safety and save money by preventing accidents and expensive repairs.

This document provides more in-depth guidance about what to check during each step of the pre-trip inspection.

1. Vehicle Overview

A pre-trip inspection should begin with a quick scan of the vehicle.

Walk around the entire perimeter of the vehicle. Look for anything obviously wrong—such as:

- Body damage
 - Fluid on the ground
 - Whether the vehicle's leaning
 - Unsecured doors or cargo
 - Missing license plates or annual inspection stickers.
- Potential hazards around the vehicle such as pedestrians, overhead wires or other vehicles.

Review the last driver's DVIR, if one was completed. If any damage or defects were noted, sign off that the necessary repairs were made, or agree that repairs were not necessary before heading out. If problems haven't been fixed and they should have been, talk to a company representative to get them addressed.



2. Engine Compartment & Wheel Assembly

The engine is probably the most expensive component on the truck—it's important to make sure it's well cared for.

Pocket the keys, verify that the parking brakes are on and the wheels are chocked, and open the hood.

Begin your engine compartment inspection on the right side:

- Compartment is in good overall condition with no obvious issues like leaks.
- Fluid levels—including oil, coolant and transmission, plus any other fluids on this side—are between the “add” and “full” lines. Wipe off any dipsticks, and get them seated properly to get a good reading.
- Auxiliary oiler, if there is one, is in good condition.
- Hoses are not leaking, worn or loose.
- Belts are not worn or loose. Check belts by pushing on them mid-span. Generally speaking, play on a belt should be less than an inch. The smaller the belt, the less deflection desired.
- Alternator mounting bolts are tight, wire connections are good, nothing's cracked, frayed or rubbing, and there's no charring or other damage. Look over all electrical wiring for cracks or wear.
- Do the same for the water pump and air compressor if they're on this side.
- Air conditioning compressor mounts are tight and the belt is riding on the pulleys properly. (Do the same if the A/C compressor is on the other side of the engine.)
- Exhaust system is in good condition as far back as can be seen.
- Turbo charger is not cracked, damaged or leaking exhaust or oil. If you see black soot, marring or separation from the couplers, there is good reason to suspect the turbo charger is leaking exhaust.
- Suspension, including hangers and frame mounts, is not broken or damaged. See that everything is tight, with no loose bolts. Bolts may be loose if shiny metal or new rust is present. Confirm that no bolts are missing with a side-by-side comparison.
- Hanger and shackle set at the rear isn't damaged, and the U-bolts in the center are tight. Confirm that the springs in the U-bolt area are not cracked or damaged.

- Shock absorbers are not loose, bushings are good, no leaking fluid.
- Tie rod end and steering running to the right spindle is tight and nothing is bent.
- Air brake line is not cracked, frayed or rubbing on anything.
- Brake chamber is firmly mounted and not cracked, damaged or rusting through.
- Slack adjuster has appropriate free play. Grab the slack adjuster and pull it back to make sure it doesn't travel more than about an inch.

Now examine the wheel assembly on the right side:

- Inside the rim is free of oil, grease or leakage.
- Brake shoes have at least a quarter-inch lining. If they're not visible, reach in and feel the lining. Also take a look at the brake drum for cracks.
- Tread and tire are in good condition. Steer-tire tread must be more the 4/32" deep. If you don't have a tread-depth gauge, use the penny trick: from the top of a penny to the top of Lincoln's forehead is about 4/32". Also look for uneven wear or feathering, chunks of missing tread, damage, bruising, cuts or gouges.
- Tire inflation is where it needs to be. Under-inflation is the number one cause of problems with tires. When tires get down 10-20% they start getting strange wear patterns; 20% or more, the risk of a sidewall blowout increases. Gauge tires when they're cold. The reading will be anywhere from 5-20% off if they're gauged when they're hot.
- Outside of the rim isn't cracked or bent.
- Lug nuts are tight. Lug nuts might be loose if shiny metal or new rust is showing. If a lug nut is loose enough to turn by hand, the vehicle's on the verge of losing a rim. If there's a cracking lug nut, that's an indicating that the lug nuts have been loose for a while.
- Oil level inside the hub is visible above the bottom edge of the sight glass. If the glass isn't transparent, pull the cap off and dip a pinky into the oil. Compare how far up the finger the oil goes to the sight glass to check the level. If the hub oil is allowed to leak and run dry, there's a bearing set inside that'll be destroyed, and then the whole hub, including the brake drum, will go with it. The oil won't go dry overnight—just keep an eye on things daily.



Then move to the left side:

- Compartment is free from obvious problems; belts, wiring and connections are all in good shape (same as on right side).
- Air compressor, which may be gear-driven and reliant on engine coolant and oil, isn't leaking. Confirm that all connections are good, and that the air line isn't cracked, frayed or rubbing. If the air line is damaged, everything else from here on down will fail.
- Power steering fluid is between "add" and "full." Be sure to clean dipstick before check and replace cap after checking.
- Overall system is not leaking. Major leaks will be evidenced by dripping under the vehicle.
- Power steering column doesn't have excessive play, and U-joints and –knuckles are in good shape.
- Pitman arm coming off the gear box is tight. If the pitman arm comes loose, you won't be able to steer your truck.
- Ball joints have tight castle nuts and castle pins are in place.
- Drag link running back has a seated, tight and well-greased ball joint, and the castle nut and pin are in place.
- Upper steering arm across the left spindle is tight.
- Suspension, including front and rear hangers, bolts, shackles, U-bolts and springs, is in good shape.
- Brake assembly air line is not cracked, frayed or rubbing on anything. Also see that the brake chamber is firmly mounted, and check the free play on the slack adjuster to make sure it doesn't travel more than an inch.
- Wheel assembly is free from oil inside the drum; brake shoes and drums are in good shape; lug nuts, rim and hub oil level are all in good condition; tire tread condition, sidewall and inflation are all appropriate.

3. Inside the Cab

Don't go any further until it's clear the truck's going to start—especially in cold climates prone to dead batteries. Things to check:

- Vehicle registration is valid and vehicle contains all the needed paperwork.
- Fire extinguisher is the right one for the cargo being hauled.
- Windows operate and glass all around the cab is clean and free of cracks.
- Visual obstructions are removed.
- Gauges. With the transmission in neutral, depress the clutch and start the engine.
- Oil pressure comes up in a few seconds, starts out high and drops as the engine warms up.
- Coolant temp is low after start up.
- Tachometer is working—600 RPMs at idle speed is normal.
- Speedometer reads zero (double check that it's working once you start moving).
- Fuel gauge is consistent with what is in the tank.
- Primary and secondary air pressure gauges both read low, and change appropriately.
- Ammeter and voltmeter both register positive.
- Switches work—including flashers, blower motor, heater and defroster.
- Safety equipment is in the cab, including three reflective triangles, spare fuses and any personal gear.
- Seat is adjusted to reach the wheel and controls comfortably, and seat belt is functional.
- Mirrors are clean and in good condition. Adjust them as needed for proper sight lines and make sure they're tight.
- Horn works.
- Wipers work.
- Steering wheel has appropriate amount of play. The free play should be no more than 10% of the wheel diameter—two inches or less on a 20" wheel.

4. Lights

Non-working lights are dangerous and a way to unnecessarily catch the attention of roadside inspectors. To check the lights:

- Set the parking brake and check the low beams and emergency flashers
- Look to see that the lights and four-ways are on, front and rear.
- Confirm that the high beams are working.
- Turn off the headlights and flashers, turn on parking, clearance, side-marker and identification lights and inspect these lights during the walk-around.

5. Walk-Around

A complete vehicle inspection includes a detailed walk-around of both the tractor and trailer.

Start at the front of the tractor and work to the back to see that:

- Windshield isn't cracked or chipped.
- Wiper blades fit snugly against the glass.
- Bumper and lights are secure.
- Mirrors and window are clean, tight and in good condition.
- Door operates as it should and that the weather seal is in place. The weather seal provides great protection from both weather and road noise, but it tends to wear out quickly.
- Access ports, steps and side fairing are in good condition.
- Batteries are properly secured and not damaged or leaking.
- Fuel tank steps and mountings are tight and the strapping is good. Visually check the fuel level and compare it to the fuel gauge in the cab.
- Air lines from the tractor to the trailer are connected and the lines themselves and the suspension spring are in good condition.
- Glad hand seals aren't kinked, cut or torn. Without an airtight seal, there's going to be a leak at the glad hand and the truck won't be able to maintain air pressure. When connecting glad hands, only rotate them—don't push or pull them.

- Trailer light connections are good and locked into place.
- Exhaust bracket mounts and cab air ride suspension system are in good condition.
- Rear window is clean and in good shape.
- Four conspicuity markings are in place on the back of the cab.
- Frame rails and cross members are not cracked, bent or damaged.
- Air lines and electrical bundles are tight, in place and in good condition here and all the way back under the trailer.
- Header at the front of the trailer has tight rivets, seams are good and nothing's damaged.

On the side of the trailer, check top, down, then under:

- Top rail and down the side are free from damage, and all lights are working.
- Apron (also known as striker, upper fifth wheel and coupler) and apron bolts are not cracked or damaged.
- Kingpin is tight inside the fifth wheel. From time to time there may be a high hook, where the kingpin is sitting on top of the jaws.
- Fifth wheel (also called the lower fifth wheel or lower coupler) plate is mounted up against the uppers; the pivot pin's tightly in place; and the handle is in the locked position. Look at the fifth wheel from behind to see that the frame and pivots are good, that there's nothing cracked or damaged, and that the jaws are closed around the shank of the kingpin.
- Sliding fifth wheel (if present) has pins securely locking it into place.
- Vertical and horizontal bolts are tight.
- Angle irons and flat metal are free from cracks or damage.
- Cross members, air lines and wiring back to this point are all good.
- Drive line, drive shaft, U-joints and differentials are in good condition. Someone who over-torques the truck will put a twist in the drive shaft. It's hard to see on a short shaft, but it can be seen on a long one.
- Shock absorbers are intact.

- Landing gear mounting iron and bracing are in good shape. Confirm that the landing gear is up and that the handle is working and stowed properly. Look over the welds, bolts and bracings.
- Tandem set, including the quarter fender, is in good condition.
- Suspension on the drive axles is in good shape, including U-bolts, mounting bolts and spring(s).
- Air ride suspension air bags aren't leaking or damaged.
- Brake components are in good shape.
- Drive wheels, rims and tires are in appropriate condition. These only need 2/32" of tread, and look between the set to make sure the rims are butted up against each other and there's nothing wedged between them.

Continue around the truck, checking top, down, then under. Look for:

- Working lights and any damage.
- Cross members are in good shape, and that air lines and electrical bundles are protected.
- Tandem air lines are suspended at least one foot off the ground. The springs holding these lines are notorious for failing. Always check them.
- Tandem slide mechanism is fully locked and everything's connected as it should be.
- Tandem pin return springs, air tank and air lines are all in good condition.
- Brake chamber and slack adjusters are in appropriate shape. Many new slack adjusters have a sight indicator to show they haven't traveled more than they're supposed to when the brake was applied. It will be evident that the push rod didn't come out too far.
- Axle isn't cracked, bent or damaged.
- Suspension assembly and U-bolts are good.
- Brake drums, shoe and lining are free from oil, in good condition and the lining is at least 1/4" when you look at it from the side.
- Rear tire set is in good condition; check in the same way as the front tire set. Minor surface damage may not be a problem, but anything that goes deep enough to expose cord may cause the tire to fail early.
- Rear mud flap is within 6" from the ground to meet most state requirements.

- Rear axle, slider linkage and frame carriage assembly are all in good shape. Look at the air tank and lines coming off of it to see that everything's in good order.
- Brake chambers, suspension, springs and inside both drums are in appropriate condition.

At the back of the trailer, see that:

- Back bumper and the stop bar for the sliding tandem are in working order.
- ID markers and conspicuity tape are present.
- Door frame is in good shape. If the load isn't sealed, open the door to confirm it functions properly and that the correct cargo is inside. If they're swing doors, use the door as a shield against falling cargo.
- Lights, under-ride guard (or bumper) and step tread are all as they should be.
- Continue the "top, down, then under" visual inspection of the right side.
- Anything that couldn't be seen from under the vehicle from the left side.
- Registration: pop it open and make sure that it's there and current.
- Exhaust system, as far forward as can be seen, is free from black soot, which indicates a leak.
- Door, window and mirrors are in good shape.

6. Signal Lights

Working signal lights are essential for communicating your intentions to others. To inspect signal lights:

- Turn off all other lights and engage the left signal light. Get out to confirm that it's working front, sides and rear.
- Repeat the same process for the right signal light.
- Check brake lights. This is easiest with a helper. If you don't have a helper, back up against something reflective to see both tractor and trailer lights. Get other advice or techniques on how to check brake lights from a safety manager.

7. Brakes

Avoid potentially disastrous effects of failed brakes with a thorough review.

- Chock the wheels.
- Turn on the engine to build up pressure.
- When the vehicle's been idling for a while and the air pressure is over 100 pounds per square inch (psi). Then, release the parking brake and charge the trailer, apply the foot brake, then turn off the engine and watch the gauges. Look to see that the vehicle's not leaking more than 4 psi per minute (3 psi if you only have a tractor), and watch it for the full 60 seconds.
- Turn the key back on, pump the air pressure down and notice where the low pressure indicator comes on—it should activate before 60 psi.
- Continue pumping down. Somewhere between 20-40 psi the brake buttons should pop out, switching over from the parking brake to the emergency brake. With the clutch in and shifter in neutral, start up the vehicle to see how long it takes to build air pressure back up. Rev the vehicle up to about 1400 RPM, which is the normal operating RPM. It should take less than 45 seconds to go from 85-100 psi.
- Remove the wheel chocks before moving on to the next step of the brake check.
- Check to make sure the parking brakes will hold when the vehicle's in park.
- Put it in the lowest gear possible, release the tractor brake with the trailer brake still applied, and tug forward gently to verify the trailer parking brakes will hold.
- Engage the tractor brake and release the trailer brake and do the same thing to verify the tractor brake will hold.
- Roll ahead slowly and step on the foot brake to make sure the service brakes function. Watch for the vehicle pulling to one side or delayed stopping action.