

Vehicle Inspection Study Guide

COMBINATION VEHICLES

During the actual tests, you will be expected to point to or touch each of the parts of your vehicle listed below. Name the part and explain what damage or problems you might find. The types of damages or problems are listed below and in the vehicle inspection section in the CDL Manual.

Note: All axles touching the ground on one side of the vehicle must be inspected.

This study guide cannot be used during the actual pre-trip inspection portion of the skills test.

Front of Vehicle

Lights Check for proper color/clean lenses, cracks, missing screws and condensation. Also check for function, left/right turn signals, headlights, high/low beam and four-way flashers.

Steering Box Check for missing/loose bolts, cracks and nonfactory welds. Check for steering fluid leaks and torn or frayed hoses.

Steering Linkage Check the steering column, pitman arm and drag link for cracks, bends, non-factory welds, missing castle nuts/cotter pins and proper lubrication.

Engine Compartment

Oil Level Check by pulling out the dipstick, wiping it and reinserting it, then pull out to look at the low and full marks to determine the level.

Coolant Level Observe the site glass or line markings for proper level. If not equipped, explain removing radiator cap for level. (**Do not remove cap.**)

Power Steering Fluid Observe the sight glass or line markings for proper level. If not equipped, open the cap and check for proper level.

Water Pump Check for missing/loose bolts, cracks, proper belt tension, cracked or frayed belts and coolant leaks.

Alternator Check for missing/loose bolts, cracks, proper belt tension, cracked or frayed belts, and cracked, burnt or loose wires.

Air Compressor Check for missing/loose bolts. Check belts for tension, cracked or frayed lines and leaks.

Leaks Look under the engine compartment for coolant, power steering, transmission and oil leaks.

Hydraulic Brakes (if equipped) Check the site glass or line on container for proper brake fluid. Check the master cylinder for cracks, leaks, check the brake lines for cracks, frays and brake fluid leaks.

Inside the Vehicle

(start engine)

Clutch/Gearshift If standard, check for excessive play in clutch—no more than two inches. Check the gear ranges to ensure they engage. Check the boot for holes and dry rot. If automatic, check gearshift for ranges.

Air Pressure Gauge Check for cracks and cleanliness. Air pressure should build to a minimum of 100 PSI in both the primary and secondary system.

Oil Pressure Gauge Check the gauge for cracks and cleanliness. Oil pressure should come up to normal within seconds after the engine is started. If no gauge, identify the location of the warning light that indicates a system failure.

Ammeter/Voltmeter Check the gauge for cracks and cleanliness. Amps/Volts should come up to normal within seconds after the engine is started. If no gauge, identify the location of the warning light that indicates a system failure.

Air Brake Build air pressure up to 100-120 PSI, cut engine off and release all brakes, press hard on the foot brake and hold down for one minute, air pressure should not drop over four PSI. Turn ignition key on and continue with foot brake pumping air pressure down. At around 60 PSI the "Low Air" buzzer should sound and/or a warning light should appear. Keep pumping air down with foot brake, and at about 40 PSI, the release valves should pop out for the trailer and the tractor.

Hydraulic Brake (if equipped) Pump the brake pedal three times, apply firm pressure to the pedal and hold for five seconds. The pedal should not move. If it does, there may be a leak.

Steering Play Check steering wheel play of no more than ten degrees (approximately two inches of movement at the rim of a 20-inch steering wheel).

Parking Brake Set the parking brake, put the vehicle in low gear and gently release your foot from the brake pedal (and clutch if equipped), until you feel the vehicle pulling against the brake. The vehicle should not move.

Mirrors/Windshield Check mirrors for proper adjustment. Check the windshield for cracks, cleanliness and illegal stickers.

Wipers Check the wipers for looseness, dry rot and function.

Lighting Indicators Check the following for function: panel light, high/low beam indicator, left and right turn signal indicators and four-way flasher indicator.

Horns Check both the highway and city horns for proper function.

Heater/Defroster Check both the defroster and heater fans for proper function.

Safety/Emergency Equipment	Ensure working fire extinguisher properly charged and mounted, spare electrical fuses (unless equipped with circuit breakers), three reflective triangles.
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Front Suspension

Spring Mount(s)	Check for missing, cracked, shifted or bent springs. If 1/4 or more are missing, your vehicle could be put out of service.
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Shock Absorber	Check for cracks, leaks and missing bolts.
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Front Wheels

Rims	Check the rims for bends, cracks and nonfactory welds.
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Hub Seal	Check the hub oil seal for missing bolts, cracks, leaks and proper level (if equipped with site glass).
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Tire	Check the tire for at least 4/32" tread depth in the major grooves. Check for cuts, bulges and proper air pressure using an air gauge.
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Lug Nuts	Check the lug nuts for missing, loose nuts and rust around them.
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Front Brakes

Slack Adjuster	Check the slack adjuster for missing cotter pins. If the slack adjuster moves more than one inch where the push rod attaches to it, it probably needs to be adjusted. Slack adjusters should not be at more than a 90-degree angle with the brakes applied.
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Chambers	Check the chambers for cracks, dents and air leaks.
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Air Hose	Check the hoses for loose connections, dry rot, holes and air leaks.
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Brake Drum	Check the drum for cracks, non-factory welds and signs of grease or oil.
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Hydraulic Brakes (if equipped)	Check the rotor for cracks, non-factory welds and signs of fluid leaks. Check the lines for cuts, holes, loose connections and fluid leaks. Check the calipers for cracks, missing/loose bolts and fluid leaks.
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Driver/Fuel Area

Door	Check the door for cracked or bent hinges and that it functions properly.
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Mirrors	Check the mirrors for cracks, cleanliness and missing/loose bolts/nuts.
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Fuel Tank	Check the fuel tank for cracks, holes and that the straps are not loose or cracked. Shiny metal by straps could indicate a loose strap. Check under fuel tank for leaks.
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Under the Vehicle

Drive shaft	Check the drive shaft for cracks, non-factory welds, missing/loose bolts or nuts and proper lubrication.
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Exhaust System	Check the exhaust system for cracks, holes, missing/loose bolts and nuts. Check for signs of soot, which can indicate an exhaust leak.
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Frame	Check the vehicle frame for cracks, bends, nonfactory welds and rust.
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Tractor Only

Air/Electrical Lines	Check for leaks, cuts, cracks or sign of wear.
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Catwalk	Check to make sure it is clear and not loose.
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Coupling System	Check for loose or missing bolts, clamps, brackets or nuts.
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Mounting Bolts	Check for loose or missing nuts or bolts.
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Safety Latch	Ensure it is in position over locking lever and engaged.
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Platform	Check for cracks or breaks.
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Release Arm	Ensure it is locked in place.
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Kingpin/Apron	Ensure the kingpin is not bent, apron is not bent, cracked or broken. Locking jaws are closed around kingpin.
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Sliding Fifth Wheel	Ensure it is in locked position, not cracked or broken.
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Locking Pins	Check for loose or missing pins. None broken/damaged.
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Lights/Reflector	Ensure it is not cracked, lenses clear, clean, proper color, no condensation. Check for function, left/right turn signal, four-way flashers and brake.
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Rear of Vehicle

Rear Wheels	Check the rear wheels the same as the front with the exception of the tire depth, it should be 2/32" in the major grooves. Check the space between the dual tires. Tires should not be touching and no sign of debris. If equipped with spacers, they should not be bent, cracked or non-factory welds.
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Rear Suspension	Inspect this area the same as the front. Suspensions vary and all items should be checked for cracks, bent, non-factory welds, missing/loose bolts or nuts. Inspect walker beams, torsion bars and air bellows, if equipped.
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Rear Brakes	Inspect this area the same as the front of the vehicle.
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Front of Trailer

Air/Electric Lines	Ensure glad hands are secure and rubber seals not split, cracked or missing, electrical connection locked into place.
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Header Board	Ensure it is not cracked or bulged.
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Lights/Reflectors	Ensure it is not cracked, clear, clean, proper color, no condensation. Check for function.
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Side of Trailer

Landing Gear	Check for missing, bent or cracked frames. Handle secured.
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Lights/Reflectors	Ensure it is not cracked, clear, clean, proper color, no condensation. Check for function.
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Doors, Ties	Ensure it opens and closes properly, hinges not cracked, ties not broken or missing.
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Frame	Ensure it is not bent or cracked, non-factory welds.
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Wheels	Check same as rear wheels.
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Suspension	Check the same as front suspension.
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Brakes	Check same as front brakes.
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Rear of Trailer

Lights/Reflectors	Ensure it is not cracked, lenses clear, clean, proper color, no condensation. Check for function same as rear of tractor.
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Door/Ties	Ensure it opens and closes properly, hinges not cracked, ties not broken or missing.
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Splash Guards	Ensure it is secured, no nuts or bolts missing.
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