

11.7 Brake Checks

Correct Brake checks are a must!

Detailed, Step by Step instructions follow.

NOTE: Failure to correctly perform all components of the hydraulic or air brake check will result in an automatic failure of the vehicle inspection test.

STEP ONE: AIR BRAKE VEHICLES

(3 PARTS) Air Leak Check: Part One of Three

With the engine running, build the air pressure up to the governed cut-out of 120-140 psi (operational level).



Shut the engine off, chock wheels if necessary, and turn the ignition key back to the "ON" or "battery charge" position



Release the Tractor Protection Valve and Parking brakes by pushing both valves in * *see note below*



Fully apply the foot brake and hold it steady for one (1) minute.



Check the air gauge to see if the air pressure drops.



Air drop cannot exceed:

Single Vehicle:

- 3 pounds in 1 minute.

Combination Vehicle:

- 4 pounds in 1 minute.

Special Note: If the loss of air exceeds the above amounts, there is a defect somewhere in the system.

Low Air Alarm Check: Part Two of Three

Make sure the engine is off and the ignition key is in the "ON" position.



Fan (pump) the brake pedal to reduce the air pressure in the system.



The low-air warning devices (buzzer, light or flag) should activate before air pressure drops below approximately 60 psi).



- About 60 p.s.i. low air alarm should come on

Note: There is a simplified brake check practice sheet in the back of this manual.

Cut it out and use it to help you study and memorize the brake check procedures



Tractor Protection Valve/Spring Brake Check: Part Three of Three

Continue to fan off the air pressure. You must tell the examiner that the tractor protection valve and parking brake valve should close (pop out) when the pressure in the system drops between 20 and 45 psi. On other combination vehicle types and single vehicle types, the parking brake valve should close (pop out).



- 20-45 PSI, TPV Valve should pop out



Special Note: Air brake check procedures vary from vehicle to vehicle and different drivers may have learned different procedures; however, all procedures are designed to confirm that the correct safety devices operate at the appropriate times as the air pressure drops from "normal" to "very low."

Not all valves will pop out on every vehicle, but an audible discharge of air should be recognizable. The "Air Brake System Check" must be done correctly and in order (Leak Down, Low Air Alarm and Tractor Protection Valve) to pass the skills test.

If you forget to turn the key "on", but recognize your mistake before you complete the check (valve pops), you will be permitted to start the procedure over.

WHEN THE VALVE "POPS" THE TEST IS OVER.

STEP TWO (ALL VEHICLES) PARKING BRAKE TEST:

Straight Truck and Buses with Air Brakes: With the parking brake engaged check that parking brake will hold vehicle by **gently** trying to pull forward with parking brake on.



Combination Vehicles with Air Brakes: Step One:

With the truck/tractor parking brake engaged and the trailer brake (Tractor Protection Valve) released, check that the truck/tractor parking brake will hold vehicle by **gently** trying to pull forward.



Combination Vehicles with Air Brakes: Step Two:

With the trailer brake (Tractor Protection Valve) engaged and the truck/tractor parking brake released, check that the trailer brake will hold the vehicle by **gently** trying to pull forward.



HYDRAULIC BRAKE VEHICLES:

All Vehicles: With the parking brake engaged check that parking brake will hold vehicle by **gently** trying to pull forward with parking brake on.



STEP THREE (ALL VEHICLES) Service Brake Test

Release the parking brake
(or brakes)

(air or hydraulic)



Pull forward at approximately 5 mph, and apply service brake. Check to see that brakes are working properly and to see if the vehicle pulls to one side or the other.



STEP THREE: (HYDRAULIC BRAKE VEHICLES)

Pump the brake pedal 3 times and hold it down for 5 seconds. The brake pedal should not move (depress) during the 5 seconds.



If equipped with a hydraulic brake reserve (backup) system, with the key off, depress the brake pedal and listen for the sound of the reserve system electric motor.

Check that the warning buzzer or light is off.



Air Brake Check

(Air Brake Equipped Vehicles Only)

WARNING: Failure to perform all three components of the air brake check correctly will result in an automatic failure of the vehicle inspection test. Air brake safety devices vary. However, this procedure is designed to see that any safety device operates correctly as air pressure drops from normal to a low air condition. For safety purposes, in areas where an incline is present, you will use wheel chocks during the air brake check. The proper procedures for inspecting the air brake system are as follows:

1. With the air pressure built up to governor cutoff (120 – 140 psi), shut off the engine, chock your wheels if necessary, release the parking brake (all vehicles), and the tractor protection valve (combination vehicle) and fully apply the foot brake. Hold the foot brake for one minute. Check the air gauge to see if the air pressure drops more than three pounds in one minute (single vehicle) or four pounds in one minute (combination vehicle).
2. Without re-starting the engine, turn electrical power to the **on** or **battery charge** position. Begin fanning off the air pressure by rapidly applying and releasing the foot brake. Low air warning devices (buzzer, light, flag) should activate before air pressure drops below 60 psi or level specified by the manufacturer.
3. Continue to fan off the air pressure. At approximately 40 psi on a tractor-trailer combination vehicle (or level specified by the manufacturer), the tractor protection valve and parking brake valve should close (pop out). On other combination vehicle types and single vehicle types, the parking brake valve should close (pop out). Valves should pop between 20 and 45 PSI.

End of Truck Pre-Trip Section



Next is the School Bus section (to be studied along with the truck section for School Bus applicants). Passenger bus applicants skip this section; passenger bus section follows.

11.8 School Bus Only

ADDITIONAL PRE-TRIP INSPECTION ITEMS FOR SCHOOL BUSES



Special Note: The All Vehicles section of the pre-trip inspection form for the buses is the same as the inspection criteria for straight trucks and combination vehicles with the exception of the type of tires allowed on the front of vehicles transporting passengers. FMCSR §398.5(e) prohibits re-grooved, re-capped, or re-treaded tires on the front wheels of vehicles carrying passengers. This exception being noted, only the items specific to the buses will be covered in this section.

Emergency Equipment: School bus emergency equipment includes a first aid kit, body fluid clean-up kit, and seat belt cutter on buses equipped with belts and/or wheel chair tie-downs. In addition to checking for spare electrical fuses (if equipped), three red reflective triangles, and a properly charged and rated fire extinguisher, school bus drivers must also inspect the following emergency equipment:

- ✓ Check for a first aid kit meeting Idaho standards for content.