

(2) The warning device (visual or audible) connected to the brake system air pressure source shall be activated when the air pressure is lowered to not less than 50 psi.

(3) The governor cut-in pressure shall be not lower than 80 psi, and the cut-out pressure shall not be higher than 135 psi, unless other values are recommended by the vehicle manufacturer.

(4) Air brake pressure shall not drop more than 2 psi in 1 minute for single vehicles or more than 3 psi in 1 minute for combination vehicles, with the engine stopped and service brakes released. Allow a 1-psi drop per minute for each additional towed vehicle.

(5) With the reservoir(s) fully charged, air pressure shall not drop more than 3 psi in 1 minute for single vehicles or more than 4 psi in 1 minute for combination vehicles, with the engine stopped and service brakes fully applied. Allow a 1-psi pressure drop in 1 minute for each additional towed vehicle.

(6) The compressor drive belt shall not be badly worn or frayed and belt tension shall be sufficient to prevent slippage.

Inspection procedure. With the air system charged, open the drain cocks in the service and supply reservoir on the truck or truck-tractor. Note the pressure at which the visual or audible warning device connected to the low pressure indicator is activated. Close the drain cocks and, with the trailers uncoupled, check air pressure buildup at the manufacturer's recommended engine speed. Observe the time required to raise the air pressure from 85 to 100 psi. Continue running the engine until the governor cuts out and note the pressure. Reduce engine speed to idle, couple trailers, and make a series of brake applications. Note the pressure at which the governor cuts in. Increase engine speed to fast idle and charge the system to its governed pressure. Stop the engine and record the pressure drop in psi per minute with brakes released and with brakes fully applied.

(d) *Air-over-hydraulic brake subsystem hoses, master cylinder, tubes and connections.* System tubes, hoses and connections shall not be cracked or improp-

erly supported, the air and hydraulic hoses shall not be abraded and the master cylinder shall not show signs of leakage.

(1) *Inspection procedure.* Stop the engine and examine air and hydraulic brake hoses, brake master cylinder, tubes and connections visually for conditions specified.

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§ 570.58 Electric brake system.

(a) *Electric brake system integrity.* The average brake amperage value shall be not more than 20 percent above, and not less than 30 percent below, the brake manufacturer's maximum current rating. In progressing from zero to maximum, the ammeter indication shall show no fluctuation evidencing a short circuit or other interruption of current.

(1) *Inspection procedure.* Insert a low range (0 to 25 amperes for most 2- and 4-brake systems and 0 to 40 amperes for a 6-brake system) d.c. ammeter into the brake circuit between the controller and the brakes. With the controller in the "off" position, the ammeter should read zero. Gradually apply the controller to the "full on" position for a brief period (not to exceed 1 minute) and observe the maximum ammeter reading. Gradually return the controller to "full off" and observe return to zero amperes. Divide the maximum ammeter reading by the number of brakes and determine the brake amperage value.

(b) *Electric brake wiring condition.* Electric brake wiring shall not be frayed. Wiring clips or brackets shall not be broken or missing. Terminal connections shall be clean. Conductor wire gauge shall not be below the brake manufacturer's minimum recommendation.

(1) *Inspection procedure.* Examine visually for conditions specified.

§ 570.59 Service brake system.

(a) *Service brake performance.* Compliance with any one of the following performance criteria will satisfy the requirements of this section. Verify that tire inflation pressure is within the limits recommended by the vehicle

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manufacturer before conducting either of the following tests.

(1) *Roller-type or drive-on platform tests.* The force applied by the brake on a front wheel or a rear wheel shall not differ by more than 25 percent from the force applied by the brake on the other front wheel or the other rear wheel respectively.

(i) *Inspection procedure.* The vehicle shall be tested on a drive-on platform, or a roller-type brake analyzer with the capability of measuring equalization. The test shall be conducted in accordance with the test equipment manufacturer's specifications. Note the brake force variance.

(2) *Road test.* The service brake system shall stop single unit vehicles, except truck-tractors, in a distance of not more than 35 feet, or combination vehicles and truck-tractors in a distance of not more than 40 feet, from a speed of 20 mph, without leaving a 12-foot-wide lane.

(i) *Inspection procedure.* The road test shall be conducted on a level (not to exceed plus or minus 1 percent grade), dry, smooth, hard-surfaced road that is free from loose material, oil or grease. The service brakes shall be applied at a vehicle speed of 20 mph and the vehicle shall be brought to a stop as specified. Measure the distance required to stop.

NOTE: Inspect for paragraphs (b), (c) and (d) of this section on vehicles equipped with brake inspection ports or access openings, and when removal of wheel is not required.

(b) *Disc and drum condition.* If the drum is embossed with a maximum safe diameter dimension or the rotor is embossed with a minimum safe thickness dimension, the drum or disc shall be within the appropriate specifications. These dimensions will generally be found on motor vehicles manufactured since January 1, 1971, and may be found on vehicles manufactured for several years prior to that time. If the drums and discs are not embossed, they shall be within the manufacturer's specifications.

(1) *Inspection procedure.* Examine visually for the condition indicated, measuring as necessary.

(c) *Friction materials.* On each brake, the thickness of the lining or pad shall not be less than one thirty-second of an inch over the fastener, or one-sixteenth

of an inch over the brake shoe on bonded linings or pads. Brake linings and pads shall not have cracks or breaks that extend to rivet holes except minor cracks that do not impair attachment. The wire in wire-backed lining shall not be visible on the friction surface. Drum brake linings shall be securely attached to brake shoes. Disc brake pads shall be securely attached to shoe plates.

(1) *Inspection procedure.* Examine visually for the conditions indicated, and measure the height of the rubbing surface of the lining over the fastener heads. Measure bonded lining thickness over the surface at the thinnest point on the lining or pad.

(d) *Structural and mechanical parts.* Backing plates, brake spiders and caliper assemblies shall not be deformed or cracked. System parts shall not be broken, misaligned, missing, binding, or show evidence of severe wear. Automatic adjusters and other parts shall be assembled and installed correctly.

(1) *Inspection procedure.* Examine visually for conditions indicated.

§ 570.60 Steering system.

(a) *System play.* Lash or free play in the steering system shall not exceed the values shown in Table 2.

(1) *Inspection procedure.* With the engine on and the steering axle wheels in the straight ahead position, turn the steering wheel in one direction until there is a perceptible movement of the wheel. If a point on the steering wheel rim moves more than the value shown in Table 1 before perceptible return movement of the wheel under observation, there is excessive lash or free play in the steering system.

TABLE 2. STEERING WHEEL FREE PLAY VALUES

Steering wheel diameter (inches)	Lash (inches)
16 or less	2
18	2¼
20	2½
22	2¾

(b) *Linkage play.* Free play in the steering linkage shall not exceed the values shown in Table 3.

(1) *Inspection procedure.* Elevate the front end of the vehicle to load the ball