

(b) *Brake pipe valve required.* Each steam locomotive shall have a brake pipe valve attached to the front of the tender, the rear of the back cab wall, or adjacent to the exit of a vestibuled cab. The words "Emergency Brake Valve" shall be clearly displayed near the valve.

**§ 230.71 Orifice testing of compressors.**

(a) *Frequency of testing.* The compressor or compressors shall be tested for capacity by orifice test as often as conditions may require, but not less frequently than once every 92 service days.

(b) *Orifice testing criteria.* (1) Compressors in common use, as listed in the following table, shall have orifice test criteria as follows:

Make	Compressor size	Single strokes per minute	Diameter of orifice (in inches)	Air pressure maintained (in pounds)
Westinghouse .....	9½ .....	120	11/64	60
Westinghouse .....	11 .....	100	3/16	60
Westinghouse .....	150 CFM 8½ CC .....	100	9/32	60
Westinghouse .....	120 CFM 8½ .....	100	15/64	60
New York .....	2a .....	120	5/32	60
New York .....	6a .....	100	13/64	60
New York .....	5b .....	100	15/64	60

**Note:** This table shall be used for altitudes to and including 1,000 feet. For altitudes over 1,000 feet the speed of compressor may be increased 5 single strokes per minute for each 1,000 feet increase in altitude.

(2) For compressors not listed in the table in paragraph (b)(1) of this section, the air pressure to be maintained shall be no less than 80 percent of the manufacturer's rated capacity for the compressor.

$$D = (.6PR / (S - .6P))$$

Where:

- D = Extreme depth of telltale holes in inches but in no case less than one-sixteenth inch;
- P = certified working pressure in psi;
- S = 1/8 of the minimum specified tensile strength of the material in psi; and
- R = inside radius of the reservoir in inches.

**§ 230.72 Testing main reservoirs.**

(a) *Hammer and hydrostatic testing.* Except as described in paragraphs (b) through (d) of this section, every main reservoir, except those cast integrally with the frame, shall be hammer and hydrostatically tested during each annual inspection. The reservoir shall be hammer tested while empty and with no pressure applied. If no defective areas are detected, a hydrostatic test of MAWP shall be applied.

(2) One row of holes shall be drilled lengthwise of the reservoir on a line intersecting the drain opening. When main reservoirs are drilled as described in paragraph (b)(1) of this section, the hydrostatic and hammer tests described in paragraph (a) of this section are not required during the annual inspection. Whenever any telltale hole shall have penetrated the interior of any reservoir, the reservoir shall be permanently withdrawn from service.

(b) *Drilling of main reservoirs.* (1) Only welded main reservoir originally constructed to withstand at least five times the MAWP may be drilled over its entire surface with telltale holes that are 3/16 of an inch in diameter. The holes shall be spaced not more than 12 inches apart, measured both longitudinally and circumferentially, and drilled from the outer surface to an extreme depth determined by the following formula:

(c) *Welded main reservoirs without longitudinal lap seams.* For welded main reservoirs that do not have longitudinal lap seams, an appropriate NDE method that can measure the wall thickness of the reservoir may be used instead of the hammer test and hydrostatic test required in paragraph (a) of this section. The spacing of the sampling points for wall thickness shall not be greater than 12 inches longitudinally and circumferentially. The reservoir shall permanently be withdrawn