

INSTRUCTION LEAFLET

No. 2386

MARCH, 1936

(SUPERSEDES APRIL, 1934 ISSUE)

BRAKE PIPE
VENT VALVE
TEST CODE

WESTINGHOUSE
AIR BRAKE COMPANY
PITTSBURGH, PA.

THIS ITEM IS BOTH
PHYSICAL (ON SITE)
AND
DIGITAL (ONLINE)!

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WESTINGHOUSE AIR BRAKE CO.
Pittsburgh, Pa., U. S. A.

WORKS AT WILMERDING, PA.

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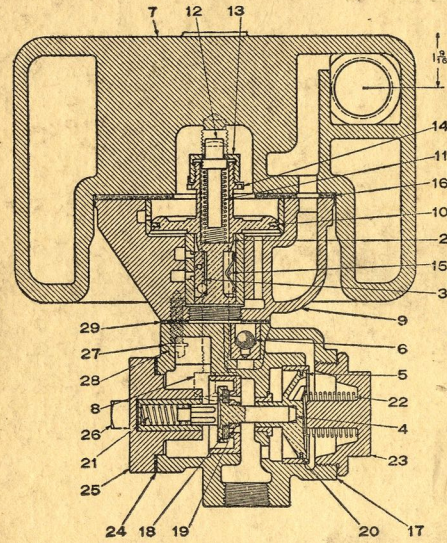
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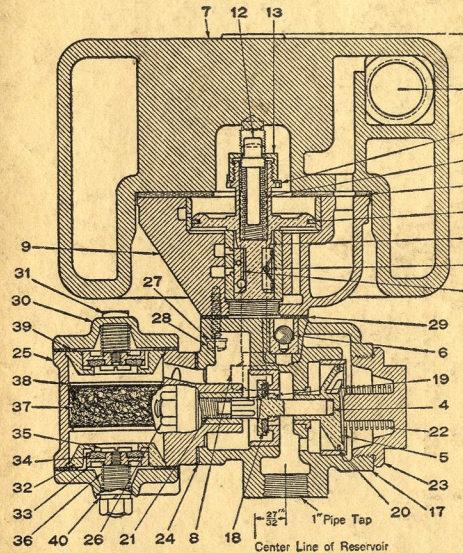
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Main Parts of the Vent Valve



No. 4 Brake Pipe Vent Valve.



No. 4-B Brake Pipe Vent Valve.

- 2 Emergency Piston
- 3 Slide Valve
- 4 Quick Action Valve
- 5 Quick Action Piston
- 6 1/2" Ball Check
- 7 Reservoir
- 9 Emergency Body
- 11 Emerg. Piston Spring
- 12 Emergency Piston Stop
- 13 Piston Stop Nut
- 14 Piston Stop Nut Lock
- 15 Slide Valve Spring
- 17 Q. A. Valve Case
- 18 Q. A. Valve Seal
- 19 Q. A. Valve Nut
- 21 Q. A. Valve Spring
- 22 Q. A. Piston Spring
- 23 Cap Nut
- 25 Q. A. Valve Cover (No. 4)
- 25 Strainer and Check Valve Case (No. 4-B)
- 30 Check Valve Case Cover
- 32 Check Valve Seat
- 34 Check Valve Seal
- 35 Check Valve Seal Retainer
- 36 Check Valve Spring
- 37 Strainer
- 38 Strainer Retaining Ring

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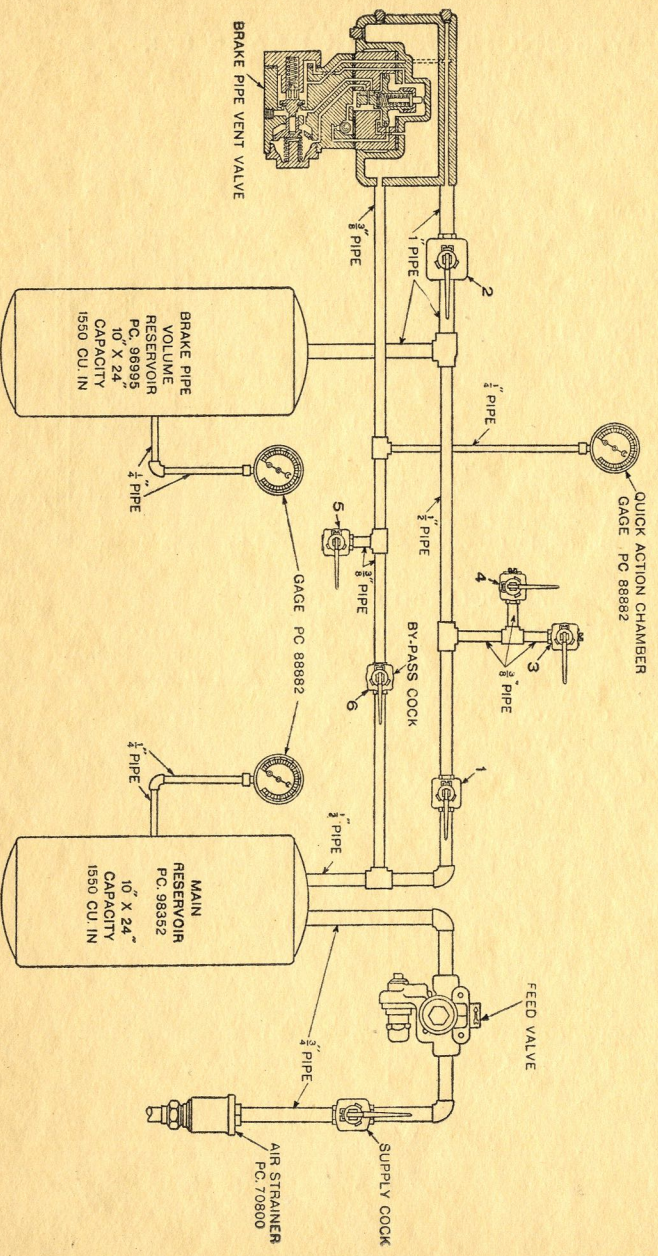
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No. 4 BRAKE PIPE VENT VALVE TEST CODE



No. 4 Brake Pipe Vent Valve Test Rack (Diagrammatic)

Length of pipe between valve and either reservoir must not exceed six (6) feet

Feed Valve to be set to close at 70 pounds.

Before placing Vent Valve on the rack, determine the friction of the piston and the slide valve by using the friction indicator, which is used for determining friction on triple valves. The resistance to movement should not exceed 6 pounds.

Make certain that the gasket between the valve portion and reservoir is in good condition, then place the Vent Valve on the rack.

Charging Test

Commence test with all cocks closed.

Open cock 1 and charge brake pipe reservoir to 70 lbs., then open cock 2 and note rate of buildup on the quick action chamber gage. The charging time should be 0 to 65 lbs. in 45 to 80 seconds. If a less time than 45 seconds is required for charging, check the No. 72 drill hole in the bushing underneath the ball check. If this is of the proper size, the faster charging time indicates ring leakage. At the same time, check the small port in the cylinder bush to see that it is open and unrestricted by dirt. Coat the entire valve with soap suds to detect leakage. If material leakage is found, the charging test should be repeated.

Slide Valve and Emergency Valve Leakage Test

After quick action chamber has been charged to 70 pounds, place a bubble over the valve exhaust. Leakage here indicates either slide valve or emergency valve seal leakage. To determine which valve is leaking, open cock 5, which vents quick action chamber pressure to atmosphere. If blow continues, it indicates emergency valve seal leakage.

Service Stability Test

Close cock 5, open by-pass cock, and recharge quick action chamber to 70 pounds. When recharged, close by-pass cock and cock 1, and open cock 3. This must not produce emergency in a 20 pound drop. If it does, it may be caused by a restricted quick action chamber port in the slide valve, a weak graduating spring, or high friction on the emergency piston. Close cock 3 and place a bubble over the vent valve exhaust. Leakage here indicates that the slide valve is leaking.

Emergency Sensitiveness Test

Open cock 1, by-pass cock, and recharge to 70 pounds. Close cock 1, and by-pass cock. Open cock 4. This must produce emergency, within a 10 pound drop. Failure to produce emergency may be due to a stuck emergency piston or a worn quick action piston ring. When emergency takes place, note the drop in pressure on the quick action chamber gage. From the opening of cock 4, the drop in pressure on the quick action chamber gage should be from 70 to 5 pounds in not less than 10 seconds nor more than 15 seconds for the No. 4 or No. 4-B vent valve, and not less than 5 seconds nor more than 7 seconds for the No. 4-A vent valve. If less than 10 seconds for the No. 4 or No. 4-B, or 5 seconds for the No. 4-A, it may be due to quick action piston ring leakage. If greater than 15 seconds for the No. 4 or No. 4-B, or 7 seconds for the No. 4-A, it may be caused by a restricted vent hole in the quick action piston. Close cock 4 and open cock 1 slowly, and note that the quick action valve closes after emergency. Failure to close will be indicated by a continuous blow at the quick action exhaust.

Description of Cocks

- Cock 1. 1/2" Cut-out cock from Main Reservoir, Pc. 95413.
 - Cock 2. 1" Cut-out cock, Pc. 96037, to vent valve.
 - Cock 3. 3/8" Bleed cock, Pc. 96035, with 5/32" choke, Pc. 78369, reduces brake pipe volume (1660 cu. in.) from 70 to 50 lbs. in 3 seconds (with cocks 1 and 2 closed).
 - Cock 4. 3/8" Bleed Cock, Pc. 96035, with 13/64" choke, Pc. 58356, reduces brake pipe volume (1660 cu. in.) from 70 to 50 lbs. in 2 seconds (with cocks 1 and 2 closed).
 - Cock 5. 3/8" Bleed cock from quick action chamber volume, Pc. 96035.
 - Cock 6. 3/8" By-pass cock used in recharging vent valve reservoir from main reservoir, Pc. 96035.
- Supply cock—3/4" cock, Pc. 96041.