These instructions are for the freight testing to be used on all freight valves that predate the "AB" type control valves only "AB" valves and newer types must be tested as per AAR Standard S-486-01 or current issue.

GENERAL INSTRUCTIONS for TESTING and MAINTAINING the FREIGHT SINGLE CAR TESTING DEVICE

To secure reliable and uniform results with the Single Car Testing Device, it must be kept free from leakage and must be tested not less than once every 30 days, or oftener if necessary, any leakage discovered must be corrected.

As often as service conditions require, the rotary valve must lubricated with a suitable grease. With the standard quick opening diaphragm cock, it is necessary to apply only a small amount of suitable grease to the cam part of the handle where it contacts the actuating plunger. Where test device with key type cock is in use, the key should be removed, cleaned, and lubricated with suitable grease.

The test gage must be kept accurate, and must be compared with a master gage as often as the device itself is being tested.

Operation Test

Assemble the device on the rack as illustrated by Fig. 13. Open the supply cock and FLOWRATOR by-pass cock.

The feed valve must be set to close at 70 pounds.

Operate the valve several times by moving the device handle from position No. 1 to position No. 6, finally leaving the handle in position No. 3 (Lap).

Commence test with all numbered cocks closed and test device handle in position No. 3 (Lap). Open cock 1 and the test device 3/8" cock. Coat the opening of the 3/8" cock with soap suds in order to detect rotary valve leakage to brake pipe. Close the 3/8" cock and coat the device exhaust port with soap suds for rotary valve leakage in all positions. Leakage permitted for the above test is a bubble not larger than 1" in diameter in five seconds. At completion of test, move the device handle to position No. 1.

Open cock 2, and when the operating reservoir pressure reaches 58 pounds, move the device handle to position No. 2. Note that the operating reservoir charges from 60 to 65 pounds in 25 to 30 seconds. At the completion of test, move the device handle to position No. 1 and charge the reservoir to 70 pounds.

Close the FLOWRATOR by-pass cock. There should be no indication of air flow. Open cock 3 allowing air to vent through the No. 80 double choke. The ball float should rise and float in the tube in the zone between the condemning line and the top of the tube. If the FLOWRATOR fails to pass this test, the ball float and glass tube of the FLOWRATOR should be cleaned, *using a non residue producing solution* to remove any oil or foreign matter which may be carried into the device.

Close cock 3 and open FLOWRATOR by-pass cock.

NOT LESS THAN 30 SECONDS MUST ELAPSE BEFORE COMMENCING EACH OF THE FOLLOWING TESTS.

Move the device handle to position No. 4. The operating reservoir pressure must reduce from 70 to 60 pounds in 10 to 12 seconds. At the completion of test, move the device handle to position No. 1 and recharge.

Move the device handle to position No. 5. The operating reservoir pressure must reduce from 70 to 50 pounds in 5 to 7 seconds. At the completion of test, move the device handle to position No. 1 and recharge.

Move the device handle to position No. 6. The operating reservoir pressure must reduce from 70 to 30 pounds in 3-1/2 to 5 seconds. At the completion of test, move the device handle to position No. 1, and recharge.

Move the device handle to position No. 3 (Lap). Open the test device 3/8" cock and observe on the operating reservoir gage that the operating reservoir pressure reduces from 70 to 10 pounds in not more than 3-1/2 seconds or less than 3 seconds. At the completion of test, close all cocks and remove device from the test rack.

Positions of Freight Test Device

Position No. 1 — M.R. charges brake pipe through 1/4" opening.

Position No. 2 — M.R. charges brake pipe through .0225" (No. 74 drill) opening.

Position No. 3 — Lap.

Position No. 4 — Brake pipe pressure reduces through .035" (No. 65 drill) opening.

Position No. 5 — Brake pipe pressure reduces through .0781" (5/64" drill) opening.

Position No. 6 — Brake pipe pressure reduces through .147" (No. 26 drill) opening.

3/8" Test Device Cock — Brake pipe pressure reduces through .250" (1/4" drill) opening.

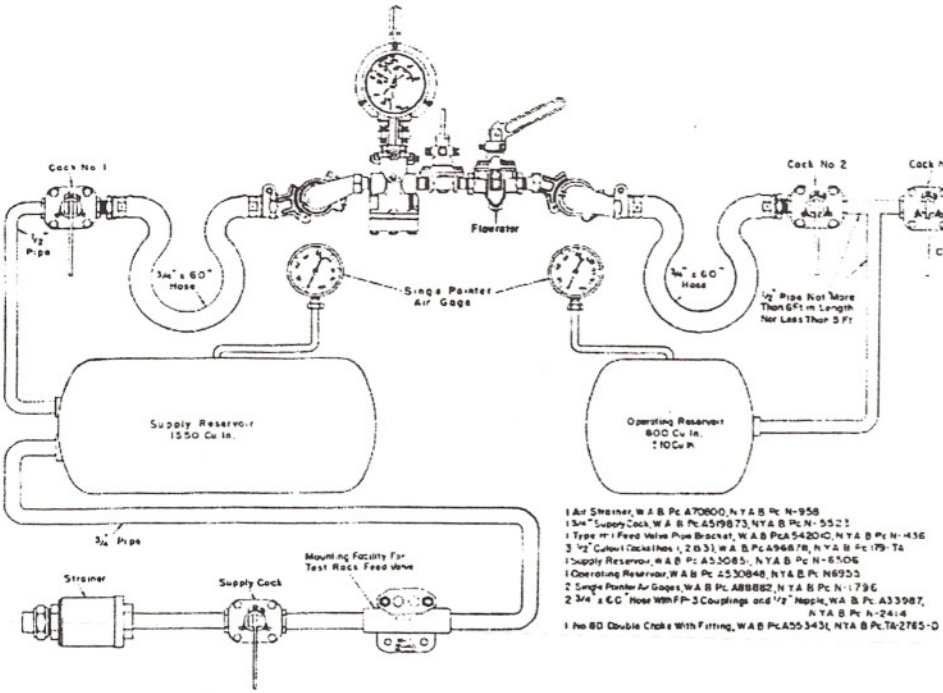
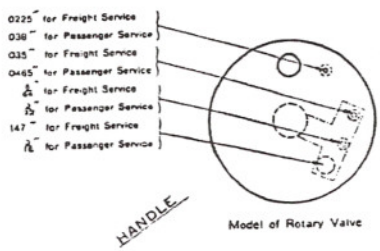


Fig. 13. Piping Diagram of Arrangement for Testing the FREIGHT Single Car Testing Device



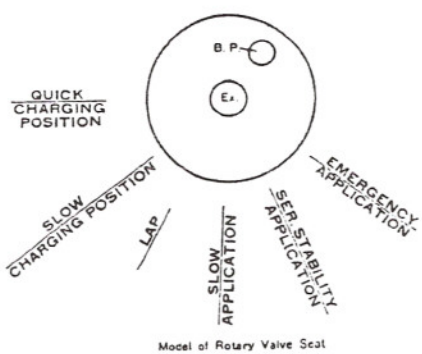


Fig. 14. Rotary Valve and the Rotary Valve Seat of the Single Car Testing Device

CODE FOR TESTING FREIGHT SINGLE CAR TESTING DEVICES (ALTERNATE METHOD)

To secure reliable and uniform results with the Single Car Testing Device, it must be kept free from leakage and must be tested not less than once every 30 days, or oftener if necessary, any leakage discovered must be corrected.

As often as service conditions require, the rotary valve must lubricated with a suitable grease. With the standard quick opening diaphragm cock, it is necessary to apply only a small amount of suitable grease to the cam part of the handle where it contacts the actuating plunger. Where test device with key type cock is in use, the key should be removed, cleaned, and lubricated with suitable grease.

The test gage must be kept accurate, and must be compared with a master gage as often as the device itself is being tested.

Attach the end of test device marked BP to the volume reservoir coupling of the test rack (Fig. 24), then couple the supply line to the test device end marked MR.

The supply line pressure must be maintained at 70 pounds by means of a suitable feed valve and, when testing Freight Single Car Testing Device, the FOLWRATOR by-pass cock must be open.

With the device handle in position No. 3 (Lap) and cocks 1 and 2 closed, open the supply cock and test device 3/8" cock. Coat the opening of the 3/8" cock with soap suds to detect rotary valve leakage to brake pipe. A 1" buble in not less than five (5) seconds is permitted.

Close the 3/8" cock and move test device handle to position No. 6, then coat the device exhaust port with soap suds in positions 6, 5, 4, 3, 2 and 1 consecutively. A 1" bubble in not less than five (5) seconds is permitted.

With test device handle in position No. 1, open cock 1. After reservoir is charged to 70 pounds, compare gages and note that gage hands register within one half (1/2) pound.

Close the FLOWRATOR by-pass cock. *There should be no indication of air flow*. Open cock 2 (with No. 80 double choke). The ball float should rise and float in the tube in the zone between the condemning line and the top of the tube. If the FLOWRATOR fails to pass this test, the ball float and glass tube of the FLOWRATOR should be cleaned, *using a non residue producing solution* to remove any oil or foreign matter which may be carried into the device.

Close cock 2 and open the FLOWRATOR by-pass cock.

By placing test device handle in the various positions indicated below, note that the volume reservoir charges or discharges within the rate limits specified.

Not less than 30 seconds must elapse before commencing each of the following tests.

VOLUME RESERVOIR — RATE OF CHANGE IN PRESSURE

HANDLE POS.	PRESSURE	TIME-SEC.
2*	Increase 40 to 50	38 to 43
4	Decrease 70 to 50	27 to 31
5	Decrease 70 to 50	5 to 7
6	Decrease 70 to 20	5-1/2 to 7

* NOTE — Begin test by first reducing volume reservoir pressure to about 30 pounds.

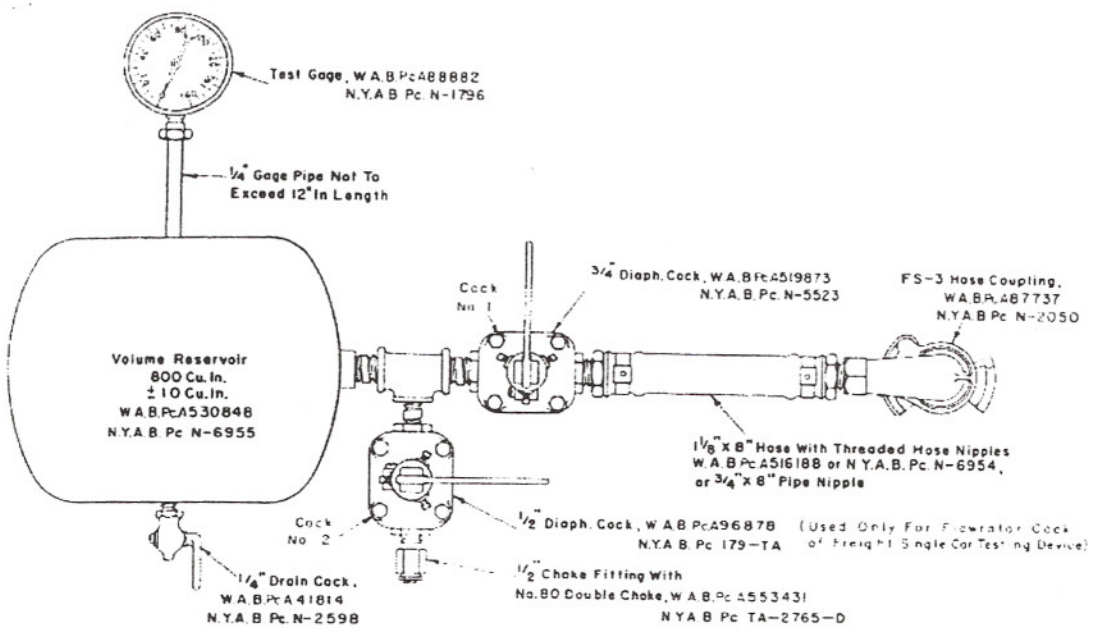


Fig. 24. Test Rack, Single Car Testing Device (Alternate Method)