

SINGLE CAR TESTING DEVICE

CODE OF TESTS

INSTRUCTION PAMPHLET

No. 5039-4 Sup. 1
JANUARY, 1956

(Superseding Issue of JANUARY, 1950)

TEST CODES

The tests are to be made with the feed valve or reducing valve adjusted for 70 to 90 pounds. Before the test apparatus is attached to the supply line, the line must be blown out.

The specified length of cars and pressures used for testing are as follows:

Feed or Reducing Valve Pressure (Pounds)	Car Length (Feet)
70	Under 50
80	From 50 to 70
90	From 70 to 90

Test For Testing Device (At Least Once Each Day)

Daily Test for Single Car Testing Device as in SECTION 2.3 must be performed at least once a day before testing brake system.

NOTE — It is important that the FLOWRATOR be within 15 degrees of vertical when reading are being made.

Connecting Device To Car

Connect the device end marked B.P. or the coupling end of the device hose to the brake pipe hose at one end of the car (preferably at "B" end of car). Move device handle to position No. 1 after making sure that the FLOWRATOR by-pass cock is open. With both angle cocks open, note that a continuous blow of air from the open hose occurs at the other end of the car. Couple on a dummy hose coupling and charge the brake pipe and auxiliary reservoir to the proper pressure as shown in the preceding tabulation. Make certain that the retaining valve handle is in "Direct Exhaust" position.

After 8 minutes, the FLOWRATOR by-pass cock may be closed to determine whether the brake system is sufficiently charged to obtain a flow reading on the FLOWRATOR.

If any part of the float is above the condemning line, make a complete check for leakage (with soap suds when weather conditions permit) of all pipe connections including angle cocks, hoses, and auxiliary reservoir release valve. Make repairs necessary to reduce leakage to where float of FLOWRATOR remains below condemning line, then open the FLOWRATOR by-pass cock and proceed to Test No. 1.

1. Application Test

Move the device handle to position No. 4, reducing the brake pipe pressure 8 pounds, then return the handle to position No. 3 (Lap).

The brake must apply before the brake pipe pressure is reduced the amount specified.

Failure to apply indicates that the valve must be removed for further investigation on the A.A.R. standard triple valve test rack. *Triple valves that fail to apply after a release in position No. 1, must not be removed unless they fail to apply after being released in position No. 2.*

NOTE — When testing a car with KD-4-12 equipment, both the 4" and 12" brake cylinder pistons must apply. The 4" Take-Up Cylinder piston must move its full travel before the 12" cylinder piston commences to move. If both the 4" and 12" cylinder pistons apply simultaneously, the transfer valve must be removed and tested per shop test rack test code.

2. Release Test

Allow 10 seconds for pressure to settle. Move device handle to position No. 2. Brake must release within 45 seconds.

During the release test, the feed or reducing valve pressure must not vary more than 2 pounds. When the variation is greater, means must be provided for maintaining a constant pressure and the test repeated.

NOTE — When testing a car with KD-4-12 equipment, the 12" brake cylinder piston must move to release position before the 4" cylinder piston commences to return. If this sequence is not obtained, the transfer valve must be removed and tested per shop test rack code.

3. Emergency Test

Move the device handle to position No. 1 to recharge the brake pipe and auxiliary reservoir to proper pressure. When testing triples on cars under 45 feet in length, move the device handle to position No. 6, reducing brake pipe pressure 20 pounds. When testing triples on cars over 46 feet in length, move the device handle to position No. 3 (Lap) and open test device 3/8" cock (1/4" orifice) reducing brake pipe pressure 20 pounds. This test must produce emergency. If emergency application is not obtained, it

indicates that this triple valve must be removed for further investigation on the A.A.R. standard triple valve test rack. At the completion of test close the test device 3/8" cock, if open, then move the device handle to position No. 1 and note that there is no prolonged blow at the triple valve exhaust, indicating that the quick action parts have assumed their normal position.

4. Service Stability Test

With the device handle in position No. 1, recharge the brake pipe and auxiliary reservoir to proper pressure. Move device handle to position No. 5, reducing brake pipe pressure 20 pounds. This test must not produce emergency. If emergency application is obtained, it indicates that this triple valve must be removed for further investigation on the A.A.R. standard triple valve test rack. At the completion of this test, move the device handle to position No. 6.

NOTE — For Brake Cylinder and Retaining Valve Test see Instructions on page 37.

Brake Cylinder and Retaining Valve

TEST CODE

The following repair track test code, which covers the necessary tests for retaining valve and for brake cylinder leakage and piston travel supplements the tests prescribed on the preceding pages of this instruction Pamphlet for other brake devices.

When testing cars equipped with two or three position retaining valve or three position retaining valve converted to the equivalent of a four position release Control Retainer, an Exhaust Gage Fitting as shown by Fig. 21 must be available. This fitting must be inserted into the tapped retainer exhaust port after the wasp excluder, if equipped with such, has been removed.

When testing cars with the four position Release Control Retainer, the Exhaust Gage Fitting as shown by Fig. 22 must be used and clamp-mounted to the retainer.

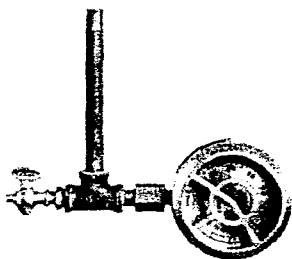


Fig. 21. Exhaust Gage Fitting for testing Retaining Valve with Tapped Exhaust Port.
W.A.B. Pc. A522598
N.Y.A.B. Pc. N-5524

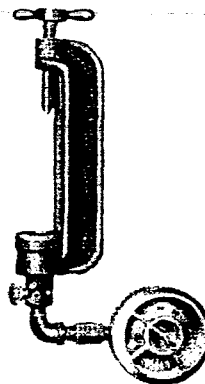


Fig. 22. Release Control Retainer Exhaust Gage Fitting.
W.A.B. Pc. A519117
N.Y.A.B. Pc. N-5308

Test No. 1. Leakage

With the proper exhaust gage fitting attached, the bleed cock closed and the retainer handle turned down to "Direct Exhaust" position, make application and releases of the brake, noting that the brake cylinder piston moves to Applied position, until 50 pounds or more brake cylinder pressure is indicated on the exhaust fitting air gage when the handle of the single car testing device is in No. 1 position. If in excess of 50 pounds, the pressure must be reduced to 50 pounds through the bleed cock.

On cars having standard "AB" or "K" single capacity brake equipment, the piston travel must be adjusted to 7 inches.

On cars with 7-5/8" X 12" compensating brake cylinder, the piston travel is checked during Test No. 3, when empty car conditions prevail. Observe that the indicator plunger, attached to the compensating chamber of the brake cylinder, is in its inward position, thus indicating that there is no air in the chamber.

Observe the test gage for leakage from the combined volumes of the brake cylinder, brake cylinder release valve, retaining valve and their related piping. The drop in pressure, indicated on this gage, Must not exceed the amount specified below.

5 pounds in one minute (from 50 pounds) when testing a car on which the brake equipment has been given C.O.T.&S. attention

8 pounds in one minute (from 50 pounds) when testing an "In-Date" car.

If the drop in pressure exceeds the amount specified, inspect the retaining valve, retaining valve pipe, brake cylinder release valve, and brake cylinder pipe, and eliminate any leakage. If no leakage is found, or if the elimination of the leakage found does not reduce the leakage observed on the test gage to less than the limits specified, it indicates a faulty brake cylinder (or in the "AB-1-B" equipment, safety valve leakage or ruptured selector valve diaphragm), in which case the defective conditions must be corrected if on an "In-Date" car. If the drop in pressure does not exceed the above specified limits, proceed as follows:

Test No. 2. Retaining Valve Test

SECTION "A"

Cars equipped with "Two Position" or "Three Position" Retaining Valve

"TWO POSITION" FREIGHT RETAINING VALVE

Move the retaining valve handle up to "Retaining Position" and immediately open the bleed cock, leaving the handle in this position for three (3) minutes. Note that a continuous exhaust of air through the choked exhaust port in the retaining valve cap is obtained.

Move retaining valve handle to "Direct Exhaust" position and note that a sufficient blow is obtained to indicate that brake cylinder pressure has been retained.

Replace the wasp excluder if the retaining valve is equipped with one.

"THREE POSITION" RETAINING VALVE

Move the retaining valve handle up to "High Pressure" position and immediately open the bleed cock, leaving handle in the position for fifteen (15) seconds, noting that a continuous exhaust of air through the choked exhaust port in the retaining valve cap is obtained.

Move retaining valve handle to "Low Pressure" position, leaving handle in this position for two (2) minutes and forty-five (45) seconds, noting that air continues to exhaust through the choked exhaust port.

Move the retaining valve handle to "Direct Exhaust" position and note that a sufficient blow is obtained to indicate that effective brake cylinder pressure has been retained.

Replace the wasp excluder if the retaining valve is equipped with one.

SECTION "B"

Freight Cars equipped with either the "Four Position" Release Control Retainer or "Three Position" Retaining Valve converted to the Equivalent of the Release Control Retainer

CONVERTED "THREE POSITION" RETAINING VALVE

Move the retaining valve handle up to "Slow Direct Exhaust" position. Open the bleed cock and leave handle in this position for fifteen (15) seconds, noting that a continuous exhaust of air through the bleed cock is obtained.

Move retaining valve handle to "High Pressure" position and leave in this position for fifteen (15) seconds. Noting that a continuous exhaust of air through the choked exhaust port in the retaining valve cap is obtained.

Move retaining valve handle to "Low Pressure" position and leave handle in this position for two (2) minutes and thirty (30) seconds, noting that air continues to exhaust through the choked exhaust port in the retaining valve cap.

Move retaining valve handle to "Direct Exhaust" position and note that a sufficient blow is obtained to indicate that effective brake cylinder pressure has been retained.

Remove the test gage and replace the wasp excluder if the retaining valve is equipped with one.

"FOUR POSITION" RELEASE CONTROL RETAINER

Move the retaining valve handle up to "Slow Direct Exhaust" position, open the bleed cock and leave handle in this position for fifteen (15) seconds, noting that a continuous exhaust of air is obtained from the bleed cock.

Move retaining valve handle to "High Pressure" position and leave handle in this position for fifteen (15) seconds, noting air continues to exhaust from the bleed cock.

Move retaining valve handle to "Low Pressure" position and leave handle in this position for two (2) minutes and thirty (30) seconds, noting that air continues to exhaust from the bleed cock.

Move retaining valve handle to "Direct Exhaust" and note that a sufficient blow is obtained to indicate that effective brake cylinder pressure has been retained.

Remove the exhaust gage fitting from the release control retainer.

If, during the above tests of the two position, three position or four position retaining valve, any erratic retaining valve operation is noted in any of the positions, such as failure of air to exhaust, abnormally slow or fast rates of brake cylinder pressure blow down, or air being entirely exhausted before the retaining valve handle is moved to "Direct Exhaust Position", the retaining valve must be repaired or removed from the car and replaced with one known to be in good repair. Any defective retaining valve which has been removed should be returned to the shop for repairs and more exhaustive tests in

accordance with the shop test code.

On cars having "ABLC" Equipment, remove the weighing gear positioning device and leave the hook in its normal vertical position.

On cars having "AB" 7-5/8" X 12" Empty and Load Equipment, remove the spacer block from the strut cylinder foot if car under test is empty.