Manual Backflow Preventer Test Kit TK 9A

The Manual Backflow Preventer Test Kit TK 9A consists of a differential pressure gauge with adapted connecting hoses and nipples. A securing strap for hanging up the kit is also included. With the TK 9A it is possible to test the non-return protective devices BA 009, BA 909, BA BS and BA BM in an easy and fast way.

This manual describes how you have to connect the test kit, how you must perform the various tests and how you can dismount the kit afterwards.

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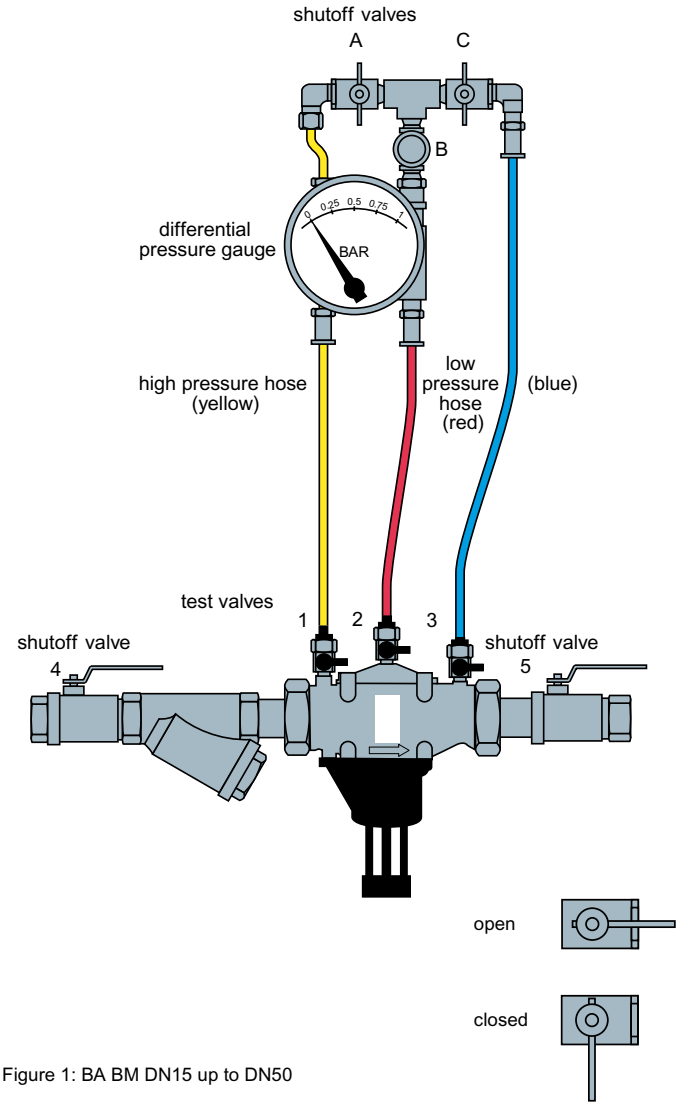


Figure 1: BA BM DN15 up to DN50

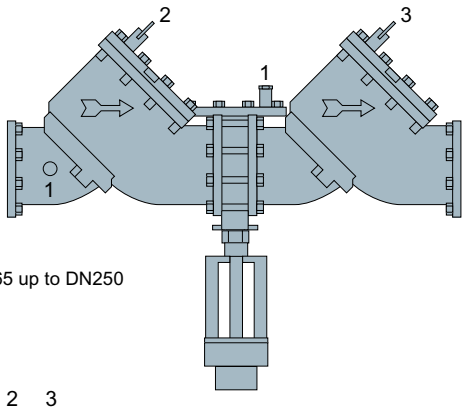
Description of the test kit

A, B, C – valves
1,2,3 – test valves
4,5 – shutoff valves

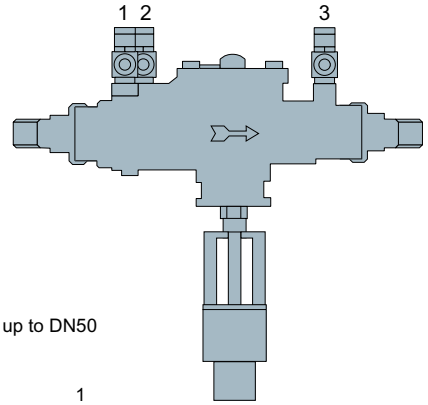
The non-return protective device BA BM for the dimensions DN 15 up to and incl. DN 50 are shown in the instructions in this manual. The test kit can also be used for other non-return protective devices. In that case the position of the test valves differs (see figure 2).

Connecting test kit

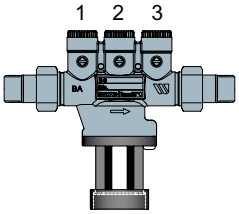
1. Close valves A, B and C of the test kit.
2. Connect the high-pressure hose (yellow) to test valve 1.
3. Connect the low-pressure hose (red) to test valve 2.
4. Close valve 5 **(this valve must be absolutely leak tightened)**.
5. Open the test valves 1 and 2 and valve 4.
6. Open valve C.
7. Open valve A to de-aerate and then close it.
8. Open valve B to de-aerate and then close it.
9. Close valve C.
10. Connect the blue hose to test valve 3.
11. Open test valve 3.



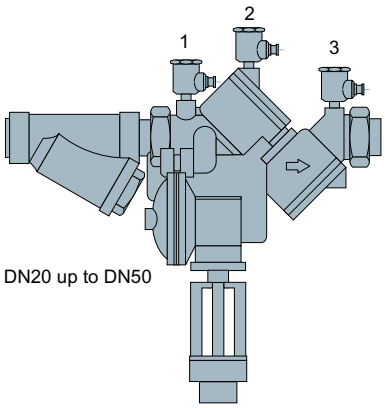
BA 909 DN65 up to DN250



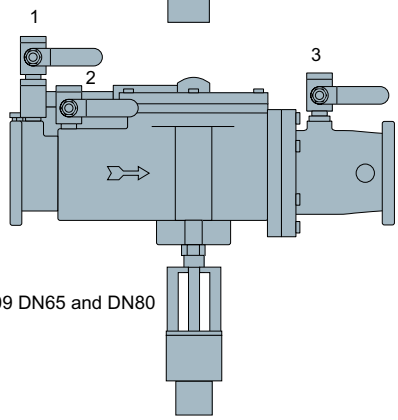
BA 009 DN15 up to DN50



BA BS DN6 up to DN10



BA 909 DN20 up to DN50



BA 009 DN65 and DN80

Figure 2: Position of the test valves

Test no. 1 - Testing valve 5

Aim: testing whether valve 5 is leak tightened. Valve 5 must be fully closed in order to perform tests no. 1, 3 and 4 accurately.

1. Connect the test kit (see page 2: “Connecting test kit”).
2. Check whether:
   - valves A, B and C are closed.
   - test valves 1, 2 and 3 are open.
   - Shutoff valve 4 is open.
   - Shutoff valve 5 is closed.
3. Close test valve 1.
4. Open valves A and C.

Close Shutoff valve 5 well if the measured difference in pressure remains constant. If the difference in pressure drops back, this indicates a leakage/contamination of Shutoff valve 5. In this case replace Shutoff valve 5.

Test no. 2 - Testing of 2nd non-return valve

Aim: testing whether the 2nd check valve is closed (at the outflow side). This check valve must fully leak tightened under all conditions.

1. Connect the test kit (see page 2: “Connecting test kit”).
2. Check whether:
   - valves A, B and C are closed.
   - test valves 1, 2 and 3 are open.
   - Shutoff valve 4 is open.
   - Shutoff valve 5 is closed.
3. Open valves A and C.

The measures difference in pressure will become smaller. If the difference in pressure continues to drop back until the relief valve opens, this indicates a leakage/contamination of the 2nd check valve. In this case replace or repair the 2nd check valve.

Test no. 3 - Testing of 1st non-return valve

Aim: testing whether the 1st check valve is closed (at the inflow side). This check valve must fully close under all conditions.

1. Connect the test kit (see page 2: “Connecting test kit”).
2. Check whether:
   - valves A, B and C are closed.
   - test valves 1, 2 and 3 are open.
   - valve 4 is open.
   - valve 5 is closed.
3. Close test valve 3.

If the measured difference in pressure drops back, this indicates a leakage/contamination of the 1st check valve. In this case replace or repair the 1st check valve.

Test no. 4 - Testing of the relief valve

Aim: testing the relief valve in the pressure-reduced zone. This relief valve must open when the pressure in the intermediate chamber (between the first and second non-recurrent valve) is still at least 14 kPa lower than the pressure at the inflow side.

1. Connect the test kit (see page 2: “Connecting test kit”).
2. Check whether:
   - valves A, B and C are closed.
   - test valves 1, 2 and 3 are open.
   - Shutoff valve 4 is open.
   - Shutoff valve 5 is closed.
3. Close test valve 3.
4. Open valve A.
5. Very slowly open valve B, until the measured difference in pressure starts to drop back. N.B.: It is important that the value on the differential pressure gauge gradually drops back.
6. Leave valve B in this position and read the value on the differential pressure gauge at the moment that water begins to drip from the outlet passage.

The value read at that moment is the opening differential pressure of the relief valve. Replace or repair the relief valve if the read value is less than 14 kPa.

Dismounting the test kit.

1. Close the test valves 1, 2 and 3.
2. Disconnect the 3 hoses (yellow, red and blue)
3. Open Shutoff valve 5.

Product range Watts Industries

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