



Braukmann DS06 Lead Free Content Dial Set Pressure Regulating Valves

INSTALLATION INSTRUCTIONS

APPLICATION

The DS06 Dial Set® Pressure Regulating Valve is a high quality pressure regulating valve that maintains a constant outlet pressure over a wide range of inlet supply pressures. It is suitable for potable water and irrigation applications. The downstream pressure adjustment dial eliminates the need for a pressure gauge when adjusting the pressure setting (static pressure only).

SPECIFICATIONS

Model: DS06 Dial Set Pressure Regulating Valves.

Construction Materials:

Body: Lead-free ECO BRASS®.

Internal Parts: Stainless steel and engineered plastics.

Regulator Mechanism: Fabric-reinforced diaphragm.

Seat Design: Balanced single seat construction.

Inlet Pressure (Maximum): 250 psi maximum.

Reduced Pressure Range:

25 to 90 psi (1/2 in. to 2 in.).

Outlet Pressure: Factory set at 60 psi (414 kPa).

Dial Calibration: ± 4 psi.

Differential: 14.5 psi minimum (inlet to outlet).

Fluid Temperature (Maximum):

Air: 140 °F (60 °C).

Water: 140 °F (60 °C).

Ambient Temperature Range: 33 to 140 °F (1 to 60 °C).

Pipe Sizes Available: 1/2 in., 3/4 in., 1 in., 1-1/4 in., 1-1/2 in. and 2 in. available.

Connections:

Can be configured as female thread-by-thread, single- or double-union, NPT threaded or sweat.

Low Lead Content: < 0.08% Lead.

Gauge Tap: 1/4" NPT.

Approvals:

ASSE 1003-2020 Listed, CSA B356 Listed, IAPMO Listed, NSF/ANSI 61/372 Compliant.

Thermal Expansion: Balanced cartridge design allows for thermal expansion properties. Use expansion tanks and safety valves where applicable.

NOTE: For optimal flow performance, a venturi nozzle is included with the 1-1/4 in. and 2 in. models.

INSTALLATION

When Installing this Product...

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in these instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. Pressure regulating valve should be installed in an accessible location for repair or replacement.
5. After installation is complete, check out the product operation as provided in these instructions.



Water Capacities

The suitability of a given regulator size is dependent on the pressure requirements where it will operate. For the pressure regulator valve size required for a specific installation, determine the following:

- 1. Pressure differential between inlet and outlet pressure in pounds per square inch (psi),
- 2. Capacity in gallons per minute, and

- 3. Allowable reduced pressure falloff in psi. Given these variables, use Table 1 to determine the proper size pressure regulator valve for your application.

Example: An installation has 135 psi inlet pressure, 60 psi outlet pressure (75 psi pressure differential). If a 15 gpm capacity is required with only 10 psi falloff allowable, a 3/4 in. DS06 is required.

Table 1. Water Capacities.

| Pressure Regulator Valve Size | Reduced Pressure Falloff (PSI) | Pressure Differential Between Inlet and Outlet | | | |
|-------------------------------|--------------------------------|--|------------------------|------------------------|------------------------|
| | | 25 psi | 50 psi | 75 psi | 100 psi or more |
| | | Flow Capacity (US gpm) | Flow Capacity (US gpm) | Flow Capacity (US gpm) | Flow Capacity (US gpm) |
| 1/2" | 6 | 7.26 | 8.15 | 7.44 | 6.47 |
| | 10 | 10.7 | 10.66 | 9.69 | 8.85 |
| | 15 | 14.27 | 15.72 | 14.49 | 13.96 |
| | 20 | 17.74 | 19.59 | 18.98 | 18.1 |
| 3/4" | 6 | 11.98 | 14.44 | 14.53 | 14.97 |
| | 10 | 17.17 | 21.05 | 25.23 | 26.33 |
| | 15 | 19.86 | 25.14 | 29.32 | 32.85 |
| | 20 | 21.27 | 26.42 | 30.42 | 33.82 |
| 1" | 6 | 11.18 | 11.23 | 9.51 | 9.11 |
| | 10 | 18.01 | 18.98 | 17.39 | 16.78 |
| | 15 | 25.67 | 28.14 | 28.71 | 26.9 |
| | 20 | 30.69 | 34.7 | 36.19 | 35.05 |
| 1-1/4" | 6 | 7.53 | 6.34 | 7.26 | 7.13 |
| | 10 | 20.25 | 17.88 | 15.15 | 14 |
| | 15 | 33.02 | 34.87 | 32.63 | 29.68 |
| | 20 | 40.07 | 44.29 | 46.01 | 34.61 |
| 1-1/2" | 6 | 29.81 | 32.27 | 30.87 | 26.81 |
| | 10 | 46.14 | 50.02 | 49.89 | 47.82 |
| | 15 | 66.22 | 78.42 | 86.74 | 84.14 |
| | 20 | 77.14 | 92.29 | 103.82 | 109.68 |
| 2" | 6 | 27.34 | 25.8 | 24.48 | 18.01 |
| | 10 | 64.81 | 97.61 | 78.15 | 90.09 |
| | 15 | 82.82 | 105.14 | 119.94 | 129.62 |
| | 20 | 87.66 | 107.83 | 120.95 | 132.09 |

DS06 Fixture Unit

Flow rates based on submittal sheet DS06, based on flush tank systems with a 15 psi fall-off defined by IAPMO/ANSI UPC 1-2009.

Table 2.

| Size | I/s | GPM | Fixture Units |
|--------|------|--------|---------------|
| 1/2" | 0.99 | 15.72 | 21 |
| 3/4" | 1.58 | 25.14 | 40 |
| 1" | 1.77 | 28.14 | 48 |
| 1-1/4" | 2.19 | 34.87 | 70 |
| 1-1/2" | 4.93 | 78.42 | 270 |
| 2" | 6.61 | 105.14 | 400 |

Capacities are based on a 100 psi supply pressure and a difference of 50 psi or more between the initial supply pressure and the reduced no-flow pressure.

Check local water pressures before selection.

Procedure

- 1. Flush the system clear of sediment or debris.
- 2. Close the supply valve and downstream isolating valve (if one is installed).
- 3. Install the DS06 with the arrow on the body pointing in the direction of water flow. Install, preferably, in horizontal pipework with filter bowl downwards - vertical installation also possible.

The DS06 can be installed directly onto the pipe by using the female NPT threads on each end. If space limitations restrict turning the DS06, install single- or double-unions.

NOTE: Heat from soldering can damage internal parts of the DS06. Always solder the tailpieces separately from the DS06.

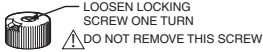
- 4. Open the supply valve slowly and check for leakage and proper operation of the DS06.

Changing the Downstream Pressure (See Fig. 1)

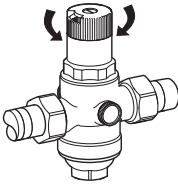
Remove the dust cap from the DS06. The DS06 is factory set to 60 psi.

To adjust the outlet pressure to a desired setting:

1. Loosen the locking screw by turning counter-clockwise (Do not remove this screw.)
2. Turn the adjusting knob counter-clockwise to reduce pressure or clockwise to increase pressure.
3. Lock the setting by turning the locking screw clockwise .
4. Replace the dust cap over the dial.



ADJUST SETPOINT AT THE DESIRED VALUE BY ACTUATING SELECTOR.



INLET PRESSURE (MAXIMUM): 250 PSI
REDUCED PRESSURE RANGE:
25 TO 90 PSI 1/2 IN. TO 2 IN. SIZE

NOTE: DO NOT DISMANTLE KNOB

SET-POINT READOUT HAS BEEN CALIBRATED IN THE FACTORY AND SET AT 60 PSI. DISMANTLING THE SELECTOR KNOB WILL CANCEL THIS CALIBRATION. RECALIBRATE USING A PRESSURE GAUGE. SEE RECALIBRATION.

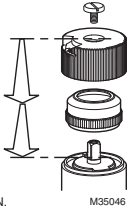


Fig. 1. Changing outlet pressure.

Replacing the Cartridge (Fig. 2)

The working parts of the DS06, including diaphragm, valve seat, strainer, and disk are all contained in a replaceable cartridge:

1. Close shutoff valve on inlet.
2. Release pressure on outlet side (e.g. through water tap).
3. Close shutoff valve on outlet.
4. Loosen slotted screw (do not remove the screw).

CAUTION

To prevent injury and/or equipment damage, loosen locknut and turn adjusting screw counter-clockwise to remove spring tension.

5. Slacken tension in compression spring by turning counter clockwise until it does not move anymore.
6. Unscrew Bonnet.
7. Remove slip ring.
8. Remove cartridge using a pliers as a lever.
9. Reassemble bonnet in reverse order.

Recalibrate

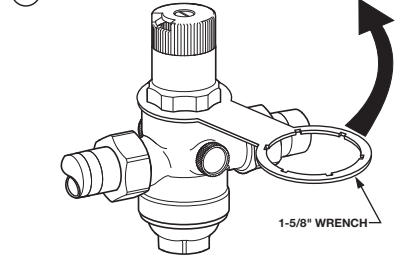
If the dial knob assembly has been disassembled recalibration is necessary.

1. Close shutoff valve on inlet.
2. Release pressure on outlet side (e.g. through water tap).
3. Close shutoff valve on outlet.
4. Remove dust cap.
5. Loosen slotted screw (do not remove screw).
6. Fit pressure gauge.
7. Slowly open shutoff valve on inlet.
8. Set desired outlet pressure (e.g. 60 psi).
9. Align scale (e.g. 60 psi) in middle of viewing window.
10. Retighten slotted screw.
11. Slowly open shutoff valve on outlet.

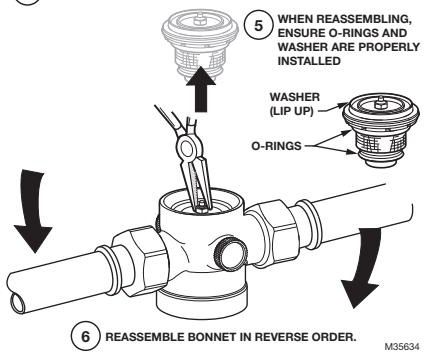
1. LOOSEN THE SETPOINT DIAL LOCKING SCREW.

2. UNSTRESS THE PRESSURE SPRING BY TURNING COUNTER-CLOCKWISE .

3. UNSCREW THE BONNET WITH A 1-5/8" WRENCH.



4. REMOVE CARTRIDGE USING A PLIERS AS A LEVER.



6. REASSEMBLE BONNET IN REVERSE ORDER.

Fig. 2. Replacing the DS06 cartridge.

Cleaning

1. Close shutoff valve on inlet.
2. Release pressure on outlet (e.g. through water tap).
3. Close shutoff valve on outlet.
4. Unscrew filter bowl using a 1-5/8" wrench.
5. Remove filter, clean and reinsert.
6. Place O-ring onto filter bowl.
7. Screw in filter cup hand-tight.
8. Slowly open shutoff valve on inlet.
9. Slowly open shutoff valve on outlets.

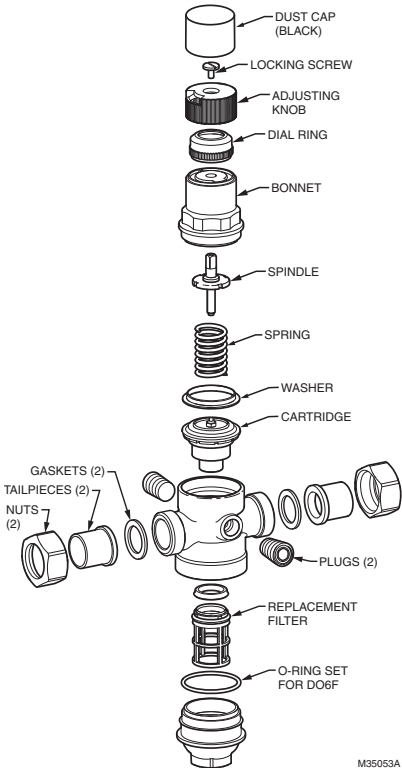


Fig. 3. DS06 exploded view.

OPERATION

DS06 is a spring loaded pressure reducing valve that operates by means of force equalizing system. The force of a diaphragm operates against the force of an adjustment spring. If the outlet pressure and therefore diaphragm force fall because water is down, the then greater force of the spring causes the valve to open. The outlet pressure then increases until the forces between the diaphragm and the spring are equal again. The inlet pressure has no influence in either opening or closing the valve. Because of this, inlet pressure fluctuation does not influence the outlet pressure, thus providing inlet pressure balancing. See Fig. 4 for the internal construction of the DS06.

NOTE: Minimum ambient rating is 33° F (1° C).

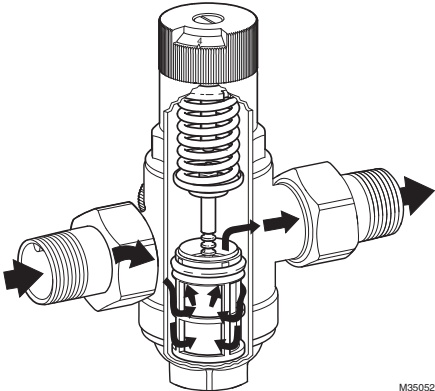


Fig. 4. Internal construction of DS06.

TROUBLESHOOTING

Table 3 provides a troubleshooting guide for the DS06 Dial Set Pressure Regulating Valve.

Table 3. Troubleshooting the DS06 Dial Set Pressure Regulating Valve.

| Problem | Cause | Remedy |
|---|---|--|
| Beating Sounds. | Pressure reducing valve is too large. | Refer to capacities table to find correct valve size. |
| Water is escaping from the spring bonnet. | Diaphragm in valve insert is faulty. | Replace valve insert. |
| Too little or no water pressure. | Shutoff valves up- or downstream of the pressure reducing valve are not fully open. | Open the shutoff valves fully. |
| | Pressure reducing valve is not set to the desired outlet pressure. | Set outlet pressure. |
| | Filter in pressure reducing valve is contaminated. | Clean or replace filter. |
| | Pressure reducing valve is not fitted in flow direction. | Fit pressure reducing valve in flow direction. (Note direction of arrow on housing.) |
| The outlet pressure set does not remain constant. | Filter in pressure reducing valve is contaminated or worn. | Clean or replace filter. |
| | Valve insert, sealing ring or edge of nozzle is contaminated or worn. | Replace valve insert. |
| | Rising pressure on outlet (e.g. in boiler). | Check check valve, safety group etc. |

DS06 LEAD FREE
REPLACEMENT PARTS

Table 4. Replacement Parts.

| Number | Part# | Sizes | Part Description |
|--------|--------------|-------------|--|
| 1 | D06FA-1/2 | 1/2" & 3/4" | Valve Insert Complete without Filter |
| | D06FA-1B | 1" & 1-1/4" | |
| | D06FA-1 1/2 | 1-1/2" & 2" | |
| 2 | ES06F-1/2A | 1/2" & 3/4" | Replacement Filter Insert |
| | ES06F-1B | 1" & 1-1/4" | |
| | ES06F-1 1/2A | 1-1/2" & 2" | |
| 3 | SB06T-1/2 | 1/2" & 3/4" | Black Filter Bowl with O-Ring |
| | SB06T-1 | 1" & 1-1/4" | |
| | SB06T-1 1/2 | 1-1/2" & 2" | |

DS06 LEAD FREE ACCESSORY

Table 5. Accessories.

| Part # | Size | Part Description |
|------------|--------|--|
| K06U1069/U | 1/2" | Union kit for 1/2-in. NPT valves. Includes union nut, threaded tailpiece, and gasket |
| K06U1077/U | 3/4" | Union kit for 3/4-in. NPT valves. Includes union nut, threaded tailpiece, and gasket |
| K06U1085/U | 1" | Union kit for 1-in. NPT valves. Includes union nut, threaded tailpiece, and gasket |
| K06U1135/U | 1-1/4" | Union kit for 1-1/4-in. NPT valves. Includes union nut, threaded tailpiece, and gasket |
| K06U1037/U | 1-1/2" | Union kit for 1-1/2-in. NPT valves. Includes union nut, threaded tailpiece, and gasket |
| K06U1045/U | 2" | Union kit for 2-in. NPT valves. Includes union nut, threaded tailpiece, and gasket |
| K06U1093/U | 1/2" | Union kit for 1/2-in. sweat valves. Includes union nut, sweat tailpiece, and gasket |
| K06U1101/U | 3/4" | Union kit for 3/4-in. sweat valves. Includes union nut, sweat tailpiece, and gasket |
| K06U1119/U | 1" | Union kit for 1-in. sweat valves. Includes union nut, sweat tailpiece, and gasket |
| K06U1143/U | 1-1/4" | Union kit for 1-1/4-in. sweat valves. Includes union nut, sweat tailpiece, and gasket |
| K06U5034/U | 1-1/2" | Union kit for 1-1/2-in. sweat valves. Includes union nut, sweat tailpiece, and gasket |
| K06U5042/U | 2" | Union kit for 2-in. sweat valves. Includes union nut, sweat tailpiece, and gasket |

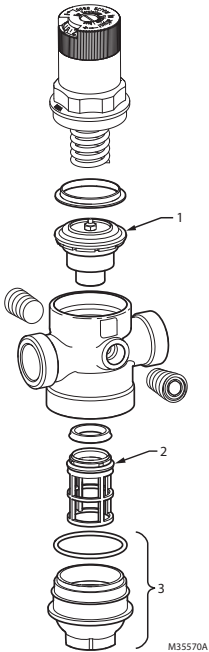


Fig. 5. Replacement Parts.



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