APPLICATION

The Honeywell Braukmann D05 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 ideally suited for new residential and light commercial construction, drip irrigation, and applications requiring highly sensitive and accurate regulation.

The wide inlet pressure range of the D05 gives flexibility without compromising reduced outlet pressure accuracy or capacity. The superior balanced single-seat design maintains a constant outlet pressure over a wide range of inlet pressures. The noncorroding unitized cartridge insert contains all the working parts and is easily replaceable.

The D05 is used for water or air regulation. It is not suitable for steam.

FEATURES

- Noncorroding unitized cartridge contains all working parts and is easily replaceable.
- Includes built-in strainer and thermal bypass.
- Balanced seat construction provides superior pressure regulation.
- Inlet and outlet are internally threaded female NPT, and externally threaded for use with union assemblies.
- One model can be used in low, standard or high pressure applications; D05 has a 15 to 150 psi outlet pressure adjustment range with up to 400 psi inlet pressure.
- Available with or without gauge tap.
- U06P Stand-In Pipe available for temporary installation during construction or system flushing.
- Two-year warranty.

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SPECIFICATIONS

Model:
D05 Pressure Regulating Valves

Construction Materials:
Body: Bronze.
Internal Parts: Stainless steel and engineered thermoplastic.
Regulator Mechanism: Fabric-reinforced diaphragm.

Inlet Pressure:
400 psi maximum.

Reduced Pressure Range:
15 to 150 psi (1/2 in. to 1 in.).
15 to 130 psi (1-1/4 in.).

Outlet Pressure:
Factory set at 60 psi.

Differential:
14 psi minimum (inlet to outlet).

Reduced Ratio:
10:1 maximum.

Temperature (Maximum):
Air: 158°F (70°C).
Water: 180°F (82°C).

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

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

Strainer Screen Size:
0.032 in.

Gauge Tap:
1/4 in. NPT (available on all models).

Approvals:
ASSE (Std. 1003) Certified.
IAPMO, CSA, and City of L.A. Listed.

Dimensions:
See Fig. 1.

ORDERING INFORMATION

When purchasing replacement and modernization products from your manufacturing representative, specify the complete model number.

If you have additional questions, need further information, or would like to comment on our products or services, please contact:
Honeywell Sparco/Braukmann
Customer Service
65 Access Road
Warwick, Rhode Island 02886
www.honeywell.ca/braukmann/
www.sparco-inc.com

In Canada—Contact your nearest Honeywell Home and Building Control Sales Office.
Water Capacities (See Table 1)
The suitability of a given regulator size is dependent on the pressure requirements of each installation. To determine 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 (gpm), 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 12 gpm capacity is required with only 10 psi falloff allowable, a 1/2 in. D05 is required.

### Table 1. Water Capacities.

<table>
<thead>
<tr>
<th>Pressure Regulator Valve Size</th>
<th>Reduced Pressure Falloff (psi)</th>
<th>Pressure Differential Between Inlet and Outlet</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25 psi</td>
<td>50 psi</td>
</tr>
<tr>
<td></td>
<td>Flow Capacity (US gpm)</td>
<td>Velocity (ft/sec)a</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2 inch</td>
<td>6</td>
<td>7.0</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>10.0</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>13.0</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>15.5</td>
</tr>
<tr>
<td>3/4 inch</td>
<td>6</td>
<td>9.0</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>15.0</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>20.0</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>23.0</td>
</tr>
<tr>
<td>1 inch</td>
<td>6</td>
<td>11.5</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>20.0</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>28.0</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>32.0</td>
</tr>
<tr>
<td>1-1/4 inch</td>
<td>6</td>
<td>13.5</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>22.0</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>37.0</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>55.0</td>
</tr>
</tbody>
</table>

a Velocity in feet per second is based on schedule 40 pipe size. Recommended pressure falloff for general use is approximately 104 kPa (15 psi). Recommended velocities for the flow of water: Residential and general use, 5 to 10 feet per second; industrial use, 7 to 15 feet per second; boiler feed, 7 to 15 feet per second.

**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. After installation is complete, check out the product operation as provided in these instructions.

**Procedure**

1. Flush the system clear of sediment or debris.
2. Close the supply valve and downstream isolating valve (if used).
3. Install the D05 with the arrow on the body pointing in the direction of water flow. (The D05 can be mounted in any position.)
4. Open the supply valve.

The D05 can be installed directly onto the pipe by using the female NPT threads on each end. If space limitations restrict turning the D05, install single- or double-unities.

NOTE: Heat from soldering can damage internal parts of the D05. Always remove the tailpiece(s) from the D05 during soldering, or disassemble the D05 prior to heating the casting.

Changing the Outlet Pressure (See Fig. 2)
The D05 is factory set to 60 psi. To change the outlet pressure, turn the adjusting bolt counterclockwise to reduce pressure or clockwise to increase pressure.

To adjust the outlet pressure to a desired setting:

1. Close the supply shutoff valve and open a downstream faucet to relieve static pressure in the line.
2. Install a pressure gauge to the gauge tap on D05G models, or temporarily with a downstream hose bib on other D05 models.
Loosen the locknut by turning counterclockwise two turns.

Turn the adjusting bolt counterclockwise several turns to make sure the setting is below the desired setting.

Close all downstream valves and/or faucets and slowly open the supply valve until fully open.

Turn the adjusting bolt clockwise to gradually increase the pressure until the gauge indicates the desired outlet pressure (under no flow condition).

Reopen a downstream valve. During flow, there will normally be a pressure falloff of 3 to 15 psi depending on the amount of water flow.

Tighten the locknut by turning clockwise until tight. Do not overtighten.

Replacing the Cartridge (See Fig. 3)
The working parts of the D05, including diaphragm, valve seat, and disk are all contained in a replaceable cartridge. To replace the cartridge:

1. Shut off the supply valve and open a downstream faucet to relieve the system pressure.

2. Loosen the locknut and turn adjusting screw counterclockwise to remove spring tension.

3. Remove the bonnet and washer using an adjustable wrench, socket, or box-end wrench.

4. Remove the cartridge using two screwdrivers as levers.

5. Attach new O-rings and screen onto the new cartridge. Make sure O-rings are properly installed above and below the screen.

6. Insert the new cartridge. Do not scratch the sides.

7. Place the washer on top of the cartridge.

Note: The inner lip must be pointing up to avoid damaging the diaphragm.

8. Replace the spring, spring cup, and bonnet.

9. Readjust the outlet pressure to the desired setting by using the procedure described in Changing the Outlet Pressure section.

Fig. 2. Changing outlet pressure.
Cleaning the Cartridge Screen

To clean the cartridge screen:

1. Shut off the supply valve and open a downstream faucet to relieve the system pressure.

**CAUTION**

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

2. Loosen locknut and turn adjusting screw counterclockwise to remove spring tension.
3. Remove the bonnet and washer using an adjustable wrench, socket, or box-end wrench.
4. Remove the cartridge using two screwdrivers as levers as shown in Fig. 3.
5. Remove and clean the cartridge screen.

**NOTE:** D05G models can be cleaned to some extent by removing the gauge tap plug and using an air hose to blow air into the unit.

6. Replace the cartridge screen and make sure the O-rings are installed properly.
7. Carefully clean the cartridge seat area.
8. Insert the cartridge. Do not scratch the sides.
9. Place the washer on top of the cartridge.

**NOTE:** The inner lip must be pointing up to avoid damaging the diaphragm.

10. Replace the spring, spring cup and bonnet (see Fig. 4).
11. Readjust the outlet pressure to the desired setting by using the procedure described in Changing the Outlet Pressure section.
Fig. 4. D05 exploded view.
OPERATION

The Honeywell Braukmann D05 is a balanced, direct acting pressure regulating valve. The D05 provides constant downstream pressure regardless of varying inlet pressures and downstream flow demands.

The spring force holds the valve in the open position until downstream pressure, sensed by a port, is sufficient to press on the underside of the diaphragm and close the valve. As downstream pressure drops due to demand, the force on the diaphragm is reduced and the valve opens. Adjustment is made by manually turning the adjustment screw clockwise to increase the spring force and require a higher downstream pressure to close the valve. Similarly, reducing the spring force lowers the outlet set pressure.

Once the outlet pressure is set, the D05 automatically regulates to maintain the downstream pressure. See Fig. 5 for the internal construction of the D05.

TROUBLESHOOTING

Table 2 provides a troubleshooting guide for the D05 Pressure Regulating Valves.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whistling noise.</td>
<td>• Slightly increase or decrease the outlet pressure until the noise disappears.</td>
</tr>
<tr>
<td>Will not hold pressure.</td>
<td>• Clean the filter cartridge.</td>
</tr>
<tr>
<td>Chatters.</td>
<td>• Replace the screen and O-rings.</td>
</tr>
<tr>
<td></td>
<td>• Replace the cartridge (see replacing the cartridge section).</td>
</tr>
<tr>
<td>Freezes up.</td>
<td>• Replace bonnet or cartridge, if damaged.</td>
</tr>
<tr>
<td></td>
<td>• To avoid future freeze-up:</td>
</tr>
<tr>
<td></td>
<td>— Temporarily (slightly) open a downstream faucet if the DS05 is going to be exposed to temperatures below 32°F (0°C). The slight water flow will eliminate freeze-up.</td>
</tr>
<tr>
<td></td>
<td>— Move the DS05 to a location with an ambient temperature above 32°F (0°C) if it is currently exposed to prolonged temperatures below 32°F (0°C).</td>
</tr>
<tr>
<td>Pressure gauge measures a lower pressure under flow conditions than was originally set during static conditions.</td>
<td>• DS05 is functioning properly. No action is necessary. The pressure decrease is characteristic of all directacting pressure regulating valves and is referred to as falloff.</td>
</tr>
</tbody>
</table>

Fig. 5. Internal construction of D05.
## D05 Parts and Accessories

<table>
<thead>
<tr>
<th>Order Number</th>
<th>Description</th>
<th>Order Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>203223</td>
<td>Bonnet Assembly for 1/2 and 3/4 in. Valves.</td>
<td>K06U1135</td>
<td>Union Kit—1-1/4 in. for D05/D505, includes nut, female NPT threaded tailpiece and gasket.</td>
</tr>
<tr>
<td>203224</td>
<td>Bonnet Assembly for 1 and 1-1/4 in. Valves.</td>
<td>K06U1093</td>
<td>Union Kit—1/2 in., includes nut, sweat tailpiece and gasket.</td>
</tr>
<tr>
<td>272840</td>
<td>Gasket for 1/2 in. D05/DS05 (quantity 24).</td>
<td>K06U1101</td>
<td>Union Kit—3/4 in., includes nut, sweat tailpiece and gasket.</td>
</tr>
<tr>
<td>272841</td>
<td>Gasket or 3/4 in. D05/DS05 (quantity 24).</td>
<td>K06U1119</td>
<td>Union Kit—1 in., includes nut, sweat tailpiece and gasket.</td>
</tr>
<tr>
<td>272842</td>
<td>Gasket for 1 in. D05/DS05 (quantity 24).</td>
<td>K06U1143</td>
<td>Union Kit—1-1/4 in. for D05/D505, includes nut, sweat tailpiece and gasket.</td>
</tr>
<tr>
<td>272843</td>
<td>Gasket for 1-1/4 in. D05/DS05 (quantity 24).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K05A1009</td>
<td>Replacement Cartridge, Screen and O-ring for 1/2 and 3/4 in. Valves.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K05A1017</td>
<td>Replacement Cartridge, Screen and O-ring for 1 and 1-1/4 in. Valves.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K05B1007</td>
<td>Replacement Screen and O-ring for 1/2 and 3/4 in. Valves.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K05B1015</td>
<td>Replacement Screen and O-ring for 1 and 1-1/4 in. Valves.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Union Kits</strong></td>
<td><strong>Accessories</strong></td>
<td><strong>Pressure Gauges</strong></td>
<td></td>
</tr>
<tr>
<td>K06U1069</td>
<td>Union Kit—1 in., includes nut, female NPT threaded tailpiece and gasket.</td>
<td>202868</td>
<td>Filter Washer, 3/4 in., for use with U06P1045 Plastic Stand-in Pipe.</td>
</tr>
<tr>
<td>K06U1077</td>
<td>Union Kit—3/4 in., includes nut, female NPT threaded tailpiece and gasket.</td>
<td>202869</td>
<td>Filter Washer, 1 in., for use with U06P1052 Plastic Stand-in Pipe.</td>
</tr>
<tr>
<td>K06U1085</td>
<td>Union Kit—1 in., includes nut, female NPT threaded tailpiece and gasket.</td>
<td>U06P1045</td>
<td>Plastic Stand-in Pipe (spacer) for use with D05 Double Union Pressure Regulating Valves, 3/4 in.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>U06P1052</td>
<td>Plastic Stand-in Pipe (spacer) for use with D05 Double Union Pressure Regulating Valves, 1 in.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M39A1032</td>
<td>Pressure Gauge with Bottom Inlet; 0 to 160 psi.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MT194A1006</td>
<td>Water Pressure Test and Recording Gauge with Hose Bib Connection; 0 to 300 psi.</td>
</tr>
</tbody>
</table>

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**Honeywell Braukmann**

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