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Honeywell

D05T Compact Design Pressure Regulating Valves

PRODUCT DATA



APPLICATION

The Honeywell Braukmann D05T 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 D05T 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 D05T is used for water or air regulation. It is not suitable for steam.

FEATURES

- Non-corroding 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-year warranty.

SPECIFICATIONS

Model: D05T 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 90 psi.

Outlet Pressure: Factory set at 60 psi.

Differential: 14 psi minimum (inlet to outlet).

Temperature (Maximum):

Air: 158°F (70°C).

Water: 180°F (82°C).

Pipe Sizes: 3/4 in. and 1 in. available.

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D05T COMPACT DESIGN PRESSURE REGULATING VALVES

Connections:

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

Approvals:

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

Strainer Screen Size: 0.032 in.

Dimensions: See Fig. 1.

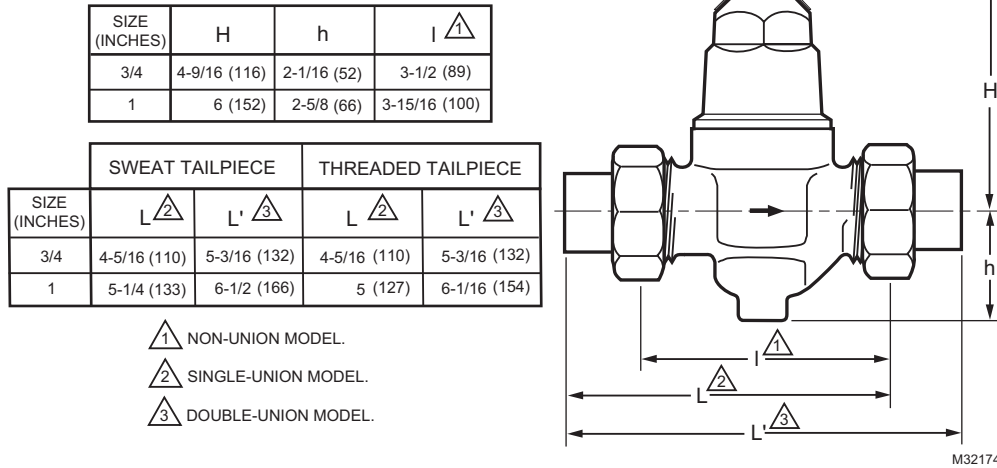


Fig. 1. D05T installation dimensions in in. (mm).

Table 1. D05T Models.

Product Number	Pipe Size		Dimensions, Approximate		Union Fittings
	(inch)	(DN)	(inch)	(mm)	
D05T1011	3/4 in.	DN20	6 5/8 in. high x 3 1/2 in. wide	168 mm high x 89 mm long	Union body, no tailpieces
D05T1029	3/4 in.	DN20	6 5/8 in. high x 5 3/16 in. long	168 mm high x 132 mm long	Double-union sweat
D05T1045	1 in.	DN25	4 1/2 in high x 4 in. long	114 mm high x 142 mm wide	Union body, no tailpieces
D05T1052	1 in.	DN25	8 5/8 in. high x 6 1/2 in. long	218 mm high x 166 mm long	Double-union sweat
D05T1060	3/4 in.	DN20	6 5/8 in. high x 5 3/16 in. long	168 mm high x 132 mm long	Double-union threaded
D05T1078	1 in.	DN25	6 5/8 in. high x 5 3/16 in. long	168 mm high x 132 mm long	Double-union threaded
D05T1086	3/4 in.	DN20	6 5/8 in. high x 5 3/16 in. long	168 mm high x 132 mm long	Single-union sweat
D05T1094	3/4 in.	DN20	6 5/8 in. high x 4 5/16 in. wide	168 mm high x 110 mm long	Single-union threaded
D05T1102	1 in.	DN25	8 5/8 in. high x 5 in. long	218 mm high x 127 mm long	Single-union sweat
D05T1110	1 in.	DN25	8 5/8 in. high x 5 in. long	218 mm high x 127 mm long	Single-union threaded

ORDERING INFORMATION

When purchasing replacement and modernization products from your TRADELINE® wholesaler or distributor, refer to the TRADELINE® Catalog or price sheets for complete ordering number.

If you have additional questions, need further information, or would like to comment on our products or services, please write or phone:

1. Your local Honeywell Automation and Control Products Sales Office (check white pages of your phone directory).
2. Honeywell Customer Care
1885 Douglas Drive North
Minneapolis, Minnesota 55422-4386

In Canada—Honeywell Limited/Honeywell Limitée, 35 Dynamic Drive, Toronto, Ontario M1V 4Z9.
International Sales and Service Offices in all principal cities of the world. Manufacturing in Australia, Canada, Finland, France, Germany, Japan, Mexico, Netherlands, Spain, Taiwan, United Kingdom, U.S.A.

Water Capacities (See Table 2)

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 2 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 17 gpm capacity is required with only 10 psi falloff allowable, a 3/4 in. D05T is required.

Table 2. Water Capacities.

Pressure Differential Between Inlet and Outlet									
Pressure Regulator Valve Size	Reduced Pressure Falloff (psi)	25 psi		50 psi		75 psi		100 psi or more	
		Flow Capacity (US gpm)	Velocity (ft/sec) ^a	Flow Capacity (US gpm)	Velocity (ft/sec) ^a	Flow Capacity (US gpm)	Velocity (ft/sec) ^a	Flow Capacity (US gpm)	Velocity (ft/sec) ^a
3/4 inch	6	9.0	5.4	10.0	6.0	11.0	6.5	12.0	7.1
	10	15.0	8.9	16.0	9.5	17.0	10.0	18.0	10.7
	15	20.0	11.9	22.0	13.7	23.0	13.7	24.0	14.3
	20	23.0	13.9	26.0	17.6	27.0	16.7	28.0	17.3
1 inch	6	11.5	4.2	13.0	4.7	14.5	5.3	16.0	5.8
	10	20.0	7.2	21.5	7.8	23.0	8.3	24.5	8.9
	15	28.0	10.7	30.0	10.9	33.0	12.0	35.0	12.7
	20	32.0	14.0	37.0	13.5	40.0	15.5	41.0	15.0

^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 D05T with the arrow on the body pointing in the direction of water flow. (The D05T can be mounted in any position.)

The D05T can be installed directly onto the pipe by using the female NPT threads on each end. If space limitations restrict turning the D05T, install single- or double-unions.



NOTE: Heat from soldering can damage internal parts of the D05T. Always remove the tailpiece(s) from the D05T during soldering, or disassemble the D05T prior to heating the casting.


4. Open the supply valve.

Changing the Outlet Pressure (See Fig. 2)


The D05T 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 inline, downstream of the D05T valve.
3. Loosen the locknut by turning counterclockwise  two turns.
4. Turn the adjusting bolt counterclockwise  several turns to make sure the setting is below the desired setting.
5. Close all downstream valves and/or faucets and slowly open the supply valve until fully open.

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

7. 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.

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

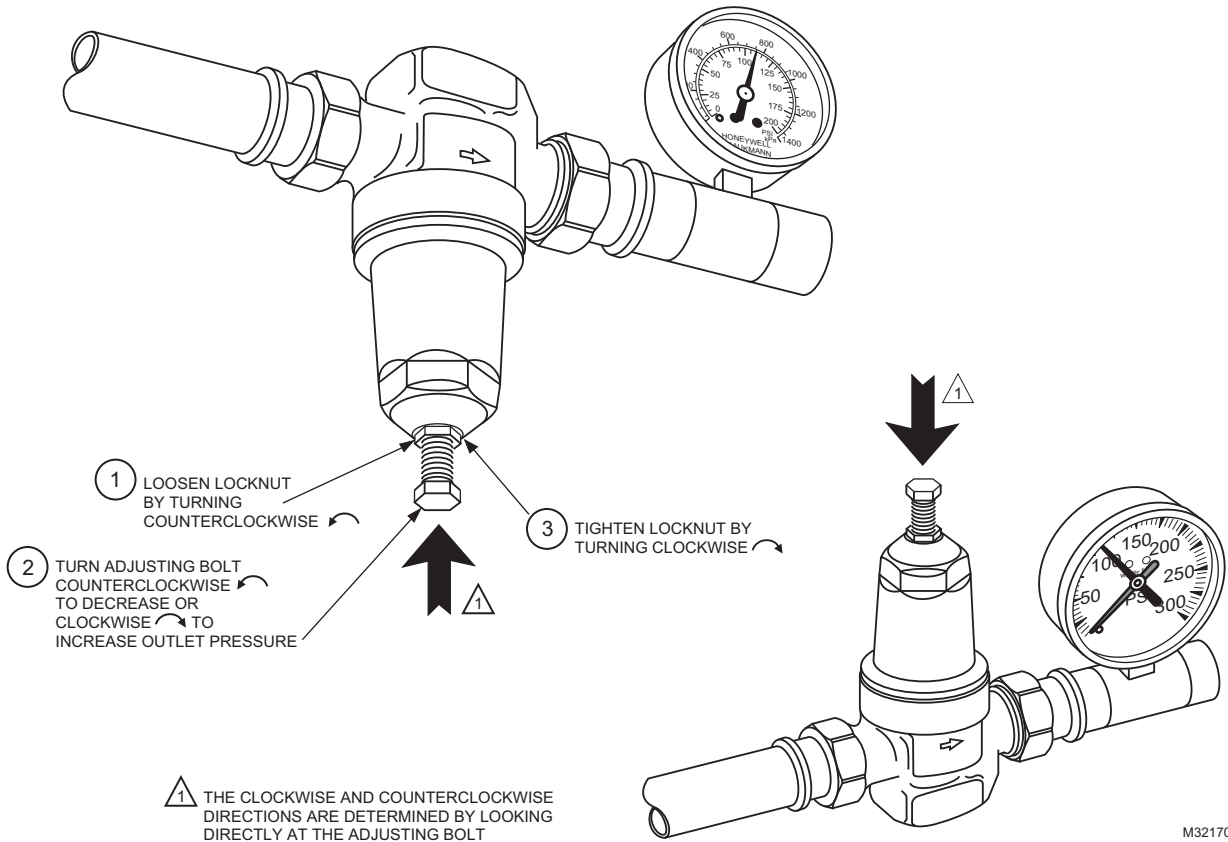



Fig. 2. Changing outlet pressure.


Replacing the Cartridge (See Fig. 3)

The working parts of the D05T, 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.

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.
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.

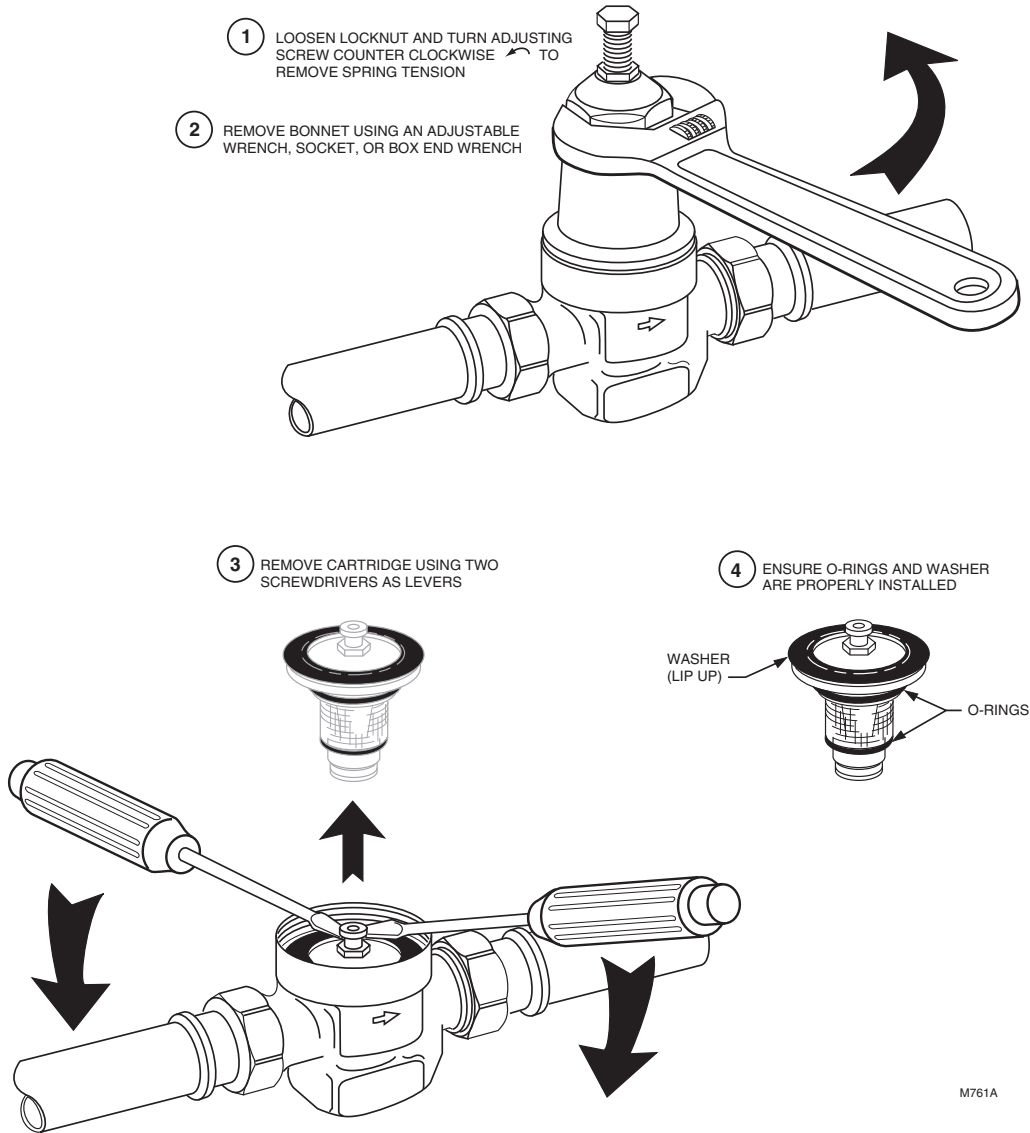


Fig. 3. Replacing the D05T cartridge.

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.
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.

D05T COMPACT DESIGN PRESSURE REGULATING VALVES

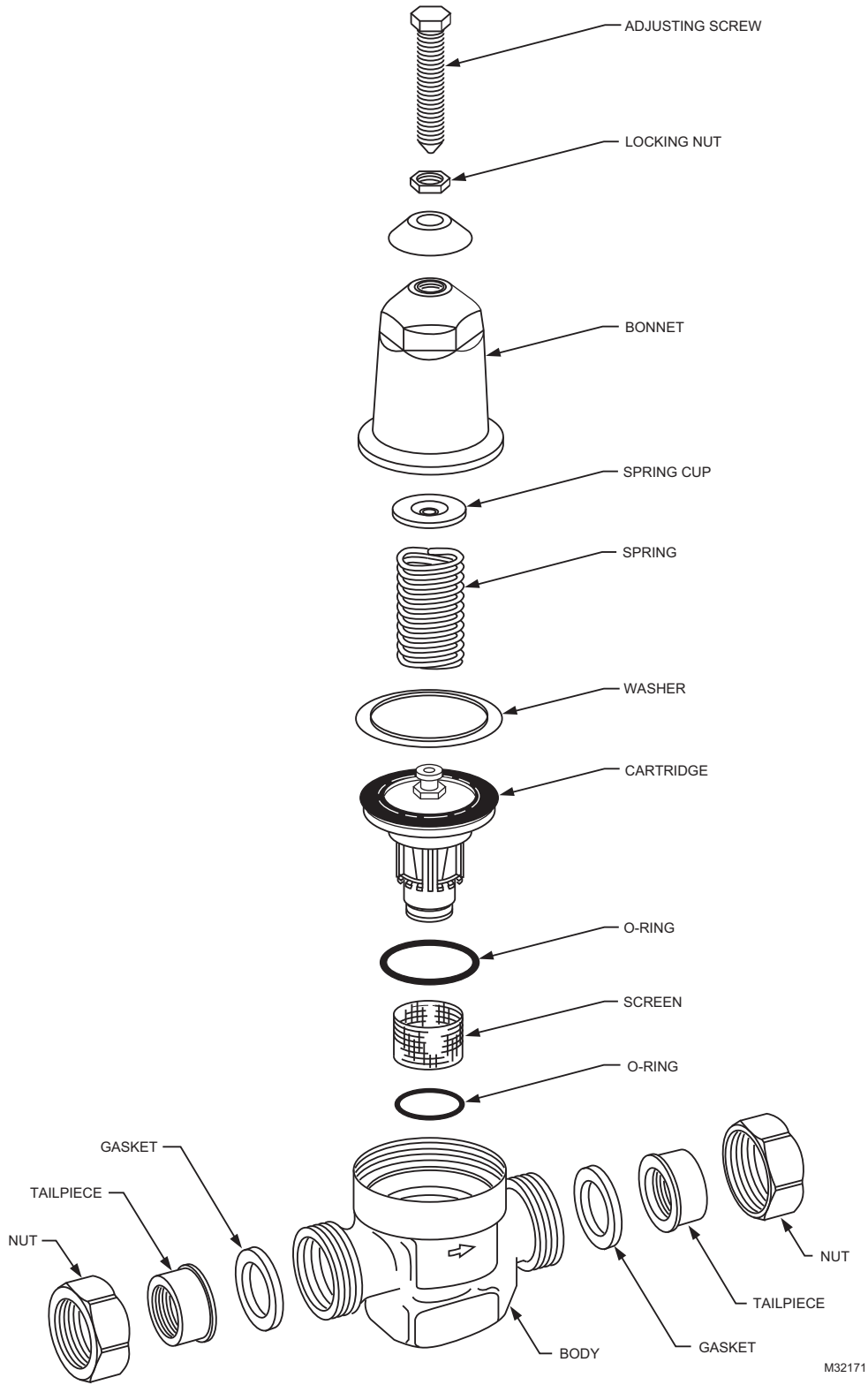


Fig. 4. D05T exploded view.

OPERATION

The Honeywell Braukmann D05T is a balanced, direct acting pressure regulating valve. The D05T 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 D05T automatically regulates to maintain the downstream pressure. See Fig. 5 for the internal construction of the D05T.

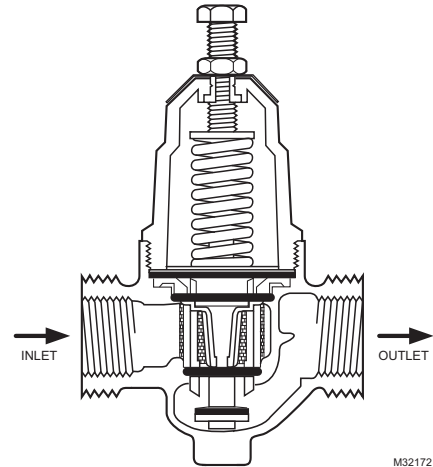


Fig. 5. Internal construction of D05T.

TROUBLESHOOTING

Table 3 provides a troubleshooting guide for the D05T Pressure Regulating Valves.

Table 3. Troubleshooting the D05T Pressure Regulating Valves.

Problem	Solution
Whistling noise.	<ul style="list-style-type: none"> Slightly increase or decrease the outlet pressure until the noise disappears.
Will not hold pressure.	<ul style="list-style-type: none"> Clean the filter cartridge.
Chatters.	<ul style="list-style-type: none"> Replace the screen and O-rings. Replace the cartridge (see replacing the cartridge section).
Freezes up.	<ul style="list-style-type: none"> Replace bonnet or cartridge, if damaged. To avoid future freeze-up: <ul style="list-style-type: none"> — 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. — 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).
Pressure gauge measures a lower pressure under flow conditions than was originally set during static conditions.	<ul style="list-style-type: none"> 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 (See Table 2).

D05T Parts and Accessories

Order Number Description

Replacement Parts

203223	Bonnet Assembly for 3/4 in. Valves.
203224	Bonnet Assembly for 1 in. Valves.
272841	Gasket for 3/4 in. D05T/DS05 (quantity 24).
272842	Gasket for 1 in. D05T/DS05 (quantity 24).
K05A1009	Replacement Cartridge, Screen and O-ring for 3/4 in. Valves.
K05A1017	Replacement Cartridge, Screen and O-ring for 1 in. Valves.
K05B1007	Replacement Screen and O-ring for 3/4 in. Valves.

K05B1015

Replacement Screen and O-ring for 1 in. Valves.

Union Kits

K06U1077	Union Kit—3/4 in., includes nut, female NPT threaded tailpiece and gasket.
K06U1085	Union Kit—1 in., includes nut, female NPT threaded tailpiece and gasket.
K06U1101	Union Kit—3/4 in., includes nut, sweat tailpiece and gasket.
K06U1119	Union Kit—1 in., includes nut, sweat tailpiece and gasket.

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