



CASH VALVE™ TYPE B ¼" TO 2" FOR STEAM SERVICE INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

Before installation, these instructions must be read carefully and understood.

WARNING

Failure to follow these instructions or to properly install and maintain this equipment could result in an explosion, fire and/or chemical contamination causing property damage and personal injury or death.

Cash Valve Regulators must be installed, operated and maintained in accordance with federal, state and local codes, rules and regulations and Emerson Process Management Regulator Technologies, Inc. instructions.

If the regulator vents gas or a leak develops in the system, service to the unit may be required. Failure to correct trouble could result in a hazardous condition.

Installation, operation and maintenance procedures performed by unqualified personnel may result in improper adjustment and unsafe operation. Either condition may result in equipment damage or personal injury. Only a qualified person shall install or service the B Series Regulator

CALIFORNIA PROPOSITION 65 WARNING

This product can expose you to chemicals including lead, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

INTRODUCTION

Scope of the Manual

This manual provides instructions for the installation, adjustment and maintenance for the B Series Pressure Regulators.

DESCRIPTION

The Type B Pressure Reducing and Regulating Valve automatically reduces a high inlet pressure to a lower delivery pressure and maintains the lower pressure within reasonably close limits regardless of the pressure fluctuations on the inlet side of the valve.

SPECIFICATION DATA

Service: Steam

Sizes: ¼", ⅜", ½", ¾", 1", 1¼", 1½" and 2"
(6, 9, 12, 19, 25, 32, 38, 51 mm)

Connections: Threaded internal inlet and outlet

Body Material: Iron, Bronze

Maximum Temperature: 400°F (204°C)

Maximum Initial Pressure:

Iron Body – 150 psi (10.3 bar)

Bronze Body – 250 psi (17.2 bar)

GENERAL INSTALLATION INSTRUCTIONS

Install a Y-Type or equivalent strainer upstream of the Type B. The built-in strainer screen is secondary protection ONLY.

The Type B Regulator should be installed in the horizontal position with the spring chamber upright. For other installation requirements, consult the factory. For ease of operation and maintenance, it is suggested that manual shutoff valves be installed upstream and downstream from the valve. Before installing the valve, the piping and the valve should be thoroughly flushed out to remove any foreign material. Install the valve with the inlet pipe fitted to the inlet connection identified on the valve body. Use a good pipe joint compound on the male pipe threads and do not over tighten the valve connections.

CAUTION

If sealant tape must be used, we highly recommend using very little tape (wrap 2-3 times max) and ensure that the tape is properly applied. When wrapping tape around the male edge of the pipe it is important to wrap the tape in a clockwise direction. To do this, hold the pipe in your left hand, or have the pipe to your left side if it is a mounted pipe. Put the tape on the threads and run the tape around the threads over the top of the pipe. Make sure there is no tape that has overlapped on the end of the open pipe. Any tape debris can cause failure. DO NOT OVER TIGHTEN during installation.

CONSTRUCTION

See component description for materials of construction.

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OPERATING INSTRUCTIONS

Adjusting the Delivery Pressure:

The regulator's delivery pressure setting is adjusted by turning the adjusting screw (2) or optional T-handle (1) at the top of the spring chamber (5) after loosening the adjusting screw lock nut (3). To increase the delivery pressure, turn the adjusting screw clockwise (into the spring chamber). To decrease the delivery pressure, turn the adjusting screw counter-clockwise (out of the spring chamber). Tighten the adjusting screw lock nut after the adjustment has been made. Draw flow through the valve and shutoff, after adjustment, to check for proper set pressure.

Troubleshooting leakage from bottom plug:

If there is leakage from bottom plug, tighten bottom plug firmly. DO NOT OVERTIGHTEN.

MAINTENANCE INSTRUCTIONS

CAUTION

Before attempting to replace any spare parts, be sure to shut off all pressure connections to the valve. With the valve closed however, system pressure could still be locked between the shutoff valve and the inlet and/or outlet sides of the regulator. Before proceeding with any valve service, be certain to relieve the pressure from both sides of the regulator.

Refer to section view above for parts identification. Repair parts can easily be installed without removing the regulator from the line.

Servicing Diaphragm(s) and Pressure Spring

1. Loosen the lock nut and turn the adjusting screw counterclockwise until the pressure spring is no longer under tension. When reassembling, run the adjusting screw down until the lock nut almost touches the spring chamber. This will give you approximately the same set as before disassembly.
2. Remove the assembly screws securing the spring chamber to the body. During reassembly, tighten the screws evenly in a star pattern. See Chart below for torque values.
3. Remove the spring chamber. Then remove the spring button, pressure spring and pressure plate.
4. Remove the diaphragm(s) and diaphragm gasket (a diaphragm gasket is only present when construction calls for metal diaphragms).
5. Remove the pusher post button. During reassembly, ensure the pusher post button is centered properly on the pusher post.
6. Inspect all parts for wear and damage and replace if necessary. Reassemble parts in reverse order. DO NOT OVERTIGHTEN. Follow the Operation Instructions to reset the delivery pressure.

Servicing the Cylinder, Piston, Strainer Screen and Plug Gasket

1. Loosen the lock nut and turn the adjusting screw counterclockwise until the pressure spring is no longer under tension. When reassembling, run the adjusting screw down until the lock nut almost touches the spring chamber. This will give you approximately the same set as before disassembly.
2. Remove the bottom plug. Take care, as the bottom plug is under slight tension as a result of the piston spring acting against the bottom plug. Remove the piston, piston spring and strainer screen.
3. Thoroughly clean the strainer screen and remove any debris from the valve body.
4. Remove the hexagon cylinder.
5. Inspect all parts for wear and damage. If either the cylinder or piston need replacing, it is necessary to replace both as both parts wear equally.
6. Reassemble the valve in reverse order. DO NOT OVERTIGHTEN. Follow the Operation Instructions to reset the delivery pressure.

Valve Size (in.)	¼	¾	½	¾	1	1¼	1½	2
Assembly Screw Torque Value (in-lbs)	100	150	200	200	250	350	350	350

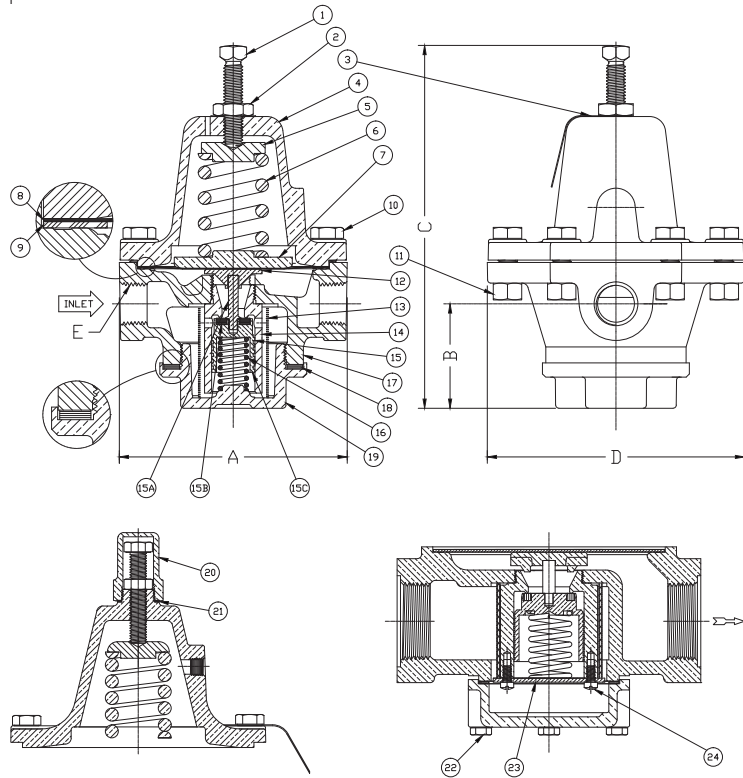
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No.	Qty.	Component Description	Construction
1	1	Adjusting Screw	Steel
2	1	Lock Nut	Steel
3	1	Name Plate	Aluminum
4	1	Spring Chamber	Iron, Brass
5	1	Spring Button	Iron
6	1	Pressure Spring	Steel
7	1	Pressure Plate	Brass
8	3	Diaphragm	Bronze, Monel®
9	1	Gasket	Aramid Fibre
10	6	Screw	Steel
11	6	Nut	Steel
12	1	Pusher Post Button	Brass
13	1	Screen	SST
14	1	Cylinder	Brass
15	1	Piston Sub	
15A	1	Pusher Post	Brass
15B	1	Seat Disc	SST-filled PTFE
15C	1	Piston	Brass
16	1	Piston Spring	SST
17	1	Body	Iron, Brass
18	1	Gasket	Aramid Fibre
19	1	Bottom Plug	Brass
20	1	Adjust Screw Cap	Brass
21	1	Cap Gasket	PPL
22	6	Screw (Bottom Plug)	SST, Steel
23	1	Cylinder Plate	Brass
24	2	Screw	SST

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FIGURE 1



VARIATION D-WITH PRESSURE SCREW CAP AND DIFFERENTIAL CONNECTION

ONLY FOR 2 INCH

DIMENSION

E		A		B		C (Std.)		D		C (Diff.)	
In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm
¼	6	3.03	76.9	1.80	45.6	3.29	83.5	3.44	87.3	3.50	88.9
⅜	10	3.88	98.6	1.75	44.5	4.5	114.3	4.38	111.3	4.70	119.4
½	13	4.47	113.5	2.05	52	7.11	180.6	5.04	128.1	7.50	190.5
¾	19	5.09	129.3	1.89	48	6.93	176.1	5.76	146.4	7.07	179.6
1	25	5.75	146.1	2.03	51.6	6.25	158.6	6.60	167.5	6.79	172.6
1¼	32	6.19	157.2	2.63	66.8	6.13	155.7	6.19	157.2	7.21	183.1
1½	38	6.19	157.2	2.63	66.8	6.38	162.1	7.63	193.8	7.174	182.1
2	51	9.19	233.4	3.50	88.9	8.50	215.9	7.76	197.1	8.75	222.3

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