



CASH VALVE™ TYPE B-95 PRESSURE REDUCING OR PRESSURE BUILD REGULATOR INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

Before installation, these instructions must be carefully read 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 Type B-95 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 Type B95 pressure regulator.

DESCRIPTION

The Type B-95 is a fully automatic pressure reducing valve designed to reduce a high inlet pressure to a lower pressure and maintain the lower pressure to reasonably close limits. Also available in a cryogenic version, it is ideal for use in the pressure build-up circuit, for either liquid oil or gas service.

Steel or stainless steel bodies and chambers, stainless steel trim. Choice of metal, Teflon or Buna-N seating. Buna-N diaphragm (limited to 180°F) or Stainless steel laminated diaphragms (to 450°F). Cryogenic version incorporates Stainless steel pressure spring, cap screws, and adjusting screw and lock nut.

INSTALLATION INSTRUCTIONS

The Type B-95 regulator may be installed in the horizontal position with the spring chamber up or down. 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, all piping 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 compatible sealant on the male pipe threads and do not overtighten the valve connections.

SPECIFICATION DATA

Service:	Air, water, steam, oil and other liquids. also cryogenic liquids and gases.
Sizes:	1/2, 3/4 and 1" (15, 20, 25 mm)
Connections:	Threaded Female NPTF inlet and outlet
Temperature Rating:	-320 to 400°F (-195 to 204°C), depending on construction.
Maximum Inlet Pressure:	720 psig (49.6 bar) at 180°F (82°C) 400 psig (27.5 bar) at -320 to 400°F (-195 to 204°C)

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OPERATION INSTRUCTIONS

Adjusting the Delivery Pressure

The regulator's delivery pressure setting is adjusted by turning the adjusting screw (1) at the top of the spring chamber (5) after loosening the adjusting screw lock nut (2). To increase delivery pressure, turn the adjusting screw clockwise (into the spring chamber). To decrease the delivery pressure, turn the adjusting screw counterclockwise (out of the spring chamber). After each adjustment, draw flow downstream and close to check new setting. Tighten the adjusting screw lock nut after the adjustment has been made.

MAINTENANCE INSTRUCTIONS

The following procedures are provided for servicing the recommended spare parts for the Type B-95 regulator. Repair parts can easily be installed without removing the regulator from the line.

Refer to the Type B-95 regulator exploded view for parts identification.

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 shut-off valve and the inlet and/or outlet sides of the relief valve. Before proceeding with the valve service, be certain to relieve the pressure from BOTH sides of the valve

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.

ASSEMBLY SCREW TORQUE VALUE (IN-LBS)

Valve Size (in.)	1/2	3/4	1
Metal Diaphragm	200	200	250
Rubber Diaphragm	150	200	200

Servicing the Cylinder, Piston, Strainer Screen and Plug Gasket

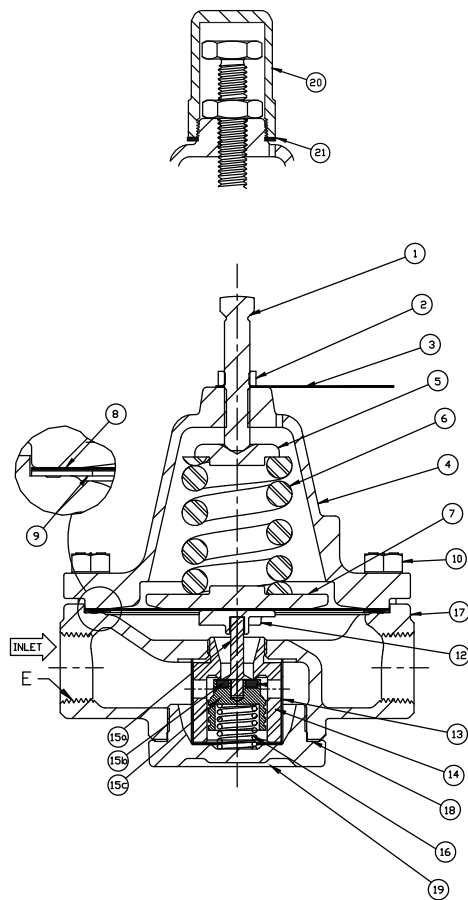
1. Loosen the lock nut and turn the adjusting screw counterclockwise until the pressure spring is no longer under tension. When reassembling, run the adjusting screw down until the lock nut almost touches the spring chamber. This will give you approximately the same set as before disassembly.
2. Remove 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.

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PARTS LIST

Item	Qty	Description	Material
1	1	Adjusting Screw	SST
2	1	Lock Nut	SST
3	1	Name Plate	Aluminum
4	1	Spring Chamber	316 SST/Steel
5	1	Spring Button	316 SST
6	1	Pressure Spring	Steel
7	1	Pressure Plate	316 SST
8	4	Diaphragm	316 SST
9	1	Gasket	Aramid Fiber
10	6	Screw	SST
12	1	Pusher Post Button	316 SST
13	1	Screen	SST
14	1	Cylinder	SST
15	1	Piston Sub	- - -
15a	1	Pusher Post	SST
15b	1	Seat Disc	PTFE/SST
15c	1	Piston	SST
16	1	Piston Spring	SST
17	1	Body	SST/Steel
18	1	Gasket	Aramid Fiber
19	1	Bottom Plug	316 SST
20	1	Adjusting Screw Cap	SST
21	1	Cap Gasket	PTFE



AVAILABLE OPTIONS

Available with drilled and tapped spring chamber and pressure screw cap for differential service with Spring Chamber Style selection D - w/ Pressure Screw Cap and Differential Connection.

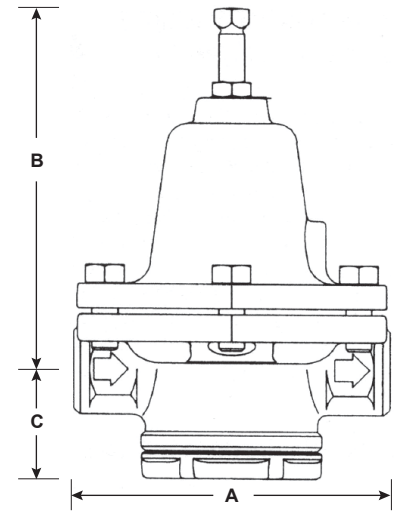
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Body, in.	Dimensions, in.			Ship. Wt., lbs
	A	B	C	
1/2	4 1/2	5 19/32	1 19/32	7 1/2
3/4	5 1/4	5 3/4	1 15/32	8 1/2
1	5 7/8	6 3/4	1 5/8	13 1/2

REDUCED PRESSURE RANGES, psig

Size, in.	Steel Spring	Stainless Spring
1/2	2-30	10-30
	10-50	20-75
	30-125	25-125
	50-150	100-200
	----	150-250
	----	250-400 ⁽²⁾
3/4	2-20	10-30
	10-35	20-70
	30-75	50-150
	50-110	100-225
	105-150	150-250
	----	200-600 ⁽²⁾
1	2-20	10-35
	10-45	20-60
	20-60	50-100
	55-100	100-250
	90-150	200-400 ⁽²⁾
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NOTES

1. Stainless springs furnished for higher ranges and for all cryogenic valves.
2. Stainless steel construction only.
3. For steam service, we recommend a maximum differential pressure of 150 psi to prevent seat erosion.

TRIM OPTIONS WITH PRESSURE AND TEMPERATURE LIMITS

Body	Trim	Seat	Diaphragm	Maximum Inlet Pressure, psig	Maximum Inlet Pressure, bar	Maximum Outlet Pressure, psig	Maximum Outlet Pressure, bar	Temperature Range, °F	Temperature Range, °C
Steel	Stainless steel	Metal	Stainless steel	400	27.5	250	17.2	-20-400	-6-204
		Buna-N	Buna-N	720	49.6	400 ¹	27.5	-20-180	-6-82
		Teflon	Stainless steel	400	27.5	250	17.2	-20-350	-6-176
Stainless steel	Stainless steel	Metal	Stainless steel	400	27.5	250	17.2	-20-400	-6-204
		Buna-N	Buna-N	720	49.6	400 ¹	27.5	-20-180	-6-82
		Teflon	Stainless steel	400	27.5	400 ¹	27.5	-320-350	-195-176

1. Requires diaphragm spacer and modified pressure plate.

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