



CASH VALVE™ TYPES FR, FR-6 AND FR-10 WATER/AIR/OIL/GAS BACK PRESSURE VALVE INSTALLATION 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 back pressure regulators, relief and differential relief valves 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 a leak develops or if the outlet continually vents gas, service to the unit may be required. Failure to correct trouble could result in a hazardous condition. Only a qualified person shall install or service the unit.

Installation, operation and maintenance procedures performed by unqualified person may result in improper adjustment and unsafe operation. Either condition may result in equipment damage or personal injury. Call a qualified person when installing, operating and maintaining the Type FR Back Pressure Valves.

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 FR Back Pressure Valves.

DESCRIPTION

The Types FR, FR-6 and FR-10 are fully automatic back pressure valves designed to dependably maintain a desired pressure in a vessel or system by maintaining a predetermined valve inlet pressure and relieving excess pressure into a lower pressure line. FR Series Valves are not emergency relief devices, but are designed for continuous pressure regulation.

SPECIFICATION DATA

Service: Air, water, oils and gases (except steam)

Sizes: 1¼", 1½" and 2"

End Connections: Threaded internal inlet and outlet

Available Body Material:

FR: Bronze, Iron, Steel or SST

FR-6: Bronze or SST

FR-10: Iron

Maximum Temperature:

FR and FR-6: 600°F (315.6°C)

FR-10: 450°F (232.2°C)

Maximum Pressure:

FR: 400 psi (27.6 bar)

FR-6: 600 psi (41.4 bar)

FR-10: 250 psi (17.2 bar)

Capacity:

For specific capacity information, consult the factory.

GENERAL INSTALLATION INSTRUCTIONS

Connect the supply line (usually the pump discharge line) to either the right or left hand body connection. The remaining right or left hand connection should be connected to the service line or plugged depending on the type of installation. The bottom connection, which is indicated by an arrow on the valve body, should be connected to the return or by-pass line. Before installing the valve, the piping and valve should be thoroughly flushed out to remove any foreign material.

Types FR, FR-6 and FR-10 Valves are typically installed in the horizontal position with the spring chamber upright. Consult the factory or its authorized representative before installing the valve in other positions.

CONSTRUCTION

See component description for materials of construction.

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.

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 shut off 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.

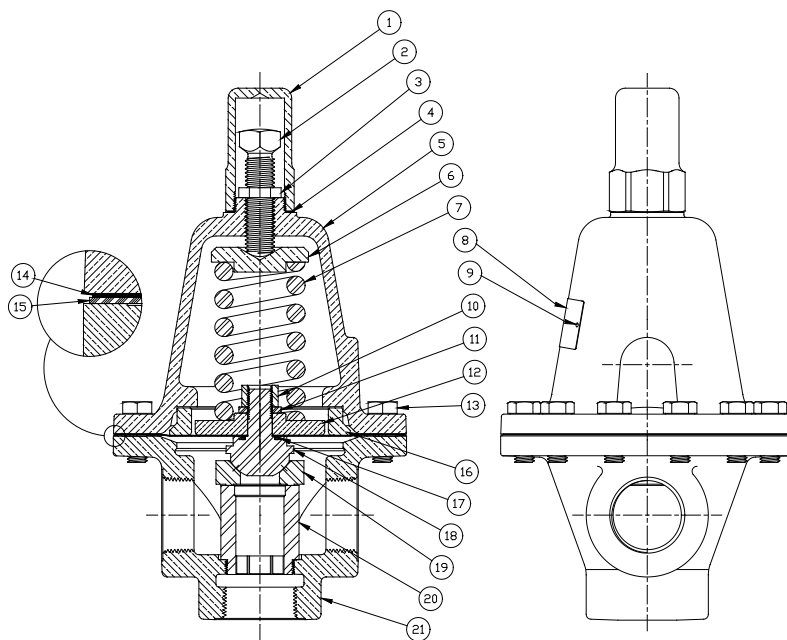
Refer to section view for parts identification. Repair parts can easily be installed without removing the regulator from the line.

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No.	Component Description	Construction
1	Adjusting Screw Cap (FR, FR6 only)	Brass
2	Adjusting Screw	Steel
3	Lock Nut	Brass or Steel
4	Gasket	Polypropylene
5	Spring Chamber	Iron (FR, FR6, FR10) Bronze, Steel or SST (FR, FR6 only)
6	Spring Button	Brass
7	Pressure Spring	Steel
8	Name Plate	Aluminum
9	Drive Screw	SST
10	Nut	Steel
11	Washer	SST
12	Pressure Plate	Brass
13	Screw	Steel
14	Diaphragm	Buna-N, Monel®, Viton (FR, FR6, FR10) Bronze or SST (FR, FR6 only)
15	Gasket	Aramid Fiber or Teflon
16	Diaphragm Ring (FR6 only)	Brass
17	O-ring	Buna-N or Teflon
18	Ball Seat	SST
19	Seat Ring	SST
20	Body Seat	Brass or SST
21	Body	Iron (FR, FR6, FR10) Bronze, Steel or SST (FR, FR6 only)

FIGURE 1



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