



CASH VALVE TYPES K-5 AND K-5C BACK PRESSURE VALVES INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

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



INSTALLATION INSTRUCTIONS

When installing the valve, connect the line (usually the pump discharge line) from the system pressure to be regulated to the bottom (inlet) connection on the valve. Connect the bypass return line to the side outlet on the valve. All fluid in excess of the valve pressure setting will now be automatically relieved or bypassed to maintain the correct pump discharge (system) pressure.

Thoroughly flush out the valve and the adjacent piping before installing the valve to remove any foreign material to ensure efficient and trouble-free operation for which the valve was designed.

In the typical installations shown on the following page, the Type K-5 valve is shown installed in the horizontal position with the spring chamber upright. This is the recommended way to install the valve.

Although installing the valve in a vertical line (valve on its side) or inverted in a horizontal line is not entirely discouraged, there are certain cautions to be considered. The valve will function well in any position but servicing it is more difficult in other positions.

DESCRIPTION

The Types K-5 and K-5C are fully automatic back pressure valves designed to dependably maintain a predetermined pressure in a vessel or system by maintaining a predetermined valve inlet pressure and relieving into a lower pressure line. Type K valves are not emergency relief devices but are designed for continuous pressure regulation.

SPECIFICATION DATA

Service:	Suitable for pump systems of all kinds. Applicable on water, other fluids, and oils of all grades.
Sizes:	NOT FOR STEAM SERVICE. 1" (25.4 mm), 1¼" (31.8 mm), 1½" (38.1 mm) and 2" (50.8 mm)
Connections:	NPTF, Threaded female bottom inlet, side outlet
Body:	Bronze
Maximum Temperature:	300°F (148°C)
Pressure Control Range:	2-150 psi (0.14-10.3 bar)

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OPERATING INSTRUCTIONS

Adjusting the Delivery Pressure

The regulator's delivery pressure setting is adjusted by turning the adjusting screw (2) at the top of the spring chamber (6) after removing the adjusting screw cap (1) and loosening the adjusting screw lock nut (3). To obtain a higher pressure setting, turn the adjusting screw clockwise (into the spring chamber). To lower the pressure setting, turn the adjusting screw counter-clockwise (out of the spring chamber). Tighten the adjusting screw lock nut after the adjustment has been made and install the adjusting screw cap (1).

MAINTENANCE INSTRUCTIONS

The following procedures are provided for servicing the K-5 and K-5C back pressure relief valves. Repair parts can easily be installed without removing the valve from the line.

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.

Refer to the K-5 cut away view for parts and identification.

Servicing the Pressure Spring (9), Seat Sub (14) and Seat Ring (15)

1. Unscrew the adjusting screw cap (1). Inspect and if necessary, replace the cap gasket (4).
2. Loosen the lock nut (3) ¼ turn and turn the adjusting screw (2) counter-clockwise until the pressure spring (6) is no longer under tension.

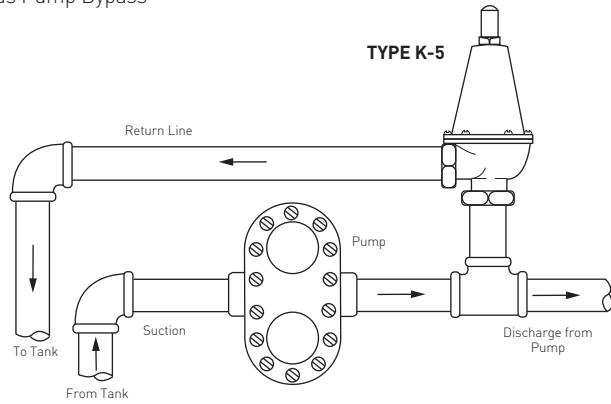
NOTE

When installing the adjusting screw during reassembly, turn the screw clockwise until the lock nut touches the spring chamber. When the valve is placed in service, the pressure setting should be very close to the original setting.

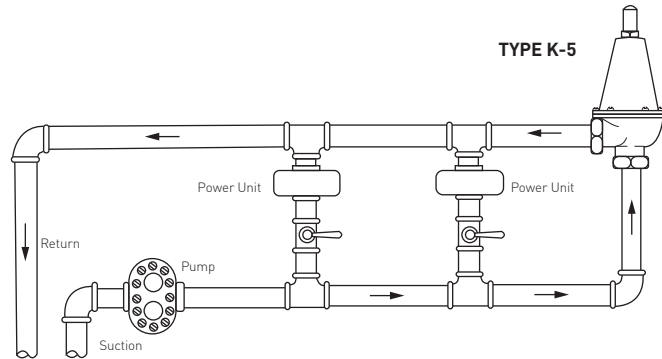
3. Remove the assembly screws (11) securing the spring chamber (6) to the valve body (16). During reassembly, tighten the screws evenly.

TYPICAL INSTALLATIONS

Typical hookup as Pump Bypass



Type K-5 installed at the end of Pumping Circuit to maintain circulation through entire loop



4. Lift the spring chamber (6) from the valve body and remove the gasket (12) from the valve body. Then remove the upper spring button (5), pressure spring (9), lower spring button (13) and pusher post (10) from the valve body (14). During reassembly, brush both sides of the body gasket with a graphite sealant.
5. The seat sub (14) can now be lifted from the valve body.
6. Once the seat sub (14) has been removed, the seat ring (15) can be unscrewed from the valve body (16).

7. Inspect all parts and replace if necessary. Reassemble the valve parts in reverse order. When installing the body seat, place a small amount of pipe dope on the threads. After placing the valve back in service, adjust the valve pressure setting as detailed under Operating Instructions.

For other installation requirements, consult the factory. For ease of operation and maintenance, it is suggested that manual shut-off valves be installed upstream and downstream from the valve. Use a good pipe joint compound on the male pipe threads and do not over tighten the valve connections.

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SPECIFICATIONS

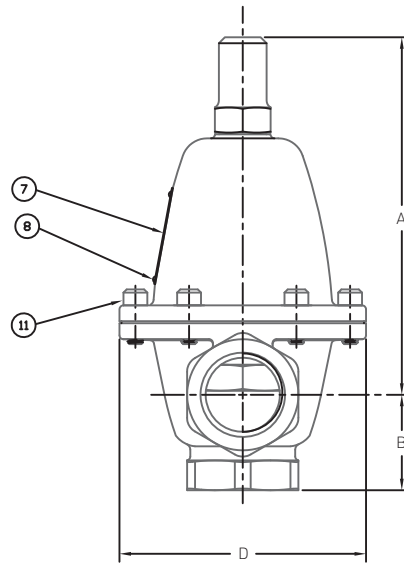
Each Type K-5 back pressure valve is supplied with a pressure spring selected to provide the desired pressure setting. The range of adjustment, or satisfactory "working range", of individual springs is shown for each valve size. Each valve has the "set" pressure and range of adjustment stamped on the identification tag fastened to the valve. The ranges shown are recommended for best performance.

HOW TO ORDER

When ordering repair parts, refer to the cut away view of the Type K-5 to identify the part required. When ordering, please use the part names listed and provide the valve serial number stated on the identification tag. Also state the following:

"Repair Parts for Type K-5 or K-5C" and provide:

1. Valve Size
2. Service (water, air, oil, etc.)
3. Inlet Pressure
4. Outlet or Delivery Pressure Range and Setting
5. Part Description
6. Quantity of Each Part
7. Valve assembly or serial number stated on the metal identification tag attached to the valve.



DIMENSIONS

Valve Size, in. (mm)	Dimensions, in. (mm)				Ship. WT. lbs (kg)
	A	B	C	D	
1 (25)	5 ⁵ / ₈ (143)	1 ¹ / ₂ (38)	2 (51)	3 ⁷ / ₈ (98)	4 ¹ / ₈ (1.87)
1 ¹ / ₄ (32)	6 ¹⁹ / ₃₂ (167)	1 ²⁵ / ₃₂ (45)	2 ⁷ / ₁₆ (62)	4 ³ / ₄ (121)	8 (3.63)
1 ¹ / ₂ (38)	6 ¹¹ / ₁₆ (170)	2 (51)	2 ¹ / ₂ (64)	4 ³ / ₄ (121)	8 (3.63)
2 (51)	7 ⁹ / ₁₆ (192)	2 ¹ / ₄ (57)	3 (76)	5 ¹⁵ / ₁₆ (151)	14 (6.35)

K-5 AND K-5C SPRING RANGES

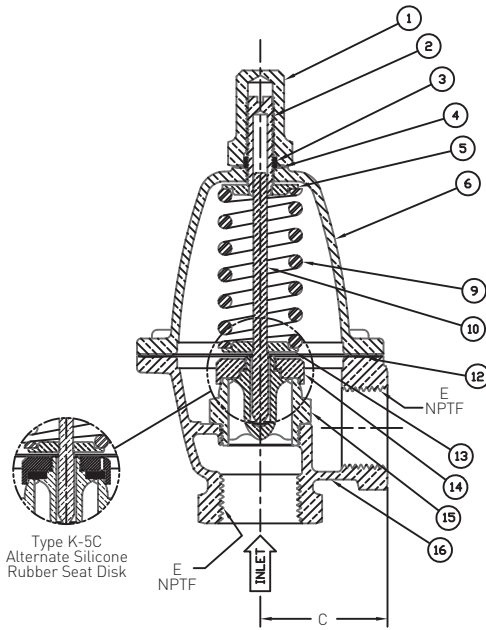
Size, in. (mm)	Adjustment Range, psi (bar)			
1 (25)	2-10 (0.14-0.69)	5-20 (0.34-1.4)	15-65 (1.0-4.5)	60-150 (4.1-10.3)
1 ¹ / ₄ (32)	----	5-35 (0.34-2.4)	30-75 (2.1-5.2)	70-150 (4.8-10.3)
1 ¹ / ₂ (38)	----	5-30 (0.34-2.0)	25-70 (1.7-4.8)	65-150 (4.5-10.3)
2 (51)	----	5-20 (0.34-1.4)	15-70 (1.0-4.8)	65-150 (4.5-10.3)

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PARTS LIST

Item	Qty.	Description	Material
1	1	Adjusting Screw Cap	Brass
2	1	Adjusting Screw	Brass
3	1	Lock Nut	Brass
4	1	Gasket	Teflon
5	1	Spring Button	Brass
6	1	Spring Chamber	Bronze
7	1	Nameplate	Aluminum
8	2	Drive Screw	SST
9	1	Pressure Spring	SST
10	1	Pusher Post	Brass
11	6	Socket Head Cap Screw	SST
12	1	Gasket	Aramid Fibre
13	1	Spring Button	Brass
14	1	Seat Sub	- - -
15	1	Seat Ring	Brass
16	1	Body	Bronze



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