

## 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 especially oils of all grades. Not for steam service.

**Sizes:** 1", 1-1/4", 1-1/2", and 2"

**Connections:** Threaded female bottom inlet, side outlet

Body: Bronze

**Maximum Temperature:** 400°F

**Pressure Control Range:** 5-150 psi

**Capacity:** Refer to Bulletin BPV-K (supersedes BPV-1) for capacity information.

## GENERAL 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 by-passed 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 the 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 concerns are (1) low pressure settings and (2) a fluctuating pressure in the return line or relief line. In cases where either of these concerns are present and such types of installations are being considered, consult with the factory or its authorized representative before proceeding with the installation.

## 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 after removing the closing 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 closing cap.

## 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



## Type K-5 K-5C

## BACK PRESSURE VALVES

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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 any valve service be certain to relieve the pressure from BOTH sides of the valve.

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

**Servicing the Pressure Spring (6) Wing Valve Assembly (12) and Body Seat (13)**

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

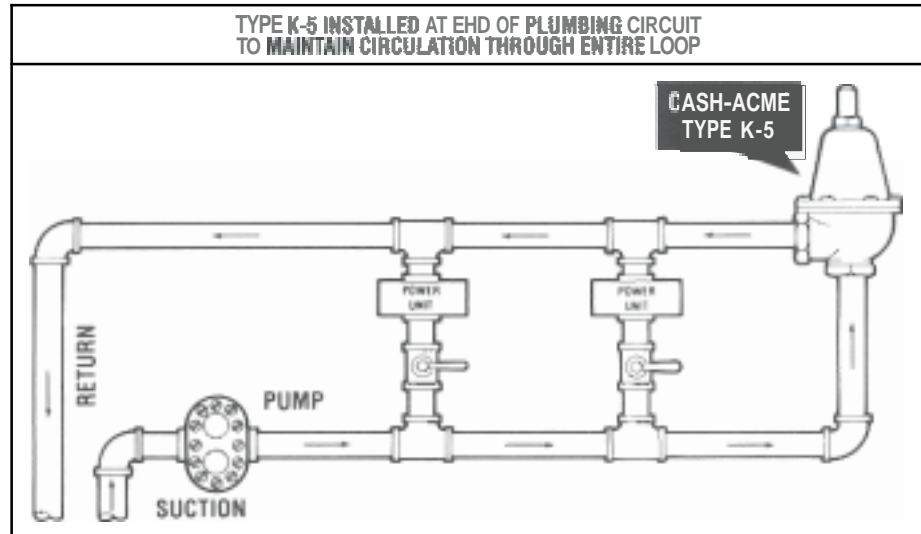
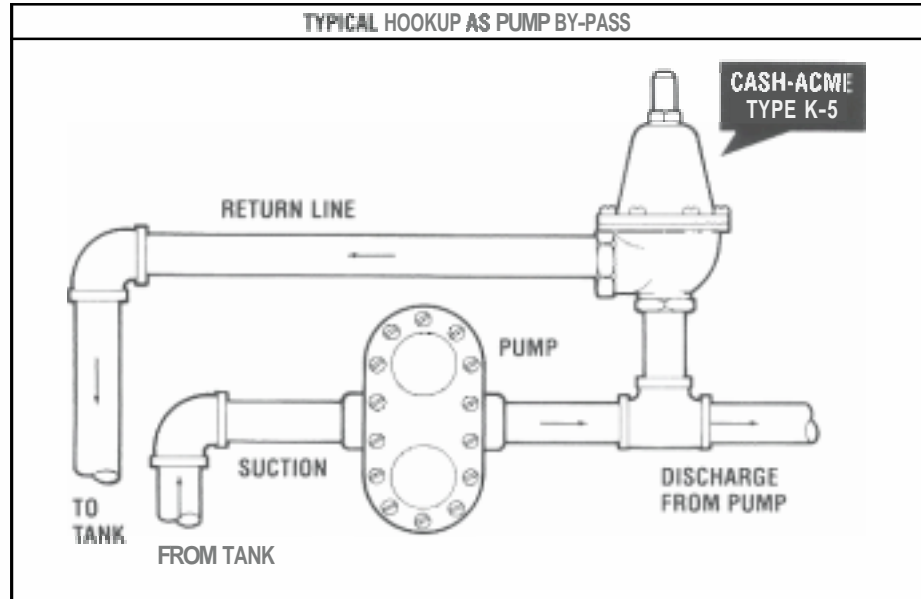
**NOTE:** When installing the adjusting screw during reassembly, turn the screw clockwise until the lock nut just touches the spring chamber. When the valve is placed in service the pressure setting should be very close to the original setting.

# INSTALLATION, MAINTENANCE & REPAIR PARTS INFORMATION

3. Remove the assembly screws (9) securing the spring chamber (8) to the valve body (14). During the reassembly, tighten the screws evenly.
4. Lift the spring chamber (8) from the valve body and remove the gasket (11) from the valve body. Then remove the upper spring seat (7), pressure spring (6), lower spring seat (10), and valve pusher stem from the valve body. During reassembly, brush both sides of the body gasket with a graphite sealant.
5. The wing valve assembly (12), consisting of the wing guide and the valve seat, can now be lifted from the valve body. Disassemble the parts by unscrewing the wing guide from the valve seat.
6. Once the wing valve assembly has been removed, the body seat (13) can be unscrewed from the valve body (14).
7. Inspect all parts and replace if necessary. Reassemble the valve parts in reverse order. When installing the body seat and assembling the wing valve assembly, 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.

## TYPICAL INSTALLATIONS



## REPAIR PARTS INFORMATION

Refer to the K-5 Series valve cut away view for part location and identification,

REF. NO.	DESCRIPTION	1"	1-1/4"	1-1/2"	2"
		PART NO.	PART NO.	PART NO.	PART NO.
1	Screw Cap	9891	12696	12696	12696
2	Screw	9893	12698	12698	12698
3	Lock Nut	2734	6295	6295	6295
4	Screw Cap Gasket	9892	13345	13345	13345
5	Seat	4621	6297	6297	6297
6	Pressure Spring	Specify Desired Range			
7	Valve Pusher Stem	11607	12701	12701	12717
8	spring chamber	6842	6863	6298	6882
9	Assembly Screw*	6302	6302	6302	6882
10	Lower Spring Seat	9896	12699	12699	12699
11	Gasket	9895	12702	12702	12722
12	Wing Valve Assembly	9908	12703	12712	12719
13	Body Seal	9898	12707	12711	12723
14	Body	9899	12709	12716	12724

\* 6 required for sizes 1", 1-1/4", 1-1/2", 8 required for size 2"

## SPECIFICATIONS

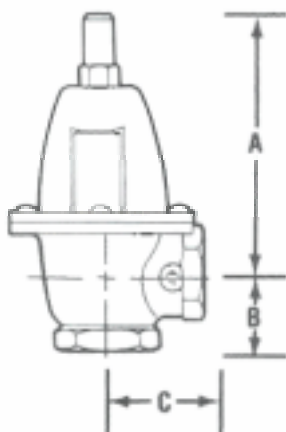
Each Type K-5 back pressure valve is supplied with a pressure spring selected to provide the desired pressure setting. The range of adjustment, or satisfactory "working range", of individual springs is shown for each valve size. Each valve has the "set" pressure and range of adjustment stamped on the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

### K-5 and K-5C SPRING RANGES

SIZE	ADJUSTMENT RANGE (psi)		
1"	5-20	15-65	60-150
1-1/4"	5-35	30-75	70-150
1-1/2"	5-30	25-70	65-150
2"	5-20	15-70	65-150

### DIMENSIONS

VALVE SIZE	DIMENSIONS			SHIP. WT. (lbs.)
	A	B	C	
1"	5-5/8"	1-1/2"	2"	4-118
1-1/4"	6-19/32"	1-25/32"	2-7/16"	8
1-1/2"	6-11/16"	2"	2-1/2"	8
2"	7-9/16"	2-1/4"	3"	14



## 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.



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