

CASH VALVE BACK PRESSURE VALVES

K SERIES

High capacity angle bypass regulators or back pressure control valves with models for pressures to 1500 psig (103.4 barg) and capacities to 200 gallons per minute (757 l/min.)



FEATURES

- Rugged, simple design enables complete disassembly on-line for easy maintenance and repair.
- Smooth, quiet performance.
- Fitted with female threaded connections, bottom inlet, side outlet; valves may be operated in any position.
- Closing cap over the top adjusting screw discourages unauthorized tampering with the set pressure and seals against leakage.
- Can be used to maintain a constant pressure differential.
- Type K-5C fitted with a silicone rubber seat disc to provide tight shut-off.
- Type K-10 balanced piston design is substantially unaffected by pressures or pressure changes in the outlet lines, assuring constant control over pump discharge pressure.
- K-10/K-15 feature a long pressure spring to provide maximum sensitivity.
- K-15 has a replaceable stainless steel seat and piston providing longer valve life at minimal cost.

GENERAL APPLICATION

Models are available for use on pump systems with water and other fluids, especially oil of all grades; hydraulic systems, oil burning equipment, rams, presses and lifts, chemicals processes, waste treatment, desalination and car washes.

TECHNICAL DATA

Materials:	Bronze, brass
Sizes:	¼" to 2" (7 to 50 mm)
Connections:	Threaded NPTF
Pressure range:	5 to 1500 psig (0.3 to 103.4 barg)
Max. temperature:	450°F (232°C)

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MODELS OVERVIEW

K Series valves are high capacity angle bypass regulators or back pressure control valves with a bottom inlet and side outlet. System pressure to be regulated is connected to the bottom inlet. Excess flow that is to be returned to the tank, pump suction or simply piped to a drain is connected to the side outlet.

There is a choice of four models suitable for specific duties:

Types K-5 and K-5C are available in 1", 1¼", 1½" and 2" (25, 32.5, 38 and 50 mm) sizes and designed for systems with a maximum operating temperature of 300°F (150°C) that require pressure control from 5 to 150 psig (0.3 to 10.3 barg).

Type K-5C differs from Type K-5 as it is fitted with a silicone rubber seat disc rather than a metal seat to provide for applications where tight shut-off is required.

They are suitable for pump systems of all kinds, applicable on water, other fluids and especially oils of all grades.

Type K-10 valves are totally enclosed and physically small with a balanced piston design. They are available in ¼", ⅜", ½", ¾", 1" and 1¼" sizes and are designed for systems which require pressure control from 15 to 600 psig (1.0 to 41.4 barg). Maximum system temperature is 450°F (232°C).

They are suitable for water, other liquids and light fuel oils and are especially well suited for use on hydraulic systems of all kinds, such as pumping units on a machine tool hydraulic mechanism and for any system requiring automatic regulation of a pump discharge pressure.

The Type K-15 is a small, compact piston-type back pressure valve available in ¼", ⅜", ½" and ¾" sizes and is designed for systems which require pressure control from 25 to 1500 psig (1.7 to 103.4 barg) with maximum temperatures of 450°F (232°C).

It is suitable for water or other liquids and light fuel oil and is especially suited for bypass applications on high pressure pumps or any system requiring automatic regulation of a pump discharge pressure.



TYPE K-5



TYPE K-10

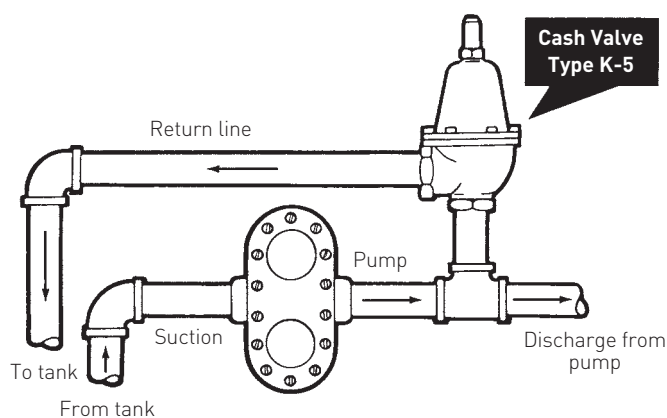


TYPE K-15

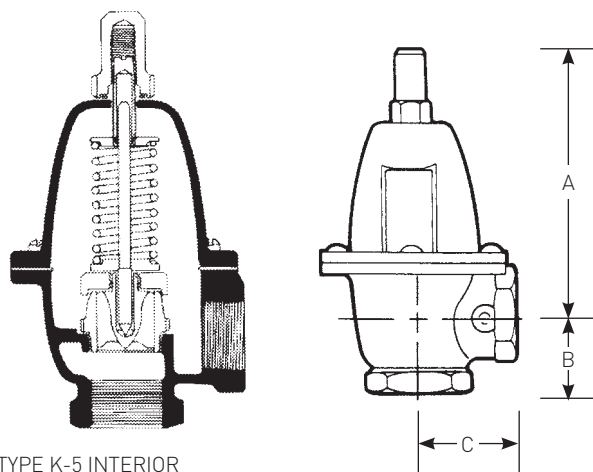
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TYPES K-5 AND K-5C DIRECT-ACTING ANGLE BACK PRESSURE VALVES



TYPICAL INSTALLATION



TYPE K-5 INTERIOR

Construction/specifications

Types K-5 and K-5C incorporate bronze bodies and internal trim, a brass spring chamber, stainless steel adjustment spring and high temperature gaskets.

TYPE K-5

Size	Dimensions			Shipping weight (lbs.)
	A	B	C	
1"	5 $\frac{5}{8}$ "	1 $\frac{1}{2}$ "	2"	4 $\frac{1}{8}$
1 $\frac{1}{4}$ "	6 $\frac{19}{32}$ "	1 $\frac{25}{32}$ "	2 $\frac{7}{16}$ "	8
1 $\frac{1}{2}$ "	6 $\frac{11}{16}$ "	2"	2 $\frac{1}{2}$ "	8
2"	7 $\frac{9}{16}$ "	2 $\frac{1}{4}$ "	3"	14

TYPE K-5, K-5C SPRING RANGES

Size	Adjustment ranges (psi)		
1"	5-20	15-65	60-150
1 $\frac{1}{4}$ "	5-35	30-75	70-150
1 $\frac{1}{2}$ "	5-30	25-70	65-150
2"	5-20	15-70	65-150

TYPE K-5, K-5C WATER CAPACITY INFORMATION (GPM)

Set pressure* (psi)	Inlet size							
	1"		1 $\frac{1}{4}$ "		1 $\frac{1}{2}$ "		2"	
	10% Rise	20% Rise	10% Rise	20% Rise	10% Rise	20% Rise	10% Rise	20% Rise
10	21	24	28	35	32	40	38	60
15	26	32	38	44	43	52	52	76
20	29	37	48	57	53	68	60	94
30	34	45	58	67	63	76	78	110
40	38	50	70	78	74	92	86	122
50	40	53	76	86	82	102	94	132
60	43	56	82	98	88	116	102	140
75	48	63	88	107	98	128	118	158
100	52	67	102	120	106	140	136	176
125	56	70	108	128	116	160	152	188
150	60	72	118	138	124	170	184	200

* Set pressures are based upon valve discharge into an atmospheric pressure return line.

If return line pressure is significantly higher than atmospheric pressure, then consult factory for capacity information.

CASH VALVE BACK PRESSURE VALVES

K SERIES

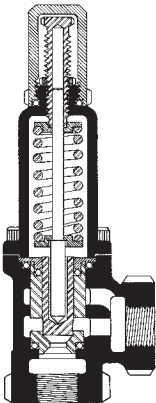
TYPE K-10 PISTON-TYPE ANGLE BACK PRESSURE VALVE

Construction/specifications

The Type K-10 valve incorporates a brass closing cap, a stainless steel pressure spring, a heavy bronze body, stainless steel trim and single seat.

TYPE K-10

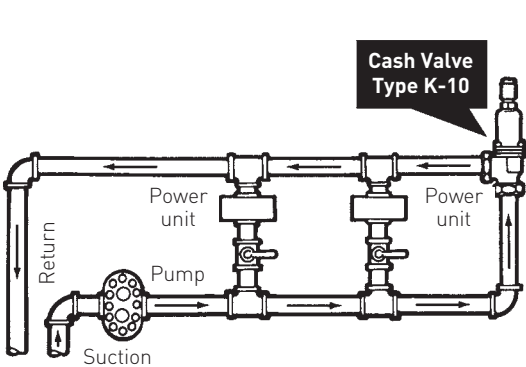
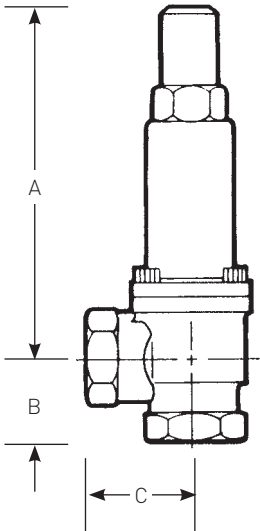
Size	Dimensions			Shipping weight (lbs.)
	A	B	C	
1/4"	4 1/4"	3 1/32"	1 1/4"	1 1/4
3/8"	4 1/4"	3 1/32"	1 1/4"	1 1/4
1/2"	5 5/8"	1 3/8"	1 5/8"	4
3/4"	5 5/8"	1 3/8"	1 5/8"	4 1/2
1"	7 7/8"	1 7/8"	2 1/4"	8 1/2
1 1/4"	7 7/8"	1 7/8"	2 1/4"	9



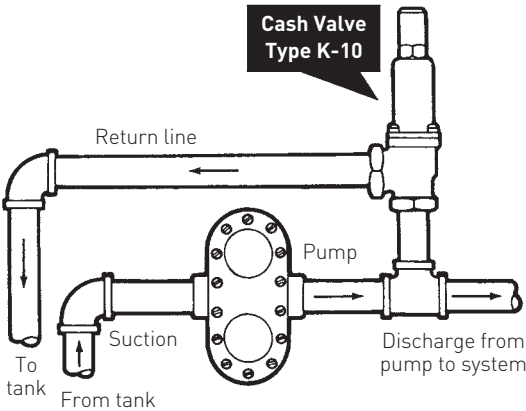
TYPE K-10 INTERIOR

TYPE K-10 SPRING RANGES

Size	Adjustment ranges (psi)			
1/4"	15-30/25-75	50-140	100-300	200-600
3/8"	15-30/25-75	50-140	100-300	200-600
1/2"	15-75	50-150	100-300	200-600
3/4"	15-75	50-150	100-300	200-600
1"	15-75	50-150	100-300	200-600
1 1/4"	15-75	50-150	100-300	200-600



TYPE K-10 INSTALLED AT END OF PUMPING CIRCUIT TO MAINTAIN CIRCULATION THROUGH ENTIRE LOOP



TYPICAL HOOK UP AS PUMP BY-PASS

CASH VALVE BACK PRESSURE VALVES

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TYPE K-10 WATER CAPACITY INFORMATION (GPM)

Set pressure* (psi)	Inlet size							
	1/4"		3/8"		1/2"		3/4"	
	10% Rise	20% Rise	10% Rise	20% Rise	10% Rise	20% Rise	10% Rise	20% Rise
15	1.0	2.5	1.0	2.5	1.5	3.5	1.5	3.5
20	1.5	4.0	1.5	4.0	2.5	5.0	2.5	5.0
30	2.5	6.0	2.5	6.0	3.5	7.0	3.5	7.0
50	3.0	9.0	3.0	9.0	5.0	11.0	5.0	11.0
75	3.5	11.0	3.5	11.5	6.0	14.0	6.0	14.0
100	4.0	11.5	4.0	14.5	7.0	15.0	7.0	17.0
125	4.5	11.5	4.5	17.0	7.5	16.0	7.5	19.0
150	5.0	11.5	5.0	19.5	8.0	22.0	8.0	22.0
200	5.5	11.5	5.5	20.0	9.0	24.0	9.0	24.0
250	6.0	11.5	6.0	20.0	9.7	26.0	9.7	26.0
300	7.0	11.5	7.0	20.0	10.5	28.0	10.5	28.0
400	8.0	11.5	8.0	20.0	11.5	30.0	11.5	31.5
600	10.0	11.5	10.0	20.0	14.5	30.0	14.5	37.0

TYPE K-10 WATER CAPACITY INFORMATION (GPM) (CONTINUED)

Set pressure* (psi)	Inlet size			
	1"		1 1/4"	
	10% Rise	20% Rise	10% Rise	20% Rise
15	3.0	6.0	3.0	6.0
20	4.0	8.0	4.0	8.0
30	5.0	12.0	5.0	12.0
50	6.5	17.5	6.5	17.5
75	8.5	23.5	8.5	23.5
100	10.0	27.0	10.0	27.0
125	11.5	30.0	11.5	30.0
150	13.0	34.0	13.0	34.0
200	15.0	40.0	15.0	40.0
250	17.0	47.0	17.0	47.0
300	19.0	54.0	19.0	54.0
400	23.0	63.0	23.0	63.0
600	28.0	65.0	28.0	77.0

* Set pressures are based upon valve discharge into an atmospheric pressure return line. If return line pressure is significantly higher than atmospheric pressure, then consult factory for capacity information.

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TYPE K-15 HIGH PRESSURE PISTON-TYPE BACK PRESSURE VALVE

Construction/specifications

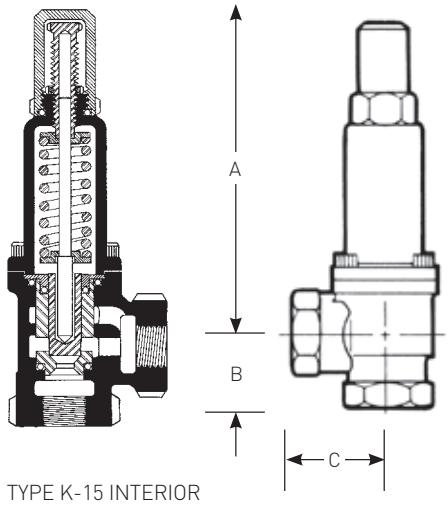
The K-15 features a replaceable stainless steel seat and piston providing longer valve life at minimal cost and incorporates a long, sensitive adjustment spring.

TYPE K-15

Size	Dimensions			Shipping weight (lbs.)
	A	B	C	
1/4"	4 1/4"	3 1/32"	1 1/4"	1 3/8
3/8"	4 1/4"	3 1/32"	1 1/4"	1 3/8
1/2"	5 5/8"	1 3/8"	1 5/8"	3
3/4"	5 5/8"	1 3/8"	1 5/8"	3

TYPE K-15 SPRING RANGES

Size	Adjustment ranges (psi)				
1/4", 3/8"	25-75	20-150	100-300	150-800	600-1500
1/2", 3/4"	25-150	20-200	100-700	150-800	600-1500



TYPE K-15 WATER CAPACITY INFORMATION (GPM)

Set pressure* (psi)	Inlet size							
	1/4"		3/8"		1/2"		3/4"	
	10% Rise	20% Rise	10% Rise	20% Rise	10% Rise	20% Rise	10% Rise	20% Rise
25	0.5	1.0	0.5	1.0	0.7	1.3	0.7	1.3
50	0.6	1.3	0.6	1.3	1.8	4.0	1.8	4.0
100	1.0	4.0	1.0	4.0	3.3	8.0	3.3	8.0
150	1.5	7.0	1.5	7.0	4.3	11.0	4.3	11.0
250	3.0	7.0	4.0	12.0	7.0	15.0	7.0	16.5
500	6.0	7.0	8.0	12.0	11.0	20.0	11.0	23.0
750	7.0	7.0	12.0	12.0	16.0	20.0	16.0	33.5
1000	7.0	7.0	12.0	12.0	20.0	20.0	20.0	33.5
1500	7.0	7.0	12.0	12.0	20.0	20.0	29.0	33.5

* Set pressures are based upon valve discharge into an atmospheric pressure return line. If return line pressure is significantly higher than atmospheric pressure, then consult factory for capacity information.

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SELECTION GUIDE

Example:	K10	A	W	A	01	-	E	0005
Model								
K10	K-10							
K05	K-05							
K5C	K-5C							
K15	K-15							
Valve size								
A	1/4" (K-10; K-15)							
B	3/8" (K-10; K-15)							
C	1/2" (K-10; K-15)							
D	3/4" (K-10; K-15)							
E	1" (K-10; K-5; K-5C)							
F	1 1/4" (K-10; K-5; K-5C)							
G	1 1/2" (K-5; K-5C)							
H	2" (K-5; K-5C)							
Service								
W	Water/oil (all)							
Body/connection style								
A	Angle type (bottom in/side out)							
Variation								
01	Standard							
02	W/o nozzle and piston O-ring, asperated piston (1 1/4" K-10 only)							
Design revision								
(-)	Original design							
Spring material								
E	Stainless steel							
Set pressure								
0005	5 psig							
0015	15 psig							
0100	100 psig							



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