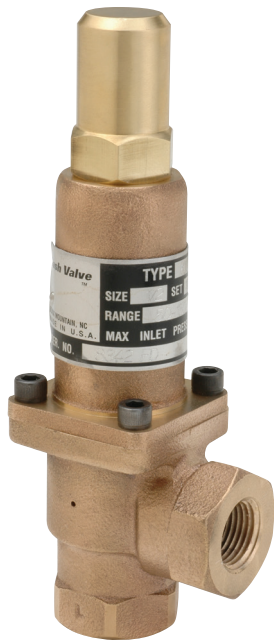




CASH VALVE™ K SERIES BACK PRESSURE VALVES

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 K5C fitted with a silicone rubber seat disc to provide tight shut-off.
- Type K10 balanced piston design is substantially unaffected by pressures or pressure changes in the outlet lines, assuring constant control over pump discharge pressure.
- Types K10 and K15 feature a long pressure spring to provide maximum sensitivity.
- Type K15 has a replaceable stainless steel seat and piston providing longer valve life at minimal cost.

GENERAL APPLICATION

The K Series Back Pressure Valves 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⁽¹⁾

Materials:	Bronze
Sizes:	¼ to 2 in. (7 to 50 mm)
Connections:	NPTF
Pressure range:	2 to 1500 psig (0.1 to 103.4 barg)
Maximum temperature:	450°F (232°C)

1. Refer to General Specifications Table in page 2 for more information.

CASH VALVE™ K SERIES BACK PRESSURE VALVES

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 K5 and K5C are available in 1, 1¼, 1½ and 2 in. (25, 32, 38 and 50 mm) sizes and designed for systems with a maximum operating temperature of 300°F (149°C) that require pressure control from 2 to 150 psig (0.1 to 10.3 barg).

Type K5C differs from Type K5 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 K10 valves are totally enclosed and physically small with a balanced piston design. They are available in ¼, ⅜, ½, ¾, 1 and 1½ in. (6, 10, 13, 19, 25 and 32 mm) 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 K15 is a small, compact piston-type back pressure valve available in ¼, ⅜, ½ and ¾ in. (6, 10, 13 and 19 mm) 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.

GENERAL SPECIFICATIONS

Type	Body Material	Spring Chamber Material	Body Size, in. (mm)	Materials		Maximum Inlet Pressure, psig (barg)	Temperature, °F (°C)
				Spring	Seat (Disc)		
K5	Bronze	Bronze	1 to 2 (25 to 50)	SST	Brass	150 (10.3)	-50 to 300 (-46 to 149)
K5C	Bronze	Bronze	1 to 2 (25 to 50)	SST	Brass or silicone	150 (10.3)	-50 to 300 (-46 to 149)
K10	Bronze	Brass	¼ to 1½ (8 to 32)	SST	Brass	600 (41.4)	-50 to 450 (-46 to 232)
	Bronze	Asperated Piston	1¼ (32)	SST	Asperated piston	600 (41.4)	-50 to 450 (-46 to 232)
K15	Bronze	Brass	¼ to ¾ (8 to 20)	SST	Brass	1500 (103.4)	-50 to 450 (-46 to 232)

TYPE K5



TYPE K10

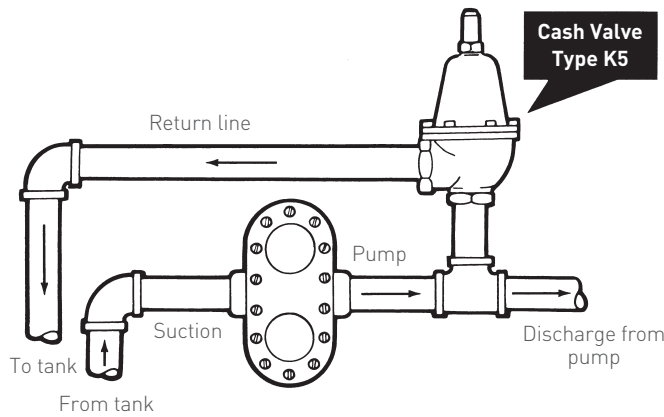


TYPE K15



CASH VALVE™ K SERIES BACK PRESSURE VALVES

TYPES K5 AND K5C DIRECT-ACTING ANGLE BACK PRESSURE VALVES



TYPICAL INSTALLATION

Construction/specifications

Types K5 and K5C incorporate bronze bodies and internal trim, a brass spring chamber, stainless steel adjustment spring and high temperature gaskets.

STANDARD SPRING RANGES, psig (barg)

Type	Size, in. (mm)	1	2	3	4
K5, K5C	1 (25)	2 to 10 (0.1 to 0.7)	5 to 20 (0.3 to 1.4)	15 to 65 (1.0 to 4.5)	60 to 150 (4.1 to 10.3)
	1¼ (32)	5 to 35 (0.3 to 2.4)	30 to 75 (2.1 to 5.2)	70 to 150 (4.8 to 10.3)	----
	1½ (38)	5 to 30 (0.3 to 2.1)	25 to 70 (1.7 to 4.8)	65 to 150 (4.5 to 10.3)	----
	2 (50)	5 to 20 (0.3 to 1.4)	15 to 70 (1.0 to 4.8)	65 to 150 (4.5 to 10.3)	----

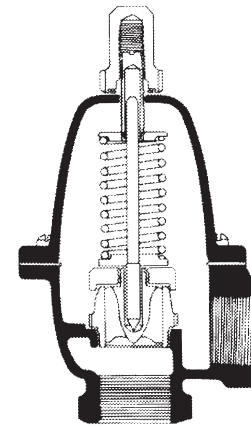
TYPE K5 DIMENSIONS

Size, in. (mm)	Dimensions, in. (mm)			Shipping weight, lbs (kg)
	A	B	C	
1 (25)	5.62 (143)	1.50 (38.1)	2.00 (50.8)	4½ (1.87)
1¼ (32)	6.59 (167)	1.78 (45.2)	2.44 (61.9)	8 (3.63)
1½ (38)	6.69 (170)	2.00 (50.8)	2.50 (63.5)	8 (3.63)
2 (50)	7.56 (190)	2.25 (57.2)	3.00 (76.2)	14 (6.35)

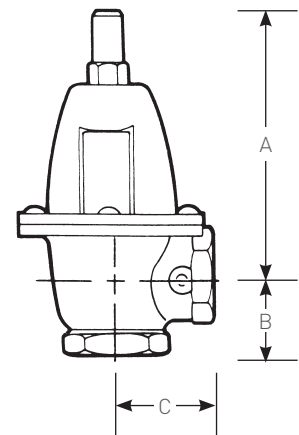
TYPES K5 AND K5C WATER CAPACITY INFORMATION (GPM)

Set pressure ⁽¹⁾ , psig	Inlet size, in. (mm)							
	1 (25)		1¼ (32)		1½ (38)		2 (50)	
	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

1. 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.

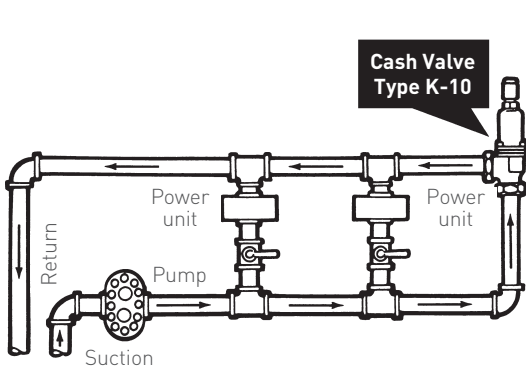


TYPE K5 INTERIOR

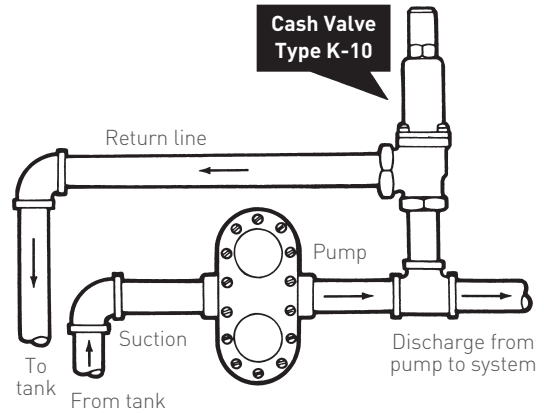


CASH VALVE™ K SERIES BACK PRESSURE VALVES

TYPE K10 PISTON-TYPE ANGLE BACK PRESSURE VALVE



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



TYPICAL HOOK UP AS PUMP BY-PASS

Construction/specifications

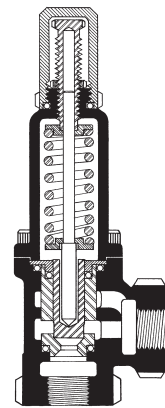
The Type K10 valve incorporates a brass closing cap, a stainless steel pressure spring, a heavy bronze body, stainless steel trim and single seat.

STANDARD SPRING RANGES, psig (barg)

Type	Size, in. (mm)	1	2	3	4	5
K10	1/4, 3/8 (6, 10)	15 to 30 (1.0 to 2.1)	25 to 75 (1.7 to 5.2)	50 to 140 (3.4 to 9.7)	100 to 300 (6.9 to 20.7)	200 to 600 (13.8 to 41.4)
	1/2, 3/4 (13, 19)	15 to 75 (1.0 to 5.2)	50 to 150 (3.4 to 10.3)	100 to 300 (6.9 to 20.7)	200 to 600 (13.8 to 41.4)	----
	1, 1 1/4 (25, 32)	15 to 75 (1.0 to 5.2)	50 to 150 (3.4 to 10.3)	100 to 300 (6.9 to 20.7)	200 to 600 (13.8 to 41.4)	----
	1/4, 3/8 (6, 10) ⁽¹⁾	15 to 75 (1.0 to 5.2)	50 to 150 (3.4 to 10.3)	----	----	----

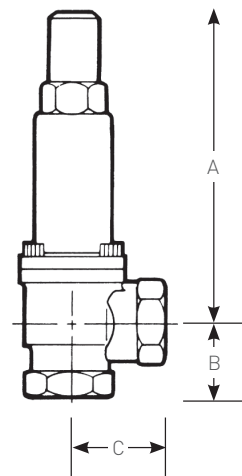
1. For McMaster Carr variation.

TYPE K10 INTERIOR



TYPE K10 DIMENSIONS

Size, in. (mm)	Dimensions, in. (mm)			Shipping weight, lbs (kg)
	A	B	C	
1/4 (6)	4.25 (108)	0.97 (24.6)	1.25 (31.7)	1 1/4 (0.57)
3/8 (10)	4.25 (108)	0.97 (24.6)	1.25 (31.7)	1 1/4 (0.57)
1/2 (13)	5.63 (143)	1.38 (35.0)	1.94 (49.3)	4 (1.81)
3/4 (19)	5.63 (143)	1.38 (35.0)	1.94 (49.3)	4 1/2 (2.04)
1 (25)	7.88 (200)	1.88 (47.7)	2.25 (57.1)	8 1/2 (3.86)
1 1/4 (32)	7.88 (200)	1.88 (47.7)	2.25 (57.1)	9 (4.08)



CASH VALVE™ K SERIES BACK PRESSURE VALVES

TYPE K10 WATER CAPACITY INFORMATION (GPM)

Set pressure ⁽¹⁾ , psig	Inlet size, in. (mm)							
	¼ (6)		⅜ (10)		½ (13)		¾ (19)	
	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 K10 WATER CAPACITY INFORMATION (GPM) (CONTINUED)

Set pressure ⁽¹⁾ , psig	Inlet size, in. (mm)			
	1 (25)		1¼ (32)	
	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

1. 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.

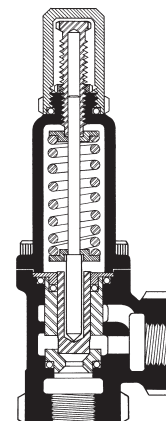
CASH VALVE™ K SERIES BACK PRESSURE VALVES

TYPE K15 HIGH PRESSURE PISTON-TYPE BACK PRESSURE VALVE

Construction/specifications

The Type K15 features a replaceable stainless steel seat and piston providing longer valve life at minimal cost and incorporates a long, sensitive adjustment spring.

TYPE K15 INTERIOR

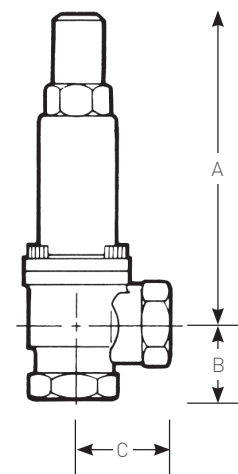


STANDARD SPRING RANGES, psig (barg)

Type	Size, in. (mm)	1	2	3	4	5
K15	1/4, 3/8 (6, 10)	25 to 75 (1.7 to 5.2)	20 to 150 (1.4 to 10.3)	100 to 300 (6.9 to 20.7)	150 to 800 (10.3 to 55.2)	600 to 1500 (41.4 to 103.4)
	1/2, 3/4 (13, 19)	25 to 150 (1.7 to 10.3)	20 to 200 (1.4 to 13.8)	100 to 700 (6.9 to 48.3)	600 to 1500 (41.4 to 103.4)	-----

TYPE K15 DIMENSIONS

Size, in. (mm)	Dimensions, in. (mm)			Shipping weight, lbs (kg)
	A	B	C	
1/4 (6)	4.25 (108)	0.97 (24.6)	1.25 (31.7)	1 1/8 (0.62)
3/8 (10)	4.25 (108)	0.97 (24.6)	1.25 (31.7)	1 1/8 (0.62)
1/2 (13)	5.63 (143)	1.38 (35.0)	1.63 (41.4)	3 (1.36)
3/4 (19)	5.63 (143)	1.38 (35.0)	1.63 (41.4)	3 (1.36)



CASH VALVE™ K SERIES BACK PRESSURE VALVES

TYPE K15 WATER CAPACITY INFORMATION (GPM)

Set pressure ⁽¹⁾ , psig	Inlet size, in. (mm)							
	¼ (6)		⅜ (10)		½ (13)		¾ (19)	
	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

1. 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™ K SERIES BACK PRESSURE VALVES

SELECTION GUIDE

Example:	K10	A	W	A	01	-	E	1
Type								
K10	Type K10							
K05	Type K5							
K5C	Type K5C							
K15	Type K15							
Valve size								
A	¼ in. (6 mm) (Types K10 and K15)							
B	⅜ in. (10 mm) (Types K10 and K15)							
C	½ in. (13 mm) (Types K10 and K15)							
D	¾ in. (19 mm) (Types K10 and K15)							
E	1 in. (25 mm) (Types K5, K5C and K10)							
F	1¼ in. (32 mm) (Types K5, K5C and K10)							
G	1½ in. (38 mm) (Types K5 and K5C)							
H	2 in. (50 mm) (Types K5 and K5C)							
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 (Type K10, size 1¼ in. (32 mm) only)							
Design revision								
[-]	Original design							
Spring material								
E	Stainless steel							
Spring range								
	Refer to tables in pages 3, 4 and 6							

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