



CASH VALVE™ B SERIES PRESSURE REGULATORS

Single seated, spring loaded, direct acting diaphragm-type pressure reducing and regulating valves for a broad range of services



FEATURES

- Reduce high inlet pressures to lower outlet pressures within close limits.
- Ruggedly built for long service life without maintenance.
- Simple design for easy maintenance and on-line repairs.
- Broad materials choice to suit a variety of applications.
- Self-supporting inbuilt strainer screen protects working parts and is cleaned easily.
- Easy pressure adjustment via standard square head adjusting screw and hex locknut. T-handle and aluminum handwheel options available.
- Optional construction for cryogenic service.
- Pre-packaged repair kits available for selected models to simplify maintenance.
- Every regulator supplied with pre-set delivery pressure.
- Each valve assembled and tested prior to shipment.

GENERAL APPLICATION

Cash Valve B Series Pressure Reducing Valves and Regulators include models suitable for air, water, steam, oil and other liquids with versions also available for cryogenic liquids and gases. Type BBC is specifically designed for heavy oil and viscous fluid applications.

TECHNICAL DATA

Materials:	Cast iron, bronze, carbon steel, stainless steel
Sizes:	¼" to 2" (7 to 50 mm)
Connections:	Threaded NPTF
Max inlet pressures	
Air or water:	720 psig (49.6 barg)
Steam:	400 psig (27.6 barg)
Heavy oil or viscous fluids:	400 psig (27.6 psig)
Max. reduced pressures	
Air, water or steam:	150 psig (10.3 barg)
Heavy oil or viscous fluids:	200 psig (13.8 barg)
Temperature range:	-320 to 450°F (-195 to 232°C)

CASH VALVE™ B SERIES PRESSURE REGULATORS

TYPE B: WATER AND AIR SERVICE (UP TO 180°F (82°C))

Model overview

Series B Regulators are available in ¼" through 2" (7 to 50 mm) sizes with either iron or bronze bodies and feature a variety of optional internal trim (diaphragm, piston and cylinder) that enable them to be used in a wide range of applications.

Each regulator is equipped with a pressure spring selected to provide the desired outlet or reduced delivery pressure setting. Depending on the adjusting spring installed, delivery pressures may be adjusted from a minimum of The range of adjustment or satisfactory working range of the individual springs that may be fitted to each valve size is listed in the spring range table on page 4.

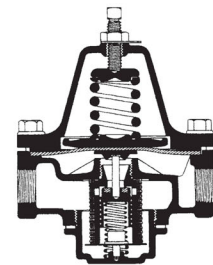
The regulator is designed for systems with a maximum operating temperature of 180°F (82°C). In addition to the standard specifications indicated in the table, any combination of body material, piston cylinder and diaphragm is available to special order.

Application

Type B Water and Air Regulators are suitable for a variety of applications including paint spray equipment, dishwashers, air tanks and equipment, food, chemical and industrial process gases and many other applications.



TYPE B
Pressure regulator/water and air



Service	Maximum initial pressure (psig)	Maximum reduced pressure (psig)	Body material		Piston and cylinder Bronze	Seat disk material NBR	Diaphragm stock NBR	Max. operating temp. °F
			Iron	Bronze				
Water or air	200	150	X		X	X	X	180
	400	150		X	X	X	X	180

CASH VALVE™ B SERIES PRESSURE REGULATORS

TYPE B: STEAM SERVICE (UP TO 400°F [204°C])

These valves are designed for steam operating temperatures up to 400°F (204°C) and are available in ¼" to 2" (7 to 50 mm) sizes with either iron or bronze bodies. Iron body valves have a SST-filled PTFE seat and are for systems with initial pressures up to 150 psig (10.3 barg); bronze bodies are for initial pressures up to 250 psig (17.2 barg).

Valves will normally be equipped as indicated in the table but other combinations of body material, piston-cylinder and diaphragm are available to special order.

Application

The Type B Steam Pressure Reducing and Regulating Valve is ideally suited for installation in pressing irons, steam cookers, degreasers, sterilizers, vulcanizers and hundreds of other applications.

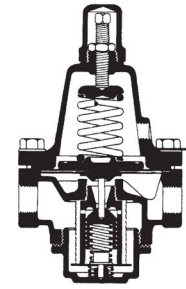
Type B Steam Regulators can also be furnished with a differential pressure control feature which may be desirable in steam/oil atomizing service.

Optional differential pressure control

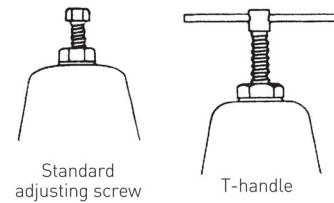
The Type B Steam Regulator can be factory modified to serve as a constant differential pressure control valve by incorporating a ¼" (7 mm) side tap in the spring housing.

In a typical steam-oil atomizing installation, fluid loading pressure is introduced above the diaphragm of the regulator and steam is delivered through the valve at a regulated pressure higher than the loading pressure, with the difference in pressure being determined by the diaphragm spring setting. The outlet steam pressure is maintained automatically to provide a constant, fixed pressure differential between the steam pressure and the oil pressure. Variations in the loading pressure are reflected in a pound-for-pound change in the discharge pressure.

Valves equipped with the optional differential pressure control are fitted with a pressure-tight closing cap and gasket over the pressure adjusting screw and a gasket above the diaphragm to ensure a good seal between the spring housing and the valve body.



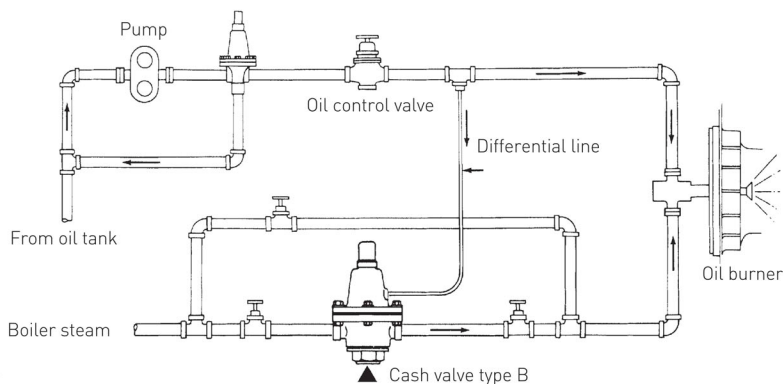
Type B steam with differential construction interior



Options

Service	Maximum initial pressure (psig)	Maximum reduced pressure (psig)	Body material		Piston and cylinder Bronze	Seat disk material PTFE	Diaphragm stock Phosphor bronze	Max. operating temperature °F
			Iron	Bronze				
Saturated steam	150	125	X		X	X	X	400
	250	150		X	X	X	X	400

TYPICAL STEAM-OIL ATOMIZING INSTALLATION



CASH VALVE™ B SERIES PRESSURE REGULATORS

MATERIALS OF CONSTRUCTION

Part description	Materials
Adjusting screw cap*	Brass
Cap gasket*	Fiber
Body	Iron or bronze
Spring chamber	Iron or bronze
Adjusting spring	Steel
Pressure plate	Cast iron or bronze
Diaphragm	NBR, bronze
Diaphragm gasket**	Aramid fiber
Pusher post button	Brass
Cylinder	Brass
Piston	Brass
Pusher post	Brass
Seat disk	NBR or SST-filled PTFE
Piston spring	302 Stainless steel
Strainer screen	Monel®
Bottom gasket	Aramid fiber or PTFE
Bottom plug	Brass

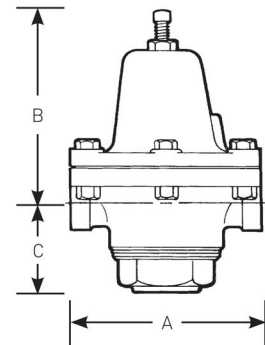
NOTES

* For pressure loaded valves only

** For use with metal diaphragms only

DIMENSIONS

Type B valve size	Dimensions			Shipping weight (lbs.)	
	A	B	C	Iron	Bronze
1/4"	3"	2 7/8"	1 3/4"	2 3/4	3
3/8"	3 7/8"	4 1/2"	1 3/4"	5	5 1/2
1/2"	4 1/2"	4 1/2"	2 1/8"	7 1/2	8
3/4"	5 1/8"	4 5/8"	2 1/8"	9	10
1"	5 7/8"	5 3/8"	2 1/8"	12	16
1 1/4"	6 3/4"	6 1/8"	2 5/8"	18	20
1 1/2"	6 3/4"	6 1/8"	2 5/8"	18	20
2"	9 1/4"	8 1/2"	3 1/2"	32	37



CASH VALVE™ B SERIES PRESSURE REGULATORS

B SERIES

The capacity of any regulator is governed by two factors:

1. Pressure differential or the difference between the inlet and outlet pressure.
2. A characteristic known as fall-off or droop, by which the outlet pressure drops slightly as flow starts through the valve and drops off even more as increased demand requires increased flow.

The rates of flow stated on the following charts are based on assumed conditions, which may be considered average for a given installation.

B SERIES WATER CAPACITY INFORMATION

Inlet pressure, psig	Outlet pressure, psig	Gallons inlet per minute by size							
		¼"	⅜"	½"	¾"	1"	1¼"	1½"	2"
25	15	0.6	1.0	2.6	4.0	5.7	9.2	10.4	16.0
	10	0.6	1.2	2.9	4.5	6.4	10.4	11.7	18.0
50	40	0.8	1.4	3.5	5.5	7.9	12.7	14.3	22.0
	25	0.8	1.6	3.8	6.0	8.6	13.8	15.6	24.0
	10	0.8	1.6	3.8	6.0	8.6	13.8	15.6	24.0
75	65	1.0	2.0	4.8	7.5	10.7	17.3	19.5	30.0
	50	1.1	2.1	5.1	8.0	11.4	18.4	20.4	32.0
	25	1.3	2.3	5.8	9.0	12.9	20.7	23.4	36.0
	10	1.3	2.3	5.8	9.0	12.9	20.7	23.4	36.0
100	90	1.5	2.7	6.7	10.5	15.0	24.2	27.3	42.0
	75	1.6	3.0	7.4	11.5	16.4	26.5	29.9	46.0
	50	1.7	3.2	8.0	12.5	17.9	28.8	32.5	50.0
	25	1.8	3.4	8.3	13.0	18.6	29.9	33.8	52.0
125	100	1.5	2.9	7.0	11.0	15.7	25.3	28.6	44.0
	75	1.7	3.3	8.0	12.5	17.9	28.8	32.5	50.0
	50	2.0	3.6	9.0	14.0	20.0	32.2	36.4	56.0
	25	2.0	3.6	9.0	14.0	20.0	32.2	36.4	56.0
150	140	1.5	2.9	7.0	11.0	15.7	25.3	28.6	44.0
	100	1.9	3.5	8.6	13.5	19.3	27.0	35.1	54.0
	75	2.0	3.8	9.3	14.5	20.7	33.4	37.7	58.0
	50	2.2	4.0	9.9	15.5	22.2	35.7	40.3	62.0
	25	2.2	4.0	9.9	15.5	22.2	35.7	40.3	62.0
200	150	1.9	3.5	8.6	13.5	19.3	31.1	35.1	54.0
	100	2.2	4.0	9.9	15.5	22.2	35.7	40.3	62.0
	75	2.5	4.6	11.2	17.5	25.0	40.3	45.5	70.0
	50	2.7	4.9	12.2	19.0	27.2	43.7	49.4	76.0
	25	2.7	4.9	12.2	19.0	27.2	43.7	49.4	76.0
250	150	2.1	3.9	9.6	15.0	21.5	34.5	39.0	60.0
	100	2.5	4.6	11.2	17.5	25.0	40.3	45.5	70.0
	75	2.8	5.2	12.8	20.0	28.6	46.0	52.0	80.0
	50	2.9	5.5	13.4	21.0	30.0	48.3	54.6	84.0
	25	2.9	5.5	13.4	21.0	30.0	48.3	54.6	84.0
300/400	150	2.5	4.6	11.2	17.5	25.0	40.3	45.5	70.0
	100	3.5	6.5	16.0	25.0	35.8	57.5	65.0	100.0
	75	4.2	7.8	19.2	30.0	42.9	69.0	78.0	120.0
	50	4.2	7.8	19.2	30.0	42.9	69.0	78.0	120.0

NOTE

Capacities are based on a 20% droop.

CASH VALVE™ B SERIES PRESSURE REGULATORS

B SERIES AIR CAPACITY INFORMATION

Inlet pressure, psig	Outlet pressure, psig	Air capacity inlet in SCFM by size							
		1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
25	15	4.7	7.0	16.5	23.5	37.6	56.4	65.8	105.8
	10	5.0	7.5	17.5	25.0	40.0	60.0	70.0	112.5
50	40	7.0	10.5	24.5	35.0	56.0	84.0	98.0	157.5
	25	8.2	12.3	28.7	41.0	65.6	98.4	114.8	184.5
	10	8.2	12.3	28.7	41.0	65.6	98.4	114.8	184.5
75	65	7.5	11.3	26.3	37.5	60.0	90.0	105.0	168.8
	50	8.5	12.8	29.8	42.5	68.0	102.0	115.0	191.3
	25	11.0	16.5	38.5	55.0	88.0	132.0	154.0	247.5
	10	11.0	16.5	38.5	55.0	88.0	132.0	154.0	247.5
100	90	9.0	13.5	31.5	45.0	72.0	108.0	126.0	203.0
	75	12.0	18.0	42.0	60.0	96.0	144.0	168.0	270.0
	50	15.0	22.5	52.5	75.0	120.0	180.0	210.0	337.5
	25	15.0	22.5	52.5	75.0	120.0	180.0	210.0	337.5
125	100	13.0	19.5	45.5	65.0	104.0	156.0	182.0	293.0
	75	15.0	22.5	52.5	75.0	120.0	180.0	236.0	338.0
	50	18.0	27.0	63.0	90.0	144.0	216.0	252.0	405.0
	25	18.0	27.0	63.0	90.0	144.0	216.0	252.0	405.0
150	140	15.0	22.5	52.5	75.0	120.0	180.0	210.0	338.0
	100	18.0	27.0	63.0	90.0	144.0	216.0	252.0	405.0
	75	23.0	34.5	80.5	115.0	184.0	276.0	322.0	518.0
	50	25.0	37.5	87.5	125.0	200.0	300.0	350.0	563.0
	25	25.0	37.5	87.5	125.0	200.0	300.0	350.0	563.0
200	150	19.0	28.5	66.5	95.0	152.0	228.0	266.0	428.0
	100	23.0	34.5	80.5	115.0	184.0	276.0	322.0	518.0
	75	27.0	40.5	94.5	135.0	216.0	324.0	378.0	608.0
	50	29.0	43.5	101.5	145.0	232.0	348.0	406.0	653.0
	25	29.0	43.5	101.5	145.0	232.0	348.0	406.0	653.0
250	150	25.0	37.5	87.5	125.0	200.0	300.0	350.0	563.0
	100	33.0	49.5	115.5	165.0	264.0	396.0	462.0	743.0
	75	37.0	55.5	129.5	185.0	296.0	444.0	518.0	833.0
	50	37.0	55.5	129.5	185.0	296.0	444.0	518.0	833.0
300/400	25	37.0	55.5	129.5	185.0	296.0	444.0	518.0	833.0
	150	34.0	51.0	115.0	170.0	272.0	408.0	476.0	765.0
	100	37.0	55.5	129.5	185.0	296.0	444.0	518.0	833.0
	75	43.0	64.5	150.5	215.0	344.0	516.0	602.0	968.0
	50	43.0	64.5	150.5	215.0	344.0	516.0	602.0	968.0

NOTE

Capacities are based on a 20% droop.

CASH VALVE™ B SERIES PRESSURE REGULATORS

B SERIES STEAM CAPACITY INFORMATION (WITH PTFE SEAT)

Inlet pressure psig	Outlet pressure psig	Steam lbs per hour by size							
		1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
25	15	25	38	88	126	202	302	353	567
	10	25	38	88	126	202	302	353	567
50	40	36	55	129	183	294	440	514	826
	25	42	63	137	210	336	504	588	945
	10	42	63	137	210	336	504	588	945
75	65	39	59	139	197	316	473	553	889
	50	53	78	185	263	421	631	736	1184
	25	68	102	239	342	546	820	956	1537
	10	69	102	239	342	546	820	956	1537
100	90	49	91	154	231	371	560	654	1050
	75	84	126	294	420	672	1008	1176	1890
	50	85	129	300	427	683	1025	1196	1922
	25	85	129	300	427	683	1025	1196	1922
125	100	88	133	266	441	706	1008	1165	1985
	75	111	165	385	550	881	1320	1540	2477
	50	115	172	400	573	916	1375	1603	2577
	25	115	172	400	573	916	1375	1603	2577
150	140	63	95	126	210	350	525	616	994
	125	112	168	392	560	896	1344	1568	2520
	100	116	174	405	578	924	1387	1618	2603
	75	137	204	479	683	1093	1639	1912	3074
	50	137	204	479	683	1093	1639	1912	3074
200	150	130	195	454	648	1037	1555	1814	2916
	125	153	230	535	763	1221	1831	2136	3434
	100	179	267	626	893	1429	2143	2500	4019
	75	179	267	626	893	1429	2143	2500	4019
225	150	190	287	671	956	1532	2297	2681	4308
	125	214	322	750	1072	1715	2572	3002	4823
	100	230	344	804	1147	1835	2752	3212	5162
	75	230	344	804	1147	1835	2752	3212	5162
250	150	196	294	686	980	1568	2352	2744	4410
	125	253	379	888	1267	2027	3039	3546	5699
	100	253	379	888	1267	2027	3039	3546	5699

NOTE

Capacities are based on a 20% droop.

CASH VALVE™ B SERIES PRESSURE REGULATORS

TYPE B SELECTION GUIDE

Example:	B	F	A	W	S	S	B	B	S	01	A	D	1
Model													
B	B valve												
Material of construction													
Z	Bronze												
F	Iron												
Valve size													
A	1/4"		E		1"								
B	3/8"		F		1 1/4"								
C	1/2"		G		1 1/2"								
D	3/4"		H		2"								
Service													
W	Water/air												
S	Steam												
Body style/connection style													
S	Side inlet/side outlet - straight thru w/ NPTF connections												
Spring chamber style													
S	Standard												
D	w/ Pressure screw cap and differential connection												
Diaphragm material													
B	Buna-N (water/air)												
Z	Bronze (steam)												
M	Monel (steam)												
Seat material													
B	Buna-N (water/air)												
T	Teflon (steam)												
Pressure screw style													
S	Standard												
H	Hex head												
T	T-handle												
Variation													
01	Standard												
Design revision													
A	Indicates 2nd design revision												
Spring material													
D	Steel												
Spring Range	Refer to table below												

HOW TO ORDER

To order, specify Cash Valve type by specific series designation (i.e. B Series). Also state the following:

1. Valve size.
2. Service (water, air, oil, etc.).
3. Inlet pressure.
4. Outlet or delivery pressure range and setting.
5. Maximum required flow rate.
6. System operating temperature.
7. Optional features, if any, as described for a specific valve.

NOTES

1. NPTF, also referred to as "Dryseal" thread, is designed to provide a more leak-free seal without the use of PTFE tape or other sealant compound. NPTF threads are interchangeable with NPT threads and are standard on all Cash Valve products.
2. Series B Valves are also available with special modifications. Consult the factory for details.

STANDARD SPRING RANGES (psig)

Spring Material	Size	1	2	3	4	5	6
Steel	1/4"	2 - 25	2 - 60	30 - 100	50 - 150	----	----
	3/8"	2 - 30	2 - 70	40 - 110	90 - 150	----	----
	1/2"	2 - 30	10 - 50	30 - 125	50 - 150	----	----
	3/4"	2 - 20	10 - 35	30 - 75	50 - 110	105 - 150	----
	1"	2 - 20	10 - 45	20 - 60	55 - 100	90 - 150	----
	1 1/4"	2 - 15	10 - 30	20 - 50	45 - 100	90 - 150	----
	1 1/2"	2 - 15	10 - 30	20 - 50	45 - 100	90 - 150	100 - 250
	2"	2 - 20	10 - 60	20 - 100	90 - 150	----	----