



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

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: | 250 psig (17.2 barg) |
| Heavy oil or viscous fluids: | 400 psig (27.6 psig) |
| Max. reduced pressures | |
| Air, water or steam: | 125 psig (8.6 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 1/4" 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 2 psig (0.14 barg) to a maximum of 150 psig (10.3 barg). 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.

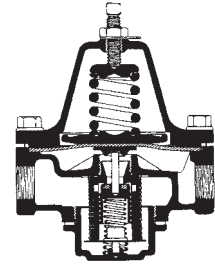
The regulator is designed for systems with a maximum operating temperature of 180°F (82°C). In addition to the standard specifications indicated in the table, any combination of body material, piston cylinder and diaphragm is available to special order.

Application

Type B water and air regulators are suitable for use on paint spray equipment, dishwashers, air tanks and equipment, food, chemical and industrial process lines and hundreds of other applications.



TYPE B
Pressure regulator/water and air



| Service | Maximum initial pressure (psig) | Maximum reduced pressure (psig) | Body material | | Piston and cylinder | Seat disc material | Diaphragm stock | Max. operating temp. °F |
|--------------|---------------------------------|---------------------------------|---------------|--------|---------------------|--------------------|-----------------|-------------------------|
| | | | Iron | Bronze | Bronze | NBR | NBR | |
| 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 50mm) sizes with either iron or bronze bodies. Iron body valves have a 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.

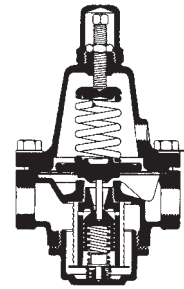
Type B steam regulators can also be furnished with a differential pressure control feature which may be desirable in steam/oil atomizing service.

Optional differential pressure control

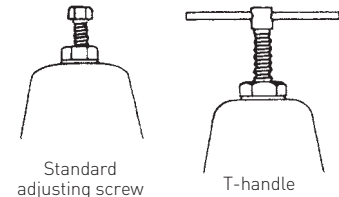
The Type B Steam regulator can be factory modified to serve as a constant differential pressure control valve by incorporating a ¼" (7 mm) side tap in the spring housing.

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.



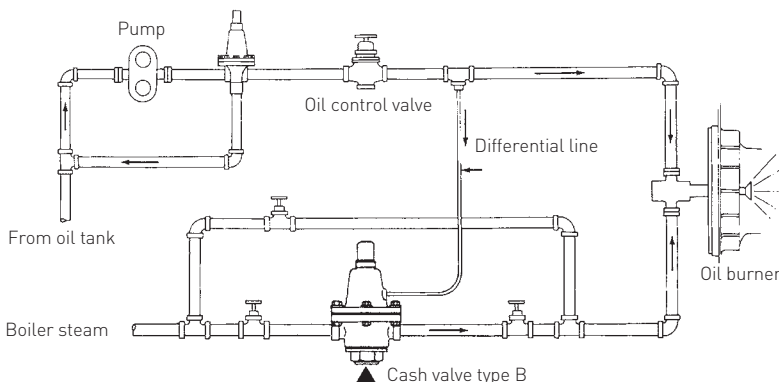
Type B steam with differential construction interior



Options

| Service | Maximum initial pressure (psig) | Maximum reduced pressure (psig) | Body material | | Piston and cylinder Bronze | Seat disc 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 disc | NBR or PTFE |
| Piston spring | 302 Stainless steel |
| Strainer screen | Monel® |
| Bottom gasket | Copper/fiber |
| Bottom plug | Brass |

NOTES

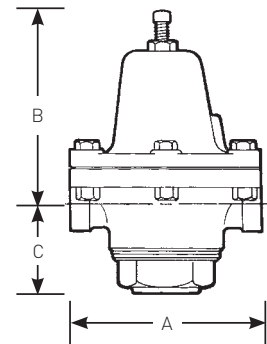
- * For pressure loaded valves only
- ** For use with metal diaphragms only

SPECIFICATIONS

| Size NPS | Spring ranges (in psi) | | | | |
|----------|------------------------|-------|--------|--------|---------|
| 1/4 | 2-25 | 20-60 | 30-100 | 50-150 | |
| 3/8 | 2-30 | 20-70 | 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 |
| 2 | 2-20 | 10-60 | 20-100 | 90-150 | |

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 amount of air or fluid any regulator will pass 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 | | | | | | | |
|------------------------|-------------------------|----------------------------------|------|------|------|------|--------|--------|-------|
| | | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 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% fallout.

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 |
| | 25 | 37.0 | 55.5 | 129.5 | 185.0 | 296.0 | 444.0 | 518.0 | 833.0 |
| 300/400 | 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% fallout.

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% fallout.

CASH VALVE B SERIES PRESSURE REGULATORS

TYPE B SELECTION GUIDE

| | | | | | | | | | | | | | |
|------------------------------------|---|----------|----------|----------|----------|----------|----------|----------|----------|-----------|----------|----------|-------------|
| Example: | B | F | A | W | S | S | B | B | S | 01 | - | D | 0025 |
| 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/NPT connections | | | | | | | | | | | | |
| B | Side inlet/side outlet - straight thru w/BSPT connections | | | | | | | | | | | | |
| P | Side inlet/side outlet - straight thru w/BSPP connections | | | | | | | | | | | | |
| Spring chamber style | | | | | | | | | | | | | |
| S | Standard | | | | | | | | | | | | |
| D | w/ Pressure screw cap and differential connection | | | | | | | | | | | | |
| Diaphragm material | | | | | | | | | | | | | |
| B | NBR (water/air) | | | | | | | | | | | | |
| Z | Bronze (steam) | | | | | | | | | | | | |
| M | Monel (steam) | | | | | | | | | | | | |
| Seat material | | | | | | | | | | | | | |
| B | NBR (water/air) | | | | | | | | | | | | |
| T | PTFE (steam) | | | | | | | | | | | | |
| Pressure screw style | | | | | | | | | | | | | |
| S | Standard | | | | | | | | | | | | |
| T | T-handle | | | | | | | | | | | | |
| Variation | | | | | | | | | | | | | |
| 01 | Standard | | | | | | | | | | | | |
| Design revision | | | | | | | | | | | | | |
| (-) | Indicates original design | | | | | | | | | | | | |
| Spring material | | | | | | | | | | | | | |
| D | Steel | | | | | | | | | | | | |
| Set pressure | | | | | | | | | | | | | |
| 0005 | 5 psig | | | | | | | | | | | | |
| 0025 | 25 psig | | | | | | | | | | | | |
| 0150 | 150 psig | | | | | | | | | | | | |

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. Cash Valve will be pleased to assist you in selecting the regulator features that are needed to meet the service requirements of your particular system. Consult the factory for details.

| Standard spring ranges - must specify during order process | | | | | |
|--|------|-------|--------|--------|---------|
| B 1/4" [*] | 2-25 | 20-60 | 30-100 | 50-150 | |
| B 3/8" [*] | 2-30 | 20-70 | 40-110 | 90-150 | |
| B 1/2" [*] | 2-30 | 10-50 | 30-125 | 50-150 | |
| B 3/4" [*] | 2-20 | 10-35 | 30-75 | 50-110 | 105-150 |
| B 1" [*] | 2-20 | 10-45 | 20-60 | 55-100 | 90-150 |
| B 1 1/4", 1 1/2" [*] | 2-15 | 10-30 | 20-50 | 45-100 | 90-150 |
| B 2" [*] | 2-20 | 10-60 | 20-100 | 90-150 | |

NOTES

* Steel

CASH VALVE B SERIES PRESSURE REGULATORS

TYPE B-95

Model overview

The Type B-95 is a fully automatic pressure reducing valve which is ideal for use in the pressure build-up circuit for either liquid or gas service and is also available in a cryogenic version.

Type B-95 valves are designed for operating temperatures from -320°F to +450°F (-195° to 232°C), depending on construction, and are available in 1/2", 3/4" and 1" (15, 18 and 25mm) sizes with either carbon steel or stainless steel bodies with NPTF threaded connections. They offer the option of either NBR or stainless steel diaphragms, with a PTFE seat or NBR seat disc.

They are suitable for inlet pressures up to 720 psig at +180°F (49.6 barg at 82°C) or up to 400 psig at -320°F to +450°F (240 barg at -195° to 232°C). In addition to the standard specification, they offer an optional closing cap, T-handle and are also available with a drilled and tapped spring chamber for differential service.

Application

Type B-95 valves are suitable for use on air, water, steam, oil and other liquids and also for cryogenic liquids and gases.



REDUCED PRESSURE RANGES (psig)

| Size | Steel spring | Size | Steel spring | Size | Steel spring |
|------|--------------|------|--------------|------|--------------|
| 1/2 | 3" | 3/4 | 1 1/4" | 1 | 3 |
| | 3 7/8" | | 1 3/4" | | 5 1/2 |
| | 4 1/2" | | 2 1/8" | | 8 |
| | 5 1/8" | | 2 1/8" | | 10 |
| | 5 7/8" | | 2 1/8" | | 16 |
| | 6 3/4" | | 2 5/8" | | 20 |
| | 6 3/4" | | 2 5/8" | | 20 |
| | 9 1/4" | | 3 1/2" | | 37 |

NOTE

1. Steel springs are furnished as standard. Stainless springs furnished for higher ranges and for all cryogenic valves.
 2. Stainless steel valves available with 200-400 psi range. Consult factory.
 3. For steam service, we recommend a max. differential pressure of 150 psi to prevent seat erosion.
- If downstream pressure control is critical to the safety of the installation, then the downstream side should be protected by a safety relief valve set to relieve at the maximum safe limit, but at least 10 psi higher than the pressure regulator's delivery setting.

CASH VALVE B SERIES PRESSURE REGULATORS

TYPE B95 SELECTION GUIDE

| Example: | B95 | D | C | W | S | S | B | B | S | 01 | - | D | 0025 |
|------------------------------------|---|---|---|---|---|---|---|---|---|----|---|---|------|
| Model | | | | | | | | | | | | | |
| B95 | B95 valve | | | | | | | | | | | | |
| Material of construction | | | | | | | | | | | | | |
| D | Carbon steel body and chamber | | | | | | | | | | | | |
| G | 316 SST body and chamber | | | | | | | | | | | | |
| Valve size | | | | | | | | | | | | | |
| C | 1/2" | | | | | | | | | | | | |
| D | 3/4" | | | | | | | | | | | | |
| E | 1" | | | | | | | | | | | | |
| Service | | | | | | | | | | | | | |
| W | Water/air | | | | | | | | | | | | |
| S | Steam | | | | | | | | | | | | |
| Body style/connection style | | | | | | | | | | | | | |
| S | Side inlet/side outlet - straight thru w/NPT connections | | | | | | | | | | | | |
| F | Side inlet/side outlet - straight thru w/BSPP connections | | | | | | | | | | | | |
| Spring chamber style | | | | | | | | | | | | | |
| S | Standard | | | | | | | | | | | | |
| K | w/ Pressure screw cap and differential connection | | | | | | | | | | | | |
| Diaphragm material | | | | | | | | | | | | | |
| B | NBR (water/air) | | | | | | | | | | | | |
| G | 316 SST (steam) | | | | | | | | | | | | |
| Seat material | | | | | | | | | | | | | |
| B | NBR (water/air) | | | | | | | | | | | | |
| T | PTFE (steam) | | | | | | | | | | | | |
| Pressure screw style | | | | | | | | | | | | | |
| S | Standard | | | | | | | | | | | | |
| Variation | | | | | | | | | | | | | |
| 01 | Standard | | | | | | | | | | | | |
| Design revision | | | | | | | | | | | | | |
| (-) | Indicates original design | | | | | | | | | | | | |
| Spring material | | | | | | | | | | | | | |
| D | Steel | | | | | | | | | | | | |
| E | SST | | | | | | | | | | | | |
| Set pressure | | | | | | | | | | | | | |
| 0005 | 5 psig | | | | | | | | | | | | |
| 0025 | 25 psig | | | | | | | | | | | | |
| 0150 | 150 psig | | | | | | | | | | | | |

| Standard spring ranges - must specify during order process | | | | | |
|--|------|-------|--------|--------|---------|
| B95 1/2" (*) | 2-30 | 10-50 | 30-125 | 50-150 | |
| B95 3/4" (*) | 2-20 | 10-35 | 30-75 | 50-110 | 105-150 |
| B95 1" (*) | 2-20 | 10-45 | 20-60 | 55-100 | 90-150 |

NOTES

* Steel

CASH VALVE B SERIES PRESSURE REGULATORS

TYPE BBC: HEAVY OIL OR VISCOUS FLUIDS

Model overview

Type BBC is available in 3/8" through 1 1/2" (10.5 to 38 mm) sizes with either a cast iron or bronze body. These valves are suited to systems with a maximum operating temperature of 180°F (82°C) when fitted with an NBR diaphragm and a maximum operating temperature of 400°F (204°C) with a Monel® metal diaphragm. A stainless steel piston and seat are standard.

Depending on the setting of the adjusting spring installed, delivery pressures may be adjusted from a minimum of 2 psig to a maximum of 200 psig (0.14 to 13.8 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.

The Type BBC incorporates a radical departure from the conventional regulator valve design, featuring a 'universal joint' type seating arrangement which ensures free valve operation. This design ensures that there are no small ports or close tolerances which would prevent dependable performance. The working parts are accessible easily without removing the valve from the line. The standard regulator is fitted with a square head adjusting screw and lock nut arrangement. A T-handle or handwheel may also be fitted for a small additional charge.

Application

The Type BBC is designed for heavy oil service (Bunker C and other grades) as well as for dirty liquids or fluids with a high viscosity.

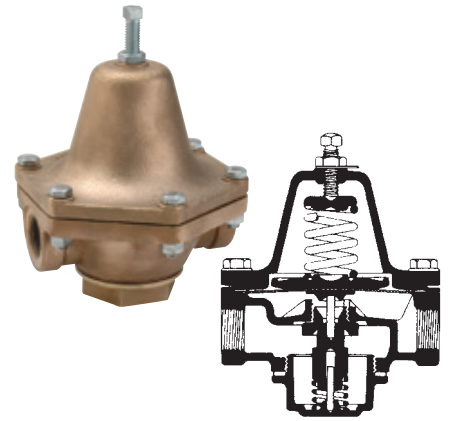
NOTE

If downstream pressure control is critical to the safety of the installation, the downstream side should be protected by a safety relief valve set to relieve at the maximum safe limit, but at least 10 psig (0.69 barg) higher than the pressure regulator's delivery setting.

Specifications

Dimensions and weights: The dimensions and weights stated for the 3/8" through 1 1/2" (10.5 to 38 mm) Series B regulators as shown in the table on page 4 also apply to the Type BBC.

Capacity information: For specific capacity information, consult the factory giving the pressure conditions that apply to your system.



SPECIFICATIONS

| Size NPS | Spring ranges (in psi) | | | | |
|----------|------------------------|-------|--------|---------|---------|
| | 2-15 | 10-50 | 40-80 | 75-150 | 125-200 |
| 3/8 | | | | | |
| 1/2 | | 2-35 | 20-50 | 40-120 | 100-200 |
| 3/4 | 2-15 | 10-30 | 20-75 | 60-125 | 100-200 |
| 1 | 2-15 | 10-40 | 30-60 | 50-150 | 100-200 |
| 1 1/4 | 2-20 | 10-30 | 20-100 | 100-150 | 100-200 |
| 1 1/2 | 2-20 | 10-30 | 20-100 | 100-150 | 100-200 |

MATERIALS OF CONSTRUCTION

| Part description | Materials |
|---|---------------------|
| Adjusting spring | Steel |
| Spring housing | Cast iron or bronze |
| Pressure plate | Cast iron |
| Diaphragm | NBR or Monel® |
| Diaphragm gasket (for metal diaphragms only) | Aramid fiber |
| Body | Cast iron or bronze |
| Pusher post seat | Brass |
| Body seat | 303 Stainless steel |
| Bottom plug gasket | Copper/fiber |
| Piston | 303 Stainless steel |
| Pusher post | Monel® |
| Piston spring | Monel® |

| Service | Maximum initial pressure (psig) | Maximum reduced pressure (psig) | Body material | | Piston and seat SS | Diaphragm stock | |
|--------------------|---------------------------------|---------------------------------|---------------|--------|--------------------|-----------------|--------|
| | | | Iron | Bronze | | NBR | Monel® |
| Oil up to 180°F | 200 | 150 | X | | X | X | |
| | 400 | 200 | | X | X | X | |
| Oil 180°F to 400°F | 150 | 125 | X | | | X | X |
| | 250 | 200 | | X | | X | X |

CASH VALVE B SERIES PRESSURE REGULATORS

TYPE BBC SELECTION GUIDE

| | | | | | | | | | | | | | |
|------------------------------------|---|----------|----------|----------|----------|----------|----------|----------|----------|-----------|----------|----------|-------------|
| Example: | BBC | F | B | O | S | S | B | E | S | 01 | - | D | 0025 |
| Model | | | | | | | | | | | | | |
| BBC | BBC valve | | | | | | | | | | | | |
| Material of construction | | | | | | | | | | | | | |
| Z | Bronze | | | | | | | | | | | | |
| F | Iron | | | | | | | | | | | | |
| Valve size | | | | | | | | | | | | | |
| B | 3/8" | E | 1" | | | | | | | | | | |
| C | 1/2" | F | 1 1/4" | | | | | | | | | | |
| D | 3/4" | G | 1 1/2" | | | | | | | | | | |
| Service | | | | | | | | | | | | | |
| O | Oil | | | | | | | | | | | | |
| Body style/connection style | | | | | | | | | | | | | |
| S | Side inlet/side outlet - straight thru w/NPT connections | | | | | | | | | | | | |
| B | Side inlet/side outlet - straight thru w/BSPT connections | | | | | | | | | | | | |
| Spring chamber style | | | | | | | | | | | | | |
| S | Standard | | | | | | | | | | | | |
| Diaphragm material | | | | | | | | | | | | | |
| B | NBR (oil up to 180°F) | | | | | | | | | | | | |
| M | Monel (oil 180°F to 400°F) | | | | | | | | | | | | |
| Seat material | | | | | | | | | | | | | |
| E | 303 Stainless steel | | | | | | | | | | | | |
| Pressure screw style | | | | | | | | | | | | | |
| S | Standard | | | | | | | | | | | | |
| T | T-handle | | | | | | | | | | | | |
| Variation | | | | | | | | | | | | | |
| 01 | Standard | | | | | | | | | | | | |
| UL | UL approved (3/8" and 1/2" iron only) | | | | | | | | | | | | |
| Design revision | | | | | | | | | | | | | |
| (-) | Indicates original design | | | | | | | | | | | | |
| Spring material | | | | | | | | | | | | | |
| D | Steel | | | | | | | | | | | | |
| Set pressure | | | | | | | | | | | | | |
| 0005 | 5 psig | | | | | | | | | | | | |
| 0025 | 25 psig | | | | | | | | | | | | |
| 0150 | 150 psig | | | | | | | | | | | | |

| Standard spring ranges - must specify during order process | | | | | | |
|--|------|-------|--------|---------|---------|---------|
| BBC 3/8" [*] | 2-15 | 10-50 | 40-80 | 75-150 | 125-200 | |
| BBC 1/2" [*] | 2-35 | 20-50 | 40-120 | 100-200 | | |
| BBC 3/4" [*] | 2-15 | 10-30 | 20-75 | 60-125 | 100-200 | |
| BBC 1" [*] | 2-15 | 10-40 | 30-60 | 50-100 | 90-150 | 125-200 |
| BBC 1 1/4", 1 1/2" [*] | 2-20 | 10-30 | 20-100 | 90-150 | 100-175 | 100-200 |

NOTES

* Steel