

## Type 808

## 1/4", 1/2, 3/4" and 1" Bellows Sealed Valve Assembly RESEARCH® CONTROL Valves

# Technical Brief

### DESCRIPTION

The Type 808 bellows sealed globe control valve is available in 1/4", 1/2", 3/4", or 1" sizes. It is especially suited to applications where the possibility of packing leakage cannot be tolerated. The bellows forms a flexible static seal that is virtually leak-free as long as the integrity of the bellows remains intact. The unit contains a set of backup packing that, in many cases, will allow the valve to continue in service until repairs can be made, should the bellows fail. The bellows is available in two pressure ranges:

1. The low pressure bellows fits 1/4", 1/2", 3/4" or, 1 valves and is available in 4 different materials.
2. The high pressure bellows fits 1/2" through 1" valves and is rated at 1,500psi for throttling applications. Note: The factory should be consulted when using this bellows.

### APPLICATIONS

The Type 808 valve is widely used in industrial applications, research, and process plants on liquids, gases or steam. The statically sealed bonnet makes it especially suited to applications where expensive concentrates are controlled and cannot be allowed to leak. Other applications arise when fugitive emissions must be prevented or when sensitive flow streams must be isolated from the ambient atmosphere. This type seal performs well in high vacuum service where standard packing is not desired.

### MATERIALS OF CONSTRUCTION

#### Body and Bonnet

Standard	316 SST, carbon steel (WCB)
Optional	Alloy 20, Alloy C-276, Alloy B2 or ASTM equivalent, Ni-Cu Alloy 400

#### Bellows

Low Pressure	DIN 1.4571(316Ti SST), DIN 2.4360 (Ni-CU Alloy 400) DIN 2.4819( Alloy C-276) Ni Alloy 625 or 750
High Pressure	DIN 1.4571(316Ti SST),

#### Innervalue

Standard	316 s/s
Optional	Alloy 20, Alloy C-276, Alloy B2 or ASTM equivalent, Ni-Cu Alloy 400, Stellite SSS TFE CV rings, Graphite

#### Packing Actuator

Standard	Aluminum
Optional	316 SST (1/2" -1")

### ACTUATOR CHOICES

Standard	Air to open	Type 754 & 766
	Air to close	Type 755 & 759

Standard Inst. Signals	3-15#, 6-30#
Optional Signals	with positioner, 3-9#, 9-15#
Accessories	Filter regulator, gauges, I/P, limit switches, handwheel on standard unit, solenoids



Shown with Type 754 actuator

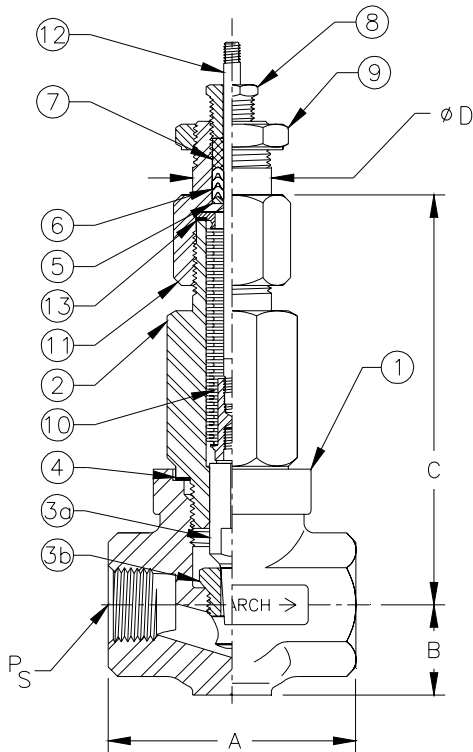
### STANDARD FEATURES

- Compact size and light weight
- Wide range of interchangeable trim sets
- Choice of linear or equal percentage on most trims
- TFE CV ring backup packing
- TFE bellows gasket
- ANSI Class IV shutoff (size "O" and larger)

### OPTIONAL FEATURES

- Flanges
- Socket weld or butt weld ends
- Angle pattern body
- Graphite and other special packings
- Choice of material for bellows gasket
- Alarm/purge port above bellows
- Extension bonnet





### Description of Items

1. Valve Body
2. Bonnet-Bellows
3. Innervalue (trim) matched set  
3A: Plug assembly  
3B: Seat
4. Body-Bonnet gasket
5. Packing Adaptor
6. Packing
7. Packing adaptor
8. Packing-Gland
9. Yoke Locknut
10. Bellows
11. Bonnet Cap
12. Bellow Stem
13. Bellows Gasket

### Innervalue Chart

Valve Size	Trim Size	Max. Cv	Orifice Dia. (in.)	Orifice Area (sq. in.)	Nominal Rangeability Linear	Nominal Rangeability Equal %
1"	6.0	6.0	0.6250	0.3068	50:1	60:1
1"	5.0	5.0	0.6250	0.3068	50:1	60:1
1"	4.5	4.5	0.5000	0.1963	50:1	60:1
3/4"-1"	4.0	4.0	0.4375	0.1503	50:1	60:1
3/4"-1"	3.5	3.5	0.4375	0.1503	50:1	60:1
1/2"-1"	A	2.5	0.3750	0.1104	40:1	50:1
1/2"-1"	B	2.0	0.3750	0.1104	40:1	50:1
1/2"-1"	C	1.25	0.2810	0.0620	40:1	50:1
1/2"-1"	D	0.8	0.2500	0.0491	40:1	50:1
1/2"-1"	E	0.5	0.2500	0.0491	40:1	50:1
1/4"-1"	F	0.32	0.1560	0.0191	30:1	40:1
1/4"-1"	G	0.2	0.1560	0.0191	30:1	40:1
1/4"-1"	H	0.13	0.1560	0.0191	30:1	40:1
1/4"-1"	I	0.08	0.1560	0.0191	30:1	40:1
1/4"-1"	J	0.05	0.1560	0.0191	30:1	40:1
1/4"-1"	K	0.03	0.0860	0.0058	25:1	NA
1/4"-1"	L	0.02	0.0860	0.0058	25:1	NA
1/4"-1"	M	0.01	0.0860	0.0058	25:1	NA
1/4"-1"	N	0.006	0.0860	0.0058	25:1	NA
1/4"-1"	O	0.003	0.0860	0.0058	25:1	NA
1/4"-1/2"	P-1	0.002	0.0625	0.0031	15:1	NA
1/4"-1/2"	P-2	0.0013	0.0625	0.0031	15:1	NA
1/4"-1/2"	P-3	0.001	0.0625	0.0031	15:1	NA
1/4"-1/2"	P-4	0.0006	0.0625	0.0031	15:1	NA
1/4"-1/2"	P-5	0.0004	0.0625	0.0031	15:1	NA
1/4"-1/2"	P-6	0.00027	0.0625	0.0031	15:1	NA
1/4"-1/2"	P-7	0.00018	0.0625	0.0031	15:1	NA
1/4"-1/2"	P-8	0.00012	0.0625	0.0031	15:1	NA
1/4"-1/2"	P-9	0.00008	0.0625	0.0031	15:1	NA
1/4"	P-10					
1/4"	P-11					
1/4"	P-12					
1/4"	P-13					
1/4"	P-14					
1/4"	P-15					
1/4"	P-16					
1/4"	P-17					
1/4"	P-18					

*Consult the factory for these innervalue sizes.*

### Dimensions

PS	1/4"	1/2"	3/4"	1"
A	2.12" (54 mm)	2.75" (70 mm)	3.37" (86 mm)	4.00" (102 mm)
B	0.68" (17 mm)	1" (25 mm)	1.18" (30 mm)	1.5" (38 mm)
C	4.15" (105 mm)	4.56" (116 mm)	4.76" (121 mm)	4.88" (124 mm)
D	0.625" (16 mm)	0.875" (22 mm)	0.875" (22 mm)	0.875" (22 mm)
Stroke	0.437" (11 mm)	0.562" (14 mm)	0.562" (14 mm)	0.562" (14 mm)

### Pressure/Temperature Rating:

Temperature °F (°C)	Low Pressure DIN 1.4571 psig (barg)	DIN 2.4360 psig (barg)	DIN 2.4819 psig (barg)	Ni Alloy 625 or 750 psig (barg)	High Pressure DIN 1.4571 psig (barg)
70 (21)	580 (40)	325 (22)	580 (40)	325 (22)	1500 (103)
200 (93)	525 (36)	290 (20)	550 (38)	280 (19)	1500 (103)
300 (149)	475 (32)	280 (19)	530 (36)	240 (16)	1500 (103)
400 (204)	445 (31)	270 (18)	520 (35)	210 (14)	1500 (103)
500 (260)	410 (28)	255 (17)	505 (35)	165 (11)	1500 (103)
600 (316)	385 (26)	240 (16)	480 (33)	125 (8)	1500 (103)
700 (371)	370 (25)	220 (15)	450 (31)	90 (6)	1500 (103)
800 (427)	345 (23)		420 (28)	50 (3)	1495 (103)

#### Notes:

The pressure ratings above are for valves constructed out of 316, Alloy 20, Alloy C, Alloy B, and carbon steel. Consult factory about other materials.  
The High Pressure DIN 1.451 bellows can be used up to 2,500 psi in special applications, consult factory for more information.

Due to continuous research, product improvements and enhancements, Badger Meter reserves the right to change product or system specifications without notice, except to the extent an outstanding bid obligation exists.



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