

Type 860

1/2" x 150 Lb. R.F. Flanged Valve Assembly RESEARCH® Control Valves

Technical Brief

DESCRIPTION

The Type 860 globe control valve features a 1/2" body with 150 lb. ANSI raised face flanges. It is designed to fit directly into pipelines of the same flange size and rating. Its compact size and light weight make it especially suited to modulating control of medium to low flow rates in the pressure range of 150 lb. flanges. Its welded construction make it readily available in a variety of materials. Other flange sizes and pressure ratings are available in the Type 809 valve assembly. Consult the factory for details.

APPLICATIONS

The Type 860 and Type 809 valves are widely used in industrial applications where flanged type ends are desired to facilitate removal of the unit from the line or to comply with specific piping standards. The compact design of the valve is especially attractive when flanged up to 3/4", 1" or 1-1/2" line sizes for controlling flow rates within the 1/2" valve size.

MATERIALS OF CONSTRUCTION

Body - Bonnet:

Standard - 316 stainless steel, carbon steel (WCB)

Optional - Monel®, alloy 20,
Hastelloy® C and B or ASTM equivalent

Innervalve:

Standard - 316 stainless steel

Optional - Stellite, Monel, alloy 20,
Hastelloy C and B or ASTM equivalent

Packing:

Standard - TFE chevron rings

Optional - Graphite

Actuator:

Standard - Die cast aluminum

Optional - 316L stainless steel on standard
1/2" models

ACTUATOR CHOICES

Standard - Air to open, fail close

Air to close, fail open

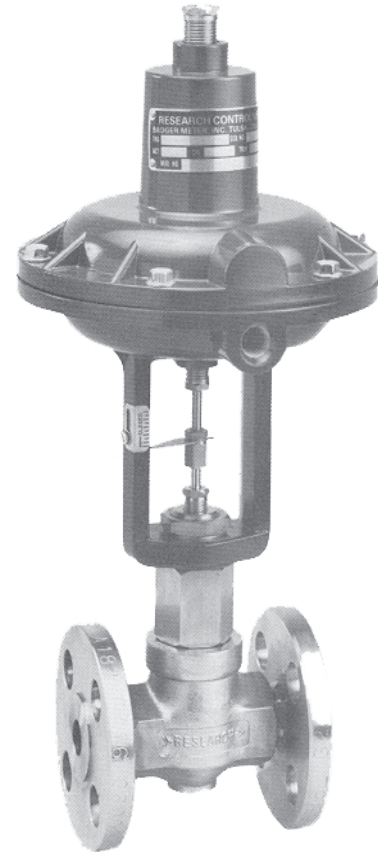
Optional - With integral top mounted
positioner

Standard Signals - 3-15#, 3-27#, 6-30#

Optional Signals - 3-9#, 9-15#, with positioner

Accessories - Filter regulator, gauges, I/P converter, limit
switches, handwheel, solenoids

316 stainless steel version may be cast



Shown with Type 754 actuator

STANDARD FEATURES

- Wide range of interchangeable trim sets
- Threaded bonnet for quick disassembly
- Choice of linear or equal percent on "J" trim and larger
- TFE chevron packing
- ANSI Class IV shutoff (size "O" and larger)

OPTIONAL FEATURES

- Radiating fin bonnet for higher temperatures
- Bellows stem seal
- Angle pattern body
- Graphite and other special packings

Hastelloy® is a registered trademark of The Haynes Stellite Company.

Monel® is a registered trademark of Inco Alloys International, Inc.

RESEARCH® is a registered trademark of Badger Meter, Inc.

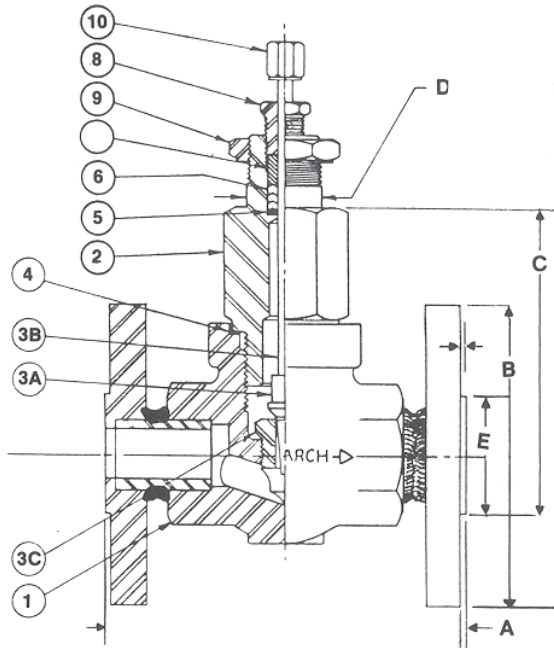
Stellite® is a registered trademark of Haynes Stellite Company.



BadgerMeter, Inc.

940908

9/93-5M



Description of Items

1. Valve Body (investment cast in all but Monel)
2. Valve Bonnet: 1-1/4" hex
(some exotic materials may use round material)
3. Innervalue (trim) Set
 - 3a. Plug (integral w/stem on some materials)
 - 3b. Stem: 3/16" dia.
 - 3c. Seat: 5/8" hex
4. Body Bonnet Gasket (may not be supplied in exotic materials)
5. Packing Adaptor (CV ring packing only)
6. Packing (CV ring)
7. Packing Follower (CV ring packing only)
8. Packing Gland: 1/2" hex
9. Yoke Lock Nut: 1-1/8" hex
10. Stem Connector: 3/8" hex

DIMENSIONS (inches)

A	B	C	D	E	F	STROKE
4.25	3.5	2.85	.875	1.38	.062	.562

1/2" Research Control Valve With 150 lb. Flanges Pressure/Temperature Rating For Valve Superstructure Excluding Packing. See notes below

Temp. deg. F	Carbon					
	316	Steel	Hast. B	Hast. C	Monel	Alloy 20
100	275	285	290	290	230	230
200	240	260	260	260	200	215
300	215	230	230	230	190	200
400	195	200	200	200	185	
500	170	170	170	170	170	
600	140	140	140	140	140	
700	110	110	110	110	110	
750		95				
800	80		80	80	80	
900	50					
1000	20					
Torque	122	122	131	124	102	117

Torque in ft./lbs. +/- 2 ft./lbs.

NOTES: The above pressure/temperature ratings were taken from ANSI B 16.34, 1981 covering flanged valves. All pressure ratings are for properly torqued, gasketed body-bonnet assemblies. The valve packing is not included in the above rating and should be considered separately.

The above list is a press/temp rating only and is not an indication of functionality or suitability for control service. Other literature is available to assist in the choosing of valve type, bonnet type, trim and actuator.

⊙ The max. temperature for Teflon CV ring packing in the standard bonnet is 400 deg. F. A cooling fin bonnet or other packing should be considered above this point.

INNERVALVE CHART

Valve Size	Trim Size	Cv Coefficient	Nominal Rangeability Linear	Orifice Diameter	Port/Orifice Area-sq. in
1/2	A	2.5	40:1	.375"	.1105
1/2	B	2.0	40:1	.375"	.1105
1/2	C	1.25	40:1	.281"	.0621
1/2	D	.80	40:1	.250"	.0491
1/2	E	.50	40:1	.250"	.0491
1/4 & 1/2	F	.32	30:1	.156"	.01911
1/4 & 1/2	G	.20	30:1	.156"	.01911
1/4 & 1/2	H	.13	30:1	.156"	.01911
1/4 & 1/2	I	.08	30:1	.156"	.01911
1/4 & 1/2	J	.05	30:1	.156"	.01911
1/4 & 1/2	K	.03	25:1	N/A	.00581
1/4 & 1/2	L	.02	25:1	N/A	.00581
1/4 & 1/2	M	.01	25:1	N/A	.00581
1/4 & 1/2	N	.006	25:1	N/A	.00581
1/4 & 1/2	O	.003	25:1	N/A	.00581
1/4 & 1/2	P1	.002	15:1	N/A	.0031
1/4 & 1/2	P2	.0013	15:1	N/A	.0031
1/4 & 1/2	P3	.001	15:1	N/A	.0031
1/4 & 1/2	P4	.0006	15:1	N/A	.0031
1/4 & 1/2	P5	.0004	15:1	N/A	.0031
1/4 & 1/2	P6	.00027	15:1	N/A	.0031
1/4 & 1/2	P7	.00018	15:1	N/A	.0031
1/4 & 1/2	P8	.00012	15:1	N/A	.0031
1/4 & 1/2	P9	.00008	15:1	N/A	.0031

⊙ K through O trims as well as the "P" series trims are considered "reduced" trims when installed in a 1/2" valve.

⊙ P1 through P9 trims should be used in 1/4" valves, however, they are available in 1/2" valve on special order. Consult the factory for availability and materials. Occasionally P1 through P9 trims are made on the smaller .042" orifice, however, the methods of manufacture and flow standards are the same as the .0625" orifice. The actual diameter of the plug may vary a slight amount from the dimensions listed.



Please see our website at
www.badgermeter.com
for specific regions and contacts.

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.



BadgerMeter, Inc.

P.O. Box 581390, Tulsa, Oklahoma 74158
(918) 836-8411 / Fax: (918) 832-9962

www.badgermeter.com