

Type 755

1/4" and 1/2" Standard Air to Close Actuator Assembly RESEARCH® Control Valves

Technical Brief

DESCRIPTION

The Type 755 actuator is a pneumatically operated, spring opposed diaphragm actuator designed specifically to fit the RESEARCH® Control Valve body-bonnet assembly. The unit is available in two sizes: one to fit the 1/4" valve and a larger version to fit the 1/2" through 1" valves. It provides smooth linear extension of the valve stem upon an increasing instrument signal. A decrease in instrument signal causes the stem to retract and open the valve. Downward closing force is generated by instrument air on top of the diaphragm. An increasing pressure in the diaphragm cavity opposes the force of the spring and extends the stem, closing the valve. The unit is designed to retract the stem, opening the valve, should the instrument signal fail.

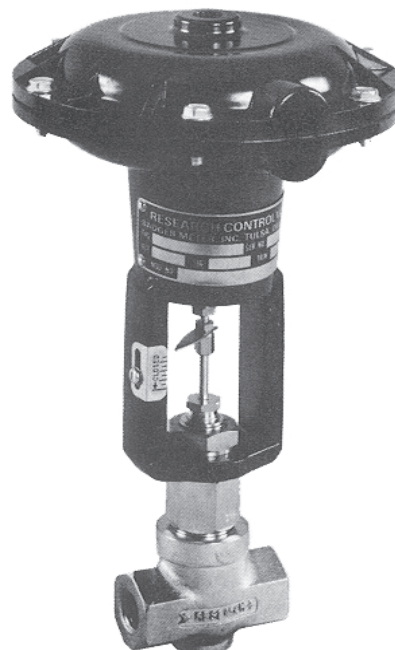
FUNCTION

The 1/4" size 755 actuator normally operates in response to a 3-15 psi change in instrument signal, or a 12 psi range. This signal range causes the valve to stroke a distance of approximately 7/16". The standard spring has a deflection rate of 25 lbs. per 1/8" and operates against an effective diaphragm area of approximately 7.3 sq. inches. The 1/2" size 755 actuator also normally operates in response to a 3-15 psi change in instrument signal, or a 12 psi range. This signal range causes the valve to stroke a distance of approximately 9/16". The standard spring in the 1/2" unit has a deflection rate of 30 lbs. per 1/8" and operates against an effective diaphragm area of approximately 11.25 sq. inches.

MATERIALS OF CONSTRUCTION

Basic Superstructure: Die cast aluminum
Paint: Epoxy
Spring: Steel (painted)
Diaphragm: Buna on Nylon fabric
Diaphragm Plate: Zinc pl. steel
All External Hardware: 300 s/s*

*Prior to 8-1-86 some external hardware may be either zinc plated steel or aluminum



Shown mounted on Type 807 valve

STANDARD FEATURES

- Compact lightweight design
- 1/4" unit = 1.81 lbs. (excluding handwheel and body-bonnet assembly)
- 1/2" unit = 4.01 lbs. (excluding handwheel and body-bonnet assembly)
- Stainless steel external hardware
- Epoxy paint for increased corrosion resistance
- Simple design for easy maintenance

OPTIONAL FEATURES

- Choice of other signal ranges: 3-27#, 6-30#
- All stainless steel housing (1/2" unit only-refer to actuator Type 890)
- Manual handwheel for operation without air; can also be used as an up travel stop.
- Side mounted positioner (for top mounted positioner, refer to type 759)

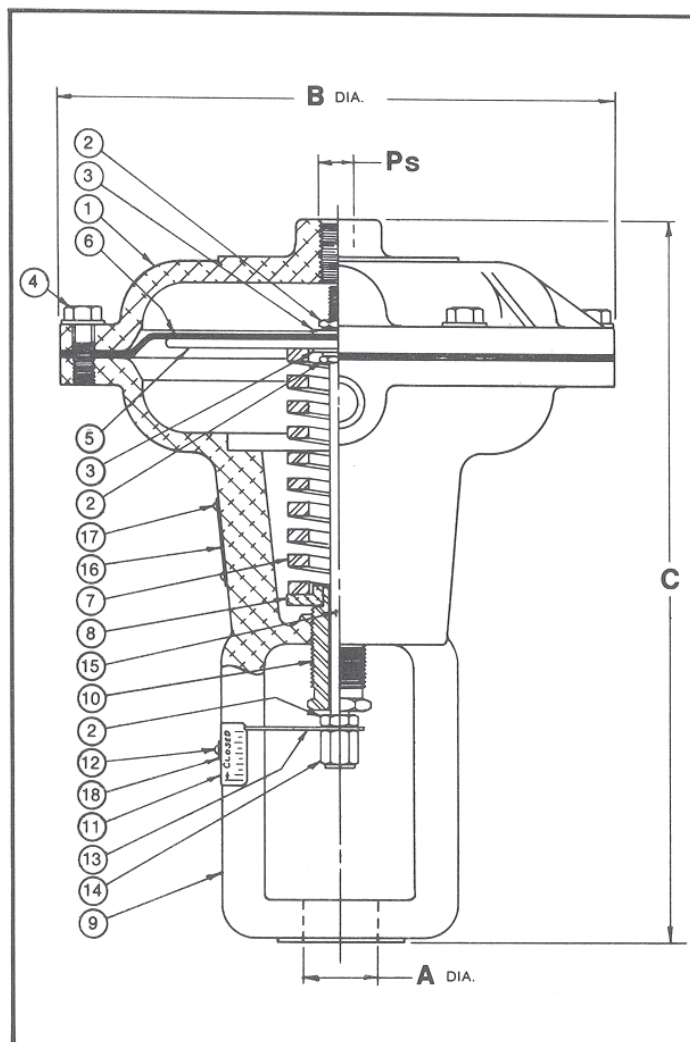
RESEARCH® is a registered trademark of Badger Meter, Inc.



BadgerMeter, Inc.

940913

11-00



Technical Information

ACTUATOR SIZE

DIMENSIONS	1/4"	1/2"
Ps _____	1/8" NPT	1/4" NPT
A _____	.625"	.875"
B _____	5.12"	6.43"
C _____	6.62"	8.40"

Diaphragm Effective Area

1/4" unit - 7.3 sq. in.

1/2" unit - 11.25 sq. in.

Pressure Rating - Max. Press. 60 psi

Caution: Do not exceed the signal range stamped on the nameplate.

Temperature Limit:

With Buna diaphragm at <30 psi

Lower limit-minus 20° F

Upper limit-plus 160° F

(Consult factory for higher temperatures)

Spring Ranges

Standard: 3-15 psi-throttling

Optional: 6-30 psi-throttling

Optional: 3-27 psi-throttling

Optional: 0-15 psi-On/Off

Optional: 0-30 psi-On/Off

Description of Items

No.	Description	Standard	Material Size	
		Material	1/4"	1/2"
1.	Pressure case	Aluminum		
2.	Stem nut	300 s/s	1/4" hx	3/8" hx
3.	Washer (2 ea)	300 s/s		
4.	Rim screw (6 ea)	300 s/s	5/16" hx	3/8" hx
5.	Plate-diaph.	Steel-zn/pl		
6.	Diaphragm	Buna on nylon		
7.	Spring	Steel		
8.	Spring seat	Aluminum		
9.	Spring case-yoke	Aluminum		

Description of Items

No.	Description	Standard	Material Size	
		Material	1/4"	1/2"
10.	Spring adjuster	300 s/s	5/16" hx	5/8" hx
11.	Travel scale	300 s/s		
12.	Screw	300 s/s		
13.	Travel pointer	300 s/s		
14.	Connector (stem)	300 s/s	1/4" hx	3/8" hx
15.	Stem	316 s/s	1/8"	3/16"
16.	Nameplate (2 hole)	s/s		
17.	Drive screw (2 ea)	s/s		
18.	Washer	s/s		

CAUTION

For outdoor use, do NOT mount upside down as water can enter the spring cavity via the stem and may freeze in colder climates.



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



BadgerMeter, Inc.

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