RCV
Research Control® | ReCo® Valves

Actuator Assembly

Type 754, 1/4" and 1/2" Standard Air-to-Open

DESCRIPTION

The Type 754 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 retraction of the valve stem upon an increasing instrument signal. A decrease in instrument signal causes the stem to extend and close the valve. Downward closing force is generated by the spring, bearing on the diaphragm plate. An increasing pressure in the diaphragm cavity opposes the force of the spring and retracts the stem, opening the valve. The unit is designed to extend the stem, closing the valve, should the instrument signal fail.

FUNCTION

The 1/4" size 754 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 pounds per 1/8" and operates against an effective diaphragm area of approximately 7.3 square inches. The 1/2" size 754 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 pound per 1/8" and operates against an effective diaphragm area of approximately 11.25 square inches.

MATERIALS

Basic superstructure	Die cast aluminum
Paint	Powder
Spring	Steel (painted)
Stem O-ring	Silicone rubber
O-ring follower	TFE
Diaphragm	Buna on Nylon fabric
Diaphragm Plate	Zinc-plated steel
All External Hardware	300 stainless steel*

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

STANDARD FEATURES

- Compact lightweight design
  1/4" unit = 2.05 pounds
  (excluding handwheel and body-bonnet assembly)
  1/2" unit = 3.76 pounds
  (excluding handwheel and body-bonnet assembly)
- Stainless steel external hardware
- Powder coated for increased corrosion resistance
- Simple design for easy maintenance

OPTIONAL FEATURES

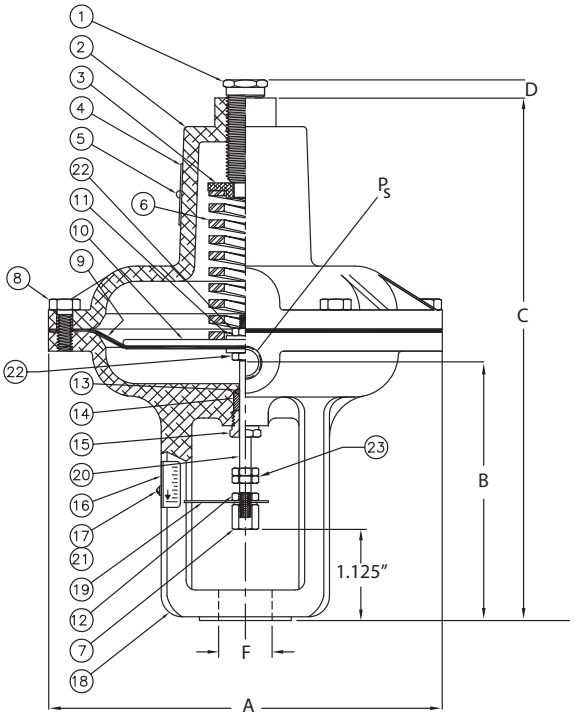
- Choice of other signal ranges: 3…27#, 6…30#
- All stainless steel housing (1/2" unit only—refer to actuator Type 891)
- Manual handwheel for operation without air; can also be used as a down travel stop
- Manual handwheel for use as an up travel stop
- Side mounted positioner (for top mounted positioner, refer to Type 766)

Badger Meter

RCV-DS-00266-EN-04 (September 2014)

Product Data Sheet

DIMENSIONS



Dimensions	Actuator Size	
	1/4"	1/2"
Ps	1/8" NPT	1/4" NPT
A	5.12"	6.43"
B	3.34"	4.29"
C	6.59"	8.56"
D	0.18…0.31"	0.25…0.37"
F	0.625"	0.875"

Description of Items

Item	Description	Standard Material	Material Size	
			1/4"	1/2"
1	Spring Adjuster	300 stainless steel	5/16" hx	5/8" hx
2	Spring case	Aluminum	—	—
3	Spring seat	Aluminum	—	—
4	Nameplate	Stainless steel	—	—
5	Drive screw (2 ea)	Stainless steel	—	—
6	Spring	Steel	—	—
7	Stem connector	300 stainless steel	1/4" hx	3/8" hx
8	Screw	300 stainless steel	—	—
9	Diaphragm	Buna or Nylon	—	—
10	Diaphragm plate	Steel-Zn/Pl	—	—
11	Washer	300 stainless steel	—	—
12	Stem nut (3 ea)	300 stainless steel	1/4" hx	3/8" hx
13	O-ring	Silicone	—	—
14	Follower O-ring	TFE	—	—
15	Gland	300 stainless steel	5/16" hx	7/16" hx
16	Travel scale	300 stainless steel	—	—
17	Rim screws (6 ea)	300 stainless steel	5/16" hx	3/8" hx
18	Pressure case & yoke	Aluminum	—	—
19	Travel pointer	300 stainless steel	—	—
20	Stem (actuator)	316 stainless steel	1/8" rnd	3/16" rnd
21	Washer (stem) (2 ea)	300 stainless steel	—	—
22	Nut, keps-ext	Stainless steel	6-32 keps	—
23	Nut, hex	Stainless steel	6-32 hx	—

SPECIFICATIONS

Diaphragm Effective Area	1/4" unit, 7.3 sq. in. 1/2" unit, 11.3 sq. in.
Pressure Rating	Max. Press. 60 psi
Temperature Limit	With Buna diaphragm at < 30 psi Lower limit, –20° F Upper limit, 160° F
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

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