

# R/RS SERIES

## Balanced Valve Design

The R & RS series' double diaphragm balanced valve design makes it possible to maintain steady outlet pressure control with widely varying inlet pressures. The regulator is physically small yet has exceptional capacity characteristics. R & RS series regulators are intended for use with both main burner and pilot load applications. They are ideally suited for use with infrared heaters and pilot lines on large industrial heaters and boilers.



**R400**

## Specifications

- Pipe Sizes** ..... 3/8" to 1" threaded connections with NPT or ISO7-1 threads.
- Housing Material** ..... R400(S), R500(S), R600(S): aluminum.
- Mounting** ..... Suitable for multi-positional mounting. If ball check vent limiting device is installed, mount in an upright position only.  
**NOTE:** All Maxitrol gas pressure regulators should be installed and operated in accordance with Maxitrol Safety Warning Instructions (see GPR\_MI\_EN.ES or GPR\_CSA\_MI\_EN.FR).
- Certifications** ..... R400(S), R500(S), R600(S): ANSI Z21.18/CSA 6.3 Gas Appliance Pressure Regulators.
- Gas Types** ..... Suitable for natural, manufactured, mixed gases, liquefied petroleum gases, and LP gas-air mixtures.
- Rated Inlet Pressure** ..... CSA Certified: R400(S), R500(S), R600(S): 1/2 psi (3.4 kPa)
- Maxitrol Tested:** ..... R400, R500, R600: 1 psi (6.9 kPa);  
R400S, R500S, R600S: 5 psi (34.5 kPa)
- Emergency Exposure Limits** ..... R400, R500, R600: 2 psi (13.8 kPa)  
R400S, R500S, R600S: 12.5 psi (86.2)
- Ambient Temperature Ranges** ..... R400(S), R500(S), R600(S): -40° to 205°F (-40° to 96°C)
- Zero Governor Models** ..... Please refer to pages 32-37 for RZ model information.
- Minimum Regulation** ..... Suitable for pilot flow applications. (P) (Circle P) (0.15 CFH NG), None (1.5 CFH NG).

**NOTE:** These R/RS regulators are not suitable for dead-end lockup service. They are capable of controlling pressure at very low flows such as standing pilots, but should not be used as a line pressure regulator for appliances equipped with electronic ignition unless the automatic control valve can open against line pressure.



## Capacities and Pressure Drop

Capacities expressed in CFH (m<sup>3</sup>/h) @ 0.64 sp gr gas

Model	Pipe Size	Pressure Drop - inches w.c. (kPa)										
		0.2 (0.05)	0.4 (0.10)	0.6 (0.15)	0.8 (0.20)	1.0 (0.25)	1.5 (0.37)	2.0 (0.50)	2.5 (0.62)	3.0 (0.75)	3.5 (0.87)	4.0 (1.0)
R400(S)	3/8" x 3/8"	77 (2.3)	110 (3.1)	134 (3.8)	155 (4.3)	174 (4.9)	212 (5.9)	245 (6.9)	274 (7.7)	---	---	---
	1/2" x 1/2"	86 (2.4)	121 (3.4)	148 (4.1)	172 (4.82)	192 (5.4)	235 (6.6)	271 (7.6)	303 (8.5)	---	---	---
R500(S)	1/2" x 1/2"	163 (4.6)	231 (6.5)	283 (7.9)	327 (9.2)	366 (10.3)	447 (12.5)	516 (14.6)	577 (16.2)	635 (17.9)	685 (19.2)	730 (20.44)
	3/4" x 3/4"	196 (5.5)	277 (7.8)	340 (9.5)	392 (11.0)	438 (12.3)	537 (15.0)	620 (17.4)	693 (19.4)	760 (21.3)	820 (23.0)	876 (24.53)
R600(S)	3/4" x 3/4"	298 (8.3)	421 (11.8)	516 (14.5)	595 (16.7)	666 (18.7)	816 (22.9)	942 (26.4)	1054 (29.5)	1150 (32.2)	1245 (34.86)	1335 (37.38)
	1" x 1"	330 (9.2)	468 (13.1)	572 (16.2)	661 (18.2)	739 (20.7)	906 (25.4)	1046 (29.3)	1169 (32.7)	1280 (35.8)	1380 (38.64)	1480 (41.44)

**NOTE:** CSA maximum capacities vary with spring range and pipe size. Please contact Maxitrol directly for CSA maximums. See pages 58-59 for Regulator Sizing Requirements and Examples.

## Spring Selection Chart: inches w.c. (kPa)

Model	CSA Certified Springs			Other Springs Available					
R400(S)	3 to 6 (0.75 to 1.5) Plated	---	5 to 12 (1.25 to 3) Blue	1 to 3.5 (0.25 to 0.9) Brown	2 to 5 (0.5 to 1.25) Plated	3 to 8 (0.75 to 2) Pink	4 to 12 (1 to 3) Violet	10 to 22 (2.5 to 5.5) Red	---
R500(S)	3 to 6 (0.75 to 1.5) Plated	4 to 8 (1 to 2) Orange	5 to 12 (1.25 to 3) Blue	1 to 3.5 (0.25 to 0.9) Brown	2 to 5 (0.5 to 1.25) Plated	3 to 8 (0.75 to 2) Pink	4 to 12 (1 to 3) Violet	10 to 22 (2.5 to 5.5) Red	---
R600(S)	3 to 6 (0.75 to 1.5) Plated	4 to 8 (1 to 2) Orange	5 to 12 (1.25 to 3) Blue	1 to 3.5 (0.25 to 0.9) Brown	2 to 5 (0.5 to 1.25) Plated	3 to 8 (0.75 to 2) Pink	4 to 12 (1 to 3) Violet	10 to 22 (2.5 to 5.5) Red	15 to 30 (3.7 to 7.5) Yellow

**NOTE:** See pages 56-57 for complete Spring Selection Chart.

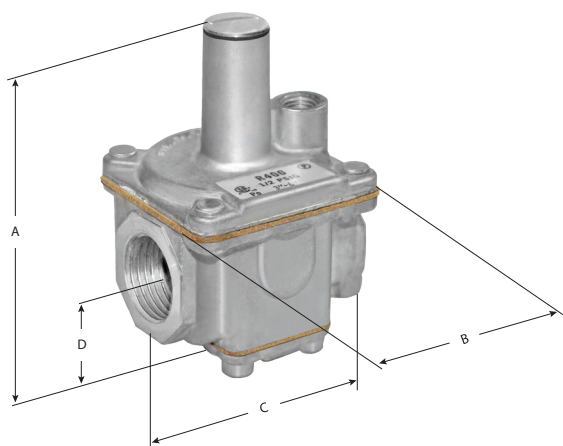
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Balanced Valve Design

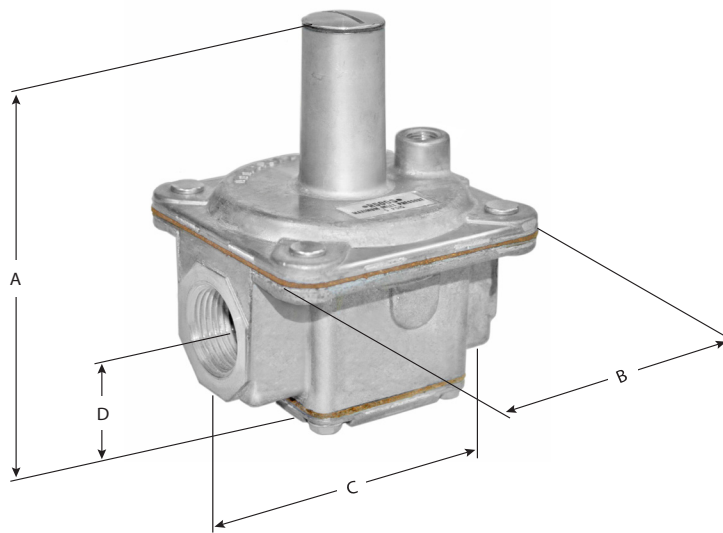
## Dimensions

Model	Pipe Size	Vent Connection	Swing Radius	Dimensions			
				A	B	C	D
R400(S)	3/8", 1/2"	1/8" NPT	2.4" (60 mm)	3.3" (83 mm)	2" (51 mm)	2" (51 mm)	0.9" (24 mm)
R500(S)	1/2", 3/4"	1/8" NPT	3.6" (90 mm)	4.7" (119 mm)	3.1" (79 mm)	3" (76 mm)	1.2" (30 mm)
R600(S)	3/4", 1"	1/8" NPT	4.3" (110 mm)	5.7" (145 mm)	3.9" (99 mm)	4" (103 mm)	1.5" (38 mm)

**NOTE:** Dimensions are maximums and to be used only as an aid in designing clearance for the valve. Actual production dimensions may vary somewhat from those shown.

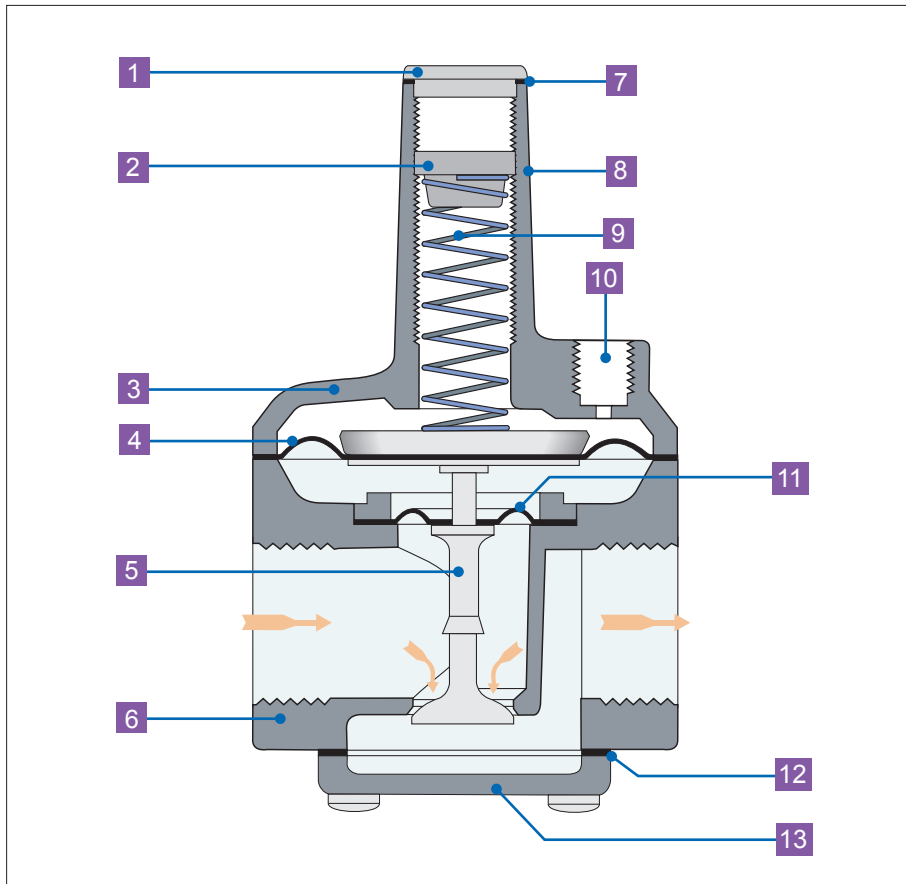


**R400(S)**



**R500(S), R600(S)**

## R/RS Balanced Valve Design



- 1** Welch Plug/Seal Cap
- 2** Vibration Resistant Adjusting Screw
- 3** Top Housing
- 4** Regulating Diaphragm
- 5** Stem & Valve
- 6** Bottom Housing
- 7** Seal Cap Gasket
- 8** Stack
- 9** Spring
- 10** Vent Connection
- 11** Balancing Diaphragm
- 12** Bottom Plate Gasket
- 13** Bottom Plate

**NOTE:** Diagrams are graphical representations only and may differ from actual product.