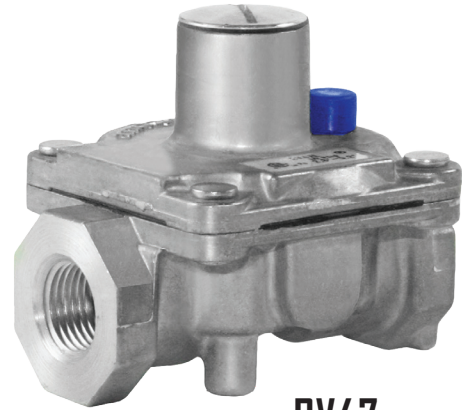


# RV SERIES

## Rubber Seat Poppet Design

The compact RV poppet regulators are designed primarily for main burner and pilot load applications. Typical applications include residential and commercial cooking appliances, barbecues, hearth products, and pilot lines. Maxitrol rubber seat poppet models offer the ultimate in design features and performance capabilities to meet your specific appliance or utility requirements.



RV47

## Specifications

**Pipe Sizes** ..... 1/8" thru 3/4" threaded connections with NPT or ISO7-1 threads.  
(Other connections available, please consult Maxitrol Company.)

**Housing Material** ..... RV12, RV20, RV47, RV48, CV47: aluminum.

**Mounting** ..... All models, with the exception of "D" suffix models, are suitable for multi-positional mounting. Other than upright position will result in a slight difference in outlet pressure. "D" suffix models are to be mounted upright only. For the RV48, if a **vLimiter**<sup>®</sup> or **vProtector**<sup>®</sup> is installed, mount in an upright position only. The **vLimiter**<sup>®</sup> 12A06 is multi-positional.

**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** ..... RV Series: ANSI Z21.18/CSA 6.3 Gas Appliance Pressure Regulators.  
CV47 Series: ANSI Z21.78/CSA 6.20 Combination Gas Controls for Gas Appliances.

**Gas Types (RV Series)** ..... Suitable for natural, manufactured, mixed gases, liquefied petroleum gases, and LP gas-air mixtures.

**Gas Types (CV47 Series)** ..... Suitable for natural or liquefied petroleum gases.

**Rated Inlet Pressure** ..... 1/2 psi (3.4 kPa)

**Emergency Exposure Limits** ..... 2.5 psi (17.2 kPa)

**Ambient Temperature Ranges**... RV20, RV47, RV48, CV47: 32° to 225°F (0° to 107°C)  
RV12: -40° to 225°F (-40° to 107°C)  
RV12T: -40° to 275°F (-40° to 135°C)  
RV20T: -40° to 300°F (-40° to 148°C)  
RV48T: 32° to 275°F (0° to 135°C)  
RV47T2, RV48T2: -40° to 225°F (-40° to 107°C)

**Minimum Regulation** ..... Suitable for pilot flow applications. **(P)** (Circle P) (0.15 CFH NG), **(Δ)** (Delta P) (0.50 CFH NG), None (1.5 CFH NG), N Models (3 CFH NG).



## Model Designations

Models having a suffix letter or a combination of suffix letters listed below indicates the design modifications described.

- A ..... Limited spring adjustment (RV47A & CV47A\*\*, short stack\*).
- C ..... Convertible regulators\*\*\*; preset to deliver outlet pressures for either natural or LP gases.  
(RV20, RV47, RV48, CV47)
- D ..... Integral ball check limiting device; permits higher maximum individual load (RV47).  
(see Capacities and Pressure Drop, page 6)
- E ..... Excessive pressure rated.
- F ..... Factory-set; fixed/non-adjustable regulator.
- I ..... Left side integral manual valve; outlet faces main inlet (CV47).
- L ..... Integral vent limiting orifice as the breather hole - with dust cap.
- M ..... B.S.P. - PL parallel thread - conforms to ISO 7-1, where pressure tight joints are made on the threads.
- N ..... Internal by-pass orifice to prevent lockup. Main burner only (RV20, RV47, RV48, CV47).
- R ..... Right side<sup>+</sup> integral manual valve; outlet faces main outlet (CV47).
- SR ..... Side pressure tap; right side<sup>+</sup> 1/8" NPT (RV20, RV47, RV48, CV47I).
- S ..... Side pressure tap; left side<sup>+</sup> 1/8" NPT (RV20, RV47, RV48, CV47R).
- T ..... Higher ambient temperature range.
- T2 ..... Lower minimum ambient temperature (RV47, RV48).
- V ..... Threaded vent connector, 5/16-24 for 1/8" tubing connection (RV20) - with dust cap.

- \* Short stack models have an adjustment range of less than 2" w.c. (0.5 kPa); these models are advantageous where installation must be made in a limited space.
- \*\* CV47 is best described as a RV47 with an extra regulated outlet. This outlet contains an integral manual valve located on the valve body's side.
- \*\*\* Convertible regulators are designed to deliver either of two fixed outlet pressures for natural or LP gases.  
RV20C: NAT GAS: 4.0" w.c. (1.0 kPa); LP: 10" w.c. (2.5 kPa)  
RV47C, RV48C, CV47C: NAT GAS: 4.0", 5.0" or 6.0" w.c. (1.0, 1.3, or 1.5 kPa); LP: 10" or 11" w.c. (2.5 or 2.8 kPa) for residential ranges. Other settings may be available as standards allow.
- + Left and right is determined when viewing regulator from outlet side with stack up.

**NOTE:** For the RV48 and RV20V vent accessory options, see page 62.

# RV SERIES

Rubber Seat Poppet Design

## Capacities and Pressure Drop

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

Model	Pipe Size	Pressure Drop @ 0.3" w.c. or (0.07 kPa)	Range of Regulation		Individual Load	
			Main Burner	Main Burner & Pilot	Fixed Orifice	Ball Check Device
RV12	1/8" x 1/8"*	14,800 (0.42)	30,000 (0.85)	25,000 (0.71)	20,000 (0.56)	---
	3/16" x 3/16"Loxit	8,800 (0.25)		15,000 (0.43)		
RV20	1/4" x 1/4" 3/8" x 3/8"*	30,000 (0.85)	65,000 (1.84)	50,000 (1.4)	30,000 (0.85)	---
RV20C	1/4" x 1/4" 3/8" x 3/8"	30,000 (0.85)	75,000 (2.11)	50,000 (1.4)	15,000 (0.42)	---
CV47 RV47	3/8" x 3/8"	55,000 (1.5)	125,000 (3.5)	90,000 (2.5)	40,000 (1.1)	125,000 (3.5)
	1/2" x 1/2"*	60,000 (1.7)				
CV47A or C RV47A or C	3/8" x 3/8"	55,000 (1.5)	125,000 (3.5)	125,000 (3.5)	40,000 (1.1)	125,000 (3.5)
	1/2" x 1/2"	60,000 (1.7)				
RV48	1/2" x 1/2"	130,000 (3.7)	230,000 (6.5)	230,000 (6.5)	40,000 (1.1)	160,000 (4.5)
	3/4" x 3/4"	150,000 (4.2)	250,000 (7.1)	250,000 (7.1)		
RV48C	1/2" x 1/2"	130,000 (3.7)	400,000 (11.3)	275,000 (7.8) Nat	40,000 (1.1)	160,000 (4.5)
	3/4" x 3/4"	150,000 (4.2)		275,000 (3.1) LP		

\*Also available as Loxit connection.

**NOTE:** CSA maximum capacities vary with spring range and pipe size. Please contact Maxitrol directly for CSA maximums. Minimum main burner regulation capacity for all models (except "N") is 150 Btu/hr (0.0042 m<sup>3</sup>/h). See pages 58-59 for Regulator Sizing Requirements and Examples.

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

Model	Available Springs										
RV12	1.5 to 3* (0.37 to 0.75) Brown	2.8 to 5.2 (0.69 to 1.3) Plated	---	4 to 8 (1 to 2) Orange	---	---	---	---	6 to 10 (1.5 to 2.5) Red	8 to 12 (2 to 3) Blue	---
RV20	1 to 3.5* (0.25 to 0.9) Brown	2.8 to 5.2 (0.69 to 1.3) Plated	---	4 to 8 (1 to 2) Orange	---	---	---	---	6 to 10 (1.5 to 2.5) Red	8 to 12 (2 to 3) Blue	9 to 12** (2.25 to 3) Plated
RV47 CV47	1 to 3.5* (0.25 to 0.9) Brown	2.8 to 5.2 (0.69 to 1.3) Plated	3.8 to 4.3 (0.95 to 1.08) Black	4 to 8 (1 to 2) Orange	4 to 12* (1 to 3) Violet	4.7 to 5.3 (1.18 to 1.33) Green	---	5.6 to 6.4 (1.4 to 1.6) Red	6 to 10 (1.5 to 2.5) Red	8 to 12 (2 to 3) Blue	9.7 to 11.3 (2.42 to 2.83) Plated
RV48	1 to 3.5* (0.25 to 0.9) Brown	3.0 to 6.0 (0.75 to 1.5) Plated	---	4 to 8 (1 to 2) Orange	---	---	5 to 12 (1.25 to 3) Blue	---	6 to 10 (1.5 to 2.5) Red	---	---

\*Uncertified Spring

\*\*Certified at inlet pressure of 2 psi

Model	Available Springs					
RV20CL	4 / 10 (1 / 2.5)	---	---	---	---	---
RV47CL***	4 / 10 (1 / 2.5)	4 / 11 (1 / 2.75)	5 / 10 (1.25 / 2.5)	5 / 11 (1.25 / 2.75)	6 / 10 (1.5 / 2.5)	6 / 11 (1.5 / 2.75)
CV47CL***	4 / 10 (1 / 2.5)	4 / 11 (1 / 2.75)	5 / 10 (1.25 / 2.5)	5 / 11 (1.25 / 2.75)	6 / 10 (1.5 / 2.5)	6 / 11 (1.5 / 2.75)
RV48C(L)***	4 / 10 (1 / 2.5)	4 / 11 (1 / 2.75)	5 / 10 (1.25 / 2.5)	5 / 11 (1.25 / 2.75)	6 / 10 (1.5 / 2.5)	6 / 11 (1.5 / 2.75)

\*\*\*Listed spring ranges are for residential ranges. Other settings may be available as standards allow.

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

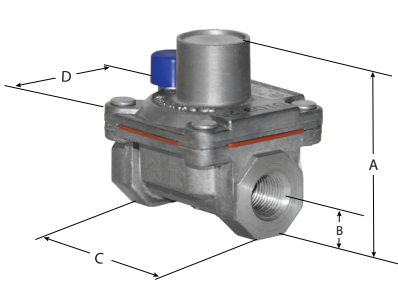
# RV SERIES

Rubber Seat Poppet Design

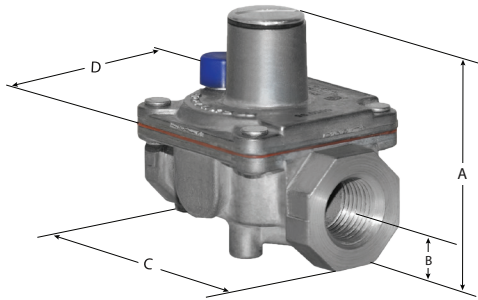
## Dimensions

Model	Pipe Size	Vent	Swing Radius	Dimensions			
				A	B	C	D
RV12	1/8" 3/16"Loxit	Integral Vent Limiting Orifice "L"	1.4" (35 mm)	1.7" (43 mm)	0.4" (10 mm)	1.7" (43 mm)	1.4" (35 mm)
RV20	1/4", 3/8"	Integral Vent Limiting Orifice "L" or 5/16-24 "V"	1.6" (41 mm)	2.1" (54 mm)	0.5" (13 mm)	2.4" (61 mm)	1.8" (45 mm)
RV47 CV47	3/8", 1/2"	Integral Vent Limiting Orifice "D" or "L" suffix	1.9" (48 mm)	2.5" (64 mm)	0.6" (16 mm)	2.9" (75 mm)	2.3" (57 mm)
RV47A CV47A			1.6" (41 mm)	2.3" (57 mm)			
RV48	1/2", 3/4"	Integral "L" or 1/8" NPT, 12A04 or 12A06 vent limiting device	2" (51 mm)	2.8" (70 mm)	0.8" (19 mm)	3.4" (86 mm)	3" (76 mm)

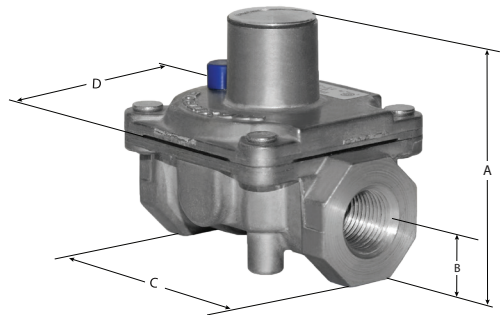
**NOTE:** Dimensions are maximums and to be used only as an aid in designing clearance for the valve.  
Actual production dimensions may vary somewhat from those shown.



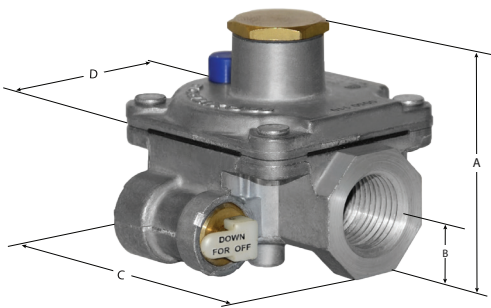
RV12



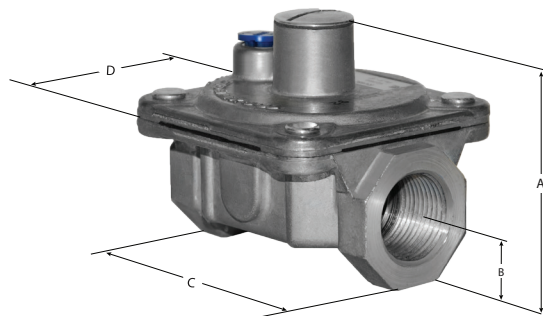
RV20



RV47, RV47A

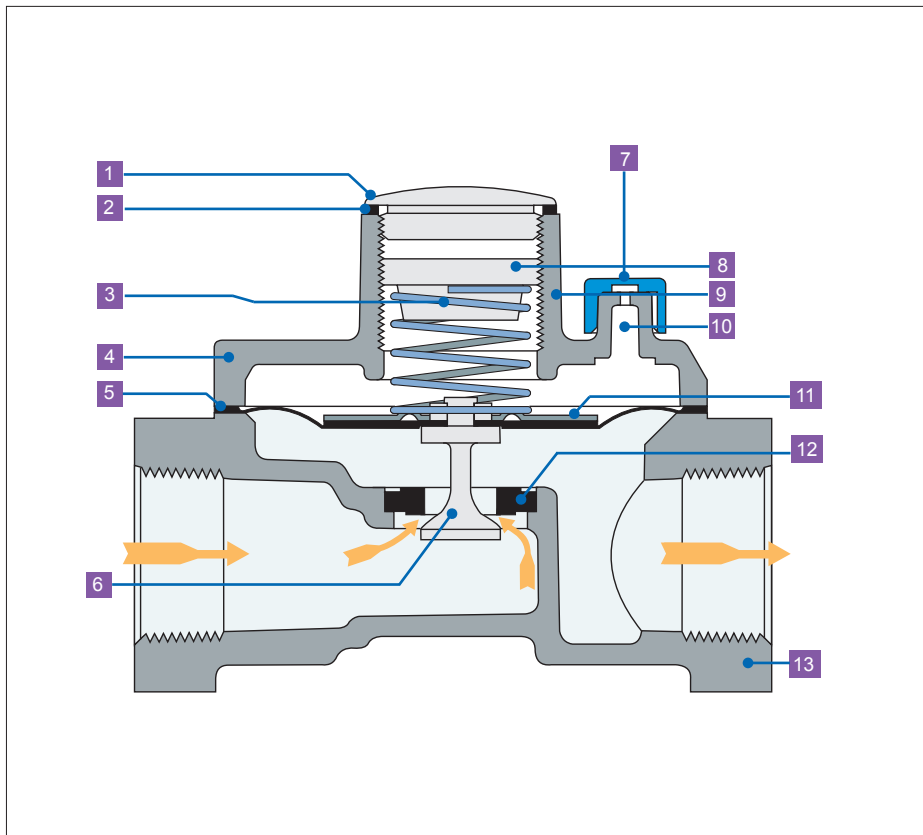


CV47, CV47A



RV48

## Rubber Seat Poppet Design



- 1 Welch Plug or Seal Cap
- 2 Seal Cap Gasket
- 3 Spring
- 4 Top Housing
- 5 Diaphragm
- 6 Stem & Valve
- 7 Dust Cap
- 8 Adjusting Screw
- 9 Stack
- 10 Vent
- 11 Diaphragm Plate
- 12 Rubber Seat
- 13 Bottom Housing

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