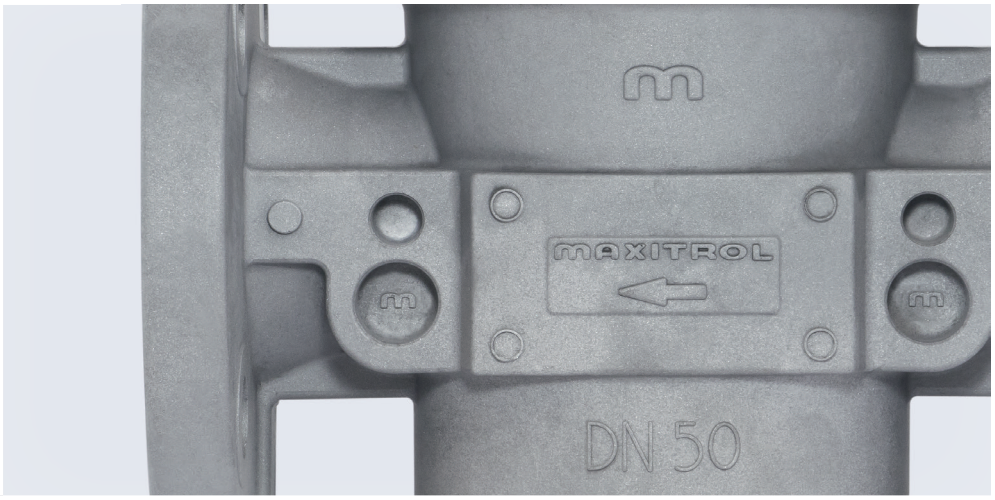


GAS PRESSURE REGULATOR AND FILTER CATALOG

11th Edition

MAXITROL®

www.maxitrol.com

⚠ WARNING

Service and installation must be performed by a trained/experienced service technician.
All products used with combustible gas **must** be installed and used **strictly** in accordance with the instructions of the Original Equipment Manufacturer (OEM) and with all applicable government codes and regulations, e.g. plumbing, mechanical, and electrical codes and practices. All Maxitrol products should be installed and operated in accordance with Maxitrol Safety Warning Instructions.

Maxitrol is NOT responsible for any errors or omissions in reliance by anyone of any information set forth in this catalog without additional reference to local requirements and applicable ordinances or codes.

The products in this catalogue comply with EU legislation. The technical specifications refer to the CE certification. Additional international approvals and certifications, e.g., CSA and UL, are available upon request.

CE

RVLM 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.

Specifications

- **Pipe Sizes:** Rp ⅛ to Rp ¾ threaded connections according to ISO 7-1/EN10226-1
- **Housing Material:** Aluminum
- **Internal Components Material:** Steel, aluminum, elastomer
- **Mounting:** Suitable for multi-positional mounting. Other than upright position will result in a slight difference in outlet pressure. Install with gas flowing as indicated by the arrow on bottom casting.
- **Construction and Design/Certifications:** According to the Gas Appliances Regulation (EU) 2016/426 and EN 88-1
- **Fuel Gases:** Suitable for gases of EN 437
- **Maximum Inlet Pressure:** 10 kPa
- **Ambient Temperature Range:** -15 °C to 80 °C
- **Capacities:** See flow chart, page 18

Model Designations

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

- **C**..... Convertible regulators*; preset to deliver outlet pressures for either natural or LP gases (RV20, RV47, RV48).
- **L** ..... Integral vent limiting orifice as the breather hole – with dust cap.
- **M** ... "Rp" parallel thread conforms to ISO 7-1/EN10226-1, where pressure tight joints are made on the threads.
- **SR**... Side pressure tap; right side** ⅛ NPT (RV20, RV47, RV48).
- **S** ..... Side pressure tap; left side** ⅛ NPT (RV20, RV47, RV48).
- **V**..... Threaded vent connector, 5/16-24 for Rp ⅛ tubing connection (RV20) – with dust cap.

** Convertible regulators are designed to deliver either of two fixed outlet pressures for natural or LP gases.*
RV20C: 1.0 kPa (NG); 2.5 kPa (LP)
RV47C, RV48C: 1.0 or 1.25 or 1.5 kPa (NG); 2.5 or 2.75 kPa (LP)

*** Left and right is determined when viewing regulator from outlet side with stack up.*

Dimensions

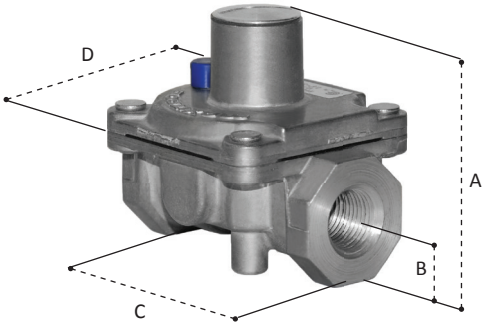
Model	Pipe Sizes	Swing Radius	Dimensions			
			A	B	C	D
RV12...	Rp ⅛	35 mm	43 mm	10 mm	43 mm	35 mm
RV20...	Rp ¼, Rp ⅜	41 mm	54 mm	13 mm	61 mm	45 mm
RV47...	Rp ⅜, Rp ½	48 mm	64 mm	16 mm	75 mm	57 mm
RV48...	Rp ½, Rp ¾	51 mm	70 mm	19 mm	86 mm	76 mm

NOTE: NPT thread on request

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

▲ *RV12...*

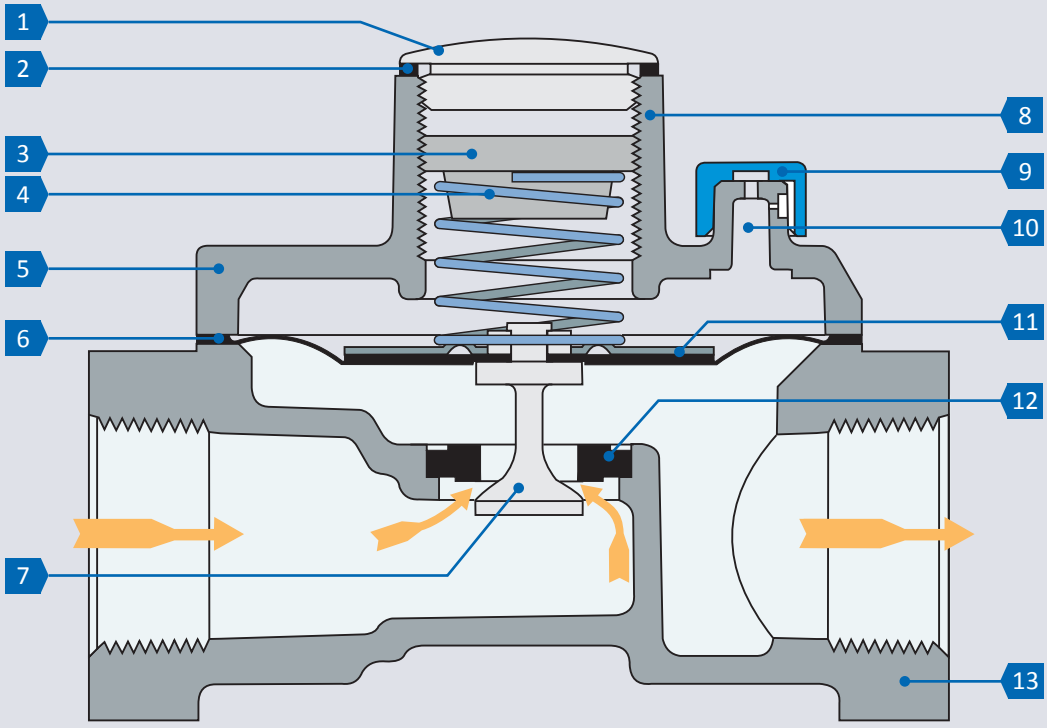
▲ *RV20...*



▲ *RV47...*

▲ *RV48 ...*

Rubber Seat Poppet Design



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

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

SPRING SELECTION

Model	Spring Replacement Number	Spring Code											
		A	B	C	D	E	F	G	H	K	L	M	N
		Outlet Pressure Range (1 kPa = 10 mbar)											
		0.25 – 0.90	0.50 – 1.25	0.50 – 1.50	0.70 – 1.30	0.75 – 2.00	1.00 – 2.00	1.00 – 3.00	1.25 – 3.00	2.50 – 5.50	3.75 – 7.50	5.00 – 10.50	7.00 – 14.00
		Color											
		brown	(plated)	green	(plated)	pink	orange	violet	blue	red	yellow	black	label
RV12...	KIT ...-R1210T	X			X		X	X					
RV20...	KIT ...-R2010	X			X		X	X					
RV47...	KIT ...-R4710	X			X		X	X					
RV48...	KIT ...-R4810	X			X		X		X				
RV52...	KIT ...-R5210	X	X			X		X		X			
RV53...	KIT ...-R5310	X	X			X		X		X	X		
RV61...	KIT ...-R6110	X	X			X			X	X	X		
RV81...	KIT ...-R8110	X	X			X		X		X	X	X	
RV91...	KIT ...-R9110	X	X			X		X		X	X	X	
RV111...	KIT ...-R11110	X	X			X		X		X	X	X	
325-3...	KIT ...-R325C10			X				X		X	X		X
325-5...	KIT ...-R325E10			X				X		X	X		X
325-7...	KIT ...-R8110	X	X			X		X		X	X	X	
R400S...	KIT ...-R400B10	X	X			X		X		X			
R500S...	KIT ...-R5210	X	X			X		X		X			
R600S...	KIT ...-R5310	X	X			X		X		X	X		
R700S...	KIT ...-R6110	X	X			X			X	X	X		
210D...	KIT ...-R8110	X	X			X		X		X	X	X	
210E...	KIT ...-R9110	X	X			X		X		X	X	X	
210G...	KIT ...-R11110	X	X			X		X		X	X	X	
210J...	KIT ...-R13110		X			X		X		X	X	X	

NOTE: *No spring replacement required for zero pressure regulator models.*

ACCESSORIES

The following items are not sold separately. They are delivered with the gas pressure regulators.

12A04/12A09 12A39

Vent Limiting Device: vLimiter ®

Maxitrol vent limiting devices eliminate the need to run vent piping to the outside. Vent limiting devices are designed for use indoors and in spaces where limiting the amount of gas escapement due to diaphragm failure is critical. Vent limiting devices should not be used outdoors if they are exposed to the environment.
Optional automatic vent limiting device – ball check permits unobstructed inhalation for fast regulator diaphragm response on opening cycle, but limits gas escapement to be within EN 88 requirements should a diaphragm rupture:

- **12A04:** Use on RV52, RV53, RV61, R400S, R500S, and R600S regulators
- **12A09:** Use on 325-3 regulators
- **12A39:** Use on RV81, RV91, RV111, 325-5, 325-7, R700S, and 210 series regulators

NOTE: *When using the vent limiting device, the regulator must be mounted in a horizontal upright position.*

NOTE: *If no vent limiting device is used, regulator vent must be piped in accordance with government and local codes and regulations.*

Pressure Tap

Pressure tap installed as an optional part of the control. The hose fitting is provided with a captive screw plug. This eliminates the need for an additional fitting with a measuring connection.

- PF10: For RVLM (Poppets) and filters (others upon request).

PF10

Dust Cap

Use on vent opening to prevent blockage of breather hole from dust or other foreign particles. Standard on all “L” models with ⅛ threaded vent.

- **13A09:** For Rp ⅛ vent. Press-in plastic cap

13A09

Tamper Proof Seals

Permanent pressure sensitive backed paper. Attempted removal of these seals will destroy the face stock, leaving adhesive residue on surface beneath. Therefore, tampering can be easily detected. Available for all threaded models. Outlet pressure printed on seal.

- **101310:** For RV12, RV20L, RV47, RV48, RV52, RV53, RV61, R400S(Z), RV500S(Z), R600S(Z), R700(Z), 325-3, and 325-5
- **101311:** For RV81, RV91, RV111, 210D, 210E, 210G, 325-7

101310

SIZING A REGULATOR

System Requirements

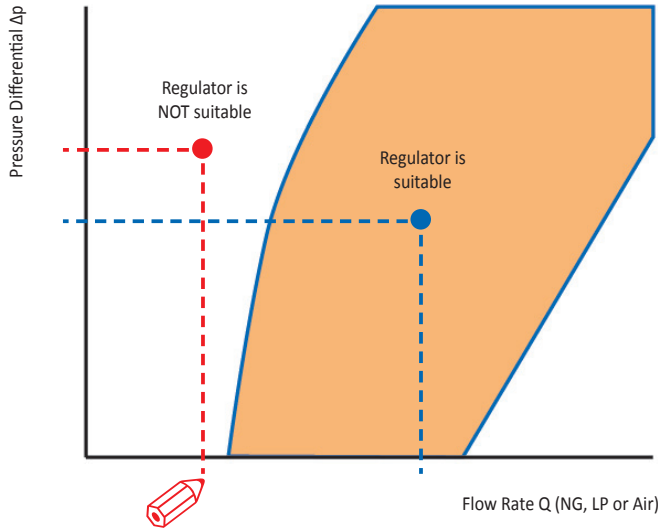
When sizing a regulator the following must be known:

- Fuel Gases
- Available Inlet Pressure
- Desired Outlet Pressure
- Zero Pressure Regulator Application (indicated by model number ending in “Z”)
- Will the regulator control main burner and pilot load OR main burner only?
- Required minimum and maximum flow rate in m^3/h or kW
- Pipe Size

In most cases, the manifold pipe size has already been selected on the basis of good engineering practice, and the regulator pipe size should conform to this size.
The capacity of any regulator is not an absolute value but will vary with the application depending on the prevailing differential pressure.

HOW TO DETERMINE THE SUITABLE REGULATOR FROM THE FLOW CHART

Draw a horizontal line with the known differential pressure (inlet pressure minus outlet pressure). Next draw a vertical line with the required flow rate (take care to use the axis with the correct fuel gas). The regulator where both lines cross each other within the range of regulation is the suitable regulator.



NOTE: Please contact Maxitrol directly for more information on sizing a regulator.

NOTE: Service and installation must be performed by a trained/ experienced service technician.

LEGEND FOR FLOW CHARTS

Δp = Pressure Differential in kPa
Q = Flow Rate in m^3/h
dv = Volumetric Rate of Flow
f = Friction Factor
ρ = Density

Pressure Units:	1 kPa = 10 mbar = 10 hPa
Air:	dv = 1.00 f = 1.00
Natural Gas (NG):	dv = 0.64 f = 1.24
Liquid petroleum gas (LPG):	dv = 1.56 f = 0.80

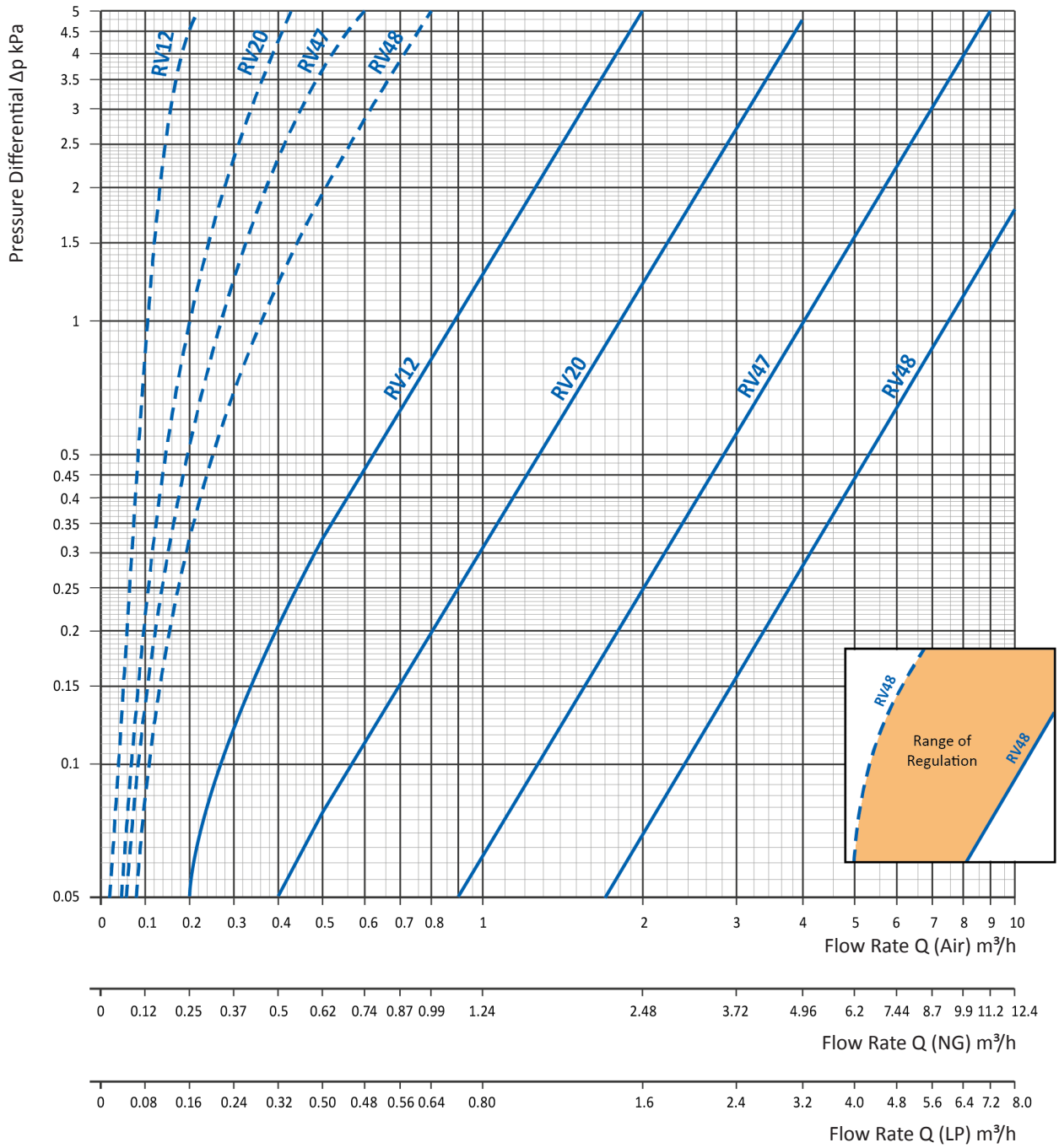
$$dv = \frac{\rho_{gas}}{\rho_{air}}$$

$$f = \sqrt{\frac{\rho_{air}}{\rho_{gas}}}$$

$$\dot{V}_{gas} = f \cdot \dot{V}_{air}$$

FLOW CHARTS GAS PRESSURE REGULATORS

RVLM Series – Rubber Seat Poppet Design



NOTE: *The given flow rates are approximate values. Actual flow rates may vary somewhat from those shown.*

MAXITROL®

Maxitrol Company
23555 Telegraph Road
Southfield, MI 48033
USA

T: (+1) 248 356-1400
infoNA@maxitrol.com

Maxitrol GmbH & Co. KG
Warnstedter Str. 3
06502 Thale
Germany

T: (+49) 3947 400-0
infoEU@maxitrol.com

Maxitrol GmbH & Co. KG
Valleys Innovation Centre
Navigation Park
Abercynon CF45 4SN
United Kingdom

T: (+44) 1443 742-755
M: (+44) 7866 492-261
infoEU@maxitrol.com

Maxitrol GmbH & Co. KG
Industriestr. 1
48308 Senden
Germany

T: (+49) 2597 9632-0
senden@maxitrol.com

GDR.GF-LT-EN-04.2025