Gas Appliance Pressure Regulators
Straight-Thru-Flow Design

RV52, RV53, RV61, RV81, RV91, RV111, and RV131
1/2", 3/4", 1", 1¼", 1½", 2", 2½", 3" & 4"

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Gases: Suitable for application in natural, manufactured,
mixed gases, liquefied petroleum gases and LP gas-air mixture
piping systems.
Straight-Thru-Flow Design

RV series

All models except RV131 are CSA design certified for 1/2 psi rated pressure under the ANSI standard for gas pressure regulators; and CSA listed to certify compliance with nationally published safety, construction, and performance standards.

They are main burner only, non-lockup type. They should not be used as a line gas pressure regulator ahead of low pressure controls. Use only where downstream controls can operate at line pressure. Refer to other Maxitrol sales bulletins for proper types.

The RV52, RV53, & RV61 are suitable for multipoise mounting. The RV81, RV91, RV111, & RV131 are recommended for normal horizontal position only.

Maxitrol's original Straight-Thru-Flow design meets your needs for high capacities at low inlet pressures. The basic difference between S-T-F design and other type regulators lies in the conical valve. The cone principal permits gas to flow straight through the regulator without changing directions. Frictional flow resistance is reduced, resulting in greater capacity.

The improved flow pattern provides accurate sensitive regulation at extremely low pressure differentials. The ability of the regulator to handle large capacity appliances with limited supply pressure offers a definite advantage to designers of commercial and industrial gas-fired equipment.

Models up to the three inch pipe size have high strength pressure cast aluminum housings. The RV131 four inch model is of cast iron and steel construction. RV61, RV81, RV91, RV111, & RV131 internal conical valves are coated with Teflon® for long life. Diaphragm material is cut from the finest synthetic coated fabrics available. All other parts are carefully specified corrosion-resistant or plated material.

Pipe sizes of 1/2”, 3/4”, 1”, 1-1/4”, 1-1/2”, 2”, 2-1/2”, 3”, and 4” are available. Models through the 3” size are threaded, the 4” RV131 is flanged.

At the emergency exposure limits, there may be no regulation, but all models will contain gas. They will suffer no internal damage and will resume regulation when normal pressure is restored.

Straight-Thru-Flow appliance regulators are intended for use with all fuel gases, and may also be used with air or other noncorrosive gases within their pressure limits. Typical applications include all types of residential, commercial and industrial gas-fired appliances and equipment used on low pressure gas supply. See Maxitrol's "Spring Selection Chart" for part numbers, color and size of springs.

*NOTE: All Maxitrol appliance regulators should be installed in accordance with Maxitrol's “Safety Warning” bulletin.*

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CAPACITIES—expressed in CFH (m³/h)—0.64 sp gr gas

Sizing Instructions

In order to select the proper size regulator, you must know the available inlet pressure, desired outlet pressure, and the required maximum flow rate.

Example No. 1—To select a regulator of ample capacity to handle flow.

KNOWN:
Pipe size 2-1/2", flow rate 8,000 CFH (0.64 sp gr), inlet pressure 9" w.c., desired outlet pressure 5" w.c.

SOLUTION:
1. Determine differential pressure available:
   - Inlet pressure 9" w.c.
   - Subtract outlet pressure - 5" w.c.
   - Available differential pressure 4" w.c.
2. When determining capacity Maxitrol recommends that the pressure drop not exceed 1/2 of available differential pressure (1/2 of 4" w.c. = 2" w.c.).
3. Check Capacity Chart to determine which regulator has a pressure drop of 2" w.c. or less at a flow rate of 8,000 CFH.
4. The RV111 meets these standards with a flow rate of 12,134 CFH for the 2-1/2" pipe size at 2" w.c. pressure drop. Therefore, the RV111—2-1/2" is the correct regulator to use.

Example No. 2—To determine maximum recommended operating outlet pressure.

KNOWN:
Pipe size 4", flow rate 21,000 CFH, inlet pressure 10" w.c.

SOLUTION:
1. Check capacity Chart above for 4" regulator, RV131.
2. Note that at a flow rate of 21,172 CFH the pressure drop is 2" w.c.
3. Subtract 4" differential pressure from 10" w.c. inlet pressure to obtain maximum recommended outlet pressure setting of 6" w.c.

Pressure Drop Chart

Pressure Drop Chart

Inlet Pressure (inches w.c.)

Outlet Pressure (inches w.c.)

CFH (m³/h)

2.8 m³/h
28
Flow Rate
280

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NOTE: The area within the heavy line indicates CSA certified springs.