



# MINIATURE REGULATOR

*1/8" & 1/4" PTF PIPE SIZES*

*RELIEVING OR NONRELIEVING*

*DIAPHRAGM TYPE (R06)*

*For Compressed Air Service*

*For Water Service (With Brass Body)*

*PISTON TYPE (R04)*

*For Compressed Air Service*

## SPECIFICATIONS

MAIN PORTS: 1/8" or 1/4" PTF

GAUGE PORTS: 1/8" PTF (two)

RATED OPERATING CONDITIONS:

MAXIMUM PRIMARY (INLET) PRESSURE:  
400 psig (27.6 bar)

SECONDARY (OUTLET) PRESSURE RANGES:\*

3 to 100 psig (.2 to 6.9 bar) (Standard)

1 to 10 psig (.1 to .7 bar) (Optional)

2 to 50 psig (.1 to 3.5 bar) (Optional)

TEMPERATURE RANGES:

DIAPHRAGM TYPE (R06)

PLASTIC BONNET: 0 to 150°F (-18 to 66°C) †

BRASS BONNET: 0 to 200°F (-18 to 93°C) †

PISTON TYPE (R04)

PLASTIC BONNET: 35 to 150°F (2 to 66°C)

BRASS BONNET: 35 to 200°F (2 to 93°C)

RELIEVING OR NONRELIEVING MODELS

## APPLICATION

Used where a compact, economical pressure control is required. Very popular in applications requiring a panel mount regulator with a nonrising adjustment knob.

## FEATURES

- Reliable pressure regulation at flows up to 12 scfm.
- Compact, space-saving design.
- Nonrising adjustment knob; low torque pressure adjustment throughout entire pressure range.
- "Snap-Action" locking on nonrising adjustment knob is standard.

## WARNING

THESE UNITS ARE INTENDED FOR USE IN INDUSTRIAL COMPRESSED AIR SYSTEMS ONLY (EXCEPT FOR THE BRASS BODY R06 MODEL WHICH CAN BE USED FOR WATER SERVICE). THEY MUST NOT BE USED WHERE PRESSURE OR TEMPERATURE MAY EXCEED MAXIMUM RATED OPERATING CONDITIONS. SEE SPECIFICATIONS.

IF OUTLET PRESSURE IN EXCESS OF THE REGULATOR PRESSURE SETTING COULD CAUSE DOWNSTREAM EQUIPMENT TO RUPTURE OR MALFUNCTION, INSTALL A PRESSURE RELIEF DEVICE DOWNSTREAM OF THE THE REGULATOR. THE RELIEF PRESSURE AND FLOW CAPACITY OF THE RELIEF DEVICE MUST SATISFY SYSTEM REQUIREMENTS.

BEFORE USING WITH FLUIDS OTHER THAN AIR OR WATER, FOR NONINDUSTRIAL APPLICATIONS, OR FOR LIFE SUPPORT SYSTEMS, CONSULT C. A. NORGREN CO. FOR APPROVAL.

\*Secondary pressure adjustment ranges are not minimum or maximum secondary pressure limits. Regulators can be adjusted to zero psig secondary pressure and generally, to pressures in excess of those specified. The use of these regulators to control pressure outside of the specified ranges is not recommended.

† With dewpoint less than air temperature below 35°F (2°C).

# NORGREN

LITTLETON, COLORADO

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## OPERATION

The working parts of these pressure regulators are the diaphragm and valve pin assembly (4 and 5) or the piston and valve pin assembly (4a and 5a), regulating spring (3), valve (6) and adjustment knob (1) (plastic bonnet) or adjustment screw (brass bonnet). Operation of either diaphragm or piston type regulator is similar. The following description covers the diaphragm type regulator. For operation of piston type regulators, substitute the word "piston" wherever the word "diaphragm" appears in the description.

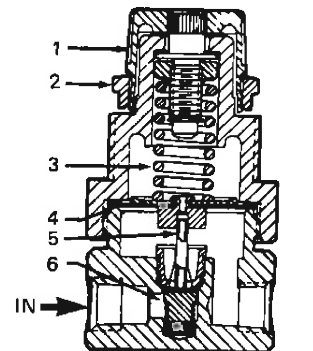
With the adjustment turned counterclockwise until no load is applied to the regulating spring, the valve is closed. When the adjustment is turned clockwise, a force is applied to the regulating spring which causes the diaphragm assembly to move downward and open the valve. The increase in secondary (regulated) pressure, acting against the lower (pressure) side of the diaphragm, creates a force tending to move the diaphragm assembly upward, compressing the regulating spring. The upward movement will continue until the force exerted by the pressure on the lower side of the diaphragm balances the spring force exerted on the upper side. If there is no downstream flow demand, this balance of forces will occur with the valve closed. If there is a flow demand, the balance of forces will occur with the valve open just the amount necessary to compensate for the demand, thus maintaining the desired pressure.

The relieving feature allows the outlet pressure setting to be reduced under dead end conditions. When the adjustment screw is turned counterclockwise, the force on the regulating spring is reduced, and the air pressure under the diaphragm (4 and 4a) moves the diaphragm upward. This upward movement of the diaphragm opens the relief passage and allows air to escape from the outlet side of the regulator through the valve pin (5 and 5a), and through the vent passage to atmosphere. As the outlet air pressure decreases to the reduced pressure setting, the diaphragm moves downward and closes the relief passage.

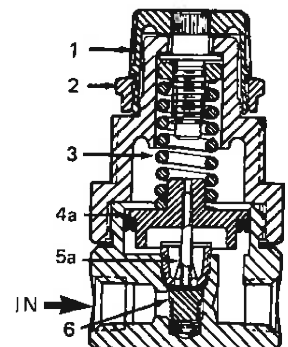
The diaphragm will likewise move upward in response to an increase in secondary pressure above the set point, allowing air to escape to atmosphere as described above. However, the flow capacity of the relief passage is limited, and depending upon the source of the overpressure condition, the outlet pressure might increase to a point significantly higher than the set pressure. For this reason, the relieving feature of a regulator must not be relied upon as an overpressure safety device. See WARNING note.

The nonrelieving regulator model does not have the relief passage in the diaphragm and will not vent the outlet air pressure as described above. Some other means of venting the outlet air pressure must be provided with a nonrelieving regulator in a dead end system.

Turn the adjusting knob or screw clockwise to increase secondary pressure, counter clockwise to decrease the pressure. On regulators with plastic bonnets, push outer ring (2) on adjusting knob downward to lock setting. To release, pull ring upward. To secure setting on regulators with brass bonnets, tighten locknut.



DIAPHRAGM TYPE (R06)



PISTON TYPE (R04)

## ORDER TABLE

Standard models normally available from distributor stock.

PIPE SIZE	ALUMINUM BODY – RELIEVING MODELS*		
	STANDARD—w/Gauge	OPTIONAL—w/Gauge	
	3 to 100 psig Range	2 to 50 psig Range	1 to 10 psig Range
1/8"	R06-100-RGK-AU	R06-100-RGE-AU	R06-100-RGA-AU
1/4"	R06-200-RGK-AU	R06-200-RGE-AU	R06-200-RGA-AU
BRASS BODY – RELIEVING MODELS*			
1/8"	R06-121-RGK-AU	R06-121-RGE-AU	R06-121-RGA-AU
1/4"	R06-221-RGK-AU	R06-221-RGE-AU	R06-221-RGA-AU
ALUMINUM BODY – RELIEVING MODELS*			
1/8"	R04-100-RGK-AU	R04-100-RGE-AU	R04-100-RGA-AU
1/4"	R04-200-RGK-AU	R04-200-RGE-AU	R04-200-RGA-AU

\*To order nonrelieving models, substitute "N" for "R" in the 7th position of the model number.

To order without gauge, substitute "N" for "G" in 8th position.

To order both brass body & brass bonnet, insert "22" for "00" in the 5th and 6th position.

## PARTS

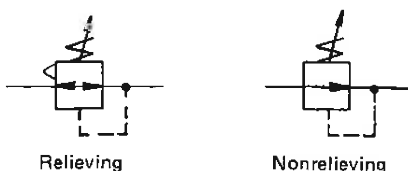
### REPAIR KITS

Diaphragm Type (R06)	
Relieving Model . . . . .	3407-02
Nonrelieving Model . . . . .	3407-01
Piston Type (R04)	
Relieving Model . . . . .	2961-02
Nonrelieving Model . . . . .	2961-01

## ACCESSORIES

	PLASTIC BONNET	BRASS BONNET
Mounting Bracket . . . . .	18-025-003	18-001-020
(Includes panel mounting nut)		
Panel Mounting Nut . . . . .	18-025-002	18-003-037
Tamper-Resistant Seal Wire . . . . .	2117-01	
(Installs into groove above red "Snap-Action" locking)		
Gauges:		
1/8" Center-back connection, 1-1/2" black metal case, plastic crystal, dual scale (psig and bar).		
0 to 30 psig range . . . . .	18-013-214	
0 to 60 psig range . . . . .	18-013-211	
0 to 160 psig range . . . . .	18-013-212	

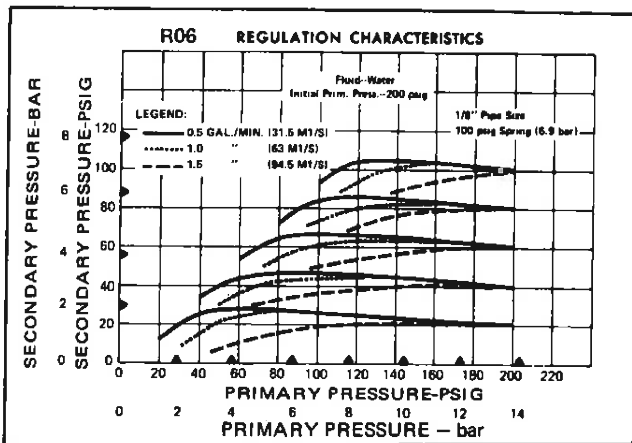
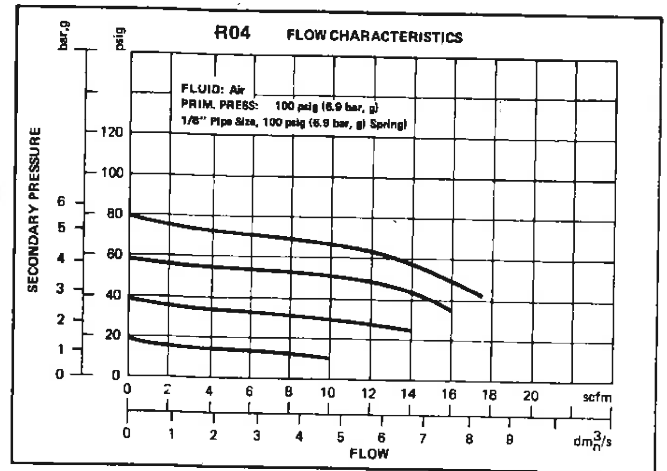
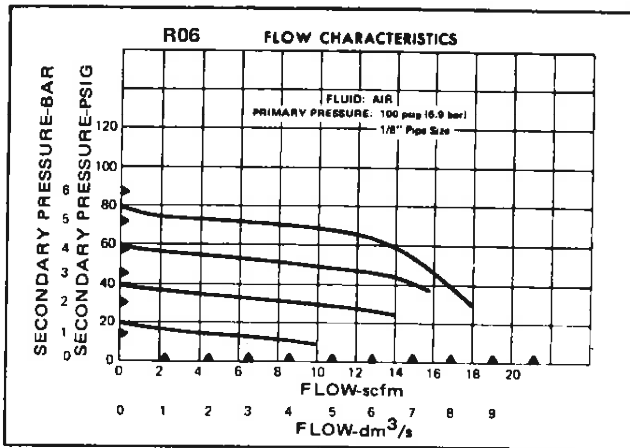
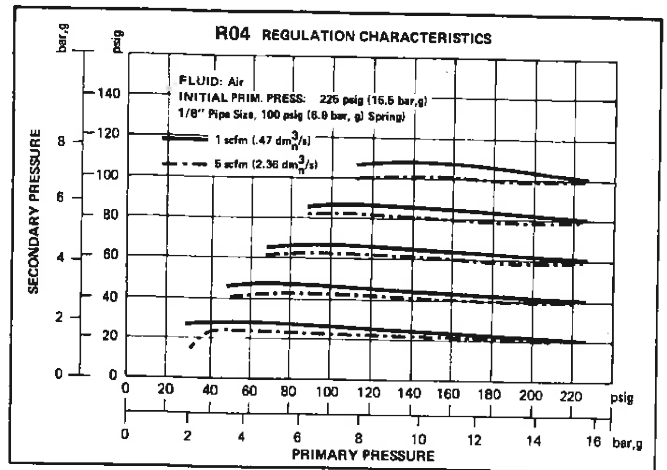
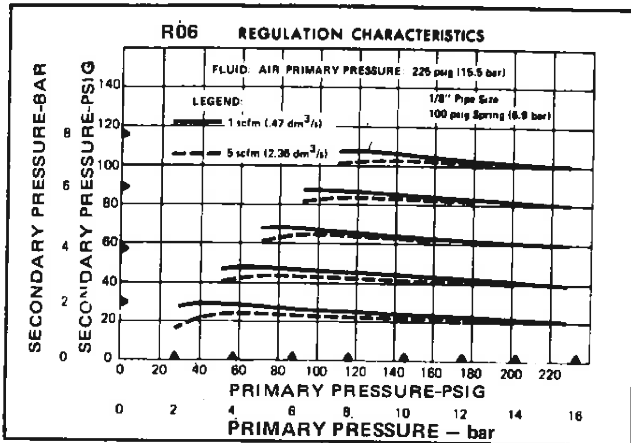
## GRAPHIC SYMBOLS



## MATERIALS OF CONSTRUCTION

Bonnet . . . . .	Acetal Resin or Brass
Body . . . . .	Aluminum or Brass
Valve Assembly . . . . .	Brass
Valve Seat . . . . .	Acetal Resin
Elastomers . . . . .	Buna-N
Piston . . . . .	Acetal Resin

# PERFORMANCE CHARACTERISTICS



## DIMENSIONS

All dimensions in inches (millimeters).

