

# 11-018 Precision Air Pressure Regulator

1/4" Port Size

**Fast response**

**Minimum overshoot during flow changes**

**Constant bleed feature provides maximum sensitivity to system changes**

**Relieving feature allows reduction of downstream pressure when the system is dead-ended**

## Technical data

Fluid:

Compressed air

**Note: 5 micron prefiltration and oil-free air required.**

**Inlet pressure range\***

Low Pressure Models: 8 to 150 psig (0.55 to 10.3 bar)

High Pressure Models: 10 to 200 psig (0.7 to 13.8 bar)

\* Inlet pressure must be at least 7 psig (0.5 bar) greater than the adjusted outlet pressure for proper operation.

**Operating temperature\*\*:**

32° to 160°F (0° to 70°C)

\*\* Air supply must be dry enough to avoid ice formation at temperatures below 35°F (2°C).

**Repeatability**

Low Pressure Models: 0.02 psig (0.001 bar) for flow change; 0.05 psig (0.004 bar) when turning supply off and on

High Pressure Models: 0.08 psig (0.006 bar) for flow change; 0.16 psig (0.011 bar) when turning supply off and on

**Constant bleed feature:** Under dead-end conditions, a small, constant bleed of pilot air will escape thru the relief passage in the bottom plug. This will be accompanied by a slight residual outlet pressure of 1 to 4 inches H<sub>2</sub>O (2.5 to 10 millibar).

**Gauge ports:**

1/4" PTF

**Materials**

Body and bonnet: Zinc

Main valve: Polycarbonate

Main valve seat: Teflon

Pilot valve: Stainless steel

Pilot valve seat: Aluminum

Main diaphragm: Nitrile

Pilot diaphragm

Low Pressure Models: 302 SS

High Pressure Models: Nitrile

Bottom plug: Brass

Elastomers: Nitrile, neoprene, polyurethane



## Ordering Information

Models listed have PTF threads, hand wheel adjustment, and relieving diaphragm. A gauge is not included.

Port Size	Outlet Pressure Adjustment Range*	Model Number	Flow scfm (dm <sup>3</sup> /s)	Weight lbs (kg)
1/4"	0.4 to 10 psig (0.03 to 0.69 bar)	11-018-146 (low pressure)	12 (5.66)†	1.4 (0.64)
1/4"	1.0 to 60 psig (0.1 to 4.1 bar)	11-018-100 (low pressure)	12 (5.66)†	1.4 (0.64)
1/4"	3 to 150 psig (0.2 to 10.3 bar)	11-018-110 (high pressure)	12 (5.66)††	1.4 (0.64)

\* Outlet pressure can be adjusted to pressures in excess of, and less than, those specified. Do not use these units to control pressures outside of the specified ranges.

† Typical flow with 100 psig (7 bar) inlet pressure, 60 psig (4.1 bar) set pressure and 0.125 psig (0.009 bar) droop from set.

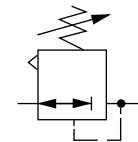
†† Typical flow with 200 psig (14 bar) inlet pressure, 60 psig (4.1 bar) set pressure and 0.250 psig (0.017 bar) droop from set.

## Service Kits

Type	Part number
Low Pressure Models	2787-01
High Pressure Models	2787-02
Special tool to install main valve seat	681-01

Service kit includes o-rings, seals, pilot diaphragm, pilot spring, main diaphragm, main valve seat, diffuser screen, constant bleed orifice and orifice filter

## ISO Symbols

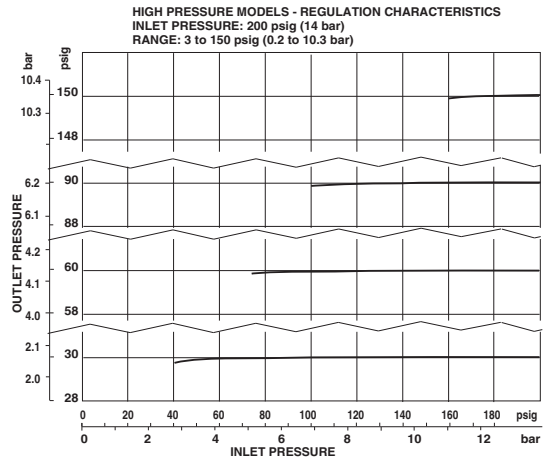
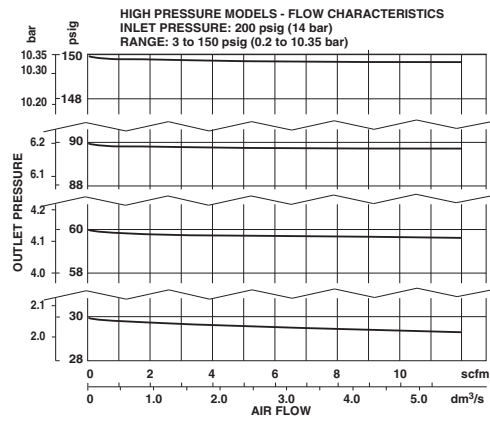
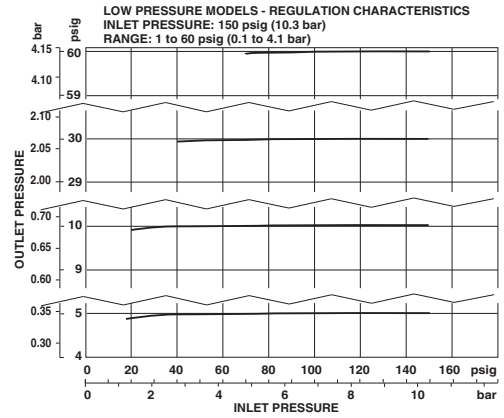
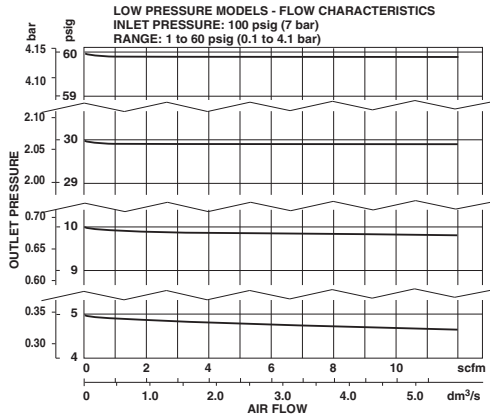


Relieving

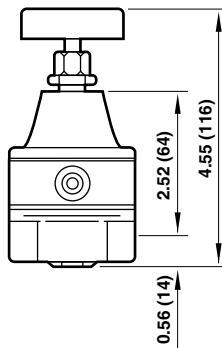
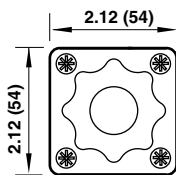
# 11-018 Precision Air Pressure Regulator

1/4" Port Size

## Typical Performance Characteristics



Panel mounting hole diameter: 0.47" (12 mm)  
 Maximum panel thickness: 0.094" (2.4 mm)



Dimensions in inches (mm)

# R38 Instrument Regulator and B38 Filter/Regulator

Aluminum Model 1/4" Port Size

Compact instrument units with high performance

Stable regulation with temperature compensation

Excellent flow and regulation characteristics

Panel Mounting facility

Technical data

Fluid:

Compressed air

Maximum pressure:

290 psig (20 bar)

Operating temperature:

-40° to 175°F (-40° to 80°C) \*

\* Air supply must be dry enough to avoid ice formation at temperatures below 35°F (2°C).

Typical relief differential at 30

psig (2 bar) outlet pressure:

2.3 psig (0.16 bar)

Maximum bleed flow at 30

psig (2 bar) outlet pressure

(relieving types only):

0.003 scfm (1.5 cm<sup>3</sup>/s)†

† Maximum bleed rate occurs under dead-end (no flow) conditions.

Gauge ports:

1/4 NPT

Materials

Body: Aluminum

Bonnet: Aluminum

Adjusting screw: Steel

Elastomeric materials: Nitrile



B38

R38

## Ordering Information

Models listed are relieving type with 0.6 to 30 psig (0.04 to 2 bar) outlet pressure adjustment range \*, and PTF threads. A gauge is not included.

Port Size	Model Number	Flow† scfm (dm <sup>3</sup> /s)	Weight lbs (kg)
1/4" PTF	R38-200-RNCA	17 (8)	1.06 (0.48)
1/4" PTF	B38-200-B2CA	17 (8)	1.18 (0.54)

\* Outlet pressure can be adjusted to pressures in excess of, and less than, those specified. Do not use these units to control pressures outside of the specified ranges.

† Typical flow with 100 psig (7 bar) inlet pressure, 15 psig (1 bar) set pressure and 1 psig (0.05 bar) droop from set.

## Service Kits

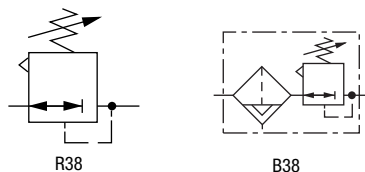
R38 Item	Type	Part number
30 psig (2 bar) Range	Relieving	R38-100-R
	Non relieving	R38-100-NR
60, 100 psig (4 bar, 7 bar) Range	Relieving	R38-101-R
	Non relieving	R38-101-NR

Service kit includes diaphragm assembly, o-ring, valve, valve spring and 8 pan head screws.

## B38 Filter Elements

B38-100A (5)	5 μm
B38-100A (25)	25 μm

## ISO Symbols



R38

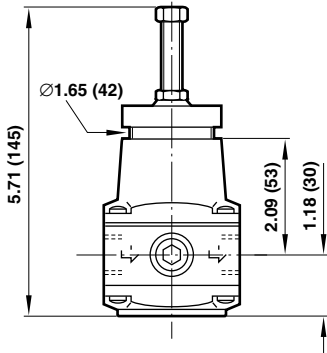
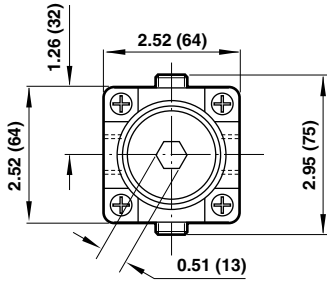
B38

All Dimensions in Inches (mm)

# R38 Instrument Regulator

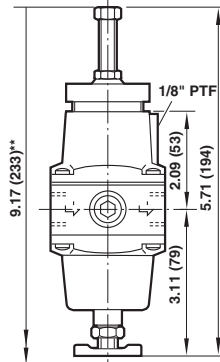
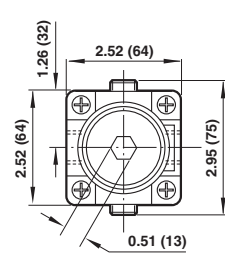
Aluminum Model 1/4" Port Size

R38



Panel mounting hole diameter: 1.65" (42 mm)  
Panel thickness: 0" to 0.24" (0 to 6 mm)

B38

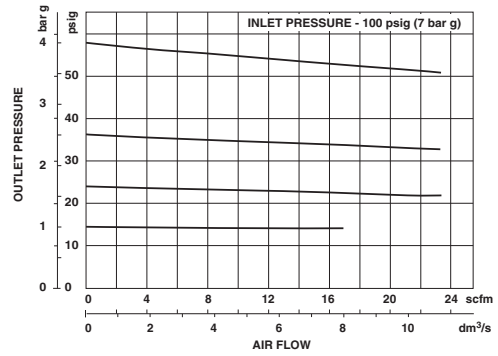


\*\* Minimum clearance required to remove bowl.  
Panel mounting hole diameter: 1.65" (42 mm)  
Maximum panel thickness: 0.24" (6 mm)

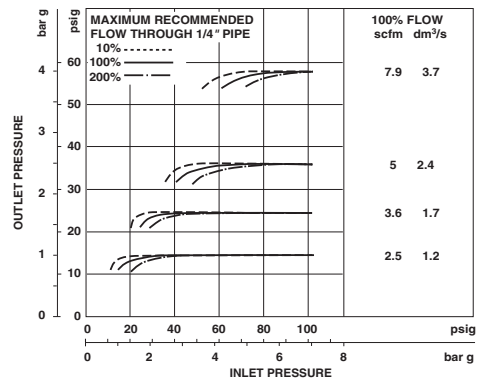
## Typical Performance Characteristics

R38

FLOW CHARACTERISTICS - PORT SIZE: 1/4"

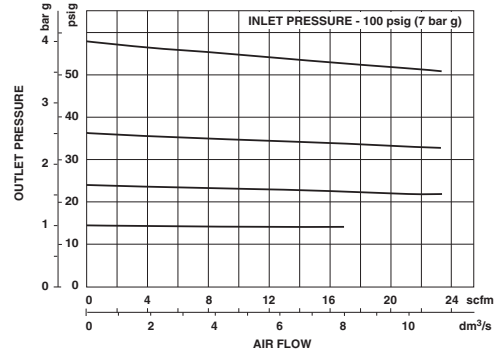


REGULATION CHARACTERISTICS - PORT SIZE: 1/4"

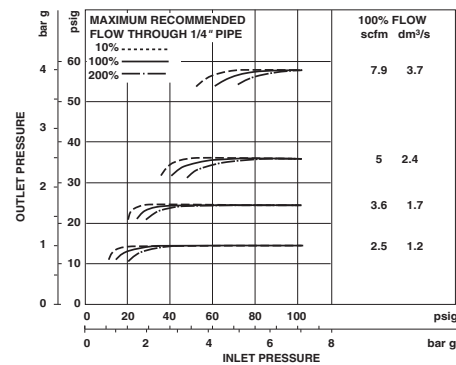


B38

FLOW CHARACTERISTICS - PORT SIZE: 1/4"



REGULATION CHARACTERISTICS - PORT SIZE: 1/4"



# R40, R41

## R40 Conventional Pilot Regulator, and R41 Feedback Pilot Regulator

1/4" Port Size

Pilot regulators are used to control the outlet pressure of a pilot operated regulator (ordered separately)

R41 can be close coupled to a 2" R18 pilot regulator

Conventional pilot regulator provides good pressure regulation, rapid response to changing flow demands, and excellent stability.

Feedback pilot regulator provides superior pressure regulation under changing flow demands where changes in flow demand are not sudden or cyclic.

Constant bleed feature provides maximum sensitivity to system changes



### Technical data

Fluid:

Compressed air

Inlet pressure range:

10 psig (0.7 bar) to 450 psig (31 bar) maximum

Operating temperature:

0° to 175°F (-20° to 80°C) \*\*

\*\* Air supply must be dry enough to avoid ice formation at temperatures below 35°F (2°C).

Maximum bleed rate at 50 psig (3.5 bar) outlet pressure:

0.25 scfm (0.12 dm<sup>3</sup>/s)†

†Maximum bleed rate occurs under dead-end (no flow) conditions.

Pilot ports:

1/4" PTF, ISO G, or ISO Rc

R41 feedback port: 1/8" PTF, ISO G, or ISO Rc

Materials

Body, bonnet: Aluminum

Valve: Teflon

Elastomers: Nitrile

### Ordering Information

Models listed are relieving with constant bleed, 10 to 250 psig (0.7 to 17 bar) outlet pressure adjustment range \*, PTF ports.

Port Size	Type	Model	Flow† scfm (dm <sup>3</sup> /s)	Weight lb (kg)
1/4"	Conventional Pilot	R40-200-BNSA	6.4 (3)	1.66 (0.75)
1/4"	Feedback Pilot	R41-204-BNSA††	6.4 (3)	1.66 (0.75)

† Typical flow with 100 psig (7 bar) inlet pressure, 90 psig (6.3 bar) set pressure and 15 psig (1 bar) droop from set.

†† Do not use the R41 feedback pilot regulator to control outlet pressures at or less than 100 psig (7 bar). Use the 11-104 feedback pilot regulator at those pressures.

### Alternative Models

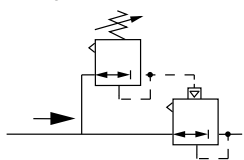
Type	Substitute	Threads	Substitute
R40 Conventional	40	PTF	A
R41 Feedback	41	ISO G parallel	G
Mounting/Type	Substitute	Outlet Pressure Adjustment Ranges*	Substitute
Remote/R40 Conventional	00	2 to 50 psig (0.1 to 3.5 bar) R40 only	E
Remote/R41 Feedback	04	5 to 125 psig (0.3 to 8.5 bar) R40 only	L
		10 to 250 psig (0.7 to 17 bar)	S

\* Outlet pressure can be adjusted to pressures in excess of, and less than, those specified. Do not use these units to control pressures outside of the specified ranges.

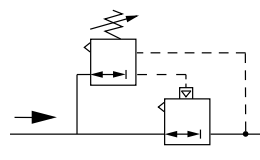
### Feedback Pilot Regulator Warning

The feedback line must sense the pilot operated regulator outlet pressure and must be connected before turning on the air supply. If the feedback line is not connected, the pilot operated regulator outlet pressure will rapidly increase to the inlet pressure when the adjusting knob on the pilot regulator is turned clockwise.

### ISO Symbols



R40 Conventional Pilot Regulator with Pilot Operated Regulator



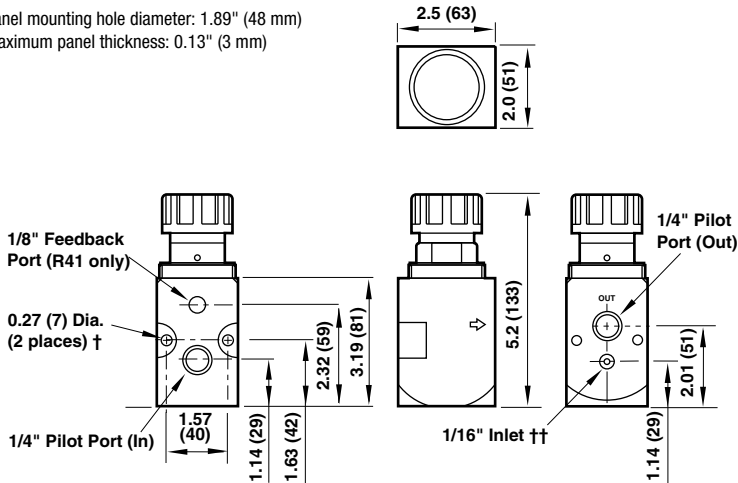
R41 Feedback Pilot Regulator with Pilot Operated Regulator

# R40, R41

## R40 Conventional Pilot Regulator, and R41 Feedback Pilot Regulator

### 1/4" Port Size

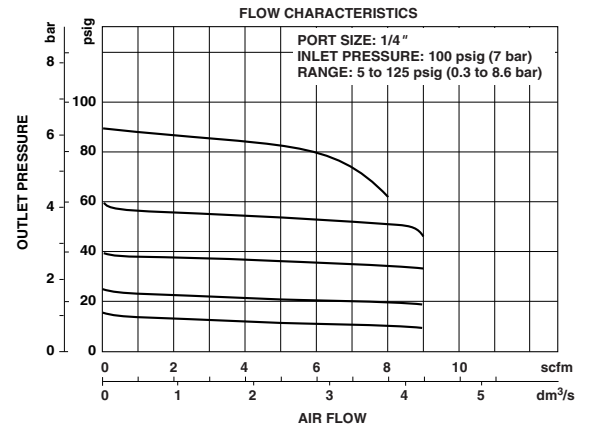
Panel mounting hole diameter: 1.89" (48 mm)  
Maximum panel thickness: 0.13" (3 mm)



† Mounting holes for subbase mounting.  
†† Air inlet for subbase mounting.

Dimensions in inches (mm)

### Typical Performance Characteristics



### Service Kits

Type	Part number
R40, R41	5945-41

Service kit contains diaphragm, valve spring, guide bushing, valve, valve spring, filter screen, and all o-rings.

# 11-400, 20AL

## Conventional Pilot Regulators

1/4" Port Size

Pilot regulators are used to control the outlet pressure of a pilot operated regulator (ordered separately)

The pilot regulator is installed in an accessible location in the compressed air system; pilot operated regulator is installed at any point without regard to accessibility

Conventional pilot regulator provides good pressure regulation, rapid response to changing flow demands, and excellent stability.

Constant bleed feature provides maximum sensitivity to system changes

Relief feature allows reduction of downstream pressure when the system is dead-ended

### Technical data

Fluid:

Compressed air filtered to 5µm

Maximum inlet pressure:

360 psig (25 bar)

Operating temperature:

0° to 175°F (-20° to 80°C) \*

\* Air supply must be dry enough to avoid ice formation at temperatures below 35°F (2°C).

Typical flow: with 100 psig (7 bar) inlet pressure, 23 psig (1.6 bar) set pressure and 1.5 psig (0.1 bar) droop from set: 4.2 scfm (2 dm<sup>3</sup>/s)

Gauge ports:

1/8" PTF

Materials:

Body, bonnet: Zinc

Elastomers: Nitrile



### Ordering Information.

Models listed are relieving with constant bleed, PTF threads, without gauge.

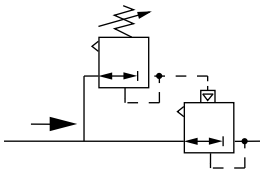
Port Size	Model Number	Range psig (bar)	Weight lbs (kg)
1/4"	11-400-2G/AC103	1 to 30 (0.06 to 2)	1.98 (0.90)
1/4"	11-400-2G/AE103	1 to 60 (0.06 to 4)	2.07 (0.94)
1/4"	11-400-2G/AG103	2 to 100 (0.16 to 7)	2.2 (1.00)
1/4"	20AL-X2G/AK103	100 to 300 (7 to 20)	2.3 (1.05)

### Service Kits

Type	Part number
11 400-20AL-X	11 400-100/20AL

Service kit includes: diaphragm assemblies, valve assembly, valve spring o-rings and valve seats for pilots.

### ISO Symbol



Conventional Pilot Regulator  
with Pilot Operated Regulator

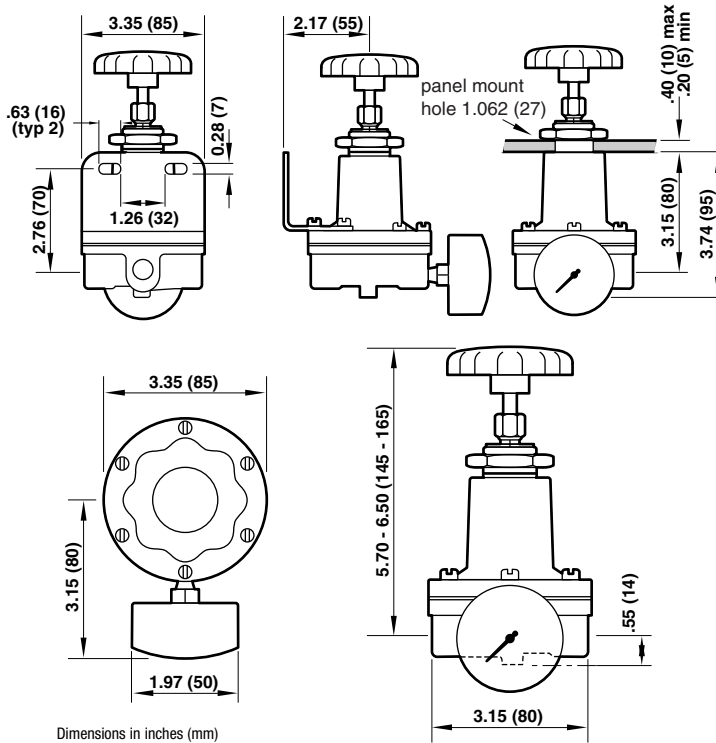
# 11-400, 20AL

## Conventional Pilot Regulators

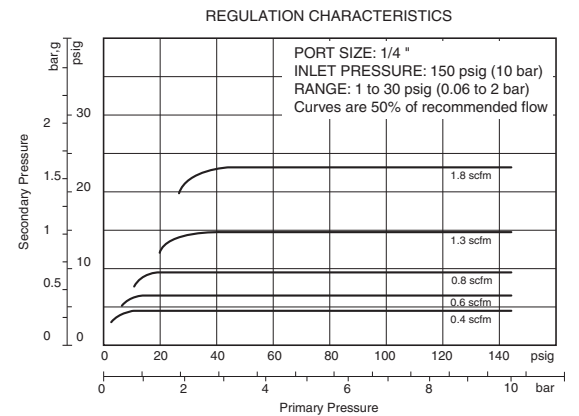
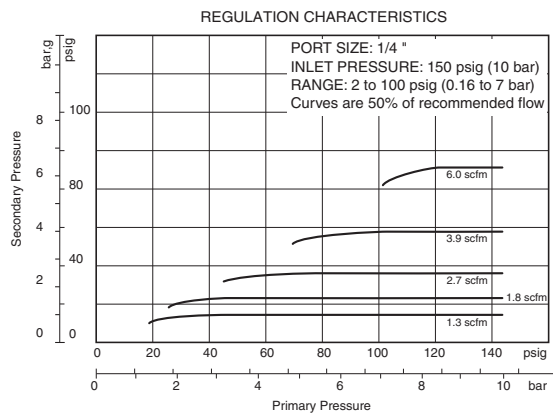
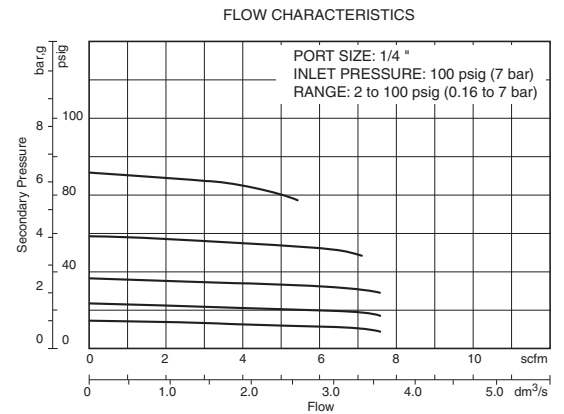
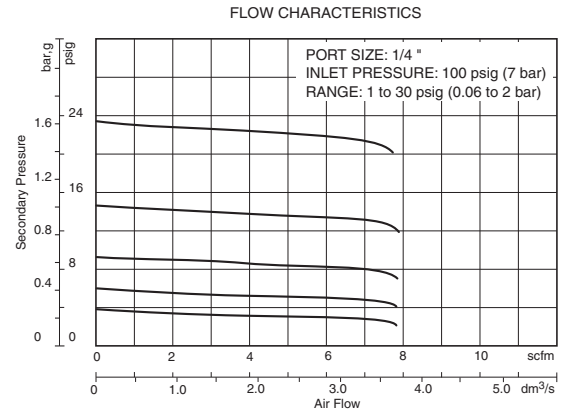
1/4" Port Size

### Mounting Dimensions

(Shown with optional gauge and mounting bracket)



### Typical Performance Characteristics



# 11-104

## Feedback Pilot Regulator

1/4" Port Size

Pilot regulators are used to control the outlet pressure of a pilot operated regulator (ordered separately)

The pilot regulator is installed in an accessible location in the compressed air system; pilot operated regulator is installed at any point without regard to accessibility

Feedback pilot regulator provides superior pressure regulation under changing flow demands where changes in flow demand are not sudden or cyclic.

Constant bleed feature provides maximum sensitivity to system changes

Relief feature allows reduction of downstream pressure when the system is dead-ended

### Technical data

Fluid:

Compressed air

Inlet pressure range:

10 psig (0.7 bar) to 400 psig (27.6 bar) maximum

Operating temperature:

0 to 175°F (-20° to 80°C) \*

\* Air supply must be dry enough to avoid ice formation at temperatures below 35°F (2°C).

Maximum bleed rate at 50 psig (3.5 bar) outlet pressure:

0.25 scfm (0.12 dm<sup>3</sup>/s)†

†Maximum bleed rate occurs under dead-end (no flow) conditions.

Pilot ports:

1/4" PTF

Feedback port:

1/8" PTF

Materials

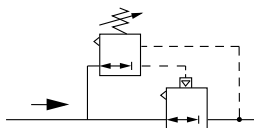
Body, bonnet: Zinc

Valve seat: Brass

Valve ball: Stainless steel

Elastomers: Nitrile

ISO Symbols



11-104 Feedback Pilot Regulator with Pilot Operated Regulator



### Ordering Information.

Model listed is relieving, constant bleed, 5 to 100 psig (0.3 to 7 bar) outlet pressure adjustment range†, with PTF ports.

Port Size	Type	Model	Weight lb (kg)	Pressure psig (bar)
1/4" PTF	Feedback Pilot	11-104-001	3.38 ( 1.53)	5-105 (.3-7)
1/4" PTF	Feedback Pilot	11-104-002	3.38 ( 1.53)	50-250 (3-17)

† Outlet pressures can be adjusted to pressures in excess or, and less than, those specified. Do not use these units to control pressures outside of the specified ranges.

### Service Kits

Type	Part number
11-104	1970-11

Service kit includes: diaphragm assemblies, valve assembly, valve spring o-rings and valve seats for pilots.

### Feedback Pilot Regulator Warning

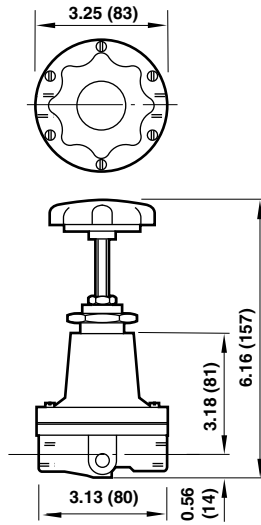
The feedback line must sense the pilot operated regulator outlet pressure and must be connected before turning on the air supply. If the feedback line is not connected, the pilot operated regulator outlet pressure will rapidly increase to the inlet pressure when the adjusting knob on the pilot regulator is turned clockwise.

**11-104**

**Feedback Pilot Regulator**

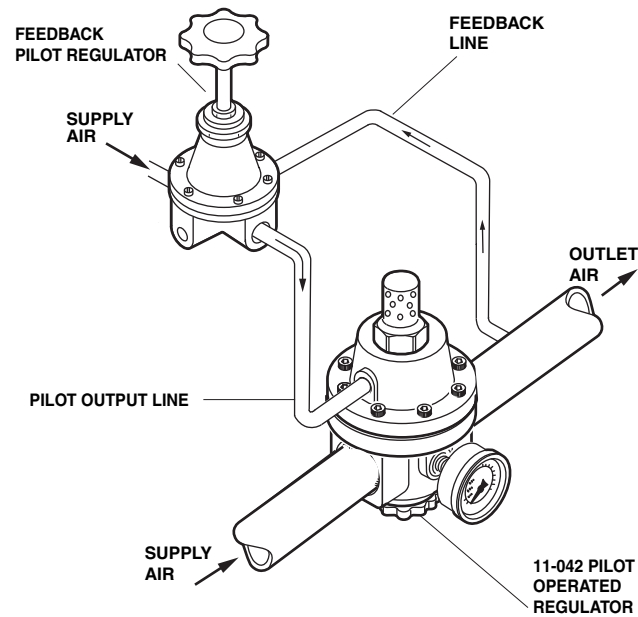
1/4" Port Size

Panel mounting hole diameter: 1.06" (27 mm)  
 Maximum panel thickness: 0.38" (10 mm)



Dimensions inches (mm)

Typical installation



# Pilot Operated Regulators

## 11-042 and 11-008

Designed for systems that require pressure regulation at an inaccessible location.

A pilot regulator (ordered separately) controls the outlet pressure of the pilot operated regulator.

### Technical data

Fluid:

Compressed air

Inlet pressure range:

10 psig (0.7 bar) to 400 psig (27.6 bar)

Operating temperature:

0° to 175°F (-20° to 80°C) \*\*

\*\* Air supply must be dry enough to avoid ice formation at temperatures below 35°F (2°C).

### Materials

11-042

Body: zinc

Bonnet: aluminum

Bottom plug: acetal

Valve: brass

Elastomers: nitrile

Port sizes

Main	Gauge	Pilot	Exhaust
1/4"	1/4"	1/4"	3/4"
3/8"	3/8"	1/4"	3/4"
1/2", 3/4", 1", 1-1/4"	1/2"	1/4"	3/4"

11-008

Body: zinc

Bonnet: aluminum

Bottom plug:

1/2", 3/4 ports: brass

1" ports: glass filled nylon

Valve: brass

Elastomers: nitrile



11-042



11-008  
Constant bleed type

### 11-042 and 11-008 Pilot Operated Regulator Ordering Information

Models listed include relieving diaphragm and PTF threads. Also order a pilot regulator.

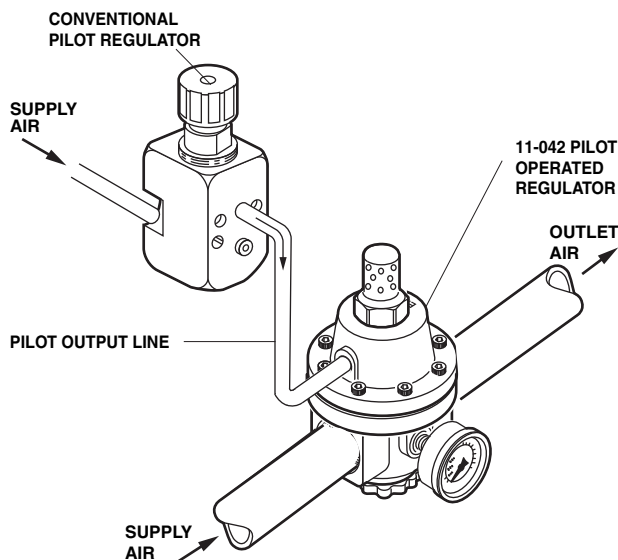
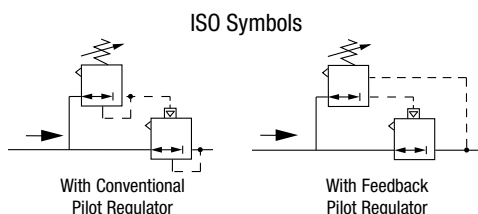
Port Size	Model	Flow* scfm (dm <sup>3</sup> /s)	Weight lb (kg)
1/4"	11-042-001	120 (57)	2.8 (1.3)
3/8"	11-042-002	120 (57)	2.7 (1.2)
1/2"	11-042-003	120 (57)	2.6 (1.2)
3/4"	11-042-007	300 (142)	4.8 (2.2)
1"	11-042-008	300 (142)	4.6 (2.1)
1-1/4"	11-042-009	300 (142)	4.3 (2.0)
1/2"	11-008-130	70 (33)	1.6 (0.7)
3/4"	11-008-009	110 (52)	4.9 (2.2)
1"	11-008-110	180 (85)	4.6 (2.1)

\* Typical flow with 100 psig (0.7 bar) inlet pressure, 90 psig (6.3 bar) set pressure and a droop of 5 psig (0.35 bar) from set.

For additional models contact the factory

### Feedback Pilot Regulator Warning

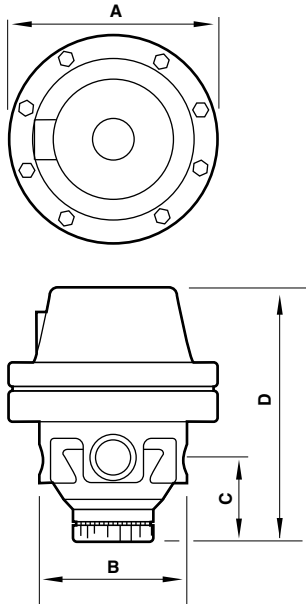
The feedback line must sense the pilot operated regulator outlet pressure and must be connected before turning on the air supply. If the feedback line is not connected, the pilot operated regulator outlet pressure will rapidly increase to the inlet pressure when the adjusting knob on the pilot regulator is turned clockwise.



# Pilot Operated Regulators

11-042 and 11-008

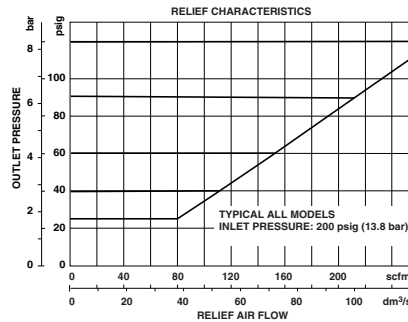
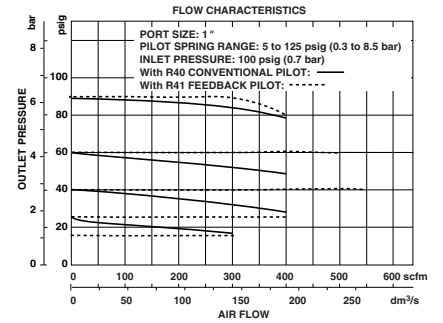
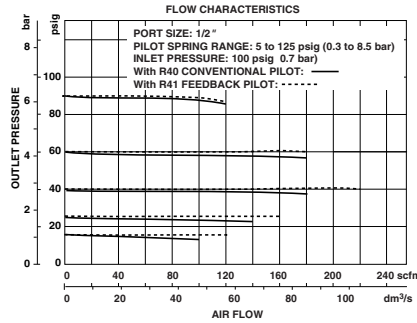
11-042



Port Size	A	B	C	D
1/4", 3/8", 1/2"	4.16 (106)	2.71 (69)	1.48 (38)	5.07 (129)
3/4", 1", 1-1/4"	4.16 (106)	3.65 (93)	1.86 (47)	5.97 (152)

Dimensions in inches (mm)

## Typical Performance Characteristics

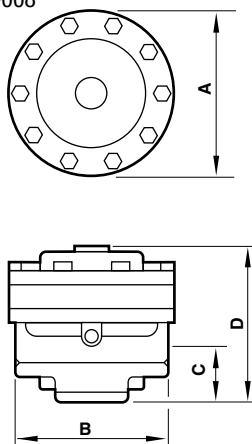


## 11-042 Service Kits

Type	Part number
Kit for 1/4", 3/8", 1/2" units	4158-01
Kit for 3/4", 1", 1-1/4" units	4158-02
O-ring kit for 1/4", 3/8", 1/2" units	4158-03
O-ring kit for 3/4", 1", 1-1/4" units	4158-04

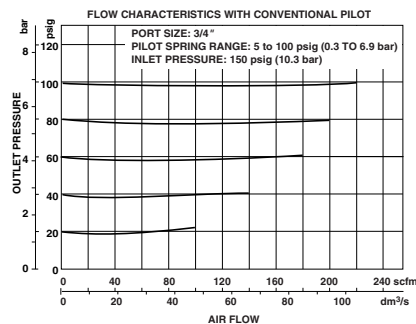
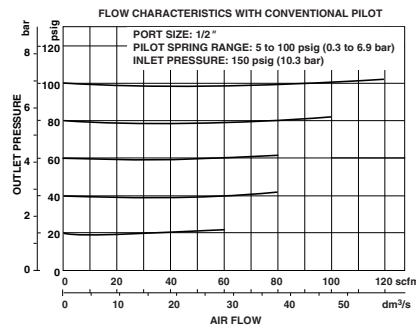
Kit contains filter screen, diaphragm, and all o-rings.  
 O-ring kit contains filter screen and all o-rings.

11-008



Port Size	A	B	C	D
1/2"	3.34 (85)	3.38 (86)	1.50 (38)	3.30 (84)
3/4", 1"	4.91 (125)	4.63 (118)	1.69 (43)	4.36 (111)

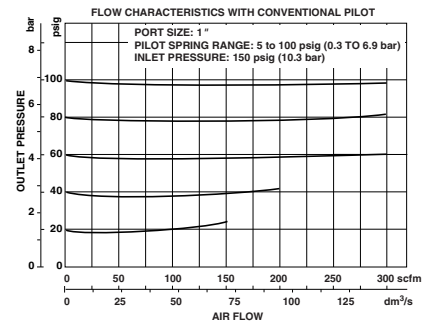
Dimensions in inches (mm)



## 11-008 Service Kits

Type	Part number
1/2" ported units	695-01
3/4", 1" ported units	696-01

Kit contains diaphragm, valve, and all o-rings.



# Pilot Operated Regulators

## R18 and R24

Designed for systems that require pressure regulation at an inaccessible location.

A pilot regulator (ordered separately) controls the outlet pressure of the pilot operated regulator.

### Technical data

R18

Fluid:

Compressed air

Inlet pressure range:

10 psig (0.7 bar) minimum to 450 psig (31 bar) maximum

Operating temperature:

0° to 175°F (-18° to 80°C)\*

\* Air supply must be dry enough to avoid ice formation at temperatures below 35°F (2°C).

R24

Fluid:

Compressed air

Inlet pressure range:

10 psig (0.7 bar) to 300 psig (20 bar)

Operating temperature:

0° to 175°F (-20° to 80°C)\*\*

\*\* Air supply must be dry enough to avoid ice formation at temperatures below 35°F (2°C).

### Materials

R18

Body, bonnet, bottom plug, valve:

Aluminum

Elastomers: Nitrile

R24

Body, top cap: zinc

main valve, adjusting screw: brass

pilot valve, relief valve: acetal

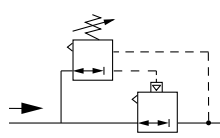
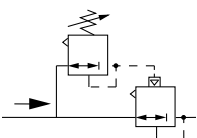
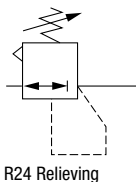
Elastomers: nitrile

Bottom plug: acetal

Port sizes

Main	Gauge	Pilot
1/4"	1/4"	1/4"
3/8"	3/8"	1/4"
1/2", 3/4", 1", 1-1/4"	1/2"	1/4"

### ISO Symbols



R18



R24

### Ordering Information

Models listed include relieving diaphragm and PTF threads. Also order a pilot regulator.

Port Size	Model	Flow† scfm (dm <sup>3</sup> /s)	Weight lb (kg)
1-1/2"	R18-B00-RNXA††	2000 (944)	6.82 (3.09)
2"	R18-C00-RNXA††	2000 (944)	6.61 (2.99)
1/4"	R24-201-RNXA		1.16 (0.73)
3/8"	R24-301-RNXA		1.54 (0.70)
1/2"	R24-401-RNXA		1.50 (0.68)
3/4"	R24-601-RNXA		2.60 (1.18)
1"	R24-801-RNXA		2.60 (1.18)
1-1/4"	R24-A01-RNXA††		2.51 (1.14)

† Typical flow with 100 psig (0.7 bar) inlet pressure, 90 psig (6.3 bar) set pressure and a droop of 15 psig (1 bar) from set.

†† Do not use the R41 feedback pilot regulator to control outlet pressures at or less than 100 psig (7 bar). Use the 11-104 feedback pilot regulator at those pressures.

### Alternative Models - R18

R18-★00-★X★

Port Size	Substitute	Threads	Substitute
1-1/2"	B	PTF	A*
2"	C	ISO G parallel	G

Diaphragm	Substitute	Gauge*	Substitute
Relieving	R	Without	N
Non relieving (do not use with a feedback pilot regulator)	N		

\* A factory installed gauge is only available with PTF threads (A in last position of model number). For additional options see the website for this product.

### Alternative Models - R24

R24-★01-RNX★

Port Size	Substitute	Threads	Substitute
1/4"	2	PTF	A
3/8"	3	ISO G parallel	G
1/2"	4		
3/4"	6		
1"	8		
1-1/4"	A		

### Feedback Pilot Regulator Warning

The feedback line must sense the pilot operated regulator outlet pressure and must be connected before turning on the air supply. If the feedback line is not connected, the pilot operated regulator outlet pressure will rapidly increase to the inlet pressure when the adjusting knob on the pilot regulator is turned clockwise.

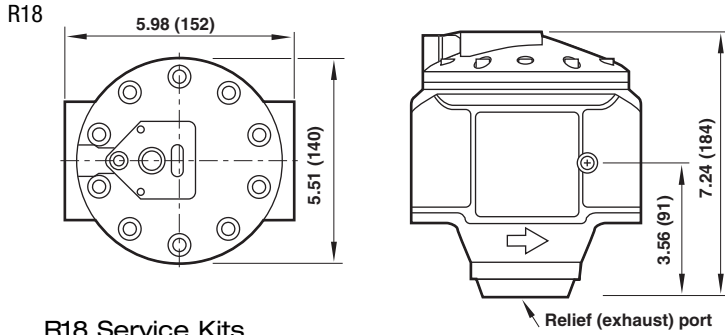
**NOTE:** Do not use the R41 feedback pilot regulator to control outlet pressures at or less than 100 psig (7 bar). Use the 11-104 feedback pilot regulator at those pressures.

# Pilot Operated Regulators

R18 and R24

Dimensions in inches (mm)

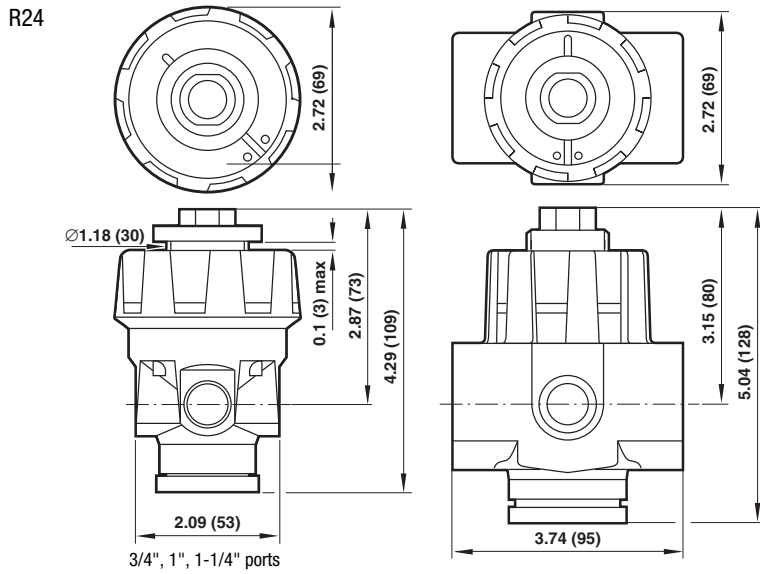
## Typical Performance Characteristics



### R18 Service Kits

Type	Part number
R18	5945-40

R18 service kit contains filter screen and all o-rings.



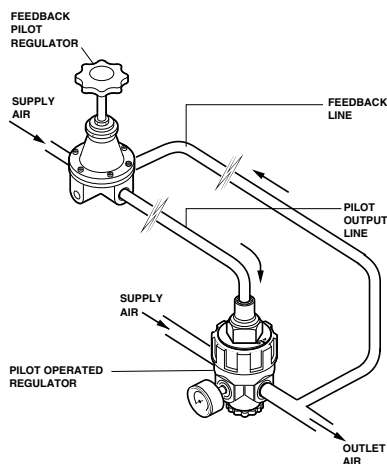
### R24 Service Kits

Item	Port Size	Part number
Service kit	1/4", 3/8", 1/2"	5292-54
Service kit	3/4", 1", 1-1/4"	5292-55

Service kits include seals, main valve and spring.

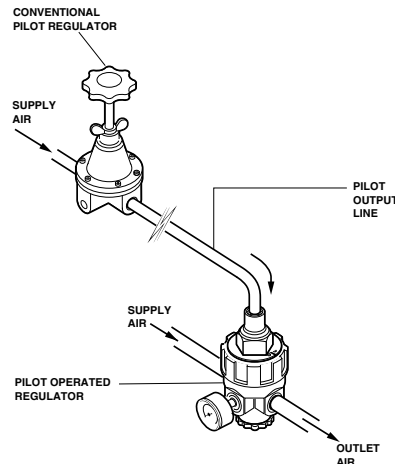
### Typical Installation

Feedback Pilot and Pilot Operated Regulator

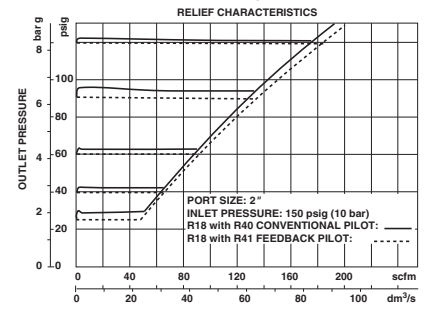
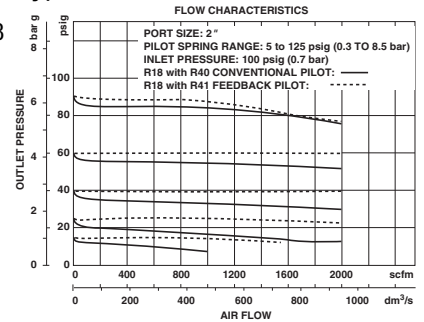


### Typical Installation

Conventional Pilot and Pilot Operated Regulator



R18



R24

