

# Pilot Operated Regulators

1/4" to 2" port sizes.

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R24



11-042



11-008



R18

**Pilot Operated Regulator  
1/4", 3/8", 1/2", 3/4", 1" and 1-1/4" Port Sizes**

- Designed for systems that require high flow or pressure regulation at an inaccessible location.
- A pilot regulator (ordered separately) controls the outlet pressure of the pilot operated regulator.
- For general purpose applications, order an R72 or R07 pilot regulator.
- For precision applications, order an R40, R41, or 11-104 pilot regulator.
- Exceptionally high relief flow.


**11-042 Pilot Operated Regulator Ordering Information**

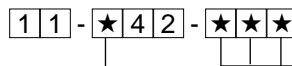
Models listed include relieving diaphragm and PTF threads. Also order a pilot regulator.

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)

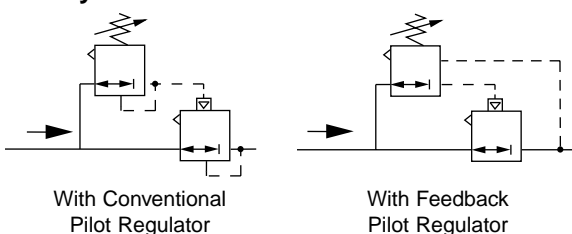
\* Typical flow with 100 psig (0.7 bar) inlet pressure, 90 psig (6.3 bar) set pressure and a droop of 5 psig (0.35 bar) from set.

**11-042 Alternative Models**

Threads	Substitute
PTF	0
ISO G parallel	8
ISO G Rc	9



With Gauge	Substitute
1/4" main ports	004
3/8" main ports	005
1/2" main ports	006
3/4" main ports	010
1" main ports	011
1-1/4" main ports	012

**ISO Symbols**

**Warning - Feedback Pilot Regulators**

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

**See Section ALE-25 for Accessories**



**Technical Data**

Fluid: Compressed air

Inlet pressure range: 10 psig (0.7 bar) to 400 psig (27.6 bar) \*

\* For best performance, inlet pressure should be at least 10 psig (0.7 bar) greater than the desired regulated pressure, but must not exceed the specified 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).

Typical flow with a conventional pilot regulator at 100 psig (6.9 bar) inlet pressure,

90 psig (6.3 bar) set pressure, and a droop of 5 psig (0.35 bar) from set:

1/2" ports: 120 scfm (57 dm<sup>3</sup>/s)

1" ports: 300 scfm (142 dm<sup>3</sup>/s)

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"

Thread type

Main and gauge ports: PTF, ISO G, or ISO Rc

Pilot port: PTF with PTF main ports, ISO G with ISO G and ISO Rc main ports

Exhaust port: PTF with PTF main ports, ISO G with ISO G and ISO Rc main ports

Materials

Body: Zinc

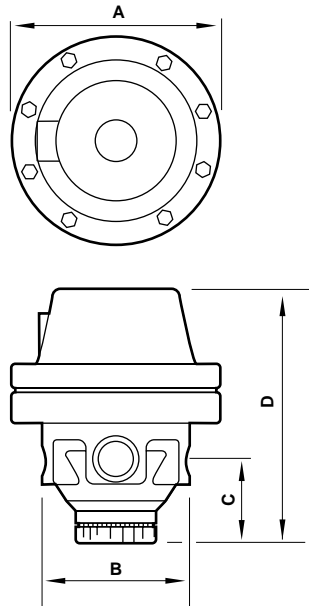
Bonnet: Aluminum

Bottom plug: Acetal

Valve: Brass

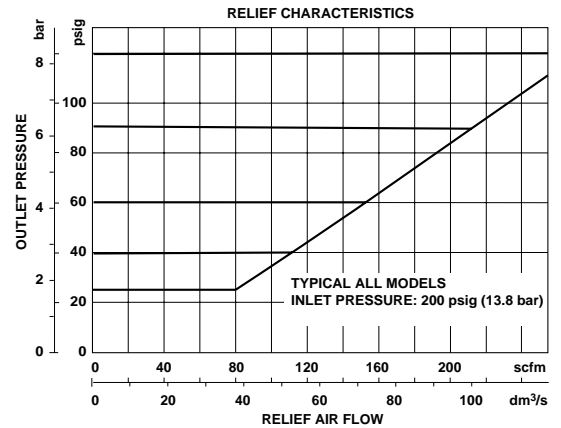
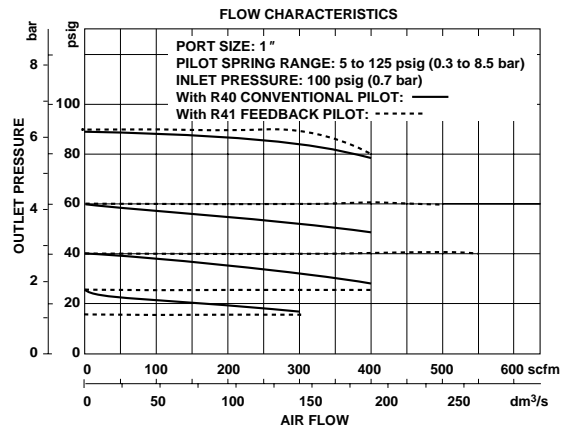
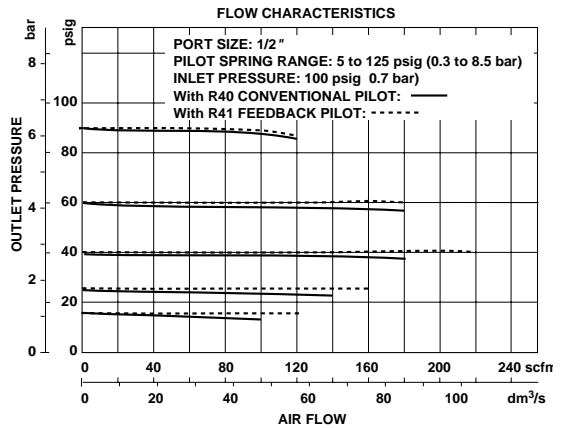
Elastomers: Nitrile

All Dimensions in Inches (mm)



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)

**Typical Performance Characteristics**



**Service Kits**

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

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

**Pilot Operated Regulator  
1/2", 3/4" and 1" Port Sizes**

- 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.
- For general purpose applications, order an R72 or R07 pilot regulator.
- For precision applications, order an R40, R41, or 11-104 pilot regulator.
- Constant bleed feature provides quick maximum sensitivity to system changes


**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)
1/2"	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)

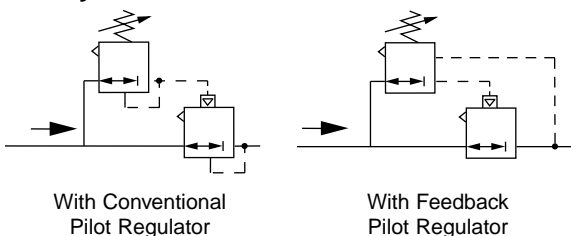
\* Typical flow with a conventional pilot at 150 psig (10.3 bar) inlet pressure, 100 psig (6.9 bar) set pressure and a droop of less than 5 psig (0.35 bar) from set.

**Alternative Models**

Threads	Substitute
PTF	0
ISO G parallel	8
ISO G Rc	9

11 - ★ 0 8 - ★ ★ ★

With 150 psig (10 bar) Gauge	Substitute
1/2" main ports	142
3/4" main ports	021
1" main ports	122

**ISO Symbols**

**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.

**See Section ALE-25 for Accessories**



**Technical Data**

Fluid: Compressed air

Inlet pressure range: 10 psig (0.7 bar) to 400 psig (27.6 bar)\*

\* For best performance, inlet pressure should be at least 10 psig (0.7 bar) greater than the desired regulated pressure, but must not exceed the specified 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).

Typical flow with a conventional pilot regulator at 150 psig (10.3 bar) inlet pressure, 100 psig (6.9 bar) set pressure, and a droop of less than 5 psig (0.35 bar) from set:

1/2" ports: 70 scfm (33 dm<sup>3</sup>/s)

3/4" ports: 110 scfm (52 dm<sup>3</sup>/s)

1" ports: 180 scfm (85 dm<sup>3</sup>/s)

Maximum bleed rate at 50 psig (3.5 bar) outlet pressure: 0.34 scfm (0.16 dm<sup>3</sup>/s)†

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

Port sizes

Main: 1/2", 3/4", 1"

Gauge: 1/8"

Pilot: 1/4"

Thread type

Main and gauge ports: PTF, ISO G, or ISO Rc

Pilot port: PTF with PTF main ports, ISO G with ISO G and ISO Rc main ports

Materials

Body: Zinc

Bonnet: Aluminum

Bottom plug:

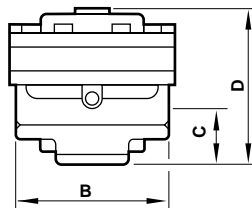
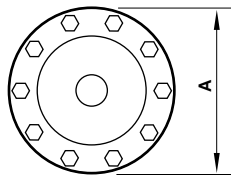
1/2", 3/4 ports: Brass

1" ports: Glass filled nylon

Valve: Brass

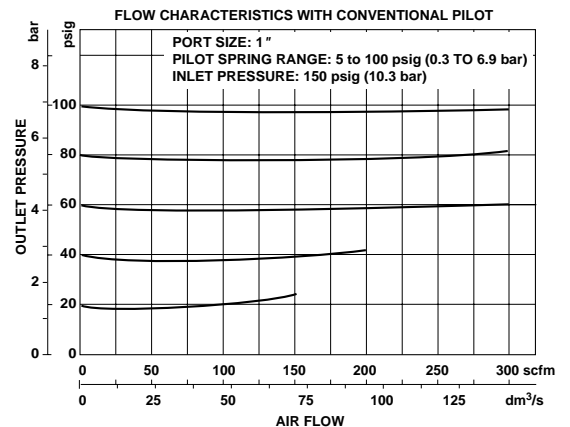
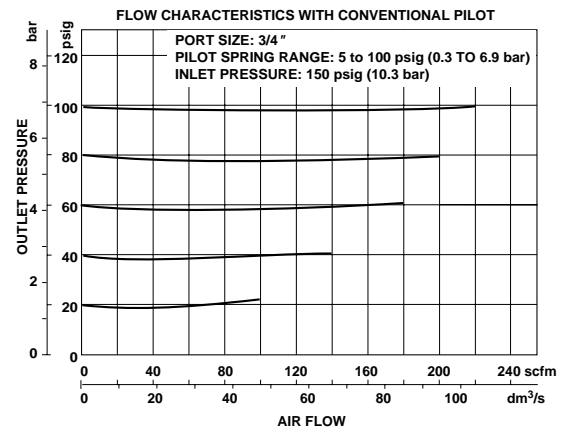
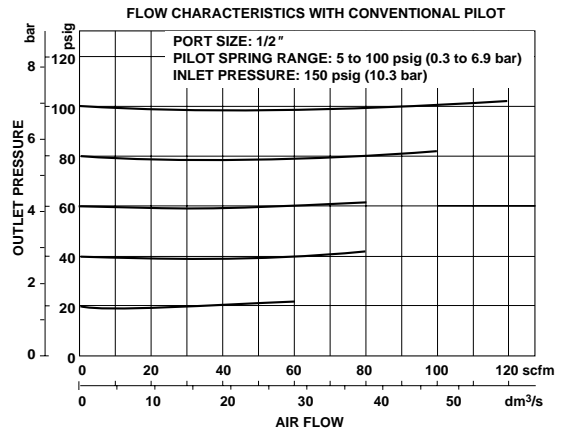
Elastomers: Nitrile

All Dimensions in Inches (mm)



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)

**Typical Performance Characteristics**



**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.

**18 Series Pilot Operated Regulator  
1-1/2" and 2" Port Sizes**

- Designed for systems that require high flow or pressure regulation at an inaccessible location.
- A pilot regulator (ordered separately) controls the outlet pressure of the pilot operated regulator.
- For general purpose applications, order an R72 or R07 pilot regulator.
- For precision applications, refer to R40, R41, or 11-104 pilot regulator (ALE-9).
- Exceptionally high relief flow.



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

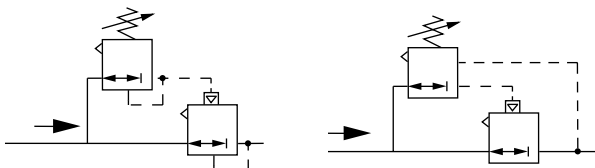
Port Size	Model	Flow <sup>*</sup> scfm (dm <sup>3</sup> /s)	Weight lb (kg)
1-1/2"	R18-B00-RNXA	2000 (944)	6.82 (3.09)
2"	R18-C00-RNXA	2000 (944)	6.61 (2.99)

\* 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.

**Alternative Models - R18**

Port Size	Substitute	Threads	Substitute
1-1/2"	B	PTF	A
2"	C	ISO Rc taper	B
		ISO G parallel	G
Diaphragm	Substitute	Gauge	Substitute
Relieving	R	With	G
Non relieving (do not use with a feedback pilot regulator)	N	Without	N

R 1 8 - ★ 0 0 - ★ ★ X ★

**ISO Symbols**


R18 with Conventional Pilot Regulator

R18 with Feedback Pilot Regulator

**Warning - Feedback Pilot Regulators**

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

**See Section ALE-25 for Accessories**



## Technical Data

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).

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:  
2000 scfm (950 dm<sup>3</sup>/s)

Main ports: 1-1/2" or 2" PTF, ISO G, or ISO Rc

Pilot and gauge ports: 1/4" PTF, ISO G, or ISO Rc

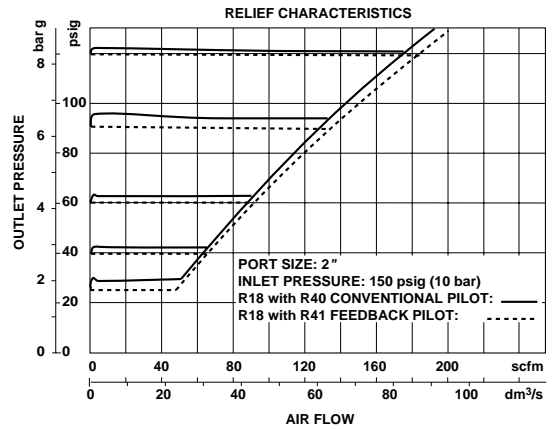
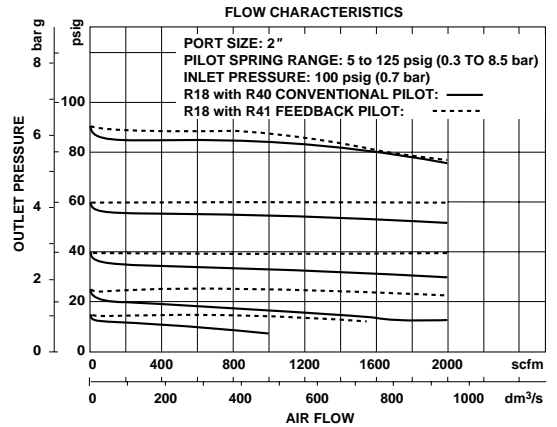
Exhaust port: 3/4" PTF, ISO G, or ISO Rc

Materials

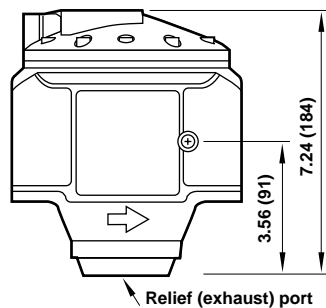
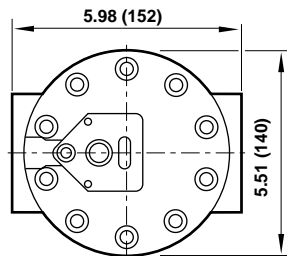
Body, bonnet, bottom plug, valve: Aluminium

Elastomers: Nitrile

## Typical Performance Characteristics



All Dimensions in Inches (mm)



## Service Kits

Type	Part number
R18	5945-40

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

Pilot Operated 'Micro Trol'  
Regulator 1/4" to 1-1/4"

- High flow and relief flow characteristics
- Easy to adjust even at high output pressures
- Balanced valve minimizes effect of variations in inlet pressure on outlet pressure
- Relieving feature allows outlet pressure reduction even when the system is dead ended
- Full flow gauge ports
- Panel mounting facility



**Ordering Information.** Models listed are constant bleed units with relieving diaphragm, and PTF threads. A gauge is not included. Also order a pilot operator.

Port Size	Model	Weight lb (kg)
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)

**Alternative Models**

R 2 4 - ★ ★ ★ - ★ ★ ★ ★

Port Size	Substitute
1/4"	2
3/8"	3
1/2"	4
3/4"	6
1"	8
1-1/4"	A

Option	Substitute
Not applicable	0

Type	Substitute
Pilot operated	1

Threads	Substitute
PTF	A
ISO Rc taper	B
ISO G parallel	G

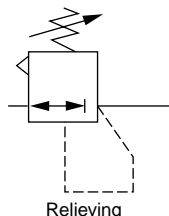
Spring	Substitute
None	X

Gauge	Substitute
With	G
Without	N

Diaphragm	Substitute
Relieving	R

\* A factory installed gauge is only available with PTF threads (A in last position of model number). If a gauge is desired with ISO threads (B or G in last position), order the desired gauge and appropriate reducing bushing from **Accessories** on page 3.

**ISO Symbol**



**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.

**See Section ALE-25 for Accessories**



## Technical Data

Fluid: Compressed air

Inlet pressure range: 10 psig (0.7 bar) to 300 psig (20 bar)\*

\* For best performance, inlet pressure should be at least 10 psig (0.7 bar) greater than the desired regulated pressure, but must not exceed the specified 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).

Typical flow with 150 psig (10 bar) inlet pressure, 90 psig (6.3 bar) set pressure and 15 psig (1 bar) droop from set:

1/2 ports: 220 scfm (104 dm<sup>3</sup>/s)

1-1/4 ports: 700 scfm (330 dm<sup>3</sup>/s)

Maximum bleed rate at 50 psig (3.5 bar) outlet pressure: 0.031 scfm (0.016 dm<sup>3</sup>/s) †

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

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"

Thread type

Main ports: PTF, ISO G, or Rc

Gauge ports: PTF, ISO G, or Rc

Pilot port: PTF with PTF main ports, ISO G with ISO G and Rc main ports

Materials

Body, top cap: Zinc

Main valve, adjusting screw: Brass

Pilot valve, relief valve: Acetal

Elastomers: Nitrile

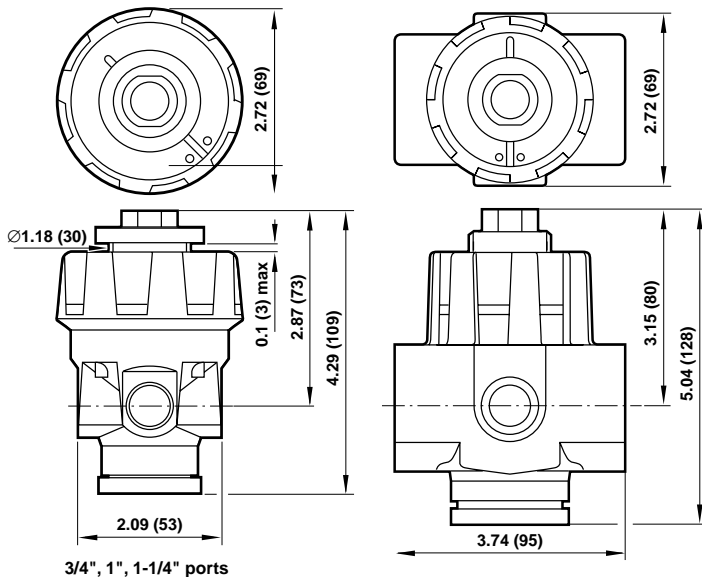
Bottom Plug: Acetal

## 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

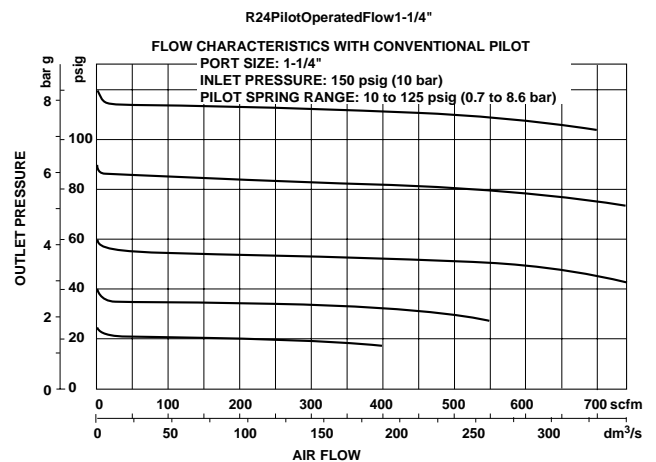
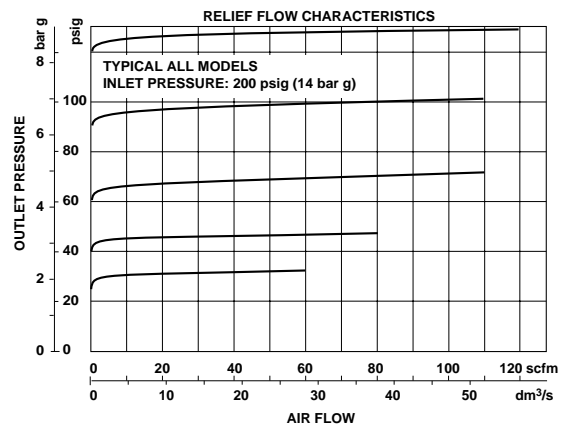
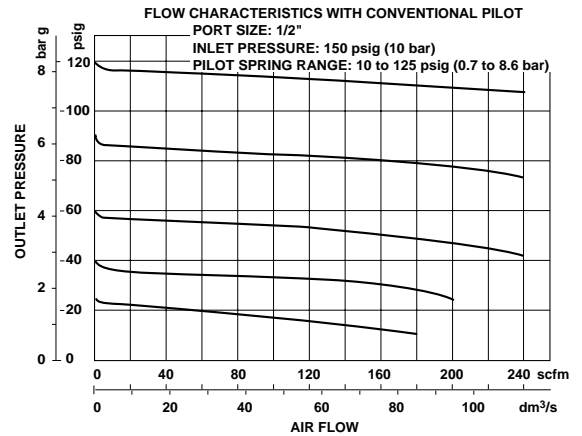
Service kits include seals, main valve and spring.

All Dimensions in Inches (mm)



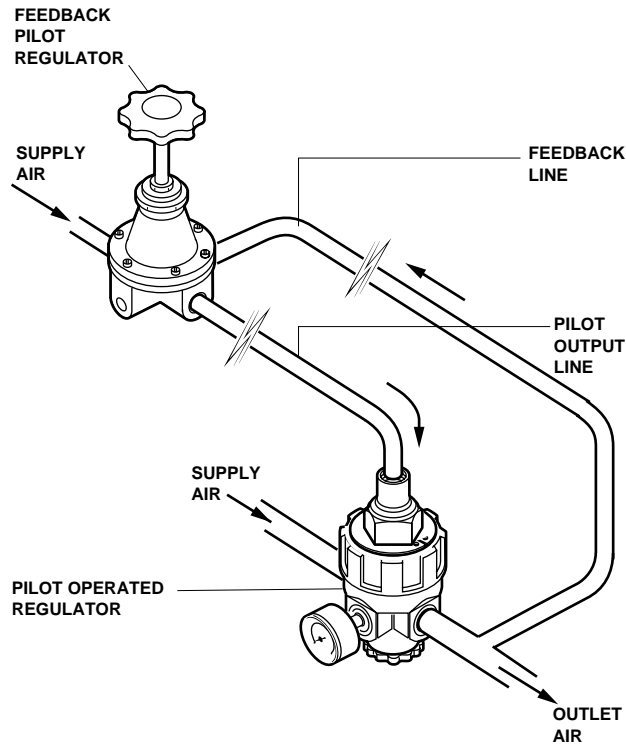
## Typical Performance Characteristics

RANGE: 10 to 232 psi (0.7 to 16 bar)





## Typical Installation - Feedback Pilot and Pilot Operated Regulator



## 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.

## Typical Installation - Conventional Pilot and Pilot Operated Regulator

