AIR PREPARATION SYSTEM
DIAL AIR REGULATORS

1/4 to 2 Body Ported

Parker

WARNING — USER RESPONSIBILITY

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Parker Hannifin EMEA Sàrl European Headquarters
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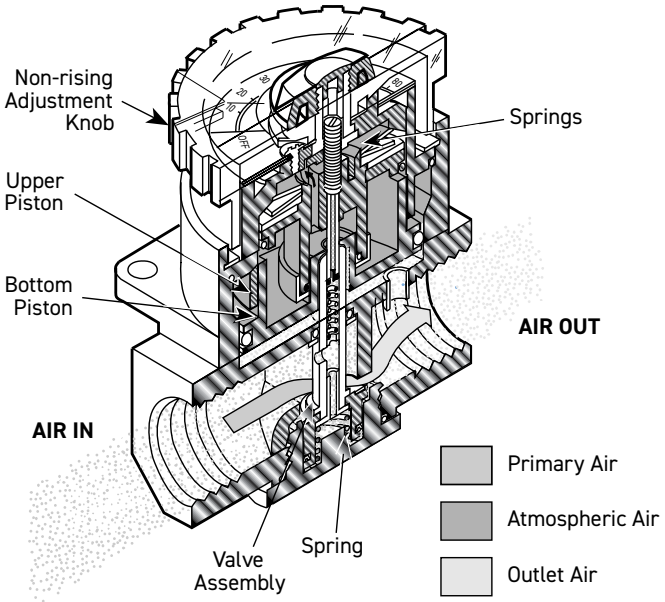
DIAL-AIR™ PILOT

Description

The Dial-Air™ Pilot is a constant bleed, piston operated regulator. The pilot controlled pressure reducing valve provides exceptionally high air flow with steady pressure control and minimal secondary pressure drop.

The non-rising adjustment knob provides quick selection of the desired secondary pressure in less than one full turn. The adjustment knob also can serve as the pressure indicator thereby eliminating the need for a pressure gauge.

This regulator is specifically designed for applications requiring more accurate air circuit control, high air flow capacity with flat performance curves and quick regulator adjustment. The regulator can be used as a conventional regulator for standard air circuits or as a pilot regulator to provide pressure to the control chamber of a pilot operated (slave) regulator



Operation

To set the regulator, turn the large dial adjustment knob to the desired secondary set pressure. This opens the pilot valve seat allowing air flow into the control chamber which forces the lower piston downward against the relief seat and opens the main valve. At the same time, the air in the control chamber forces the upper piston upward against Belleville springs which closes the pilot valve seat when the set pressure is attained. Secondary pressure in the chamber is now balanced against the control pressure through the lower piston. If demand flow increases, the constant control pressure will force the lower piston and the main valve further downward, and allow more flow downstream. A higher than desired secondary pressure will force the lower piston upward, closing the main valve seat and opening the main relief valve seat thereby allowing air to relieve to the atmosphere. For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

PRINCIPAL REGULATOR (REMOTE OPERATED)

Remote-control Dial-Air™ Regulator

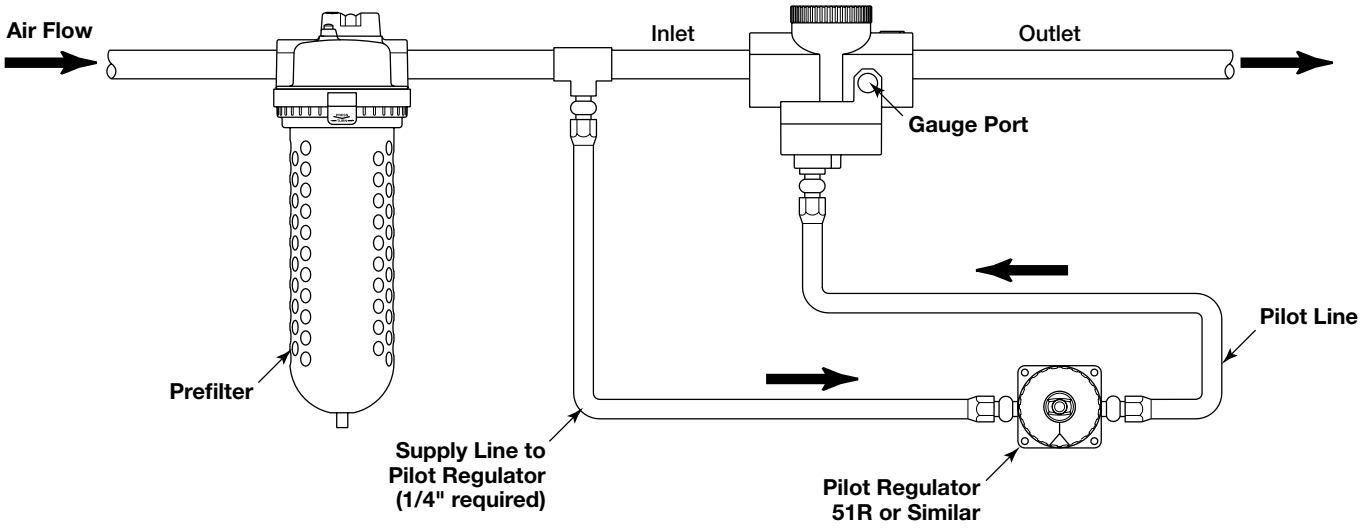
Incorporates all the features of the standard Dial-Air™ Regulator plus the additional advantage of remote installation using the 51R model Pilot Regulator. Maximum inlet operating pressure and temperature ratings are 20,7 bar (300 psig) and 65,5°C (150°F).

The Remote-control Dial-Air™ Regulators are available in five pipe sizes, with 1/4" NPT connections on the pilot regulator and pilot port of remote-controlled regulators.

Typical installation is shown below. For other remote models, see 52R, 53R & 54R.

Dial-Air™

Dial-Air™ regulators feature a transparent, pressure-calibrated, non-rising adjustment dial for quick adjustment of secondary pressure. If a gauge (52R, 53R, 54R) is required for monitoring reasons, two 1/4" gauge ports are provided; however, these are usually used for additional outlet ports. The full reduced pressure range can be dialed in less than 270° of dial rotation. This feature is particularly advantageous if secondary pressure must be changed frequently. The transparent dial can be color or graphics coded for easy reference to required pressure changes. Dial-Air™ regulators can be mounted in any position so dial face is always visible. All Dial-Air™ units have a slight constant air bleed: 0.024 dm3/s (0.05 scfm), @ 7 bar (100 psig) inlet and 6,2 bar (90 psig) outlet.

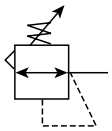


DIAL AIR REGULATORS 51R

Features

- Pressure reference indicating dial face
- Non-rising, pressure-adjustment dial
- Self-relieving
- Full pressure adjustment in less than one full turn
- Recommended for pilot-air applications
- Constant bleed, piston operated
- 1/4" port (BSPP, NPT)

Symbol

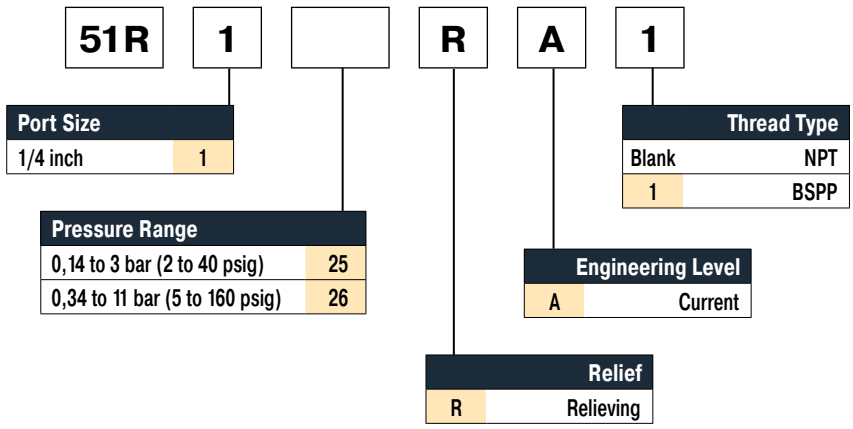


Technical Data

BSPP Port size	Description	Flow ǂ dm³/s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Weight kg (lb)	Part number
1/4"	Standard pressure 0 to 11 bar (5 to 160 psig)	0,3 (0.7)	11 (160)	71,4 (2.8)	66 (2.6)	66 (2.6)	0,5 (1.3)	**51R126RA1**
1/4"	Low pressure 0 to 2.8 bar (2 to 40 psig)		3,0 (40)					**51R125RA1**

Note: dm3/s (scfm) = Standard cubic feet per minute at 7 bar (100 psig) inlet, secondary pressure 6 bar (90 psig).

Order Code



Note: ☐ = Standard order code.

WARNING! Product rupture can cause serious injury. Do not connect regulator to bottled gas. Do not exceed Maximum primary pressure rating.

Specifications

Flow capacity *	0,3 dm3/s ANR (0.7 scfm)
Operating temperature	0°C to 65,6°C (32°F to 150°F)
Adjusting pressure range	0,14 to 3 bar (2 to 40 psig) 0,34 to 11 bar (5 to 160 psig)
Max supply pressure	20,7 bar (300 psig)
Bleed rate	0,02 dm3/s ANR (0.05 scfm)
Port size	1/4
Weight	0.5 kg (1.3 lb)

* dm3/s (scfm) = Standard cubic feet per minute at 7 bar (100 psig) inlet, secondary pressure 6,2 bar (90 psig).

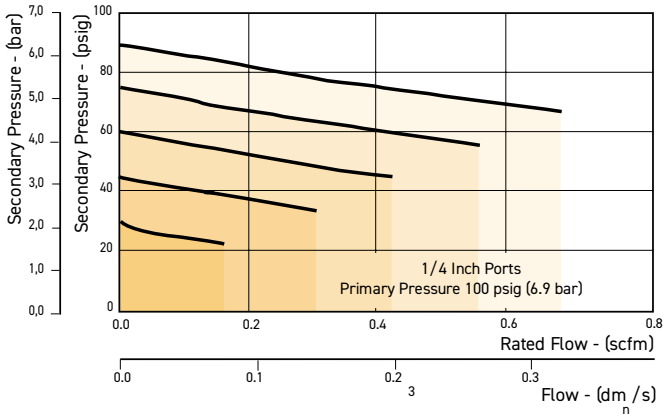
Material Specifications

Body	Zinc
Bonnet	Zinc / brass
Piston	Acetal
Seals	Nitrile
Springs	Steel
Valve assembly	Brass / nitrile / acetal

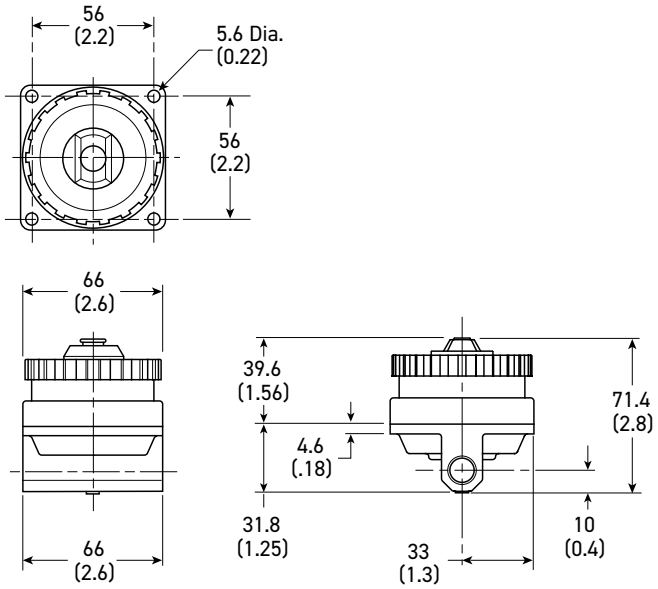
Repair and Service Kits

Adjustment dial knob	RRP-16-024
O-ring, repair kit	GRP-95-260
Piston and bonnet repair kit	RRP-95-765
Spring, regulation, belleville washer, 0,14 to 3 bar (2 to 40 psig)	RRP-95-906
Spring, regulation, belleville washer, 0,34 to 11 bar (5 to 160 psig)	RRP-95-905
Tamper resistant kit	RRP-95-585
Valve, pilot with o-ring and valve spring	RRP-96-934

Flow Chart 51R126R* Regulator



Dimensions mm (inches)

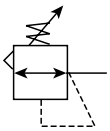


DIAL AIR REGULATORS 52R

Features

- Balanced poppet design
- Non-rising, pressure-adjusting dial
- High-relief flow (3/16" relief orifice)
- Two 1/4" gauge ports
- Constant bleed, piston operated
- 1/4", 3/8", 1/2", 3/4" ports (BSPP, NPT)

Symbol

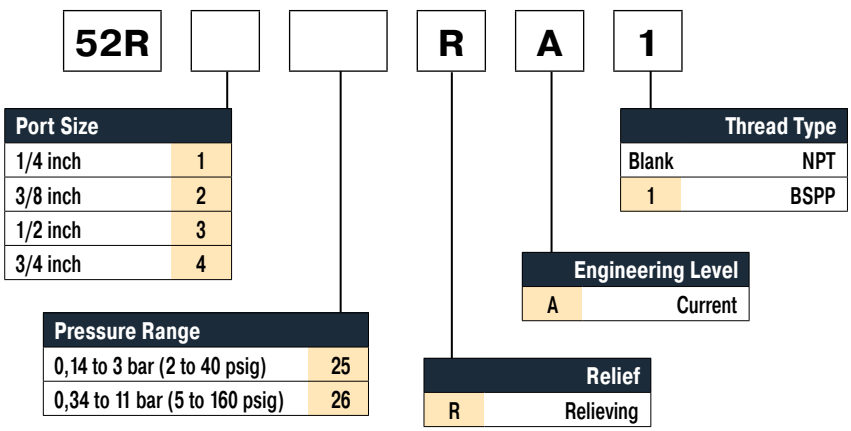


Technical Data

BSPP Port size	Description	Flow* dm³/s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Weight kg (lb)	Part number
1/4"	Standard pressure 0,34 to 11 bar (5 to 160 psig)	55,2 (117)	20,7 (300)	104 (4.1)	81 (3.2)	81 (3.2)	1.04 (2.3)	**52R126RA1**
1/4"	Low pressure 0,14 to 3 bar (2 to 40 psig)	55,2 (117)						**52R125RA1**
3/8"	Standard pressure 0,34 to 11 bar (5 to 160 psig)	85 (180)						**52R226RA1**
3/8"	Low pressure 0,14 to 3 bar (2 to 40 psig)	85 (180)						**52R225RA1**
1/2"	Standard pressure 0,34 to 11 bar (5 to 160 psig)	92 (195)						**52R326RA1**
1/2"	Low pressure 0,14 to 3 bar (2 to 40 psig)	92 (195)						**52R325RA1**
3/4"	Standard pressure 0,34 to 11 bar (5 to 160 psig)	103,8 (220)						**52R426RA1**
3/4"	Low pressure 2 to 40 psig (0,14 to 3 bar)	103,8 (220)						**52R425RA1**

*** dm3/s (scfm) = Standard cubic feet per minute at 7 bar (100 psig) inlet, secondary pressure 5,5 bar (80 psig).**

Order Code



Note: ☐ = Standard order code.

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Specifications

Flow capacity [1]	1/4” 55,2 dm 3 /s ANR (117 scfm) 3/8” 85 dm 3 /s ANR (180 scfm) 1/2” 92 dm 3 /s ANR (195 scfm) 3/4” 103,8 dm 3 /s ANR (220 scfm)
Operating temperature	0°C to 65,6°C (32°F to 150°F)
Adjusting pressure range	0 to 2.8 bar (2 to 40 psig) 0 to 11 bar (5 to 160 psig)
Max supply pressure	20,7 bar (300 psig)
Bleed rate	0,02 dm3/s ANR (0.05 scfm)
Gauge ports [2]	2x 1/4
Port size	1/4”, 3/8”, 1/2”, 3/4”
Weight	1.04 kg (2.3 lb)

[1] dm3/s (scfm) = Standard cubic feet per minute at 7 bar (100 psig) inlet, secondary pressure 6,2 bar (90 psig).

[2] Ports can be used as additional high flow 1/4” outlet ports

Material Specifications

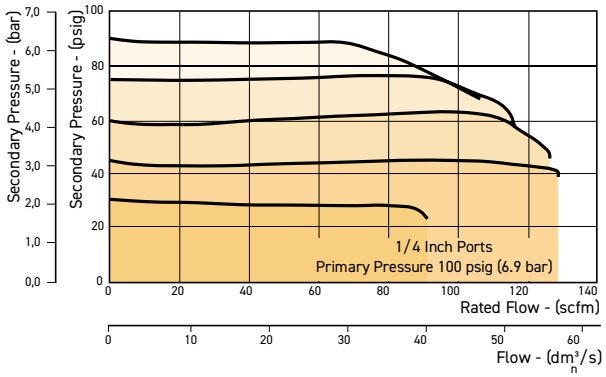
Body	Zinc
Bonnet	Zinc / brass
Piston	Acetal
Seals	Nitrile
Springs	Steel
Valve assembly	Brass / nitrile / acetal

Repair and Service Kits

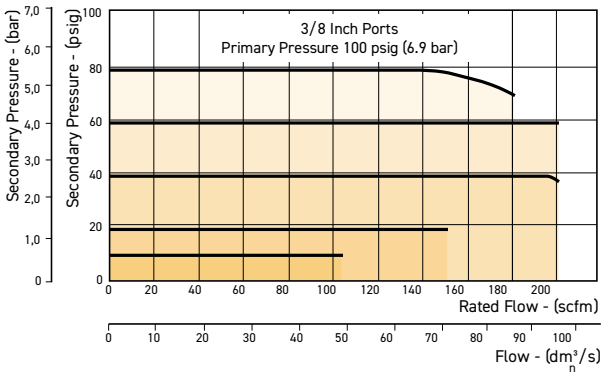
Adjustment dial knob	RRP-16-024
O-ring, repair kit	GRP-95-260
Piston bottom and o-ring seal	RRP-95-192
Pistons and bonnet repair kit	RRP-95-766
Spring, regulation, belleville washer, 0,14 to 3 bar (2 to 40 psig)	RRP-95-906
Spring, regulation, belleville washer, 0,34 to 11 bar (5 to 160 psig)	RRP-95-905
Tamper resistant kit	RRP-95-585
Valve, main with U-cup seal & bottom plug	RRP-95-914
Valve, main with U-cup seal	RRP-95-151
Valve, pilot with o-ring and valve spring	RRP-96-934

Flow Chart

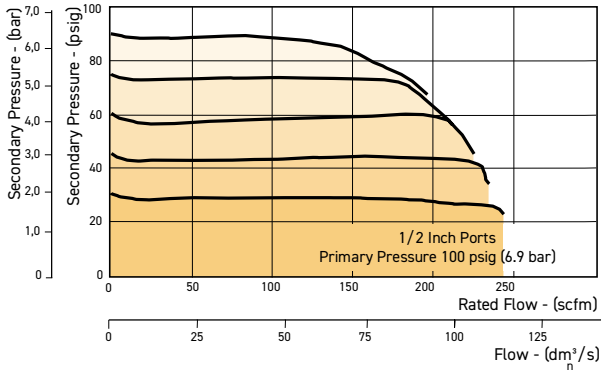
52R 1/4“ Regulator (52R126R*)



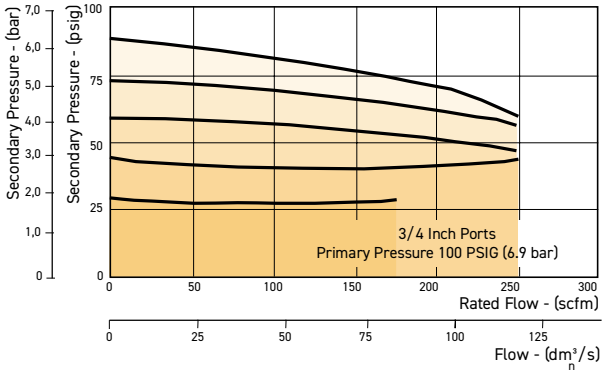
52R 3/8“ Regulator (52R226R*)



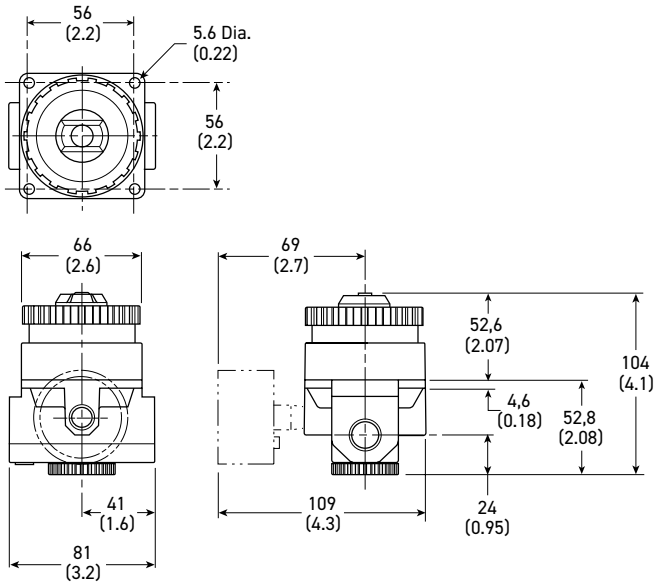
52R 1/2“ Regulator (52R326R*)



52R 3/4“ Regulator (52R426R*)



Dimensions mm (inches)

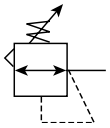


DIAL AIR REGULATORS 53R

Features

- Balanced poppet design
- Non-rising, pressure-adjusting dial
- High-relief flow (3/16" relief orifice)
- Two 1/4" gauge ports
- Constant bleed, piston operated
- 3/4", 1", 1-1/4" ports (BSPP, NPT)

Symbol

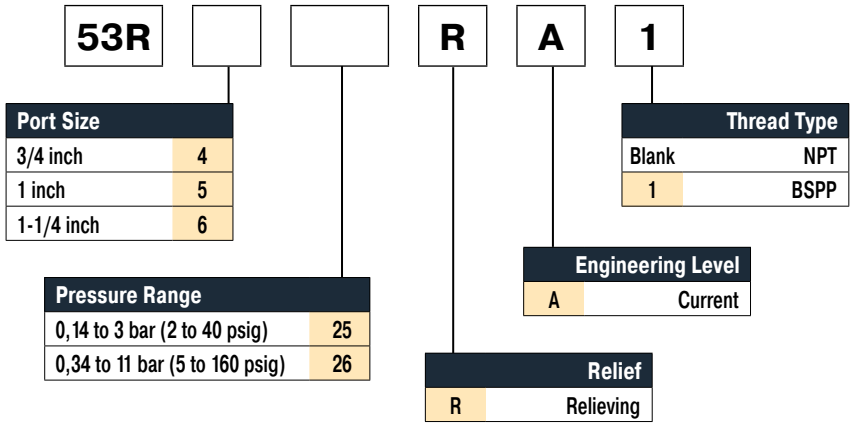


Technical Data

BSPP Port size	Description	Flow* dm³/s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Weight kg (lb)	Part number
3/4"	Standard pressure 0,34 to 11 bar (5 to 160 psig)	188,8 (400)	20,7 (300)	132 (5.2)	109 (4.3)	109 (4.3)	2,1 (4.7)	**53R426RA1**
3/4"	Low pressure 0,14 to 3 bar (2 to 40 psig)	188,8 (400)						**53R425RA1**
1"	Standard pressure 0,34 to 11 bar (5 to 160 psig)	306,8 (650)						**53R526RA1**
1"	Low pressure 0,14 to 3 bar (2 to 40 psig)	306,8 (650)						**53R525RA1**
1-1/4"	Standard pressure 0,34 to 11 bar (5 to 160 psig)	330,4 (700)						**53R626RA1**
1-1/4"	Low pressure 0,14 to 3 bar (2 to 40 psig)	330,4 (700)						**53R625RA1**

*** dm3/s (scfm) = Standard cubic feet per minute at 7 bar (100 psig) inlet, secondary pressure 5,5 bar (80 psig).**

Order Code



Note: ☐ = Standard order code.

WARNING! Product rupture can cause serious injury. Do not connect regulator to bottled gas. Do not exceed Maximum primary pressure rating.

Specifications

Flow capacity [1]	3/4" 188,8 dm 3 /s ANR (400 scfm) 1" 306,8 dm 3 /s ANR (650 scfm) 1-1/4" 330,4 dm 3 /s ANR (700 scfm)
Operating temperature	0°C to 65,6°C (32°F to 150°F)
Adjusting pressure range	0,14 to 3 bar (2 to 40 psig) 0,34 to 11 bar (5 to 160 psig)
Max supply pressure	20,7 bar (300 psig)
Bleed rate	0,02 dm3/s ANR (0.05 scfm)
Gauge ports [2]	2x 1/4
Port size	3/4", 1", 1-1/4"
Weight	2,1 kg (4.7 lb)

[1] dm3/s (scfm) = Standard cubic feet per minute at 7 bar (100 psig) inlet, secondary pressure 6,2 bar (90 psig).

[2] Ports can be used as additional high flow 1/4" outlet ports

Material Specifications

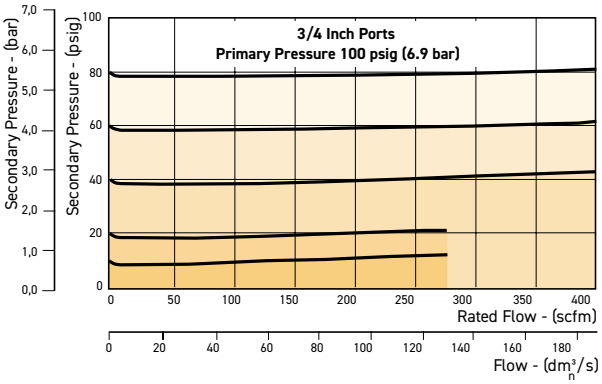
Body	Zinc
Bonnet	Zinc / brass
Piston	Acetal
Seals	Nitrile
Springs	Steel
Valve assembly	Brass / nitrile / acetal

Repair and Service Kits

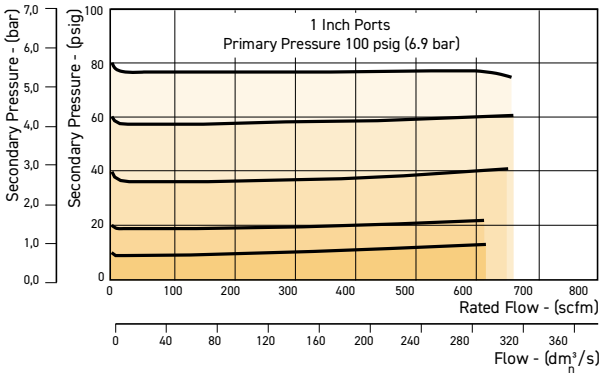
Adjustment dial knob	RRP-16-024
O-ring, repair kit	GRP-95-261
Piston bottom and o-ring seal	RRP-95-192
Pistons and bonnet repair kit	RRP-95-766
Spring, regulation, belleville washer, 0,14 to 3 bar (2 to 40 psig)	RRP-95-906
Spring, regulation, belleville washer, 0,34 to 11 bar (5 to 160 psig)	RRP-95-905
Tamper resistant kit	RRP-95-585
Valve, main with U-cup seal	RRP-95-152
Valve, pilot with o-ring and valve spring	RRP-96-935

Flow Chart

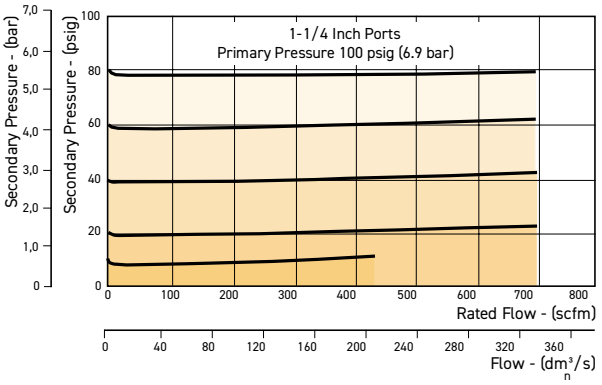
53R 3/4“ Regulator (53R426R*)



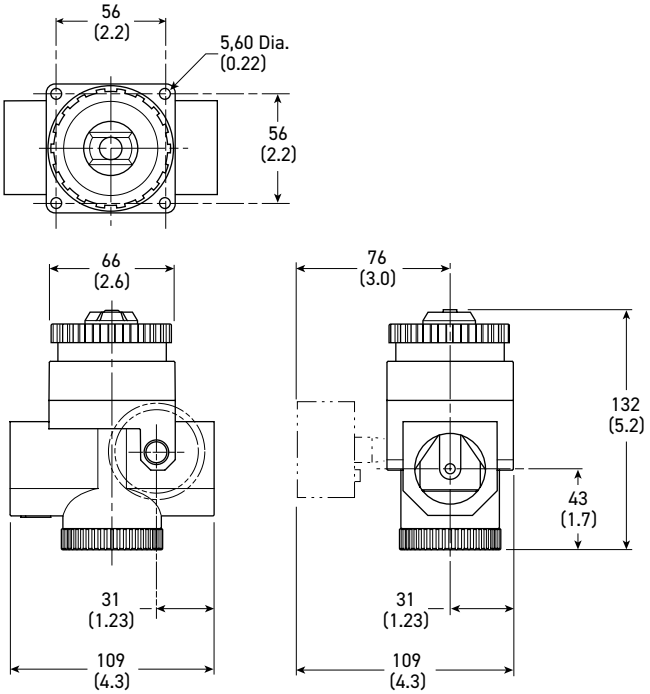
53R 1“ Regulator (53R526R*)



53R 31-14“ Regulator (53R626R*)



Dimensions mm (inches)

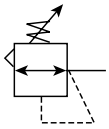


DIAL AIR REGULATORS 54R

Features

- Balanced poppet design
- Non-rising, pressure-adjusting dial
- High-relief flow (3/16" relief orifice)
- Two 1/4" gauge ports
- Constant bleed, piston operated
- 1-1/2", 2" ports (BSPP, NPT)

Symbol

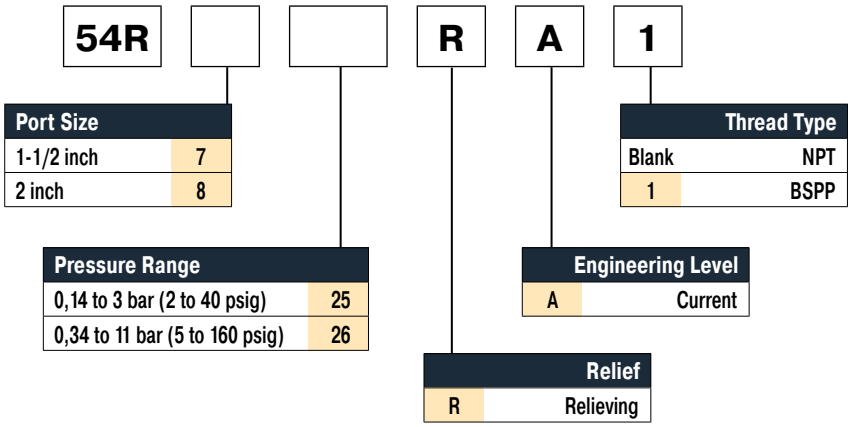


Technical Data

BSPP Port size	Description	Flow* dm³/s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Weight kg (lb)	Part number
1-1/2"	Standard pressure 0,34 to 11 bar (5 to 160 psig)	755 (1,600)	20,7 (300)	173 (6.8)	135 (5.3)	135 (5.3)	4,1 (9)	54R726RA1
1-1/2"	Low pressure 0,14 to 3 bar (2 to 40 psig)							54R725RA1
2"	Standard pressure 0,34 to 11 bar (5 to 160 psig)							54R826RA1
2"	Low pressure 0,14 to 3 bar (2 to 40 psig)							54R825RA1

* dm3/s (scfm) = Standard cubic feet per minute at 7 bar (100 psig) inlet, secondary pressure 5,5 bar (80 psig).

Order Code



Note: ☐ = Standard order code.

WARNING! Product rupture can cause serious injury. Do not connect regulator to bottled gas. Do not exceed Maximum primary pressure rating.

Specifications

Flow capacity [1]	1-1/2” 755 dm 3 /s ANR (1,600 scfm) 2” 755 dm 3 /s ANR (1,600 scfm)
Operating temperature	0°C to 65,6°C (32°F to 150°F)
Adjusting pressure range	0,14 to 3 bar (2 to 40 psig) 0,34 to 11 bar (5 to 160 psig)
Max supply pressure	20,7 bar (300 psig)
Bleed rate	0,02 dm3/s ANR (0.05 scfm)
Gauge ports [2]	2x 1/4
Port size	1-1/2”, 2”
Weight	4,1 kg (9 lb)

[1] dm3/s (scfm) = Standard cubic feet per minute at 7 bar (100 psig) inlet, secondary pressure 6,2 bar (90 psig).
[2] Ports can be used as additional high flow 1/4” outlet ports

Repair and Service Kits

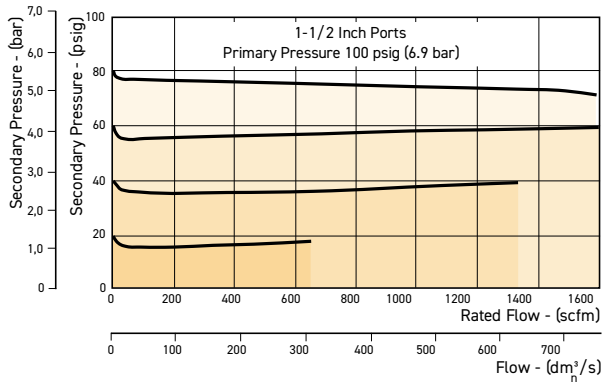
Adjustment dial knob	RRP-16-024
O-ring, repair kit	GRP-95-262
Piston bottom and o-ring seal	RRP-95-192
Pistons and bonnet repair kit	RRP-95-766
Spring, regulation, belleville washer, 0,14 to 3 bar (2 to 40 psig)	RRP-95-906
Spring, regulation, belleville washer, 0,34 to 11 bar (5 to 160 psig)	RRP-95-905
Spring, main valve	RRP-95-024
Tamper resistant kit	RRP-95-585
Valve, main with o-ring seal	RRP-95-153
Valve, pilot with o-ring and valve spring	RRP-96-935

Material Specifications

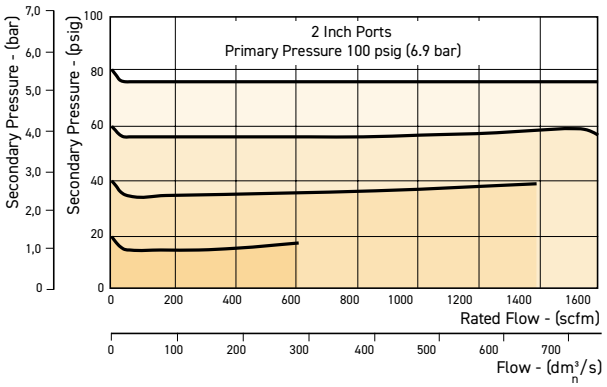
Body	Zinc
Bonnet	Zinc / brass
Piston	Acetal
Seals	Nitrile
Springs	Steel
Valve assembly	Brass / nitrile / acetal

Flow Chart

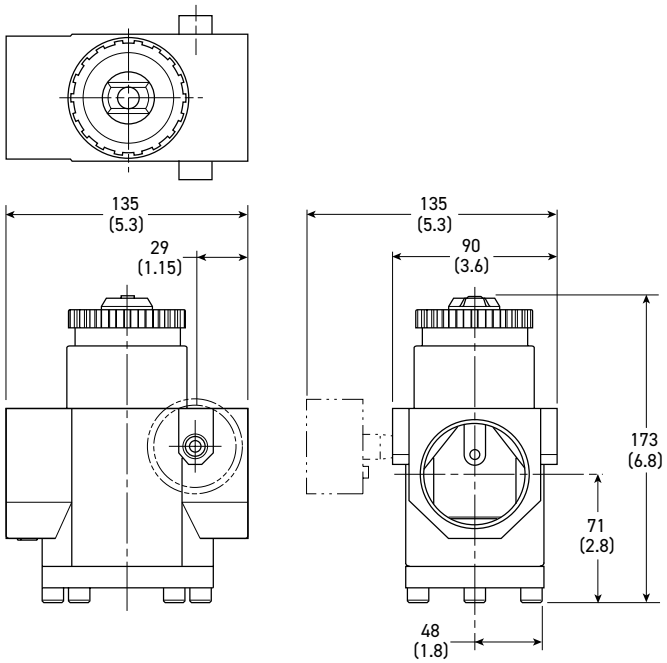
54R 1-1/2“ Regulator (54R726R*)



54R 2“ Regulator (54R826R*)



Dimensions mm (inches)



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