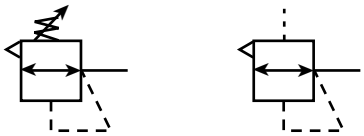
Air Line Regulators

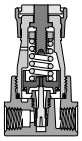
Regulators



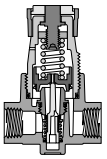
- Pipe Sizes 1/8 thru 2 Inch
- Flows to 1000 SCFM
- Pressures to 250 PSIG

Air regulators are designed to provide quick response and accurate pressure regulation for the most demanding industrial applications.

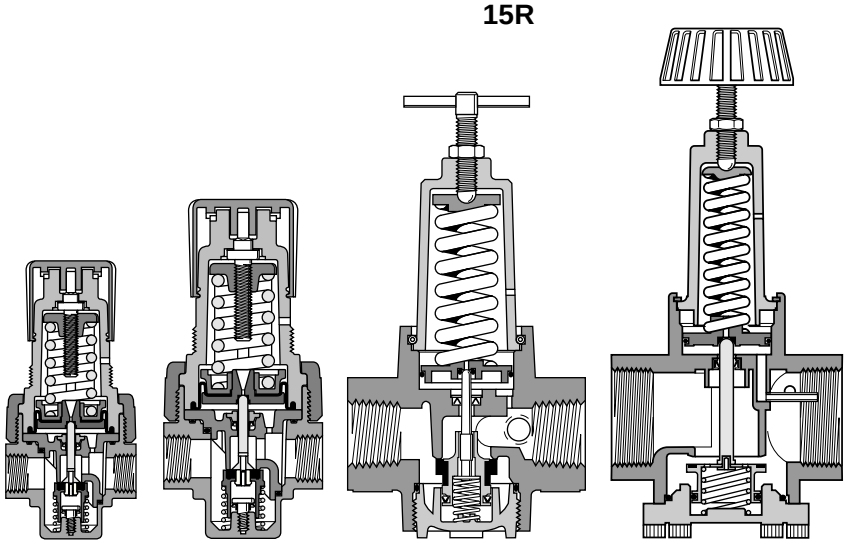
- Miniature 14R, Series, 1/8 and 1/4 Inch
- Economy 15R Series, 1/4 and 3/8 Inch
- Compact 06R Series, 1/4 thru 1/2 Inch
- Standard 07R Series, 3/8 thru 3/4 Inch
- Hi-Flow 08R Series, 3/4 thru 1-1/2 Inch
- Hi-Flow 09R, Series, 2 Inch
- Precision 27R, Series, 1/4 Inch
- Pilot Controlled 11R, 12R, 13R Series, 1/4 thru 1-1/2 Inch



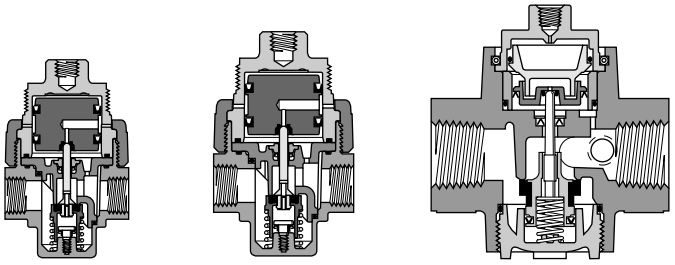
14R



15R



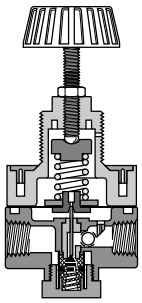
06R **07R** **08R** **09R**



11R **12R** **13R**

Regulator Selection

1. Determine maximum system flow requirements.
2. Determine maximum allowable pressure drop at rated flow in SCFM.
3. Refer to flow chart and select regulator by choosing the curve that offers minimum pressure drop at desired flow in SCFM.



27R

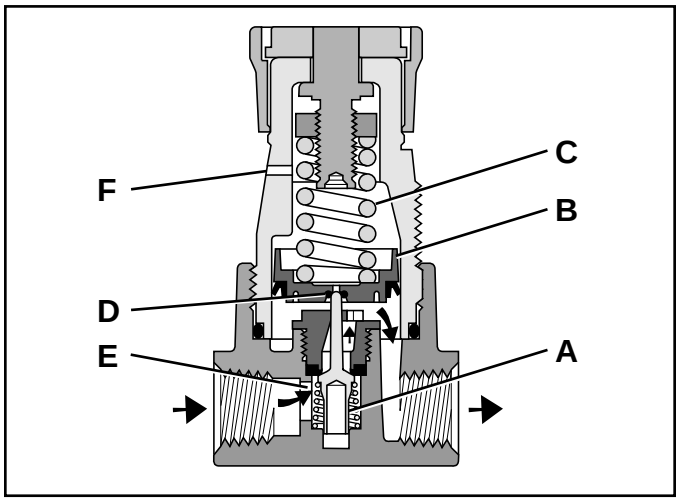
Air Line Regulators Accessories

Model	14R	15R	06R	11R	07R	12R	08R	13R	09R	27R
Body Service Kit										
Unbalanced Poppet	PS424BSB									
Balanced Poppet	PS425BSB	PS455SB					PS312BSB	PS312SB	PS603SB	
Seat Insert Kit			PS713SB		PS813SB					
Bonnet Assembly Kit	L01369	L01369	PS715SB		PS715SB					
Bonnet Tamperproof Clip (Non-Adjustable Field Conversion)	P01265	P01265								
Gauges										
30 PSIG	P530156									
60 PSIG	P530154	P781641	P781641	P781641	P781641	P781641	P781641	P781641		P781641
160 PSIG	P77413	P781642	P781642	P781642	P781642	P781642	P781642	P781642	P781642	P781642
300 PSIG		P781643	P781643	P781643	P781643	P781643	P781643	P781643		P781643
Mounting Bracket Kit	PS417BSB*	PS417BSB*	PS707SB*	PS707SB*	PS807SB*	PS807SB*	PS309SB	PS309SB	PS605SB	PS173SB
Panel Mount Nuts										
Plastic	P78652	P78652	P04082		P04082					
Metal	P01531	P01531								
Repair Kits										
Non-Relieving	PS422SB	PS422SB	PS709SB**	PS747SB	PS809SB**	PS847SB	PS311SB	PS111SB	PS604SB	
Relieving	PS423SB	PS423SB	PS708SB**	PS749SB	PS808SB**	PS849SB	PS310SB	PS110SB		PS170SB
Springs										
1-30 PSIG Range	P01175	P01175								PS171SB
1-60 PSIG Range	P01174	P01174	P04062		P04062		P78695B			
5-125 PSIG Range	P01173	P01173	P04063		P04063		P78696B		PS602SB	
1-15 PSIG Range	P01176	P01176								PS177SB
0-50 PSIG Range										PS172SB
5-250 PSIG Range			P04064		P04064		P78697B			
Tamperproof Kit			PS737SB		PS737SB					

* Panel Mount Nut Included
** Includes Poppet

For Modular Kits & Hardware see Page 84-85

Air Line Regulators
Miniature 14R Series
1/8 & 1/4 Inch–Basic 1/8" Body



Features

- Unbalanced poppet standard.
- Solid control piston with lip seal for extended life.
- Non-rising adjusting knob.
- Compact, 2.9 inch (74 mm) high by 1.65 inch (42 mm) wide.
- Easily serviced.

Application

The 14R Miniature series regulators are designed to provide minimum pressure drop over a wide operating range. They feature an unbalanced poppet for reverse, flow applications, a solid control piston and lip seal for long, service-free operation. With a non-rising adjustment knob as standard, this series offers a very economical and attractively styled miniature package.

⚠ WARNING

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

Operation

With the adjusting knob turned fully counterclockwise (no spring load), and pressure supplied to the regulator inlet port, the valve poppet assembly **(A)** is closed. Turning the adjusting knob clockwise applies a load to control spring **(C)**. This load causes the piston **(B)** and the valve poppet assembly **(A)** to move downward allowing flow across the seat area **(E)** created between the poppet assembly and the seat. Pressure in the downstream line is sensed below the control piston **(B)** and offsets the load of spring **(C)**. As downstream pressure rises, poppet assembly **(A)** and control piston **(B)** move upward until the area **(E)** is closed and the load of the spring **(C)** and pressure under piston **(B)** are in balance. A reduced outlet pressure has now been obtained, depending on spring load. Creating a demand downstream, such as opening a valve, results in a reduced pressure under the control piston **(B)**. The load of control spring **(C)** now causes the poppet assembly to move downward opening seat area **(E)** allowing air to flow to meet the downstream demand. The flow of downstream air is metered by the amount of opening **(E)**.

Should downstream pressure exceed the desired regulated pressure, the excess pressure will cause the control piston **(B)** to move upward against control spring **(C)**, open vent hole **(D)**, and vent the excess pressure to atmosphere through the hole in the bonnet **(F)**. (This occurs in the relieving type regulator only.)

Specifications

Adjusting Nut:
Brass

Adjusting Stem & Spring:
Steel

Body:
Zinc

Bonnet, Seat, Piston & Valve Poppet:
Plastic

Gauge Ports:
(Can Be Used For Full Flow)
1/8 Inch

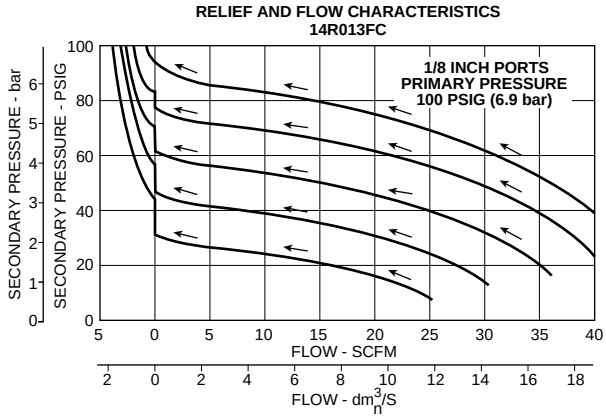
Pressure & Temperature Rating:
0 to 250 PSIG (0 to 17 bar)
32°F to + 125°F (0°C to 52°C)

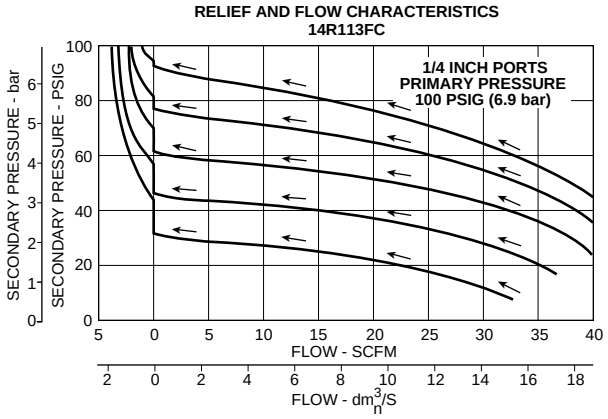
Port Threads:
1/8 & 1/4 Inch

Seals:
Nitrile

Secondary Pressure Ranges:
Standard Pressure 2-125 PSIG
(.1 to 8.6 bar)
Medium Pressure 1-30 PSIG
(.07 to 2.0 bar)
Medium Pressure 1-60 PSIG
(.07 to 4.0 bar)
Low Pressure 1-15 PSIG
(.07 to 1.0 bar)

Performance Characteristics





Ordering Information

14R	1	13	F	*	SB

Port Size

0–1/8 Inch
1–1/4 Inch

Pressure Range

Without Gauge
10. 30 PSIG
11. 60 PSIG
12. 15 PSIG
13. 125 PSIG

With Gauge
15. 30 PSIG
16. 60 PSIG
17. 15 PSIG
18. 125 PSIG

Adjustment

F. Non-Rising Knob, Unbalanced Poppet, Relieving

G. Non-Rising Knob, Unbalanced Poppet, Non-Relieving

Engineering Change Designator

Will be entered at factory.

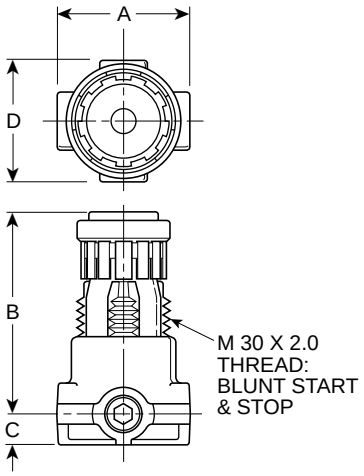
CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustments is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

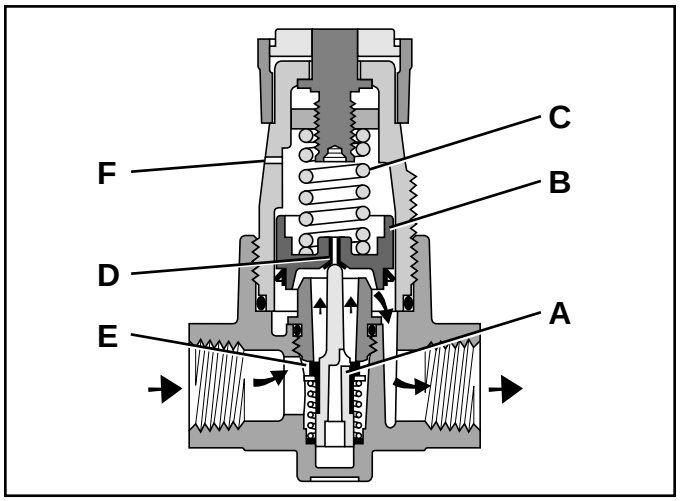
Dimensions:

Model	Port Size Inch	A	B	C	D	Wt.
14R	1/8", 1/4"	1.65	2.50	.38	1.56	.3 lb.
		42 mm	63.5 mm	10 mm	40 mm	.14 kg

NOTE:
1.20 Dia. (31.0 mm) hole required for panel mounting.



Air Line Regulators
Economy 15R Series
1/4 & 3/8 Inch–Basic 1/4" Body



Features

- Unique balanced poppet valve minimizes secondary pressure fluctuations.
- Solid control piston with resilient seat for service-free operation.
- Non-rising “locking” adjusting knob.
- Compact, 3.3 inch (84 mm) high by 2.12 inch (54 mm) wide.
- Easily serviced.

Application

The 15R Economy series regulators are designed to provide minimum pressure drop over a wide operating range. They feature a balanced poppet valve and solid control piston for long, service-free operation. With a non-rising adjustment knob as standard, this series offers a very economical and attractively styled package.

⚠ WARNING

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

Operation

With the adjusting knob turned fully counterclockwise (no spring load), and pressure supplied to the regulator inlet port, the valve poppet assembly **(A)** is closed. Turning the adjusting knob clockwise applies a load to control spring **(C)**. This load causes the piston **(B)** and the valve poppet assembly **(A)** to move downward allowing flow across the seat area **(E)** created between the poppet assembly and the seat. Pressure in the downstream line is sensed below the control piston **(B)** and offsets the load of spring **(C)**. As downstream pressure rises, poppet assembly **(A)** and control piston **(B)** move upward until the area **(E)** is closed and the load of the spring **(C)** and pressure under piston **(B)** are in balance. A reduced outlet pressure has now been obtained, depending on spring load. Creating a demand downstream, such as opening a valve, results in a reduced pressure under the control piston **(B)**. The load of control spring **(C)** now causes the poppet assembly to move downward opening seat area **(E)** allowing air to flow to meet the downstream demand. The flow of downstream air is metered by the amount of opening **(E)**.

Should downstream pressure exceed the desired regulated pressure, the excess pressure will cause the control piston **(B)** to move upward against control spring **(C)**, open vent hole **(D)**, and vent the excess pressure to atmosphere through the hole in the bonnet **(F)**. (This occurs in the relieving type regulator only.)

Specifications

Adjusting Nut:
Brass

Adjusting Stem & Spring:
Steel

Body:
Zinc

Bonnet, Seat, Piston & Valve Poppet:
Plastic

Gauge Ports:
(Can Be Used For Full Flow)
1/4 Inch

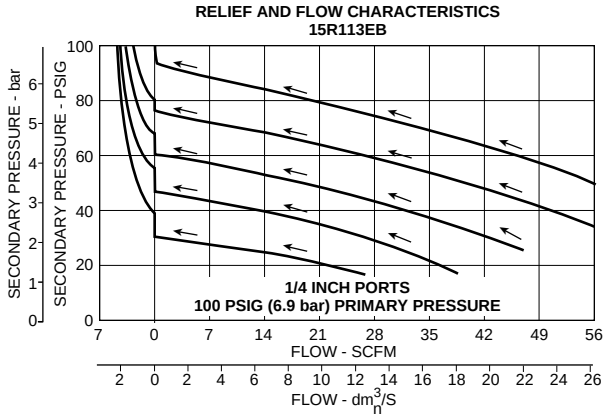
Port Thread:
1/4, 3/8 Inch

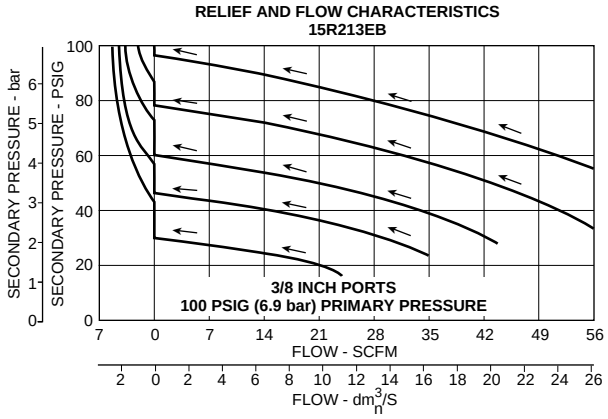
Pressure & Temperature Rating:
0 to 250 PSIG (0 to 17 bar)
32°F to + 125°F (0°C to 52°C)

Secondary Pressure Ranges:
Standard Pressure 2-125 PSIG
(.1 to 8.6 bar)
Medium Pressure 1-30 PSIG
(.07 to 2.0 bar)
Medium Pressure 1-60 PSIG
(.07 to 4.0 bar)
Low Pressure 1-15 PSIG
(.07 to 1.0 bar)

Seals:
Nitrile

Performance Characteristics





Ordering Information

15R	1	13	E	*	SB

Port Size

1–1/4 Inch
2–3/8 Inch

Pressure Range

Without Gauge
10. 30 PSIG
11. 60 PSIG
12. 15 PSIG
13. 125 PSIG
With Gauge
15. 30 PSIG
16. 60 PSIG
17. 15 PSIG
18. 125 PSIG

Adjustment

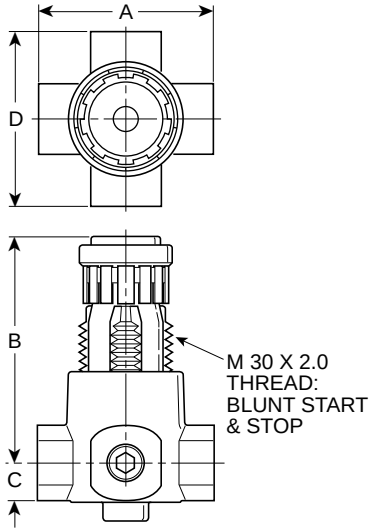
E. Non-Rising Knob, Balanced Poppet, Relieving
Y. Non-Rising Knob, Balanced Poppet, Non-Relieving

Engineering Change Designator

Will be entered at factory.

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustments is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

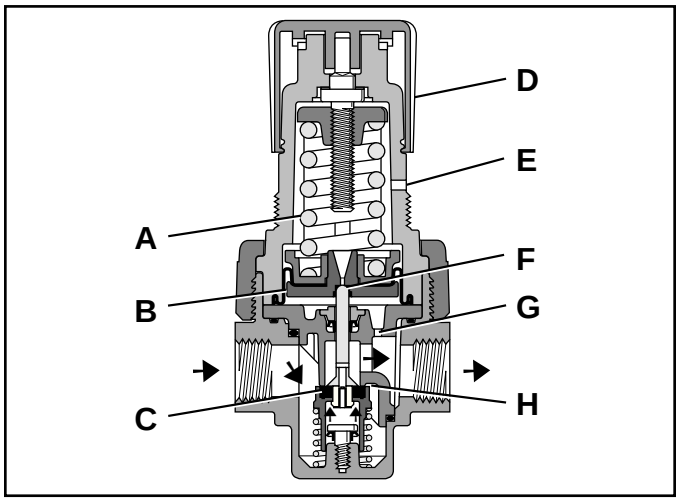


Dimensions:

Model	Port Size Inch	A	B	C	D	Wt.
15R	1/4", 3/8"	2.12	2.60	.70	2.00	.5 lb.
		54 mm	66 mm	18 mm	51 mm	.23 kg

NOTE:
1.20 Dia. (31.0 mm) hole required for panel mounting.

Air Line Regulators
Compact 06R Series
1/4, 3/8 & 1/2 Inch–Basic 3/8" Body



Features

- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation.
- Large reverse flow capability.
- Rolling diaphragm for extended life.
- Two high flow 1/4" gauge ports can be used as additional outlets.
- Easily serviced.
- Removable knob for panel mounting.

Application

The 06R series regulators are designed to provide quick response, and accurate pressure regulation for the most demanding industrial applications. The use of rolling diaphragm design results in significantly longer life, and therefore helps to eliminate maintenance and costly downtime. Rolling diaphragms and balanced poppets are used to provide accurate pressure regulation, and the built in capability of reverse flow **without** the use of check valves.

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

Operation

With the knob **(D)** turned fully counterclockwise (no spring load), and pressure supplied to the regulator inlet port, the valve poppet assembly **(C)** is closed. Turning the knob clockwise applies a load to control spring **(A)**. This load causes the diaphragm **(B)** and the valve poppet assembly **(C)** to move downward allowing flow across the seat area **(H)** created between the poppet assembly and the body. Pressure in the downstream line is sensed below the diaphragm **(B)** and offsets the load of spring **(A)**. As downstream pressure rises, poppet assembly **(C)** and diaphragm **(B)** move upward until the area **(H)** is closed and the load of the spring **(A)** and pressure under diaphragm **(B)** are in balance. A reduced outlet pressure has now been obtained, depending on spring load. Creating a demand downstream, such as opening a valve, results in a reduced pressure under the diaphragm **(B)**. The load of control spring **(A)** now causes the poppet assembly to move downward opening seat area **(H)** and allowing air to flow downstream. The flow of downstream air is metered by the amount of opening **(H)**.

During low flow requirements, the amount of opening at the seal **(H)** is small, while at high flow it is large. The downstream pressure signal, which regulates the amount of opening, requires an adjustment over this range, in order to attempt a constant output. This adjustment is the orifice **(G)**, which is sized and located in such a manner as to provide a compensation to the downstream pressure signal transmitted to the diaphragm. This effect is called aspiration and its effect is to maintain downstream pressure nearly constant over a wide range of flow demands.

Should downstream pressure exceed the desired regulated pressure, the excess pressure will cause the diaphragm **(B)** to move upward against control spring **(A)**, open vent hole **(F)** and vent the excess pressure to atmosphere through the hole in the bonnet **(E)**. (This occurs in the standard relieving type regulator only.)

Specifications

Adjusting Stem:
Steel

Body:
Zinc

Bonnet, Piston Stem, Valve Poppet & Cap:
Plastic

Collar:
Plastic

Diaphragm:
Nitrile

Gauge Ports:
Two Ports – 1/4 Inch (Can be used as additional High Flow 1/4 Outlet Ports)

Knob:
Plastic

Port Threads:
1/4, 3/8 & 1/2 Inch

Primary Pressure Rating:
Maximum Primary Pressure
250 PSIG (17 bar)

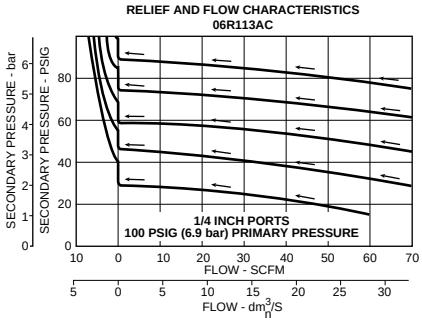
Seals:
Nitrile

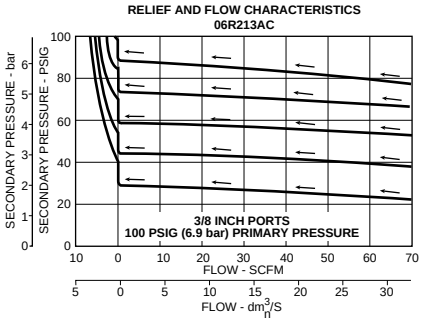
Secondary Pressure Ranges:
Standard Pressure 2-125 PSIG (.14 - 8.6 bar)
Low Pressure 1-60 PSIG (.07 - 4 bar)
High Pressure 5-250 PSIG (.34 - 17.3 bar)

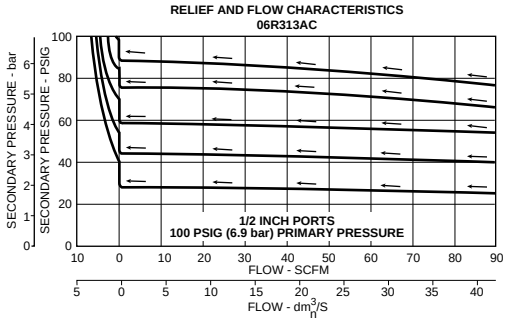
Springs:
Poppet: Stainless
Control: Steel

Temperature Rating:
32°F to 175°F (0°C to 80°C)

Performance Characteristics







Ordering Information

06R	1	13	A	*	SB

Port Size

1–1/4 Inch
2–3/8 Inch
3–1/2 Inch

Pressure Range

Without Gauge	With Gauge
11. 60 PSIG	16. 60 PSIG
13. 125 PSIG	18. 125 PSIG
15. 250 PSIG	21. 250 PSIG
24. 30 PSIG Non-Adjustable (Use with V option only)	

Adjustment & Relieving

A. Non-Rising Knob/ Relieving
L. Non-Rising Knob/ Non-Relieving
V. Non-Adjustable, Relieving

Engineering Change Designator

Will be entered at factory.

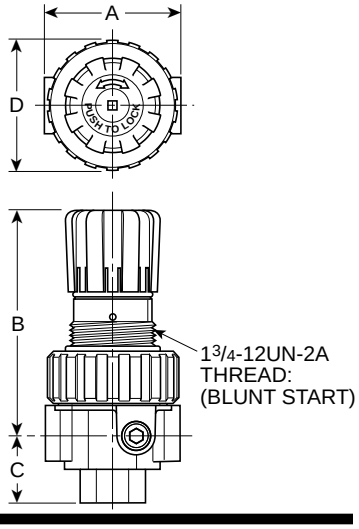
CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

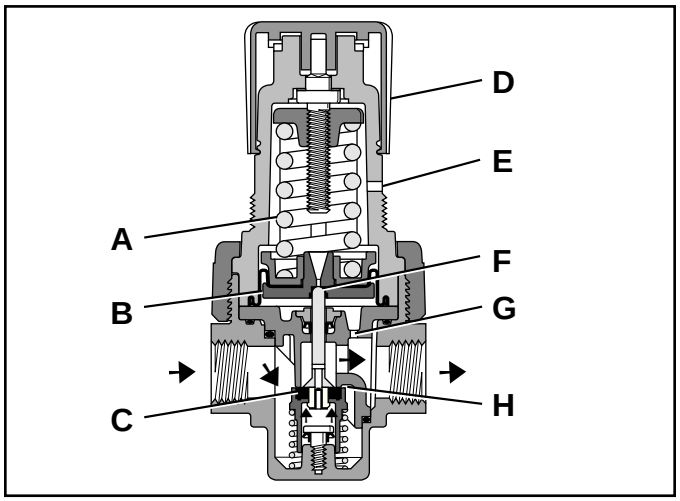
Dimensions:

Model	Port Size Inch	A	B	C	D	Wt.
06R	1/4", 3/8", 1/2"	2.81	4.69	1.39	2.74	1.6 lb.
		71 mm	119 mm	35 mm	70 mm	.7 kg

NOTE:
2.00 Dia. (51 mm) minimum hole required for panel mounting. Maximum panel thickness 1/4".



Air Line Regulators
Standard 07R Series
3/8, 1/2 & 3/4 Inch–Basic 1/2" Body



Features

- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation.
- Large reverse flow capability.
- Rolling diaphragm for extended life.
- Two high flow 1/4" gauge ports can be used as additional outlets.
- Easily serviced.
- Removable knob for panel mounting.

Application

The 07R series regulators are designed to provide quick response, and accurate pressure regulation for the most demanding industrial applications. The use of rolling diaphragm design results in significantly longer life, and therefore helps to eliminate maintenance and costly downtime. Rolling diaphragms and balanced poppets are used to provide accurate pressure regulation, and the built in capability of reverse flow **without** the use of check valves.

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

Operation

With the knob **(D)** turned fully counterclockwise (no spring load), and pressure supplied to the regulator inlet port, the valve poppet assembly **(C)** is closed. Turning the knob clockwise applies a load to control spring **(A)**. This load causes the diaphragm **(B)** and the valve poppet assembly **(C)** to move downward allowing flow across the seat area **(H)** created between the poppet assembly and the body. Pressure in the downstream line is sensed below the diaphragm **(B)** and offsets the load of spring **(A)**. As downstream pressure rises, poppet assembly **(C)** and diaphragm **(B)** move upward until the area **(H)** is closed and the load of the spring **(A)** and pressure under diaphragm **(B)** are in balance. A reduced outlet pressure has now been obtained, depending on spring load. Creating a demand downstream, such as opening a valve, results in a reduced pressure under the diaphragm **(B)**. The load of control spring **(A)** now causes the poppet assembly to move downward opening seat area **(H)** and allowing air to flow downstream. The flow of downstream air is metered by the amount of opening **(H)**.

During low flow requirements, the amount of opening at the seal **(H)** is small, while at high flow it is large. The downstream pressure signal, which regulates the amount of opening, requires an adjustment over this range, in order to attempt a constant output. This adjustment is the orifice **(G)**, which is sized and located in such a manner as to provide a compensation to the downstream pressure signal transmitted to the diaphragm. This effect is called aspiration and its effect is to maintain downstream pressure nearly constant over a wide range of flow demands.

Should downstream pressure exceed the desired regulated pressure, the excess pressure will cause the diaphragm **(B)** to move upward against control spring **(A)**, open vent hole **(F)** and vent the excess pressure to atmosphere through the hole in the bonnet **(E)**. (This occurs in the standard relieving type regulator only.)

Specifications

Adjusting Stem:
Steel

Body:
Zinc

Bonnet, Piston Stem, Valve Poppet & Cap:
Plastic

Collar:
Plastic

Diaphragm:
Nitrile

Gauge Ports:
Two Ports – 1/4 Inch (Can be used as additional High Flow 1/4 Outlet Ports)

Knob:
Plastic

Port Threads:
3/8, 1/2 & 3/4 Inch

Primary Pressure Rating:
Maximum Primary Pressure
250 PSIG (17 bar)

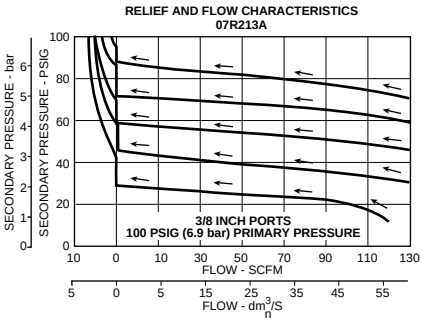
Seals:
Nitrile

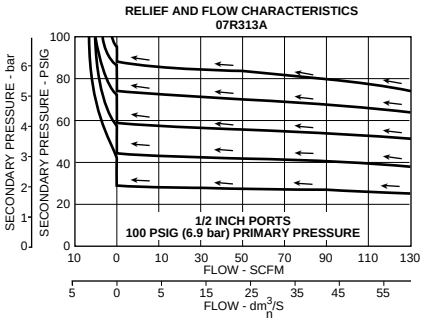
Secondary Pressure Ranges:
Standard Pressure 2-125 PSIG (.14 - 8.6 bar)
Low Pressure 1-60 PSIG (.07 - 4 bar)
High Pressure 5-250 PSIG (.34 - 17.3 bar)

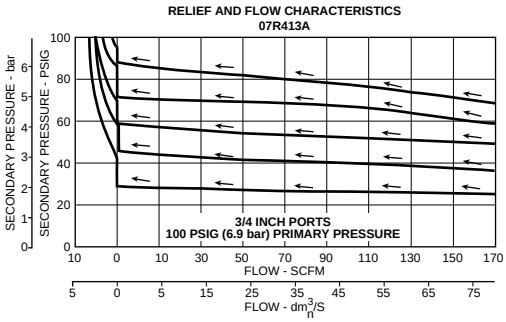
Springs:
Poppet: Stainless
Control: Steel

Temperature Rating:
32°F to 175°F (0°C to 80°C)

Performance Characteristics







Ordering Information

07R	3	13	A	*	SB

Port Size

2–3/8 Inch
3–1/2 Inch
4–3/4 Inch

Pressure Range

Without Gauge	With Gauge
11. 60 PSIG	16. 60 PSIG
13. 125 PSIG	18. 125 PSIG
15. 250 PSIG	21. 250 PSIG
24. 30 PSIG Non-Adjustable (Use with V option only)	

Adjustment & Relieving

A. Non-Rising Knob/ Relieving
L. Non-Rising Knob/ Non-Relieving
V. Non-Adjustable, Relieving

Engineering Change Designator

Will be entered at factory.

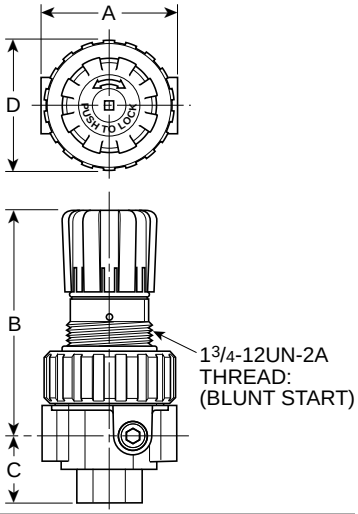
CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustments is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

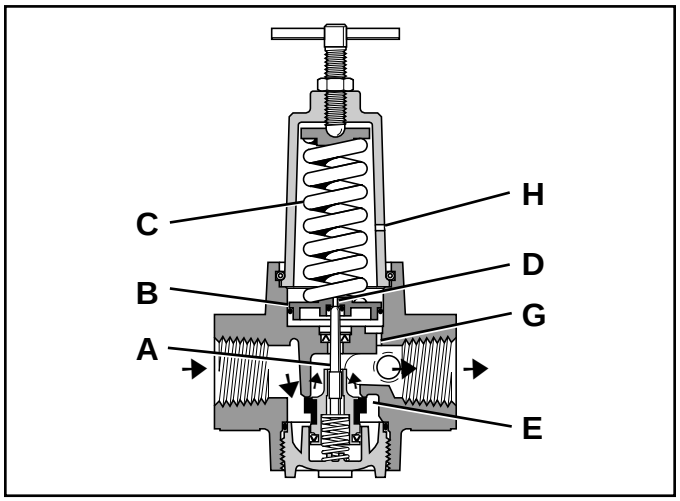
Dimensions:

Model	Port Size Inch	A	B	C	D	Wt.
07R	3/8", 1/2" 3/4"	3.24	4.79	1.61	2.74	2.5 lb.
		82 mm	122 mm	41 mm	70 mm	1.1 kg

NOTE:
2.00 Dia. (51 mm) minimum hole required for panel mounting. Maximum panel thickness 1/4".



Air Line Regulators
Hi-Flow 08R Series
3/4, 1, 1-1/4 & 1-1/2 Inch–Basic 1" Body



Features

- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation.
- Large reverse flow capability.
- Solid control piston for extended life.
- Two full flow 1/4" gauge ports can be used as additional outlets.
- Easily serviced.

Application

The 08R Hi-Flow series regulators are designed to provide quick response, and accurate pressure regulation for the most demanding Hi-Flow industrial applications. The unique solid piston was designed for long, service-free operation and will not rupture or tear under high cycle or other demanding applications.

⚠ WARNING

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

Operation

With the T-handle turned fully counterclockwise (no spring load), and pressure supplied to the regulator inlet port, the valve poppet assembly **(A)** is closed. Turning the T-handle clockwise applies a load to control spring **(C)**. This load causes the piston **(B)** and the valve poppet assembly **(A)** to move downward allowing flow across the seat area **(E)** created between the poppet assembly and the body. Pressure in the downstream line is sensed below the control piston **(B)** and offsets the load of spring **(C)**. As downstream pressure rises, poppet assembly **(A)** and control piston **(B)** move upward until the area **(E)** is closed and the load of the spring **(C)** and pressure under piston **(B)** are in balance. A reduced outlet pressure has now been obtained, depending on spring load. Creating a demand downstream, such as opening a valve, results in a reduced pressure under the control piston **(B)**. The load of control spring **(C)** now causes the poppet assembly to move downward opening seat area **(E)** and allowing air to flow to meet the downstream demand. The flow of downstream air is metered by the amount of opening **(E)**.

During low flow requirements, the amount of opening at the seat **(E)** is small, while at high flows it is large. The downstream pressure signal, which regulates the amount of opening, requires an adjustment over this range, in order to attempt a constant output. This adjustment is the orifice **(G)**, which is sized and located in such a manner as to provide a compensation to the downstream pressure signal transmitted to the piston. This effect is called aspiration and its effect is to maintain downstream pressure nearly constant over a wide range of flow demands.

Should downstream pressure exceed the desired regulated pressure, the excess pressure will cause the control piston **(B)** to move upward against control spring **(C)**, open vent hole **(D)**, and vent the excess pressure to atmosphere through the hole in the bonnet **(F)**. (This occurs in the standard relieving type regulator only.)

Specifications

Adjusting Stem & Springs:
Steel

Body:
Aluminum

Bonnet, Piston Stem, Valve Poppet & Cap:
Aluminum

Gauge Ports:
Two Ports – 1/4 Inch
(Can be used as additional Full Flow 1/4 Outlet Ports)

Piston, Cap:
Plastic

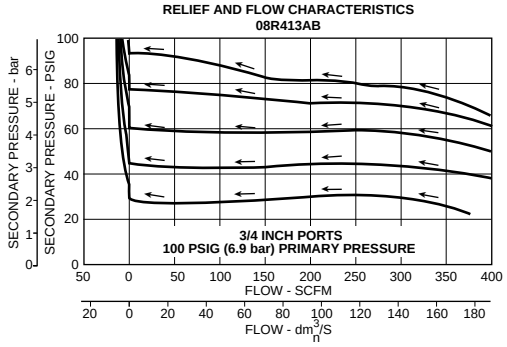
Port Threads:
3/4, 1, 1-1/4, 1-1/2 Inch

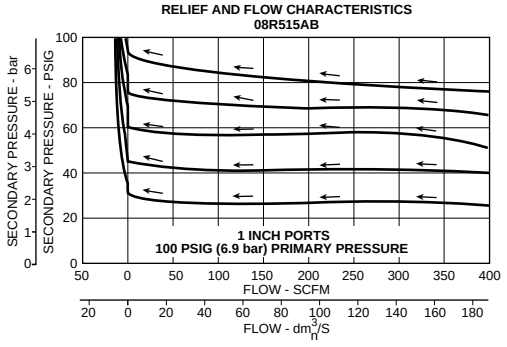
Pressure & Temperature Rating:
0 to 250 PSIG (0 to 17 bar)
32°F to +175°F (0°C to 80°C)

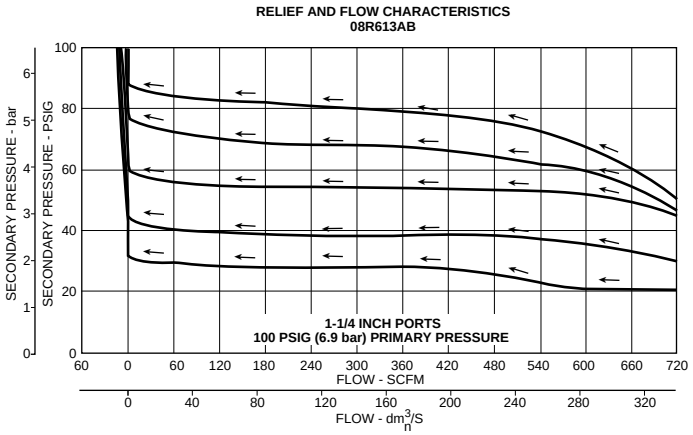
Seals:
Nitrile

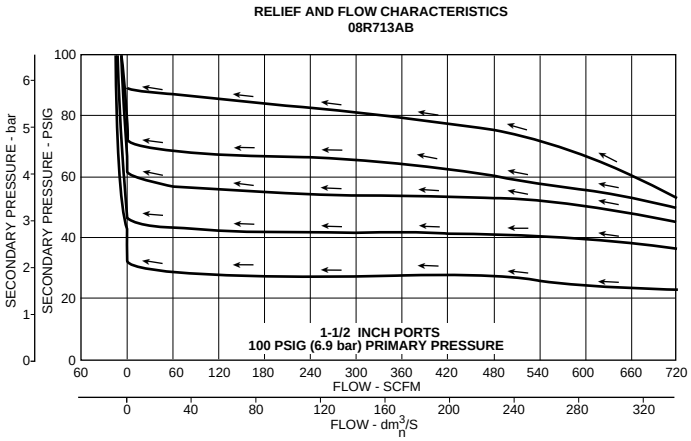
Secondary Pressure Ranges:
Standard Pressure 2-125 PSIG (.14 to 8.6 bar)
Low Pressure 1-60 PSIG (.07 to 4 bar)
High Pressure 5-250 PSIG (.34 to 17.3 bar)

Performance Characteristics









Ordering Information

08R	5	13	A	*	SB

Port Size

- 4–3/4 Inch
- 5–1 Inch
- 6–1-1/4 Inch
- 7–1-1/2 Inch

Pressure Range

Without Gauge
- 11. 60 PSIG
- 13. 125 PSIG
- 15. 250 PSIG

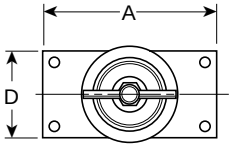
With Gauge
- 16. 60 PSIG
- 18. 125 PSIG
- 21. 250 PSIG

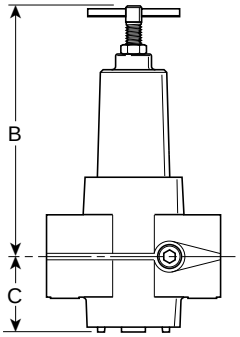
Adjustment

- A. T-Handle, Relieving
- L. T-Handle, Non-Relieving

Engineering Change Designator

Will be entered at factory.





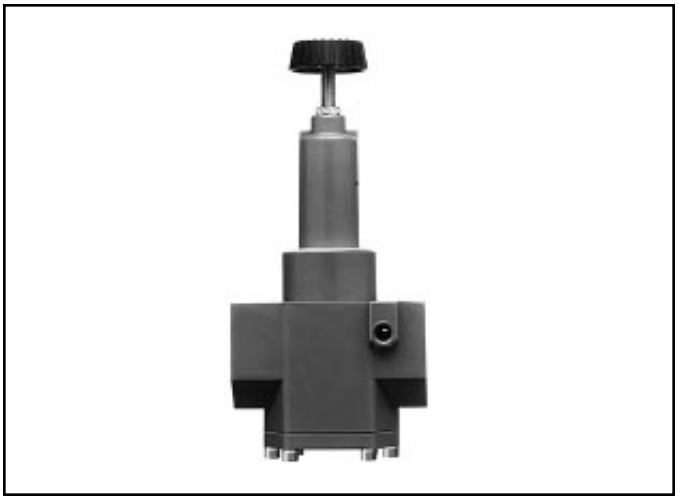
CAUTION:

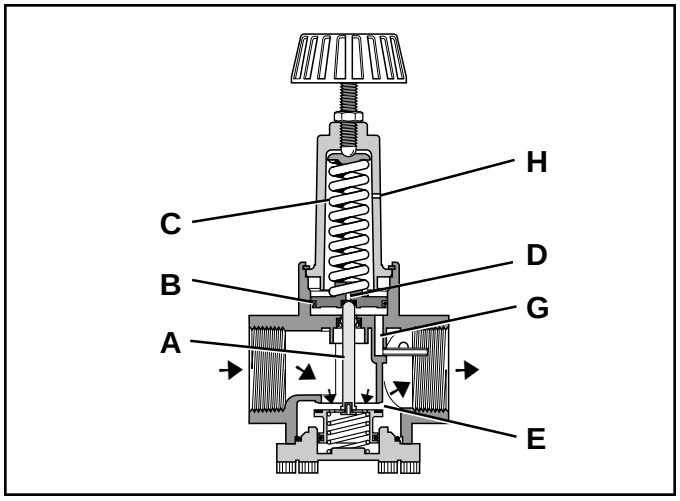
REGULATOR PRESSURE ADJUSTMENT – The working range of T-handle adjustments is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the T-handle is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

Dimensions:

Model	Port Size Inch	A	B	C	D	Wt.
08R	3/4", 1" 1-1/4", 1-1/2"	5.00	7.81	2.13	2.96	3.9 lb.
		127 mm	198 mm	54 mm	75 mm	1.8 kg

Air Line Regulators
Hi-Flow 09R Series
2 Inch–Basic 2" Body





Features

- Piston design for reduced downtime.
- High flow.
- Balanced poppet for quick and accurate regulation.
- Two full flow 1/4" gauge ports which can be used as additional outlets.
- Self relieving piston standard.

Application

The 09R Hi-Flow series regulators are designed to provide quick response, and accurate pressure regulation for the most demanding Hi-Flow industrial applications. The unique solid piston was designed for long, service-free operation and will not rupture or tear under high cycle or other demanding applications.

⚠ WARNING

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

Operation

With the knob turned fully counterclockwise (no spring load), and pressure supplied to the regulator inlet port, the valve poppet assembly **(A)** is closed. Turning the knob clockwise applies a load to control spring **(C)**.

This load causes the piston **(B)** and the valve poppet assembly **(A)** to move downward allowing flow across the seat area **(E)** created between the poppet assembly and the body. Pressure in the downstream line is sensed below the control piston **(B)** and offsets the load of spring **(C)**. As downstream pressure rises, poppet assembly **(A)** and control piston **(B)** move upward until the area **(E)** is closed and the load of the spring **(C)** and pressure under piston **(B)** are in balance. A reduced outlet pressure has now been obtained, depending on spring load. Creating a demand downstream, such as opening a valve, results in a reduced pressure under the control piston **(B)**. The load of control spring **(C)** now causes the poppet assembly to move downward opening seat area **(E)** and allowing air to flow to meet the downstream demand. The flow of downstream air is metered by the amount of opening **(E)**.

During low flow requirements, the amount of opening at the seat **(E)** is small, while at high flows it is large. The downstream pressure signal, which regulates the amount of opening, requires an adjustment over this range, in order to attempt a constant output. This adjustment is the orifice **(G)**, which is sized and located in such a manner as to provide a compensation to the downstream pressure signal transmitted to the piston. This effect is called aspiration and its effect is to maintain downstream pressure nearly constant over a wide range of flow demands.

Should downstream pressure exceed the desired regulated pressure, the excess pressure will cause the control piston **(B)** to move upward against control spring **(C)**, open vent hole **(D)**, and vent the excess pressure to atmosphere through the hole in the bonnet **(F)**. (This occurs in the standard relieving type regulator only.)

Specifications

Adjusting Stem & Springs:
Steel

Body:
Aluminum

Bonnet, Piston Stem, Valve Poppet & Cap:
Aluminum

Gauge Ports:
Two Ports – 1/4 Inch
(Can be used as additional Full Flow 1/4 Outlet Ports)

Piston, Cap:
Plastic

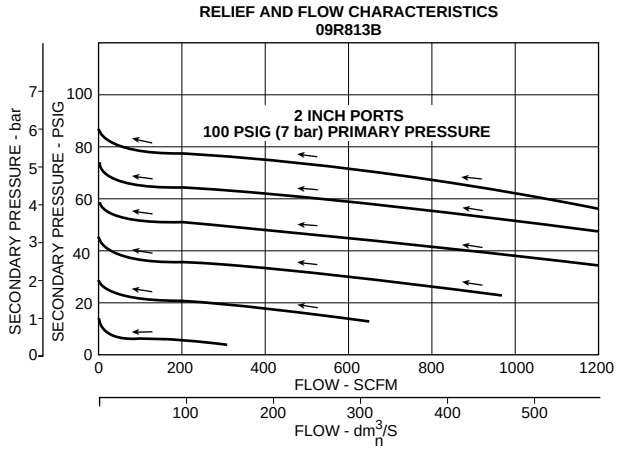
Port Threads:
2 Inch

Pressure & Temperature Rating:
0 to 250 PSIG (0 to 17 bar)
175°F (80°C)

Seals:
Nitrile

Secondary Pressure Ranges:
10-125 PSIG (.7 to 8.6 bar)

Performance Characteristics



Ordering Information

09R	8	13	B	*	SB

Port Size
8–2 Inch

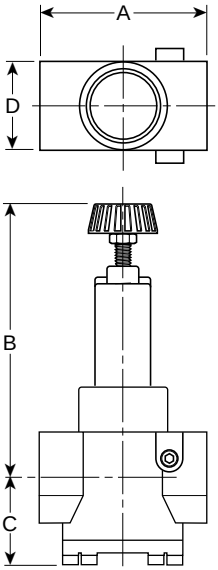
Pressure Range
13. 125 PSIG

Adjustment
B. Knob, Relieving
M. Knob, Non-Relieving

Engineering Change Designator
Will be entered at factory.

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustments is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

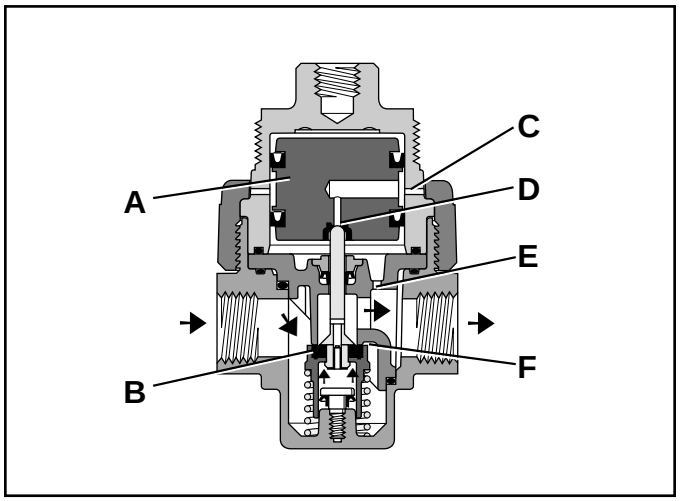


Dimensions:

Model	Port Size Inch	A	B	C	D	Wt
09R	2"	5.30	9.10	2.80	3.60	10.82 lb.
		135 mm	231 mm	71 mm	91 mm	4.9 kg

Pilot Controlled Regulators

11R Series, 1/4, 3/8 & 1/2 Inch–Basic 3/8" Body
12R Series, 3/8, 1/2 & 3/4 Inch–Basic 1/2" Body
13R Series, 3/4, 1, 1-1/4 & 1-1/2 Inch–Basic 1" Body



Features

- Balanced poppet provides quick response and accurate pressure regulation.
- Pilot controlled regulators can be mounted “out of reach” with pilot regulator installed in a convenient location.
- Solid control piston for extended life.
- Two full flow 1/4" gauge ports can be used as additional outlets.
- Pilot port 1/4 Inch.

Application

The 11, 12, 13R series pilot operated regulators are designed to provide quick response and accurate pressure regulation from any remote installation in your compressed air system. Simply install a pilot regulator in a convenient location for your pilot air supply and operate with the built in dependability of a solid piston and balanced poppet design for long, service-free operation.

⚠ WARNING

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

Operation

With pressure supplied to the regulator inlet port and no pilot signal, the valve poppet assembly **(B)** is closed. Pressurizing the pilot port applies a load to control piston **(A)**. This load causes the piston **(A)** and the valve poppet assembly **(B)** to move downward allowing flow across the seat area **(F)** created between the poppet assembly and the body. Pressure in the downstream line is sensed below the control piston **(A)** and offsets the load of piston **(A)**. As downstream pressure rises, poppet assembly **(B)** and control piston **(A)** move upward until the area **(F)** is closed and the load of the piston **(A)** and pressure under piston **(A)** are in balance. A reduced outlet pressure has now been obtained. Creating a demand downstream, such as opening a valve, results in a reduced pressure under the control piston **(A)**. The load of control piston **(A)** now causes the poppet assembly to move downward opening seat area **(F)** and allowing air to flow downstream. The flow of downstream air is metered by the amount of opening **(F)**.

During low flow requirements, the amount of opening at the seat **(F)** is small, while at high flows it is large. The downstream pressure signal, which regulates the amount of opening, requires an adjustment over this range, in order to attempt a constant output. This adjustment is the orifice **(G)**, which is sized and located in such a manner as to provide a compensation to the downstream pressure signal transmitted to the piston. This effect is called aspiration and its effect is to maintain downstream pressure nearly constant over a wide range of flow demands.

Should downstream pressure exceed the desired regulated pressure, the excess pressure will cause the control piston **(A)** to move upward against opening vent hole **(D)** and vent the excess pressure to atmosphere through the hole in the bonnet **(C)**. (This occurs in the relieving type regulator only.)

Specifications

Body & Pilot Cap:
Zinc

Gauge Ports:
Two Ports – 1/4 Inch
(Can be used as additional Full Flow 1/4 Outlet Ports)

Master Regulator:
14R113F

Piston, Valve Poppet* & Collar:
Plastic
* Aluminum Poppet in 13R Series

Port Threads:
11R – 1/4, 3/8 Inch
12R – 1/2, 3/4 Inch
13R – 3/4, 1, 1-1/4, 1-1/2 Inch

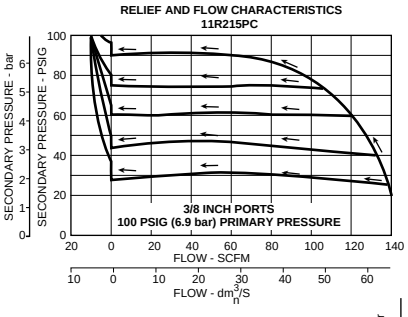
Pressure & Temperature Rating:
0 to 250 PSIG (0 to 17 bar)
32°F to +175°F (0°C to 80°C)

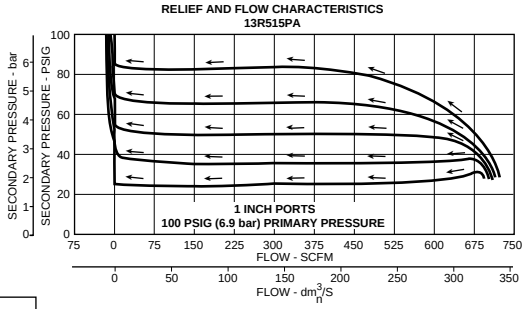
Seals:
Nitrile

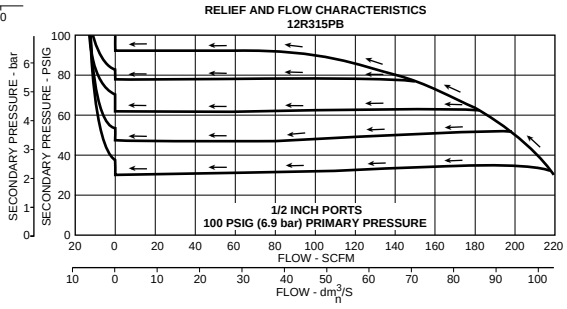
Secondary Pressure Ranges:
Will Follow “Pilot” Regular Pressure Setting

Springs:
Steel

Performance Characteristics







Ordering Information

11R	2	15	P	*	SB

Port Size

11R
1–1/4 Inch
2–3/8 Inch
3–1/2 Inch
12R
2–3/8 Inch
3–1/2 Inch
4–3/4 Inch
13R
4–3/4 Inch
5–1 Inch
6–1-1/4 Inch
7–1-1/2 Inch

Options

Without Gauge
14. Non-Relieving Piston
15. Relieving Piston
With Gauge
19. Non-Relieving Piston
21. Relieving Piston

Engineering Change Designator

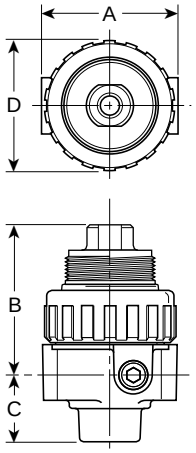
Will be entered at factory.

CAUTION:

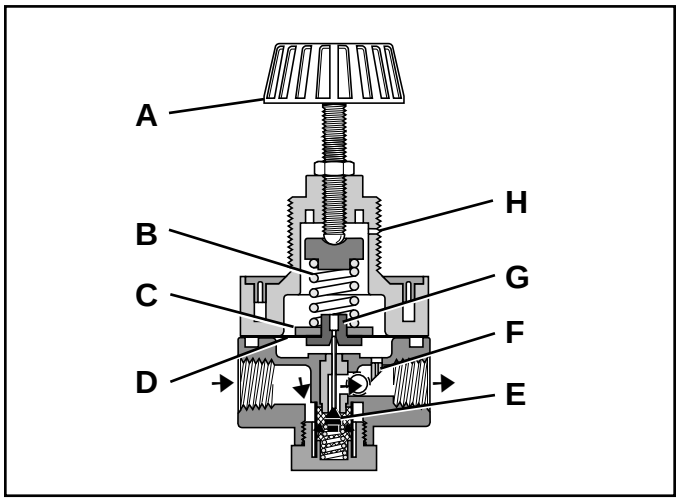
REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustments is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

Dimensions:

Model	Port Size Inch	A	B	C	D	Wt.
11R	1/4", 3/8", 1/2"	2.81	3.05	1.39	2.74	1.3 lb.
		71 mm	77 mm	35 mm	70 mm	.58 kg
12R	3/8", 1/2", 3/4"	3.24	3.15	1.61	2.74	2.0 lb.
		82 mm	80 mm	41 mm	70 mm	.91 kg
13R	3/4", 1" 1-1/4", 1-1/2"	5.00	3.27	2.13	2.90	3.2 lb.
		127 mm	83 mm	54 mm	74 mm	1.5 kg



Air Line Regulators
Standard 27R Series
1/4 Inch–Basic 1/4" Body



Features

- Fine adjustment sensitivity.
- Good repeatability and minimal pressure drop.
- High flow capacity.
- Two full flow 1/4" gauge ports can be used as additional outlets.
- Rubberized, soft seat valve stem for long life.

Application

The 27R series precision provide quality performance for a wide range of pneumatic systems and equipment. Critical applications in which they are especially effective include:

- Air Gauging/Weighing
- Air Chucks
- Tensioning Controls
- Test Panels/Stations
- Air Spraying Guns
- Air Cylinders and Actuators
- Dancers and Calender Roll Loading
- Medical Equipment
- Electrical Microprocessor Processing
- Positioner Signal
- Valve Operators

⚠ WARNING

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

Operation

Set the desired secondary pressure by turning the adjustment knob **(A)** clockwise. This action increases the regulating spring **(B)** force against the top of the diaphragm disc **(C)**. When the spring force above exceeds the air pressure beneath the diaphragm **(D)**, it is transmitted via the valve stem **(E)** and opens the valve. Air flow through the regulator now occurs. A specially designed aspirator tube **(F)** constantly transmits the secondary pressure to the underside of the diaphragm **(D)** so that, during flow conditions, any pressure drop can be compensated for. When flow is no longer required the outlet pressure increases slightly, allowing the diaphragm to rise, and the valve to close and pressure to be maintained.

On self-relieving models, if the outlet pressure beneath the diaphragm **(D)** should increase beyond the spring force, the diaphragm **(D)** will rise and the relief seal **(G)** between the diaphragm **(D)** and the valve stem **(E)** will be broken. The excess outlet pressure is then vented through the diaphragm orifice into the bonnet and subsequently to the atmosphere through an orifice **(H)** in the bonnet

Specifications

Bleed Rate:
2.0 SCFH

Body/Bonnet:
Zinc alloy, die cast, chromated

Diaphragm Seals:
Nitrile standard, Fluorocarbon optional

Effect of Supply Pressure Variation:
0.15 PSIG (0.01 bar) for 25 PSIG (1.7 bar) change in P_1

Exhaust Capacity:
0.25 SCFM (0.12 dm^2/s) @ 5 PSIG (0.34 bar) increase in P_2

Flow Capacity:
27 SCFM (12.7 dm^2/s) @ 100 PSIG (7.0 bar) P_1 and 20 PSIG (1.4 bar) P_2

Gauge Ports:
1/4 Inch

Port Threads:
1/4 Inch

Pressure & Temperature Rating:
0 to 250 PSIG (0 to 17 bar)
32°F to +175°F (0.0°C to 80°C)

Relief Flow:
1.0 SCFM

Repeatability:
±.02 PSIG (±0.014 bar)

Response:
250 ms – The valve will open to full flow and fill a volume of 1250 cm^3

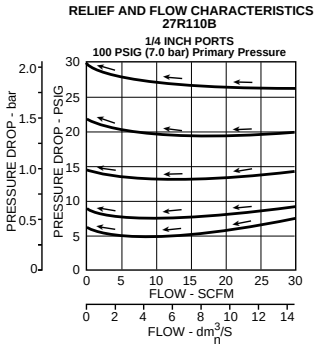
Sensitivity:
Less than 1" water (0.036 PSIG: 0.002 bar)

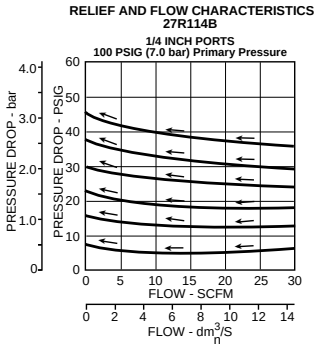
Springs:
Regulating spring of zinc coated carbon steel: valve spring of stainless steel

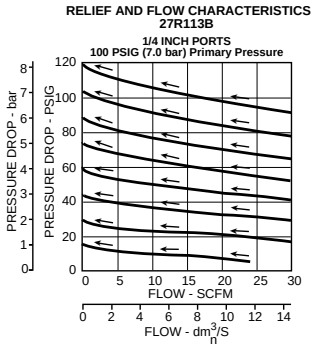
Valve Seat:
Nitrile standard, Fluorocarbon optional

Valve Stem:
Brass

Performance Characteristics







Ordering Information

27R	1	10	B	*	SB

Port Size
1–1/4 Inch

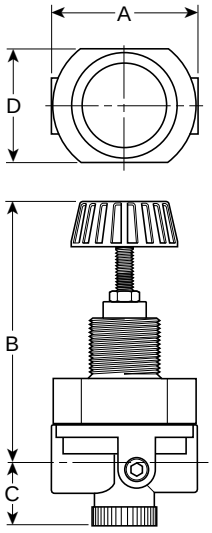
Pressure Range
10. 30 PSIG
12. 15 PSIG
13. 125 PSIG
14. 50 PSIG

Adjustment
B. Knob, Relieving

Engineering Change Designator
Will be entered at factory.

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustments is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.



Dimensions:

Model	Port Size Inch	A	B	C	D	Wt.
27R	1/4"	2.69	4.81	1.25	2.13	1.7 lb.
		68 mm	122 mm	32 mm	54 mm	.8 kg

NOTE: Max. panel thickness .50". 1.28 Dia. (33 mm) minimum hole required for panel mounting.