PNEUMATIC COMPONENTS AND SYSTEMS





Introduction to Air Logic

The Air Logic Division of Knapp Manufacturing, Inc. designs and manufactures a comprehensive line of pneumatic and vacuum control equipment-sensing and input elements, control elements, output interfacing devices and complete air supply systems. The control elements include both fluidic and moving diaphragm control components. Air Logic has a strong reputation for immediate service, quality, and dependability. For special applications and requirements call Air Logic.

Regulators

Air Logic is a manufacturer of Modular Subminiature Precision Pressure Regulators and Modular Manifold Systems, ideal for instrumentation, medical and industrial applications.

The modular equipment includes

- Subminiature Precision Pressure Regulators
- Factory Preset Precision Pressure Regulators
- Manifold Mounted Precision Pressure Regulators
- Modular Manifold System

The Precision Pressure Regulators provide the ultimate in regulation of pressure.

The Modular Manifold System allows various combinations of pneumatic accessories to be assembled together.

The unique modular dovetail design allows the regulator or the manifold to be used individually or assembled into a modular combination of pneumatic components.

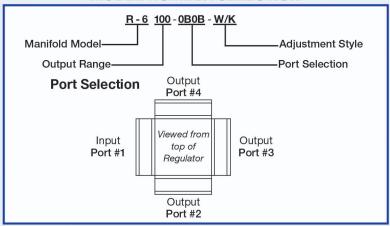
are trademarks of Air Logic registered in the United States Patent and Trademark office.

Patent numbers 5,217,260 & 5,261,447

Regulator Selection Guide

Please Order by model number for output range or specify the preset output range 0.5 to 40 PSI using 100 PSI supply. Specify accessory letters or numbers for the dovetail ports and adjustment style. The regulator is supplied with an INPUT PORT, an OUTPUT PORT, and two BLANK PORTS as standard. Two accessory ports may be ordered. When choosing the port selection the input port is the starting point. The remaining ports are then selected counterclockwise.

MODEL NUMBER SELECTION



ADJUSTM	INDEX		
Model Number	Adjustment Range	Description	Page Number
M-5000	N/A	Modular Manifold	10-11
M-5001	N/A	Modular Manifold	S 507 50 10
R-6010	0.5 to 10		
R-6030	0.5 to 30	Manifold Mounted	8-9
R-6060	0.5 to 60	Pressure Regulator	
R-6100	0.5 to 100		
PR-6000	Specify Preset Output	Manifold Mounted Preset Regulator	8-9
R-7010	0.5 to 10	'	
R-7030	0.5 to 30	Precision Pressure	4-5
R-7060	0.5 to 60	Regulator	
R-7100	0.5 to 100		
PR-7000	Specify Preset Output	Preset Precision Pressure Regulator	6-7
Modular Dovetail Accessories	N/A	For Pressure Regulator and Manifold System	12-13

PORT CONNECTION			
Selection	Accessory Number	Description	
	0	10-32 UNF Threads	
	1	1/8-27 NPT Threads	
	2	1/4-18 NPT Threads	
	В	Blank Dovetail	
Side Ports	U	Union Dovetail	
Side Forts	С	Connecting Dovetail	
	G	1/8-27 NPT Dovetail Gauge Port	
	Н	1/4-18 NPT Dovetail Gauge Port	
	D	0-30 PSI Gauge with Gauge Port	
	l l	0-60 PSI Gauge with Gauge Port	
	J	0-100 PSI Gauge with Gauge Port	
	K	0-160 PSI Gauge with Gauge Port	
	W	Wall Mounting Dovetail Bracket	
Manifold Ton	0	10-32 UNF Threads	
Manifold Top Cover	1	1/8-27 NPT Threads	
0010.	2	1/4-18 NPT Threads	
	В	Blank Cover	

Modular Precision Regulator and Manifold Systems



Unique Modular Manifold Design



R-7000 Series Precision Pressure Regulator



FEATURES

- Modular Dovetail Design
- Excellent Repeatability
- Miniature Size
- Non-Rising Stem
- Automatic Relief
- Low Cost

The Modular Subminiature Precision Pressure Regulator

is designed for precise regulation of pressure. It is ideal for instrumentation and industrial applications. The pressure regulator has a 20 turn adjustment range from 0.5 to 100 PSI. Maximum supply is 150 PSI. Four adjustment ranges are available: 10 PSI, 30 PSI, 60 PSI and 100 PSI. The standard device is furnished with an adjustment knob and is also available with an extended 1/4" shaft to accept an adjustment knob or furnished with an exposed screwdriver adjustment by which the pressure range can be adjusted.

The **Unique Modular Dovetail** design allows the regulator to be used individually or assembled into a modular combination of pneumatic components.

Port Connections Available

- Threaded Port
- Connector
- Union
- Gauge Port
- Blank Slides
- Push-in Fitting



Unique Modular Dovetail Design SPECIFICATIONS

Adjustment Range: 0.5 to 100 PSI Maximum Supply: 150 PSI

Operating Temperature: 40° to 150° F (4° to 66°C)

Recommended Filtration: 5 Micron

Effect of Supply Variation: Within .1 PSI output change with

10 PSI supply change

Flow Regulator: Maximum flow 5 SCFM with 100 PSI supply Repeatability: Within .1 PSI when the supply pressure is turned off

and on

Drift: At 75°F. 0.1 PSI total drift

Supply Consumption: Within 400 cc/m at 100 PSI supply, with a

deadend output

MATERIALS

Housing: Glass filled Celcon

Adjustment Screw: Carbon Filled Nylon Retaining Ring: Carbon Spring Steel

Stem Assembly: Celcon

Diaphragm: Buna N, Polyurethane Diaphragm Assembly: Celcon Springs: Stainless Steel

O-Rings: Buna N, Silicone Nitrile

Valve Seat: PVC

Filter: Stainless Steel 304, Micron size 380

Manifold Mount Screws: Zinc

PORT CONNECTIONS

Threaded Dovetail: A Modular Dovetail Slide with 10-32 UNF,

1/8-27 NPT, 1/4-18 NPT thread sizes. The 1/8" and 1/4" NPT contain a brass hoop ring insert. The 1/8" and 1/4" gauge port is available. During assembly fittings should be finger tight plus one turn.

Union Dovetail: A Modular Dovetail Slide with a thru hole

joining two units together with a common

air supply.

Connecting Dovetail: A Modular Connecting Dovetail Slide with no

hole joining two units together with no

common air supply.

Gauge Dovetail: A Modular Dovetail Slide with 1/8-27 NPT or

 $1/4\mbox{-}18$ NPT thread sizes. The Dovetail Slide has the word "gauge" molded into the slide.

Blank Dovetail: 2 Blank Dovetail Slides are supplied as

standard.

Push-in Fitting Available for 5/32", 3/16", 1/4", 5/16",

Dovetail: 4mm and 6mm O.D. Tubing.

MOUNTING

Panel Mount: 9/16" hole for panel mounting, mounting nut

furnished. Panel mounting nut should be

finger tight plus 1/4 turn.

Base mounting: .115 diameter mounting holes, use 4-40

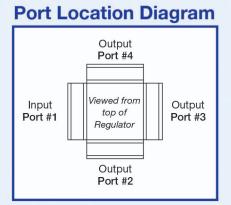
mounting screws.

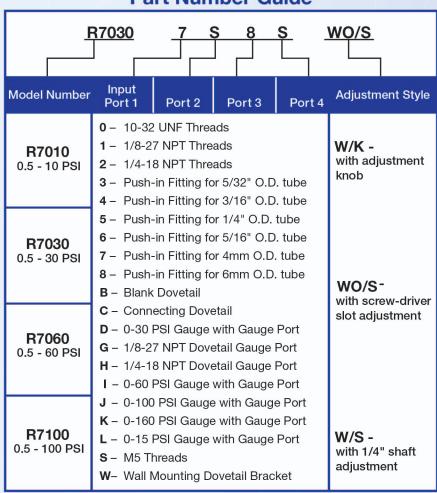
Wall Mount: Modular Dovetail wall mount.

Regulator Selection Guide

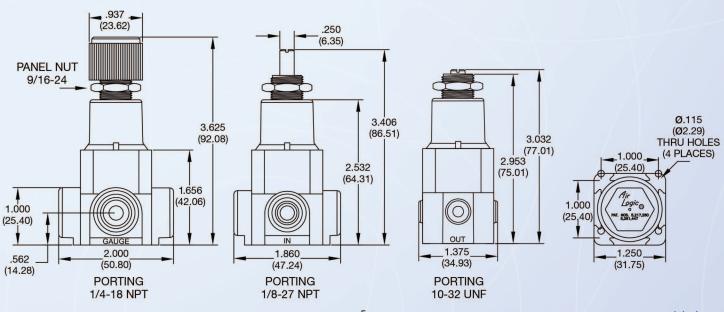
ORDERING INFORMATION Order by model number for output range. Specify accessory letters or numbers for the dovetail ports and adjustment style. The regulator is supplied with an INPUT PORT, an OUTPUT PORT, and two BLANK PORTS as standard. Two accessory ports may be ordered. When choosing the port selection the input port is the starting point. The remaining ports are then selected counterclockwise.

Part Number Guide





DIMENSIONS () = Metric Dimensions



PR-7000 Series

Preset Precision Pressure Regulator



FEATURES

- Modular Dovetail Design
- Excellent Repeatability
- Miniature Size
- Automatic Relief
- Low Cost

The Modular Precision Preset Regulator is designed to produce a precise output pressure that is preset. The regulator is ideal for instrumentation and industrial applications.

The standard preset model is factory preset to the desired output pressure, 0.5-40 PSI using 100 PSI supply. Specify the supply pressure if the supply is different than 100 PSI.

The Preset Regulator is available with a recessed allen wrench adjustment or a removable adjustment knob.

The Unique Modular Dovetail design allows the regulator to be used individually or assembled into a modular combination of pneumatic components.

Port Connections Available

- Threaded Port
- Connector
- Union
- Gauge Port
- Blank Slides
- Push-in Fitting



Unique Modular Dovetail Design

SPECIFICATIONS

Adjustment Range: 0.5 to 40 PSI Maximum Supply: 150 PSI

Operating Temperature: 40° to 150° F (4° to 66°C)

Recommended Filtration: 5 Micron

Effect of Supply Variation: Within .1 PSI output change with 10

PSI supply change

Flow Regulator: Maximum flow 5 SCFM with 100 PSI supply Repeatability: Within .1 PSI when the supply pressure is turned off

and on

Drift: At 75°F. 0.1 PSI total drift

Supply Consumption: Within 400 cc/m at 100 PSI supply, with a

deadend output

MATERIALS

Housing: Glass filled Celcon

Adjustment Screw: Carbon Filled Nylon **Retaining Ring:** Carbon Spring Steel

Stem Assembly: Celcon

Diaphragm: Buna N, Polyurethane **Diaphragm Assembly:** Celcon **Springs:** Stainless Steel

O-Rings: Buna N, Silicone Nitrile

Valve Seat: PVC

Filter: Stainless Steel 304, Micron size 380

Manifold Mount Screws: Zinc

PORT CONNECTIONS

Threaded Dovetail: A Modular Dovetail Slide with 10-32 UNF.

1/8-27 NPT, 1/4-18 NPT thread sizes. The 1/8" and 1/4" NPT contain a brass hoop ring insert. The 1/8" and 1/4" gauge port is available. During assembly fittings should be finger tight plus one turn.

Union Dovetail: A Modular Dovetail Slide with a thru hole

joining two units together with a common

air supply.

Connecting Dovetail: A Modular Connecting Dovetail Slide with no

hole joining two units together with no

common air supply.

Gauge Dovetail: A Modular Dovetail Slide with 1/8-27 NPT or

1/4-18 NPT thread sizes. The Dovetail Slide has the word "gauge" molded into the slide.

Blank Dovetail: 2 Blank Dovetail Slides are supplied as

standard.

Push-in Fitting Available for 5/32", 3/16", 1/4", 5/16",

4mm and 6mm O.D. Tubing.

MOUNTING

Dovetail:

Base Mounting: .115 diameter mounting holes – use 4-40

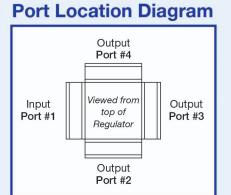
mounting screws.

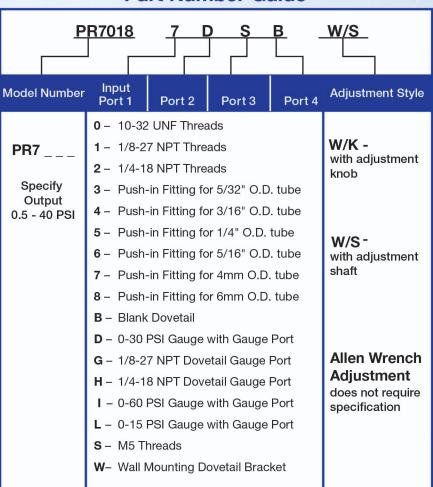
Wall Mount: Modular Dovetail wall mount.

Regulator Selection Guide

ORDERING INFORMATION Order by model number and specify the preset output range 0.5 to 40 PSI using 100 PSI supply. Specify accessory letters or numbers for the dovetail ports and adjustment style. The regulator is supplied with an *INPUT PORT*, an *OUTPUT PORT*, and two *BLANK PORTS* as standard. Two accessory ports may be ordered. When choosing the port selection, the *INPUT PORT* is the starting point. The remaining ports are then selected counterclockwise.

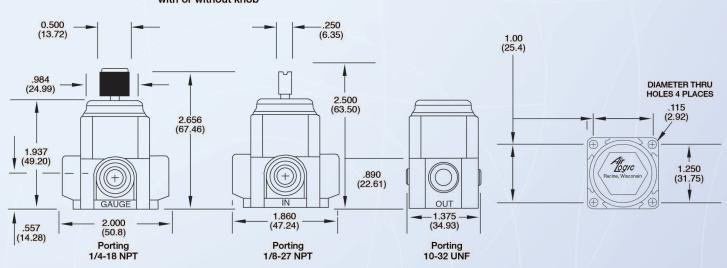
Part Number Guide





DIMENSIONS () = Metric Dimensions

Removable Adjusting Stem with or without knob



R-6000, PR-6000 Series Manifold Mounted Pressure Regulator



FEATURES

- Manifold Mount
- Modular Dovetail Design
- Excellent Repeatability
- Automatic Relief
- Low Cost

The Manifold Mounted Precision Pressure Regulators are designed to mount directly on pneumatic circuit boards or manifold subplates. The port connections for the supply and output are located on the base of the manifold mounted series regulator. Two recessed Buna-N o-rings are supplied for sealing the regulator to the manifold.

The Manifold Mounted Regulators are available in two models: The Adjustable Precision Regulator has a 20-turn adjustment range from .5 to 100 PSI. Maximum supply is 150 PSI. Four adjustment ranges are available: 10 PSI, 30 PSI, 60 PSI, and 100 PSI.

The Adjustable Regulator is furnished with an adjustment knob and is also available with an extended 1/4" shaft to accept an adjusting knob or furnished with an exposed screwdriver adjustment by which the pressure range can be adjusted.

The Preset Precision Regulator is designed to produce a precise output pressure that is preset at the factory, 0.5 to 40 PSI using a 100 PSI supply.

The preset regulator is available with a recessed allen wrench adjustment or a removable adjustment knob.

The Unique Modular Dovetail design allows the regulator to be used individually or assembled into a modular combination of pneumatic components.

Port Connections Available

- Threaded Port
- Connector
- Union
- Gauge Port
- Blank Slides
- Push-in Fitting



Unique Modular Dovetail Design SPECIFICATIONS

Adjustment Range: Adjustment Model, 0.5 to 100 PSI Preset Model, 0.5 to 40 PSI

Maximum Supply: 150 PSI

Operating Temperature: 40° to 150° F (4° to 66°C)

Recommended Filtration: 5 Micron

Effect of Supply Variation: Within .1 PSI output change with 10 PSI supply change

Flow Regulator: Maximum flow 5 SCFM with 100 PSI supply Repeatability: Within .1 PSI when the supply pressure is

turned off and on

Drift: At 75°F. 0.1 PSI total drift

Supply Consumption: Within 400 cc/m at 100 PSI supply, with a deadend output

MATERIALS

Housing: Glass filled Celcon

Adjustment Screw: Carbon filled Nylon Retaining Ring: Carbon Spring Steel

Stem Assembly: Celcon

Diaphragm: Buna N, Polyurethane Diaphragm Assembly: Celcon Springs: Stainless Steel

O-Rings: Buna N, Silicone Nitrile

Valve Seat: PVC

Filter: Stainless Steel 304, Micron size 380

Manifold Mount Screws: Zinc

PORT CONNECTIONS

Threaded Dovetail: A Modular Dovetail Slide with 10-32 UNF,

1/8-27 NPT, 1/4-18 NPT thread sizes. The 1/8" and 1/4" NPT contain a brass hoopring insert. The 1/8" and 1/4" gauge port is available. During assembly, fittings should be finger tight plus one turn.

Union Dovetail: A Modular Dovetail Slide with a thru hole joining two

units together with a common air supply.

Connecting Dovetail: A Modular Connecting Dovetail Slide with no hole

joining two units together with no common air

Gauge Dovetail: A Modular Dovetail Slide with 1/8-27 NPT or 1/4-18 NPT thread sizes. The Dovetail Slide has

has the word "gauge" molded into the slide.

Blank Dovetail: 2 Blank Dovetail Slides are supplied as

Push-in Fitting Available for 5/32", 3/16", 1/4", 5/16",

Dovetail: 4mm and 6mm O.D. Tubing.

MOUNTING

Mounting Base:

Manifold Mounting: .115 diameter mounting holes - use 4-40 mounting

An Air Logic manifold mounting base is available.

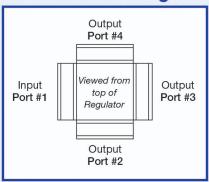
10-32 UNF threaded input and output ports.

Regulator Selection Guide

ORDERING INFORMATION Order by model number for output range or specify the preset output range 0.5 to 40 PSI using 100 PSI supply. Specify accessory letters or numbers for the dovetail ports and adjustment style. The regulator is supplied with an *INPUT PORT*, an *OUTPUT PORT*, and two *BLANK PORTS* as standard. Two accessory ports may be ordered. When choosing the port selection the input port is the starting point. The remaining ports are then selected counterclockwise.

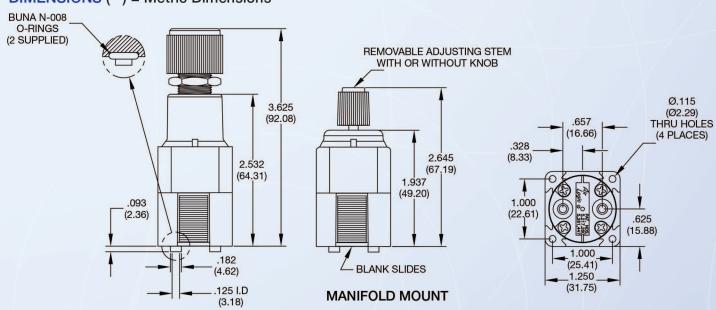
Part Number Guide

Port Location Diagram



Part Number Guide					
<u>P</u>	R6032 B I B W	二			
Model Number	Input Port 1 Port 2 Port 3 Port 4	Adjustment Style			
R6010 0.5 - 10 PSI	0 - 10-32 UNF Threads 1 - 1/8-27 NPT Threads 2 - 1/4-18 NPT Threads W/K - with adjustm knob				
R6030 0.5 - 30 PSI	 3 - Push-in Fitting for 5/32" O.D. tube 4 - Push-in Fitting for 3/16" O.D. tube 5 - Push-in Fitting for 1/4" O.D. tube 	WO/S - with screw-driver slot adjustment			
R6060 0.5 - 60 PSI	 6 - Push-in Fitting for 5/16" O.D. tube 7 - Push-in Fitting for 4mm O.D. tube 8 - Push-in Fitting for 6mm O.D. tube 	W/S- with 1/4" Shaft adjustment			
R6100 0.5 - 100 PSI	B – Blank Dovetail D – 0-30 PSI Gauge with Gauge Port G – 1/8-27 NPT Dovetail Gauge Port H – 1/4-18 NPT Dovetail Gauge Port				
PR6 Specify Output	 I - 0-60 PSI Gauge with Gauge Port J - 0-100 PSI Gauge with Gauge Port K - 0-160 PSI Gauge with Gauge Port L - 0-15 PSI Gauge with Gauge Port 	Allen Wrench Adjustment does not require specification			
0.5 - 40 PSI	S - M5 Threads W- Wall Mounting Dovetail Bracket	W/K or W/S must be specified			

DIMENSIONS () = Metric Dimensions



M-5000 Series Modular Manifold



- Modular Dovetail Design
- Miniature Size
- Low Cost

The **Modular Manifold** is designed for instrumentation and industrial applications.

The **Unique Modular Dovetail** design allows the manifold block to be used as an individual unit or assembled into a modular combination of pneumatic components.

The **Modular Manifold** is available in two models. The standard model and the filtered model.

The standard model is unfiltered.

The filtered model contains four stainless steel filters in the side ports. Micron size is 380. The top cover is unfiltered.

The Manifold Block contains four individual dovetail slides and one top cover that will accept a various assortment of threaded ports or blanks.

Port Connections Available

- Threaded Port and Top Cover
- Blank Slide and Blank Top Cover
- Connector
- Union
- Gauge Port
- Push-in Fitting

The Modular Dovetail Wall Mount Bracket is available for wall or cabinet mounting.

The Pneumatic Accessories include the modular manifold block, the modular precision pressure and preset regulators, pressure or vacuum switches, and pressure or vacuum gauges.

By combining the pneumatic accessories together pneumatic circuits and systems can be assembled into one Modular Manifold System.



Unique Modular Dovetail Design SPECIFICATIONS

Maximum Supply: 150 PSI

Operating Temperature: 40° to 150° F (4° to 66°C)

Recommended Filtration: 5 Micron

Capacity: 1 Cubic Inch

MATERIALS

Housing: Glass filled Celcon **O-Rings:** Buna N, Silicone Nitrile

Filter: Stainless Steel 304, Micron size 380

PORT CONNECTIONS

Threaded Dovetail: A Modular Dovetail Slide with 10-32

UNF, 1/8-27 NPT, 1/4-18 NPT thread

sizes. The 1/8" and 1/4" gauge port is available.

Union Dovetail: A Modular Dovetail Slide with a thru hole joining

two units together with a common air supply.

Connecting Dovetail: A Modular Connecting Dovetail Slide with no

hole joining two units together with no

common air supply.

Blank Dovetail: A Blank Dovetail Slide is supplied when the port is

not in use.

Gauge Dovetail: A Modular Dovetail Slide with 1/8-27 NPT or

1/4-18 NPT thread sizes. The Dovetail Slide has

the word "gauge" molded into the slide.

Top Cover: The top cover is available in various combinations,

10-32 UNF, 1/8-27 NPT or 1/4-18 NPT thread sizes. The 1/4" and 1/8" contain a brass hoop insert. During assembly, fittings should be finger tight plus one turn.

A Blank Top Cover is available when porting is not desired.

Push-in Fitting Dovetail : Available for 5/32", 3/16", 1/4", 5/16", 4mm and 6mm O.D. Tubing.

MOUNTING

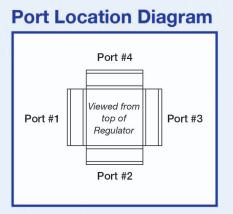
Base mounting: .115 diameter mounting holes - use 4-40 mounting screws

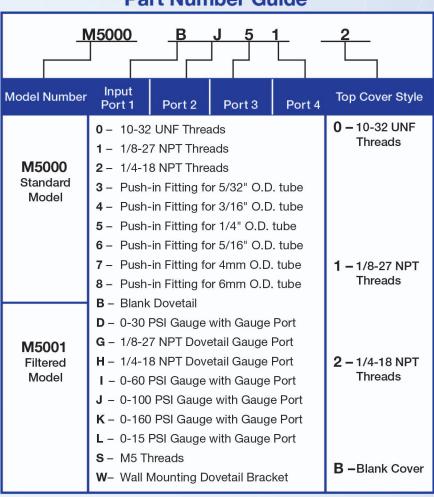
Wall Mount: Modular Dovetail wall mount

Manifold Selection Guide

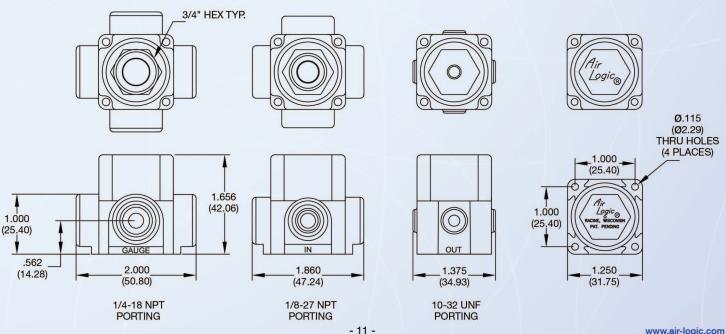
ORDERING INFORMATION Order by model number. Specify accessory letters or numbers for the dovetail ports and top cover port. When choosing the port selection Port #1 is the starting point. The remaining ports are then selected counterclockwise.

Part Number Guide





DIMENSIONS () = Metric Dimensions



Modular Dovetail Accessories

The **Modular Dovetail Accessories** are designed for the Adjustable Pressure Regulator, the Preset Pressure Regulator, the Manifold Mounted Pressure Regulator, and the Modular Manifold System.

The **Unique Modular Dovetail** design allows the regulator or the manifold to be used individually or assembled into a modular combination of Pneumatic Components.

The Modular Dovetail Slides are sealed with a Buna No-ring to prevent leaking. The dovetail slides are locked in place by the bottom hex cover.

The **Blank Dovetail Slides** are used when porting is not desired. Four blank dovetail slides are standard on the manifold regulator. The supply side is marked "IN" and the output side is marked "OUT."

The **Dovetail Union and Connector** allow various combinations of regulators and manifold blocks to be assembled together.

The **Union Dovetail** contains a thru hole joining two units together with a common air supply.

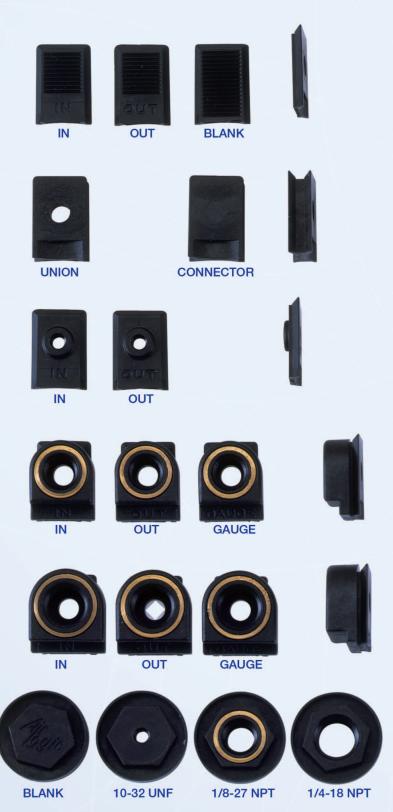
The **Connecting Dovetail** contains no thru hole, but joins two units together with no common air supply.

The 10-32 UNF Threaded Dovetail Slides have an IN and an OUT.

The **1/8-27 NPT Threaded Dovetail Slides** have an IN, OUT, and a GAUGE Port. The 1/8" NPT port contains a brass hoop ring insert designed for added strength.

The 1/4-18 NPT Threaded Dovetail Slides have an IN, OUT, and Gauge Port. The 1/4" NPT ports contain a brass hoop ring insert designed for added strength.

The **Manifold Top Cover** is available with blank port, 10-32 UNF, 1/8-27 NPT and 1/4-18 NPT.



The Manifold Mounting Base Plate is designed for testing and evaluating the manifold mounted precision regulator. The mounting base has 10-32 UNF threaded input and output ports. Part Number 7-MMB

The Modular Dovetail Wall Mount Bracket is available for wall or cabinet mounting.



Model Number	Range	
G-015	0-15 PSI	
G-030	0-30 PSI	
G-060	0-60 PSI	
G-100	0-100 PSI	
G-160	0-160 PSI	
Vacuum Gauge V-030	0-30" Hg	

The **Subminiature Pressure Switches** and Vacuum Switches are available with a 1/8" NPT pipe thread mount. The accessories are designed for the 1/8" NPT Threaded Dovetail Slide.



DIMENSIONS () = Metric Dimensions

MANIFOLD MOUNTING BASE 4-40 UNC **WALL MOUNT BRACKET** TAPPED HOLE 1.766 (4 PLACES) (44.86)10-32 UNF 1.000 1:1 Ratio TAPPED HOLE (25.40)2.000 (50.80) (2 PLACES) 21607 1.500 (38.10) 1.125 Ø.172 (Ø4.37).328 .562 (14.27) (8.33) 1.000 (25.40)182 DIA. (4.62)(16.66).375 (9.53)1.328 (33.73)