OEM Filters, Air Dryers, and Nitrogen Generator Modules

Product Catalog
Bulletin OEM-H

Parker Balston

ENGINEERING YOUR SUCCESS.

Parker Hannifin Corporation

The Global Leader in Motion and Control Technologies

We engineer success of our customers around the world, drawing upon nine core motion and control technologies. These technologies enable virtually every machine and process to operate accurately, efficiently and dependably.

As the global leader in motion and control, we partner with our distributors to increase our customers' productivity and profitability by delivering an unmatchable breadth of engineered components and value-added services.

We continue to grow with our customers by creating application-focused products and system solutions. A key to our global expansion has been to follow our customers and establish operations, sales and service wherever they are needed. No single competitor matches Parker's global presence.

Corporate Headquarters in Cleveland, Ohio.

Parker's Motion and Control Technologies

Aerospace	Hydraulics
Climate Control	Pneumatics
Electromechanical	Process Control
Filtration	Sealing & Shielding
Fluid & Gas Handling	

Parker Balston

ENGINEERING YOUR SUCCESS.

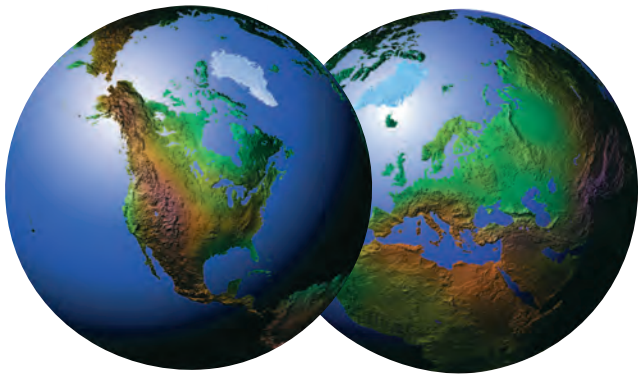
Table of Contents

Custom Product Capabilities	**4-7**
Filter Media	5
Disposable Filter Units	6
Membrane Air Dryers	7
Compressed Air Filters	**8-47**
8000 Series High Efficiency Coalescers	8-12
Filter Installation Recommendations 8000 Series	9-10
8000 Series Ordering Information	12
8000 Series 1/4" to 2" Line Size Filters	13
8000 Series 3" Line Size Filters	14
8000 Series Modular Configurations - 1/4" to 1 1/2" Line Size	15-16
Compressed Air Filters Selection Chart - Air Preparation Units	17-18
Compressed Air Filters - Air Preparation Units	19-45
Filter Regulators	46-47
Membrane Air Dryers	**48-49**
Product Specifications and Ordering Information	50-51
OEM Disposable Filter Solutions	**52-60**
Filter Cartridge and Housing Selection	53-58
Technical Specifications	59
Filter Media Selection	60
Compressed Air and Gas Water Separators	**61-62**
OEM Nitrogen Generators	**63-66**
Offer of Sale	**67**

Parker Balston®
Custom Product Capabilities

Commitment

Parker Hannifin Corporation is dedicated to providing new and innovative filtration and gas purification technology for use in the most demanding industrial and scientific applications. As a technology leader, our organization is committed to developing, manufacturing and marketing superior quality products and services worldwide.



Quality

We are very proud of our worldwide reputation for quality. Quality is our first priority from the day we discover the need for a new filtration product to the day you install the new product in your system. Parker Hannifin Corporation is an international organization specializing in high quality filter products and related separation equipment. Balston products have an outstanding reputation for quality and uniformity that has established the Balston brand as an accepted standard for industrial filtration. Balston products are all manufactured at facilities approved under ISO 9001 standards.

Let Parker Hannifin Corporation review your OEM product requirements, we'll save you money while providing flexible engineering, exceptional service and a team focused on the OEM customer and needs.

Customer Driven
Competitive pricing
Fast deliveries
Flexible blanket terms to maximize your cost savings
Sample programs that enable you to test with minimal risk
Trial programs
ISO 9001 Certified
Global Service and Support

Filter Media

Balston
Filter Media

High efficiency particulate filtration from 75 micron to 0.01 micron

Wide range of sizes and flow rates available

Cost effective, self sealing designs

Efficiencies from 93% to 99.9999%

For use in gas or liquid streams

Minimal pressure drop

Filter Media

Balston branded filter media has been manufactured in the USA for over thirty years. Our capabilities and expertise are unmatched throughout the world. Balston filter media is available in a wide range of custom sizes and configurations as well as hundreds of standard designs. We can assist in identifying your needs and offer suggestions on the best way to meet your application requirements. If you have a custom size requirement, we can develop a product that meets your needs.

Parker Hannifin Corporation has an extensive range of materials to suit the different applications you might encounter. More importantly, we have the expertise to formulate these materials into the high efficiency media you need for your application. Our technology also enables us to develop and formulate media from new materials every day.

Challenge Parker Hannifin Corporation with a specific efficiency and flow characteristic, if we do not already manufacture a grade that suits your needs...we'll develop one utilizing our team of knowledgeable engineers and scientists.

Custom Parameters

Media shape:	Cylindrical, flat sheet
Element sizes:	Dia. from 1/2" to 3"
	Lengths from 1/2" to 20"
Filtration efficiency:	80% to 99.9999%
Particulate removal:	75 micron to 0.01 micron
Sealing mechanisms: compression;	Self sealing, axial endcaps
Temperature range:	-150°F to 900°F (-65°C to 482°C)
Materials of construction:	Glass fiber, quartz fiber, polyolefins, high performance polymers, activated carbon fiber, -PVDF, PTFE

Applications

- General purpose compressed air filtration
- Instrument air filtration
- Protection of pneumatic control components
- Bacterial removal from air for food, medical, and dental use
- Protection of pneumatic process equipment
- Filtration of samples to analyzers
- High purity liquids
- Bacteria and parasite removal from water

Disposable Filter Units

Balston
Disposable Filter Units

Compact in-line design

Available with liquid drain port and various indicators

Wide range of filter efficiencies

Resistant materials of construction

Pressures up to 125 psig (8.62 barg)

Lightweight, cost effective

Choice of port size and configuration

Custom Parameters	
Fitting configuration:	Tube ends Threaded ports O-ring barbed seal
Filter sizes:	Dia. from 1/2" to 3" Lengths from 1" to 6"
Filtration efficiency:	80% to 99.9999%
Particulate removal:	50 micron to 0.01 micron
Temperature range:	0°F to 250°F (-7°C to 121°C)
Materials of construction:	Nylon, PVDF, Polypropylene

Disposable Filter Units

Parker Hannifin Corporation manufactures the Balston branded Disposable Filter Unit (DFU) which incorporates our extensive media capability with a small, inexpensive, disposable housing. This unique design was introduced to the filtration industry over 20 years ago. Balston DFU's are available in custom sizes and configurations as well as standard designs. A wide range of filter media is available to configure application specific filtration. We can also design a disposable filter housing that suits your application needs.

Parker Hannifin Corporation pioneered oil indicating technology over 15 years ago. We have recently developed new indicators to monitor the condition of various fluid streams. For instance, bacteria indicators for food, medical and dental applications and moisture indicators for air lines.

Applications
Protection of pneumatic controls
Instrument air filtration
Filtration of samples to analyzers
Indication of moisture, oil, or bacteria present in air or gas

Membrane Air Dryers

Balston
Membrane Air
Dryer Modules

State-of-the-art membrane technology

No electricity required, no moving parts

Dewpoints as low as -58°F (50°C)

Explosion proof

Silent operation

No desiccant to change

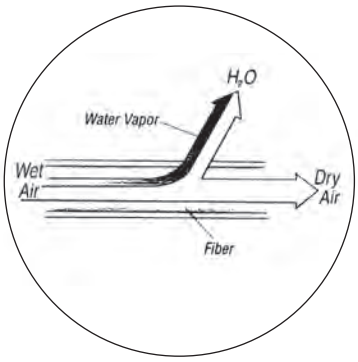
No refrigerants or freons

Membrane Air Dryers

Parker Hannifin Corporation's OEM customer support team will propose a convenient and cost effective solution to your air drying requirement. Balston Membrane Air Dryers are small, lightweight, and economical.

Using our state-of-the-art membrane manufacturing capabilities, Parker Hannifin Corporation is able to quickly respond to any customer's requirements. Our ability to meet customer requirements extends beyond flow, pressure, and dewpoint. Parker Filtration is able to address needs concerning size, inlet and outlet port configuration, air consumption, private labeling, product literature, installation manuals, and custom color. Our compact membrane modules range from 5/8" (13cm) dia. X 12" (30.5cm) long up to 3" dia. X 30" long, and can handle flows from 1slpm to 100 scfm (170 Nm^3/h).

As the value leader, we have merged our superior coalescing technology with a proven, innovative membrane system capable of supplying oil and particulate free, dry compressed air to dewpoints as low as -58°F (-50°C) and beyond.



Water vapor quickly permeates the membrane, and is released harmlessly to atmosphere. Air flows along the membrane fiber as a separate product stream.

Custom Parameters	
Dewpoints:	50°F to -58°F (10°C to -50°C)
Pressures:	40 psig to 150 psig (2.8 BAR to 10.3 BAR)
Flow rates:	1slpm to 100 scfm (170 Nm^3/h)
Module sizes:	Dia. from 5/8" to 3" (13cm to 7.6cm) Lengths from 8" to 30" (20.3cm to 76.2cm)
Port sizes:	1/8" to 1/2" NPT
(Private labeling available)	

Applications

- Low dewpoint instrument air
- Prevention of freeze-ups
- Purging electronic cabinets and environmental chambers
- Dry air to power air bearings
- Dry air for spray applications
- Dry air for medical and dental applications

High Efficiency Coalescers
Parker Filtration 8000 Series

Parker Filtration 8000 Series Coalescing Filters

Remove 99.99% of 0.01 micron particles of oil, water, and dirt from compressed air and other gases

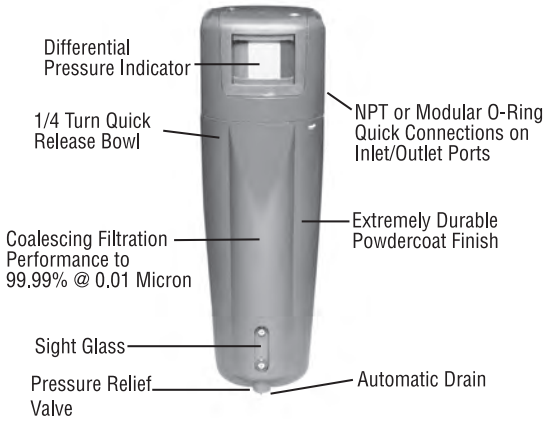
Continuously trap and drain liquids

Service flow ranges from a few SCFM to 40,000 SCFM

Remove trace oil vapor with adsorbent cartridges

Maximum pressure from 250 to 665 psig (17.2 barg to 45.9 barg)

Maximum temperature to 130°F (54°C)



Parker Filtration 8000 Series Filter Assemblies

Coalescing Compressed Air Filters protect your equipment and delicate instruments from the dirt, water, and oil usually found in compressed air. Coalescing Filters remove these contaminants at a very high efficiency - up to 99.99% for 0.01 micron particles and droplets. Liquid releases from the filter cartridge to an automatic drain as rapidly as it enters the filter. This allows the filter to continue removing liquids for an unlimited time without loss of efficiency or flow capacity.

The Parker Filtration 8000 Series are shipped as complete systems with built-in differential pressure indicators to signal filter changes and an automatic drain with sightglass to monitor its performance. A 1/4 turn bayonet quick release bowl with a pressure relief valve has been incorporated into this new design offering quick access to the filter cartridge without the need for tools. Modular quick connections are available for coupling together several filter housings in series. The 8000 Series is available in many different configurations to accommodate the requirements of any unique application.

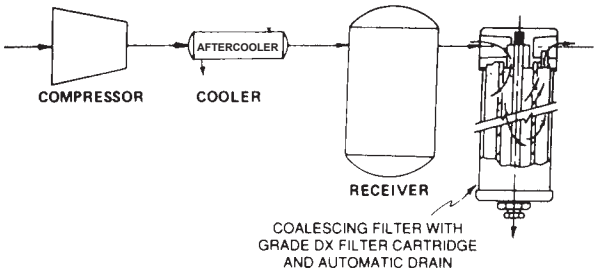
Filter Installation Recommendations
Parker Filtration 8000 Series

Recommendations for Typical Filter Installations

Selecting the proper location for the 8000 Series filter in a compressed air line is as important as selecting the proper filter. In most cases you will probably be able to base your own installation on these recommendations for typical installations.

Placing The Filter At the Compressor

The standard compressor installation consists of a compressor, a water-chilled aftercooler, and a receiver. The filter should be installed downstream from the receiver or, at least 50 feet from the compressor. In a system with an efficient aftercooler, the distance from the receiver to the filter is not important. Since the filter is usually maintained by the personnel responsible for the compressor, it is often convenient to install the filter downstream from the receiver. If there is no aftercooler, or the aftercooler is not efficient, coalescing filters should be installed as close to the point(s) of use as possible.



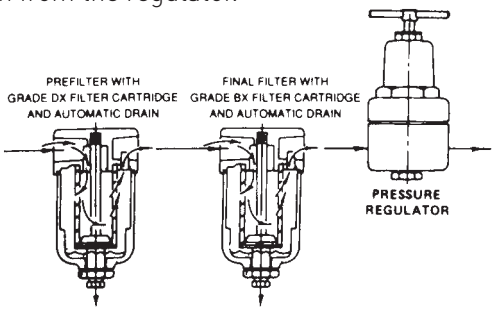
Compressor Filter Specifications

8000 Series Filter Cartridge	Grade DX
Filter Housing	Determine filter size from flow chart on page 3, but port size must be equal to or larger than the line size
Automatic Drain	Recommended
Differential Pressure Indicator	Recommended

Some compressor installations do not have an aftercooler (this is an undesirable situation). Air saturated with water vapor leaves a compressor at 240°F to 400°F (116°C to 204°C). Without an aftercooler, the air cools close to room temperature in the distribution lines and water condenses throughout the air distribution system. About two-thirds of the total water content of the air will be condensed when the air has cooled to 100°F (38°C). A filter located immediately upstream from where the main air line branches into smaller distribution lines will remove most of the water load from the system. The filter requirements for the main line are described above; they are the same as for a system with an aftercooler. However, since the air will continue to cool in the distribution system, additional filters located at end-use points will be required to remove water that condensed downstream from the main line filter.

Placing The Filter At The Point-Of-Use

Whether or not the system has an aftercooler, we strongly recommend a filter at each critical end-use point, even if a main line Grade DX filter has been used. The point-of-use filters will remove dirt and oil which may have been in the distribution lines, as well as water that has condensed downstream from the main filter. If there is a pressure regulator at the end-use point, the filter should be installed immediately upstream from the regulator.



Point-of-Use Filter Recommendations

8000 Series Filter Cartridge	Grade BX
Filter Housing	Size from flow chart (see page 3) or by line size. Port size must be equal to or larger than line size.
Automatic Drain	Recommended
Differential Pressure Indicator	Optional

If there is no Grade DX filter upstream from the final filter, or if a significant amount of water or oil is expected, then a two-stage system, Grade DX followed by Grade BX, is required at each use point. The housing and automatic drain for the Grade DX prefilter should be the same as for the Grade BX final filter (if the flow capacities permit).

Even if the application is not particularly sensitive to impurities in the air - for example, an air-driven tool - it is still good practice to remove condensed water with a filter at the end of the line. We recommend a single-stage Grade DX filter with automatic drain.

Filter Installation Recommendations Parker Filtration 8000 Series

Using Filters With Air Dryers

Properly-specified filters are relatively inexpensive protection for air dryers. Refrigerated, membrane, and desiccant dryers benefit from filter protection.

Refrigerated Dryers

A Grade DX prefilter with an automatic drain should be installed upstream from a refrigerated dryer to prevent oil and condensed water from entering the dryer. Oil entering a dryer coats the cooling coil and reduces its efficiency; condensed water increases the cooling load and reduces dryer capacity. A dryer that was in operation before an 8000 Series filter was installed may already have oil inside it. Therefore a second filter, a Grade BX filter with automatic drain, must be installed downstream from the dryer if oil-free air is required.

Desiccant Dryers

Desiccant dryers are very sensitive to water and oil droplets. Water can saturate the desiccant and reduce its drying efficiency or even destroy it. Oil can coat the desiccant, rendering it ineffective, or the oil can accumulate on the desiccant and create a combustion hazard when the desiccant is heated for regeneration.

For maximum protection of the desiccant dryer, a two-stage filter (Grade DX followed by Grade BX) system with automatic drains should installed upstream from the dryer. To protect downstream delivery points from abrasive desiccant particles, a high efficiency filter with high solids holding capacity should be installed downstream from the dryer. The Grade DX filter cartridge is recommended for this downstream installation location.

Membrane Dryers

Membrane air dryers are sensitive to water and oil droplets. Oil can permanently damage the hollow fiber core. Two stages of coalescing filters (Grade DX followed by BX) remove contaminants down to 0.01 micron. Most competitive membrane dryers are not assembled with adequate prefiltration protection and should be protected with a two stage Filter System (Grade DX, Grade BX). For additional information, see the Membrane Air Dryers section, pages 46-49.

Sterile Air Filters

- **Remove all viable organisms**
- **USDA accepted for use in federally inspected Meat and Poultry Plants**
- **Low pressure drop**
- **Full compliance with FDA requirements**

Grade SA filter cartridges, rated at 99.9999+% efficiency for 0.1 micron particles, are at least 30 times better than the accepted standard for sterile air filters developed by independent research organizations in the US and UK. These sterile air filters are in full compliance with the requirements of the FDA.

"This sterile air system produces commercially sterile air and, to the limits of detection, no viable colonies of micro-organisms were found".

- Professor David A. Evans, Ph.D.

Maintaining The Filters

In a typical compressed air delivery system, a properly specified filter cartridge can be expected to last for up to one year. The filter cartridge can continue to coalesce indefinitely, but solids loading in the depth of the cartridge will cause a pressure drop through the housing. The 8000 Series filter should be changed when the pressure drop reaches 10 psi. At pressure drops higher than 10 psig, the cartridge will continue to perform at its rated efficiency, but downstream instrumentation may be affected by the pressure drop. To monitor the condition of the filters, install a Differential Pressure Indicator (DPI) on a filter or across a multi-filter installation. The DPI gives a visual indication of differential pressure through the filter cartridge. The Differential Pressure Indicator (P/N 41-070) is optional on the 1/4" and 1/2" Compressed Air Filter Assemblies. For 1/2" NPT and smaller, the 41-070 DPI may be easily connected to "Tees" upstream and downstream from the filter. The 3/4" NPT and larger filter assemblies have pre-drilled pressure taps to accommodate the 41-083 DPI.

8000 Series
1/4” to 2” Line Size Filters

Models 8A02

Models 8A02N-0B2, 8A02N-0BD, 8A02N-0BP are 1/4” line size assemblies with simple, reliable “automatic” drains used for low flow applications with moderate levels of liquid contaminate. The 8A02N-0BP is designed to empty condensate when there is a sudden pressure drop through the system (intermittent compressed air demand applications). The 8A02N-0BD incorporates an overnight drain which will drain liquid contaminate when the compressed air system pressure drops below 5 psig. The 8A02N-0B2 utilizes a standard manual threaded drain. All models have a transparent polycarbonate bowl with an aluminum head.

Model 8A02

Models 8B02, 8C02, 8B04, 8C04

Models 8B02, 8C02, 8B04 and 8C04

Model 8B02 is a 1/4” line size assembly. Model 8B04 is a 1/2” line size assembly. Both are equipped with a manual drain, transparent nylon bowl, and are suitable choices when space is limited. The 8C02 and 8C04 are equipped with aluminum bowls. These housings are available with a manual drain, without a DPI. Order either 8B02N-0A2, 8B04N-0A2, 8C02N-0A2 or 8C04N-0A2

Model 800X Series

Model 8104 Series

Models 8002, 8003, and 8004

Models 8002 and 8003 are 1/4” and 3/8” line size assemblies. These filters have increased liquid holding capacity and are equipped with high capacity float drains, differential pressure indicators, sightglass, pressure relief valve, and 1/4 turn bayonet bowl closures. The 8004 series is designed to service 1/2” compressed air lines with low flow rates.

Model 8104

The Model 8104 is a 1/2” line size assembly with an aluminum bowl. The filter housing has a large liquid holding capacity and a high capacity float drain, differential pressure indicator, sightglass, pressure relief valve, and 1/4 turn bayonet bowl closure.

Models 8206, 8208, 8312, and 8D16

The Model 8206 filter assembly has 3/4” NPT inlet and outlet ports and an automatic float drain and differential pressure indicator installed. The Models 8208, 8312, and 8D16 filter assemblies have 1”, 1 1/2”, and 2” NPT inlet and outlet ports, respectively; these models are also equipped with automatic drains and differential pressure indicators. Materials of construction are shown in the charts.

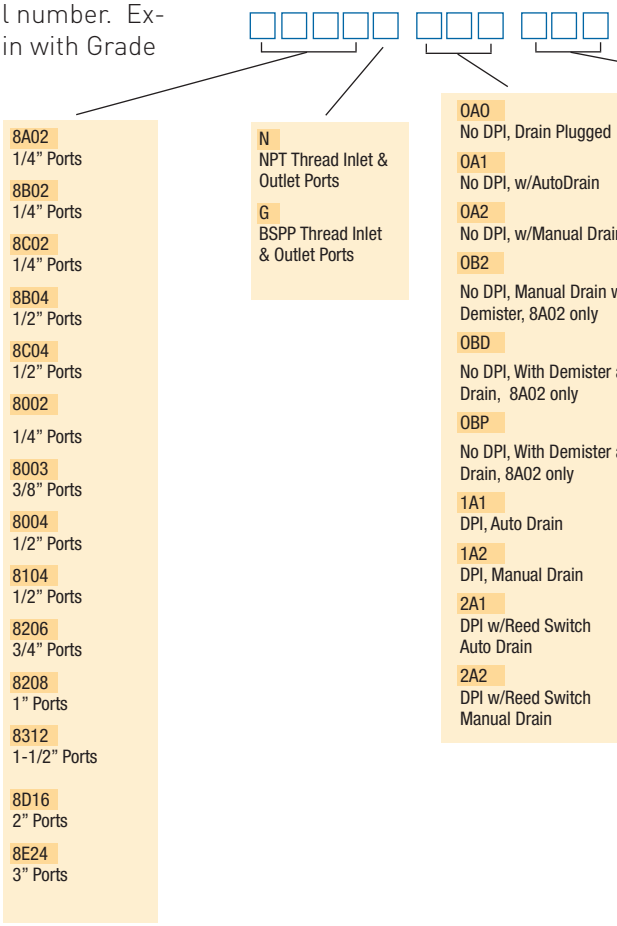
Models 8206, 8208, and 8312

Model 8D16

8000 Series
Ordering Information

How to Order the Filter Assembly

Build your own custom filter assembly using the guide-line matrix below and specify your model number. Example: 1/2" filter with DPI and Auto Drain with Grade DX Filter = 8104N-1A1-DX



How to Select the Filter Cartridge and Housing

1 Decide which grade(s) of filter cartridges fits the application (see selection boxes at left).

2 Select the filter housing with a port size equal to the line size where the filter is to be located.

3 For a new installation in which the line size has yet to be selected, determine the gas flow rate and pressure at the point where the filter will be located, and then refer to the flow chart on the reverse side of this data sheet. NOTE: The filter port size must be equal to or larger than the line size (when specified).

4 Each assembly is shipped with the filter cartridge installed. To order additional filter cartridges, indicate the model number of the cartridges, and the grade. Examples: 050-05-DX, 050-05-BX. The grade used for Type CI cartridges is 000 (CI-100-12-000).

5 For CRN rated assemblies, insert a "C" in the Model #. Example 2A-C8004N-3A1)

Note: Assemblies with CI Cartridges are shipped with the adsorbent cartridge wrapped separately. This shipping method prolongs the life of the cartridge.

8000 Series
1/4" to 2" Line Size Filters

Principal Specifications

Model	8A02 (6)	8B02, 8C02, 8B04, 8C04 (6)	8002, 8003, 8004 (1)	8104 (1)
Port Size	1/4" NPT	1/4" NPT or 1/2" NPT	1/4", 3/8", 1/2" NPT	1/2" NPT
Materials of Construction				
Head	Anod. Alum.	Anod. Alum.	Anod. Alum.	Anod. Alum.
Bowl	Polycarbonate	see page 9	Anod. Alum.	Anod. Alum.
Internals	Nylon	Nylon/steel	Nylon	Nylon
Seals	Buna-N	Buna-N	Buna-N	Buna-N
Maximum Temperature	120°F (49°C)	120°F (49°C)	130°F (54°C) (2)	130°F (54°C) (2)
Maximum Pressure	150 psig (10.3 barg)	150 psig (10.3 barg)	250 psig (17.2 barg) (2)	250 psig (17.2 barg) (2)
Minimum Pressure (3)	5 psig (0.4 barg) (3)	15 psig (1.03 barg) (3)	15 psig (1.03 barg) (3)	15 psig (1.03 barg) (3)
Shipping Weight	0.5 lbs. (0.2 kg)	1.3 lbs. (0.6 kg)	2.0 lbs. (0.9 kg)	2.5 lbs. (1.1 kg)
Dimensions	1.5"W X 4.0"L (4cm X 10cm)	3.5"W X 5.6L" (9cm X 14cm)	3.3"W X 8.5"L (8cm X 20cm)	3.3"W X 11.3"L (8cm X 28cm)
Differential Pressure Indicator	Not Included	Not Included	Optional	Optional
Replacement Filter Cartridges No. required	1		1	1
Box of 4 [_ _]	4/050-05-[_ _]	4/100-09-[_ _]	4/100-12-[_ _]	4/100-18-[_ _]
CI Cartridge Box of 1 (5)	——	——	DCI-100-12-000	DCI-100-25-000

Notes:

1 Automatic drain and Differential Pressure Indicator are temperature limiting factors. For Temperature capabilities to 220°F (104°C), order assemblies without automatic Drain and Differential Pressure Indicator.

2 Maximum pressure ratings are for temperatures to 130°F (54°C). Please consult factory for maximum pressure ratings at elevated temperatures.

3 Required for proper operation of piston drain, overnight drain, or float drain.

[_ _] Indicate grade of filter cartridge by putting appropriate letter after ordering number. To order assembly with Type CI cartridges, add-000 after assembly number. Example: 8104N-0A0-000

5 Automatic drains not supplied with assemblies containing Type CI cartridges.

6 Housing not available with CI cartridge, or SA filter.

7 For CRN rated housings, insert a "C" in the Model #. Example: C8004-1A1-DX

Principal Specifications

Model	8206	8208	8312	8D16
Port Size	3/4" NPT	1" NPT	1 1/2" NPT	2" NPT
Materials of Construction				
Head	Anod. Alum.	Anod. Alum.	Anod. Alum.	Anod. Alum.
Bowl	Steel	Steel	Steel	Steel
Internals	St. Steel	St. Steel	St. Steel	St. Steel
Seals	Buna-N	Buna-N	Buna-N	Buna-N
Maximum Temperature (1)	130°F (54°C)	130°F (54°C)	130°F (54°C)	130°F (54°C)
Maximum Pressure (2)	250 psig (17.2 barg)	250 psig (17.2 barg)	250 psig (17.2 barg) (2)	250 psig (17.2 barg) (2)
Minimum Pressure (3)	5 psig (0.4 barg) (3)	15 psig (1.03 barg)	15 psig (1.03 barg) (3)	15 psig (1.03 barg) (3)
Shipping Weight	8 lbs. (3.6 kg)	8 lbs. (3.6 kg)	15 lbs. (6.8 kg)	11 lbs. (5 kg)
Dimensions	4"W X 13"L (10cm X 33cm)	4"W X 13"L (10cm X 33cm)	5.0"W X 17L" (13cm X 43cm)	6.3"W X 28"L (16cm X 71cm)
Differential Pressure Indicator	Optional	Optional	Optional	Not Included
Replacement Filter Cartridges No. Required	1	1	1	1
Box of 4 [_ _]	4/150-19-[_ _]	4/150-19-[_ _]	4/200-35-[_ _]	4/200-80-[_ _]
DCI Cartridge (Box of 1)	DCI 150-19-000	DCI 150-19-000	DCI 200-35-000	DCI 200-80-000

8000 Series
3” Line Size Filters

Remove 99.99% of 0.01 micron particles of oil, water, and dirt

Equipped with automatic drains

Maximum temperature to 250°F (121°C)

Maximum pressure to 325 psig (22.41 barg)

Model 8E24N

8E24N Multiple Cartridge Filter Assembly

This filter assembly provides high efficiency filtration of compressed air and other compressed gases at very high flow rates. With inlet and outlet ports accommodating 3” pipe size, the filter will handle a capacity of 28,000 SCFM at 100 psig. The standard carbon steel unit has a pressure rating of 325 psig. This model has built-in legs for floor mounting. Special high pressure units can be provided with ASME code stamp for pressure ratings to 665 psig (17.2 barg).

The filter cartridges are sealed by tightening the threaded retainer cap onto the rigid tie rod. Since the filter cartridges are self-gasketing, the only resilient seal in the system is the o-ring in the head of the vessel.

This Assembly can be equipped with a stainless steel automatic float drain (P/N 20-211), differential pressure indicator (P/N 41-071), and a set of filter cartridges (except where noted).

Principal Specifications

Model (2)	8E24N
Port Size	3” NPT
Materials of Construction	
Vessel	Carbon Steel
Filter Cartridge Holders	303 St. Steel
Seals	Buna-N
Maximum Temperature (1)	250°F (121°C)
Maximum Pressure	325 psig (22.41 barg)
Minimum Pressure (3)	10 psig (0.7 barg)
Shipping Weight	132 lbs. (60 kg)
Dimensions	6.6”W X 36”H (17cm X 92cm)
Flange Center Line to Floor Dimension	7.6” (19 cm)

Notes:

1 Maximum operating temperature of carbon steel vessel is 650°F (343°C). Minimum operating (process and ambient pressure) temperature is -20°F (29°C). Max. Temps. for Seal material: 250°F (121°C) (Buna), 400°F (204°C) (Viton), 450°F (232°C) (Silicone). Seal material may not be the limiting factor. Maximum temperature for assemblies with DPI is 130°F (54°C)

2 8E24N Filter Assemblies can be shipped complete with Automatic Drain (P/N 20-211), Differential Pressure Indicator (P/N 41-071), and one set of filter cartridges.

3 Maximum operating pressure for 41-071 Differential Pressure Indicator is 250 psig (8.62 barg). The DPI is sensitive in the range of 0-7 psi (0-0.48 barg) differential. The Maximum operating pressure for 20-211 Auto Drain is 400 psig (27.58 barg). Minimum operating pressure is 10 psig (0.69 barg).

Modular Configurations 1/4” to 1 1/2” Line Size

Available in 12 different sizes and configurations

Available as two or three stage assemblies

Parker Filtration 8000 Series are available in stock as modular assemblies for the ease and convenience of our OEM customers. Simply purchase the correct two stage or three stage assembly for the application and integrate directly into your product without the need of added labor and parts to assemble and install.

Model 3A-8002N-3A1

Principal Specifications

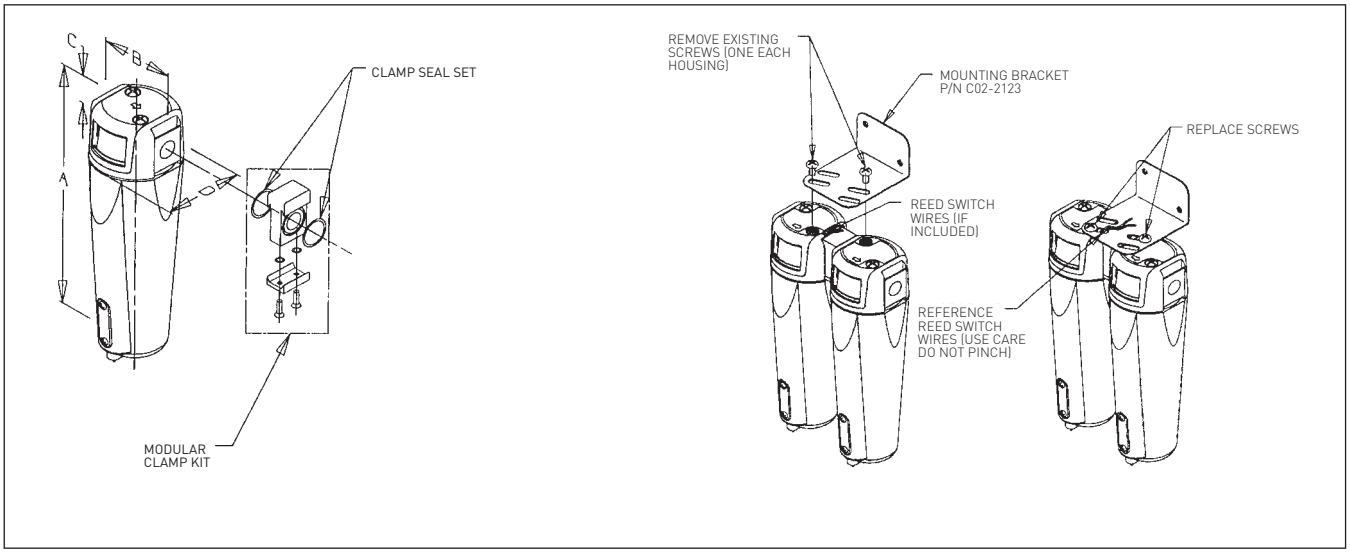
Model	Two Stage (DX, BX)	Three Stage (DX, BX, CI)
1/4”	2A-8002N-3A1	3A-8002N-3A1
3/8”	2A-8003N-3A1	3A-8003N-3A1
1/2”	2A-8004N-3A1	3A-8004N-3A1
3/4”	2A-8206N-3A1	3A-8206N-3A1
1”	2A-8208N-3A1	3A-8208N-3A1
1 1/2”	2A-8312N-3A1	3A-8312N-3A1

All of the above ship assembled with modular clamps and with DX and BX filter elements installed. Auto drains are included on the DX and BX stage and Differential Pressure Indicator on the DX stage only. CI cartridge is included on the three stage assemblies but shipped separately.

Optional Mounting Bracket Size	Number Required	Part Number
1/4, 3/8, 1/2	Mounting Brackets Optional	C02-2123 (1/4-1/2” Models)
3/4, 1	1 Mounting Bracket on double assembly (required for weight)	C02-2124 (3/4, 1” Models)
1 1/2	2 Mounting Brackets on triple assembly (required for weight)	C02-2125 (1 1/2” Model)

Notes:

1 The flow rate of the system is calculated by determining the flow rate of the BX or CI cartridge in the system.



Modular Configurations
1/4" to 1 1/2" Line Size

Filter Housing Model	Port Size	Filter Cartridge Grade	Flow rates (SCFM/Nm³/hr), at 2 psi/0.1379 barg drop at indicated line pressure. Refer to Principal Specification Charts in each product data sheet for maximum pressure rating of each housing PSIG/BARG										
			2/0.1	20/1.4	40/2.8	80/5.5	100/6.9	125/8.6	150/10.3	200/13.8	250/17.2	400/27.6	650/44.8
8A02	1/4"	DX	4/6.8	9/15.3	13/22.1	24/40.8	29/49.3	36/61.2	43/73.1	55/93.4	67/113.8	–	–
		BX	1/ 1.7	2/3.4	4/6.8	7/11.9	8/13.6	9/15.3	12/20.4	15/255.5	17/28.9	–	–
8002, 8003, 8004 , 8B02, 8B04, 8C02, 8C04	1/4", 3/8", 1/2"	DX	9/15.3	19/32.3	39/66.3	51/86.5	63/107.0	76/129.1	90/152.9	117/198.8	145/246.4	–	–
		BX	3/5.1	8/13.6	11/318.7	21/35.7	25/42.5	31/52.7	36/61.2	47/79.9	58/98.5	–	–
		CI	2/10.2	5/20.4	7/32.3	12/54.4	15/66.3	18/81.6	22/95.1	28/124.0	35/152.9	–	–
		SA (1)		8/32.3	11/51.0	21/86.7	25/107.0	31/129.1	36/152.9	–	–	–	–
8104	1/2"	DX	19/32.3	41/69.7	65/110.4	113192.0	137/232.8	166/282.0	196/333.0	257/436.6	316/536.9	–	–
		BX	9/15.3	19/32.3	30/51.0	51/86.7	63/107.0	76/129.1	90/152.9	117/198.8	145/246.4	–	–
		CI	6/10.2	12/20.4	19/32.3	32/54.4	39/66.3	48/81.6	56/95.1	73/124.0	90/152.9	–	–
		SA		19/32.3	30/51.0	51/86.7	63/107.0	76/129.1	90/152.9	–	–	–	–
8206	3/4"	DX	37/62.9	78/132.5	123/209.0	214/363.6	259/440.0	315/535.2	371/630.4	484/822.3	596/1012.6	–	–
		BX	10/17.0	21/35.7	34/57.8	56/95.1	70/118.9	85/150.4	101/171.6	131/222.6	162/275.2	–	–
		CI	8/13.6	16/27.2	26/44.2	44/74.8	53/90.0	65/110.4	76/129.1	99/168.2	122/207.3	–	–
8208	1"	DX	55/93.4	115/195.4	181/307.5	314/533.5	380/645.6	463/786.7	546/927.7	711/1208.0	877/1490.0	–	–
		BX	11/18.7	23/39.1	37/62.9	64/108.7	77/130.8	94/159.7	111/188.6	144/244.6	178302.4	–	–
		CI	10/17.0	20/34.0	32/54.4	56/95.1	67/113.8	82/139.3	96/163.1	125/212.4	154/261.6	–	–
		SA		23/39.1	37/62.9	64/108.7	77/130.8	94/159.7	111/188.6	–	–	–	–
8312	1 1/2"	DX	98/166.5	203/344.9	319/542.0	554/941.3	670/1138.3	816/1386.4	963/1636.1	1254/2130.5	1546/2626.7	–	–
		BX	22/37.4	46/78.2	74/125.7	129/219.2	155/263.3	189/321.1	223/378.9	290/492.7	358/608.2	–	–
		CI	16/27.2	33/56.1	52/88.4	91/154.6	110/188.7	134/227.7	158/268.4	206/350.0	253/429.9	–	–
		SA		94/159.7	148/251.5	256/434.9	310/526.7	378/642.2	445/756.1	–	–	–	–
8D16	2"	DX	160/271.8	333/565.8	525/892.0	908/1542.7	1100/1868.9	1340/227.7	1580/2684.5	2060/35152.5	2540/4315.5	–	–
		BX	45/76.5	94/159.7	148/251.5	256/434.9	310/526.7	378/642.2	445/756.1	580/985.4	715/1214.8	–	–
		CI	23/39.1	49/83.3	77/130.8	133/226.0	161/273.5	197/334.7	231/392.5	301/511.4	371/630.4	–	–
8E24	3"	DX	364/618.4	760/1291.3	1190/2021.8	2060/3500.0	2500/4247.5	3045/5173.5	3600/6116.5	4680/7951.4	5770/9803.3	9030/15342.1	14480/24601.7
		BX	90/152.9	190/322.8	300/509.7	510/866.5	620/1053.4	755/1282.7	890/1512.1	1160/1970.9	1430/2429.6	2240/3805.8	3590/6099.4
		CI	47/79.9	98/166.5	154/261.6	266/451.9	322/547.1	394/669.4	462/784.9	602/1022.8	742/1260.7	1160/1970.9	1860/3160.1

Options and Accessories • (1) SA Grade not available in 8004.

Retention Efficiency

Grade	Efficiency for 0.01 Micron Particles and Droplets
DX	93%
BX	99.99%
SA	99.9999+%
000 (CI)	Oil Vapor Removal

Physical Properties, Microfibre Filter Cartridges

Temperature Range	-150°F to 300°F (-100°C - 149°C)
Maximum Pressure Differential Across Filter, Inside-to-Outside Flow:	100 psi (6.89 barg)
Materials of Construction	Borosilicate glass microfibers with fluorocarbon resin binder. Resistant to water, all hydrocarbon and synthetic lubricants.

Filter Cartridge Description

General purpose applications such as plant compressed air	Single stage filtration. Use a Grade DX filter cartridge
Instrument air and other critical air requirements	Two stage filtration is necessary. Use a Grade DX followed by a Grade BX filter cartridge. As a general rule, a Grade BX filter cartridge should not be used alone.
Removal of trace compressor	For rare instances where even a trace amount oil vapor can cause a problem, three stage filtration is necessary. Use a Grade DX followed by a Grade BX, and a CI cartridge, Type 000.

Compressed Air Filters

Selection Chart Prep-Air® II Air Preparation Units

Product Selection Chart

Basic Unit	Series	Port Size (inches)										Bowls			Capacity	Elements (Micron)	Page
		1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	Poly	Metal	Metal SG		5	
FILTERS	FF10				X								316 Stainless Steel			4 oz.	Standard	7
	Q*S, H*S	X	X										X	X	X	1 oz.	Grade 6 Std., Grade 10 Opt.	9
COALESCERS	FF501		X										316 Stainless Steel			1 oz.	Grade 6	11
	FF11				X								316 Stainless Steel			4 oz.	Grade 6	13

Basic Unit		Series	Port Size (inches)							Spring	Page
			1/8	1/4	3/8	1/2	3/4	1	1-1/2	125	
REGULATORS	STANDARD	FR364		X						Standard	15
		05R		X	X					Standard	17
		FR10				X				Standard	19
		07R			X	X	X			Standard	21
		P3NR					X	X	X	Standard	23

*Sight gauge

Compressed Air Filters

Selection Chart Prep-Air® II Air Preparation Units

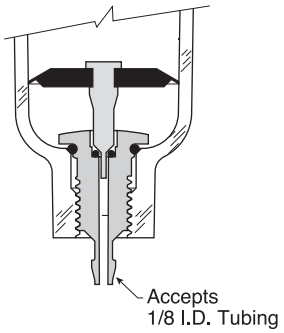
Product Selection Chart

Basic Unit	Series	Port Size							Bowls			Capacity	Elements (Micron)	Spring Range	Page
		1/8	1/4	3/8	1/2	3/4	1	1-1/2	Poly	Metal	Metal SG		5	125	
FILTER/REGULATORS	14E	X	X						X	X	N/A	1 oz.	Standard	Standard	25
	FB548		X						316 Stainless Steel			1 oz.	Standard	Standard	27
	06E		X	X	X				X	X	X	4.4 oz.	Standard	Standard	29
	FB11				X				316 Stainless Steel			4 oz.	Standard	Standard	31

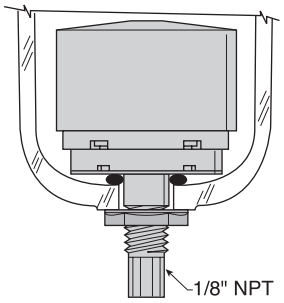
*Sight gauge

Compressed Air Filters

Air Preparation Units - Drains



Automatic Pulse Drain



Automatic Float Drain

Spitter Drain

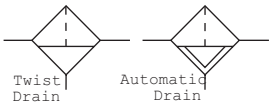
The diaphragm in this drain pulses when there is a pressure differential such as a valve cycling or cylinder stroking downstream. This action flexes the diaphragm and allows the filter to drain the entrapped water.

The float internal to this drain rises with increased liquid level. When the float rises, it opens a seat area allowing the trapped liquids to drain through the bottom.

A manual override can be pushed in the bottom of the drain to unseat the float if particulates create a block.

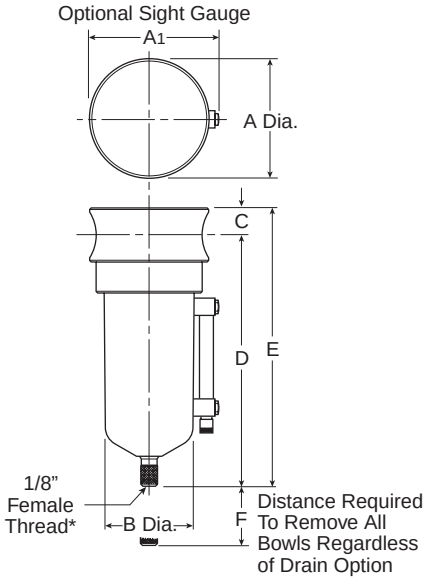
Compressed Air Filters

Air Preparation Units - FF10 Filter - Standard 1/2” NPT Ports



Features

- **Stainless steel construction handles most corrosive environments.**
- **Meets NACE specifications MR-01-75/ISO 15156.**
- **1/8" female threaded drain.**
- **High Flow: 1/2" - 70 SCFM §**



Port Size	NPT without sight gauge		NPT with sight gauge	
	Manual Twist Drain	Automatic Float Drain	Manual Twist Drain	Automatic Float Drain
1/2"	FF10-04DGSS	FF10-04DGRSS	FF10-04WGSS	FF10-04WGRSS

§ SCFM = Standard cubic feet per minute at 90 PSIG inlet and 5 PSIG pressure drop.

F10 Filter Dimensions		
A 2.38 (60)	**A1** 2.50 (64)	**B** 1.75 (44)
C .56 (14)	**D** 5.00 (127)	**E** 5.56 (141)
F 2.12 (54)		
inches (mm)		

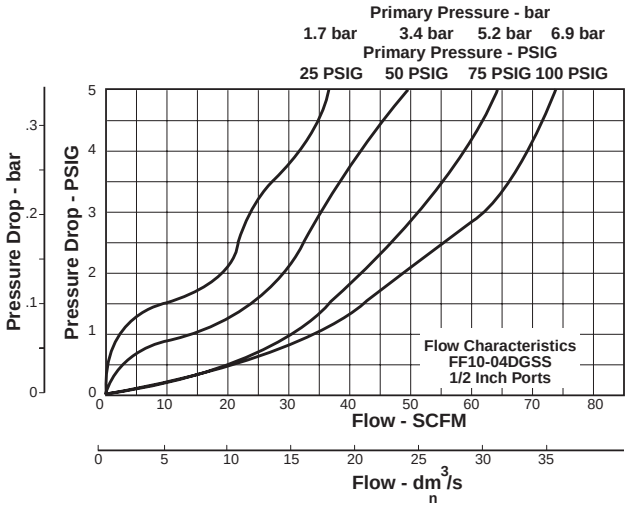
Ordering Information

FF10	-	04	W	G		SS

Port Type	Port Size	Bowl	Element	Options	Material
- NPT	04 1/2 Inch	D Metal Bowl without Sight Gauge W Metal Bowl with Sight Gauge	G5 Micron	Blank Manual Twist Drain R Automatic Float Drain	SS Stainless Steel

Compressed Air Filters

Air Preparation Units - FF10 Air Line Filters
Technical Information



FF10 Filter Kits & Accessories

Drain Kit –
- Automatic Float Drain SA602MDSS
- Manual Twist Drain–
  - Small (Old) SA600Y7-1SS
  - Large (New) SAP05481

Filter Element Kits –
Particulate (5 Micron) Element EK55G
Pipe Nipple – 1/2" 316 Stainless Steel 616A28-SS

Specifications

Bowl Capacity ..... 4.0 Ounces
Filter Rating ..... 5 Micron
Sump Capacity ..... 1.7 Ounce
Port Threads ..... 1/2 Inch
Pressure & Temperature Ratings –
- Manual Twist Drain (D-Bowl) ..... 0 to 300 PSIG (0 to 20.7 bar) 0°F to 180°F (-18°C to 82°C)
- Manual Twist Drain (W-Bowl) ..... 0 to 250 PSIG (0 to 17.2 bar) 0°F to 150°F (-18°C to 66°C)
- Automatic Float Drain ..... 15 to 175 PSIG (1 to 12 bar) 40°F to 125°F (4°C to 52°C)

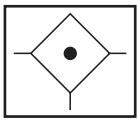
Note: Air must be dry enough to avoid ice formation at temperatures below 32°F (2°C).
Weight ..... 1.9 lb. (0.85 kg)

Materials of Construction

Body ..... 316 Stainless Steel
Bowls ..... 316 Stainless Steel
Deflector ..... Acetal
Drain ..... 316 Stainless Steel
Element Holder ..... Acetal
Filter Element ..... Polyethylene
Seals ..... Fluorocarbon
Sight Gauge ..... Isoplast

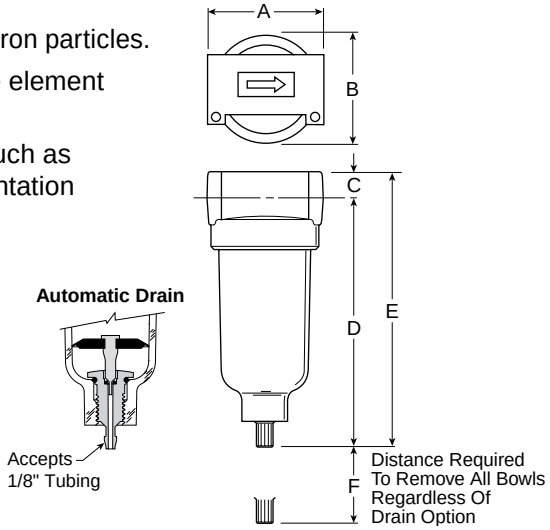
Compressed Air Filters

Air Preparation Units - 10F Coalescing Filters - Miniature 1/8", 1/4" Basic 1/8" Body



Features

- Removes liquid aerosols and sub-micron particles.
- Liquids gravitate to the bottom of the element and will not re-enter the airstream.
- Oil free air for critical applications, such as air gauging and pneumatic instrumentation and controls.
- Interchangeable twist and automatic pulse drains.
- Grade 6 element, 99.97% DOP efficiency.
- High Flow: Grade 6 Element
  1/8" – 17 SCFM §
  1/4" – 20 SCFM §
  Grade 10 Element
  1/8" – 19 SCFM §
  1/4" – 24 SCFM §



Port Size	NPT	
	Twist Drain	Automatic Pulse Drain
Poly Bowl ‡		
1/8"	**10F01E***	**10F05E***
1/4"	**10F11E***	**10F15E***
Metal Bowl without Sight Gauge		
1/8"	**10F03E***	**10F07E***
1/4"	**10F13E***	**10F17E***

Standard part numbers shown bold, with Grade 6 Elements (for Grade 10 Elements, replace "E" with "H" in the 6th position). For other models refer to ordering information below.

‡ For polycarbonate bowl see Caution on page 2.

§ SCFM = Standard cubic feet per minute at 90 PSIG inlet and 5 PSIG pressure drop.

10F Coalescing Filter Dimensions		
A	**B**	**C**
1.69 (43)	1.56 (39,6)	0.39 (10)

10F Coalescing Filter Dimensions		
D	**D†**	**E**
3.82 (97)	3.67 (93)	4.21 (107)
E†	**F**	
4.06 (103)	1.60 (41)	

Inches (mm)

† With Automatic Pulse Drain.

Ordering Information

10F	1	1	E	*	—

Port Size
- **0 1/8 Inch**
- **1 1/4 Inch**

Bowl Options

Polycarbonate Bowl
- **1 Twist Drain**
- **5 Automatic Pulse Drain**

Metal Bowl
- **3 Twist Drain**
- **7 Automatic Pulse Drain**

Elements
- **E Grade 6**
- H Grade 10

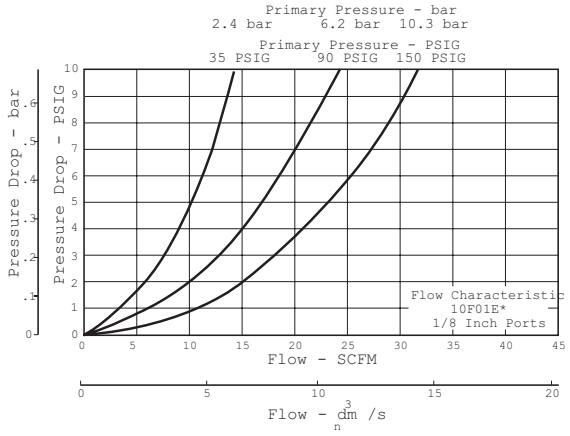
Engineering Level
- * Will be Entered at Factory

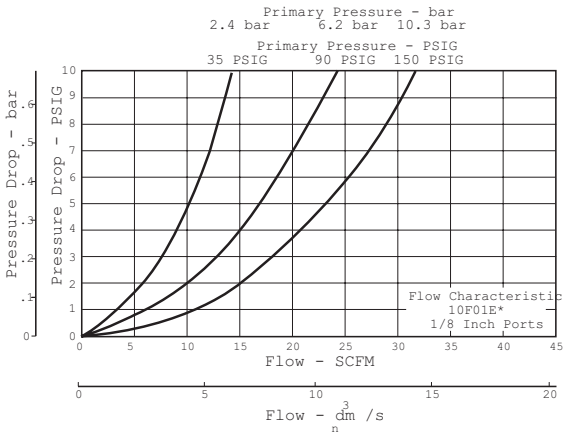
Port Type
- **Blank NPT**
- 1 BSPP
- 2 BSPT

Compressed Air Filters

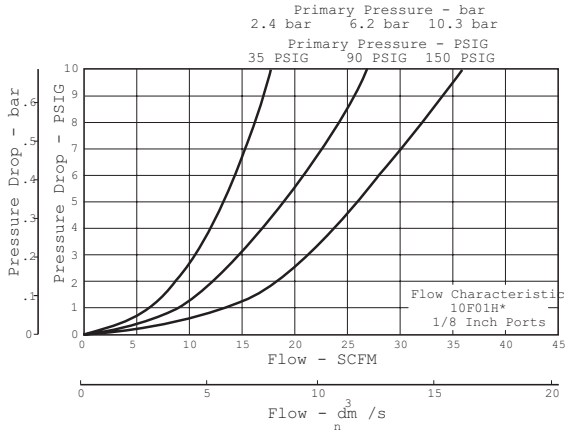
Air Preparation Units - 10F Coalescing Filters
Technical Information

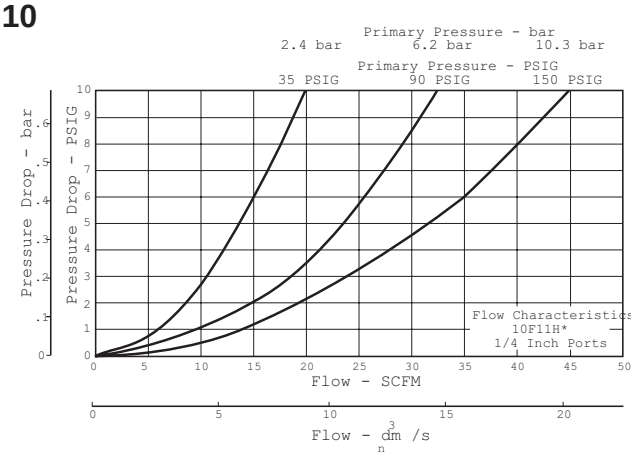
Grade 6





Grade 10





10F Coalescing Filter Kits & Accessories

Bowl Kits –
- Poly Bowl – Automatic Pulse Drain PS408BP
  Twist Drain PS404P
- Metal Bowl – Automatic Pulse Drain PS451BP
  Twist Drain PS447BP

Filter Element Kits – Grade 6 (Standard) PS446P
Grade 10 (Optional) PS456P

Mounting Bracket Kit PS417BP

Specifications

Automatic Pulse Drain Tube Barb ..... 1/8 Inch

Bowl Capacity ..... 1 Ounce

Operation –
- Normal Operating Pressure Drop ..... 2 PSIG
- Maximum Recommended Pressure Drop ..... 10 PSIG
  (Element should be replaced)

Port Threads ..... 1/8, 1/4 Inch

Pressure & Temperature Ratings –
- Polycarbonate Bowl ..... 0 to 150 PSIG (0 to 10.3 bar)
  32°F to 125°F (0°C to 52°C)
- Metal Bowl ..... 0 to 250 PSIG (0 to 17.2 bar)
  32°F to 175°F (0°C to 80°C)
- Automatic Pulse Drain ..... 10 to 250 PSIG (0.7 to 17.2 bar)
  at 125°F (52°C) or less

Weight ..... 0.41 lb. (0.18 kg)

Materials of Construction

Body ..... Zinc

Bowls ..... Transparent Polycarbonate
Metal (Zinc) Without Sight Gauge

Drains – Twist Drain –
- Body & Stem ..... Plastic
- Seals ..... Nitrile

Automatic Pulse Drain –
- Piston & Seals ..... Nitrile
- Stem, Seat, Adaptor & Washers ..... Aluminum

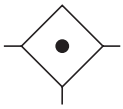
Element Holder ..... Plastic

Filter Element –
- Borosilicate & felt glass fibers 99.97% DOP efficiency
- Largest Aerosol Particle Passed (Grade 6) ..... 0.01 Micron
- Largest Solid Particle Passed (Grade 6) ..... 0.30 Micron

Seals ..... Nitrile

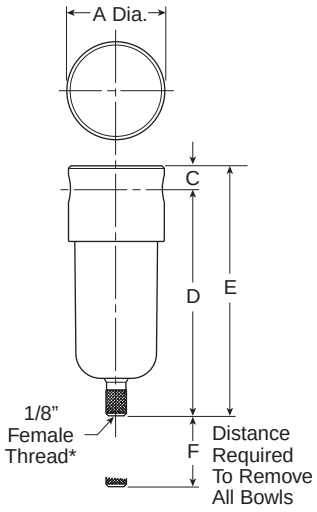
Compressed Air Filters

Air Preparation Units
FF501 Coalescing Filter - Miniature 1/4” Ports



Features

- **Stainless steel construction handles most corrosive environments.**
- **Meets NACE specifications MR-01-75/ISO 15156.**
- **1/8" female threaded drain*.**
- **High Flow: 1/4" - 16 SCFM §**



Port Size	NPT
	Manual Twist Drain
1/4”	FF501-02DHSS

Standard part numbers shown bold. For other models refer to ordering information below.

SCFM = Standard cubic feet per minute at 90 PSIG inlet and 5 PSIG pressure drop.

F501 Coalescing Filter Dimensions		
A 1.56 (40)	**C** 0.31 (8)	**D** 3.69 (94)
E 4.00 (102)	**F** 1.58 (40)	

inches (mm)

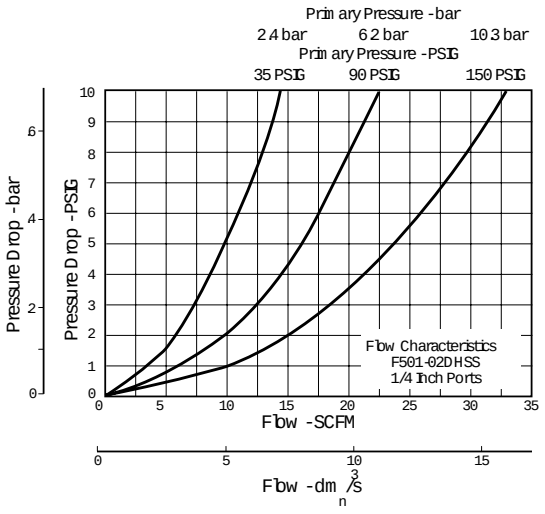
Ordering Information

FF501	-	02	D	H	SS

Port Type	Port Size	Bowl	Element	Material
- NPT	02 1/4 Inch	D Metal Bowl without Sight Gauge	H .3 Micron	SS Stainless Steel

Compressed Air Filters

Air Preparation Units - F501 Series Technical Information



FF501 Filter Kits & Accessories

Filter Element Kits –
0.3 Micron EKF31
Manual Twist Drain –
Small (Old) SA600Y7-1SS
Large (New) SAP05481
Pipe Nipple –
1/4" 316 Stainless Steel 616Y28-SS

Specifications

Bowl Capacity ..... 1.0 Ounces
Filter Rating ..... 0.3 Micron
Port Threads ..... 1/4 Inch
Pressure & Temperature Ratings –
Manual Twist Drain ..... 0 to 300 PSIG (0 to 20.7 bar)
0°F to 180°F (-18°C to 82°C)

Note: Air must be dry enough to avoid ice formation at temperatures below 32°F (2°C)
Sump Capacity ..... 0.4 Ounce
Weight ..... 0.6 lb. (0.27 kg)

Materials of Construction

Body ..... 316 Stainless Steel
Bowls ..... 316 Stainless Steel
Drain .....
316 Stainless Steel
Element Holder ..... Acetal
Filter Element ..... Borosilicate Fiber
Seals ..... Fluorocarbon

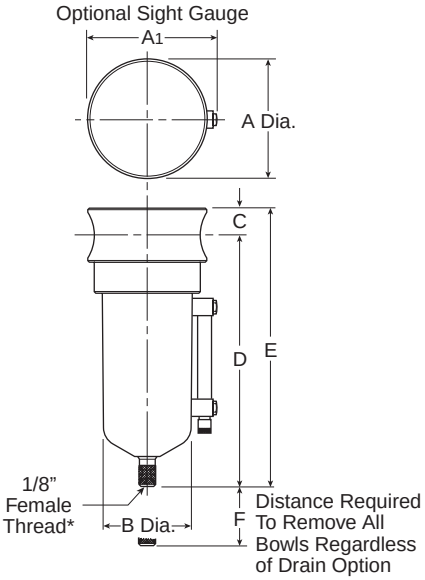
Compressed Air Filters

Air Preparation Units - FF11 Coalescing Filter Standard 1/2” Ports

Features

- **Stainless steel construction handles most corrosive environments.**
- **Meets NACE specifications MR-01-75/ISO 15156.**
- **1/8" female threaded drain*.**
- **High Flow: 1/2" - 45 SCFM §**

* Beginning January 2008



Port Size	NPT without sight gauge		NPT with sight gauge	
	Manual Twist Drain	Automatic Float Drain	Manual Twist Drain	Automatic Float Drain
1/2"	Metal Bowl With Sight Gauge			
	F11-04DJSS	**F11-04DJRSS**	F11G04WJSS	F11G04WJRSS

Standard part numbers shown bold. For other models refer to ordering information below.

§ SCFM = Standard cubic feet per minute at 90 PSIG inlet and 5 PSIG pressure drop.

F11 Coalescing Filter Dimensions		
A 2.38 (60)	**A1** 2.50 (64)	**B** 1.75 (44)
C 0.56 (14)	**D** 5.00 (127)	**E** 5.56 (141)
F 2.12 (54)		
inches (mm)		

Ordering Information

F11	-	04	W	J		SS

Port Type
- **NPT**
G BSPP

Port Size
04 1/2 Inch

Bowl
D Metal Bowl without Sight Gauge
W Metal Bowl with Sight Gauge

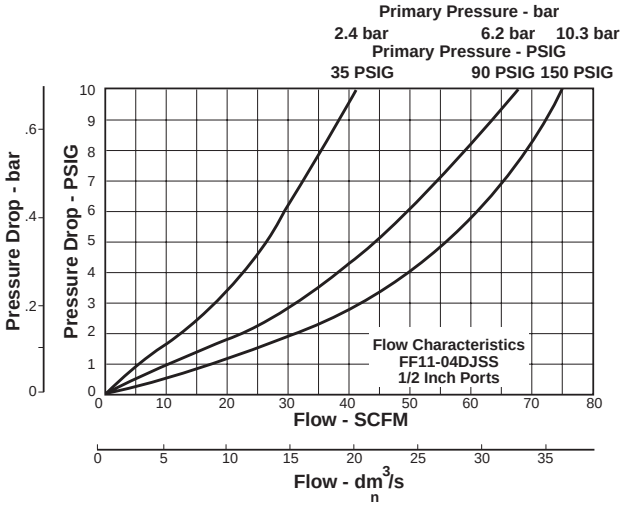
Element
J .01 Micron

Options
Blank Manual Twist Drain
R Automatic Float Drain

Material
SS Stainless Steel

Compressed Air Filters

Air Preparation Units - FF11 Series Technical Information



F11 Filter Kits & Accessories

Drain Kit –
Automatic Float Drain SA10MDSS
Manual Twist Drain SAP05481
Filter Element Kits –
0.3 Micron EKF71
Pipe Nipple –
1/2" 316 Stainless Steel 616A28-SS

Specifications

Bowl Capacity ..... 4.0 Ounces
Filter Rating ..... 0.01 Micron
Sump Capacity ..... 1.7 Ounce
Port Threads ..... 1/2 Inch
Pressure & Temperature Ratings –
Manual Twist Drain ..... 0 to 300 PSIG (0 to 20.7 bar)
0°F to 180°F (-18°C to 82°C)
Manual Twist Drain (W) ..... 0 to 250 PSIG (0 to 17.2 bar)
0°F to 150°F (-18°C to 66°C)
Automatic Float Drain ..... 0 to 175 PSIG (0 to 12 bar)
40°F to 125°F (4°C to 52°C)
Note: Air must be dry enough to avoid ice formation at temperatures below 32°F (2°C).
Weight ..... 1.9 lb. (0.85 kg)

Materials of Construction

Body ..... 316 Stainless Steel
Bowls ..... 316 Stainless Steel
Drain ..... 316 Stainless Steel
Element Holder ..... Acetal
Filter Element ..... Borosilicate Fiber
Seals ..... Fluorocarbon
Sight Gauge ..... Isoplast

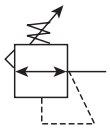
FF11 Media Specifications

Grade Designation	Coalescing Efficiency 0.3 to 0.6 Micron Particles	Maximum Oil Carryover[1] PPM w/w	Micron Rating	Pressure Drop (PSID) @ Rated Flow[2]		Flow: SCFM @3 PSID Operating Pressure 100 PSIG
				Media Dry	Media Wet With 10-20 wt. oil	
6	99.97%	0.008	0.01	1.0	2-3	??
10	95%	0.85	1.0	0.5	0.5	??

[1]Tested per ISO 12500-1 at 40 ppm inlet.
[2]Add dry + wet for total pressure drop.

Compressed Air Filters

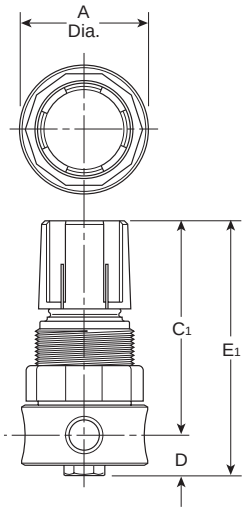
Air Preparation Units - FR364 Regulator -Miniature 1/4” Ports



Features

- **Stainless steel construction handles most corrosive environments.**
- **Large diaphragm to valve area ratio for precise regulation and high flow capacity.**
- **Meets NACE specifications MR-01-75/ISO 15156.**
- **High Flow: 1/4" – 12 SCFM§**

R364



R364

Series	Adjustment Type	Port Size	NPT
FR364	Knob	1/4"	R364-02CSS

§ SCFM = Standard cubic feet per minute at 100 PSIG inlet, 75 PSIG no flow secondary setting and 15 PSIG pressure drop.

R364 Regulator Dimensions	
A 1.56 (40)	**C1** 2.56 (65)
D 0.50 (13)	**E1** 3.06 (78)

inches (mm)

NOTE: 1.25 Dia. (32mm) hole required for panel mounting.

⚠ WARNING

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

Ordering Information

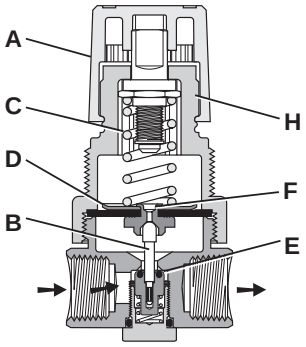
FR364	-	02	C	SS

Series	Port Type	Port Size	Pressure Range	Material
R364 Standard Knob	- NPT	02 1/4 Inch	C 0-125 PSIG (0-8.5 bar)	SS Stainless Steel

Compressed Air Filters

Air Preparation Units FR364 Air Line Regulators Technical Information

Operation



FR364

With the adjusting knob (A) turned fully counter-clockwise (no spring load), and pressure supplied to the regulator inlet port, the valve poppet assembly (B) is closed. Turning the adjusting knob clockwise applies a load to control spring (C). This load causes the diaphragm (D) and the valve poppet assembly (B) 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 diaphragm (D) and offsets the load of spring (C). As downstream pressure rises, poppet assembly (B) and diaphragm (D) move upward until the area (E) is closed and the load of the spring (C) and pressure under diaphragm (D) 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 (D). 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 diaphragm (D) to move upward against control spring (C), open vent hole (F), and vent the excess pressure to atmosphere through the hole in the bonnet (H). (This occurs in the relieving type regulator only.)

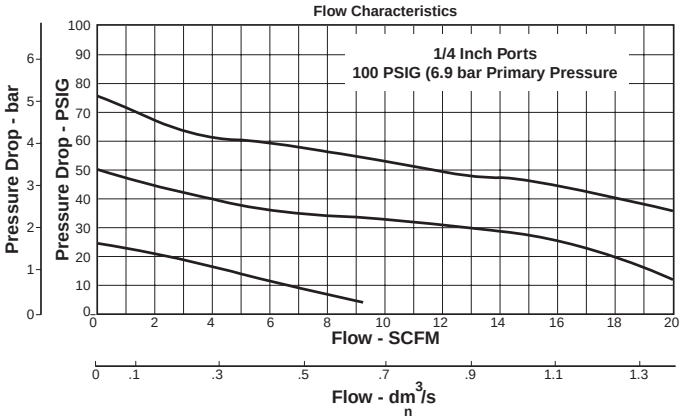
Technical Information

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.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.



FR364 Regulator Kits & Accessories

R364 Bonnet Kit (Knob Included)	CKR364YSS
Gauge –	
160 PSIG (0 to 1100 kPa)	K4515N14160SS
Panel Mount Bracket (Stainless)	161X57-SS
Panel Mount Nut –	
Stainless	R05X51-SS
Plastic	R05X51-P
Service Kit –	
Relieving	RKR364YSS
Springs –	
0-125 PSIG Range	SPR-377-1-SS

Specifications

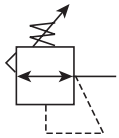
Gauge Port	1/4 Inch
Operation	Fluorocarbon Diaphragm
Port Threads	1/4 Inch
Pressure & Temperature Ratings –	300 PSIG Max (20.7 bar) 40°F to 150°F (4°C to 66°C)
Weight	0.5 lb. (0.23 kg)

Materials of Construction

Adjustment Mechanism / Springs	316 Stainless Steel
Adjusting Knob (R364)	Polypropylene
Body	316 Stainless Steel
Bonnet (R364)	Acetal
Bottom Plug	316 Stainless Steel
Poppet	316 Stainless Steel
Seals	Fluorocarbon

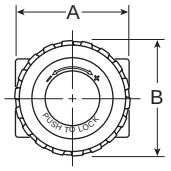
Compressed Air Filters

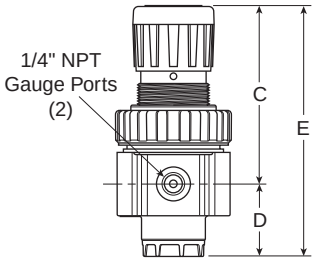
Air Preparation Units - 05R Regulators - Economy
1/4", 3/8" NPT - Basic 1/4" Body



Features

- **Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation.**
- **Rolling diaphragm for extended life.**
- **Removable non-rising knob for panel mounting and tamper resistance.**
- **Easily serviced.**
- **Reverse Flow.**
- **High Flow: 1/4" – 30 SCFM§**
  3/8" – 40 SCFM§





Port Size	NPT
Without Gauge	
1/4"	**05R113A***
3/8"	**05R213A***
With 160 PSI Gauge	
1/4"	**05R118A***
3/8"	**05R218A***

NOTE: 1.53 Dia. (39mm) hole required for panel mounting.

§ SCFM = Standard cubic feet per minute at 100 PSIG inlet, 90 PSIG no flow secondary setting and 10 PSIG pressure drop.

05R Regulator Dimensions		
A 2.00 (51)	B 2.06 (52)	C 3.16 (80)
D 1.28 (32)	E 4.44 (113)	
Inches (mm)		

Ordering Information

05R	1	13	A	*	—	—	---

Port Size
1 1/4 Inch
2 3/8 Inch

Pressure Range
Without Gauge
13 125 PSIG
With Gauge**
18 125 PSIG
** Includes 1-1/2" Dial Face Gauge

Relief
A Relieving

Engineering Level
* Will be Entered at Factory

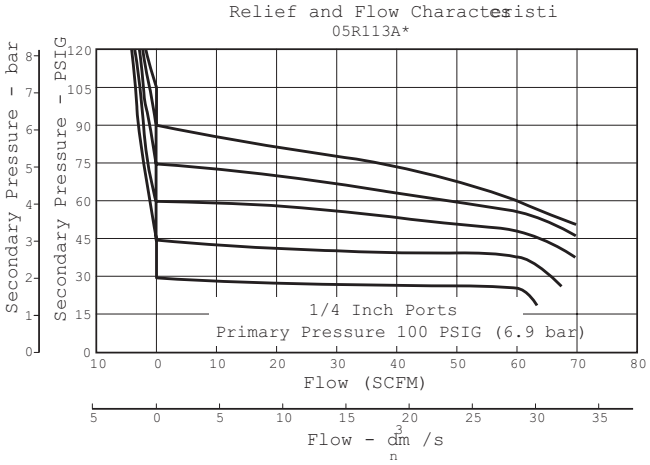
Port Type
Blank NPT
* 1/4 & 3/8 inch meet ISO 1179-1 Standard.

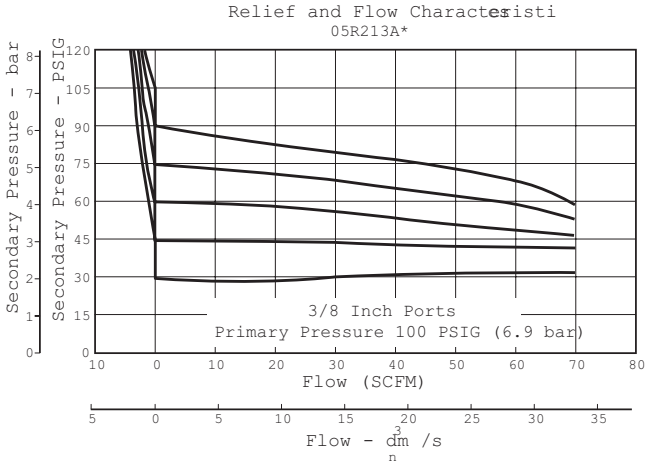
Options
Blank No Options
† Inlet Pressure is 100 PSIG. For other pressures, contact factory.

Preset / Pressure Limited
Blank None

Compressed Air Filters

Air Preparation Units 05R Air Line Regulators Technical Information





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.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

⚠ WARNING

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

05R Regulator Kits & Accessories

Bonnet Assembly Kit PS915P
Control Knob P04420
Gauges – 1-1/2" Dial Face ????
30 PSIG (0 to 2.1 bar) K4515N14030
60 PSIG (0 to 4.1 bar) K4515N14060
160 PSIG (0 to 11.0 bar) K4515N14160
300 PSIG (0 to 20.0 bar) K4515N14300
2" Dial Face
60 PSIG (0 to 4.1 bar) K4520N14060
160 PSIG (0 to 11.0 bar) K4520N14160

Mounting Bracket Kit PS963P
Panel Mount Nut – Metal PS964P
Springs – 1-30 PSIG Range P04427
1-60 PSIG Range P04426
2-125 PSIG Range P04425
2-200 PSIG P02934
Service Kit – Relieving PS908P

Specifications

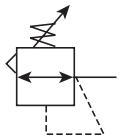
Gauge Ports (2) ..... 1/4 Inch
Port Threads ..... 1/4, 3/8 Inch
Primary Pressure Rating –
Maximum Primary Pressure ..... 250 PSIG (17.2 bar) Max.
For Secondary Pressure Ranges see above charts.
Temperature Rating ..... 32°F to 175°F (0°C to 80°C)
Low Temperature ..... -4°F to 125°F (-20°C to 52°C)
Weight ..... 1.1 lb. (0.49 kg)

Materials of Construction

Adjusting Stem ..... Brass
Bonnet ..... Plastic
Body ..... Zinc
Collar, Knob ..... Plastic
Diaphragm ..... Nitrile
Poppet & Cap ..... Plastic
Seals ..... Nitrile
Springs – Poppet & Control ..... Steel

Compressed Air Filters

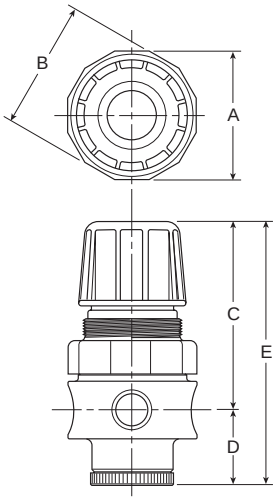
Air Preparation Units - FR10 Regulator - Standard 1/2” Ports



Features

- Stainless steel construction handles most corrosive environments.
- Large diaphragm to valve area ratio for precise regulation and high flow capacity.
- Meets NACE specifications MR-01-75/ISO 15156.
- Low temperature version available.
- High Flow: 1/2" – 80 SCFM§

R10



R10

Port Size	NPT
1/2"	FR10-04CSS

§ SCFM = Standard cubic feet per minute at 100 PSIG inlet, 75 PSIG no flow secondary setting and 15 PSIG pressure drop.

R10, R11 Regulator Dimensions		
A 2.34 (60)	B 2.43 (62)	C 3.59 (91)
D 1.38 (35)	E 4.97 (126)	
inches (mm) NOTE: 1.75 Dia. (44mm) hole required for panel mounting.		

⚠ WARNING

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

Ordering Information

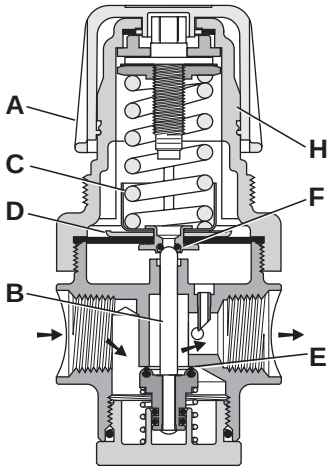
FR10	-	04	C	SS

Series	Port Type	Port Size	Pressure Range	Material
R10 Standard Knob	- NPT	04 1/2 Inch	C 0-125 PSIG (0-8.5 bar)	SS Stainless Steel

Compressed Air Filters

Air Preparation Units FR10 Air Line Regulators Technical Information

Operation



With the adjusting knob **(A)** turned fully counter-clockwise (no spring load), and pressure supplied to the regulator inlet port, the valve poppet assembly **(B)** is closed. Turning the adjusting knob clockwise applies a load to control spring **(C)**. This load causes the diaphragm **(D)** and the valve poppet assembly **(B)** 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 diaphragm **(D)** and offsets the load of spring **(C)**. As downstream pressure rises, poppet assembly **(B)** and diaphragm **(D)** move upward until the area **(E)** is closed and the load of the spring **(C)** and pressure under diaphragm **(D)** 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 **(D)**. 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 diaphragm **(D)** to move upward against control spring **(C)**, open vent hole **(F)**, and vent the excess pressure to atmosphere through the hole in the bonnet **(H)**. (This occurs in the relieving type regulator only.)

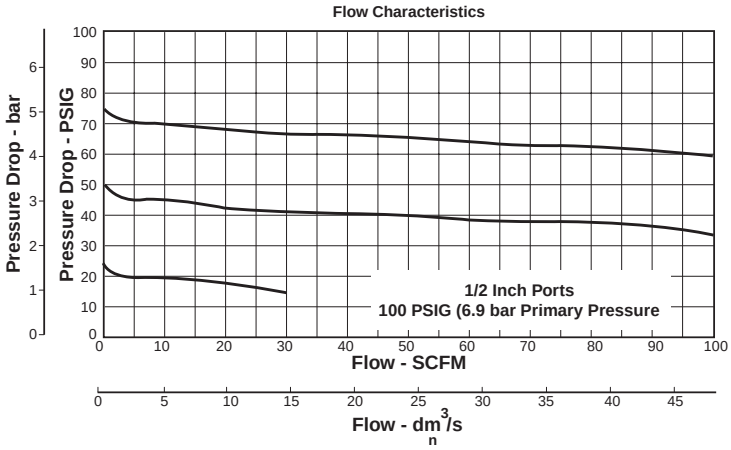
Technical Information

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.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.



FR10 Regulator Kits & Accessories

R10 Bonnet Kit (Knob Included) CKR10YSS
Gauge –
160 PSIG (0 to 1100 kPa), 2" Face K4520N14160SS
Panel Mount Bracket (Stainless) 161X57-SS
Panel Mount Nut –
Stainless R10X51-SS
Plastic R10X51-P
Service Kit –
Relieving RKR10YSS

Springs –
0-125 PSIG Range SPR-389-1-SS

Specifications

Gauge Port ..... 1/4 Inch
Operation ..... Fluorocarbon Diaphragm
Port Threads ..... 1/2 Inch
Pressure & Temperature Ratings – ..... 300 PSIG Max (20.7 bar)
0°F to 150°F (-18°C to 66°C)
Note: Air must be dry enough to avoid ice formation at temperatures below 32°F (2°C).
Weight ..... 1.79 lb. (0.81 kg)

Materials of Construction

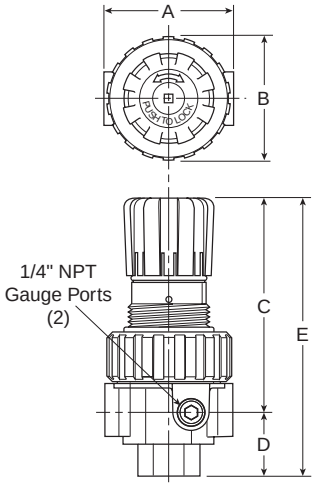
Adjustment Mechanism / Springs ..... 316 Stainless Steel
Body ..... 316 Stainless Steel
Bonnet / Knob (R10) ..... Acetal
Bottom Plug ..... 316 Stainless Steel
Poppet ..... 316 Stainless Steel
Seals ..... Fluorocarbon

Compressed Air Filters

Air Preparation Units - 07R Regulators - Standard 3/8", 1/2", 3/4" NPT - Basic 1/2" Body

Features

- **Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation.**
- **Rolling diaphragm for extended life.**
- **Two high flow 1/4" gauge ports can be used as additional outlets.**
- **Easily serviced.**
- **Removable non-rising knob for panel mounting and tamper resistance.**
- **High Flow: 3/8" – 70 SCFM§**
  1/2" – 90 SCFM§
  3/4" – 90 SCFM§



Port Size	NPT
Without Gauge	
3/8"	07R213A*
1/2"	07R313A*
3/4"	07R413A*

NOTE: 2.00 Dia. (51mm) hole required for panel mounting.

§ SCFM = Standard cubic feet per minute at 100 PSIG inlet, 90 PSIG no flow secondary setting and 10 PSIG pressure drop.

07R Regulator Dimensions		
A 3.24 (82)	B 2.74 (70)	C 4.79 (122)
D 1.61 (41)	E 6.40 (163)	
Inches (mm)		

⚠ WARNING

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

Ordering Information

07R	3	13	A	*	—	—	---

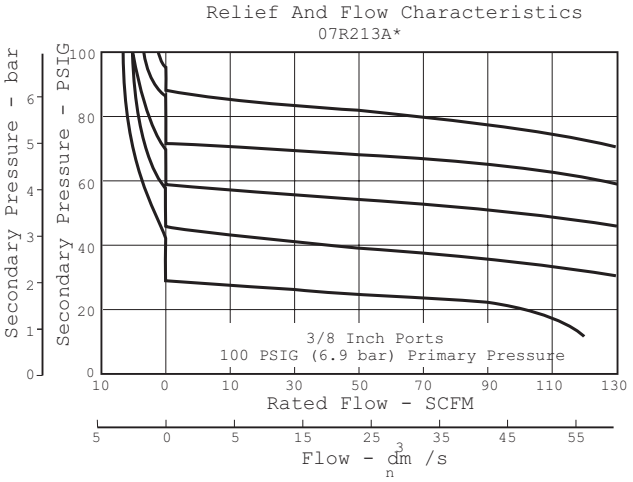
Port Size	Pressure Range	Relief	Engineering Level	Port Type	Options	Preset / Pressure Limited
2 3/8 Inch 3 1/2 Inch 4 3/4 Inch	Without Gauge 13 125 PSIG	A Relieving	* Will be Entered at Factory	Blank NPT	Blank No Options	Blank None

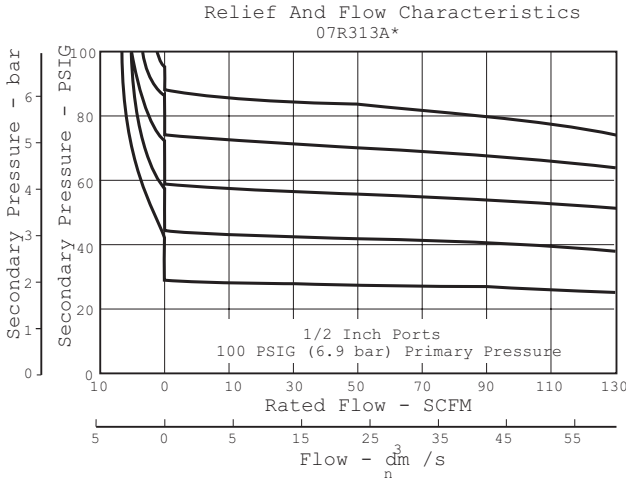
* 3/8 & 1/2 inch meet ISO 1179-1 Standard.

† Inlet Pressure is 100 PSIG. For other pressures, contact factory.

Compressed Air Filters

Air Preparation Units 07R Air Line Regulators
Technical Information



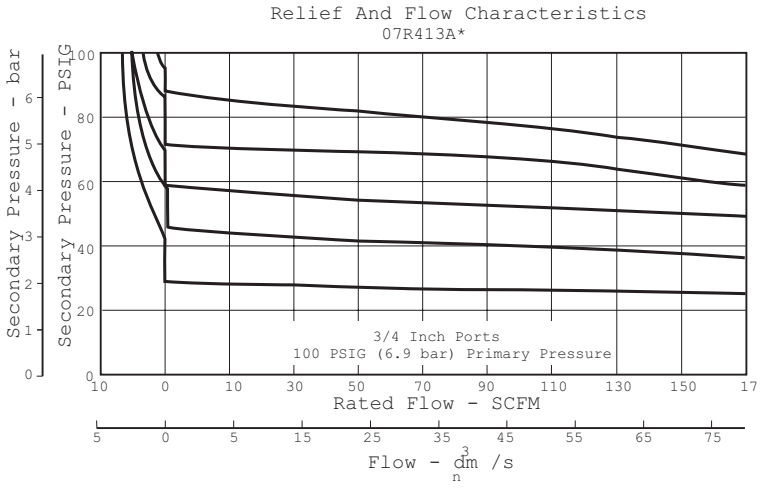


CAUTION:

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.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.



07R Regulator Kits & Accessories

Bonnet Assembly Kit PS715P
Control Knob P04069B
Gauges – 60 PSIG (0 to 4.1 bar) K4520N14060
160 PSIG (0 to 11.0 bar) K4520N14160

Mounting Bracket Kit (Includes Panel Mount Nut) PS807P
Panel Mount Nut – Plastic P04082
Metal P04079B

Service Kit – Relieving (Includes Poppet) PS808P

Springs – 2-125 PSIG Range P04063

Tamperproof Kit PS737P

Specifications

Gauge Ports (2) ..... 1/4 Inch
(Can be used as additional High Flow 1/4 Inch Outlet Ports)
Port Threads ..... 3/8, 1/2, 3/4 Inch
Primary Pressure Rating –
Maximum Primary Pressure ..... 250 PSIG (17.2 bar)
Secondary Pressure Range –
Standard Pressure ..... 2 to 125 PSIG (0 to 8.6 bar)

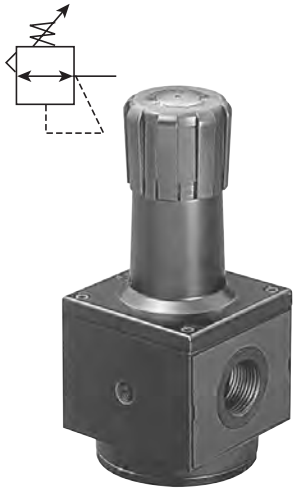
Temperature Rating ..... 32°F to 175°F (0°C to 80°C)
Weight 2.5 lb. (1.1 kg)

Materials of Construction

Adjusting Stem ..... Steel
Body ..... Zinc
Bonnet, Piston Stem, Valve Poppet & Cap ..... Plastic
Collar, Knob ..... Plastic
Diaphragm ..... Nitrile
Seals ..... Nitrile
Springs – Poppet ..... Stainless
Control ..... Steel

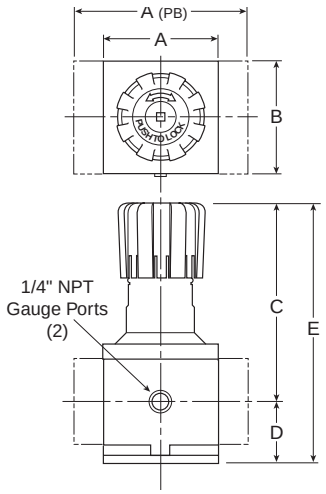
Compressed Air Filters

Air Preparation Units - P3NR Regulators - High Flow 3/4", 1", 1 1/2" NPT - Basic 1" Body



Features

- **Port blocks (PB) available to provide 1-1/2" port extension to 1" ported bodies.**
- **Self relieving feature plus balanced poppet provides quick response and accurate pressure regulation.**
- **Solid control piston for extended life.**
- **High Flow: 3/4" – 200 SCFM§**
  1" – 300 SCFM§
  1½" – 300 SCFM§



P3NR Regulator Dimensions		
A 3.62 (92)	A(PB) 5.91 (150)	B 3.62 (92)
C 6.38 (162)	D 2.08 (53)	E 8.46 (215)

Inches (mm)

Port Size	NPT
Without Gauge	
3/4"	P3NRA96BNN
1"	P3NRA98BNN
1½	P3NRA9PBNN

NOTE: 2.00 Dia. (51mm) hole required for panel mounting.

§ SCFM = Standard cubic feet per minute at 100 PSIG inlet, 90 PSIG no flow secondary setting and 10 PSIG pressure drop.

⚠ WARNING

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

Ordering Information

P3N	R	A	9	8	B	N	N

Design Level

Port Type
9 NPT Female

* 3/4 & 1 inch meet ISO 1179-1 Standard.

Port Size
6 3/4" (w/o Port Blocks)
8 1" (w/o Port Blocks)
P 1-1/2" Port Blocks (w/ 1" Ported Body)

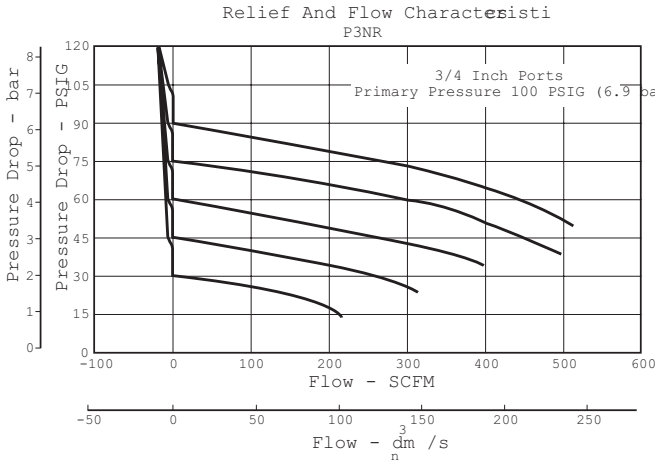
Relief
B Relieving

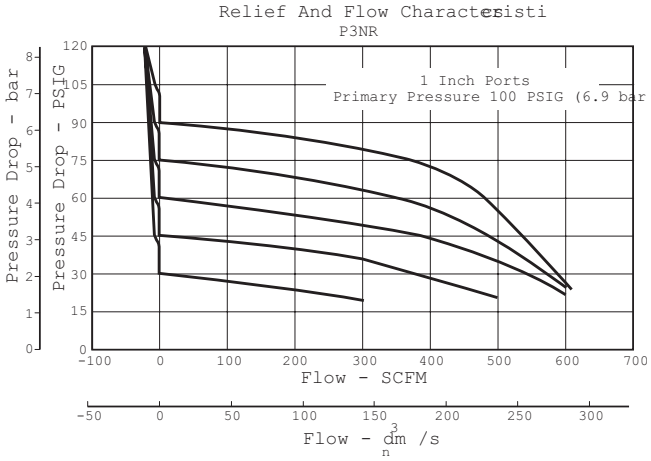
Adjustment
N Non-Rising Knob

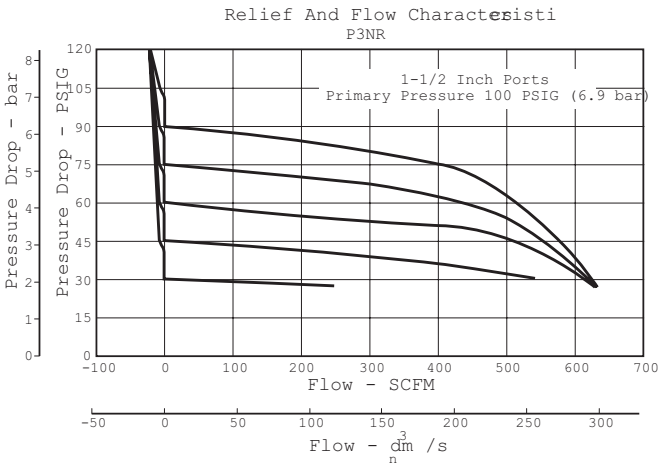
Pressure Gauge
Without Gauge
N 125 PSI (0 to 8 bar)

Compressed Air Filters

Air Preparation Units - P3NR Air Line Regulators Technical Information







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.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

P3NR Regulator Kits & Accessories

Control Knob P3NKA00PN

Gauges – 60 PSIG (0 to 4.1 bar) K4520N14060
160 PSIG (0 to 11.0 bar) K4520N14160

Mounting Bracket Kit* P3NKA00MW

Service Kit – Relieving P3NKA00RR

Springs – 2-125 PSIG Range C10A1308

Specifications

Gauge Ports (2) ..... 1/4 Inch
(Can be used as additional High Flow 1/4 Inch Outlet Ports)

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

Primary Pressure Rating –
Maximum Primary Pressure ..... 250 PSIG (17.2 bar)

Secondary Pressure Range –
Standard Pressure ..... 2 to 125 PSIG (0 to 8.6 bar)

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

Weight – 3/4" ..... 4.2 lb. (1.9 kg)
1" ..... 4.2 lb. (1.9 kg)
1½" † ..... 5.3 lb. (2.4 kg)

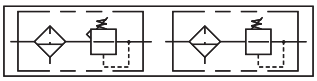
Materials of Construction

Adjusting Stem ..... Steel
Body ..... Aluminum
Bonnet ..... Aluminum
Knob ..... Plastic
Piston ..... Plastic
Poppet Assembly ..... Brass
Seals ..... Nitrile
Springs – Poppet & Control ..... Steel

† 1" Port Body with 1½" Port Block.

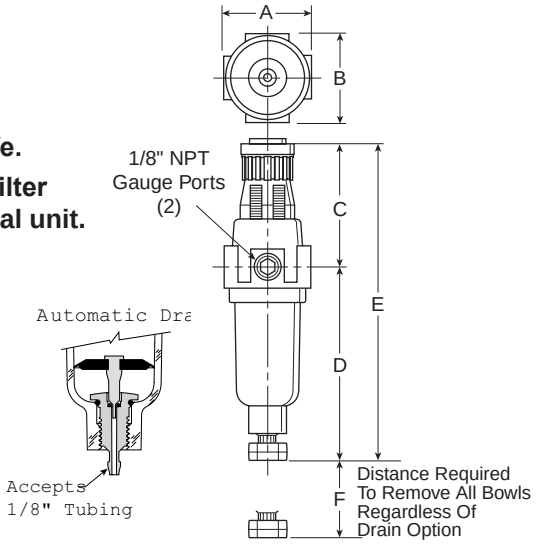
Compressed Air Filters

Air Preparation Units - 14E Filter/Regulator - Miniature 1/8", 1/4" NPT - Basic 1/8" Body



Features

- **Excellent water removal efficiency.**
- **Unbalanced poppet standard.**
- **Solid control piston for extended life.**
- **Space saving package offers both filter and regulator features in one integral unit.**
- **Non-rising adjustment knob.**
- **Two full flow 1/8" gauge ports.**
- **High Flow: 1/8" – 16 SCFM§**
  1/4" – 18 SCFM§



Port Size	NPT	
	Twist Drain	Automatic Pulse Drain
Poly Bowl‡		
1/8"	14E01B13F*	14E05B13F*
1/4"	14E11B13F*	14E15B13F*
Metal Bowl		
1/8"	14E03B13F*	14E07B13F*
1/4"	14E13B13F*	14E17B13F*

‡ For polycarbonate bowl see Caution on page A2.

§ SCFM = Standard cubic feet per minute at 100 PSIG inlet, 90 PSIG no flow secondary setting and 10 PSIG pressure drop.

NOTE: 1.218 Dia. (31mm) hole required for panel mounting.

14E Filter / Regulator Dimensions		
A 1.62 (41)	B 1.58 (40)	C 2.42 (61)
D 3.79 (96)	D† 3.64 (92)	E 6.21 (158)
E† 6.06 (154)	F 1.60 (41)	
Inches (mm) † With Auto Drain		

Ordering Information

14E	1	1	B	13	F	*	—	—	---

Port Size
0 1/8 Inch
1 1/4 Inch

Bowl Options
Polycarbonate Bowl
1 Twist Drain
5 Automatic Drain
Metal Bowl
3 Twist Drain
7 Automatic Drain

Elements
B 5 Micron

Pressure Range
13 125 PSIG

Relief
F Relieving

Engineering Level
* Will be Entered at Factory

Port Type
Blank NPT

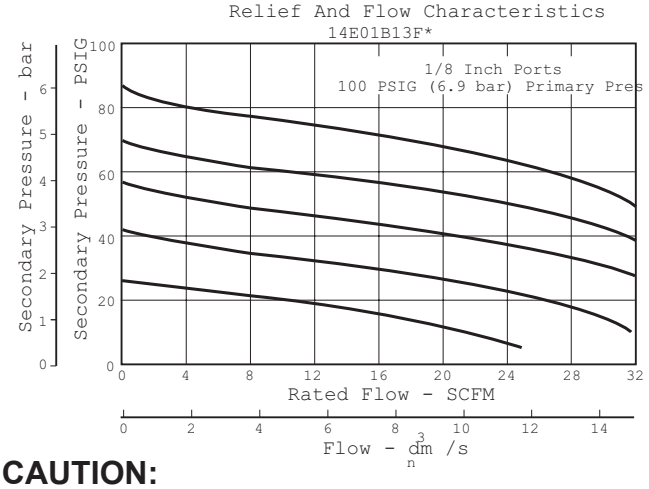
Options
Blank No Options

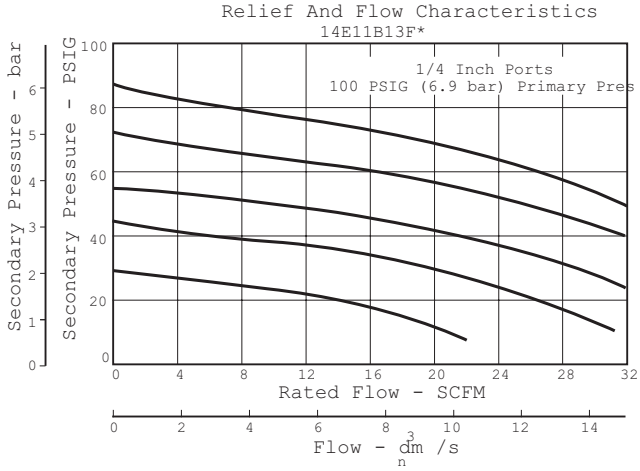
† Inlet Pressure is 100 PSIG. For other pressures, contact factory.

Preset / Pressure Limited
Blank None

Compressed Air Filters

Air Preparation Units - Prep Air II, 14E Filter/Regulators Technical Information





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.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

⚠ WARNING

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

14E Filter / Regulator Kits & Accessories

Bowl Kits –

Poly Bowl – Automatic Drain PS408BP
Twist Drain PS404P

Metal Bowl – Automatic Drain PS451BP
Twist Drain PS447BP

Filter Element Kits – 5 Micron PS403P

Gauges – 30 PSIG (0 to 2.1 bar) K4515N18030
60 PSIG (0 to 4.1 bar) K4515N18060
160 PSIG (0 to 11.0 bar) K4515N18160

Mounting Bracket Kit (Includes Panel Mount Nut) PS417BP

Panel Mount Nut P78652

Poppet Kit – Unbalanced PS424BP

Service Kit – Relieving PS423P

Springs – 2- 125 PSIG Range (Gold) P01173

Specifications

Automatic Pulse Drain Tube Barb ..... 1/8 Inch

Bowl Capacity ..... 1 Ounce

Gauge Ports (2) (Can be used for Full Flow) ..... 1/8 Inch

Port Threads ..... 1/8, 1/4 Inch

Pressure & Temperature Ratings –

Polycarbonate Bowl

0 to 150 PSIG (0 to 10.3 bar), 32°F to 125°F (0°C to 52°C)

Metal Bowl

0 to 250 PSIG (0 to 17.2 bar), 32°F to 175°F (0°C to 80°C)

Secondary Pressure Ranges –

Standard Pressure ..... 2 to 125 PSIG (0 to 8.6 bar)

Weight ..... 0.4 lb. (0.18 kg)

Materials of Construction

Adjusting Nut ..... Brass

Adjusting Stem & Spring ..... Steel

Body ..... Zinc

Bonnet, Knob, Seat, Piston, Holder & Deflector ..... Plastic

Bowls Available – Transparent ..... Polycarbonate
Metal (Without Sight Gauge) ..... Zinc

Drains – Manual – Twist Type
Body & Stem ..... Plastic
Seals ..... Nitrile

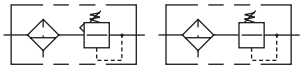
Automatic – Pulse Type
Piston & Seals ..... Nitrile
Stem, Seat, Adaptor & Washers ..... Aluminum

Filter Elements – 5 Micron (Standard) ..... Plastic

Seals ..... Nitrile

Compressed Air Filters

Air Preparation Units - FB548 Filter/Regulator - Miniature 1/4” Ports

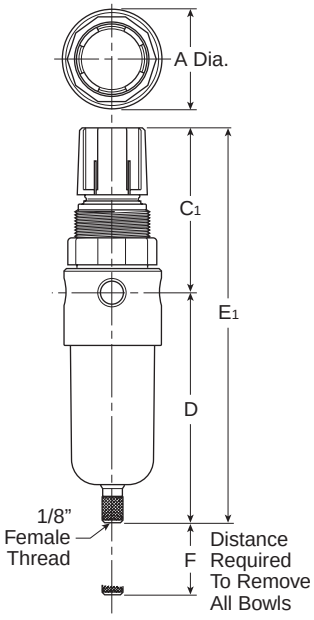


B548

Features

- **Stainless Steel Construction Handles Most Corrosive Environments**
- **Large Diaphragm To Valve Area Ratio For Precise Regulation And High Flow Capacity**
- **1/8" Female Threaded Drain***
- **Meets NACE Specifications MR-01-75/ISO 15156.**
- **High Flow: 1/4" – 12 SCFM§**

* Beginning January 2008



Port Size	NPT
1/4"	FB548-02DGCSS

§ SCFM = Standard cubic feet per minute at 100 PSIG inlet, 75 PSIG no flow secondary setting and 15 PSIG pressure drop.

FB548 Piggyback Dimensions		
A 1.56 (40)	C1 2.17 (55)	D 3.63 (92)
E1 3.06 (78)	F 1.58 (40)	

inches (mm)
NOTE: 1.25 Dia. (32mm) hole required for panel mounting.

⚠ WARNING

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

Ordering Information

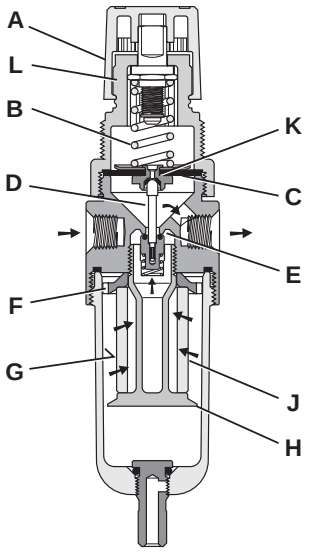
FB548	-	02	D	G	C		SS

Series	Port Type	Bowl	Element	Reduced Pressure Range	Options	Material
B548 Standard Knob	- NPT	D Metal Bowl without Sight Gauge	G5 Micron	C 0-125 PSIG (0-8.5 bar)	Blank Relieving	SS Stainless Steel

Compressed Air Filters

Air Preparation Units - FB548 Filter/Regulators Technical Information

Operation



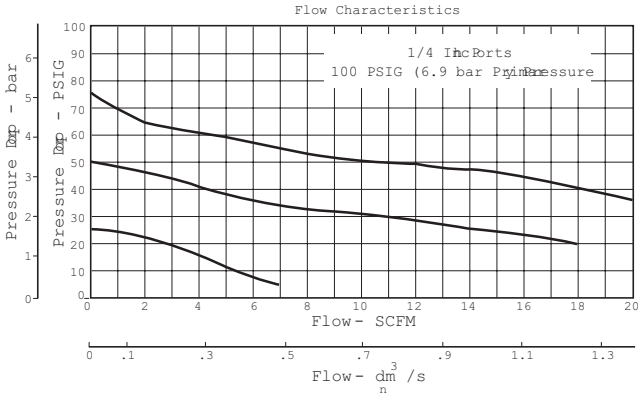
Turning the adjusting knob clockwise applies a load to control spring **(B)** which forces diaphragm **(C)** and valve poppet assembly **(D)** to move downward allowing filtered air to flow through the seat area **(E)** created between the poppet assembly and the seat. **"First stage filtration".** Air pressure supplied to the inlet port is directed through deflector plate **(F)** causing a swirling centrifugal action forcing liquids and coarse particles to the inner bowl wall **(G)** and down below the lower baffle **(H)** to the quiet zone. After liquids and large particles are removed in the first stage of filtration **"second stage filtration"** occurs as air flows through element **(J)** where smaller particles are filtered out and retained. The air flow now passes through seat area **(E)** to the outlet port of the unit. Pressure in the downstream line is sensed below the diaphragm **(C)** and offsets the load of spring **(B)**. When downstream pressure reaches the set-point, poppet valve assembly **(D)** and diaphragm **(C)** move upward closing seat area **(E)**. Should downstream pressure exceed the desired regulated pressure, the excess pressure will cause the diaphragm **(C)** to move upward opening vent hole **(K)** venting the excess pressure to atmosphere through the hole in the bonnet **(L)**. (This occurs in the standard relieving type filter/regulators only.)

Technical Information

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.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.



FB548, Regulator Kits & Accessories

FB548 Bonnet Kit (Knob Included) CKR364YSS
Filter Element Kits –
Particulate (5 Micron) EK504VY
Gauge –
160 PSIG (0 to 1100 kPa), 2" Face K4515N14160SS
Manual Twist Drain SA600Y7-1SS
Panel Mount Bracket (Stainless) 161X57-SS
Panel Mount Nut –
Stainless R05X51-SS
Plastic R05X51-P
Service Kit –
Relieving RK549YSS

Springs –
0-125 PSIG Range SPR-377-1-SS

Specifications

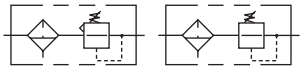
Bowl Capacity ..... 1.0 Ounces
Filter Rating ..... 5 Micron
Gauge Port ..... 1/4 Inch
Operation ..... Fluorocarbon Diaphragm
Port Threads ..... 1/4 Inch
Pressure & Temperature Ratings – ..... 300 PSIG Max (20.7 bar)
0°F to 150°F (-18°C to 66°C)
Note: Air must be dry enough to avoid ice formation at temperatures below 32°F (2°C).
Sump Capacity ..... 0.4 Ounce
Weight ..... 0.6 lb. (0.27 kg)

Materials of Construction

Adjustment Mechanism / Springs ..... 316 Stainless Steel
Body ..... 316 Stainless Steel
Bonnet (B548) ..... Acetal
Bottom Plug ..... 316 Stainless Steel
Knob (B548) ..... Polypropylene
Poppet ..... 316 Stainless Steel
Seals ..... Fluorocarbon

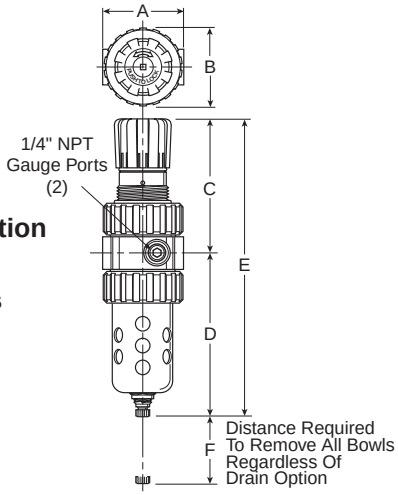
Compressed Air Filters

Air Preparation Units - 06E Filter/Regulator - Compact 1/4", 3/8", 1/2" NPT - Basic 3/8" Body



Features

- **Space saving package offers both filter and regulator features for optimal performance.**
- **Excellent water removal efficiency.**
- **Rolling diaphragm for extended life.**
- **Quick response, and accurate pressure regulation regardless of changing flow or inlet pressure.**
- **Two high flow 1/4" gauge ports can be used as additional outlets.**
- **Shown with recommended metal bowl guard.**
- **High Flow: 1/4" – 46 SCFM§**
  3/8" – 55 SCFM§
  1/2" – 61 SCFM§



Port Size	NPT	
	Twist Drain	Automatic Float Drain
Poly Bowl‡ / Metal Guard		
1/4"	06E12B13A*	06E16B13A*
3/8"	06E22B13A*	06E26B13A*
1/2"	06E32B13A*	06E36B13A*
Metal Bowl / Sight Gauge		
1/4"	06E14B13A*	06E18B13A*
3/8"	06E24B13A*	06E28B13A*
1/2"	06E34B13A*	06E38B13A*

‡ For polycarbonate bowl see Caution on page 2.

§ SCFM = Standard cubic feet per minute at 100 PSIG inlet, 90 PSIG no flow secondary setting and 10 PSIG pressure drop.

NOTE: 2.00 Dia. (50.8 mm) hole required for panel mounting. Max. panel thickness 1/4".

06E Filter / Regulator Dimensions			
A	B	C	D
2.81 (71)	2.74 (70)	4.69 (119)	5.69 (145)
D†	E	E†	F
5.74 (146)	10.38 (264)	10.43 (265)	2.25 (57)

Inches (mm)

† With Twist Drain or Auto Pulse Drain

⚠ WARNING

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

Ordering Information

06E	1	2	B	13	A	*	—	—	---

Port Size
1 1/4 Inch
2 3/8 Inch
3 1/2 Inch

Bowl Options

Polycarbonate Bowl	Metal Bowl
2 Metal Bowl Guard / Twist Drain	4 Sight Gauge / Twist Drain
6 Metal Bowl Guard / Auto Float Drain	8 Sight Gauge / Auto Float Drain

Elements
B 5 Micron

Pressure Range
13 125 PSIG

Relief
A Relieving

Engineering Level
* Will be Entered at Factory

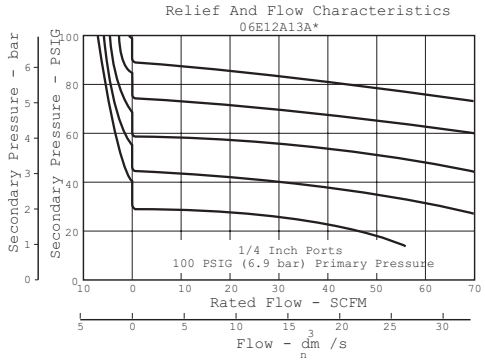
Port Type
Blank NPT
* 1/4 & 3/8 inch meet ISO 1179-1 Standard.

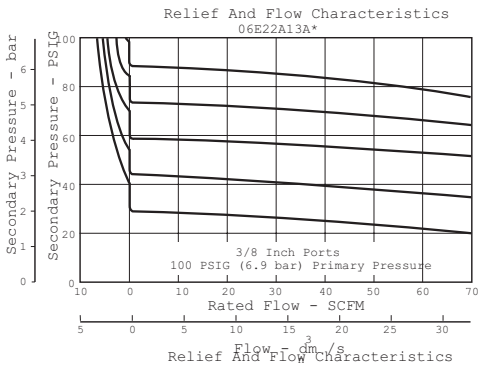
Options
Blank No Options
† Inlet Pressure is 100 PSIG. For other pressures, contact factory.

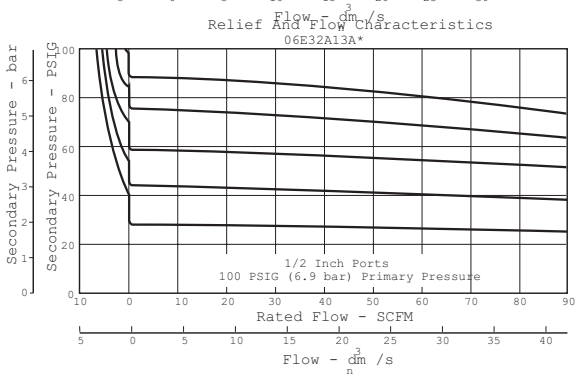
Preset
Blank None

Compressed Air Filters

Air Preparation Units - 06E Filter/Regulators Technical Information







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.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

06E Filter / Regulator Kits & Accessories

Bonnet Assembly Kit PS715P
Bowl Guard Kit PS705P
Bowl Kits –
Poly Bowl – Automatic Float Drain PS722P
Twist Drain PS732P
Metal Bowl – Sight Gauge / Automatic Drain PS723P
Sight Gauge / Twist Drain PS735P
Control Knob P04069B
Drain Kit – Automatic Float Drain PS506P
Twist Drain PS512P

Filter Element Kits – 5 Micron PS702

Gauges – 60 PSIG (0 to 4.1 bar) K4520N14060
160 PSIG (0 to 11.0 bar) K4520N14160

Mounting Bracket Kit (Includes Panel Mount Nut) PS707P
Panel Mount Nut P04082

Service Kits – Non-Relieving (Includes Poppet) PS711P
Relieving (Includes Poppet) PS710P
Seat Insert Kit PS713P
Spring – 2- 125 PSIG Range P04063

Tamperproof Kit (Key Lock) PS737P

Specifications

Bowl Capacity ..... 4.4 Ounces
Gauge Ports (2) ..... 1/4 Inch
(Can be used as Additional Full Flow 1/4" Outlet Ports)
Port Threads ..... 1/4, 3/8, 1/2 Inch

Pressure & Temperature Ratings –
Polycarbonate Bowl – 0 to 150 PSIG (0 to 10.4 bar)
32°F to 125°F (0°C to 52°C)
Metal Bowl – 0 to 250 PSIG (0 to 17.2 bar)
32°F to 175°F (0°C to 80°C)
Automatic Float Drain – 15 to 250 PSIG (1.0 to 17.2 bar)
Secondary Pressure Range –
Standard Pressure ..... 2 to 125 PSIG (0 to 8.6 bar)

Sump Capacity ..... 1.75 Ounces
Weight ..... 1.6 lb. (0.7 kg)

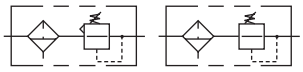
Materials of Construction

Adjusting Stem ..... Steel
Body ..... Zinc
Bonnet, Internal Parts ..... Plastic
Bowls Available – Transparent ..... Polycarbonate
Metal (With or Without Sight Gauge) ..... Zinc
Bowl Guard ..... Steel
Collar ..... Plastic
Diaphragm ..... Nitrile
Drains – Manual Twist Drain Standard
Body & Nut ..... Plastic
Automatic Float Drain Optional
(Interchangeable for Field Conversions)
Operating Range ..... 10 to 250 PSIG (.7 to 17.2 bar)
Housing, Float ..... Plastic
Seals ..... Nitrile
Springs, Push Rod ..... Stainless Steel
Knob ..... Plastic
Filter Elements – 5 Micron (Optional) ..... Plastic

Seals ..... Nitrile
Sight Gauge ..... Polyamide
Springs – Poppet ..... Stainless
Control ..... Steel

Compressed Air Filters

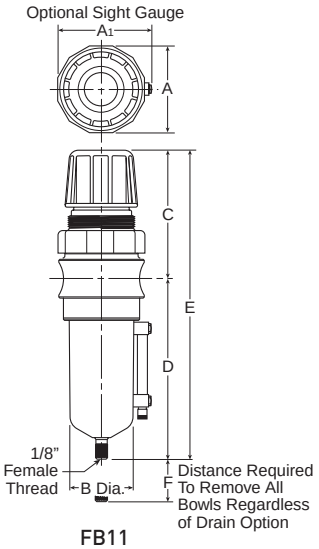
Air Preparation Units - FB11 Filter/Regulator - Standard 1/2" Ports



Features

- **Stainless steel construction handles most corrosive environments.**
- **Large diaphragm to valve area ratio for precise regulation and high flow capacity.**
- **1/8" female threaded drain.**
- **Meets NACE specifications MR-01-75/ISO-15156.**
- **Low temperature version available.**
- **High Flow: 1/2" – 72 SCFM§**

B11



FB11

Port Size	Adjustment Type	NPT		BSPP	
		Manual Twist Drain	Automatic Float Drain	Manual Twist Drain	Automatic Float Drain
1/2"	Metal Bowl with Sight Gauge				
	Knob	**FB11-04WGCSS**	**FB11-04WGCRSS**	FB11G04WGCSS	FB11G04WGCRSS

Standard part numbers shown bold. For other models refer to ordering information below.

§ SCFM = Standard cubic feet per minute at 100 PSIG inlet, 90 PSIG no flow secondary setting and 15 PSIG pressure drop.

FB11 Piggyback Dimensions		
A 2.34 (60)	**A1** 2.50 (64)	**B** 1.75 (44)
C 3.59 (91)	**D** 5.00 (127)	**E** 8.59 (218)
F 2.12 (54)		

inches (mm)
NOTE: 1.75 Dia. (44mm) hole required for panel mounting.

⚠ WARNING

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

Ordering Information

FB11	-	04	W	G	C	—	SS

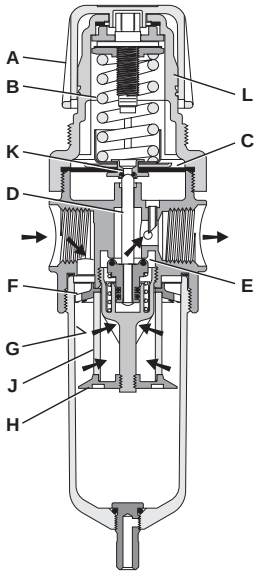
Series	Port Type	Port Size	Bowl	Element	Reduced Pressure Range	Options	Material
FB11 Standard Knob	- NPT	04 1/2 Inch	D Metal Bowl without Sight Gauge W Metal Bowl with Sight Gauge	G 5 Micron	C 0-125 PSIG (0-8.5 bar)	Blank Relieving	SS Stainless Steel

Compressed Air Filters

Air Preparation Units - FB11 Filter/Regulators

Technical Information

Operation



Turning the adjusting knob clockwise applies a load to control spring **(B)** which forces diaphragm **(C)** and valve poppet assembly **(D)** to move downward allowing filtered air to flow through the seat area **(E)** created between the poppet assembly and the seat. **"First stage filtration".**

Air pressure supplied to the inlet port is directed through deflector plate **(F)** causing a swirling centrifugal action forcing liquids and coarse particles to the inner bowl wall **(G)** and down below the lower baffle **(H)** to the quiet zone. After liquids and large particles are removed in the first stage of filtration **"second stage filtration"** occurs as air flows through element **(J)** where smaller particles are filtered out and retained. The air flow now passes through seat area **(E)** to the outlet port of the unit.

Pressure in the downstream line is sensed below the diaphragm **(C)** and offsets the load of spring **(B)**. When downstream pressure reaches the set-point, poppet valve assembly **(D)** and diaphragm **(C)** move upward closing seat area **(E)**. Should downstream pressure exceed the desired regulated pressure, the excess pressure will cause the diaphragm **(C)** to move upward opening vent hole **(K)** venting the excess pressure to atmosphere through the hole in the bonnet **(L)**. (This occurs in the standard relieving type filter/regulators only.)

Technical Information

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.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

FB11 Regulator Kits & Accessories

FB11 Bonnet Kit (Knob Included) CKR10YSS
Drain Kit –
- Automatic Float Drain SA602MDSS
- Manual Twist Drain SA600Y7-1SS

Filter Element Kit –
- Particulate (5 Micron) EKF10VY

Gauge –
- 160 PSIG (0 to 1100 kPa), 2" Face K4520N14160SS

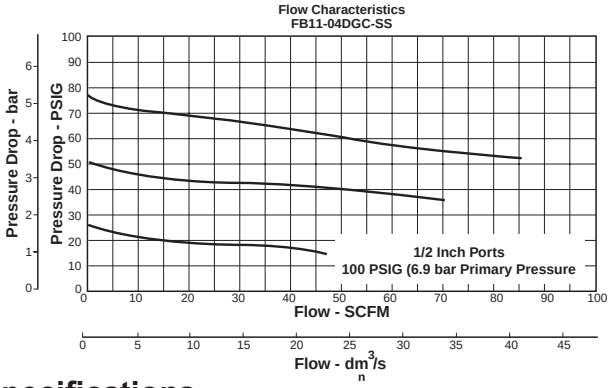
Panel Mount Bracket (Stainless) R10Y57-SS
Panel Mount Nut –
- Stainless R10X51-SS
- Plastic R10X51-P

Service Kit –
- Relieving RKR10YSS

Spring –
- 0-125 PSIG Range SPR-389-1-SS

Materials of Construction

Adjustment Mechanism / Springs ..... 316 Stainless Steel
Body ..... 316 Stainless Steel
Bonnet / Knob (B11) ..... Acetal
Bottom Plug ..... 316 Stainless Steel
Poppet ..... 316 Stainless Steel
Seals ..... Fluorocarbon
Sight Gauge ..... Isoplast



Specifications

Bowl Capacity ..... 4.0 Ounces
Filter Rating ..... 5 Micron
Gauge Port ..... 1/4 Inch
Operation ..... Fluorocarbon Diaphragm
Port Threads ..... 1/2 Inch
Pressure & Temperature Ratings –
- Metal Bowl (D) ..... 300 PSIG Max (20.7 bar) 0°F to 150°F (-18°C to 66°C)
- Metal Bowl (W) ..... 0 to 250 PSIG (0 to 17.2 bar) 0°F to 150°F (-18°C to 66°C)
- Automatic Float Drain ..... 15 to 175 PSIG (1 to 12 bar) 40°F to 125°F (4°C to 52°C)

Note: Air must be dry enough to avoid ice formation at temperatures below 32°F (2°C).

Sump Capacity ..... 1.7 Ounce
Weight ..... 2.42 lb. (1.09 kg)

Filter Regulators

Filter-Regulator Combinations

Balston Filter-Regulators combine a high efficiency coalescing filter with a high quality pressure regulator. Air flows through the filter, then to the pressure regulator. The filter is a Balston coalescing compressed air filter (Grade BX) and will completely remove oil, water, and dirt from compressed air and other compressed gases. For the 12 E Series, flow direction through the element is inside-to-outside for optimum oil and water removal. For Model B14E15B13FL, flow direction is outside-to-inside. This filter removes particulates, 5 micron and larger, from compressed air and gases. An automatic drain is installed on the 3/8", 1/2", and 3/4" models offering maintenance-free operation. Pressure gauges are standard and are available in up to 4 different ranges (see ordering information).

12E Series

Model B14E15B13FL

Principal Specifications

Model	12E27	12E37	12E47	B14E15B13FL
Port Size	3/8" NPT	1/2" NPT	3/4" NPT	1/4" NPT
Gauge Ports	1/4" NPT	1/4" NPT	1/4" NPT	1/8" NPT
Materials of Construction				
Head	Zinc	Zinc	Zinc	Zinc
Bowl	Zinc	Zinc	Zinc	Polycarbonate
Bonnet	Plastic	Plastic	Plastic	Plastic
Internals	Zinc/Nitrile	Zinc/Nitrile	Zinc/Nitrile	Zinc/Nitrile
Maximum Temperature	125°F (52°C)	125°F (52°C)	125°F (52°C)	120°F (49°C)
Maximum Pressure (2)	250 psig (17.2 barg)	250 psig (17.2 barg)	250 psig (17.2 barg)	125 psig (8.62 barg)
Minimum Pressure	15 psig (1.03 barg) (1)	15 psig (1.03 barg) (1)	15 psig (1.03 barg) (1)	2 psig (0.14 barg)
Shipping Weight	2.5 lbs. (1.1 kg)	2.5 lbs. (1.1 kg)	2.5 lbs. (1.1 kg)	1.0 lbs. (.45 kg)
Dimensions	3.25"W X 13"L (8cm X 33cm)	3.25"W X 13"L (8cm X 33cm)	3.25"W X 13"L (8cm X 33cm)	1.6"W X 6.2"L (16cm X 4cm)

Notes:

1 Minimum operating pressure for automatic drain is 15 psig (1.03 barg).

2 Maximum pressure ratings are for temperatures to 130°F (54°C). Please consult the factory for maximum pressure ratings at elevated temperatures.

Filter Regulators

Ordering Information

Model	12E27	12E37	12E47	B14E11B13F
Control Gauge Pressure Range				
0-30 psig (0-2.07 barg)	see ordering matrix below →			0-30 psig (0-2.1 barg)
5-60 psig (0.34-4.14 barg)	see ordering matrix below →			–
10-130 psig (0.69-9.0 barg)	see ordering matrix below →			–
Auto. Drain (1)	Included	Included	Included	Included
Replacement Filter Cartridges				
Number Required	1	1	1	PS403 (Box of 1)
Box of 5	5/130-14-BX	5/130-14-BX	5/130-14-BX	–
Box or 10	130-14-BX	130-14-BX	130-14-BX	–

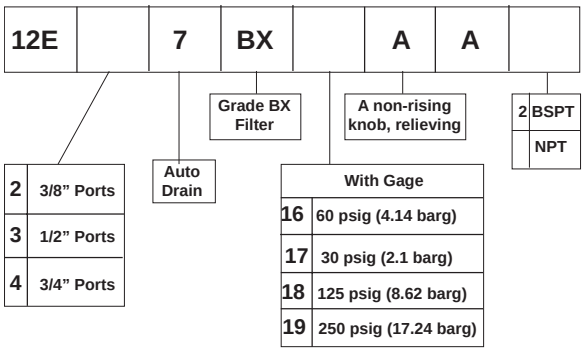
Notes:

1 Minimum operating pressure for automatic drain is 15 psig.

2 Maximum pressure ratings are for temperatures to 130°F (54°C). Please consult the factory for maximum pressure ratings at elevated temperatures.

How to Order

To order product with desired port size and Regulating Pressure Range, select the indicator digits from the matrix (at right). This will complete the entire model number which is needed to place an order.



Membrane Air Dryers

Membrane Air
Dryer Model
AD0030-35

Offer a reliable, efficient, and economical alternative to pressure swing and refrigerant dryer technologies

Require no electricity thus lowering operating costs

Dewpoints as low as -58°F, (-50°C) prevent freeze-ups

Explosion proof

Silent operation

No desiccant to change

Eliminates point of use condensate discharge typical of refrigerant dryer technology

Membrane Air Dryers

Parker Membrane Air Dryers combine a superior coalescing technology with a proven, innovative membrane drying system to supply clean, dry compressed air with dewpoints as low as -58°F, (-50°C). The Parker Membrane Dryers are available in 10 different models which can deliver compressed air at flow rates up to 40 SCFM. The Membrane Air Dryers are engineered for easy installation, operation, and long term reliability. The Dryers incorporate high efficiency water separation, coalescing filtration and the highest efficiency membrane available to provide low cost operation and minimal maintenance.

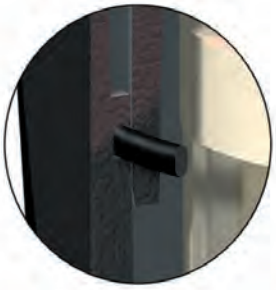
Applications

- Low dewpoint instrument air
- Pneumatic equipment
- Purging electronic cabinets
- Analytical instrumentation
- Prevention of freeze-ups
- Dry air for hazardous areas
- General laboratory air supply
- Air bearings
- Electrostatic painting
- Dental air
- Laser and optical purge
- Purge moisture sensitive coatings and adhesives

State-of-the-Art Membrane Technology

Water vapor from the compressed air supply passes through the hollow fibers of the membrane. At the same time, a small portion of the dry air product is redirected along the length of the fibers to sweep out the water vapor which has permeated the membrane. The moisture-laden sweep gas is then vented to the atmosphere, and clean, dry air is supplied to the application. The drying power of the membrane is controlled by varying the compressed air flow rate and pressure. The Parker Membrane Air Dryer is designed to operate continuously, 24 hours per day, 7 days per week. The only maintenance required is changing the prefilter cartridge once a year. This annual maintenance takes approximately 5 minutes.

State-of-the-art Technology



Captive 'O' Rings
- less need for spares

Figure 1
Dual Layer Filter Element
- long life and high efficiency

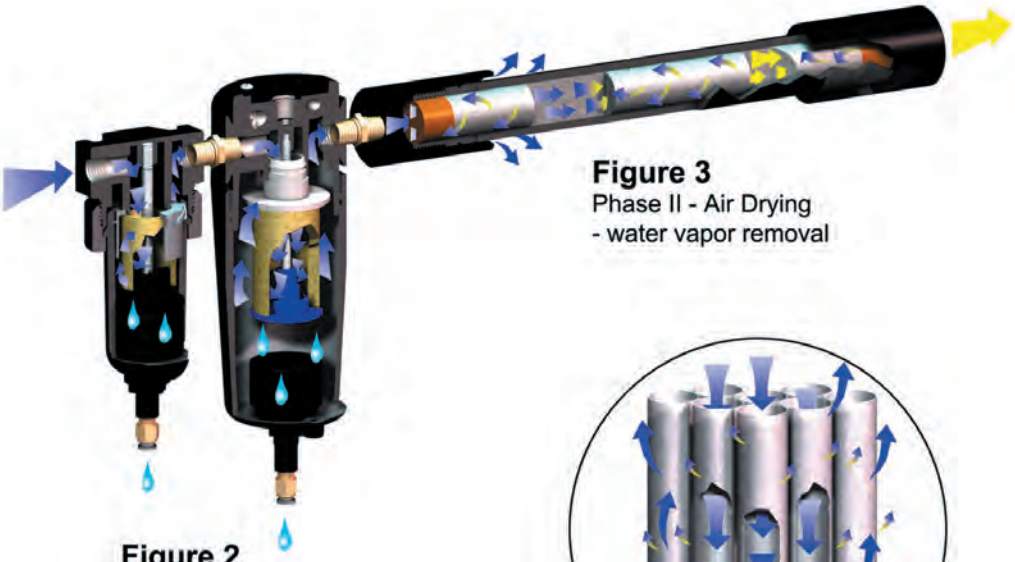


Figure 2
Phase I - Coalescing

Figure 3
Phase II - Air Drying
- water vapor removal

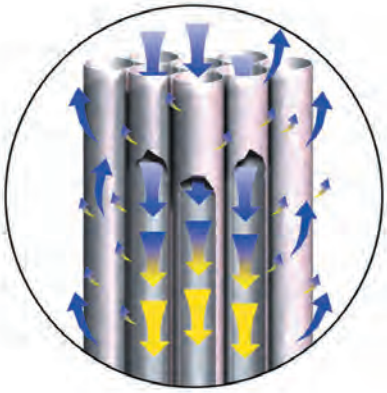


Figure 4
Hollow Fiber Membrane
- permeates only water vapor

Phase I - Coalescing Filtration

Prior to entering the membrane drying module, the compressed air passes through a high efficiency water separator and coalescing filter to remove oil and water droplets and particulate contamination with an efficiency of 99.99% at 0.01 micron. The liquids removed by the filter cartridge continuously drip from the filter cartridge into the bottom of the housing, where they are automatically emptied by an autodrain assembly (see Fig. 1 and Fig. 2). The air leaving the prefilter, therefore, is laden only with water vapor, which will be removed in the membrane module.

Phase II - Drying

The water vapor in the compressed air is removed by the principle of selective permeation through a membrane (see Fig. 3). The membrane module consists of bundles of hollow membrane fibers (see Fig. 4), each permeable only to water vapor. As the compressed air passes through the center of these fibers, water vapor permeates through the walls of the fiber, and dry air exits from the other end of the fiber. A small portion of the dry air (regeneration flow) is redirected along the length of the membrane fiber to carry away the moisture-laden air which surrounds the membrane fibers. The remainder of the dry air is piped to the application.

Product Specifications

Model AD0010-35
Model AD0002-40

Model AD0030-35
Model AD0008-40

Model AD0080-35
Model AD0020-40

Model AD0200-35

Model AD0050-40

Model AD0400-35
Model AD0100-40

Flow Rates — 35°F (2°C) Pressure Dewpoint

Model Number (3)	AD0010-35	AD0030-35	AD0080-35	AD0200-35	AD0400-35
Product Flow at 100 psig Inlet Pressure	1 SCFM (1.7Nm³/h)	3 SCFM (5Nm³/h)	8 SCFM (13.6Nm³/h)	20 SCFM (34.6Nm³/h)	40 SCFM (68.6Nm³/h)
Regeneration Flow at 100 psig (2)	.25 SCFM (0.4Nm³/h)	0.5 SCFM (0.8Nm³/h)	1.5 SCFM (2.5Nm³/h)	3.5 SCFM (6Nm³/h)	6 SCFM (10.2Nm³/h)

Flow Rates (1) — -40°F (-40°C) Atmospheric Dewpoint

Model Number (3)	AD0002-40	AD0008-40	AD0020-40	AD0050-40	AD0100-40
Product Flow at 100 psig	0.25 SCFM (0.4 Nm³/h)	0.8 SCFM (1.4 Nm³/h)	2 SCFM (3.4 Nm³/h)	5 SCFM (8.5 Nm³/h)	10 SCFM (17 Nm³/h)
Regeneration Flow at 100 psig (2)	0.25 SCFM (0.4 Nm³/h)	0.2 SCFM (0.3 Nm³/h)	0.5 SCFM (0.8 Nm³/h)	2 SCFM (3.4 Nm³/h)	2.5 SCFM (4 Nm³/h)

Notes:

1 Dewpoint specified for saturated inlet air at 70°F (21°C) and 100 psig. Outlet flows will vary slightly for other inlet conditions.

2 Total Air consumption = Regeneration flow + outlet flow.

3 If compressed air is extremely contaminated, a Grade DX prefilter should be installed directly upstream from the membrane dryer. Add-DX suffix to Model number. Example: AD0010-35-DX.

Specifications and Ordering Information

Principal Specifications

Model Number	AD0010-35 AD0002-40	AD0030-35 AD0008-40	AD0080-35 AD0020-40	AD0200-35 AD0050-40	AD0400-35 AD0100-40
Min/Max Inlet Air Temp.(2)	40°F/120°F (4°C/49°C)	40°F/120°F (4°C/49°C)	40°F/120°F (4°C/49°C)	40°F/120°F (4°C/49°C)	40°F/120°F (4°C/49°C)
Min/Max Ambient Temp.	40°F/120°F (4°C/49°C)	40°F/120°F (4°C/49°C)	40°F/120°F (4°C/49°C)	40°F/120°F (4°C/49°C)	40°F/120°F (4°C/49°C)
Min/Max Inlet Pressure	60 psig/150 psig (4.1 barg/10 barg)	60 psig/150 psig (4.1 barg/10 barg)	60 psig/150 psig (4.1 barg/10 barg)	60 psig/150 psig (4.1 barg/10 barg)	60 psig/150 psig (4.1 barg/10 barg)
Compressed Air Requirement	Total Air Consumption: Regeneration Flow + Outlet Flow Requirements (see tables on page 48.)				
Max. Pressure Drop(3)	3 psid (0.2 Bar)	3 psid (0.2 Bar)	3 psid (0.2 Bar)	5 psid (0.3 Bar)	5 psid (0.3 Bar)
Wall Mountable	Yes	Yes	Yes	Yes	Yes
Mechanical Separator (included) (4)	F14F17B	F06F18B	F06F18B	F07F38B	F07F38B
Coalescing Prefilter(4)	8A02N-OBD-BX	8002N-1A1-BX	8002N-1A1-BX	8104N-1A1-BX	8104N-1A1-BX
Inlet/Outlet Port Size	1/4" NPT (female)	1/4" NPT (female)	1/4" NPT (female)	1/2" NPT (female)	1/2" NPT (female)
Electrical Requirements	None	None	None	None	None
Dimensions	18.8"l x 2.3"w x 5.4"(7) (48cm x 5.8cm x 13.7cm)	22.1"l x 3"w x 9.4"h(8) (56cm x 7.6cm x 24cm)	27.5"l x 4"w x 9.4"h(8) (70cm x 10cm x 24cm)	28.5"l x 4"w x 12.4"h(5,8) (72cm x 10cm x 31.4cm) 31.5"l x 5.5"w x 12.4"h(6,8) (80cm x 14cm x 31.4cm)	44.5"l x 5.4"w x 12.4"h(8) (113cm x 13.7cm x 31.4cm)
Shipping Weight	4 lbs. (2 kg)	5 lbs. (2 kg)	5 lbs. (2 kg)	5 lbs.(5) (2kg) 10 lbs.(6) (5kg)	10 lbs. (5kg) 18 lbs.(7) (81kg)

Notes:

1 Dewpoint specified for saturated inlet air at 70°F (21°C) and 100 psig (6.9 barg). Outlet flows will vary slightly for other inlet conditions.

2 Inlet compressed air dewpoint must not exceed the ambient air temperature by more than 10°F (5°C).

3 Total Air Consumption = Regeneration Flow + Outlet Flow.

4 If compressed air is extremely contaminated, a Grade DX prefilter should be installed directly upstream from the membrane dryer. Add-DX suffix to Model number.
Example: AD0010-35-DX.

5 Model AD0200-35

6 Model AD0050-40

7 Add 2.2" for DX Assemblies

8 Add 3.5" for DX Assemblies

Ordering Information

For assistance, call toll-free at 1-800-343-4048 8AM to 5PM Eastern Time

Membrane Air Dryer		AD0010-35 AD0002-40	AD0030-35 AD0008-40	AD0080-35 AD0020-40	AD0200-35 AD0050-40	AD0400-35 AD0100-40
Membrane Air Dryer For Contaminated Air		AD0010-35-DX AD0002-40-DX	AD0030-35-DX AD0008-40-DX	AD0080-35-DX AD0020-40-DX	AD0200-35-DX AD0050-40-DX	AD0400-35-DX AD0100-40-DX
Replacement Prefilter Cartridges*	Stage 1: Stage 2:** Stage 3:	PS403 4/050-05-DX 4/050-05-BX	PS702 4/100-12-DX 4/100-12-BX	PS702 4/100-12-DX 4/100-12-BX	PS802 4/100-18-DX 4/100-18-BX	PS802 4/100-18-DX 4/100-18-BX

* To ensure consistent product performance and reliability use only genuine Balston replacement parts and filter cartridges.
** DX Grade for -DX Models only.

Balston OEM Disposable Filter Solutions

Balston Disposable Filter Units

Ideal for the following gas filtration applications:
Final filter for air logic devices
Protection of pneumatic components
Filtration of portable environmental sampling devices
Filtration of samples to on-line analyzers
Protection of Pneumatic temperature controls

Ideal for the following liquid filtration applications:
Filtration of liquid with minimum holdup volume
Filtration of liquid samples to analyzers

Additional applications in the following industries:
Instrument & Controls
HVAC
Dental
Automotive
Food Packaging

Parker Hannifin Corporation, the leader in separation and filtration technologies, is pleased to present a brochure designed to help OEM customers choose the best Balston disposable filter product for industrial, commercial, measurement and control applications.

Balston brand disposable filter units (DFU) consist of a microfibre filter cartridge permanently bonded into a sealed plastic holder with 125 psig pressure ratings, temperatures to 275°F, and available in low and high flow models. The economical DFU offers all of the advantages of microfibre filter cartridges for high efficiency liquid and gas filtration, combined with the economics and convenience of complete disposability.

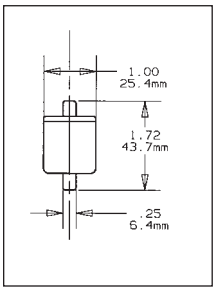
Our years of experience in fitting products to individual applications has led to the creation of a variety of standard products that can be ordered off the shelf for general purpose filtration requirements or can be custom designed for all types of specialty applications.

If you do not see the specific configuration, size or material that you are looking for, our OEM engineering team will be happy to review your requirements and design product to your exact specifications.

If you have questions, or would like to place an order, please call 1-800-343-4048.

Filter Cartridge and Housing Selection

Miniature General Purpose DFU



Model 9933-03

Specifications	
Max. Pressure at 110°F (43°C):	125 psig (8.62 barg)
Max. Temp. at 0 psig:	230°F (110°C)
Inlet / Outlet Ports:	1/4" Tube
Drain:	None
Housing Material of Construction:	Nylon
Internal Volume:	.004L

Ordering Information

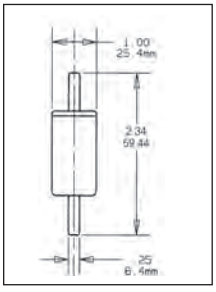
A9933-03-□ Box of 100 bulkpack

C9933-03-□ Box of 500 bulkpack

Available in grades A, B, C and D.

See pages 55-58 for detail of types, grades, application, and installation information.

General Purpose DFU - Minimal Length



Model 9930-05

Specifications	
Max. Pressure at 110°F (43°C):	125 psig (8.62 barg)
Max. Temp. at 0 psig:	230°F (110°C)
Inlet / Outlet Ports:	1/4" Tube
Drain:	None
Housing Material of Construction:	Nylon
Internal Volume:	.01L

Ordering Information

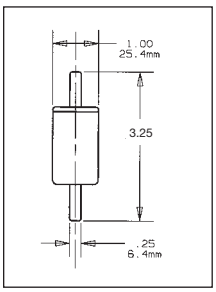
A9930-05-□ Box of 100 bulkpack

C9930-05-□ Box of 500 bulkpack

Available in the following grades: A, B, C, D

See pages 55-58 for detail of types, grades, application, and installation information.

General Purpose DFU - Low Flow Gas



Model 9933-05

Specifications	
Max. Pressure at 110°F (43°C):	125 psig (8.62 barg)
Max. Temp. at 0 psig:	230°F (110°C)
Inlet / Outlet Ports:	1/4" Tube
Drain:	None
Housing Material of Construction:	Nylon
Internal Volume:	.01L

Ordering Information

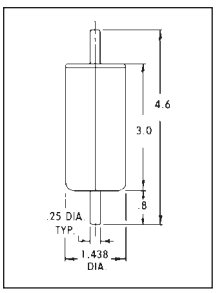
A9933-05-□ Box of 100 bulkpack

C9933-05-□ Box of 500 bulkpack

Available in the following grades: A, B, C, D. Also available with adsorbents 000, 101, 103, 107.

See pages 55-58 for detail of types, grades, application, and installation information.

General Purpose DFU - Higher Flow



Model 9933-11

Specifications	
Max. Pressure at 110°F (43°C):	125 psig (8.62 barg)
Max. Temp. at 0 psig:	230°F (110°C)
Inlet / Outlet Ports:	1/4" Tube
Drain:	None
Housing Material of Construction:	Nylon
Internal Volume:	.02L

Ordering Information

A9933-11-□ Box of 100 bulkpack

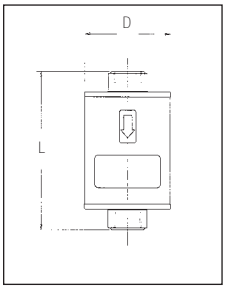
C9933-11-□ Box of 500 bulkpack

Available in the following grades: A, B, C, D. Also available with adsorbents 000, 101, 103, 107.

See pages 55-58 for detail of types, grades, application, and installation information.

Filter Cartridge and Housing Selection

General Purpose DFU for Gases - Highest Flow



Model 7825

Specifications	
Max. Pressure at 110°F (43°C):	125 psig (8.62 barg)
Max. Temp. at 0 psig:	125°F (52°C)
Inlet / Outlet Ports:	1/4" FNPT
Drain:	None
Housing Material of Construction:	PolyPropylene
L= Length:	Available 6", 8", 10", 12"
D= Diameter:	2.5"

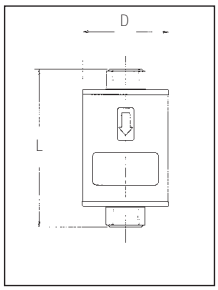
Ordering Information

A7825-□□-□□□ Box of 100 bulkpack

C7825-□□-□□□ Box of 500 bulkpack

Available in Type Q and in the following grades: A, B, C, D. Also available with adsorbents 000, 101, 103, 107. Please consult OEM Technical Support for information on flow rates for these configurations. 3/8" NPT, 3/8" and 1/4" Tube Quick Disconnect are available upon request.

General Purpose DFU for Liquids - Highest Flow



Model 7825

Specifications	
Max. Pressure at 110°F (43°C):	125 psig (8.62 barg)
Max. Temp. at 0 psig:	125°F (52°C)
Inlet / Outlet Ports:	1/4" FNPT
Drain:	None
Housing Material of Construction:	Polypropylene
L= Length:	Available 6", 8", 10", 12"
D= Diameter:	2.5"

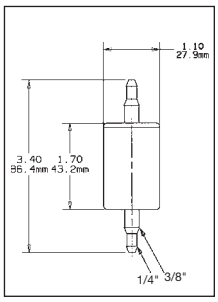
Ordering Information

A7825-□□-□□□ Box of 100 bulkpack

C7825-□□-□□□ Box of 500 bulkpack

Available with integral liquid cartridge in grades ranging from 75 micron to .22 micron at 80% efficiency rating. Please consult OEM Technical Support for information on flow rates for these configurations. 3/8" NPT, 3/8" and 1/4" Tube Quick Disconnect are available upon request.

General Purpose DFU with Integral Barb Fittings



Model 4433-05

Specifications	
Max. Pressure at 110°F (43°C):	125 psig (8.62 barg)
Max. Temp. at 0 psig:	230°F (110°C)
Inlet / Outlet Ports:	1st Tier: 1/4" Tube 2nd Tier: 3/8" Tube
Drain:	None
Material of Construction:	Nylon
Internal Volume:	.01L

Ordering Information

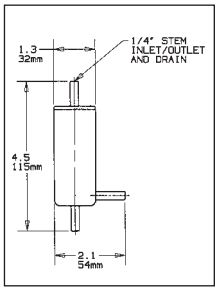
A4433-05-□ Box of 100 bulkpack

C4433-05-□ Box of 500 bulkpack

Available in grades: A, B, C and D

See pages 55-58 for detail of types, grades, application, and installation information.

General Purpose DFU with Drain Port



Model 8833-11

Specifications	
Max. Pressure at 110°F (43°C):	125 psig (8.62 barg)
Max. Temp. at 0 psig:	230°F (110°C)
Inlet / Outlet Ports:	1/4" Tube
Drain:	1/4" Tube
Housing Material of Construction:	Nylon
Internal Volume:	.02L

Ordering Information

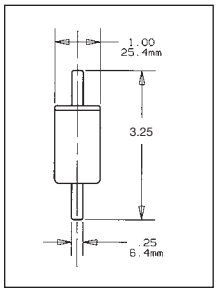
A8833-11-□ Box of 100 bulkpack

C8833-11-□ Box of 500 bulkpack

Available in Type X and in the following grades: A, B, C, D, S. Also available with adsorbents 000, 101, 103, 107. See pages 55-58 for detail of types, grades, application, and installation information.

Filter Cartridge and Housing Selection

High Chemical Resistance DFU - Low Flow



Model 9922-05

Specifications	
Max. Pressure at 110°F (43°C):	125 psig (8.62 barg)
Max. Temp. at 0 psig:	275°F (135°C)
Inlet / Outlet Ports:	1/4" Tube
Drain:	None
Housing Material of Construction:	PVDF
Internal Volume:	.01L

Ordering Information

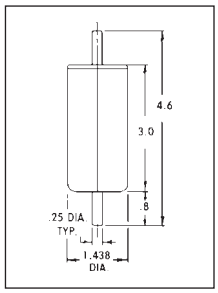
A9922-05-□ Box of 100 bulkpack

C9922-05-□ Box of 500 bulkpack

Available in Type Q and in the following grades: A, B, C, D. Also available with adsorbents 000, 101, 103, 107.

See pages 55-58 for detail of types, grades, application, and installation information.

High Chemical Resistance DFU - Higher Flow



Model 9922-11

Specifications	
Max. Pressure at 110°F (43°C):	125 psig (8.62 barg)
Max. Temp. at 0 psig:	275°F (135°C)
Inlet / Outlet Ports:	1/4" Tube
Drain:	None
Housing Material of Construction:	PVDF
Internal Volume:	.02L

Ordering Information

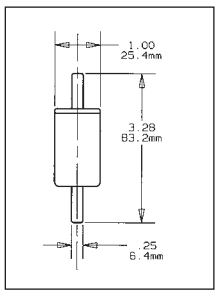
A9922-11-□ Box of 100 bulkpack

C9922-11-□ Box of 500 bulkpack

Available in Types Q and in the following grades: A, B, C, D. Also available with adsorbents 000, 101, 103, 107.

See pages 55-58 for detail of types, grades, application, and installation information.

Oil Indicating DFU



Model 9900-05

Specifications	
Max. Pressure at 110°F (43°C):	125 psig (8.62 barg)
Max. Temp. at 0 psig:	230°F (110°C)
Inlet / Outlet Ports:	1/4" Tube
Drain:	None
Housing Material of Construction:	Nylon
Internal Volume:	.01L

Ordering Information

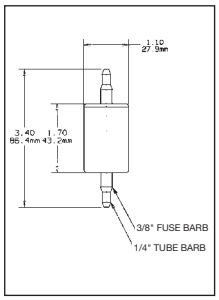
A9900-05-□ Box of 100 bulkpack

C9900-05-□ Box of 500 bulkpack

Available in grade BK.

See pages 55-58 for detail of types, grades, application, and installation information.

General Purpose DFU with Integral Barb Fittings - For Less Critical Applications



Model 4433-05-10P

Specifications	
Max. Pressure at 110°F (43°C):	125 psig (8.62 barg)
Max. Temp. at 0 psig:	230°F (110°C)
Inlet / Outlet Ports:	1st Tier: 1/4" Tube 2nd Tier: 3/8" Tube
Drain:	None
Material of Construction:	Nylon
Internal Volume:	.01L

Ordering Information

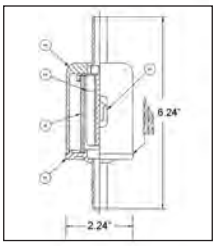
A4433-05-10P Box of 100 bulkpack

C4433-05-10P Box of 500 bulkpack

Retention efficiency of plastic filter element is 100 micron nominal.

Filter Cartridge and Housing Selection

Large Capacity High Flow DFU



Model 8800-12

Specifications	
Max. Pressure at 110°F (43°C):	50 psig (0.34 barg)
Max. Temp. at 0 psig:	150°F (67°C)
Inlet / Outlet Ports:	1/2" Tube
Drain:	None
Housing Material of Construction:	Nylon
Internal Volume:	.138L

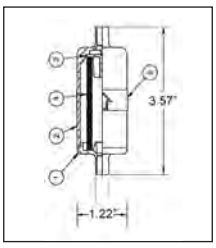
Ordering Information

8800-12-□ Box of 1

Available in Types Q and X and in the following grades: A, B, C, D. Also available with adsorbents 000, 101, 103, 107.

See pages 55-58 for detail of types, grades, application, and installation information.

Large Capacity High Flow DFU Intake Filter



Model 9953-11

Specifications	
Max. Pressure at 110°F (43°C):	2 psig (0.14 barg)
Max. Temp. at 0 psig:	125°F (52°C)
Inlet / Outlet Ports:	.320" OD
Drain:	None
Housing Material of Construction:	Polypropylene
Internal Volume:	0.033L

Ordering Information

9953-11-□ Box of 10

Available in Types Q and X and in the following grades: A, B, C, D

See pages 55-58 for detail of types, grades, application, and installation information.

Filter Cartridge and Housing Selection

Disposable Adsorption Units (DAUs) contain a bed of adsorbent granules. Utilizing a wide choice of adsorbents, the DAUs selectively remove vapors from air and other gases.

Because the adsorbed vapor remains trapped in the solid bed, the DAU has a fixed upper limit of total weight of vapor which can be captured. It is usually not feasible to regenerate the filter when it has reached its adsorption limit. DAUs should be used only when small quantities of vapor are to be removed.

Considerations in Using Adsorbent Cartridges

The following factors should be considered when selecting a DAU:

1 Solid adsorbents are effective only for vapors. Since liquids will damage or inactivate most solid adsorbents, the DAU must be preceded by an efficient coalescing filter.

2 In contrast with Microfibre Filters, which operate at their initial efficiency throughout their life, adsorbent cartridges have a limited holding capacity. When the adsorption capacity is reached, no further adsorption occurs. The limiting capacity, or "breakthrough" point, is not sharply defined, and the exit vapor concentration will increase rapidly as saturation is approached. To avoid unwanted vapor contaminants downstream, it is necessary to change the adsorbent cartridge well before it has reached its ultimate adsorption capacity.

3 Adsorption is reversible, if operating conditions change, a vapor may desorb rather than adsorb. For example, if a temporary surge in vapor impurity concentration causes a relatively high concentration to be adsorbed on the solid, a subsequent decrease in inlet vapor composition will result in desorption of vapor from the solid to the gas stream.

4 The efficiency of a given adsorbent for a given vapor depends upon the specific operating conditions. Therefore, again in contrast to filtration, it is not possible to assign a single efficiency rating to an adsorbent. While it is not possible to predict or guarantee an adsorption efficiency for any specific set of conditions, it is possible to enhance the conditions beneficial to adsorption and avoid conditions which interfere with adsorption. Conditions which aid adsorption are: low temperature, high pressure, low flow rate, and absence of competing vapors (particularly water vapor).

Adsorbent	Grade	Use For
Carbon	000	Compressor oil vapors, C_5 and heavier hydrocarbons, aromatics, oxygenated hydrocarbons, chlorinated organics, freons, carbon disulfide.
Silica Gel	101	Recommended only for water vapor.
Molecular Sieve Type 13X	103	Most C_4 and lighter hydrocarbons, ethylene, propylene, acetylene, ethylene oxide, ammonia, mercaptans, sulfur hexafluoride, triethylamine, and smaller amines.
Mixed Sodium & Calcium Hydroxides	107	All acidic gases, including sulfur trioxide, sulfur dioxide, nitrogen dioxide, carbon dioxide, hydrogen sulfide, hydrogen chloride, phosphorus trichloride, boron trifluoride.

Notes:

1 Please refer to Ordering Information for complete explanation of nomenclature.

2 In DAU 9933-05-107 and DAU 9933-11-107, color indicator turns violet when adsorbent is spent.

3 In DAU 9933-05-101 and 9933-11-101, adsorbent turns translucent when vapor capacity is reached.

4 Maximum operating temperature is 180°F.

How to Specify your Balston DFU/DAU

The Chart below illustrates how to configure the DFU part number when ordering.

Body Size
2 digit number
03=smallest solids capacity, available in Q-type & DAU type
05=medium solids capacity, available in Q-type & DAU type
06=6" length, available in 7825 style w/ Q, LP, & DAU type
08=8" length, available in 7825 style w/ Q, LP, & DAU type
10=10" length, available in 7825 style w/ Q, LP, & DAU type
11=high solids capacity, available in Q , X type & DAU type
12=12" length, available in 7825 style w/ Q, LP, & DAU type

Packaging
A or C letter designation
A=100 per box, Not Bagged
C=500 per box, Not Bagged

Note: All Dau's are individually bagged to insure media integrity

Body/Material
2 digit number
00=Clear Nylon, Std Ends
30=Tinted Nylon, Short Ends
33=Tinted Nylon, Std Ends
22=PVDF, (Kynar) Std Ends
25=PolyPropylene 2.5" Diameter

Connection Style
2 Digit Number
99=No Drain
88=Drain
78=1/4" NPT Ports
44=Barbed Version

Cartridge Grade
3 digit number

To determine required efficiency, please refer to the general grade description flow rate information. When selecting X or Q type cartridges, A, B, C, or D positioned before the cartridge type will determine the retention efficiency. When selecting cartridge type, do not overspecify. Select the coarsest grade which is adequate for the application. Coarser Grade filters provide lower pressure drop and longer life than finer filters. When selecting DAU grades refer to the chart on page 5 to determine the adsorbent appropriate for the application.

Specify your part number with the above guidelines. Please refer to pages 57-58 to confirm the grades, sizes and materials available in each housing type.

Custom configurations, Private labelling available-Please Ask for a quote!! We will happily engineer product to your specific requirements

Call 800-343-4048 to place your order.

We would be pleased to answer all of your technical questions. Our technical staff is available from 8am-5pm Eastern Time.

Technical Specifications

Filtration Efficiency

The Balston® Microfibre® Disposable Filter Unit (DFU) may be used to filter liquids or gases; therefore, each DFU has two retention ratings. Liquid ratings are defined as 98% retention of the stated particle size; gas ratings are defined as percentage retention of 0.01 micron particles.

Retention Efficiency Grade	Gas Efficiency (at .01µm)	Liquid Efficiency (98% retention)
DQ, DX	93%	25 µm
CQ	98%	8 µm
BQ, BK, BX	99.99%	2 µm
AQ	99.9999+%	0.9 µm

Note: Consult OEM Technical Support for information on flow rates for 8", 10", and 12" lengths.

Pressure Drop Specification	Models 8822-11, 9922-05, 9922-11	Models 9900-05, 4433-05 8833-11, 9933-05, 9933-11, 7825
Max. DP:		
Gases		
• Flow per arrow	80 psid (5.5 bard)	50 psid (3.4 bard)
• Flow opposite arrow	20 psid (1.4 bard)	20 psid (1.4bard)
Liquids		
• Flow per arrow	50 psid (3.4 bard)	50 psid (3.4 bard)
• Flow opposite arrow	20 psid (1.4 bard)	20 psid (1.4 bard)

Flow Rates	Air Flow at 2 psi (0.1 barg) drop, standard cu. ft. per min. (SCFM/Nm³/hr) at indicated line pressure PSIG/BARG						
DFU Type	**2/0.1**	**20/1.4**	**40/2.8**	**60/4.1**	**80/5.5**	**100/6.9**	**125/8.6**
8833-11-DX, DU 9922-11-DQ 9933-11-DU	1.8/3.1	3.6/6.1	5.8/9.9	8.0/13.6	10.0/17.0	12.0/20.4	14.6/24.8
8833-11-BX, BU 9922-11-BQ 9933-11-BU	0.9/1.5	1.8/3.1	2.9/4.9	4.0/6.8	5.0/8.5	6.0/10.2	7.3/12.4
9933-05-DU 9922-05-DQ 4433-05-DU 4433-05-10P	1.2/2.0	2.5/4.2	3.9/6.6	5.4/9.2	6.8/11.6	8.3/14.1	10.1/17.2
9933-05-BU 9922-05-BQ 9900-05-BK	0.8/1.4	1.6/2.7	2.6/4.4	3.6/6.1	4.4/7.5	5.4/9.2	6.6/11.2
9933-03-DU	0.6/1.0	1.25/2.1	1.9/3.2	2.7/4.6	3.4/5.8	4.1/7.0	5.1/8.7
9933-03-BU	0.4/0.7	0.8/1.4	1.3/2.2	1.8/3.1	2.2/3.7	2.7/4.6	3.3/5.6
9933-11-DAU 9922-11-DAU	0.7/1.2	1.7/2.9	2.5/4.2	3.7/6.3	4.3/7.3	5.0/8.5	5.7/9.7
9933-05-DAU 9922-05-DAU 4433-05-DAU	0.5/0.8	1.2/2.0	1.9/3.2	2.6/4.4	3.3/5.6	4.06.8	4.7/8.0
8833-11-AQ 9922-11-AQ	0.45/0.8	0.9/1.5	1.8/3.1	2.0/3.4	2.5/4.2	3.0/5.1	3.8/6.5
9933-05-AQ 9922-05-AQ	0.4/0.7	0.8/1.4	1.3/2.2	1.8/3.1	2.2/3.7	2.7/4.6	3.3/5.6
7825-06-BQ	3.5/5.9	7.1/12.1	10.4/17.7	13.0/20.4	16.25/27.6	17.55/29.8	20.1/34.2
7825-06-DQ	5.0/8.5	11.0/18.7	16.0/27.2	20.0/34.0	25.0/42.5	27.0/45.9	31.0/52.7
7825-06-DAU	3.5/5.9	7.25/12.3	10.3/17.5	13.0/22.1	15.5/26.3	17.3/29.4	19.5/33.1

Chemical Compatibility, Models 9922-05, 9922-11 Polyvinylidene fluoride (PVDF), opaque

Suitable: Water (to 200°F/135°C); concentrated nitric, sulfuric, and hydrochloric acids; chlorine (gas or liquid); sodium hypochlorite; ethylene oxide (gas or liquid); Freons; hydrogen peroxide (all concentrations); bromine (dry and aqueous solutions); all chlorinated solvents except methylene chloride; all aromatic and aliphatic solvents; all alcohols and glycols; aniline; phenol; ammonia (gas, liquid, or aqueous).

Limited Use: Acetone MEK, Dioxane, furfural, methylene chloride.

Unsuitable: THF, DMF, ethylene diamine, chlorosulfonic acid, ethanolamine, pyridine, sulfur trioxide.

Chemical Compatibility, Models 9900-05, 8833-11, 9933-05, 9933-11, 4433-05 - Nylon, clear

Suitable: Water (to 158°F/70°C); benzene, toluene, other aromatic hydrocarbons; hydrocarbon solvents and fuels; perchloroethylene; trichloroethylene; nitric acid (to 10%); sulfuric acid (to 40%); hydrochloric acid (to 10%); most salt solutions; sodium and potassium hydroxide (to 50%).

Limited Use: Water at 176°F (80°C); acetone; MEK; acetaldehyde; ammonia (to 25%).

Unsuitable: Water (above 194°F/90°C), alcohols, glycols, phenol, aniline, DMF, concentrated acids, chlorine.

Media Selection

General Description

K Type Filter: Designed with integral dye to indicate presence of oil. Polyolifin binder with borosilicate glass fibers. Available in style 9900-05.

LP Filter: Designed to filter liquids with high solids contents. Have an integral prefilter and an external support structure (flow direction is inside to outside). Available in style 7825 only. Polyolifin binder with glass borosilicate fibers.

X-Type Filter: Used for solids and relatively large amounts of suspended liquids in gases. Provide excellent chemical resistance, temperature resistance to 300°F and good mechanical handling properties. These cartridges have thick walls for coalescing efficiency. Flourocarbon Resin Binder available in style 8833-11 DFU's.

P-Type Filter: Used for less critical applications. 100 Micron nominal rated plastic filter element. Available in style 4433-05 only.

Q-Type Filter: Used for solids and trace amounts of liquids in gases. Similar to X-type cartridges in chemical and temperature resistance. Flourocarbon Resin Binder. Available in 9922-05, 9922-11 styles.

DAU Grades: Please see page 55 for complete description.

Recommended Grade

Gas Filtration		Liquid Filtration (select particle and size retention)	
Grade DQ,DX	General Purpose	Grade DQ,DX	General Purpose
Grade BQ,BK,	Complete oil and/or water droplet removal	Grade CQ	Removes almost all visible particles
	Note: Grade BK contains a visual oil indicator which turns a portion of the surface of the cartridge pink when saturated with oil.	Grade BQ,BX	Removes all visible particles and most colloidal haze
		Grade AQ	All submicron particles
Grade AAQ	Commercially sterile	Grade AAQ	All submicron particles

Installation Instructions

Primary flow should be in the direction of the arrow (inside-to-outside of the filter cartridge). Moderate reverse flow can be tolerated without damage, as in a vent or breather application. Slip-on tubing (1/4" ID) may be used for low pressure applications. For high pressure applications, compression tubing fittings recommended by the manufacturers for use with 1/4" OD plastic tubing are satisfactory to 125 psig. Consult OEM Technical Support for information on Parker Hannifin tube fittings, regulators, valves etc. (Call Parker at 1-800-343-4048, 8AM to 5PM EasternTime.)

For connections to pressure pipe or tubing

Compression fittings for 1/4" O.D. tubing may be obtained from Parker-Hannifin Corp.

The following brass fittings seal by o-ring compression and may be completely recovered and reused when changing filters. They may be purchased from Parker Hannifin Corporation.

Connector 1/4" tubing to 1/4" NPT, female - P/N 11970

Connector 1/4" tubing to 1/4" tubing - P/N 11971

Elbow 1/4" tubing to 1/8" NPT female (for manual drain on Type 8833-11) - P/N 11972

For connections to low pressure plastic tubing

Tubing with 1/4" ID may be slipped over the DFU end fittings and held with tubing clamps. Plastic barbs are available to connect the DFU to smaller diameter plastic tubing. The connection is suitable for pressures to 50 psig.

DFU to 1/16" ID tubing P/N 14000 (bag of 20 barbs)

DFU to 1/8" ID tubing P/N 14001 (bag of 20 barbs)

Parker offers a manual drain valve for removal of coalesced liquids from the Type 8833-11-DX.

Drain Valve 1/8" NPT (male) x 1/8" ID tubing (Requires elbow part 11972) P/N 20125

Notes:
1 DFU 9933-05-AQ (or others with Nylon housings) may be sterilized with ethylene oxide or by autoclaving to 230°F. For autoclaving to 275°F, use DFU 9922-05-AQ (or others with PVDF housings).

Compressed Air and Gas Water Separators

Remove bulk liquids from your application

Tested in accordance with ISO 8573.9

High liquid removal efficiencies at all flow conditions

Float drain automatically expels condensate build-up

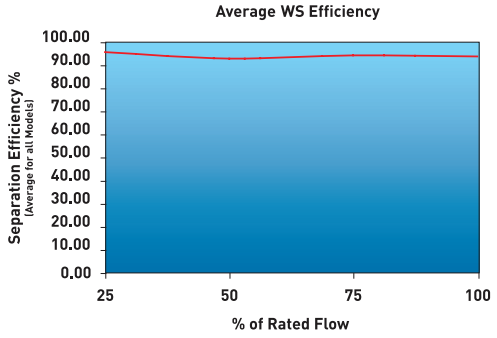
Low pressure losses for low operational costs

Suitable for variable flow compressors

Works with all types of compressor and compressor condensate

Low maintenance

Separation Efficiency:



Tested with an Inlet challenge concentration of 33ml/m³hr and in accordance with ISO 8573.9. Performance shown is an average for all models in range. Individual models performance available upon request.

Protect your equipment from contamination:

Balston's new water separators have been designed for the efficient removal of bulk liquid contamination from compressed air. Today, many products are offered for the removal of bulk liquid from compressed air, however, these are often selected based only upon their initial purchase cost, with little or no regard for the separation efficiency they provide or the cost of operation throughout their life. Balston's water separators have been designed from the ground up with the key design focus on air flow management, separation efficiency at all flow conditions, minimal pressure losses and independently validated performance.

Applications

- Bulk liquid removal at any point in a compressed air system
- Protection to membrane and desiccant dryer prefiltration
- Liquid removal from compressor inter-coolers / after-coolers
- Liquid separation within refrigeration dryers

Compressed Air and Gas Water Separators

Product Selection and Technical Data

Part Number	Port Size (inches)	SCFM/NM³/hr. at 100 psig/7 barg NPT	Max Operating Pressure (psig/barg)	Max Operating Temp (°F/°C)	Min Operating Temp (°F/°C)
WS002N	1/4”	25/42	232/16	176/80	35/1.7
WS003N	3/8”	25/42	232/16	176/80	35/1.7
WS004N	1/2”	25/42	232/16	176/80	35/1.7
WSOH3N	3/8”	100/170	232/16	176/80	35/1.7
WS0H4N	1/2”	100/170	232/16	176/80	35/1.7
WS006N	3/4”	100/170	232/16	176/80	35/1.7
WS008N	1”	100/170	232/16	176/80	35/1.7
WS0H6N	3/4”	250/425	232/16	176/80	35/1.7
WS0H8N	1”	250/425	232/16	176/80	35/1.7
WS0010N	1-1/4”	250/425	232/16	176/80	35/1.7
WS0012N	1-1/2”	250/425	232/16	176/80	35/1.7
WS0H10N	1-1/4”	750/1274	232/16	176/80	35/1.7
WS0H12N	1-1/2”	750/1274	232/16	176/80	35/1.7
WS0016N	2”	750/1274	232/16	176/80	35/1.7
WS0020N	2-1/2”	1700/2888	232/16	176/80	35/1.7
WS0024N	3”	1700/2888	232/16	176/80	35/1.7

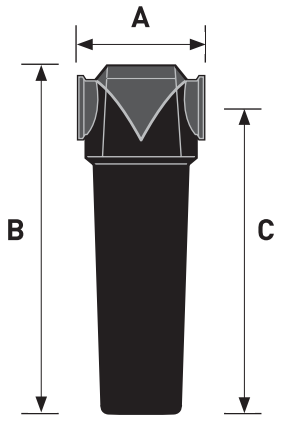
Flow/Pressure Correction Factors

(to calculate flow rates below and above 100 PSIG use this table)

Line Pressure psig/barg	Correction Factor
15/1	0.25
29/2	0.38
44/3	0.50
58/4	0.63
73/5	0.75
87/6	0.88
100/7	1.00
116/8	1.06
131/9	1.12
145/10	1.17
160/11	1.22
174/12	1.27
189/13	1.32
203/14	1.37
218/15	1.41
232/16	1.46

Dimensions and Weights

Part Number	Port Size (inches)	Dimensions (inches/cm) A	B	C	Weight (lbs/kg)
WS002N	1/4”	3/8	7.2/18	6/15	1.3/0.6
WS003N	3/8”	3/8	7.2/18	6/15	1.3/0.6
WS004N	1/2”	3/8	7.2/18	6/15	1.3/0.6
WSOH3N	3/8”	3.8/10	9.3/24	7.9/20	2.4/1.1
WS0H4N	1/2”	3.8/10	9.3/24	7.9/20	2.4/1.1
WS006N	3/4”	3.8/10	9.3/24	7.9/20	2.4/1.1
WS008N	1”	3.8/10	9.3/24	7.9/20	2.4/1.1
WS0H6N	3/4”	5.1/13	10.8/27	9.2/23	4.8/2.2
WS0H8N	1”	5.1/13	10.8/27	9.2/23	4.8/2.2
WS0010N	1-1/4”	5.1/13	10.8/27	9.2/23	4.8/2.2
WS0012N	1-1/2”	5.1/13	10.8/27	9.2/23	4.8/2.2
WS0H10N	1-1/4”	6.7/17	17/43	15/38	11.2/5.1
WS0H12N	1-1/2”	6.7/17	17/43	15/38	11.2/5.1
WS0016N	2”	6.7/17	17/43	15/38	11.2/5.1
WS0020N	2-1/2”	8.1/21	19.9/51	17.5/44	22/10.0
WS0024N	3”	8.1/21	19.9/51	17.5/44	22/10.0



Parker OEM Nitrogen Generators

Parker Hannifin Corporation's OEM approach offers proven innovative membrane technology to provide a continuous source of nitrogen. Volumetric flows cover the range from 5 - 7,000 SCFH pressures to 500 psig (34 bar). Our membrane systems offer exceptional performance coupled with a wide array of sizes and configurations to meet your equipment needs.

Features

Supply reliable, efficient and economical nitrogen, on-demand for your customers

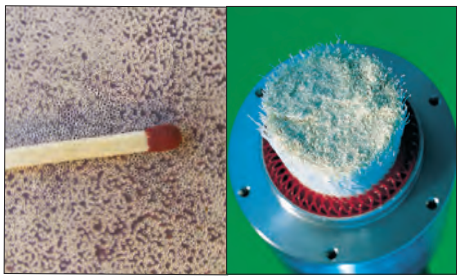
Take control of the nitrogen utility and offer it with your equipment

Integrate into your equipment or provide as an independent system

Design assistance available

Unlimited nitrogen at your specification

Relieve your customers of the burden of high pressure cylinders or bulk nitrogen supply



Summary

On- board nitrogen is a value-added expansion of many companies' product lines. The ability to provide a complete solution, including the nitrogen utility, can increase opportunities for new as well as retrofit sales.

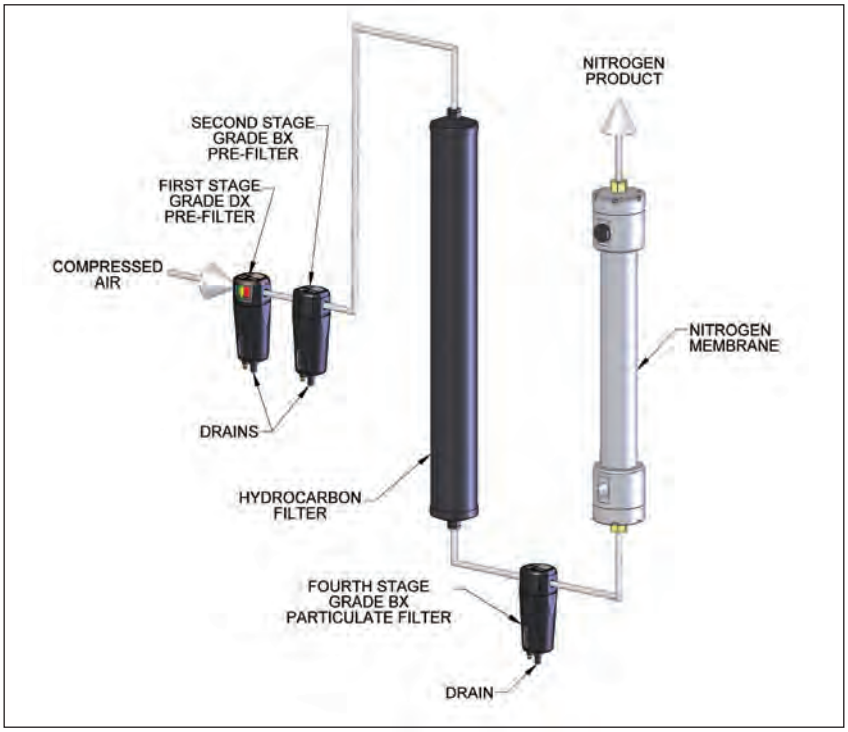
Parker Hannifin develops and manufactures a range of Nitrogen Membrane Modules which offer the OEM customer the ultimate in design flexibility and product performance.

Components

Parker Hannifin Corporation is a leader in both coalescing filtration technology and nitrogen generation. Nitrogen generation prefiltration components are available separately and ready for incorporation into the OEM system. Parker Hannifin Corporation provides sample design information but allows the OEM to define the final design parameters.

Design Criteria

The data section on the next page of this bulletin provides the performance specifications and required inlet compressed air conditions for the OEM membrane nitrogen modules available. Design criteria start with the source of compressed air, its flow, pressure and quality, the desired nitrogen product flow and purity, and the nature of the nitrogen use, i.e., continuous or intermittent.



Nitrogen Module Specifications

OEM Membrane Module Performance (1)

Minimum Flow Rate in SCFH/Nm³/hr for Nitrogen Purities @ 100 psig/6.9 barg, 70°F/21°

Nitrogen Module	99.5%	99%	98%	97%	96%	95%
NM-P243	--	--	5.2/0.1	9.8/0.3	12.9/0.4	13.6/0.4
NM-ST304	--	10/0.3	18/0.5	25/0.7	32/0.9	40/1.1
NM-ST604	--	25/0.7	42/1.2	58/1.6	73/2.1	89/2.5
NM-DT604	48/1.4	72/2.0	108/3.1	136/3.9	177/5.0	214/6.1
NM-ST608	--	87/2.5	151/4.3	203/5.7	263/7.4	321/9.1
NM-ST6010	--	138/3.9	240/6.8	325/92.2	417/11.8	519/14.7
NM-ST1508	164/4.6	233/6.6	383/10.8	522/14.8	696/19.7	870/24.6
NM-DT1506-8 (2)	183/5.2	287/8.1	494/14.0	678/19.2	839/23.8	1044/29.6
NM-DT1508 (2)	243/6.9	383/10.8	661/18.7	904/25.6	1148/32.5	1391/39.4
NM-ST15020 (3)	--	1879/53.2	3094/87.6	4209/119.2	5601/158.6	6992/198.0

Notes:
1 For performance at other operating conditions, please contact your local sales representative at 1-800-343-4048.
2 For pressures > 115 psi (7.93 barg), use suffix "-H".
3 Max pressure is 153 psig (10.5 barg).

The Parker Membrane is unique because it is the most permeable membrane in the world and is also one of the most robust. This results in a low cost of ownership, long membrane life, small size, temperature stability, and systems that are highly cost effective.

Membrane Module Specifications and Operating Conditions

Operating Conditions	
Min/Max Operating Pressure	60 psig - 190 psig (6)
Ambient Temperature Range	36°F - 122°F / 2°C - 50°C
Compressed Air Temperature Range	36°F - 122°F / 2°C - 50°C (4)
Inlet Residual Oil Content	< 0.01 mg/m³
Inlet Particle Prefiltration	0.01 Micron
Relative Humidity of Compressed Air	<100% (Non-condensing)
Electrical Requirement	None
Design Pressure	217 psig (15 barg)
Design Temperature	149°F (65°C)
Housing	Aluminum
Nitrogen Principal Specifications	
Pressure Drop	< 4.5 psid (0.31 barg) (5)
Atmospheric Dewpoint Range	-20°F to -80°F (-29°C to -62°C)
Particles > 0.01 Micron	None with Prefiltration
Nitrogen Purity	95% to 99.5% - see chart at top of page

Notes:
4 Inlet air temperature must be no more than 10°F above ambient temperature.
5 Module only.
6 Pressures to 500 psig (34 bar) available. Please consult factory.

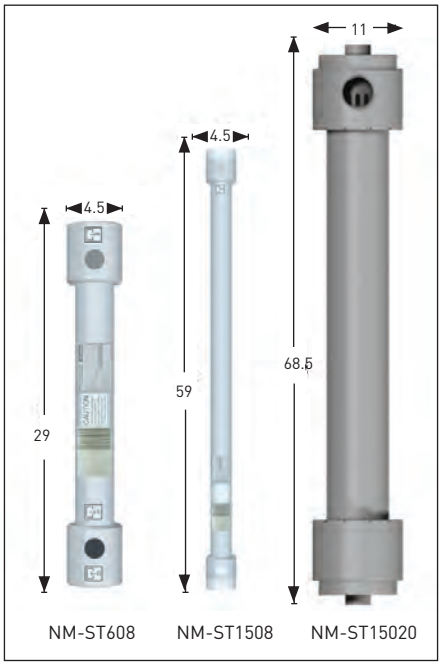
HiFluxx® Nitrogen Module Specifications

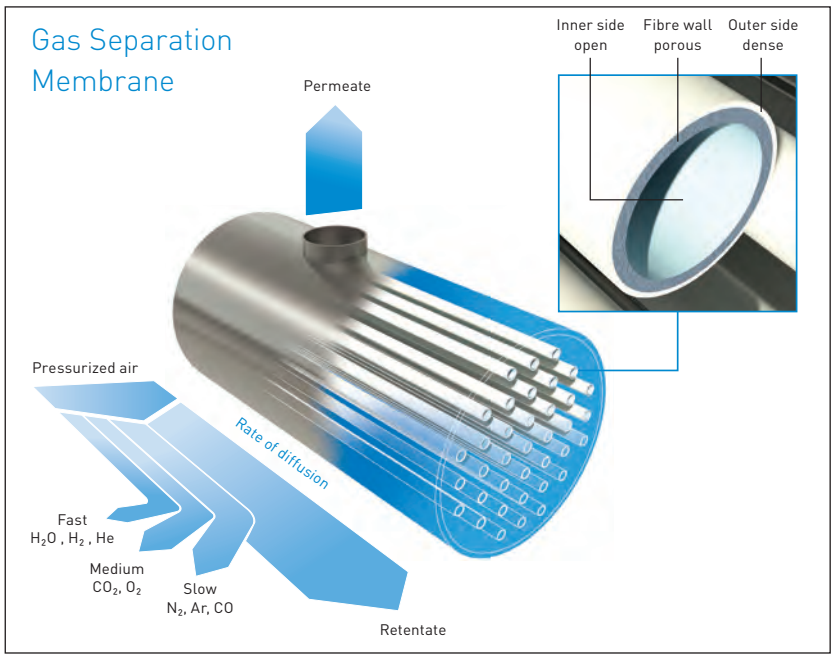
OEM Nitrogen Module Specifications

Part #	Modules Dims (inch)	Modules Dims (cm)	Dims w/ fittings (inch)	Dims w/ fittings (cm)	Weight (lbs/kg)	Connection Size (NPT
NM-P243	14.7 x 4	37.4 x 10	16.53 x 1.6 x 3.31	41.99 x 4.1 x 8.41	1/0.45	1/4”
NM-ST304	15.2 x 3.2 x 2.5	38.7 x 8.0 x 6.3	15.3 x 5 x 2.5	38.86 x 12.7 x 6.35	5/2.27	1/4”
NM-ST604	29.8 x 3.1 x 2.5	75.7 x 8.0 x 6.3	30 x 5 x 2.5	76.2 x 12.7 x 6.35	7/3.18	1/4”
NM-DT604	30 x 2.5 x 5.7	76 x 6.3 x 14.5	30 x 2.5 x 10	76.2 x 6.35 x 25.4	14/6.35	1/4”
NM-ST608	29 x 4.5	73.6 x 11.4	34 x 4.5	86.36 x 11.43	12/5.44	1/2”
NM-ST6010	29 x 5.5	73.6 x 13.9	33 x 5.5	83.82 x 13.97	12/5.44	1/2”
NM-ST1508	65.2 x 4.5	165 11.4	70 x 4.5	177.8 x 11.43	20/ 9.1	1/2”
NM-DT1506-8	67 x 11.7 x 5.7	170.3 x 29.6 x 14.5	68 x 11.7 x 5.7	172.72 x 29.72 x 14.48	40/18.14	3/4”
NM-DT1508	67 x 11.7 x 8	170.3 x 29.6 x 20	69.48 x 11.7 x 8	176.48 x 29.72 x 20.32	40 /18.14	1”
NM-ST15020	68.5 x 11	174 x 28.0	74.5 x 11.02	189.23 x 27.99	106/48.1	2”

Recommended Pre-Filtration For Ordering Information Assistance, call 1-800-343-4048, 8AM to 5PM Eastern Time

Nitrogen Generator	1st Stage	2nd Stage	Hydrocarbon Filter	4th Stage
NM-P243	8002N-1A1-DX	8002N-0A1-BX	7825-06-000	--
NM-ST304	8002N-1A1-DX	8002N-0A1-BX	7825-06-000	--
NM-ST604	8002N-1A1-DX	8002N-0A1-BX	75620	8002N-0A1-BX
NM-DT604	8004N-1A1-DX	8004N-0A1-BX	75620	8004N-0A1-BX
NM-ST608	8004N-1A1-DX	8004N-0A1-BX	75620	8004N-0A1-BX
NM-ST6010	8004N-1A1-DX	8004N-0A1-BX	75620	8004N-0A1-BX
NM-ST1508	8004N-1A1-DX	8004N-0A1-BX	B04-0482	8004N-0A1-BX
NM-DT1506-8	8206N-1A1-DX	8206N-0A1-BX	B04-0483	8206N-0A1-BX
NM-DT1508	8208N-1A1-DX	8208N-0A1-BX	B04-0483	8208N-0A1-BX
NM-ST15020	8D16N-0A1-DX	8D16N-0A1-BX	CAT375	8D16N-0A1-BX





SmartFluxx® Module Specifications

SmartFluxx Membrane Module Performance

Minimum Flow Rate in SCFH (Nm³/hr) for Nitrogen Purities @100 psig/bar g, 70°F/21°C[1]

Nitrogen Module	99.5%	99%	98%	97%	96%	95%
NM-SA604	16.6 (0.4)	24.9 (0.7)	40.3 (1.1)	52.1 (1.5)	66.3 (1.9)	73.4 (2.1)
NM-SA1508[2]	213 (6)	296 (8)	426 (12)	574 (16)	681 (19)	847 (24)
NM-SA15020	1303 (37)	1836 (52)	2724 (77)	3494 (99)	4382 (123)	5367 (152)

1 For performance at other operating conditions, please ask your local sales representative at 1-800-343-4048.

2 Available in stainless steel (Part Number NM-SA1508SS).

Specifications

Part #	Dimensions (inch)	(cm)	With fittings (inch)	(cm)	Weight (lbs/kg)	Connection Size (NPT)
NM-SA604	29.8 x 3.1 x 2.5	75.7 x 8.0 x 6.3	30 x 5 x 2.5	76.2 x 12.7 x 6.35	7/3.18	1/4"
NM-SA1508[4]	65.2 x 4.5 Ø	165 x 11.4 Ø	70 x 4.5 Ø	177.8 x 11.43 Ø	15/6.8	1/2"
NM-SA15020	68.5 x 11 Ø	174 x 28.0 Ø	74.5 x 11.02 Ø	189.23 x 27.99 Ø	106/48.1	2"

4 Available in stainless steel (Part Number NM-SA1508SS).

Recommended Pre-Filtration

Nitrogen Generator	1st Stage	2nd Stage	Hydrocarbon Filter	4th Stage
NM-SA604	8002N-1A1-DX	8002N-0A1-BX	75620	8002N-0A1-BX
NM-SA1508[5]	8004N-1A1-DX	8004N-0A1-BX	B04-0482	8004N-0A1-BX
NM-SA15020	8D16N-1A1-DX	8D16N-0A1-BX	CAT375	8D16N-0A1-BX

5 Stainless prefilters are available. Contact Parker Hannifin at 1-800-343-4048

NOTE: 3D Model & CAD Step Files are also available upon request by calling 1-800-343-4048.

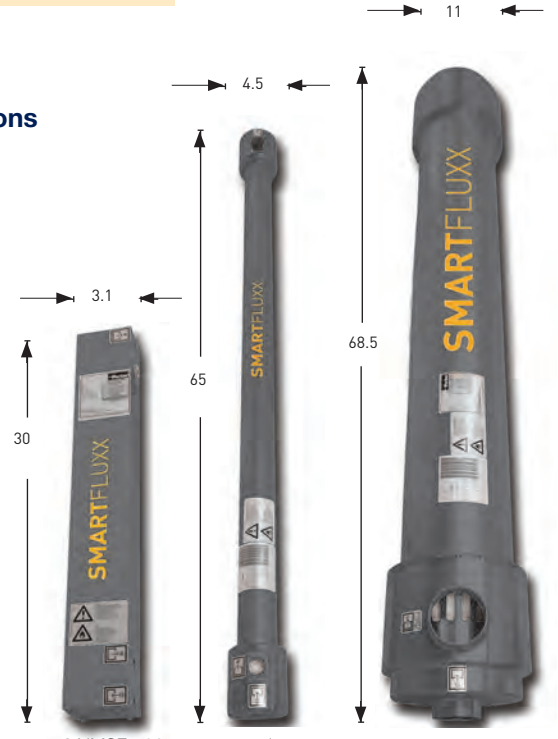
Membrane Module Specifications and Operating Conditions

Parker SmartFluxx membrane modules can supply between 95% and 99.5% nitrogen (Nitrogen purity calculated as 100% - O_2%)

Operating Conditions	
Min/Max Operating Pressure	60 –189 psig (4 –13 bar g)[8]
Ambient Temperature Range	36°F –122°F / 2°C – 50°C
Compressed Air Temp. Range[6]	36°F –122°F / 2°C – 50°C
Inlet Residual Oil Content	< 0.01 ppm (w)
Inlet Particle Prefiltration	0.01 Micron
Relative Humidity of Compressed Air	< 100% (Non-condensing)
Electrical Requirement	None
Nitrogen Principal Specifications	
Pressure Drop[7]	< 4.5 psid (0.31 bar g)
Atmospheric Dewpoint Range	-20°F to -80°F (-29°C to -62°C)
Particles > 0.01 Micron	99.99% Removal
Nitrogen Purity	95% to 99.5%

6 Inlet air temperature must be within 10°F of ambient temperature.

7 Module only.



8 NMSF-5367 max operating pressure is 152 psig (10.5 barg).

Worldwide Filtration Manufacturing Locations

North America

Compressed Air Treatment

Gas Separation & Filtration Division
Lancaster, NY
716 686 6400
www.parker.com/gsf

Haverhill, MA
978 858 0505
www.parker.com/gsf

Engine Filtration

Racor
Modesto, CA
209 521 7860
www.parker.com/racor

Holly Springs, MS
662 252 2656
www.parker.com/racor

Hydraulic Filtration

Hydraulic & Fuel Filtration
Metamora, OH
419 644 4311
www.parker.com/hydraulicfilter

Laval, QC Canada
450 629 9594
www.parkerfarr.com

Velcon
Colorado Springs, CO
719 531 5855
www.velcon.com

Process Filtration

domnick hunter Process Filtration
SciLog
Oxnard, CA
805 604 3400
www.parker.com/processfiltration

Water Purification

Village Marine, Sea Recovery,
Horizon Reverse Osmosis
Carson, CA
310 637 3400
www.parker.com/watermakers

Europe

Compressed Air Treatment

Gas Separation & Filtration Division EMEA
Gas Generation/Compressed Air and Gas Treatment
Gateshead, England
+44 (0) 191 402 9000
www.parker.com/gsfe

Membrane and Modules
Etten-Leur, Netherlands
+31 76 508 5300
www.parker.com/gsfe

Hiross Zander
Essen, Germany
+49 2054 9340
www.parker.com/gsfe

Padova, Italy
+39 049 9712 111
www.parker.com/gsfe

Engine Filtration & Water Purification

Racor
Dewsbury, England
+44 (0) 1924 487 000
www.parker.com/rfde

Racor Research & Development
Stuttgart, Germany
+49 (0)711 7071 290-10

Hydraulic Filtration

Hydraulic Filter
Arnhem, Holland
+31 26 3760376
www.parker.com/hfde

Urjala, Finland
+358 20 753 2500

Condition Monitoring
Parker Kittiwake
West Sussex, England
+44 (0) 1903 731 470
www.kittiwake.com

Process Filtration

domnick hunter Process Filtration
Parker Twin Filter BV
Birtley, England
+44 (0) 191 410 5121
www.parker.com/processfiltration

Asia Pacific

Australia
Castle Hill, Australia
+61 2 9634 7777
www.parker.com/australia

China
Shanghai, China
+86 21 5031 2525
www.parker.com/china

India
Chennai, India
+91 22 4391 0700
www.parker.com/india

Parker Fowler
Bangalore, India
+91 80 2783 6794
www.johnfowlerindia.com

Japan
Tokyo, Japan
+81 45 870 1522
www.parker.com/japan

Korea
Hwaseon-City
+82 31 359 0852
www.parker.com/korea

Singapore
Jurong Town, Singapore
+65 6887 6300
www.parker.com/singapore

Thailand
Bangkok, Thailand
+66 2186 7000
www.parker.com/thailand

Latin America

Parker Comercio Ltda.
Filtration Division
Sao Paulo, Brazil
+55 12 4009 3500
www.parker.com/br

Pan American Division
Miami, FL
305 470 8800
www.parker.com/panam

Africa

Aeroport Kempton Park, South Africa
+27 11 9610700
www.parker.com/africa

Bulletin OEM-H.3 08/2017

Parker Hannifin Corporation
Gas Separation and Filtration Division
4087 Walden Ave.
Lancaster, NY 14086
1 800 343 4048 (US & Canada)
www.balstonfilters.com