

# BEWARE

**Water • Dirt • Pressure • Friction**

## YOU NEED CLEAN DRY AIR!

### Parker Air Preparation Systems - FRLs

Bulletin 0760-B1



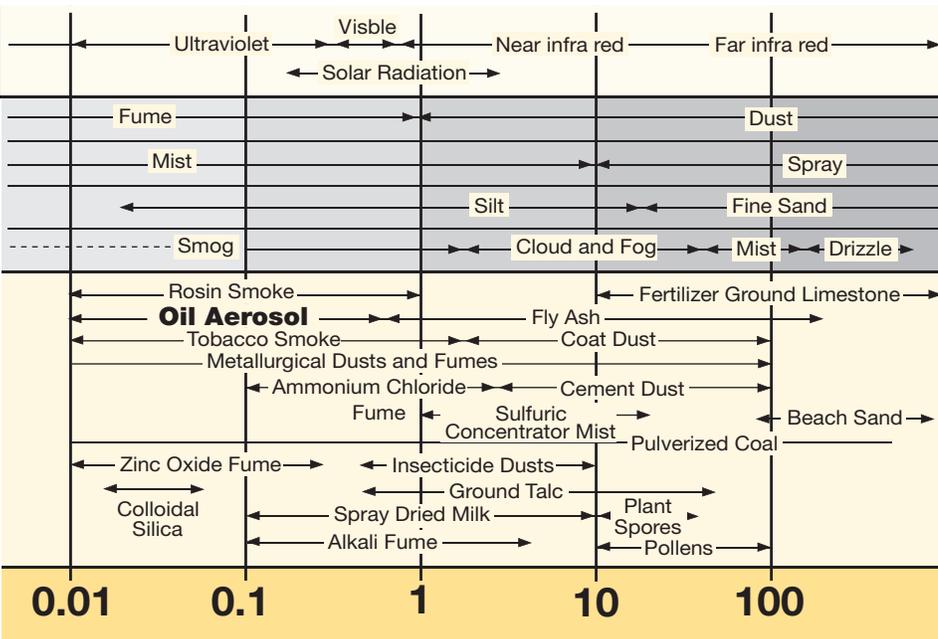
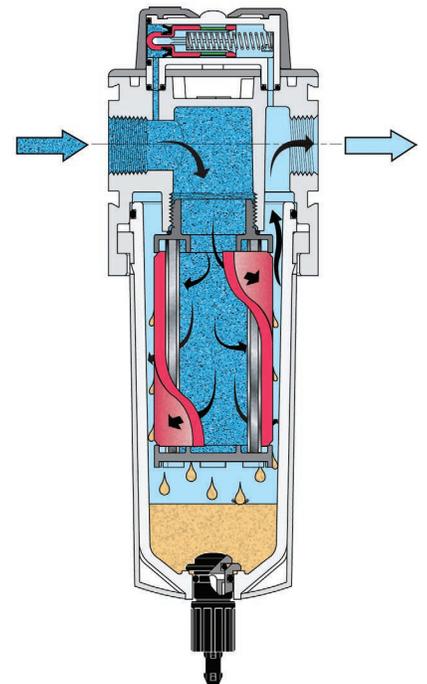
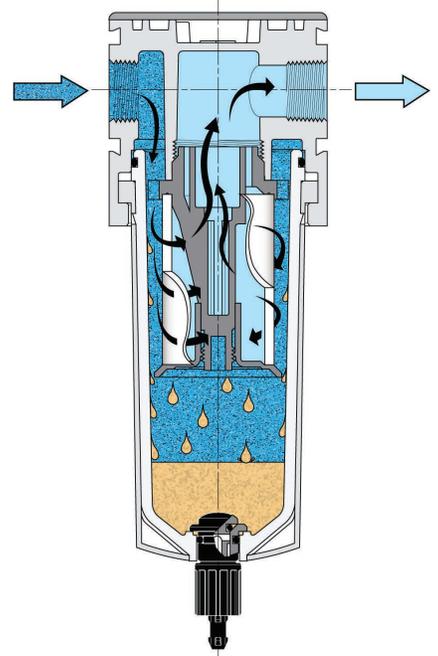
ENGINEERING YOUR SUCCESS.

# DIRT?

## Filters

### Do dirt and debris promote premature failure in your application?

By using the appropriate particulate and coalescing filters, air line contamination will be minimized by delivering clean dry air to your application. Particulate filters are used for the removal of solid particle contaminants down to 5 micron, as well as the removal of condensed liquids. Coalescing filters are designed to remove water, oil aerosols (not vapor) and particulate from air streams down to 0.01 micron in size. Installed in pairs, particulate and Coalescing filters ensure a continuous supply of high quality air.



To assist in understanding the parameters of filtration, refer to this pollution size comparison chart. Look at the size of a major contaminant, oil aerosol! It is in the region of 0.01 - 0.8 micron. Tobacco smoke is also a liquid aerosol in a similar size band 0.01 - 1.2 micron. Observe the smoke test yourself, appreciate the size of the problem! The smallest particle the human eye can see is in the order of 40 microns.

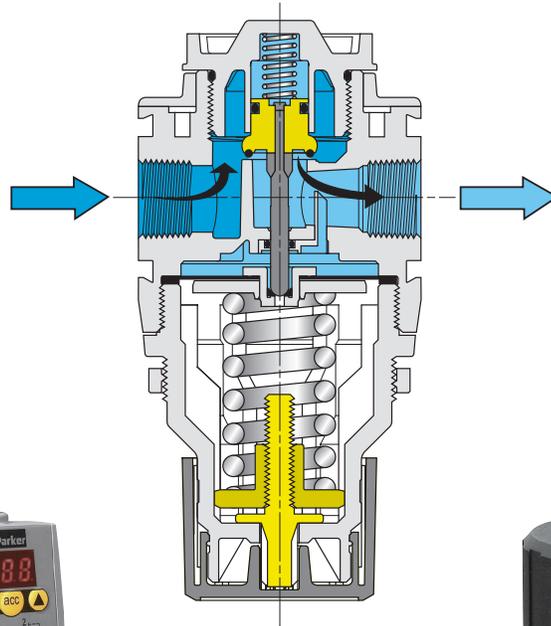
# PRESSURE?

## Regulators

### Save money by appropriately sizing regulators for your application.

Reducing required operating pressure saves money on air, as well as, wear and tear on machine components and seals. A combination of smart engineering, zero leakage products, and the application of best pneumatics practices will provide your customer with a cost effective, cost reduced solution for their equipment, thus differentiating you from the competition.

Air regulators are designed to provide quick response and accurate pressure regulation for the most demanding industrial applications. Used to provide a convenient and low cost method to reduce a supplied air pressure to a desired outlet pressure and transform a fluctuating air supply to a relatively constant reduced air pressure within the operating range of the regulator. This type of regulator is generally used in a wide variety of applications where reduced pressure is highly desirable for energy conservation, safety requirements, air circuit control and air instrumentation.



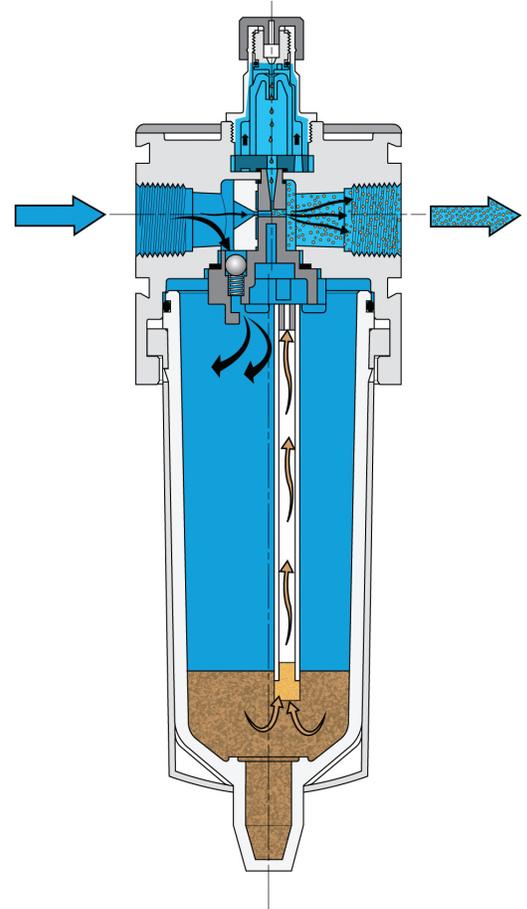
Examples →	High Precision Regulators	Semi-Precision Regulators	General Purpose Regulators
<b>Sensitivity:</b> Reduced pressure repeatability/variation under no-flow condition	.005 to .010 psig (1/8" to 1/4" of water column)	1 to 2 psig	3 to 4 psig
<b>Back Pressure:</b> Control pressure accurately <i>*key for cylinder applications</i>	Begins to relieve at .005 to .010 psig overpressure	Begins to relieve at .5 to 2 psig overpressure	Begins to relieve at 5 to 10 psig overpressure
<b>Set Pressure:</b> Maintain under varying flow, input pressure, temperature conditions	High	Medium	Standard
<b>Constant Bleed:</b> Does the regulator constantly bleed a small volume of air to the atmosphere to maintain stability?	Yes	Yes	No

1" Water Column = 0.0360 PSI / 1 psi = 27.7612 Inches Water Column

# FRICTION?

## Lubricators

**Lubrication reduces friction, extends seal life and can act as a coolant in the system.** Normal wear and tear is often caused by constant friction between two surfaces. Lubricators are used to add measured amounts of suitable oil into the air stream. Pneumatic lubricators inject an oil aerosol into the flowing air stream to automatically provide the proper amount of internal lubrication to air operated tools or other pneumatic devices extending the life of expensive tooling. Lubricators are designed to provide lubrication for most general applications in a pneumatic system. Units should be installed close to the application ensuring effective distribution of oil to pneumatic components. When using lubricators, it is important to use only petroleum based oil in order to avoid damage to the components and the seals.



### Quantity Part numbers

1 Quart F442001

1 Gallon F442002

12 Quart Case F442003

4 Gallon Case F442005

### Recommended Oil

Petroleum based oil of 100 to 200 SSU viscosity at 100°F and an inline point greater than 200°F (DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.)

# WATER?

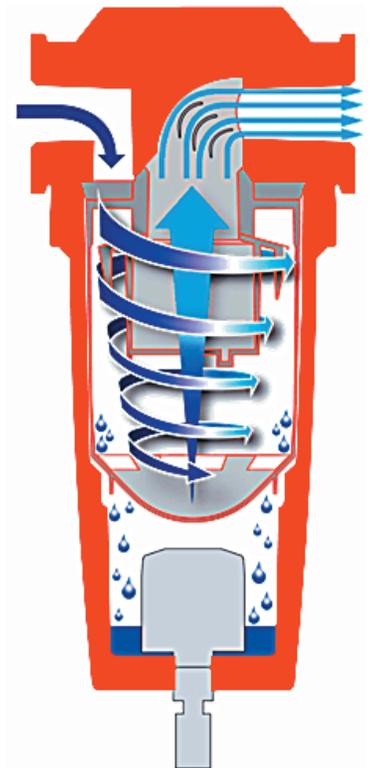
## Bulk Liquid Separator



Removes 98%  
of all liquid

### Operation

- Air enters the water separator inlet and turns into the separator module
- The inlet of the separator module contains a set of fixed vanes which the air must pass through
- The vanes force the air to spin inside the vessel
- The spinning air is then forced to change direction as it passes through the impinger
- A vortex is created which, due to the design of the separator module, narrows and intensifies as it reaches the lower part of the separator module
- Bulk liquid is removed from the air stream due to:
  - Directional changes of the air stream
  - Velocity changes
  - Centrifugal action of the vortex
- As the vortex reaches the bottom of the module, air is forced through the center of the vortex
- Aerospace turning vanes located in the outlet of the separator module turn an inefficient corner into a number of more efficient corners
- Turning vanes reduce turbulence, minimizing pressure loss and cost of ownership
- The number of vanes required is dependent upon the conduit diameter



### Specifications

Pressure Differential at Rated Flow – 1.6 PSID (111 mbar)

Model Number	Pipe Size	SCFM (L/s)	Maximum Operating Pressure PSIG (bar)	Operating Temperature	Weight Lb. (kg)
WSPX010AGFX	1/4"	21 (10)	232 (16)	Maximum 149°F (65°C)	0.9 (0.4)
WSPX015BGFX	3/8"	85 (40)			2.2 (1.0)
WSPX015CGFX	1/2"	85 (40)		Minimum 35°F (2°C)	2.2 (1.0)
WSPX025DGFX	3/4"	233 (110)			4.8 (2.2)
WSPX025EGFX	1"	233 (110)		2.6 (5.7)	
WSPX035GGFX	1-1/2"	742 (350)		6.3 (11.6)	
WSPX040HGFX	2"	742 (350)		6.3 (11.6)	
WSPX055JGFX	3"	1695 (800)		12.0 (26.4)	



Stated flows are for operation at 102 PSIG (7 bar) with reference to 20°C, 1 bar(s).  
0% relative water vapor pressure.

# Accessories

Parker offers a wide range of accessories to help customize your air preparation package, including **ball valves**, **soft start/dump valves**, **manifold blocks**, **digital pressure sensors**, and other critical components for your application.



**Ball Valves**



**Soft Start / Dump Valves**



**Manifold Blocks**

