

BEACH FILTERS

for clean, dry compressed air and gases

www.beachfilters.com

FEATURING DURABLE *Polyclear II*[®]
SPECIALTY & T-LINE POINT OF USE FILTERS



The Clear Choice in Filtration for Compressed Air and Gas for Over 60 Years.

BEACH FILTERS

Problem Solver

Ordinary Industrial Compressed Air is universally **wet, dirty** and **contaminated** with entrained oil and oil vapors. Specifically all industrial compressed air will contain the following:

- Water droplets
- Water vapor
- Rust and pipe scale
- Carbon particles from decomposed compressor oils
- Oil vapors and fumes
- Oil droplets

Industry has put up with these problems for years, but **dirty air** at the **point-of-use** is not inevitable. The net gain in efficiency from filtering the air at both the compressor site and the **point-of-use** more than pays for the initial investment by:

- Eliminating production down time
- Extending the service life of mechanical components (tools and controls)
- Reduction in the cost of sub-standard products
- Improved product purity in the electronics, medical, and food industries
- Product safety and quality

There are a bewildering variety of compressed air and gas filters offered in today's market. They range from strainers such as wire mesh, sintered bronze or stainless steel elements, ribbon or string wound elements, fiber or cellulose discs to open pore sponge materials. Beach offers both desiccant and mechanical/coalescing/desiccant filters for the removal of moisture, oil, oil vapors, and particulate.

About Us

Beach Precision Parts Company, Now Beach Filter Products, Inc., was founded by Willard C. Beach prior to World War II. The initial products were air brushes (paint spray guns) and self locking nuts for use in the automotive, aircraft and related businesses. Dirty compressed air adversely affected the performance and quality of the end products. Mr. Beach made the decision to market the first 100% desiccant filters to improve the performance of his air brushes. Our promise is to continue to produce compressed air filters, designed for the end user, that will result in outstanding performance.

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SECTION 1

Compressed Air/Gas Contaminants and Removal

Filtration begins at the compressor site with **Air Intake Filters**, Aftercoolers, Refrigerated Dryers and large coarse coalescing filters. The arrangement is more or less common in industry today. However, contaminants remain such as 1) rust and scale, 2) oil vapors, and 3) water vapors. Bacteria, control of which is so important in the medical and food industry, are generally not removed because of their small micron size. Different desiccants are available to do effectively one or all the filtration required. Coalescing filters, in general will not remove oil vapors, water vapors or odors. **True Filters**, such as the desiccant type offered by Beach, remove contaminants by presenting a tortuous path for the air to follow and entrap impurities throughout the entire cartridge or element.

Beach desiccant and mechanical/coalescing/desiccant filters are true filters designed to remove oil and water vapor and particulate down to 0.3 microns.

SECTION 2

Beach Versus Coalescing Filters

Independent laboratory tests have shown that Beach Filters with standard Cylform® desiccant are twice as effective at removing oil and oil vapor and Cylform® elements with silica gel desiccant are better 2 to 1 in removing moisture versus one of industries major coalescing filters. New technology makes it possible for all Beach Filters to remove particulate down to 0.3 microns. Cylform® elements are also 2 to 3 times more effective in removing synthetic oils from the air stream.

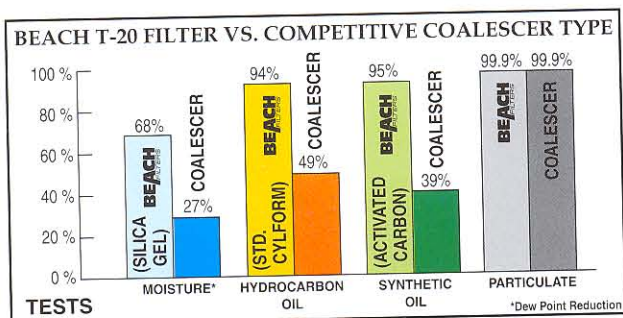


Figure 1

Highly efficient Beach Filters are required to remove oil, oil vapors, water and particulate left in the air or picked up in the air line. **Installed at or near the point-of-use, no additional filters are required downstream of a Beach Filter.**

SECTION 3

Point-of Use Filtration

The presence of oil/oil vapors and water at the point-of-use is ordinarily evidenced by the liquid in the bowl or trap having a milky appearance which is an emulsion of oil and water. These contaminants are damaging to such sensitive equipment as instruments, pneumatic controls and hundreds of other industrial plant processes. **The following are typical point-of-use applications for Beach Filters:**

Instrument Air
Pneumatic Controls
Robotics
Process Air
Cleaning Parts & Drying
Air Operated Assembly
Tools
Injection Molding
Filtering Gases
Conveying Materials
Air Jet Cleaning
Sorting Equipment
Separating Pills

Spray Painting & Finishes
Bottle & Container Cleaning
Pneumatic Extruders
Air for Packaging & Weighing
Mixing & Blending
Aeration & Agitating of Liquids
Testing
Operating Clamps & Chucks
Cooling of Electronic
Equipment
Sandblasting
Squeeze rolls
Oxygen Analyzers

Beach has been manufacturing filters for these and thousands of other uses for over 60 years. Point-of-use filters by Beach range from <5 to 1200 scfm at 150 to 250 psi in a variety of plastics, metals and desiccants to meet the most exacting needs.

* Cylform is a trademark of Beach Filter Products, Inc.

SECTION 4

Beach Filters

SPECIALTY FILTERS for the ultimate in protection from oil/oil vapors, particulate removal down to 0.3 micron and moisture to 0°F dew point (depending on desiccant selected). **Ideal for instrument air, pneumatic controls, and other low flow applications.**

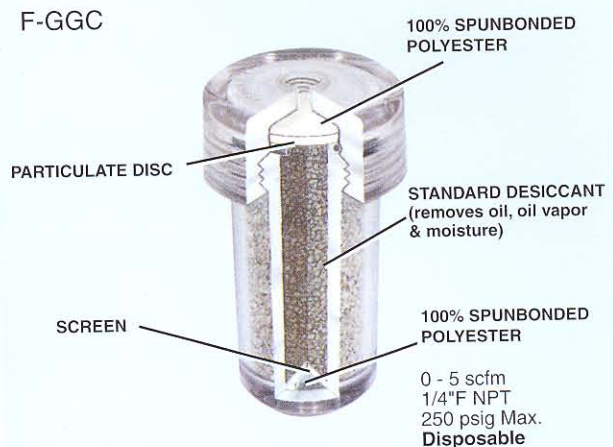


Figure 2

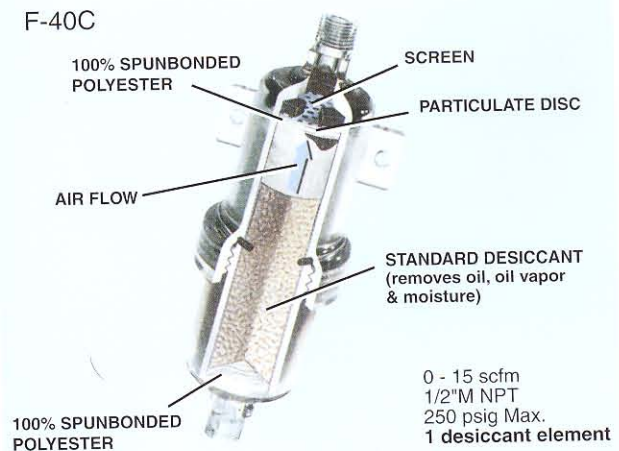


Figure 3

The **Disposable Model F-GG** filter, and the **Model F-40C** filter with self mounting bracket, are inexpensive point-of-use filters:

- Constructed of 100% Beach Polyclear II®, a rigid polyurethane thermo plastic, **Unique to Beach**
- Clearview
- Excellent resistance to synthetic oils, hydrocarbons, solvents, caustics and acids
- Superior sunlight resistance (UV)
- Good strength and operating temperatures up to 180° F
- Maximum Pressure - 250 psi

* Polyclear II is a trademark of BEACH FILTER PRODUCTS, INC.

Beach T-Line Filters

The triple action advantage combines three filtration processes:

- Mechanical Separation (Figure 4, section A)
- Coalescing (Figure 4, section B)
- Beach Patented Cylform® Desiccant Element (Figure 4, section D)
- Sump (section C) **The mechanical separation and coalescing step results in 80% of the oil droplets, water and large particulate removal.** Net result, longer desiccant element life. The desiccant Element (section D) results in the final filtration. (See figure 5)

The T-Line models F-T20C, F-T40C, and F-T60C are high tech 3 stage filters for compressed air and gases from 20 to 60 scfm. These unique filters remove:

- All Oil Vapors and Hydrocarbons
- Moisture
- Particulate down to 0.3 microns

All Beach Polyclear II® Filters have excellent resistance to synthetic oils, hydrocarbons, solvents, caustics and other chemicals. Maximum operating temperature 180° F

Polyclear II®* and other Beach desiccant/coalescer filters remove oil, oil vapors, moisture and particulate down to 0.3 microns.

Figure 6 illustrates the filter with various plastics with the recommended automatic drain with muffler diffuser. The filter Head is aluminum or acetal thermoplastic on all T-line filters.

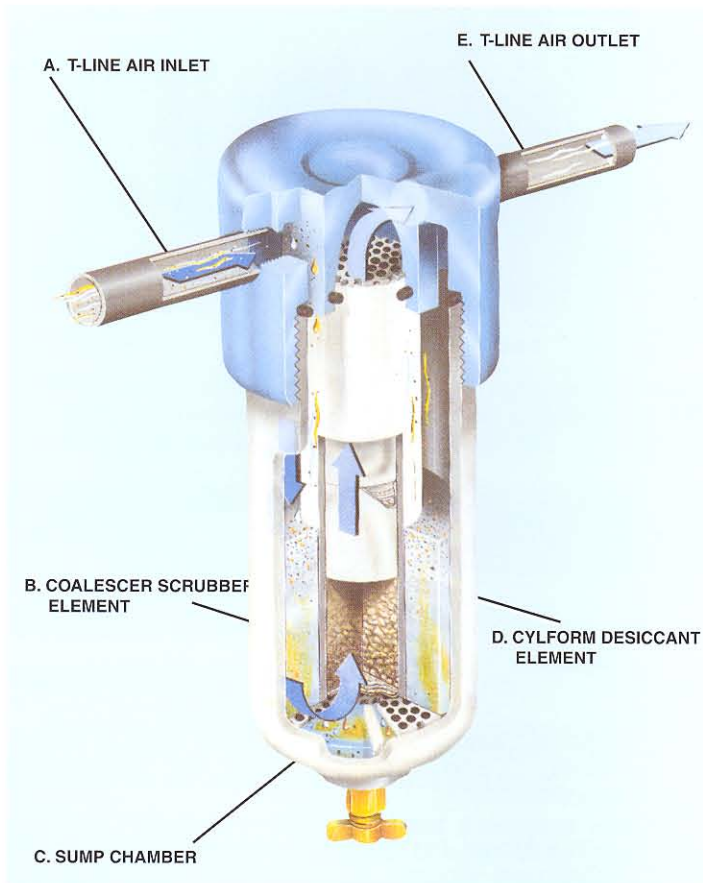


Figure 4



Coalescer filter removes 80% of oil, water and particulates.

Figure 5



Figure 6 (Pictured with auto drain, an accessory, part# NDM2)

UNIQUE OUTSTANDING FEATURES OF BEACH T-LINE FILTERS

- Filter heads constructed of aluminum or acetal thermoplastic
- Bowls constructed of 100% polyurethane thermoplastic
- Easy service - no need to break the line
- Clearview - Color change of desiccant is visible
- Very low pressure drop - See figure 10
- Cleanable and reusable coalescer scrubber
- Four times the coalescing filtration versus

competitive filters, plus a final desiccant after filter.

- Optional automatic drain
- 99.9% efficiency down to 0.3 microns
- Guards are available for all clearview In-line models and T-line Polyclear II®* Models
- Up to 250 psi with Polyclear II®*
- Lowest operating costs

(See Section 12 of this brochure for specifications.)

Beach In-Line Filters

Beach in-line filters have 60 years of proven performance. These unique filters are available with capacities of 20, 60, 100, 200, and 1200 scfm at 100 psi using the Beach clearview acrylic tube with epoxy coated aluminum end caps. Pressures of 250 psi are attainable with the Beach all aluminum Models or the aluminum tube with a sight glass for visible inspection of the desiccant elements.

Like all Beach Filters, our in-line filters remove:

- All oil vapors and hydrocarbons
- Moisture
- Particulate down to 0.3 microns

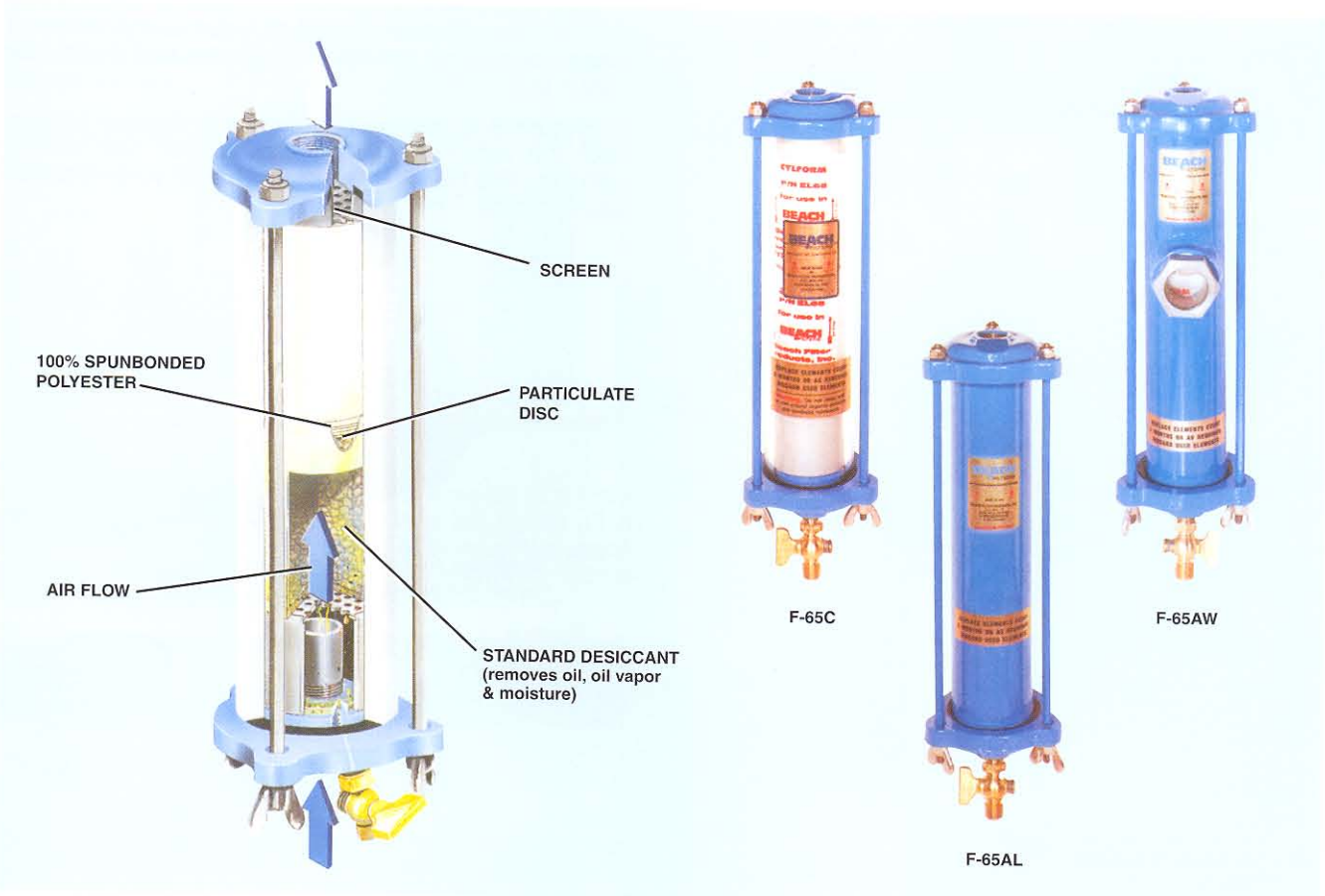


Figure 7

The Beach In-Line Models contain 2 or 3 Beach patented Cylform® elements which change color when saturated. All filters are available with an optional automatic drain. The simple fool proof engineering of these filters is illustrated in figure 7. Figure 8 illustrates the three basic models available in each filter series.

The patented Cylform® elements are easy to change. When the bottom element on the inlet side is saturated, discard and push the top element down. Put new element in the top thus only replacing one element.

The **C Models** with clear acrylic tube should not be used around solvents, hydrocarbons or synthetic lubricants. Beach recommends either the **AL or AW Models**. **AL Models** are 100% aluminum, and the **AW Models** have a heat treated glass window for easy inspection of the patented Beach Cylform® elements which change color when saturated.



Figure 8

Metal Guards are available for all clear (C Model) Filters. See technical data for engineering specifications.

The Model F-1200AW is available only with the transparent window. The tempered glass window is located between the middle and top elements for easy inspection.

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SECTION 5

Cylform® Desiccant Elements by Beach

The patented and trademarked Beach Cylform® desiccant elements are constructed of 100% seamless polyester tubing fabric. The end caps are 100% spunbonded polyester with a special particulate disc sewn in the top. The construction creates a sewn formed fabric o-ring in one end. **All components are heat set for maximum control of element dimensions and eliminates channeling and bypass of unfiltered air.** (See Figure 9.)

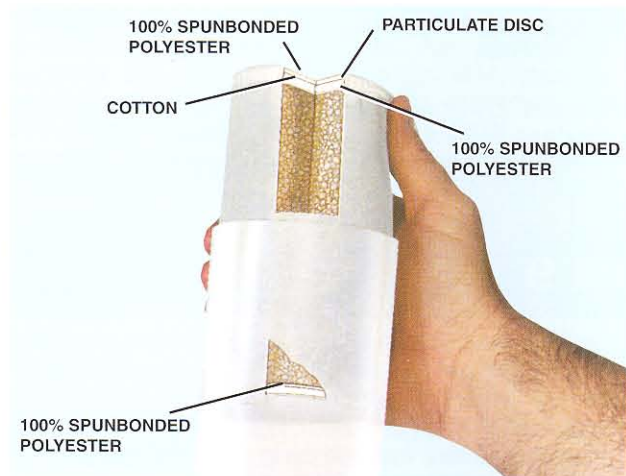


Figure 9

All filters are sealed with plastic caps and replacement elements are **packaged two to a sealed polyethylene bag to preserve the low moisture level.**

SECTION 6

Desiccant Recommendations

VARIETY OF DESICCANT FILLS

Since no one desiccant can solve all problems, we offer a variety of Beach patented and trademarked elements for our compressed air and gas filters.

General Filtration — The standard desiccant will solve most filtration problems. It is an attapulgite clay which is a stabilized crystal that provides excellent filtration of hydrocarbons and moisture. It has the uncanny ability to absorb oil while it absorbs moisture. **At full flow rate it traps all contaminants — oil vapors, water and hydrocarbons. The filter disc in the top of the element removes particulate as small as 0.3 microns.** (See figure 9)

Moisture Removal and Minus Dew Point — in multiple element filters such as the F-T60 and all In-Line Models the silica gel element should be placed at the top with a standard Cylform® element at the bottom. **Incorporated with a refrigerated dryer, the silica gel element can result in lowering the dew point from 0° C to -40° C.**

Odor and Oil Vapor Removal — If odor caused by oil vapor or other contaminants needs to be removed, an **activated carbon fill is recommended** as a secondary desiccant. This can be accomplished by using filters in tandem or by incorporating two different elements in such filters as the Beach In-lines or the F-T60C.

Special Desiccants — Other special fills are available on request. Also, a combination of elements with different fills can be used for special applications.

SECTION 7

Element Life -- When to Change Elements

Element life varies widely and depends on the condition of the air to be filtered (oil/oil vapor, moisture, particulate, dust, odor, etc.). Saturation of the element is indicated by color change and is visible on all **clearview models.** In addition, an increase in pressure drop may be noted on all filters.

Standard Cylform® Element

- Color changes from **natural white to grayish brown/dark gray** (color depends on contaminants)
- Pressure drop will normally increase 1.5x to 2.0x of normal
- **Discard used elements**

Silica Gel Element

Saturated with moisture the silica gel element will turn from blue to pink.

To regenerate — **Heat in conventional oven from 200°F to 250°F 2 to 4 hours or until the element returns to a deep blue color.** Store in sealed polyethylene bag until ready to use. Silica gel elements, which have been protected from oil, can be regenerated 3 to 5 times.

Color change is not visible with aluminum filters without sight glass, thus saturation must be determined by one of the following:

- Pressure drop across the filter is 1.5x to 2.0x of normal
- Disassemble and inspect

THE KEY TO CLEAN, DRY COMPRESSED AIR IS ROUTINE INSPECTION AND REPLACEMENT OF THE FILTER ELEMENTS. Beach suggests that elements should be replaced as needed or every 3 months. **Performance of your Beach Filters depends on replacing the elements as required. Saturated elements result in oil/oil vapors downstream of the filter. Exact replacement time or frequency depends on the contamination in the air stream.** Section 12 gives the approximate capacity. For your convenience in servicing Beach filters, a tag has been attached to every filter to record service dates.

SECTION 8

Pressure Drop Versus Flow Rate (SCFM)

Filter Model	Specialty		T-Line			In-Line				
	F-GGC	F-40C	F-T20C	F-T40C	F-T60C	F-65	F-125	F-300	F-600	F-1200
Capacity (SCFM) at 100 psig Inlet Pressure	5	15	20	40	60	20	60	100	200	1200
Pressure Drop at 100% Capacity (psi)	0.5	1.5	1.5	2.8	4.4	3.1	4.8	5.9	7.1	10
Pressure Drop at 50% Capacity (psi)	0.25	0.75	0.75	1.4	2.4	1.6	1.9	2.0	3.6	4.5

Figure 10

All data is based on 100 psig inlet pressure using new standard Cylform® desiccant elements. Pressure drop will increase as the element saturation point is reached.

Patented Cylform® elements are designed to offer maximum filtration with minimum pressure drop.

SECTION 9

Filter Selection

The first step in selecting a Beach filter is to establish operating parameters. The filter selected should not be based on pipe size alone. The important factors are location of the filter (near point of air use), maximum air flow and outlet pressure required and the volume of contaminants to be removed. If considerable contamination is present in the air to be filtered, a larger filter may be needed than the air flow parameters indicate.

Remember—NEVER UNDERSIZE YOUR FILTERS. If the parameters indicate near capacity operation of the filter, select the next larger size.

The table below gives suggested flow rates for certain pipe sizes at tested pressures. This is only a guide to assist in selecting the proper filter size.

MAXIMUM RECOMMENDED AIR FLOW (scfm) THRU A.N.S.I. STANDARD WEIGHT SCHEDULE 40 PIPE

To be used as a guide in sizing piping and equipment in compressed air systems

Applied Pressure psig	NOMINAL STANDARD PIPE SIZE—INCHES							
	¼	½	¾	1	1-½	2	2-½	3
5	1.2	4.9	6.6	13	40	80	135	240
10	1.7	7.7	11.0	21	64	125	200	370
20	3.0	13.0	18.5	35	110	215	350	600
40	5.5	23.0	34.0	62	200	385	640	1100
60	8.0	34.0	50.0	93	290	560	900	1600
80	10.5	44.0	65.0	120	380	720	1200	2100
100	13.0	54.0	80.0	150	470	900	1450	2600
150	20.0	80.0	115.0	220	680	1350	2200	3900
200	26.0	108.0	155.0	290	910	1750	2800	5000
250	33.0	135.0	200.0	370	1150	2200	3500	6100

Figure 11

* Cubic feet of air at standard conditions (68 F, 14.7 psia and 36% RH)

SECTION 10

Compatibility with Solvents and Synthetic Oils

New Polyclear II[®], rigid polyurethane plastic filters are resistant to synthetic compressor lubricants, hydrocarbons, solvents and most caustics. Beach compatibility charts for Polyclear II[®] for the Models F-GGC, F-40C and all T-Lines are available on request.

Polyclear II[®]
Unique to Beach

The clear acrylic In-Line filters should **not be** used in the presence of solvents, aromatic hydrocarbons and synthetic compressor lubricants. For applications involving the above chemicals or U.V. (outside applications), use the aluminum (AL), aluminum with sight glass (AW), or Polyclear II[®] (C) Filters.

SECTION 11

Accessories

Safety Guards are available for all C Model Filters. These perforated steel guards assure maximum safety in the event of a system malfunction and permits element inspection. Specify Filter Model number when ordering. (Figure 12)

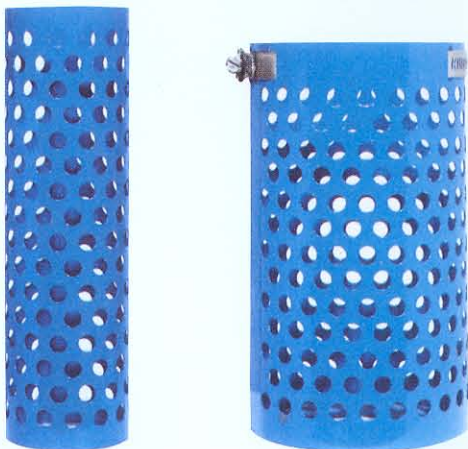


Figure 12

Automatic Drain Valves - Beach offers an automatic mini drain with muffler for all T-line and in-line filters which can be installed at the factory when requested or ordered as an accessory. The larger Automatic Drain valve can be installed at any drip leg up stream prior to the Beach filter and is not recommended for filter sump. This eliminates some impurities before the point-of-use filter. **All mini drains attach directly to petcock at bottom of sump to allow periodic cleaning without shutting down the entire system.** (Figure 14)

These drains use a simple disc with no electronics or mechanical linkages. The positive action of the disc assures reliable condensable removal with minimum loss of air and rapid shut-off on no-load condition. The muffler/diffuser reduces noise while intermittent discharges are atomized to avoid messy accumulations. (Figure 13)

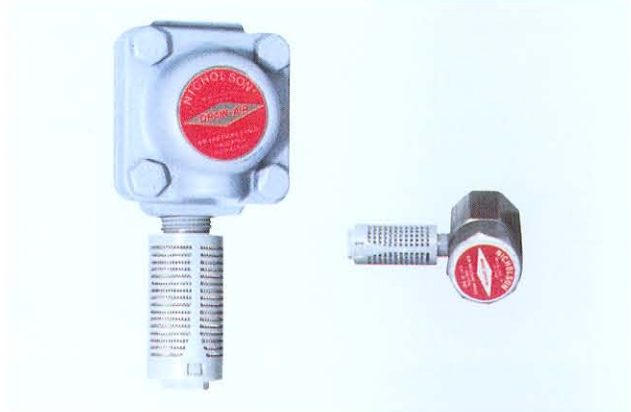


Figure 13



Figure 14

Beach MoistureBloc™ Compressed Air Filter

Especially designed for welding and paint industries and any application where moisture-free air is critical.

KEY FEATURES:

- Absolutely *no moisture* gets through
- Patented filter element blinds when saturated
- Quick switch to new filter with MoistureBloc™ Tandem
- Fast element change requires no tools

Call or email for more information



Figure 15



Mounting brackets are available for the F-GGC, F-T20C, F-T40C and F-T60C. The brackets cannot be used with the guards. (Reference price list for part numbers.)

GUARANTEED PERFORMANCE

Beach Filters and Cylform® elements are unconditionally guaranteed to remove all liquid oil, oil vapors or hydrocarbons, and to hold dirt and contaminant size to 0.3 microns. The Beach Filter must perform to full customer satisfaction or it may be returned for a complete refund. No service charge assessed.

For this guarantee to be effective, any unit which proves unsatisfactory must be returned within 60 days of the date of our invoice. Tampering with the filter invalidates the guarantee.

We believe this information is the best currently available on the subject. It is subject to revision as additional knowledge and experience are gained. This publication is not a license to operate under, or intended to suggest infringement of, any existing patents. Before using a Beach product, user shall determine suitability of that product for his intended purpose, and shall assume all risk and liability in connection therewith.

Distribution and Shipment Information

Beach Filter and replacement elements are marketed thru a network of over 600 Authorized Distributor Locations.

Domestic Shipments

- F.O.B. Glen Rock, PA 17327 via UPS.
- Shipments are made within 24 hours of receipt order.




Drop Shipments

- Drop shipments are encouraged by Beach Distributors to reduce time between shipment and receipt of the order by the customer.

Terms: Net 30 Days








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SECTION 12

	SPECIALTY FILTERS		
	Polyclear II®		
			
FILTER MODEL	F-GGC	F-40C	F-T20C
scfm at 100 psi	5	15	20
Pressure Drop at 100% Capacity (psi)	0.5 psi	1.5 psi	1.5 psi
Maximum psi (Models C)	250 psi	250 psi	250 psi
Maximum psi (Models AL & AW)			
Max. Operating Temp.	180° F	180° F	180° F
Inlet & Outlet	1/4" F- NPT	1/4" M- 14 NPT	1/2" F- 14 NPT
Overall Size	4-1/2" x 2-7/8"	9-1/4" x 3-1/8"	10-9/16" x 4-5/8"
Shipping Weight	1 lb.	2 lbs.	5 lbs.
No. of Elements	Disposable	1	1
Element Type No.	N/A	EL40	EL20
Cleans Approx.	300,000 cu. ft.	800,000 cu. ft.	2,000,000 cu. ft.

*When clean dry air is a must
Beach is the clear choice.*

Beach Filter Models and Specifications

T-LINE FILTERS			IN-LINE FILTERS					
			C- Acrylic AL- Aluminum *AW- Aluminum w/ sightglass					
								
F-T40C	F-T60C		F-65C F-65AL F-65AW*	F-125C F-125AL F-125AW*	F-300C F-300AL F-300AW*	F-600C F-600AL F-600AW*	F-1200AW*	
40	60		20	60	100	200	1200	* ALL IN-LINE MODELS ARE AVAILABLE WITH A SIGHT GLASS. DESIGNATE WITH "AW"
2.8 psi	4.4 psi		3.1 psi	4.8 psi	5.9 psi	7.1 psi	10 psi	
250 psi	250 psi		150 psi	150 psi	150 psi	150 psi	150 psi	
			250 psi	250 psi	250 psi	250 psi	250 psi	
180° F	180° F		150° F	150° F	150° F	150° F	150° F	
1" F- 11-1/2 NPT	1" F- 11-1/2 NPT		1/2" F- 14 NPT	1" F- 11-1/2 NPT	1-1/2" F- 11-1/2 NPT	2" F- 11-1/2 NPT	2" F- 11-1/2 NPT	
9-1/2" x 6-1/8"	14-3/4" x 6-1/8"		11-7/8" x 4-3/8"	19-3/4" x 6-1/2"	21-3/4" x 8"	19-1/8" x 9-1/2"	31-1/2" x 13-1/2"	
6 lbs. 13 oz.	8 lbs. 13 oz.		5 lbs.	16 lbs.	22 lbs.	34 lbs.	125 lbs.	
1	2		2	2	2	2	3	
EL125	EL125		EL65	EL125	EL300	EL600	EL1200	
3,300,000 cu. ft.	5,000,000 cu. ft.		1,000,000 cu. ft.	2,500,000 cu. ft.	4,000,000 cu. ft.	9,000,000 cu. ft.	80,000,000 cu. ft.	

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