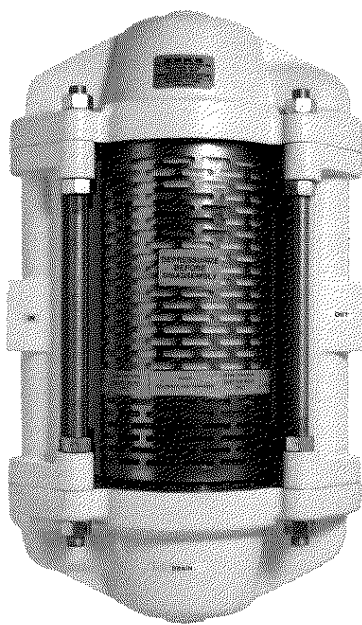


Color Guard™ Filters





Why Color Guard™ Filters?

Every time you work with compressed air, your compressor, new or old, will continuously mix and pump contaminants throughout the air system. These contaminants jam tools, corrode air gauges, score valves and cylinders, and increase product spoilage. To eliminate this problem, the air must be filtered and contaminants removed.

With many conventional filters you can only "guesstimate" a filter's performance and when to replace the cartridge because only the pressure drop which occurs as the cartridge becomes clogged is monitored. This pressure drop causes compressed air tools and pneumatic equipment to operate improperly, and, when the pressure drop is high, a compressed air system becomes inefficient and costly. Another problem associated with conventional filters is that the thin filter wall of the used cartridge can rupture allowing unfiltered compressed air to pass downstream while gauges indicate a misleading "0" pressure drop.

The solution to these operational and design problems is Zeks Color Guard™ filters with their "depth bed" filtration system. They effectively remove contaminants with virtually no pressure

drop (1-3 psi nominal) and change color to indicate exactly how the filter is performing and when cartridge changeout is required.

Color Guard filters consist of two parts: a housing and a disposable cartridge. The housing's unique design incorporates a multi-stage pre-filtering system while the cartridge contains a bed of filtration media. The "depth bed" cartridge design eliminates the chance of cartridge rupture because the compressed air flows through the entire length of the elements rather than through a thin wall (as in conventional filters), thereby dramatically reducing air velocity and associated pressure drop. In addition, this reduced velocity increases contact time between the compressed air and the filtration media, thereby improving filter performance.

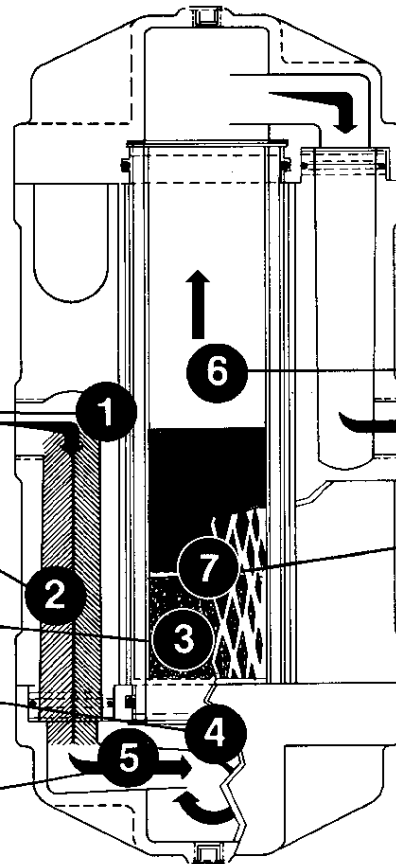
The cartridge in the filter housing is visible through a transparent sight tube allowing cartridge performance to be continuously monitored. As the filter scrubs the compressed air clean, removing oil and particulate contaminants, it changes color to signal the need for replacement. Cartridges should be replaced only when their color visually indicates the need for change.

Color Guard's "Depth-Bed" Filtration System

Color Guard's "Depth-Bed" filtration system consists of a 5-stage pre-filtration system built into the housing and a 2-stage final filtration system built into the cartridge.

Pre-Filtration System

1. **Direction Change** — Bulk contamination resists direction change and impinges on sidewall.
2. **Impingement Separator** — Nylon brush collects and coalesces oil and water particles which drain to sump.
3. **Particle Scrubber** — Air is scrubbed clean of micron size particles by dense wire mesh.
4. **Velocity Drop** — As air expands to fill sump cavity, heavy particles fall out of the air.
5. **Cyclonic Action** — Unique casting design forces air into cyclone. Centrifugal force throws large contaminants out of air stream.



Final Filtration System

6. **Air Polisher** — Depending upon which type of cartridge is used, the polishing bed removes oil and dirt; synthetic lubricants; moisture; or oil vapors and hydrocarbons. Particles to .5 micron are polished from the air.
7. **Oil Coalescer** — Fine filtration media coalesces micron size aerosols and solids.

Types of Cartridges

Standard Cartridge

Used to remove oil aerosols and particulate contamination, Standard cartridges have a unique filter bed which changes color from white to vivid red, from bottom to top indicating cartridge status, as particles down to .5 micron are polished from the air. Standard cartridge should be used in applications where petroleum based lubricants will be present.

Note: Certain petroleum based lubricants may require a Type B cartridge. Consult factory regarding oil testing program to determine cartridge type compatibility.

Synthetic Lubricant Cartridge (Type B)

Used to remove synthetic lubricants, Type B cartridges have a unique filter bed which changes color from white to blue, from bottom to top indicating cartridge status, as particles down to .5 micron are polished from the air.

Note: Consult factory regarding compatibility of synthetic lubricant with filter component parts. Certain synthetic lubricants require filters with steel tube assemblies.

Silica Gel Desiccant Cartridge (Type SG)

Used to adsorb water, the desiccant-filled Type SG cartridge has an indicator band at the top of the cartridge which changes from blue to pink as moisture is removed from the air. Color Guard filters with this cartridge produce -40°F pressure dew point air. Applications include installations requiring very

low flow ultra-dry air such as pneumatic instruments, actuators, laboratory experiments and controls located in unheated areas. Oil, liquid water, aerosols and particles that reduce the life of the desiccant bed are removed during the first 5 stages of the Color Guard filter resulting in increased cartridge life.

Note: For applications where excessive liquid water and oil may be present, a coalescing prefilter is recommended. Consult factory for application assistance.

Activated Charcoal Cartridge (Type AC)

Type AC cartridges are used to eliminate tastes and odors by removing oil vapor and gaseous hydrocarbons from compressed air. Water, aerosols, liquid oil and particulate materials that normally adversely affect the adsorption action of the charcoal bed are removed during the first 5 stages of the Color Guard filter. Applications include food, electronics and pharmaceuticals where extremely high air quality is required. Also, Color Guard filters with Type AC cartridges can be used in those breathing applications, such as abrasive blasting, where OSHA states that plant compressed air is suitable. When used for these applications, the system must also include a pressure reducing device and a high temperature alarm or shutoff device in case of compressor overheating. The air must meet OSHA purity requirement given in 29 CFR 1910.134 (d) (1).

Warning: Zeks Type AC filters must not be used to supply breathing air unless the air meets or exceeds the requirement of the Grade "D" breathing air specifications.

Selection Data

Do not exceed 150°F entering air temperature.

Do not exceed maximum pressure rating for each filter.

*Filter Model No.	Maximum Pressure (PSIG)	Filter Flow Capacity in SCFM (Free Air) at Pressure (Standard & Type B Cartridges Only)**									
		30 PSIG	40 PSIG	50 PSIG	60 PSIG	70 PSIG	80 PSIG	90 PSIG	100 PSIG	125 PSIG	150 PSIG
F15	250	5	6	7	8	10	11	12	13	16	19
F40***	150	12	15	18	21	24	26	29	32	39	46
F60***	150	21	25	30	35	39	44	48	53	64	76
F120	150	41	50	59	68	78	87	96	105	128	151
F200	150	76	93	110	127	144	161	178	195	237	280
F500	150	156	191	226	261	296	330	365	400	487	574
F800	150	313	383	452	522	591	660	730	800	974	1150

* Cartridges other than Standard are denoted by letters. For example F60B, F60AC or F60SG.

** Consult factory for application assistance and sizing of type AC and SG cartridges.

*** Available in 250 PSIG design — Consult factory for application assistance

Ordering Replacement Cartridges

When ordering a replacement cartridge, make sure the appropriate cartridge designation is included.

Example: When ordering a replacement activated Charcoal Type AC cartridge for an F15 filter, indicate replacement cartridge as follows: Model RC15AC

Use the following suffixes for each type of cartridge:

- StandardNone
- Synthetic LubricantB
- Silica Gel DesiccantSG
- Activated CharcoalAC

For Models F152, F155, and F1550 use replacement cartridge RC15

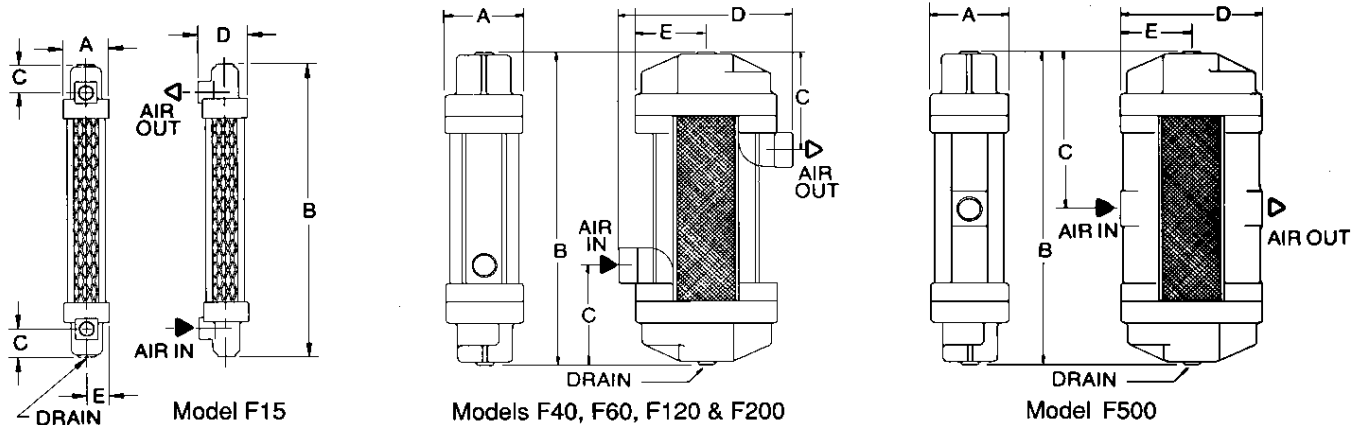
For Models F602, F605, F6050 use replacement cartridge RC60

For Model F2002 use replacement cartridge RC200

All other Models use replacement cartridges with the same number as the filter Model: i.e. Filter Model F60 uses replacement cartridge RC60.

All cartridges with the exception of RC500 and RC800 are packed with 6 cartridges per carton. RC500 and RC800 are packaged with 4 cartridges per carton.

Dimensional Data



Filter Model No.	Maximum Pressure (PSIG)	DIMENSIONS+ (Inches)					Inlet/Outlet NPT(f)	Drain NPT(f)	Vessel Weight (lbs)
		A	B	C	D	E			
F15	250	2.5	17.0	1.6	2.75	1.25	1/2	1/4	6
F40	150	4.3	11.6	5.3	8.5	3.9	3/4	1/4	6
F60	150	4.3	18.0	8.9	7.8	3.9	1	1/4	16
F120	150	6.0	13.9	7.6	12.0	5.9	1	1/2	16
F200	150	6.0	19.7	8.9	11.8	5.9	1-1/2	1/2	32
F500	150	8.5	26.4	13.2	14.8	7.4	2	1/2	60

+All dimensions subject to change without notice. Our commitment to continued product improvement may cause deviation from the information contained herein.

Materials and Components

Filter Housing: Heat-treated 356T6 aluminum castings.

Support Bars, Nuts, Cap Screws, Pipe Plugs, and Threaded Rods: Electrogalvanized Steel.

Tube: Cast methyl methacrylate (double annealed) for Models F40, F60, F120, F200, F500. Extruded polycarbonate for Model F15.

Safety Shields: Electrogalvanized expanded metal. Except: Model F500 employs a unique construction in which the shield and transparent tube are individually fitted to form a single unit.

Impingement Separator: Nylon bristle brush.

Particle Scrubber: Knit aluminum wire.

"O" Rings: Buna "N"

Gaskets: Neoprene

Note: The information set out in this brochure is for preliminary information only and is not intended to constitute any representation or warranty by ZeKs to potential customers or to form the basis of a contract with any customer. ZeKs makes no guarantee of satisfactory results from reliance upon information or recommendations contained herein and disclaims all liability for any resulting loss or damage.



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Sample Specification

Suggested specifications for Models F40, F60, F120, F200, or F500 filters with a Standard cartridge operating at a maximum pressure of 150 psig.

Filter shall be Model _____ (F40, F60, F120, F200, or F500*) designed for 150 psig (maximum operating pressure) at 150°F. Air Flow _____ scfm @ _____ psig. Filter shall be of depth filtration type, with capability of removing at least 99.9% of both .5 micron particles and oil aerosols** through a one-piece replaceable cartridge. Cartridge shall have color change feature which will be visible through the transparent sight tube to indicate performance of the cartridge at all times. Filter pipe connections shall be in-line. Top head or bottom head shall be removable for cartridge change or filter service.

* When ordering other types of filters, designate cartridge type with a suffix: i.e. F40SG for an F40 filter with desiccant cartridge.

** For Type B cartridge, description should read "at least 99.9% of both .5 micron particles and synthetic lubricants." For Type SG cartridge, description should read "sufficient moisture to produce -40°F pressure dew point air." Consult factory for appropriate Type AC cartridge description.

Maintenance

The design of the Color Guard filter allows for quick, easy, in-line maintenance. Requiring only a wrench and a replacement cartridge, servicing is a one-man operation, even for the largest models. Within a matter of minutes, the top of the filter can be removed and replaced and the Color Guard filter is back in service. Servicing can be scheduled in advance, reducing downtime to a minimum.