



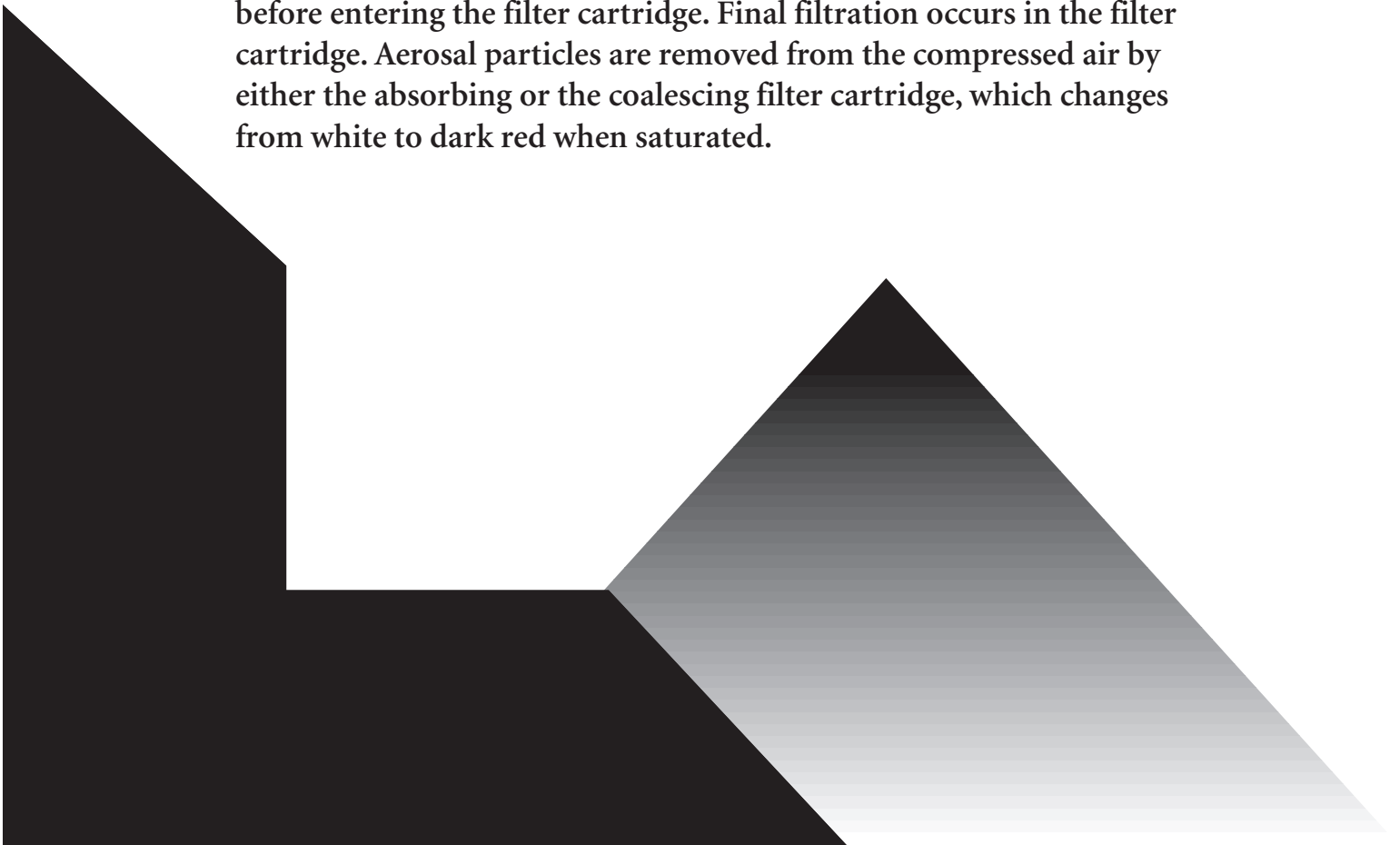
**LILLY AIR**  
SYSTEMS, INC.

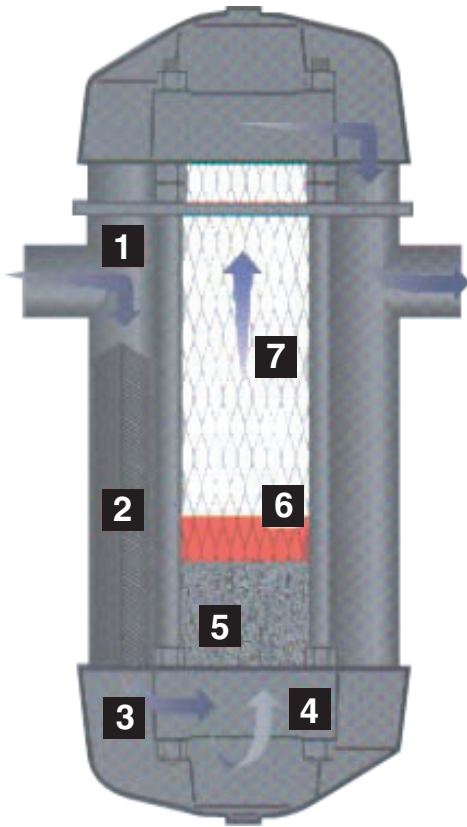
In compressed air systems, oil, water and solid particles can cause damage that result in downtime, reduced quality, loss of production output and high repair costs.

*LILLY AIR SYSTEMS* offers two types of filter technology with the unique color change replacement cartridge indicator. A choice of either adsorption or higher efficiency coalescent type filters provide application flexibility, greater reliability and lower operating costs by removing oil, water and particulate matter from compressed air. Both types of filter cartridges are interchangeable in the same housing.

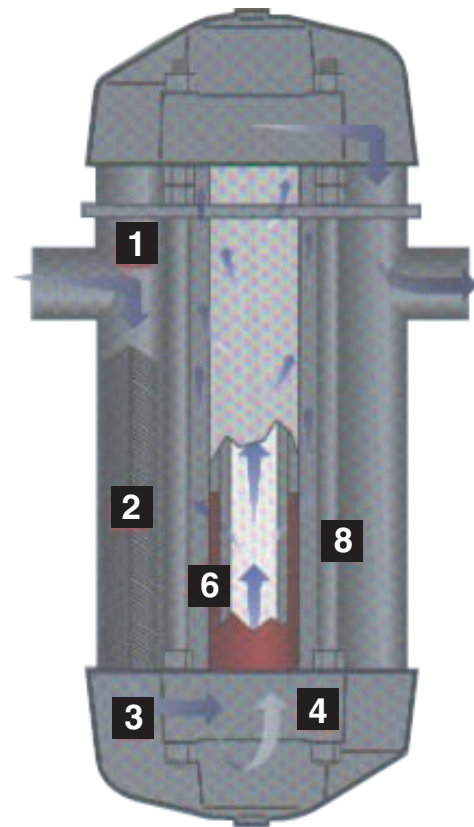
### ***HOW THE FILTER WORKS***

The high efficiency of the *LILLY* Air Filter is achieved by the combination of mechanical separation methods and either adsorption or coalescent technology. Centrifugal action, high velocity impingement and velocity drop, remove contaminants mechanically before entering the filter cartridge. Final filtration occurs in the filter cartridge. Aerosol particles are removed from the compressed air by either the absorbing or the coalescing filter cartridge, which changes from white to dark red when saturated.





Absorption Series



Coalescing Series

## Seven Stage Color Guard Depth Filtration

**Step 1:** Direction Change - Bulk contamination resists direction change and impinges on sidewall.

**Step 2:** Impingement Separator - Nylon brush collects and coalesces oil and water particles which drain to sump.

**Step 3:** Cyclonic Action - Unique casting design forces air into cyclone. Centrifugal force throws large contaminants out of air stream.

**Step 4:** Velocity Drop - As air expands to fill sump cavity, heavy particles fall out of air.

**Step 5:** Particle Scrubber - Air is scrubbed clean of micron size particles by dense wire mesh.

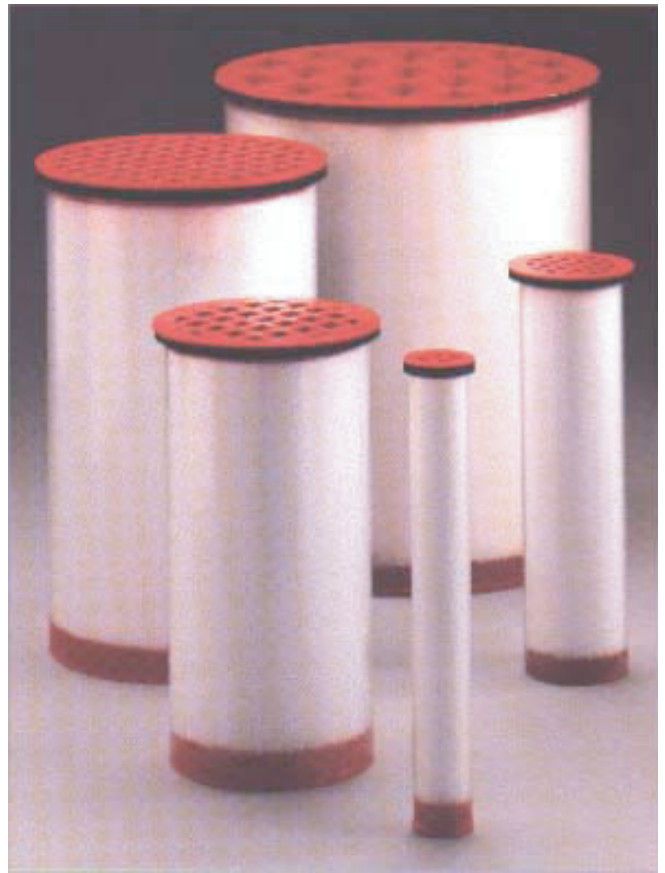
**Step 6:** Oil Coalescer - Fine Filtration Media coalesces micron size aerosols and solids.

**Step 7:** Air Polisher - Unique filter media changes color as it absorbs oil. Particles to .5 micron are polished from the air.

**Step 8:** Coalesced oil & liquids turn red & drain to the filter sump. Air is contaminant free at .01 micron.

# Adsorption Series Filter

The adsorption filter is a medium efficiency filter that removes oil particles by coalescing and adsorbing. Compressed air initially contacts the fine filtration media in the prefilter section of the cartridge. Micron size solids are coalesced with oil soluble red dye into larger particles. The air then passes through the filter medium or adsorbant, where the coalesced oil particles impact and impinge in the small pores, cracks, voids and crevices. Air paths through the adsorbant do not clog and the pressure drop remains low, approximately 1-3 psi, throughout the life of the cartridge. The air quality leaving the filter is 99.99% contaminant free at 0.5 micron.



Model #	Max PSIG	Inlet Air Pressure (psig)												
		10	20	30	40	50	60	70	80	90	100	110	125	150
		Maximum Inlet Air Flow (scfm)												
10	150	2.5	4	5	6	7	8.5	9.5	11	12	15	17	19	20
30	150	13	17	21	26	31	36	41	45	53	60	65	70	79
50	150	41	59	77	95	112	129	148	163	187	200	215	230	272
70	150	188	254	341	427	490	569	648	718	796	875	935	1060	1251

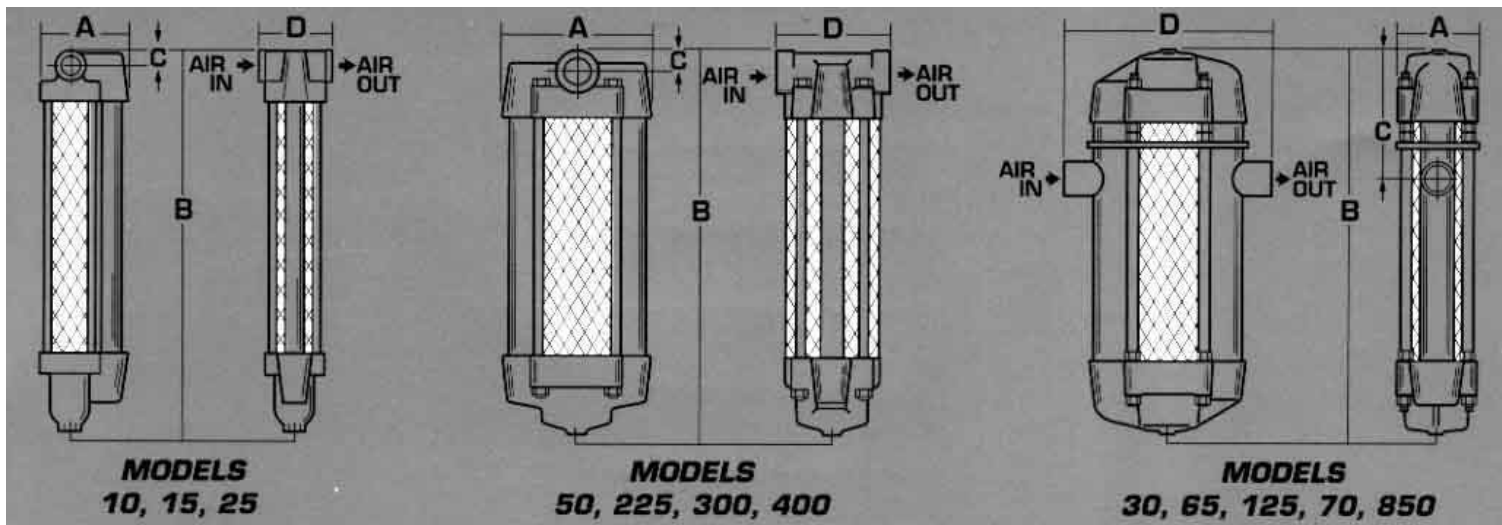
# Coalescing Series Filter



The coalescent filter is a high efficiency filter that utilizes a multistage filtration effect. Flowing inside to outside, solid particles are trapped and retained by the prefilter section of the cartridge. Oil, water and other liquid aerosols are then captured by the ultrafine glass microfiber in the body of the filter medium. Once the aerosol is captured by a fiber, it coalesces with other captured aerosols and oil soluble red dye to form a bulk liquid which is forced by the air flow to the outer surface of the filter media.

A drain layer attached to the outer surface drains the liquid to the sump of the filter housing, preventing reentrainment. The air quality leaving the filter is 99.9999% contaminant free at 0.01 micron. Pressure drop at saturation is approximately 10-14 psi.

Model #	Max PSIG	Inlet Air Pressure (psig)												
		10	20	30	40	50	60	70	80	90	100	110	125	150
		Maximum Inlet Air Flow (scfm)												
15	150	3	5	6	7	8	10	11	12	14	15	16	18	22
25	150	6	9	12	14	16	18	20	23	25	28	31	35	41
65	150	13	18	24	30	36	42	48	54	59	65	70	78	90
125	150	28	39	50	62	73	85	96	106	118	130	140	158	185
225	150	51	69	88	107	125	142	159	181	198	220	237	268	314
300	150	62	89	115	142	168	194	221	247	274	300	326	366	432
400	150	86	120	155	190	225	260	290	330	365	400	430	485	575
850	150	205	271	341	427	490	569	648	718	796	875	455	1060	1251



ADSORPTION SERIES									
Model #	Dimensions				Connections			Clearance Required Above or Below Filter	Shipping Weight
	A	B	C	D	Inlet	Outlet	Drain		
10	4	16 1/2	3/4	3 1/8	1/2	1/2	1/4	12" below	5 lbs.
30	4	17	5 1/2	8 3/4	1	1	1/4	9" above	16 lbs.
50	10	19 1/4	1 1/4	7 3/4	1 1/2	1 1/2	1/2	12" below	28 lbs.
70	12	31	12 3/4	18	2	2	1/2	12" above	165 lbs.
COALESCING SERIES									
Model #	Dimensions				Connections			Clearance Required Above or Below Filter	Shipping Weight
	A	B	C	D	Inlet	Outlet	Drain		
15	4	16 1/2	3/4	3 1/8	1/2	1/2	1/4	12" below	5 lbs.
25	4	28 1/2	3/4	3 1/8	1/2	1/2	1/4	24" below	10 lbs.
65	4	17	5 1/2	8 3/4	1	1	1/4	12" above	16 lbs.
125	4	29	5 1/2	8 3/4	1	1	1/4	24" above	32 lbs.
225	10	19 1/4	1 1/4	7 3/4	1 1/2	1 1/2	1/2	14" below	28 lbs.
300	10	25 1/4	1 1/4	7 3/4	2	2	1/2	18" below	45 lbs.
400	10	31 1/4	1 1/4	7 3/4	2	2	1/2	26" below	60 lbs.
850	12	31	12 3/4	18	2	2	1/2	16" above	165 lbs.

### Top and Bottom Heads

Aircraft quality heat treated aluminum castings for all Series.

### Downcomer Tubes, Tie Rods, Nuts

Electrogalvanized steel.

### Tube -

Models 30, 50, 65, 125, 225, 300, 400:

Cast methyl methacrylate (double annealed)

Models 10, 15, 25: Extruded polycarbonate (Lexan).

Models 70, 850: Steel tube with sight glasses.

### Safety Shields

Electrogalvanized steel  
Safety shields are made from expanded metal sheet. They are loose fitting to prevent damage from accidental external blows and to minimize hazard from solvent attack or from installing a damaged tube.

**Maximum Operating Temperature - 150°F**

**Maximum Pressure - 150 PSI**

**Maximum Recommended Filtration Temperature - 120°F**

Models 10, 15, 25, 50, 225, 300, & 400 have inlet and outlet in the top head casting with bottom entry.

Models 30, 65, 125, 70, & 850 have inlet and outlet in the side of the filter with top entry, unless specified otherwise.

NOTE: LILLY Filters require steel tubes with sight ports when exposed to phosphate ester type (fire retardant) lubricants or where the filter is exposed to solvent fumes\* in the ambient. Steel tube assemblies are available upon request for all standard filter models, at no additional charge.

\*Solvent fumes include methanol, gasoline, xylene, toluene, aromatic, or chlorinated hydrocarbon solvents, acetone, other ketones, lacquer solvents, or synthetic, fire-retardant lubricants (chlorinated hydro-carbons, phosphate esters).



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