Compressed Air and Gas Filters and Accessories

5 YEAR Housing Warranty

COST SAVING SOLUTIONS FOR COMPRESSED AIR SYSTEMS
Clean, Trouble-Free Compressed Air

When compressed air operates your most valuable and productive equipment, you can’t afford to have contamination in the lines.

Rid your compressed air system of problem-causing oil aerosols, dirt and pipe scale with Van Air filters.

Rugged housings and long-lasting elements give you the best value for your money. They’ll provide dependable filtration to reduce your downtime, maintenance and operating costs.

Van Air filters are currently providing these benefits in a wide range of applications. Just a few include chemical and petrochemical processing, power generation, manufacturing, packaging, blasting and painting.

With a variety of models for flows from 15 to 20,000 scfm (at 100 psig) and 10 element grades to remove oil, oil vapors or particulates, Van Air offers the solution to your particular filtration needs.

Put Van Air equipment to work and see the difference that clean, trouble-free compressed air makes in your system.

IMPORTANT GUIDELINES

1. When selecting filters, assume a maximum flow condition at the minimum operating pressure.

2. Match the filter’s inlet and outlet ports to your system pipe size. An undersized connection will restrict flow.

3. Allowing for wet pressure drops of .75, 1.0, 1.5 and 4.0 psid for grades AA, A, B and C respectively.

4. Install oil removal filters at the coolest point in the system for maximum removal of condensed aerosols.


6. Change element grade RD periodically as the application dictates, but at least once every six months. Note: Grade B and C prefilters required upstream of grade RD for proper operation.

To order, contact your local Van Air distributor with the filter model number and element grade you have selected. If you need assistance, contact your local distributor or our Lake City office. We’re here to help.

Element Grades

END CAPS

Corrosion resistant, color coded end caps for rust prevention and easy identification of element.

Large opening for minimum pressure drop.

COALESCING (AA, A, B & C Grades) (In to out flow direction)

Stainless steel inner and outer support cores provide superior strength and corrosion resistance, preventing rust particles from clogging the high efficiency media.

Chemical resistant polyester outer drain layer facilitates flow of coalesced oil to element bottom for draining and stands up to synthetic oils.

Note: Models 500 scfm and larger also include inner coil for extra strength.

PARTICULATE (RAA, RA, RB, RC & HT Grades) (Out to in flow direction)

Stainless inner helical coil, (models 500 scfm and larger) gives maximum element strength for out to in flows.

Glass fiber support layer adds strength to prevent strain on the high efficiency media.

Note: HT grade elements are not equipped with outer polyester prefilter layer and are fitted with metal end caps.

VAPOR ADSORBING (RD Grade) (Out to in flow direction)

Inner glass fiber support layer gives carbon and final filtration layers added strength to prevent strain on media.

Activated carbon layer removes oil vapors and fine particles from the air stream.

Glass fiber support layer adds strength to prevent strain on the high efficiency media.

Note: Models 500 scfm and larger also include inner coil for extra strength.
### Filtration Grades

<table>
<thead>
<tr>
<th>Element grade</th>
<th>Purpose</th>
<th>Particle removal down to</th>
<th>Efficiency %</th>
<th>Max. oil carryover (PPM w/w)</th>
<th>Max. inlet temp. °F</th>
<th>Clean dry Pressure drop, PSID</th>
<th>Color code</th>
<th>Flow direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>extra coarse coalescing</td>
<td>25.00 µ</td>
<td>100 @ 25.0 µ</td>
<td>7.8</td>
<td>225</td>
<td>.40</td>
<td>Black</td>
<td>In/Out</td>
</tr>
<tr>
<td>A</td>
<td>coarse coalescing</td>
<td>5.00 µ</td>
<td>100 @ 5.0 µ</td>
<td>3.9</td>
<td>225</td>
<td>.50</td>
<td>Green</td>
<td>In/Out</td>
</tr>
<tr>
<td>B</td>
<td>general purpose coalescing</td>
<td>1.00 µ</td>
<td>99.99 @ 0.6 µ</td>
<td>0.78</td>
<td>175</td>
<td>.75</td>
<td>Red</td>
<td>In/Out</td>
</tr>
<tr>
<td>C</td>
<td>high efficiency coalescing</td>
<td>0.01 µ</td>
<td>99.9999 @ 0.6 µ</td>
<td>0.008</td>
<td>125</td>
<td>1.50</td>
<td>Blue</td>
<td>In/Out</td>
</tr>
<tr>
<td>RAA</td>
<td>extra coarse particulate</td>
<td>25.00 µ</td>
<td>100 @ 25.0 µ</td>
<td>NA</td>
<td>225</td>
<td>.40</td>
<td>Black</td>
<td>Out/In</td>
</tr>
<tr>
<td>RA</td>
<td>coarse particulate</td>
<td>5.00 µ</td>
<td>100 @ 5.0 µ</td>
<td>NA</td>
<td>225</td>
<td>.50</td>
<td>Red</td>
<td>Out/In</td>
</tr>
<tr>
<td>RB</td>
<td>general purpose particulate</td>
<td>1.00 µ</td>
<td>99.99 @ 0.6 µ</td>
<td>NA</td>
<td>225</td>
<td>.75</td>
<td>Blue</td>
<td>Out/In</td>
</tr>
<tr>
<td>RC</td>
<td>high efficiency particulate</td>
<td>0.01 µ</td>
<td>99.9999 @ 0.6 µ</td>
<td>NA</td>
<td>225</td>
<td>1.50</td>
<td>Blue</td>
<td>Out/In</td>
</tr>
<tr>
<td>HT*</td>
<td>high temperature particulate</td>
<td>1.00 µ</td>
<td>99.95 @ 0.6 µ</td>
<td>NA</td>
<td>450</td>
<td>.75</td>
<td>Zinc plate</td>
<td>Out/In</td>
</tr>
<tr>
<td>RD</td>
<td>vapor adsorbing</td>
<td>0.01 µ</td>
<td>99.9999 @ 0.6 µ</td>
<td>0.004</td>
<td>80</td>
<td>1.50</td>
<td>Black**</td>
<td>Out/In</td>
</tr>
</tbody>
</table>

**Notes:** Above filtration grades will not remove certain toxic gases including carbon monoxide. Additional equipment required to produce air suitable for use in breathing air applications. *HT high temperature element available for F101 and F102 models only. All element materials are compatible with mineral and synthetic lubricants. **RD&HT elements have no outer prefilter layer – perforated stainless outer core is visible. RD performance based on installation of grade C prefilter upstream.

### Application Guide

#### Typical Uses

- Instrument Air
- Blanketing/Padding
- N₂ Replacement
- Pipeline Purging

#### Suggested Filter/Dryer Installation

- Compressor<br>  - After Cooler<br>  - Separator<br>  - Filter Grade B<br>  - Refrigerated Dryer<br>  - Filter Grade C<br>  - Heatless Regenerative Dryer<br>  - Filter Grade B or RD

#### Dryer Dew Point

- -40°F

#### Point-of-use

- **Instrumentation**<br>  - Air Cylinders, Motors<br>  - Pneumatic Conveyors<br>  - Food/Dairy/Beverage<br>  - Pharmaceutical<br>  - Clean Rooms<br>  - Critical Instrumentation<br>  - Blow Molding

(1) Assumes inlet contaminants to filter at less than 50 ppm liquid oil and H₂O saturated air at 100°F. Actual air quality will vary with operating conditions unique to each installation. Critical applications may require additional filtration.
(2) ISA S7.3 (Quality Standard for Instrument Air) requires maximum particle size of 3 microns and oil content of no more than 1 ppm w/w.
(3) Mechanical separation device should be installed prior to filters to remove slugs of liquid oil and/or water.
(4) ISO Air Quality Standard 8573.1
Van Air Systems Inc.

**FEATURES**

Flow direction shown is for Coalescing Filter. See top of page 3.

- Buna-N o-rings provide positive seal for filter head to bowl and element to housing.
- Precision machined Acme threads allow for ease of assembly and removal.
- Cast aluminum head and bowl rated for 250 psig MWP.
- Durable epoxy coating is chip and stain resistant.
- Manual override feature for convenient depressurization or draining liquid.
- Internal float drain ADM-2-2 (optional) to eliminate manual draining.
- Optional color-coded pressure differential indicator (model PD-5) graphically shows when element should be replaced. Double-sided face for easy reading from either side.
- Optional color-coded pressure differential gauge (model PD-4 shown) numerically indicates when element should be replaced. Double-sided face for easy reading from either side.
- Standard pop-up indicator signals when element should be replaced.
- Thru holes for tandem mounting with CK connector (see inset below)/optional MB bracket for wall mounting.
- In-line inlet/outlet for ease of installation.
- Push-on element installation for fast trouble-free servicing.
- Sufficient clearance between housing and element for low upward velocity/prevents re-entrainment of coalesced oil and provides excellent drainage.
- Built-in element supports require no adjustments.
- Large reservoir to provide quiet zone for water and coalesced liquid.
- Housings can easily be tandem mounted for dual filtration requirements.
- Buna-N o-rings provide positive seal for filter head to bowl and element to housing.
- Precision machined Acme threads allow for ease of assembly and removal.
- Cast aluminum head and bowl rated for 250 psig MWP.
- Durable epoxy coating is chip and stain resistant.
- Manual override feature for convenient depressurization or draining liquid.
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- Optional color-coded pressure differential gauge (model PD-4 shown) numerically indicates when element should be replaced. Double-sided face for easy reading from either side.
- Standard pop-up indicator signals when element should be replaced.
- Thru holes for tandem mounting with CK connector (see inset below)/optional MB bracket for wall mounting.
- In-line inlet/outlet for ease of installation.
- Push-on element installation for fast trouble-free servicing.
- Sufficient clearance between housing and element for low upward velocity/prevents re-entrainment of coalesced oil and provides excellent drainage.
- Built-in element supports require no adjustments.
- Large reservoir to provide quiet zone for water and coalesced liquid.
- Housings can easily be tandem mounted for dual filtration requirements.

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The F200 Series includes 14 housings for flows from 15 to 1000 scfm (at 100 psig) and nine filtration grades to meet your exact system requirements. With Van Air filters you won’t have to buy more than you need to get complete protection from compressed air contaminants.

For complete information on all Van Air element grades, please see the chart on page 3.

The filter shown is a typical oil coalescer.

**SUGGESTED SPECIFICATION**

Filter housing is cast aluminum with a maximum working pressure of 250 psig at 225°F. Inlet and outlet connections are NPT and on a common centerline. Filter head includes pop-up differential indicator. Threaded holes are included for mounting of a pressure differential gauge. Housing exterior is protected by epoxy powder coating. Filter is capable of automatic or manual draining. Manual ball type drain valve is included. Filter bowl includes a built-in element support. Housing is capable of tandem or wall mounting.

Push on, color-coded filter element with O-ring seal is supplied for (select one):

**Oil Removal** Element is equipped with fiberglass prefiltration layer, microglass coalescing media, perforated stainless steel inner and outer support cores, and (on models 500 scfm and larger) inner support spring. Outer drain layer is polyester material. Maximum oil carry-over will not exceed ____ (7.8, 3.9, 0.78, 0.008 or 0.004) parts per million by weight (ppm w/w).

**Solid Particle Removal** Element is equipped with fiberglass prefiltration layer, microglass media, perforated stainless steel inner and outer support cores, and (on models 500 scfm and larger) inner support spring. Element provides particle removal down to ____ (25.0, 5.0, 1.0 or 0.01) microns.

**Oil Vapor Removal** Element consists of activated carbon media with built-in microglass afterfiltration to prevent media migration. Media layers are supported by perforated stainless steel inner and outer support cores. Element removes oil vapors down to .004 parts per million by weight (ppm w/w at 68°F). Filter is Van Air Model No.______ rated for ______ scfm at 100 psig.
The pressure differential gauge (model PD-2) graphically indicates when element(s) should be replaced. High temperature model also available - PD-2/HT. Can be installed for easy reading at any angle. (Add SW suffix for alarm contact.)

In-line inlet/outlet for ease of installation

The pressure differential gauge (model PD-2) graphically indicates when element(s) should be replaced. (High temperature model also available - PD-2/HT) Can be installed for easy reading at any angle. (Add SW suffix for alarm contact.)

The pressure differential gauge (model PD-2) graphically indicates when element(s) should be replaced. (High temperature model also available - PD-2/HT) Can be installed for easy reading at any angle. (Add SW suffix for alarm contact.)

Welded steel housing rated for 250 psig MWP and constructed and stamped in accordance with ASME code Section VIII, Div. I.

Large reservoir to provide quiet zone for particles and coalesced liquid

Sufficient clearance between housing and element for low air velocity to prevent re-entrainment of coalesced liquid

The pressure differential gauge (model PD-2) graphically indicates when element(s) should be replaced. (High temperature model also available - PD-2/HT) Can be installed for easy reading at any angle. (Add SW suffix for alarm contact.)

Oil Vapor Removal Element consists of activated carbon media with built-in microglass afterfiltration to prevent media migration. Media layers are supported by stainless steel inner and outer perforated support cores. Elements remove oil vapors down to .004 parts per million by weight (ppm w/w at 68°F).

Filter is Van Air Model No. —— rated for —— scfm at 100 psig.

F101 Series filters are built to last. Of welded steel construction, all housings are built and stamped in accordance with ASME code for 250 psig at 225°F. Each receives hydrostatic pressure testing to 1.3 times the maximum working pressure.

Six housings are available with flows from 500 to 5000 scfm (at 100 psig) and 10 filtration grades are available to remove oil or solid particles. High temperature units are also available.

For complete information on all Van Air element grades, please see the chart on page 3.
Our rugged F102 Series includes nine housings with flows ranging from 1,500 to 20,000 scfm at 100 psig. Housings are built and stamped in accordance with ASME code for 250 psig at 225°F. Each receives hydrostatic pressure testing to 1.3 times the maximum working pressure. The top-loading feature permits quick and easy element replacement.

As complete information on all Van Air element grades, please see the chart on page 3.

SUGGESTED SPECIFICATION

Filter housing is welded carbon steel, constructed and stamped in accordance with ASME code Section VIII, Div. I. Maximum working pressure is 250 psig at 225°F. (High temperature models are rated at 165 psig at 450°F.) The filter inlet and outlet connections are ANSI RF flanged. They are located on opposite sides of the filter at different elevations. The inlet and outlet connections have port locations that allow for installation of a pressure differential gauge. The pressure differential gauge is capable of direct or remote mounting. Housing interior is protected by alkyd enamel. Housing exterior shall be protected by primer and enamel. Housing is leg mounted and free standing. For coalescing applications, flow first enters a separation chamber for gravity removal of liquids and large particles. Element is accessible through top of filter housing via o-ring sealed swing bolt closure. Separate manual drains (two) are furnished for separator/coalescing filter effluent.

Color-coded filter elements are supported by stainless steel reusable internal tie rods and hex fasteners. O-ring seals are used for tie rod openings and filter elements. Filter elements are supplied for (select one):

**Oil Removal** Element is equipped with fiberglass prefiltration layer, microglass coalescing media, perforated stainless steel inner and outer support cores and inner support spring. Outer drain layer is polyester material. Maximum oil carryover shall not exceed (7.8, 3.9, 0.78, 0.008 or 0.004) parts per million by weight (ppm w/w).

**Solid Particle Removal** Element is equipped with fiberglass prefiltration layer, glass microbead media, perforated stainless steel inner and outer support cores and inner support spring. Element will provide particle removal down to (25, 5, 1.0 or 0.01) microns.

**High Temperature Solid Particle Removal** Element is constructed of fiberglass prefiltration layer, microglass media, perforated stainless steel inner and outer support core, inner support spring and metal end caps. Element will provide particle removal down to 1.0 micron.

**Oil Vapor Removal** Element consists of activated carbon media with built-in microglass afterfiltration to prevent media migration. Media layers are supported by stainless steel inner and outer perforated support cores. Elements remove oil vapors down to .004 parts per million by weight (ppm w/w at 68°F).

Filter is Van Air Model No. _______ rated for ________ scfm at 100 psig.

**FEATURES**

- Flow direction shown is for coalescing Filter. See top of page 3.
- Swing bolt closure on top head allows for easy element replacement. Head and bolts are captive so they cannot be dropped or lost. O-ring provides positive seal from head to bowl.
- Pressure differential gauge (model PD-2) graphically indicates when elements should be replaced. (High temperature model also available – PD-2/HT) (Add SW suffix for alarm contact.)
- Mounting bracket on side of housing allows for easy installation of pressure differential gauge.
- Elements positively sealed to filter housing by reusable stainless threaded tie rod, o-ring, and hex fastener.
- Separation chamber at bottom prolongs life of coalescing filter by gravity removal of entrained water, oil and pipe scale.
- Dual drain ports
- Freestanding design eliminates need for pipe supports (two of three legs shown).

Van Air Systems Inc.
### Dimensions (inches) and Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>In/Out Conn.</th>
<th>A (B/Bc)</th>
<th>B (B/Bc)</th>
<th>C</th>
<th>D</th>
<th>Total Wt. (lbs.)</th>
<th>Drain Conn.</th>
<th>Replacement Element</th>
<th>No. of Elements</th>
</tr>
</thead>
</table>

**Due to our policy of continuous improvement, dimensions and specifications may change without notice. Before pre-piping, request a certified drawing. Flanges are ANSI Class 150 R.F.. All F101 and F102 filter bodies are built and stamped per ASME Code. F101-3500 and 5000 models utilize elliptical top heads.

### Flow Capacities (SCFM)

<table>
<thead>
<tr>
<th>Model</th>
<th>25 psig</th>
<th>50 psig</th>
<th>75 psig</th>
<th>100 psig</th>
<th>125 psig</th>
<th>150 psig</th>
<th>175 psig</th>
<th>200 psig</th>
<th>225 psig</th>
<th>250 psig</th>
</tr>
</thead>
<tbody>
<tr>
<td>F200-15-1/4**</td>
<td>8</td>
<td>12</td>
<td>15</td>
<td>18</td>
<td>22</td>
<td>25</td>
<td>28</td>
<td>31</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>F200-25-3/8**</td>
<td>9</td>
<td>14</td>
<td>20</td>
<td>25</td>
<td>30</td>
<td>36</td>
<td>41</td>
<td>47</td>
<td>52</td>
<td>58</td>
</tr>
<tr>
<td>F200-25-1/2**</td>
<td>10</td>
<td>14</td>
<td>20</td>
<td>25</td>
<td>30</td>
<td>36</td>
<td>41</td>
<td>47</td>
<td>52</td>
<td>58</td>
</tr>
<tr>
<td>F200-25-5/8**</td>
<td>12</td>
<td>17</td>
<td>23</td>
<td>29</td>
<td>35</td>
<td>41</td>
<td>47</td>
<td>53</td>
<td>60</td>
<td>67</td>
</tr>
<tr>
<td>F200-85-3/4**</td>
<td>14</td>
<td>21</td>
<td>28</td>
<td>36</td>
<td>43</td>
<td>50</td>
<td>56</td>
<td>63</td>
<td>71</td>
<td>80</td>
</tr>
</tbody>
</table>

**Notes:** Maximum working pressure for all models is 250 psi at 225°F with the exception of model “HT” which is rated at 165 psig at 450°F. For low pressure and high pressure applications, contact factory. Number following F200, F101 and F102 model designation is flow rate at 100 psi. To complete model number, insert element grade here (1). Example: F101-500-C. Natural Gas Applications: Multiply rated flow by 1.34.

### SELECTING A FILTER

Selection of Van filters is fast and easy. You'll need to determine six conditions regarding the filter installation site: (1) Maximum flow rate; (2) minimum and maximum operating pressures; (3) operating temperature; (4) piping size; (5) the contaminants to be removed; and (6) the degree of filtration desired.

Next, refer to the Flow Capacities chart to the left. Read down the column representing your lowest operating pressure. Find the flow rate closest to, but greater than, that of your system. Then read across to the left-hand column to determine the filter model you should order.

Now refer to the Filtration Grades chart on page 3. Determine the element grade that meets your needs. Be sure that the maximum inlet temperature listed on the chart is sufficient for your operating conditions.

Once you've determined the proper element grade, go to the Dimensions and Specifications chart above. Find the filter model number as previously determined. Make sure the inlet and outlet connections are suitable for your piping. Also check to be sure there will be adequate clearance for element replacement.
Your Guarantee of Exceptional Quality and Dependability

Filter Warranty

All filter housings are guaranteed to be free of defective materials and workmanship for a period of five (5) years from the date of shipment when used in compressed air applications. This warranty does not include elements, drain line components, gaskets, o-rings or any other types of seals, accessories or expendable items.

This warranty does not cover defects due to misapplication, modification, misuse, neglect, lack of normal maintenance, accidents or other exceptional circumstances.

Any warrantable material found to be defective will be repaired, replaced or refunded at Seller’s option, free of charge, provided notification is made within the above stated warranty period.

For Cool, Dry, Oil Free Compressed Air, You Can Rely On A Full Line Of Van Air Products

SINGLE TOWER DRYERS
The best vessel warranty in the industry tells you that Single Tower Dryers are built to last. Maintenance is minimal as the dryer has no moving parts. Standard models are available from 7 to 16,000 SCFM service.

REGENERATIVE DRYERS
Regenerative dryers supply the best possible protection for pneumatic instrumentation or process air. A -40°F pressure dew point is standard. Heatless dryers, from 3 through 5000 SCFM. Externally heated, blower purge dryers, from 350 through 10,000 SCFM. Internally heated dryers, from 150 through 3000 SCFM.

REFRIGERATED DRYERS
Performance proven in providing dependable dry air, Van Air refrigerated dryers are precision engineered for efficient, reliable, long-lasting service. Models are available from 10 SCFM to 7,500 SCFM.

AUTOMATIC DRAIN VALVES
Provides automatic draining of condensate.

For more information about Van Air products contact your local distributor, or our Lake City office. Put our more than 60 years of experience to work for you.

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