

### DAD-504 (130096) BREATHABLE AIR RETRO FIT KIT

**IMPORTANT:** Read and follow all **INSTRUCTIONS** and **SAFETY PRECAUTIONS** before installing, operating or maintaining this equipment. Keep this manual for future reference.

#### DESCRIPTION

The DAD-504 is designed to attach to an existing DeVilbiss DAD-500 Desiccant Air Dryer. The DAD-504 offers appropriate filtration and a connection for the attachment of a DeVilbiss Breathable Air Hose and Air Vizor™ supplied air breathing system.

#### SPECIFICATIONS

##### Charcoal Filter:

Air Inlet	1/2" NPT(F)
Air Outlet	1/2" NPT(F)
Air Flow Capacity	75 CFM
Maximum Operating Pressure	150 PSIG (10.3 Bar)
Maximum Temperature	150° F (65.6°C)
Manual Mechanical Drain	Standard
Pressure Differential Indicator	Standard
Aerosol Filter	.003 ppm./wt.
Particulate Filter	3.0 micron

##### Flow Thru Regulator:

Flow Thru Ports	1/2" NPT(F)
Regulated Ports	1/4" NPT(F)
Air Flow Capacity (regulated) with 100 PSI Inlet	28 CFM @ 60 PSI
Maximum Inlet Pressure	300 PSIG
Regulated Pressure	0-125 PSIG
Maximum Temperature	175° F (79.4°C)

#### BREATHING AIR REQUIREMENTS

Supplied breathing air, as defined by OSHA 29 CFR 1910.134i and NIOSH 42 CFR 84.141, MUST meet or exceed the following requirements for Type 1-Grade D breathable air, as defined in Compressed Gas Association (CGA-G7-1-1997):

**Oxygen** = 19.5-23.5% (Typical atmospheric levels)

**Oil (condensed)** = 5 mg/m (milligrams per cubic meter) maximum

**Carbon Monoxide (CO)** = 10 ppm (parts per million) max.

**Carbon Dioxide (CO<sub>2</sub>)** = 1000 ppm (parts per million) max. (Typical atmospheric levels)

**Odor** = The presence of a pronounced odor should render the air as unsatisfactory

It is up to the employer to assure that the air compressor is properly maintained, that the air compressor intake is located in a clean contaminate free location and that the air compressor is drawing in typical atmospheric air, meeting all of the national and local requirements for breathing air.

**This filter unit, when added to a DAD-500, does not remove or filter Carbon Monoxide (CO).** It is up to the employer to ensure that the level of CO does not exceed the maximum national or local allowed level. The recommended method to assure that the CO level is not exceeded is to install a carbon monoxide monitor and alarm.

**This filter unit, when added to a DAD-500, will only remove particulate matter, water, oil and odor.** This filter unit will meet the particulate matter, oil and odor requirements of Type 1-Grade D Breathable Air and Compressed Breathing Air, CSA-Z180.1 when:

- The filter unit is connected to a compressed air source:
  - The compressor is properly maintained
  - The air compressor intake is located in a clean contaminate free location
  - The air compressor is drawing in typical atmospheric air, meeting all of the national and local requirements for breathing air
- The filters are properly maintained
- A properly operating CO monitor is installed



**Risk of explosion or fire. Improper use can cause personal injury.**

• **This product is designed and intended for use in industrial compressed air systems only. Do not use for liquids or gasses other than air.**

• **Do not use where pressure or temperature can exceed rated operating conditions (see specifications).**

• **Regulated outlet pressure must never be set higher than the maximum operating pressure of the downstream air tool or equipment. An outlet pressure gauge should always be used.**



**Risk of illness or death. Carbon monoxide can cause nausea, fainting or death. Stop using if carbon monoxide is present. This unit does not remove carbon monoxide. A carbon monoxide monitor should be incorporated into your air supply line to warn of the presence of carbon monoxide.**

#### SAFETY PRECAUTIONS

This manual contains important information that all users must know and understand before using the equipment. This information relates to **USER SAFETY and PREVENTING EQUIPMENT PROBLEMS.**

To help you recognize this information, we use the following terms to draw your attention to certain equipment labels and portions of this manual. Please pay special attention to any label or information that is highlighted by one of these terms:



**Important information to alert you to a situation that might cause serious injury if instructions are not followed.**



**Important information that tells how to prevent damage to equipment, or how to avoid a situation that might cause minor injury.**

#### Note

Information that you should pay special attention to.



**WARNING**

**Risk of injury. Do not place unit in service without metal bowl guard installed. Filter units are sold only with metal bowl guards. To minimize the danger of flying fragments in the event of plastic bowl failure, guard must not be removed. If the unit is in service without the metal bowl guard installed, manufacturer's warranties are void and the manufacturer assumes no responsibility for any resulting loss. If unit has been in service and does not have a metal bowl guard, order one and install before placing back in service.**

**CAUTION**

**Certain compressor oils, cleaning agents and solvents may attack the plastic and rubber components used in the construction of this product. This product should not be used in conjunction with or in the vicinity of these materials. Read and follow material labels carefully. Please consult DeVilbiss if in doubt.**

**INSTALLATION – RETRO FIT KIT**

1. Be sure to read all "Cautions" and "Warnings" in this manual and on the unit before installation or using this equipment.
2. This unit is designed to fit a DeVilbiss DAD-500 desiccant air dryer. Installation on non-DeVilbiss desiccant dryers is not recommended, as we cannot assure the performance of those devices.
3. Shut off the air supply to the DAD-500 and bleed air from the system.
4. Separate the air filter, coalescing filter and nipple from the desiccant tank. (This might be a good time to change the desiccant beads, Part No. DAD-1).
5. Attach retro fit kit (DAD-504) to desiccant tank. Reattach air filter, coalescing filter and nipple to retro fit kit.
6. Position the filters in line with the desiccant tank, with the regulator gauge facing straight forward.

**Note**

Use PTFE tape on pipe plug threads and all threaded fittings to facilitate removal in the future. Do **not** use loctite or any material that may bond and make removal difficult.

**OPERATION**

After the system is installed and ready to use;

1. Attach breathable air hose to Q.D. on flow-thru regulator.
2. Attach air hose(s) to outlet valve.
3. Open main shut-off valve upstream of system.
4. Attach breathable air hose to supplied air respirator.
5. Adjust regulator (3) to read 60 PSIG (flowing air to the visor). The pressure should never be allowed to drop below 50 PSI in a flowing condition.

**MAINTENANCE**



**WARNING**

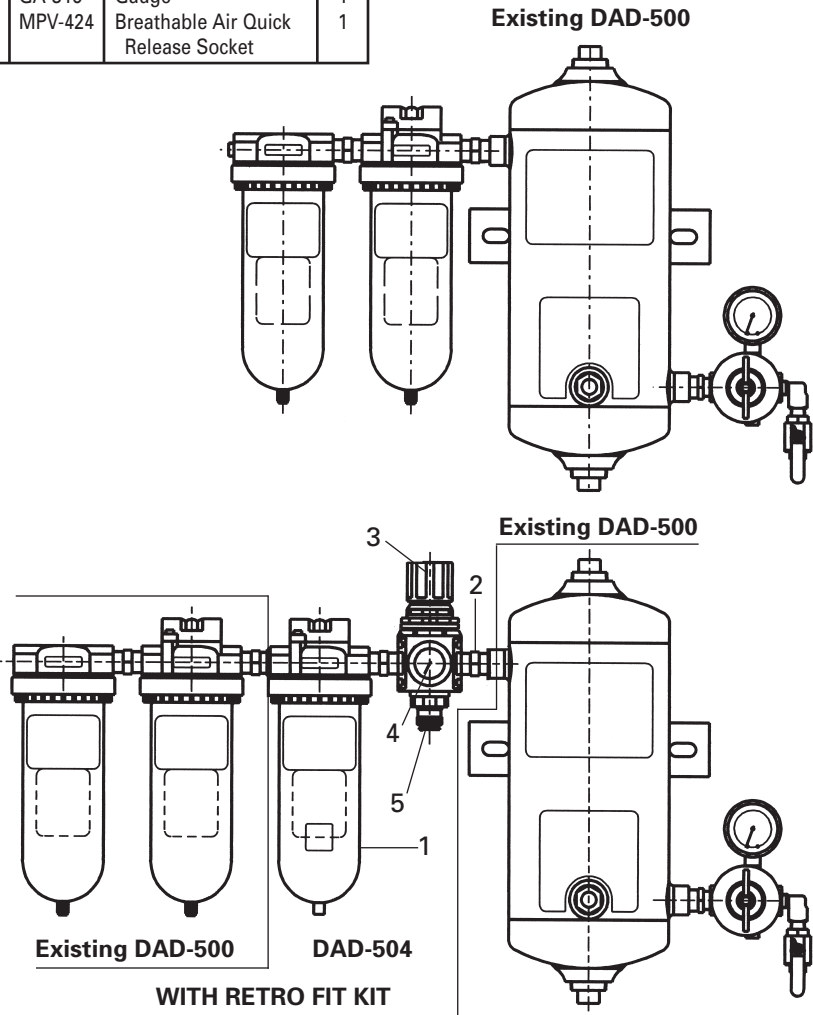
**Risk of injury. Components under pressure. Relieve air pressure before performing any maintenance.**

1. Check system at least once per shift to insure proper drainage. Look for water in the drain tubing.
2. Before performing maintenance on system, close main shut-off valve located upstream. Bleed off residual air in system.

**Figure 1 DAD-500 /DAD-504**

**PARTS LIST**

Ref. No.	Replacement Part No.	Description	Ind. Parts Req.
1	HAF-517	Charcoal Filter	1
2	—	Nipple	1
3	HAR-508	Flow-Thru Regulator	1
4	GA-316	Gauge	1
5	MPV-424	Breathable Air Quick Release Socket	1



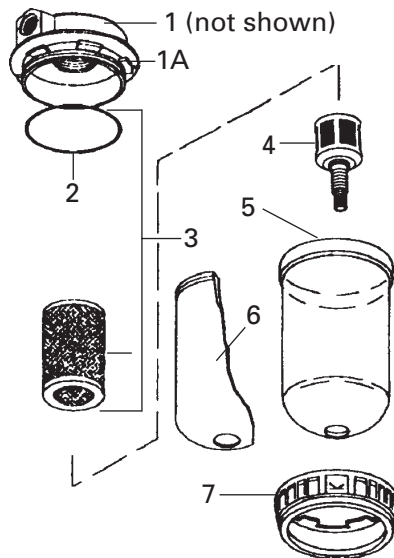
**MAINTENANCE – HAF-517  
CHARCOAL FILTER**

1. Before performing maintenance on unit, close any main shut-off valve located upstream of filter. Bleed off residual air in unit.
2. To open filter, press button located on clamp ring and rotate ring either clockwise or counterclockwise while pulling down on ring. The metal bowl guard and plastic bowl can then be removed from the filter body.
3. Remove the filter element by loosening counterclockwise. Clean or replace the filter element. Replace the charcoal element when it no longer removes oil vapor odors or when the red indicator is visible.
4. Inspect "O"ring for damage. Replace if necessary.
5. Inspect plastic bowl for signs of damage such as cracks, crazing or deterioration. Replace if necessary.

**HAF-517 Parts List**

Ref. No.	Replacement Part No.	Description	Ind. Parts Req.
1	HAF-404	Filter Change Ind. (Not shown)	1
1A	---	Body	1
2	---	O-Ring	1
3	HAF-36	Filter Element and O-Ring Kit	1
4	HAF-11	Manual Drain	1
5	HAF-8	Plastic Bowl	1
6	HAF-19	Metal Bowl Guard	1
7	HAF-409	Clamp Ring	1

**Figure 2 – HAF-517**



**MAINTENANCE – FLOW-THRU  
REGULATOR**

**CAUTION**

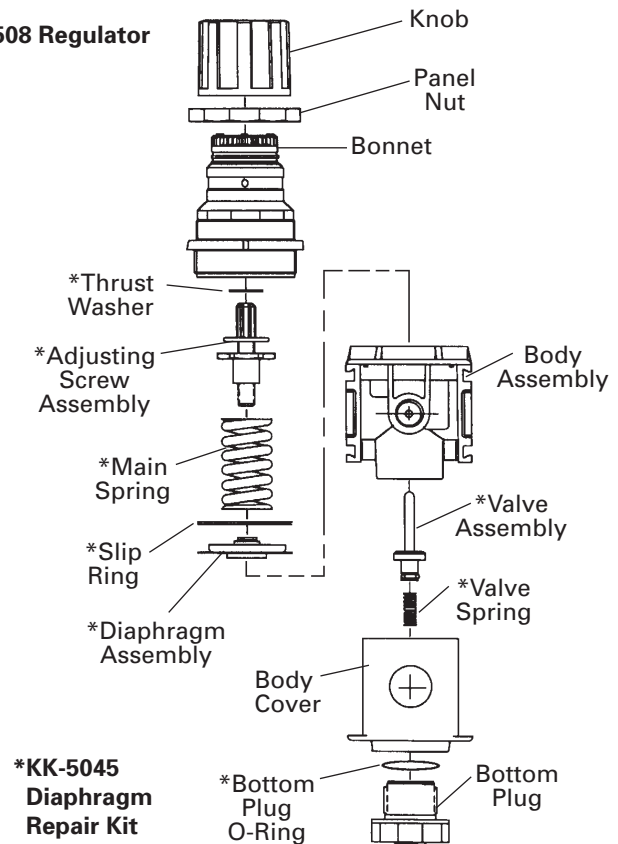
**Do not submerge regulator or components in solvent or use solvent to clean regulator parts. Damage may occur to regulator and components. Use a cloth dampened in warm, soapy water to clean exterior of regulator.**

**Note**

This unit may be serviced without removing the unit from the compressed air line.

1. Frequency of servicing depends largely on the condition of the compressed air system and the degree of contamination in the system.
2. Before attempting to service this product in-line, depressurize both the upstream and downstream sides of regulator.
3. Remove the bottom plug, valve spring and valve assembly. Inspect all seals and components for damage and replace as required. Clean seals and components with mild detergent and water. Use a clean, dry cloth to wipe any contamination from valve seal inside the body. Lubricate the valve stem and lower valve "O"ring seal with a light coat of MAGNALUBE-G or similar lubricant. Reassemble. Bottom plug torque should not exceed 25 in./lbs. (2.8 N-m).
4. To replace main spring or diaphragm, turn adjusting knob counterclockwise to remove all spring force, then remove bonnet. Remove the adjusting screw assembly, main spring, slip ring and diaphragm assembly. Inspect the diaphragm and the relief seat for damage and contamination. Replace diaphragm assembly if necessary. Clean the relief seat with a soft dry cloth. Reassemble in reverse order making sure the slip ring is properly positioned on top of the diaphragm. Bonnet torque should not exceed 120 in./lbs. (13.6 N-m).
5. Before returning unit to service, ensure that all seals have been properly reinstalled or replaced and components requiring torque values have been properly set.
6. If regulated pressure begins to creep (an uncontrolled rise in regulated pressure), it will most likely be caused by contamination on the valve seat.
7. If the unit leaks from the vent holes in the bonnet, it may be caused by contamination, deterioration or damage to the valve seat or diaphragm relief seat. Replace any damaged or worn components.

**Figure 3 – HAR-508 Regulator**



**MAINTENANCE – DESICCANT DAD-1**

1. Replace the desiccant when the humidity indicator changes to a pink color. Remove the pipe plug at the bottom of the tank. Allow the material to drain into a two (2) gallon or larger container.
2. Once all the material has been removed, replace the pipe plug (see "Note" following) and tighten securely (air tight).

**Note**

**Use PTFE tape on pipe plug threads and all threaded fittings to facilitate removal in the future. Do not use loctite or any material that may bond and make removal difficult.**

3. Replace the DAD-3 humidity indicator paper (supplied with DAD-1 Desiccant) by removing the DAD-400 humidity indicator. Pry out the old paper and push in the new paper (printed side facing away from the glass).
4. Remove the pipe plug on top of the unit.
5. Using a funnel (supplied with desiccant), fill the unit using DeVilbiss Desiccant Material Part No. DAD-1 (19-0831) until full.
6. Replace the pipe plug (see "Note" above) and tighten until air tight.
7. The humidity indicator will return to a blue color within five minutes.
8. The desiccant material should be disposed of properly.
9. Refer to the appropriate service bulletin for checking the filters and components.

**Note**

**A desiccant Tune-Up Kit Part No. DAD-600, is available. Contains the following parts to completely recondition a desiccant air station:**

Part No.	Description	Qty. Supplied
DAD-1	Desiccant	1
—	Humidity Indicator	1
HAF-6	#1 Filter Element and O-Ring	1

**WARRANTY**

This product is covered by DeVilbiss' 1 Year Limited Warranty.

**DeVilbiss Sales and Service: [www.devilbiss.com](http://www.devilbiss.com)**

**DeVilbiss**

DeVilbiss has authorized distributors throughout the world. For technical assistance or the distributor nearest you, see listing below.

**U.S.A./Canada Customer Service Office:**

195 Internationale Blvd., Glendale Heights, IL 60139  
 Toll-Free Telephone: 1-800-992-4657 (U.S.A. and Canada only)  
 Toll-Free Fax: 1-888-246-5732

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