



**HAF-503 150 CFM SEPARATOR FILTER**  
**HAF-508 150 CFM COALESCING FILTER**  
**HAF-509 SEPARATOR-COALESCING FILTER**  
**HFRL-509 & 512 80 CFM FILTER-REGULATOR**  
**HFRL-511 & 513 120 CFM FILTER-REGULATOR**



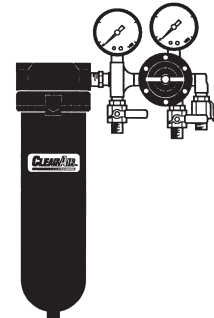
**HAF-503**



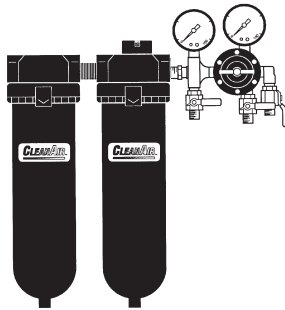
**HAF-508**



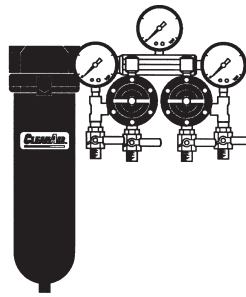
**HAF-509**



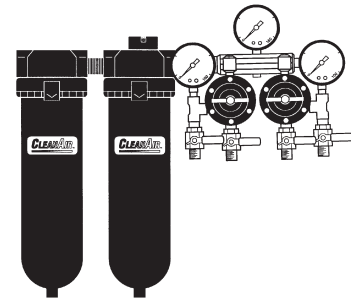
**HFRL-509**



**HFRL-512**



**HFRL-511**



**HFRL-513**

Models	Max. CFM	Filtering Capacity	Regulated Outlets	Main Outlet	Outlet Thread Size
<b>Filters Only</b>					
HAF-503 Separator	150	5 micron	—	—	—
HAF-508 Coalescer	150	.01 micron	—	—	—
HAF-509 Separator- Coalescer	150	.01 micron	—	—	—
<b>Filter - Regulators</b>					
HFRL-509 Separator	80+	5 micron	2	1	1/4" NPS(M)
HFRL-511 Separator	120+	5 micron	4	1	1/4" NPS(M)
HFRL-512 Separator-Coalescer	80+	.01 micron	2	1	1/4" NPS(M)
HFRL-513 Separator-Coalescer	120+	.01 micron	4	1	1/4" NPS(M)

**IMPORTANT! DO NOT DESTROY**

It is the Customer's responsibility to have all operators and service personnel read and understand this manual.

**READ ALL INSTRUCTIONS BEFORE OPERATING THIS PRODUCT.**

### SAFETY PRECAUTIONS

This manual contains important information that ALL users should 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. Pay special attention to any label or information that is highlighted by one of these terms:

#### WARNING

**Important information - a hazard that may cause serious injury or loss of life.**

#### CAUTION

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

#### Note

Information that you should pay special attention to.

### DESCRIPTION

The CleanAir air control units are designed to remove dirt, pipe scale, and most liquid aerosol. The HAF-503 150 CFM separator filter includes a 5 micron filter element. The HAF-508 150 CFM coalescing filter includes a .01 micron filter element. Both filters include an automatic drain which expels liquids which accumulate in the filter bowl.

### SPECIFICATIONS

Filter Port Sizes	3/4" NPT(F)
Maximum Inlet Pressure	150 PSIG (10.3 Bar)
Maximum Temperature	150° F (65.6° C)

#### WARNING

**Risk of personal injury.  
Risk of property damage.**

**Except as otherwise specified by the manufacturer, this product is specifically designed for compressed air service and use with any other fluid (liquid or gas) is a misapplication. For example, use with or injection of certain hazardous gases in the system (such as oxygen or liquid petroleum gas) could be harmful to the unit or result in a combustible condition that may cause fire or explosion. Manufacturer's warranties are void in the event of misapplication and manufacturer assumes no responsibility for any resulting loss.**

### INSTALLATION

#### CAUTION

**Certain solvents, paints and chemicals may attack plastic bowl and can cause bowl failure. Do not use near these materials.**

#### WARNING

**Do not place unit in service without metal bowl guard installed. Plastic bowl 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.**

1. Be sure to read all "**Warnings**", "**Cautions**" and "**Notes**" in this manual and on unit before installing or using this equipment.
2. Install filter as close as possible to point where air is being used. Install main air shut-off valve and standard pipe union (supplied by user) upstream of filter to allow maintenance to unit.
3. Install unit with air flow through filter in direction of arrow on top of unit.
4. Minimum 3/4" piping is recommended. Avoid using fittings, couplings, etc. that restrict air flow.
5. A 3/4" street elbow will be needed to allow vertical pipe installation. Mount filter in a vertical position.

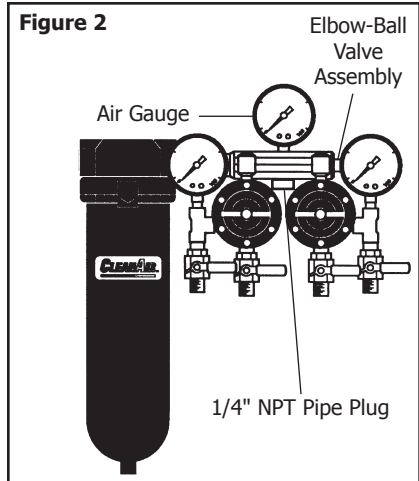
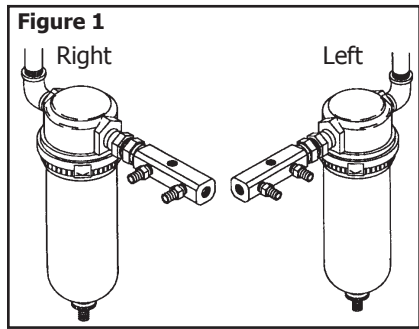
6. Do not install filter in an application where the pressure drop will exceed 20 psi. For example, a quick opening valve located upstream from the filter could cause a momentary pressure drop in excess of 20 psi.
7. Maximum inlet pressure and operating temperature is 150 PSIG (10.3 bar) and 150° F (65.6° C).
8. A 6 ft. length of vinyl tubing is shipped loose with the unit. Slide over automatic drain which protrudes from bottom of bowl. Place other end of vinyl tubing into appropriate receptacle (i.e. below booth grating, can, etc.). Prevent vinyl tubing from becoming kinked which would prevent free movement of liquids discharged from the automatic drain.
9. An optional manual drain (HAF-11) is supplied loose in the carton (see Item 10 or 11, Fig. 4 or 5). If desired, this can be installed in place of the automatic drain.

### Model HFRL-511 or HFRL-513

#### Instructions:

In addition to Steps 1-9 above;

10. Install manifold into swivel connection on outlet of filter. Note pipe sealant is not required. Orient manifold for right or left hand operation (See Fig. 1). Tighten swivel connection.
11. Install 0-160 psi air gauge into 1/4" NPT(F) port in top of manifold using pipe sealant (See Fig. 2).



12. Install 1/4" NPT pipe plug into port on bottom of manifold opposite the air gauge using pipe sealant (See Fig. 2).
13. Install assembled elbow - ball valve into end of manifold using pipe sealant (See Fig. 2).
14. Attach the two regulator - gauge - ball valve assemblies to the manifold (do not use pipe sealant). Arrange according to right or left hand operation. Tighten swivel fittings.
15. Install two "T" handles into regulators.

## OPERATION

After the unit is installed and ready to use;

1. Attach air hose(s) to outlet ball valve(s), selecting regulated and/or non-regulated according to the application.
2. Open main shut-off valve upstream of filter.
3. Main line air pressure is monitored by the top air gauge.
4. Adjust regulator(s) to desired setting by turning "T" handle in or out.
5. Open ball valve(s) to supply air to spray gun or tool being used. With air flowing, readjust air pressure at regulator if necessary.
6. After use, shut off ball valve(s) and bleed off residual air in hose(s).

## Note

The filter change indicator (on coalescer filter) only operates when air is flowing. It is always green with no air flow.

## MAINTENANCE

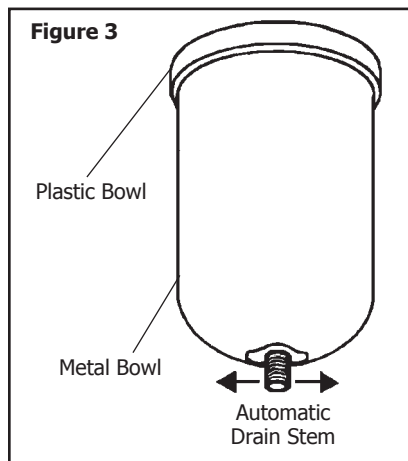
### CAUTION

**Certain solvents, paints and chemicals may attack plastic bowl and can cause bowl failure. Do not use near these materials. When bowl becomes dirty, wipe only with a clean, dry cloth. Immediately replace any crazed, cracked, damaged or deteriorated plastic bowl with a new plastic bowl. Reinstall metal bowl guard.**

1. If bowl is equipped with manual drain, drain bowl at least once per shift. Units with automatic drain will drain automatically.
2. Before performing maintenance on unit, close main shut-off valve located upstream of filter. Bleed off residual air in unit.
3. To open filter, press button located on clamp ring and rotate ring either clockwise or counterclockwise. The metal bowl guard and plastic bowl can then be removed from the filter head.

## Note

If you encounter difficulty separating the plastic and metal bowls, simply push the auto-matic drain stem (by hand) to either side as shown in Figure 3. Do not strike the stem with any tool. Damage may occur.



4. Remove the filter element by loosening the baffle counterclockwise. Clean or replace the filter element. The element can be cleaned by blowing off with a duster gun (clean from inside out). Frequency of element cleaning/replacement will depend upon air quality, air usage, and condition of the air piping. It is recommended to check and clean/replace the element every 3-6 months. The coalescing filter element should be replaced when the indicator turns red.
5. Inspect o-ring (2) for damage. Replace if necessary.
6. Inspect plastic bowl for signs of damage such as cracks, crazing or deterioration. Replace if necessary. See "Caution" under **Maintenance** section.

### WARNING

**Do not place unit in service without metal bowl guard installed.**

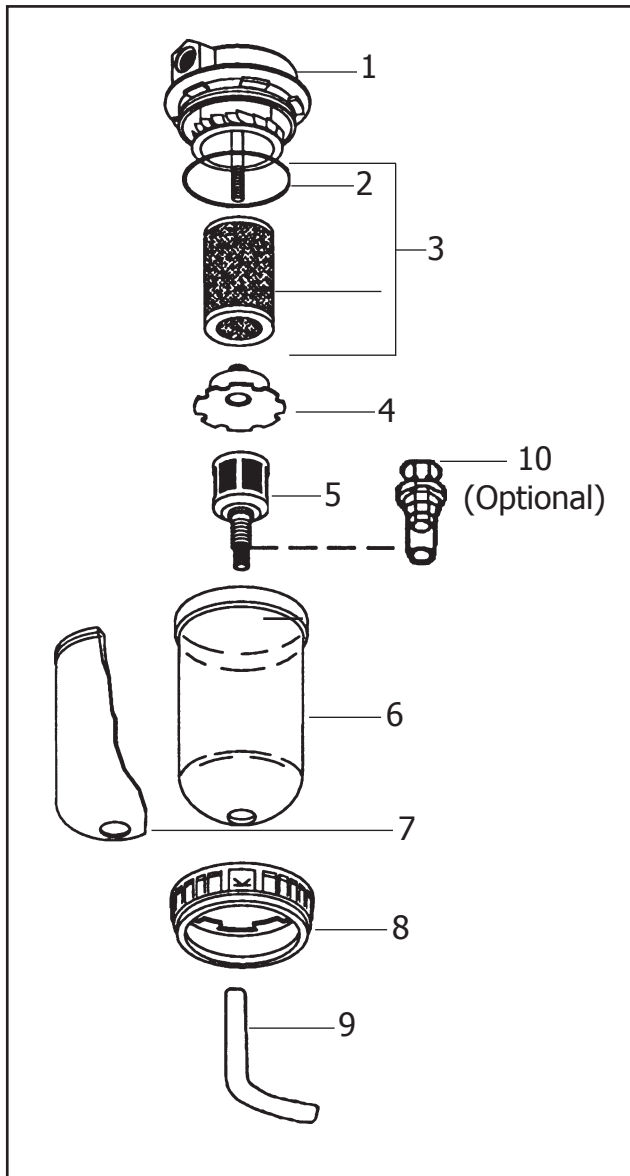
7. Before placing unit back into service, make sure plastic bowl and metal bowl guard are properly installed and securely locked in place.
8. Confirm automatic drain operates properly after unit is in operation. Replace if necessary.

**PARTS LIST - Model HAF-503, Figure 4**

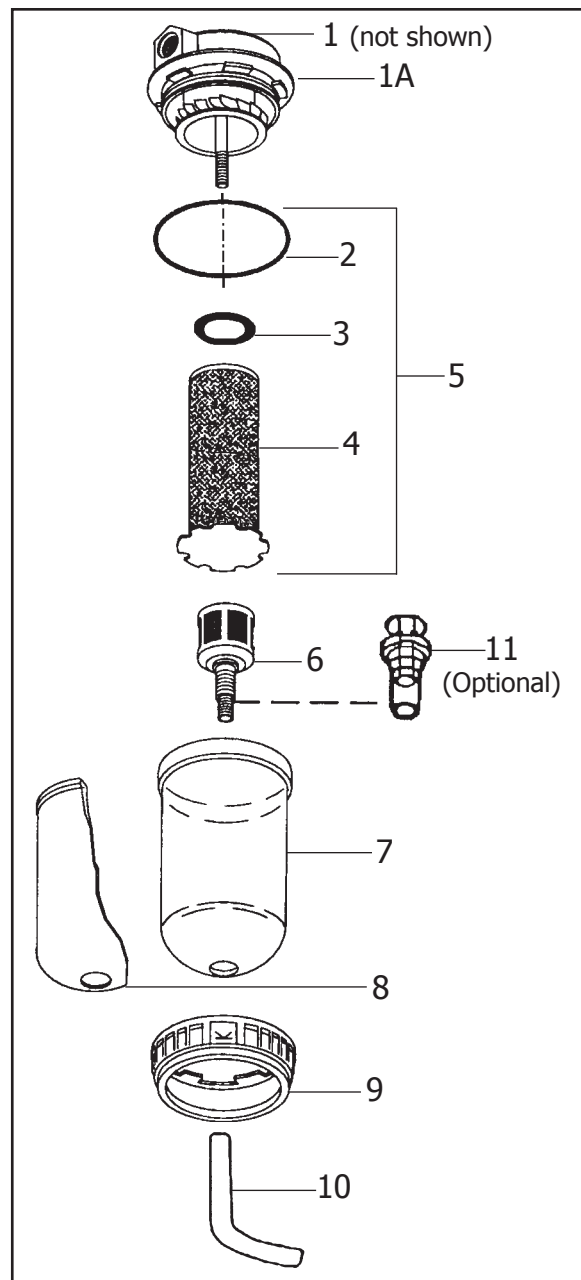
Ref No.	Replacement Part No.	Description	Individual Parts Required
1	---	Cover	1
2	---	O-Ring	1
3	HAF-15	Filter/O-ring Kit	1
4	HAF-25	Baffle	1
5	HAF-18	Automatic Drain (Standard)	1
6	HAF-7	Plastic Bowl	1
7	---	Metal Bowl Guard	1
8	---	Clamp Ring	1
9	HAF-27	1/2 x 3/8 Vinyl Tubing, 6 ft.	1
10	HAF-11	Manual Drain (Optional, shipped loose)	1

**PARTS LIST - Model HAF-508, Figure 5**

Ref No.	Replacement Part No.	Description	Individual Parts Required
1	HAF-404	Filter Change Indicator (Not shown)	1
		Cover	1A
2	---	O-Ring	1
3	---	Gasket	1
4	---	Filter	1
5	HAF-38	Filter Kit	1
6	HAF-18	Automatic Drain (Std.)	1
7	HAF-7	Plastic Bowl	1
8	---	Metal Bowl Guard	1
9	---	Clamp Ring	1
10	HAF-27	1/2 x 3/8 Vinyl Tubing, 6'	1
11	HAF-11	Manual Drain (Optional, shipped loose)	1



**Figure 4 HAF-503 150 CFM Separator Filter**



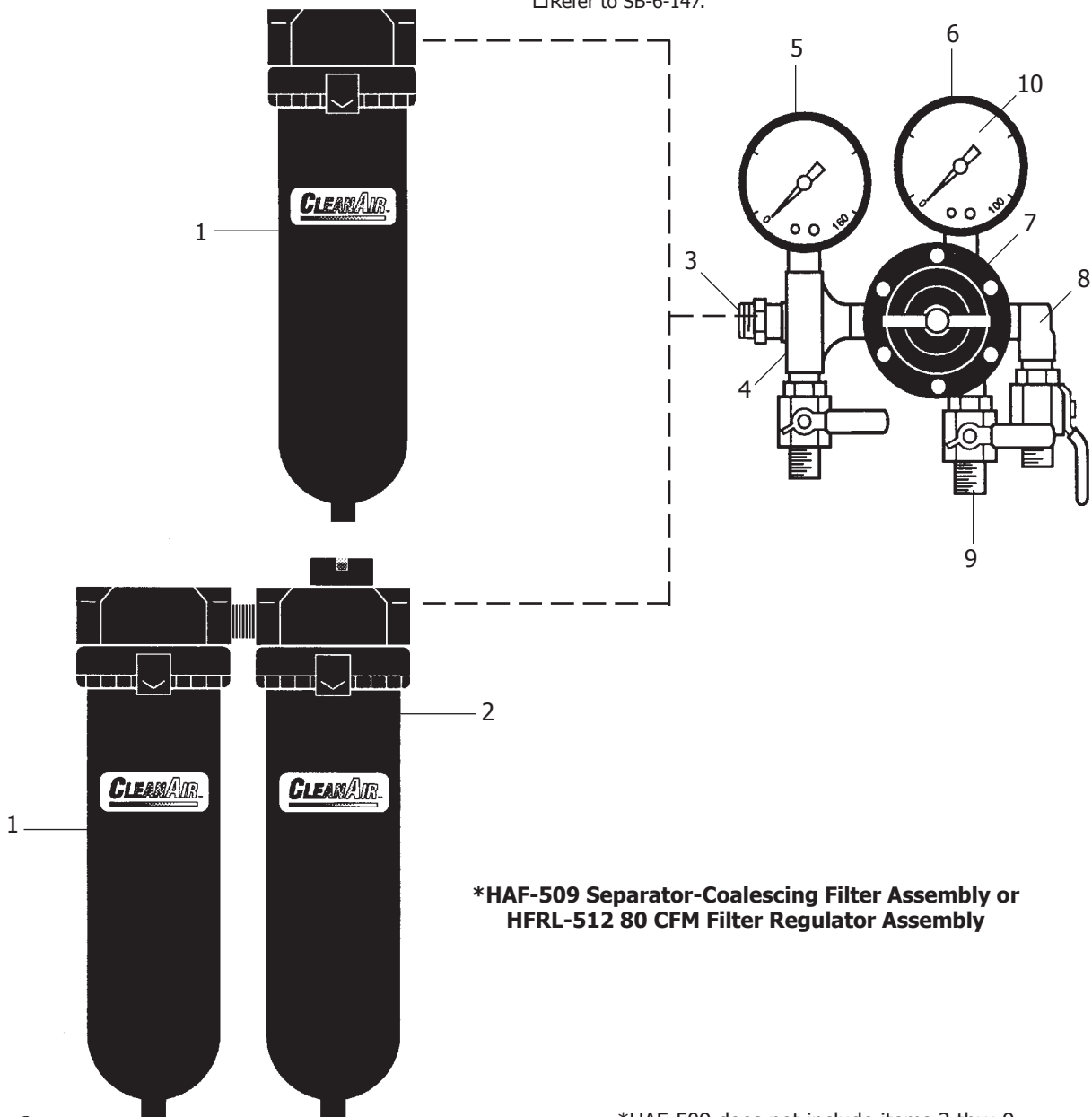
**Figure 5 HAF-508 150 CFM Separator Filter**

**PARTS LIST - Models HFRL-509 and HFRL-512 Figure 6**

Ref. No.	Replacement Part No.	Description	Individual Parts Required
1	HAF-503	Separator Filter (See Figure 4)	1
2	HAF-508	Coalescer Filter (See Figure 3)	1
3	---	3/4" (M) x 1/2" (F) Reducer Bushing	1
4	HAF-21	Cross Manifold	1
5	GA-288	Air Gauge, 0-160 psi	1
6	83-2727	Air Gauge, 0-100 psi	1
□7	HAR-507	Air Regulator	1
*8	---	1/4" Street Elbow 90°	1
9	VA-542	Ball Valve	3
•10	83-2290	Glass Lens	

**HFRL-509 80 CFM Filter Regulator Assembly**

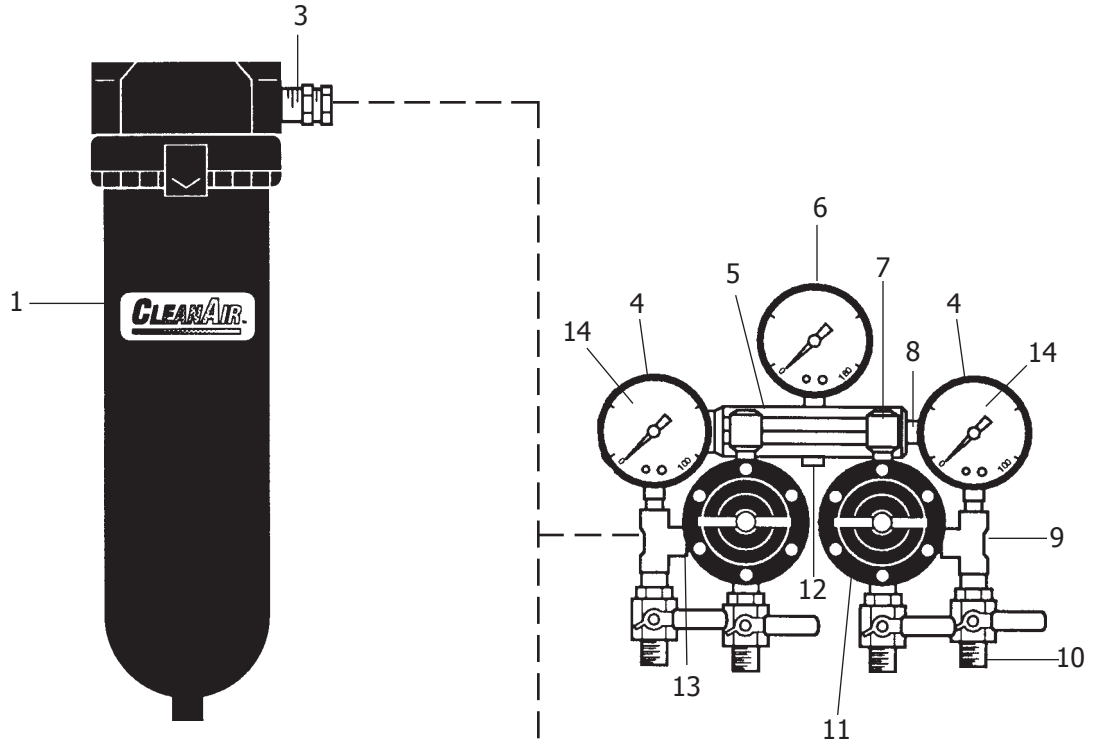
\* Purchase locally.  
 • Available separately – order 83-2290.  
 □ Refer to SB-6-147.



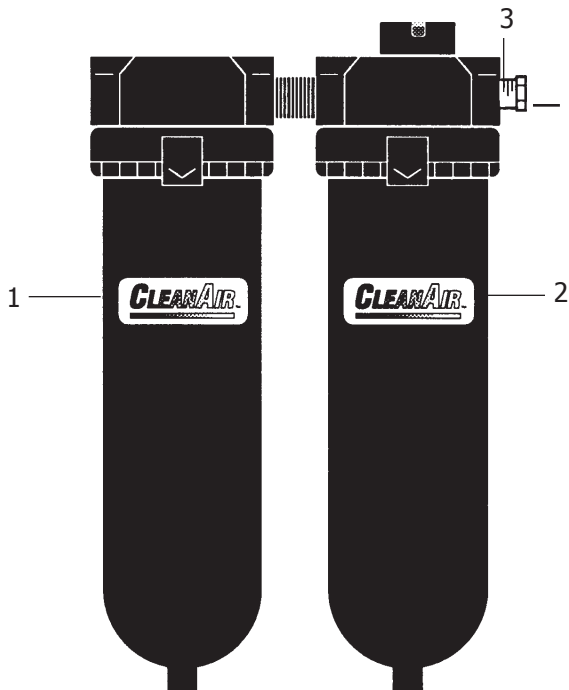
**Figure 6**

\*HAF-509 does not include items 3 thru 9.

Figure 7



HFRL-511 120 CFM Filter Regulator Assembly



HFRL-513 120 CFM Filter Regulator Assembly

PARTS LIST - Models HFRL-511 and HFRL-513 Figure 7

Ref No.	Replacement Part No.	Description	Individual Parts Required
1	HAF-503	Separator Filter (See Figure 3)	1
2	HAF-508	Coalescer Filter (See Figure 4)	1
3	SSP-58-ZN	3/4" Swivel Pipe Adapter, Straight	1
4	83-2727	Air Gauge, 0-100 psi	2
5	HAF-403	Manifold Assembly	1
6	GA-288	Air Gauge 0-160 psi	1
7	SSP-57-ZN	3/8" Swivel Pipe Adapter, 90° Elbow	2
*8	---	1/4" Street Elbow 90°	1
*9	---	1/4" Straight Tee	2
10	VA-542	Ball Valve	5
□11	HAR-507	Air Regulator	2
12	---	1/4" NPT Pipe Plug	1
13	---	1/4" Close Nipple	2
•14	83-2290	Glass Lens	

\* Purchase locally.  
 • Available separately – order 83-2290.  
 □ Refer to SB-6-147.

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**ACCESSORIES****HAF-408 Bracket Assembly Kit -**

Used with HAF-503, HAF-508, HAF-509,  
HFRL-509, HFRL-511, HFRL-512 and  
HFRL-513.

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## WARRANTY POLICY

This product is covered by Carlisle Fluid Technologies' materials and workmanship limited warranty. The use of any parts or accessories, from a source other than Carlisle Fluid Technologies, will void all warranties. Failure to reasonably follow any maintenance guidance provided may invalidate any warranty.

For specific warranty information please contact Carlisle Fluid Technologies.

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For technical assistance or to locate an authorized distributor, contact one of our international sales and customer support locations.

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