

# *Walker Engineering Enterprises*

## **AIRSEP CCE SYSTEM**

### **INSTALLATION INSTRUCTIONS FOR A DETROIT DIESEL 8 V 92 DUAL TURBO MARINE ENGINE**

KIT #KWCCE 8V92-2 (REF. DRWG.DSG2) (3/27/2008)

#### 1. List of Parts Included In Kit

<u>Part Description</u>	<u>Quantity</u>	<u>Part #</u>
Walker AirSep (9" Filters) (25" Restriction Indicator)	2	90-1153
Vacuum Regulator Assembly	2	PR2002
Drain Check Valve	2	MD105
1/2" Drain Hose (60" length)	2	CD285
1-1/4" Flex Hose (30" length)	2	CD600
1-1/4" 90° Elbow	2	CD2761
1/2" Hose Clamp #3	8	CD291
1-1/4" Hose Clamp #20	8	CD299
3/8" NPT x JIC-8 Fitting x 45°	2	CD6165
1/2" Barb x JIC-8 Swivel Fitting	2	CD621

#### 2. Engine Preparation Prior To Installing The AirSePs

To receive optimum performance from your engine and the maximum benefits from the AirSep **it is advisable to clean the air induction system of the engine**, including the aftercooler or intercooler.

Walker Engineering **suggests** that you take a Manometer reading off the crankcase before and after AirSep installation. Most engines will read positive crankcase pressure before installation of the Walker AirSep and negative (or a significant reduction) after **proper** installation.

#### 3. Installation Instructions

The following instructions must be followed for the proper installation of each of the two AirSePs on a Detroit Diesel 8V92 Dual Turbo Engine.

(a) From the turbo charger, remove the existing air cleaner, silencer and hump hose. Disconnect and remove the existing breather tube from the engine breather. Also remove any existing brackets.

(b) With the Hump Hose, attach the AirSep unit to the Turbo inlet as indicated in the attached diagram. The hump hose may have to be trimmed to enable the AirSep drain to clear obstructions on the engine. The 1/2" oil drain outlet must be on the bottom. It is important to note that the 1/2" drain must be perpendicular to the axis of the AirSep (it should be pointed straight down). If the position of the 1/2" drain deviates more than 5° from perpendicular the AirSep will not operate properly.

(c) The AirSep is provided with an adjustable mounting bracket with vibration isolation dampers installed. The installer should fabricate a bracket for the engine that attaches to the AirSep bracket for support. The distance between the holes on the AirSep bracket is 2,3/4" with the hole diameter sized for 3/8" bolts.

(d) Locate the valve cover breather. The valve cover breather should be turned so that it faces or points at the AirSep. Then, make the following hose connections.

**It is important to note that the hose lengths suggested in these instructions may have to be shortened to accommodate a particular engine. The hose lengths provided should be trimmed as required.**

(1) Connect the 1-1/4" 90° elbow to the end of the Vacuum Regulator (Note, arrow on regulator should point toward the AirSep inlet) and tighten the clamp. See diagram.

(2) Connect the 1-1/4" flex hose (30" long) to the other end of the Vacuum Regulator Assembly and tighten the clamp. See diagram.

(3) Connect the end of the 1-1/4" 90° elbow (the one attached to the Vacuum Regulator) to the AirSep and tighten clamp. See diagram.

(4) Connect the end of the 1-1/4" flex hose (the one attached to the Vacuum Regulator) to the valve cover breather, trim to fit and tighten the clamp. See diagram.

**Note: The PR2002 Vacuum Regulator should be installed with the cover up. However the unit can be positioned with the inlet and outlet pipes at an angle.**

(e) The oil separated by the AirSep must be drained from the AirSep through the check valve back into the crankcase. In most cases this can be done through an auxiliary plug located on the crankcase. The auxiliary plug selected should ideally be located above the oil level in the block. Remove the plug and insert the 3/8"NPT by 1/2" barb. If the plug you have selected is larger than the 3/8" end of the barb, you may have to obtain a brass reducer. On some engines a plug may not be available or may be located in a position that will not allow the separated oil to gravity feed through the check valve and back into the block. If

this situation should arise, check to see if there is an auxiliary dip stick hole through which the oil can be returned.

If neither a plug or the auxiliary dip stick hole is available, it may be necessary to weld a small Y on to the existing dip stick holder. The separated oil can then run down the existing dip stick tube.

(f) The check valve must be installed between the AirSep drain and the point that the separated oil is returned to the crankcase. The check valve should be installed in a vertical position close to the point where the oil is returned to the crankcase but above the engines normal operating oil level.

(g) After locating the lowest point where the check valve can be installed, using the 1/2" drain hose connect the top of the check valve to the AirSep drain.

Make sure the check valve is installed with arrows pointed down. If the check valve is installed up side down it will not operate and oil will not drain out of the AirSep.

It is imperative that the drain check valve not be at more that a 30° angle off of vertical.

Installation of the check valve near the point the separated oil is returned to the crankcase is important.

Be sure there are no low spots in the 1/2" line from the AirSep drain to the check valve or from the check valve to the point oil is returned to the crankcase.

(h) Tighten any clamps not previously tightened. **Be very careful not to over tighten any clamp placed on the AirSep.** Over tightening a clamp on the AirSep will damage the unit.

(i) **Note.** The AirSep is a closed crankcase system. **Be sure all openings into the engine (such as the oil filler cap, the dip stick hole and any other openings) are closed off.** If they are not, the AirSep will not operate properly.

**(j) Repeat instructions (a) through (i) to complete the installation of the second AirSep.**

### **AIR FILTER SERVICE:**

Carefully review the enclosed maintenance requirements for the AirSep filter. If the air restriction gauge on the AirSep turns red the air filter must be cleaned or replaced. The air filter supplied with the AirSep can under normal circumstances be cleaned and re-oiled up to three times. Cleaning and re-oiling Kits, part # DDF 9000, are sold by Walker Engineering and our Dealers.

Replacement air filter: #40-1051

### **COALESCING FILTER SET SERVICE:**

The coalescing filter set will generally last about 250-500 hours of use. You will know that you **MUST** service the internal elements, when some blowby is emitted from the regulator relief valve.

When this occurs please order replacement filter set #40-2010.

Under no circumstances should 1000 hours of use be exceeded for any one coalescing filter set.

### **\*\*\* SPECIAL OPERATION NOTICE \*\*\***

Most engine manufactures recommend that crankcase pressure readings be taken at regular intervals.

The AirSep is designed to capture the fine oil mist found in blowby and may increase crankcase pressure slightly if the coalescing element is not serviced on schedule.

Be sure to change elements as prescribed and monitor crankcase pressure to verify when the elements **MUST** be replaced.

If you have any questions during installation of the AirSep  
please call:

Walker Engineering Enterprises

(818) 252-7788 (Phone)

(818) 252-7785 (Fax)

visit the Walker Airsep website: [www Walker Airsep.com](http://www.WalkerAirsep.com)

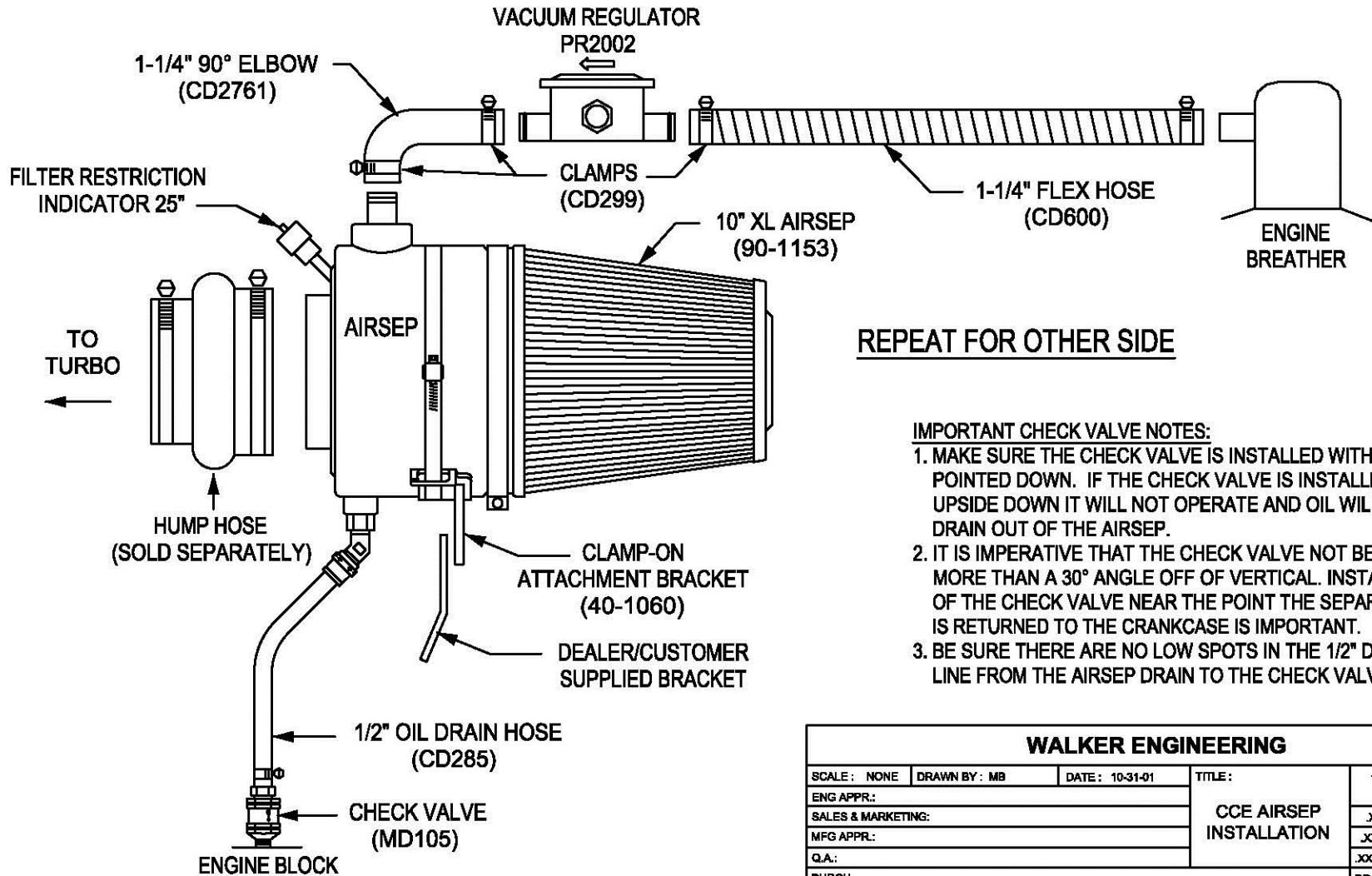
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NOTE:  
AIR-SEP MUST BE MOUNTED WITH  
THE DRAIN AT THE BOTTOM.



## - AIRSEP CCE SYSTEM - INSTALLATION INSTRUCTIONS FOR A DETROIT DIESEL 892 DUAL TURBO MARINE ENGINE

NOTE: The Vacuum Regulator should be mounted horizontal. the vacuum regulator is clearly marked with the direction of flow.



REPEAT FOR OTHER SIDE

**IMPORTANT CHECK VALVE NOTES:**

1. MAKE SURE THE CHECK VALVE IS INSTALLED WITH ARROWS POINTED DOWN. IF THE CHECK VALVE IS INSTALLED UPSIDE DOWN IT WILL NOT OPERATE AND OIL WILL NOT DRAIN OUT OF THE AIRSEP.
2. IT IS IMPERATIVE THAT THE CHECK VALVE NOT BE AT MORE THAN A 30° ANGLE OFF OF VERTICAL. INSTALLATION OF THE CHECK VALVE NEAR THE POINT THE SEPARATED OIL IS RETURNED TO THE CRANKCASE IS IMPORTANT.
3. BE SURE THERE ARE NO LOW SPOTS IN THE 1/2" DRAIN LINE FROM THE AIRSEP DRAIN TO THE CHECK VALVE.

**WALKER ENGINEERING**

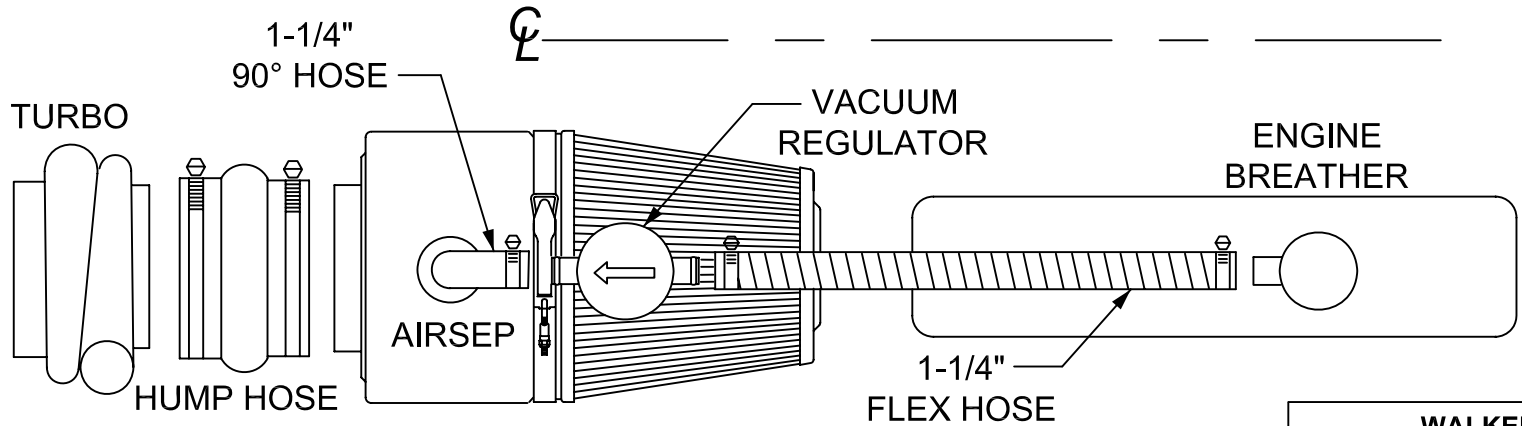
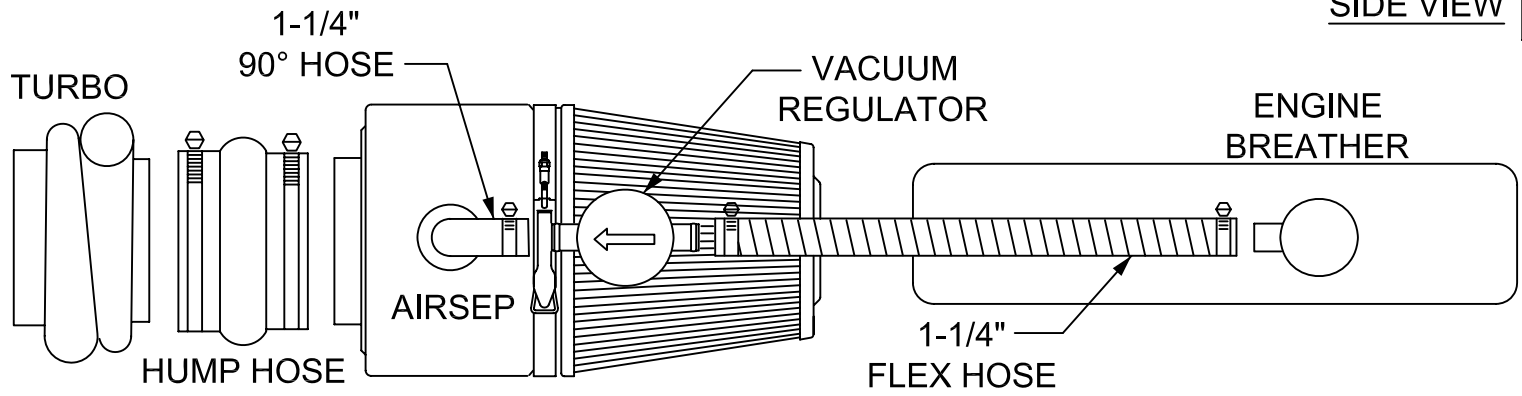
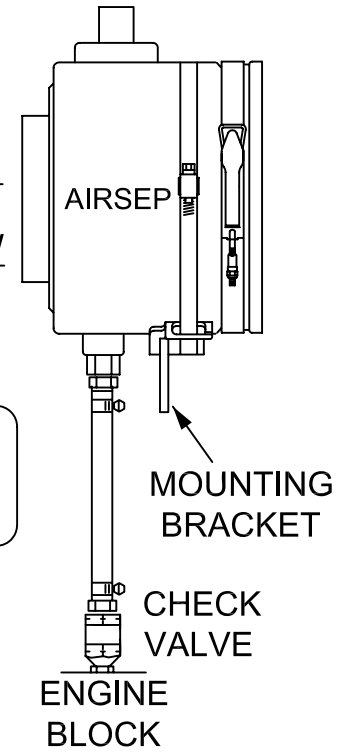
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SALES & MARKETING:				.XX = ±
MFG APPR:				.XXX = ±
Q.A.:				DRAWING NO.:
PURCH:				<b>DSG2</b>
PART NUMBER: KWCCE8V92-2		MATERIAL:		

NOTE:  
AIRSEP MUST BE MOUNTED WITH  
THE DRAIN AT THE BOTTOM.

5 DEGREES MAX

# - AIRSEP CCE SYSTEM - INSTALLATION SCHEMATIC FOR A DETROIT DIESEL 8V92 DUAL TURBO MARINE ENGINE

**OIL DRAIN  
DETAIL  
SIDE VIEW**

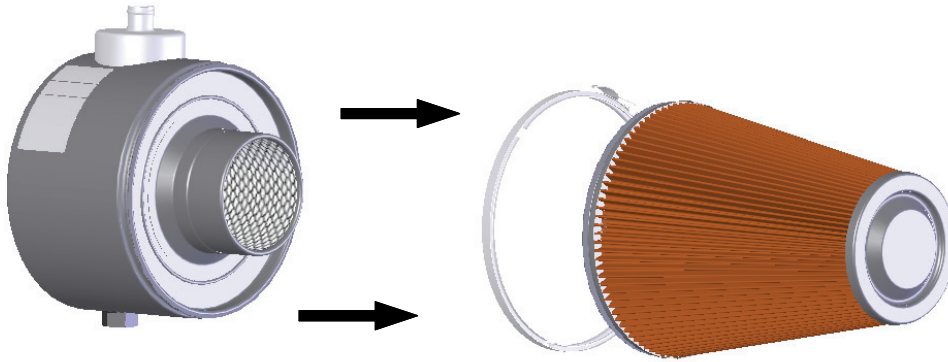


**PLAN VIEW**

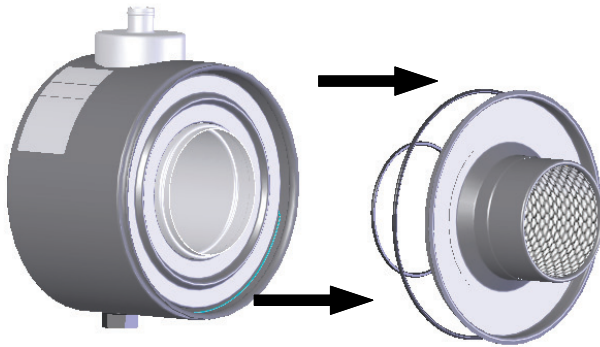
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# CCE SERVICE PROCEDURE

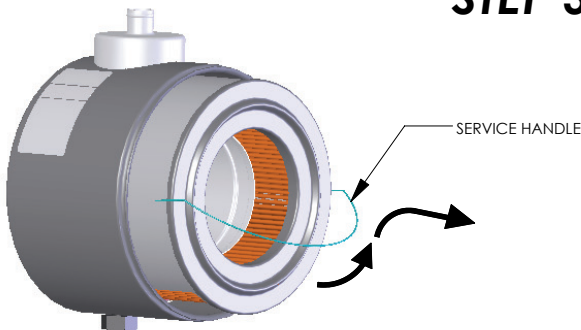
**STEP 1** Remove v-band Clamp and airfilter.



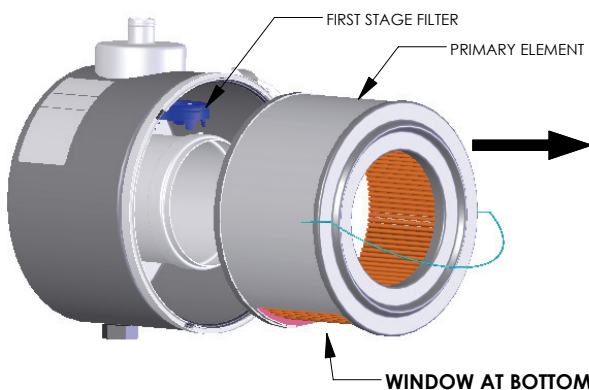
**STEP 2** Carefully remove silencer lid and o-rings.



**STEP 3** Carefully raise service handle on primary element. Pull out of housing with equal force.



**STEP 4** Once primary element is removed, reach inside housing and pull first stage element down. (Discard both elements and replace with new). Reassemble by placing o-rings, silencer lid, v-band and air filter back into place.



**IMPORTANT:** Drainage window MUST be positioned at bottom of primary element or system will malfunction. BOTH first stage and coalescing elements MUST be replaced at the same time.



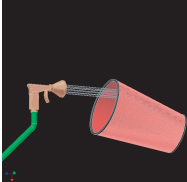
## AIR FILTER CLEANING INSTRUCTIONS



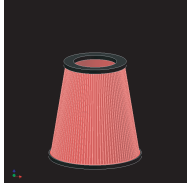
**1) PRE-CLEANING**  
Remove air filter from AIRSEP. Tap filter element to dislodge any large dirt particles. Gently brush with a soft bristle brush.



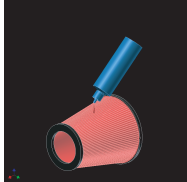
**2) SPRAY ON CLEANER**  
Spray liberal amount of cleaning solution onto entire filter element and allow to soak for 10 minutes.



**3) RINSE OFF**  
Rinse off the element with low pressure water. Always flush from the clean side to dirty side. This removes the dirt and does not drive it into the filter.



**4) DRYING THE FILTER**  
Always dry naturally. After rinsing, shake off all excess water and allow the element to air dry naturally or in the sun.



**5) RE-OILING THE FILTER**  
After cleaning air filter always re-oil before using. Apply oil down each pleat. Wait ten minutes and re-oil any light visible spots

**6) CLEAN VACUUM REGULATOR/LIMITER**  
Using a slot head screwdriver, loosen clamp and remove filter. Then follow steps 1 through 5. To clean the Vacuum Limiter do not attempt to remove the filter. Remove the entire vacuum limiter and follow steps 1 through 5.

**7) AIR FILTER INSTALLATION**  
Reinstall air filter on AIRSEP. Use Walker Air Filter Sealing Compound (CD955) when reinstalling air filter. Be sure to inspect springs and replace if worn.

## FAQ's and Air Filter Cleaning Tips

This kit cleans and oils up to four (4) 9x12 or equivalent sized filters.

**How often do I need to clean my air filter?** You should clean your air filter every 250 to 300 hours, or every year whichever comes first.

**How often should I replace my air filter?** Replace your air filter after four (4) cleanings or every 3 or 4 years depending on condition of filter.

**Is it better for my engine if I clean the air filter more often?** No, follow the cleaning interval listed above. Cleaning too often will impair the vacuum action of the AIRSEP.

**Can I use other liquids to clean and oil my air filter?** No, your AIRSEP air filter may be damaged by harsh detergents or liquids other than the recommended cleaner in this kit. Other oils may be too light or too heavy to properly capture airborne dirt. Use the appropriate Walker kit to clean and recondition your standard or blue air filters.

### CAUTION NEVER CLEAN USING:

- Gasoline
- Part Cleaner Solvents
- Caustic Cleaning Solutions
- Strong Detergents
- High Pressure Water
- High Pressure Air
- Steam Cleaners

### NEVER OIL FILTER:

- Using Transmission Fluid
- Using Motor Oil
- Using Diesel Fuel
- Using WD-40
- Using Other Oils





9255 San Fernando Road - Sun Valley, CA 91352 - P 818-252-7788 - F 818-252-7785

## AirSep Air Filter Cleaning Kit Guide



Look For  
The RED  
Dot On The  
Box

**DDF9016** Standard Air Filter  
Cleaning Kit  
(For all **RED** air filters)

**AAF1016** Air Filter Cleaning Kit  
Spray on Air Filter Oil!  
(For all **RED** air filters)

Each Kit Contains: (1) 32 OZ Cleaner Bottle with pump spray applicator and (1) 12 OZ Oil Bottle or (1) 12 OZ Spray. Look for the **RED** and **BLUE** colored dots on the boxes to identify the kit you need.

Air Filter Sealing Compound  
PN: CD959



Spring Installation Tool  
PN: ST500196



Shop sizes of our Air Filter Oil  
and Cleaner are also available.  
Red Oil, PN: MDO316  
Cleaner, PN: MDC316



Look For  
The BLUE  
Dot On The  
Box

**BAF1016** Air Filter Cleaning Kit  
for all Blue air filters.