

## Filter Service

Effective fluids filtration is vital to the longevity and performance of your Wagner. See the previous section on preventive maintenance for the scheduled intervals for filter element replacement where applicable.

Some filter elements (the air cleaner elements, for example) do not have an established service interval, but must be changed based on need. Variations in environmental conditions result in different servicing requirements.

See Figure 5-5-1 for the location of the filters on your machine. See Figure 5-5-12 for engine filter locations. Refer to the parts manual or suggested stocking guide (SSG) for your machine for part numbers of filter elements. You should always have a full set of replacement elements in stock for your machine. Contact your dealer for details.

Refer to the following pages for timing and procedures of filter element replacement.

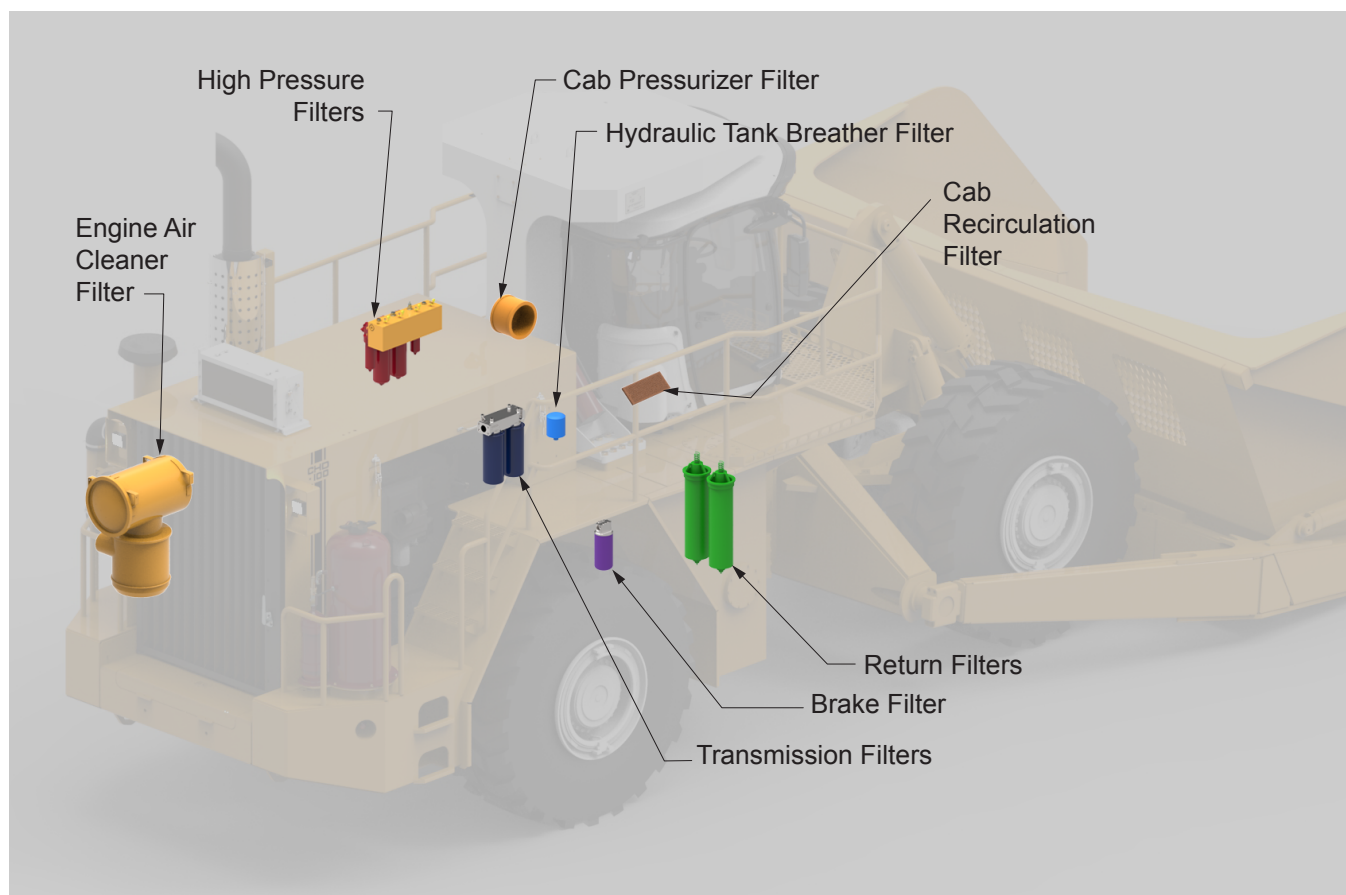


### **WARNING**

**Severe burn hazard.**

**Lubricating oils are extremely hot while the machine is running, and may cause severe burns or death upon contact.**

**Shut down the machine, employ lockout/tagout procedures, and allow the machine to cool. Wear appropriate personal protective equipment when changing fluids or filter elements.**



*Figure 5-5-1 Filter Arrangement*

## High Pressure Filters

**Service Interval:** Quarterly, every 500 hours, or when indicators dictate, whichever occurs first.

Indicators for the high pressure filters are located on the filter heads. See Section 5-4-1 for details.

Allow the machine to warm up. If, after the hydraulic oil is warm, any indicator on a filter (item 8 below) returns to red after being reset, the filter element(s) must be changed before returning the machine to work, even if prior to the quarterly/500 hour interval.

Additionally, if a warning appears at any time on the operator's control panel, that filter element must be replaced as soon as possible.

## Service Instructions

1. Stop system power and vent captive pressure.
2. Drain filter assembly.
3. Remove bowl and element assembly.
4. Push down to squeeze tangs and lift element (see Figure 5-5-3).

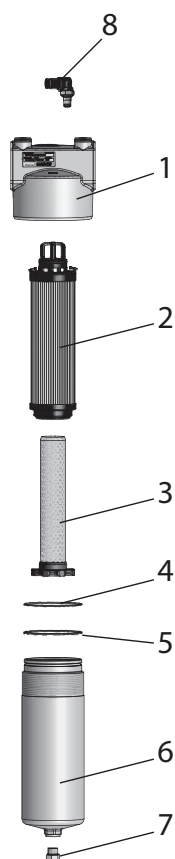


Figure 5-5-3

5. Twist to remove core (see Figure 5-5-4).



Figure 5-5-4



- |                 |                                |
|-----------------|--------------------------------|
| 1. Filter Head  | 5. O-Ring, Anti-Extrusion Ring |
| 2. Element      | 6. Bowl                        |
| 3. Core         | 7. Plug, Drain                 |
| 4. O-Ring, Bowl | 8. Filter Indicator            |

Figure 5-5-2 Parts Identification

6. Retain reusable core (see Figure 5-5-5).



Figure 5-5-5

9. Push element assembly into bowl until tangs snap (see Figure 5-5-7).



Figure 5-5-7

7. Discard used element.  
8. Insert reusable core into new element (see Figure 5-5-6).



Figure 5-5-6

10. Inspect O-ring and anti-extrusion ring.  
11. Install bowl with new element (see Figure 5-5-8).  
12. Torque bowl (25-30 ft-lb/35-40 N-m) and drain plug (25-30 ft-lb/35-40 N-m).  
13. Power up and inspect.



Figure 5-5-8

## Breather Filter

**Service Interval:** Monthly, every 250 hours, whichever occurs first.

The breather filter is inside the engine compartment on the right side of the machine. See Figure 5-5-9.

### Replacing the Breather

1. Shut down the machine and vent captive pressure by opening the petcock at the breather. See Figure 5-5-9.
2. Clean the surrounding area.
3. Remove the breather and replace with a new one.
4. Close the petcock.

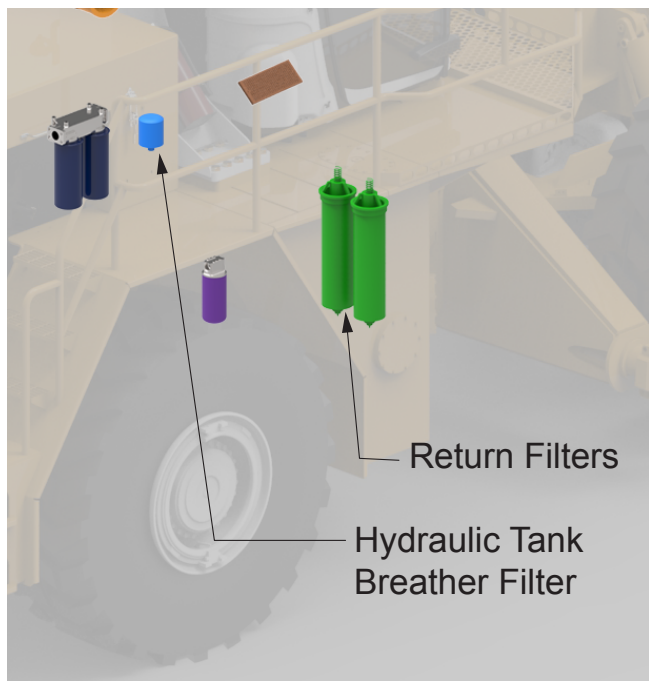


Figure 5-5-9 Return Filters and Breather Filter

## Return Filters

**Service Interval:** Quarterly, every 500 hours, or when the indicator dictates, whichever occurs first.

The return filters are accessed from the deck on the right side of the machine. See Figure 5-5-9. The indicator for the return filters located on the valve plate next to brake manifold. See Figure 5-5-10.

Allow the machine to warm up. If, after the hydraulic oil is warm, the plunger on the indicator is in the red zone, both filter elements must be changed before returning the machine to work, even if it is prior to the quarterly/500 hour interval.

The differential pressure indicator in Figure 5-5-10 indicates the elements are in working condition. As the elements collect contamination, the indicator plunger will rise into the red zone, indicating that the elements must be replaced.

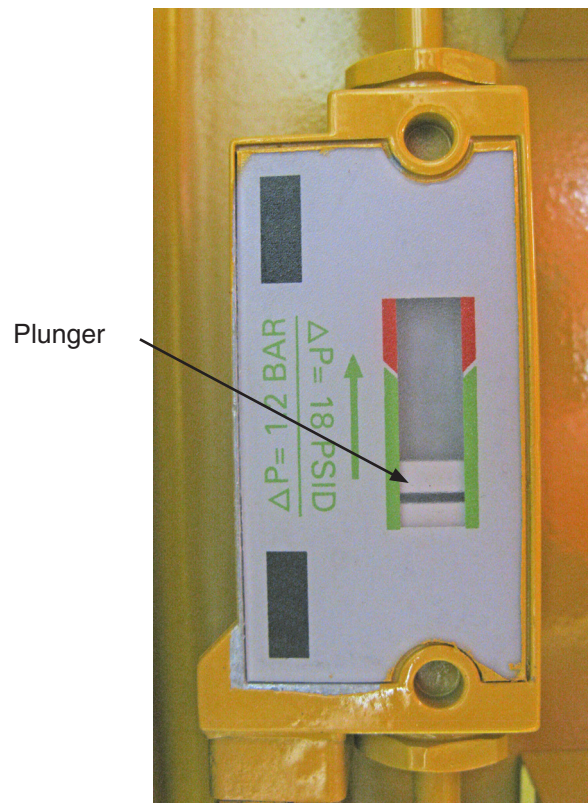


Figure 5-5-10 Differential Pressure Indicator

## Replacing the Filter Elements

1. Shut down the machine and vent captive pressure by opening the petcock at the breather. See Figure 5-5-9.
2. Clean cover plate and surrounding area.
3. Remove cover plate and gasket.
4. Remove in-tank filter assemblies.
5. Remove the bypass spring assembly (see Figure 5-5-11).
6. Remove contaminated cartridge with a twisting motion.
  - a. Discard disposable element.
  - b. Wash sleeve in non-caustic solvent. Compressed air can be used to prevent damage to the element during cleaning.

### Before Installing Cartridge

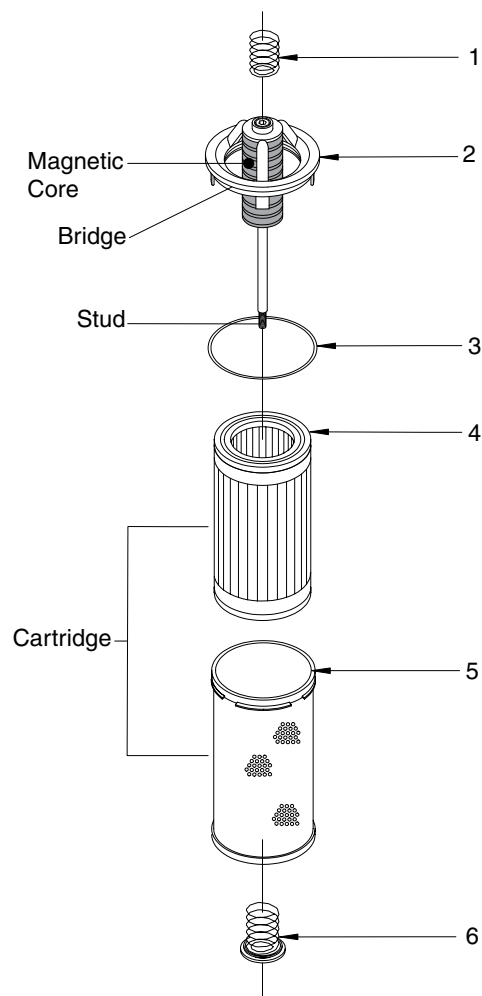
1. Clean magnetic core (insert assembly) with a lint-free cloth.
2. Check all seals and tank cover gasket and replace if necessary.

### To Assemble and Install a New or Cleaned Cartridge

1. Lubricate all seals.
2. Insert a new element into a clean sleeve.
3. Assemble insert assembly and cartridge.

**Note: For ease of mounting, hold the cartridge away from the magnetic core until the stud is through the hole in the bottom of the cartridge. Then slide the cartridge up to securely seat with the top of the bridge of the insert assembly.**

4. Install bypass spring assembly or non-bypass plate (tighten until snug).
5. Reinstall in-tank return filter into housing (make sure the top spring is secure).
6. Reinstall cover. Torque cover nuts (see 80-1057 Torque Specification Chart).
7. Close the petcock.



- |                           |                       |
|---------------------------|-----------------------|
| 1. Spring, Top            | 4. Element            |
| 2. Insert Assembly        | 5. Sleeve             |
| 3. O-Ring(Insert to Tank) | 6. Bypass Spring Assy |

Figure 5-5-11 Return Filter Assembly



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## Engine Filters

Engine filters include the engine oil filter, the coolant filter, and the fuel filter. All are located on the engine. See Figure 5-5-12.

### Service Intervals:

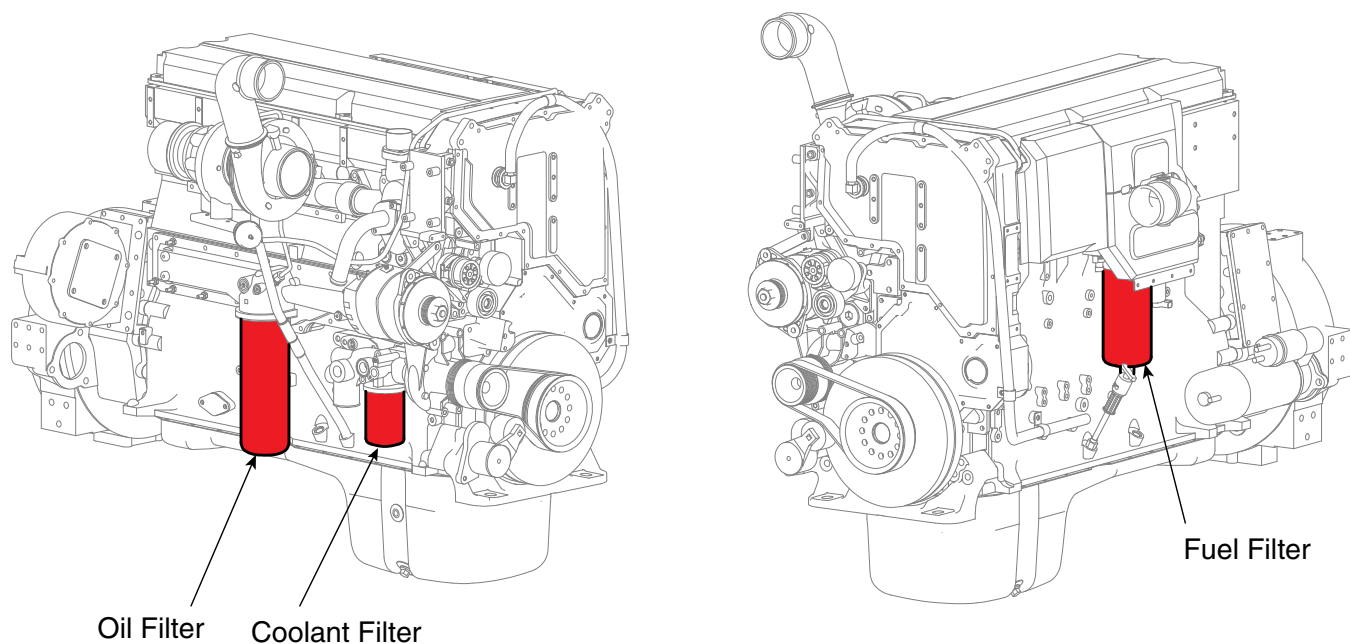
**Fuel and Coolant Filters:** Monthly, every 250 hours, or as dictated by a fault code, whichever occurs first.

**Engine Oil Filters:** Quarterly, every 500 hours, or as dictated by a fault code, whichever occurs first.

The normal service intervals will be sufficient in most cases. Occasionally, the engine may throw a fault code indicating that a filter element needs to be replaced sooner. The filter element must be replaced prior to returning the machine to work, even if prior to the scheduled interval.

Refer to Section 2 of your Wagner Service Manual for the fault codes for your machine.

Refer to the Operation and Maintenance Manual supplied with your engine for filter change procedures.



*Figure 5-5-12 Engine Filters*

## Transmission Filters

The transmission filters are located in the right side of the chassis. See Figure 5-5-13.

**Service Interval:** Quarterly or every 500 hours, whichever occurs first.

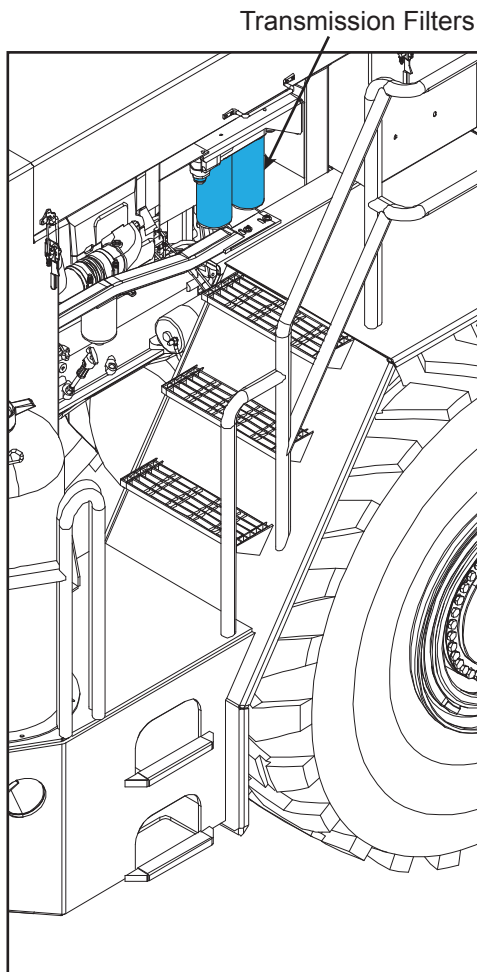


Figure 5-5-13 Transmission Filters

## Service Instructions

1. Shut down the machine.
2. Clean the area around the filter elements before removing them.
3. Remove the transmission filter elements with a filter wrench and discard.
4. Clean the mating surface of the filter head before installing the new filter elements.
5. Install the new transmission filter elements with a filter wrench.

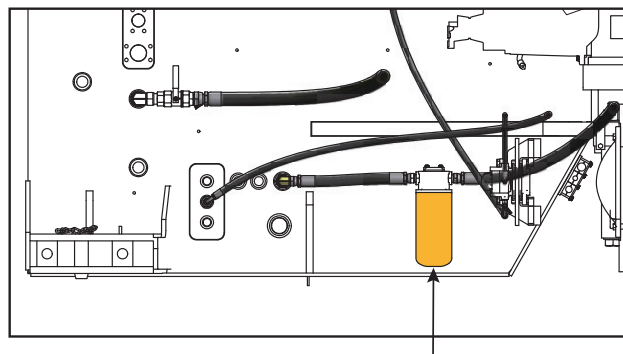
## Brake Cooling Return Filter

**Service Interval:** Quarterly or every 500 hours, whichever occurs first.

**The brake cooling return filter is accessed from the right hand chassis wall, inside. See Figure 5-5-14.**

## Service Instructions

1. Shut down the machine.
2. Open vent on hydraulic tank to relieve residual pressure
3. Clean the area around the filter element before removing.
4. Using a filter wrench, remove the brake cooling filter element and discard.
5. Clean the mating surface of the filter head before installing the new filter element.
6. Using a filter wrench, install the new brake cooling filter elements.
7. Close vent on hydraulic tank before starting vehicle.



Brake Cooling System  
Return Filter

Figure 5-5-14 Brake Cooling Return Filter

## Air Cleaner

**Service Interval:** When indicator dictates.

Variations in environmental conditions do not allow for any set interval to be established for replacement of the air cleaner elements. Obviously, dustier environments will require more frequent element changes.

Use the indicator to determine when it's time to replace the elements. This indicator, mounted on the air cleaner housing (see Figure 5-5-14), must be checked at least once per shift, and the elements replaced as necessary.

### General

The air cleaner is critical to the life of the engine. It prevents dust and debris from entering the engine air system, causing premature engine wear and possible failure. When a two stage, dry type air cleaner is used, air passes through the outer, primary filter elements installed; both are required to fully protect the engine from contamination.



Figure 5-5-15 Air Cleaner Indicator

## Air Filter Service Indicator

This gauge indicates filter element condition without filter disassembly. The service sight gauge indicates filter contamination by showing “red” or “green” in the sight gauge. The visible amount of red on the indicator will increase as the dust in the element increases.

For maximum engine performance, the filter should be changed or cleaned immediately after the “red” signal locks in full view.

To reset the service gauge, press the button on the top of the gauge.

## Air Cleaner Connections

Check the intake tubes between the air cleaner outlet and the turbocharger for cracks or wear, and that all clamps are in place and are tight.

Replace any worn or damaged tubes and tighten any loose clamps.

## Service Instructions

### 1. Empty the Dust Cup

Empty dust cup and visually inspect gasket between dust cup and lower body — if worn or damaged, replace.



Figure 5-5-16 Empty Dust Cup



## 2. Inspect Pre-Cleaning Tubes

With the dust cup removed, check the tubes. Generally, the tubes are self-cleaning and need no service, but under unusual circumstances, plugging can occur. A visual inspection is usually adequate

If the tubes carry light dust, remove it with a stiff brush. If plugging with fibrous material is evident, remove the pre-cleaning section. Clean it with compressed air or water no hotter than 160°F (72 °C).

Any time the tube lower body is removed, the body gaskets should be replaced. When reinstalling the dust cup, be sure it seals 360° around the air cleaner body.

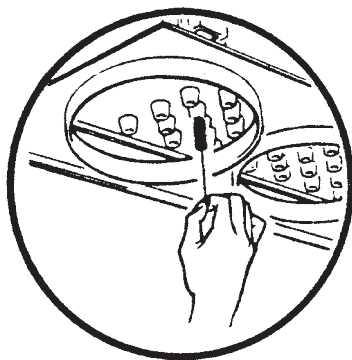


Figure 5-5-17 Pre-cleaning Tube Inspection

## NOTICE

**Never clean pre-cleaning tubes with compressed air unless both the primary and safety filters are installed in the air cleaner.**

**Do not steam-clean pre-cleaning tubes.**

## 3. Remove the Primary Filter and Visually Inspect the Safety Filter.

Unlatch the service cover to access the filters. Loosen the wing nut and remove the primary filter. The wing nut on the old filter should be held in place with a clip. Visually inspect the safety filter but do not remove the filter unless it is damaged or due for change-out.

The safety filter should be replaced every three primary filter changes.



## NOTICE

**NOTE: Remove any excess dirt and wipe out the housing before removing the safety (or secondary) filter.**

Figure 5-5-18

#### 4. Always Clean the Inside of the Filter Housing

Dirt left in the air cleaner housing can be harmful for your engine. Starting with the sealing surfaces, use a clean, damp cloth to wipe the inside surfaces clean. An improper gasket seal is one of the most common causes of engine contamination, so make sure that all hardened dirt ridges are completely removed.



Figure 5-5-19

#### 5. Install the New Filters

The safety filter should be replaced every three primary filter changes or as denoted by the SafetySignal™ service indicator. When replacing the safety filter, install the new filter immediately or cover the inlet with a cloth so that dirt is not ingested.

Before installing the new filters, inspect them for shipping damage and gasket integrity. If a filter is damaged, do not install it. If the safety filter is being replaced, and a SafetySignal is used, secure it in place with a cotter (split) pin.

Secure the primary filter in place with the wing nut (hand tighten) using a new gasket washer. Use a new wing nut clip and reset the filter service indicator.



Figure 5-5-20

#### 6. Inspect Air Cleaner System

Finally, inspect and tighten all air cleaner system connections. If there are holes or damage, replace immediately. Inspect all air ducting for worn spots or damage. Annual replacement of air cleaner system gaskets is recommended.

## Cab Air Intake Filter

The cab air intake filter is mounted on the back left side of the cab. See Figure 5-5-21.

**Service Interval:** Inspect every two weeks, every 100 hours, or when a noticeable drop in cab pressure occurs, whichever occurs first.

### Service Instructions

1. Remove the cover.
2. Inspect the filter for dust and debris. If the filter is dirty, unscrew the knob screw in the center of the filter.



Figure 5-5-21 Cab Air Intake Filter Location

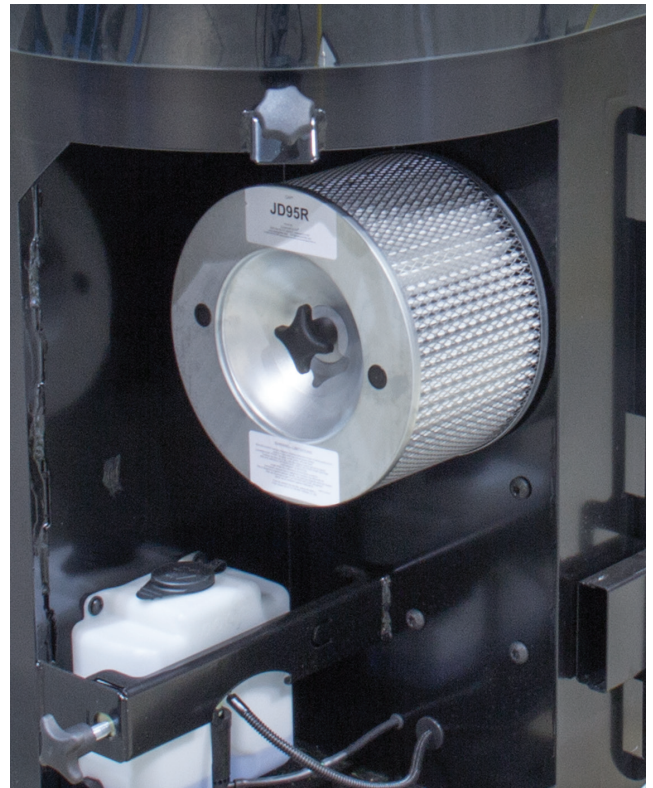


Figure 5-5-22 Cab Air Intake Filter



3. Remove the filter. The filter is held firmly by the rubber gasket and will require gentle but firm pressure to remove.
4. Bag and seal the used filter element and dispose of according to local regulation.
5. Remove all loose debris using a suitable vacuum unit and clean rags - never use compressed air.
6. Replace the filter with a new filter. Reinstall the knob screw.
7. Replace the cover.

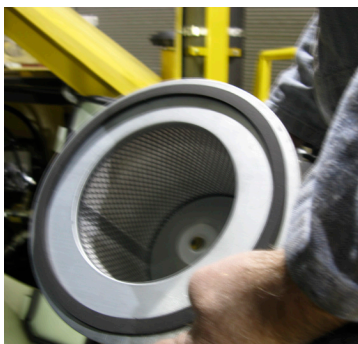


## CAUTION

**Inhalation hazard.**

**Reusing filter elements may cause contaminants to be inhaled.**

**Never clean or reuse air intake filter elements. Replace with new elements only.**



*Figure 5-5-23 Cab Air Intake Filter Element*

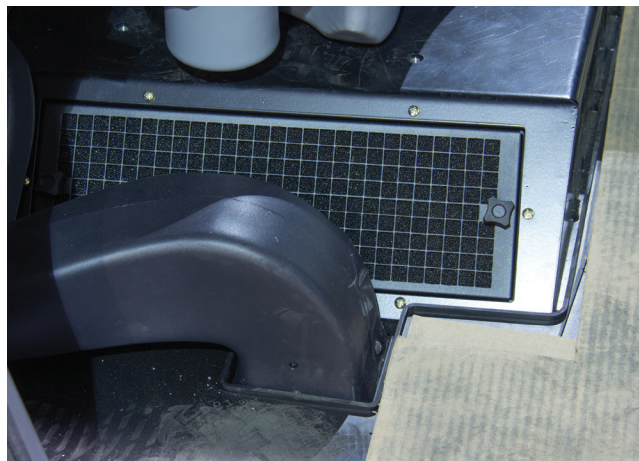
### Cab Recirculation Filter

The cab filter is located on the floor under the operator's seat on the right side of the cab. See Figure 5-5-24.

**Service Interval:** Every two weeks, every 100 hours, or when noticeable dirt has accumulated, whichever occurs first.

#### Service Instructions

1. Remove the knob screws. Remove the filter from the frame.
2. Rinse with clean water, and allow to dry. Replace with a new filter element if necessary.
3. Replace the filter in the frame and secure with knob screws.



*Figure 5-5-24 Cab Filter Element*

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