

Filter Service

Effective filtration of fluids 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. 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

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, allow the machine to cool and wear appropriate personal protective equipment when changing fluids or filter elements.

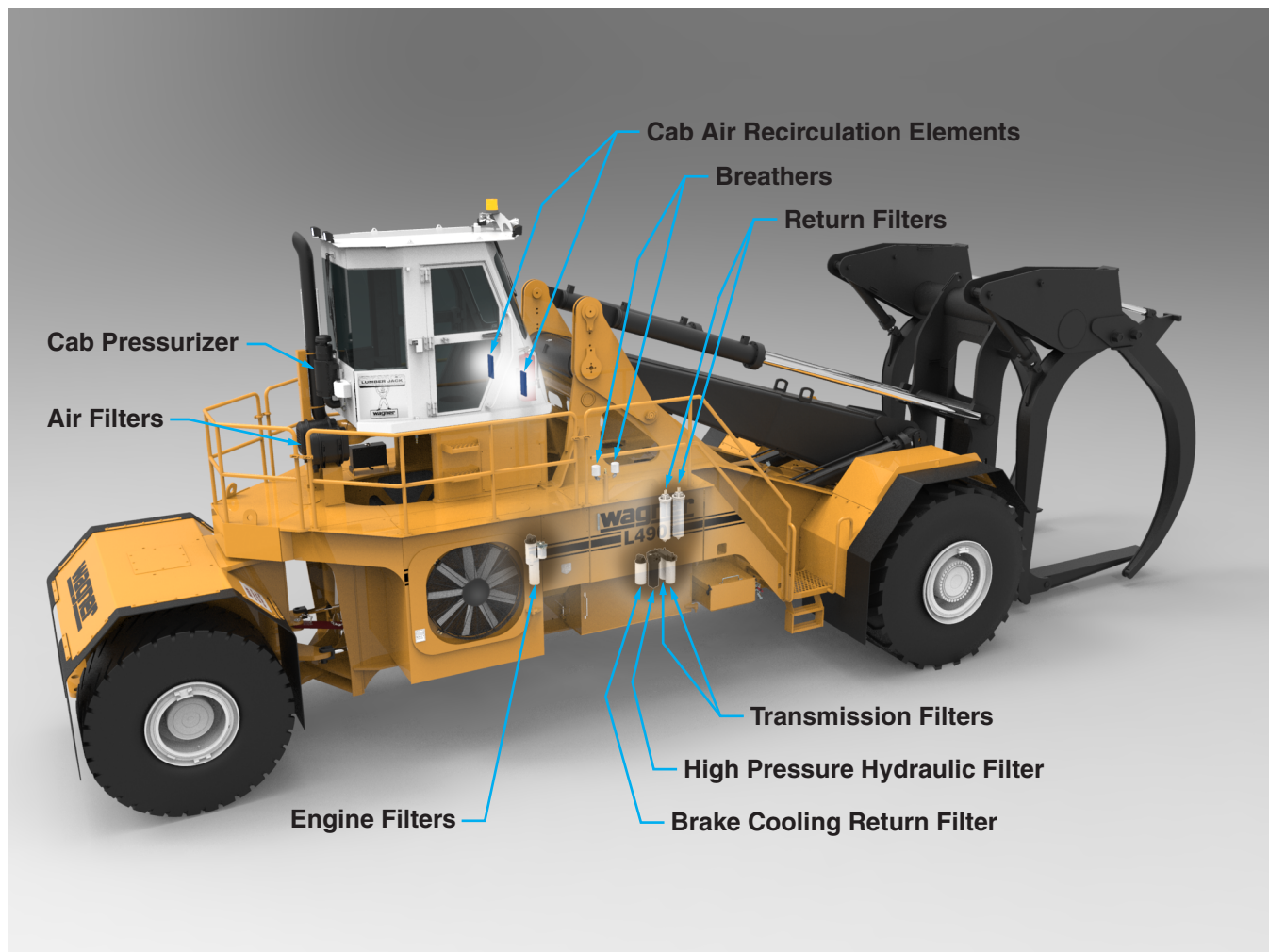


Figure 5-5-1 Filter Arrangement

High Pressure Filter

Service Interval: Quarterly, every 500 hours, or when warning message appears, whichever occurs first.

An indicator for the high pressure filter is located on the filter head. See Section 5-4-1 for details.

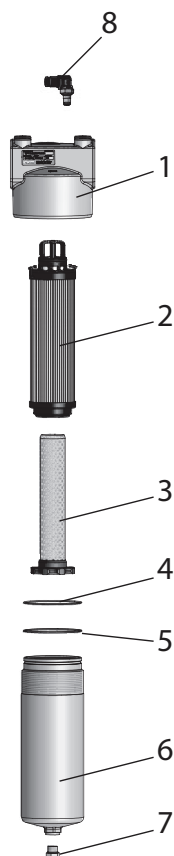
Allow the machine to warm up. If, after the hydraulic oil is warm, the indicator returns to red after being reset, or if a warning message appears on the Wagner Smart Screen Display, the filter element must be changed before returning the machine to work, even if prior to the quarterly/500 hour interval.

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



- | | |
|-----------------|--------------------------------|
| 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

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



Figure 5-5-4

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

Return Filters

Service Interval: Quarterly, every 500 hours, or when warning message appears, whichever occurs first.

The return filters are accessed from the deck on the right side of the machine. See Figure 5-5-9.

Allow the machine to warm up. If, after the hydraulic oil is warm, the warning message shown in Figure 5-5-10 appears on the Wagner Smart Screen Display, both filter elements must be changed before returning the machine to work, even if prior to the quarterly/500 hour interval.

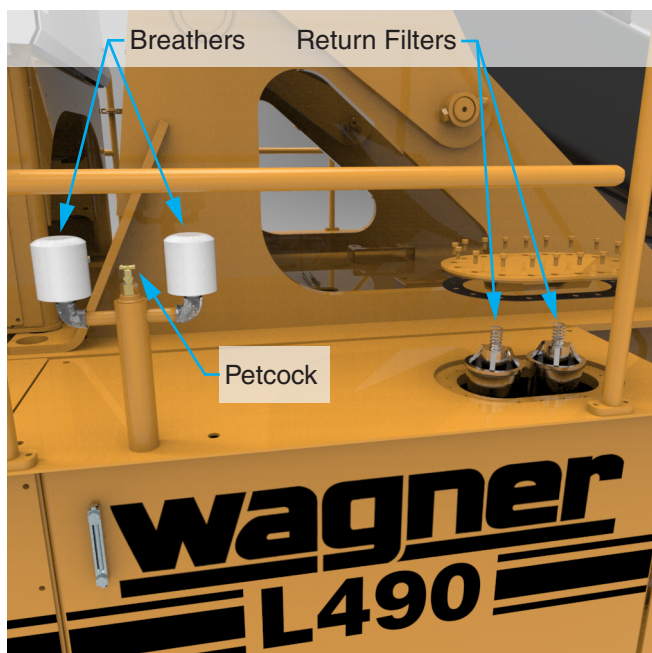


Figure 5-5-9 Return Filters

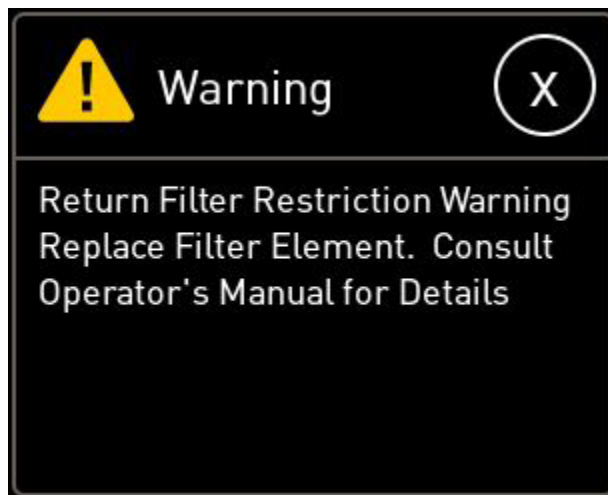


Figure 5-5-10 Return Filter Restriction Warning

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.
7.
 - 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

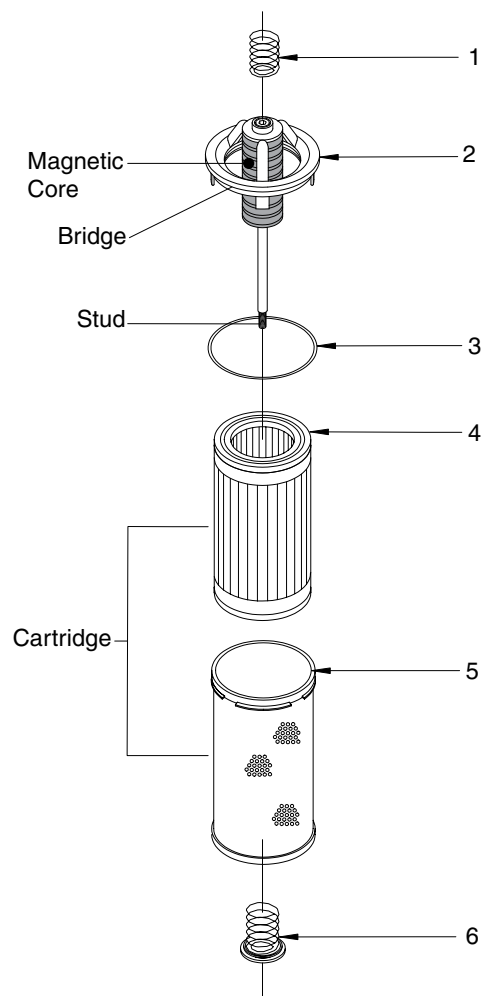
1. Clean magnetic core (insert assembly) with a lint free cloth.
2. Check all seals and tank cover gasket and replace if necessary.

To Assemble and Install New or Cleaned Cartridge

1. Lubricate all seals
2. Insert new element into 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

Brake Cooling Return Filter

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

The brake cooling return filter is accessed on the right side of the chassis. See Figure 5-5-12.

Replacing the Filter Element

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. Fill the new filter element with hydraulic oil before installation.
7. Using a filter wrench, install the new brake cooling filter elements.
8. Close vent on hydraulic tank before starting vehicle.
9. Bleed the system and check for leaks.

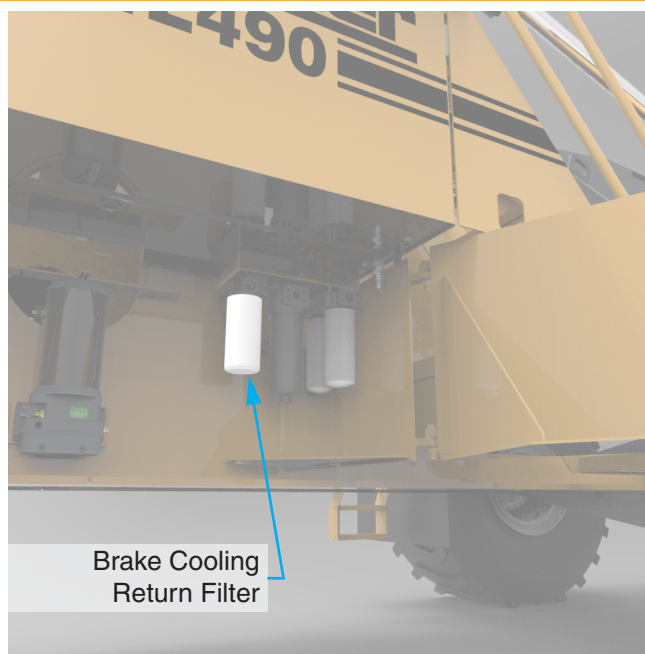


Figure 5-5-12 Brake Cooling Return Filter

Engine Filters

Engine filters include the engine oil filter, the coolant filter, and the fuel/water separator. All are located on the right side of the chassis. See Figure 5-5-13.

Service Intervals:

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

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

Fill the new filter element with oil before installation.

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.

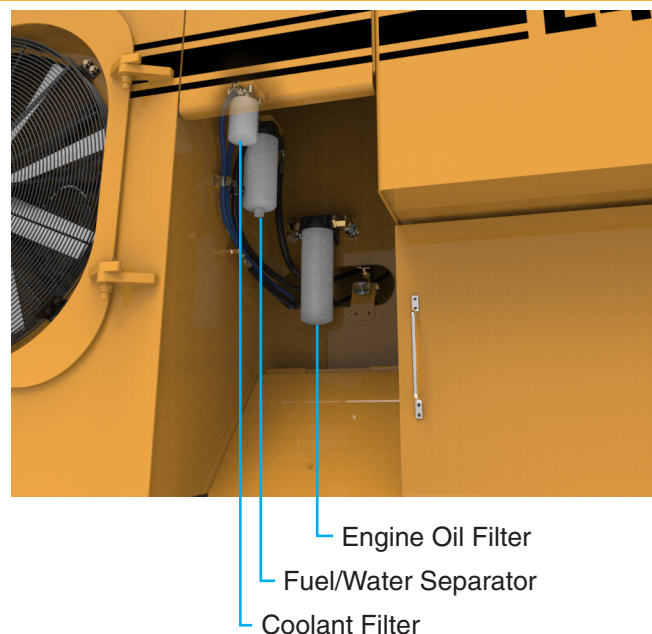


Figure 5-5-13 Engine Filters

Transmission Filters

The transmission filters are located on the right side of the chassis. See Figure 5-5-14.

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

Service Instructions

1. Shut down the machine.
2. Clean the area around the filter elements before removing.
3. Using a filter wrench, remove the transmission filter elements and discard.
4. Clean the mating surface of the filter head before installing the new filter elements.
5. Using a filter wrench, install the new transmission filter elements.
6. Fill the new filter elements with fluid before installation.

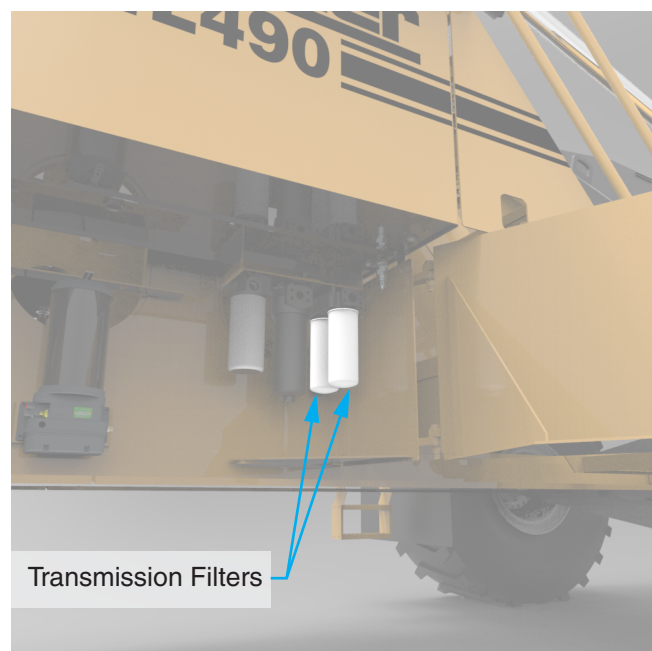


Figure 5-5-14 Transmission Filters

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.

Therefore, the indicator must be used to determine when it's time to replace the elements. This indicator, mounted between the air cleaner housing and the machine's cab (see Figure 5-5-15), 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.

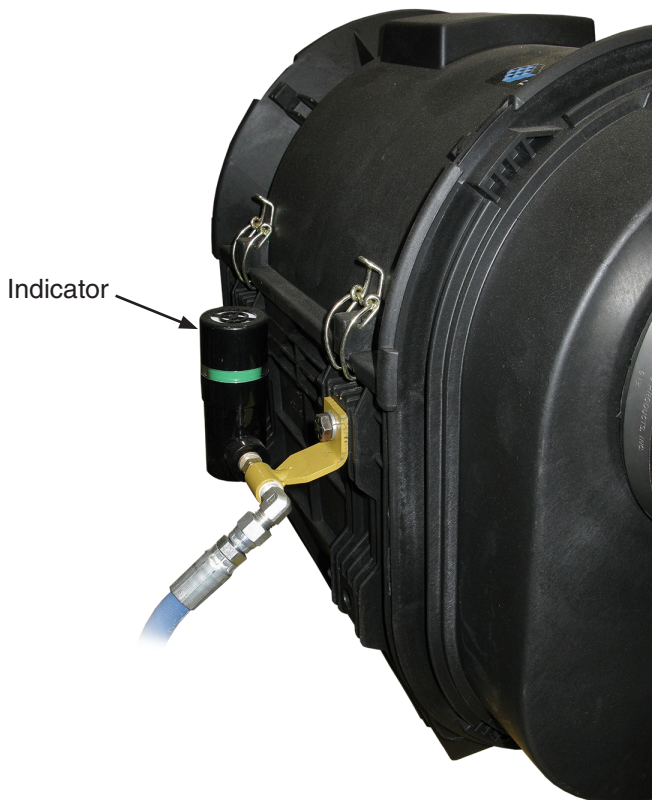


Figure 5-5-15 Air Cleaner Indicator

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. Shut off engine. Unlatch and remove the housing service cover.



Figure 5-5-16

2. Using the handle, push down on the primary filter to loosen the seal, which will tilt the filter to approximately a 5° angle. Pull the filter out of housing.

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



Figure 5-5-17

3. Using the plastic handle on the face of the safety filter, pull the filter toward the center of the housing and remove.

NOTE: A safety/secondary filter only needs to be replaced at every third primary air filter change.

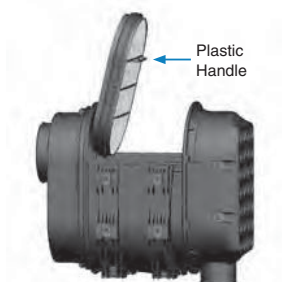


Figure 5-5-18

4. Inspect the new filter before installing. Visually check for cuts, tears, or indentations on the sealing surfaces before installation. If any damage is visible, do not install.



Figure 5-5-19

5. If replacing safety/secondary filter, use the plastic handle on the safety filter, slide the filter at an angle into the outlet side and push in place until the filter seats firmly and evenly within the housing.

NOTE: insert the safety filter tab into the positioning slot before pushing the filter in place.

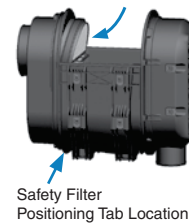


Figure 5-5-20

6. Slide the filter down at approximately a 5° angle until it hits the end of the housing. Rotate the filter toward the outlet section to complete the seal.

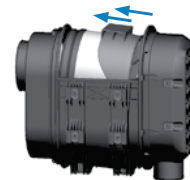


Figure 5-5-21

7. Place the service cover in position and fasten the latches.

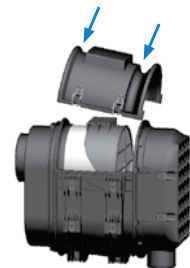


Figure 5-5-22

Cab Air Recirculation Elements

The cab air recirculation elements are located in the cab, under the dash. See Figure 5-5-23.

Service Interval: Semi-annually, every 1,000 hours, or when the cab pressurizer element is replaced, whichever occurs first.

Service Instructions

1. Shut down the machine.
2. Remove the covers.
3. Remove and discard the elements.
4. Clean the filter mounting areas.
5. Install new filter elements.
6. Install the covers.

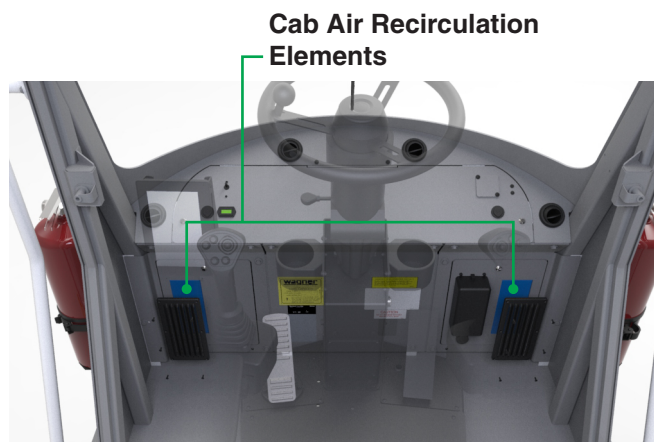


Figure 5-5-23 Cab Air Recirculation Elements

Cab Pressurizer Filter Element

The cab pressurizer is mounted to the back of the cab. See Figure 5-5-24.

Service Interval: Semi-annually, every 1,000 hours, or when a noticeable drop in cab pressure occurs, whichever occurs first.

Service Instructions

1. Disconnect flex hose from air outlet. Plug or cover end of hose to prevent contaminants from entering the HVAC system.
2. Unlatch the six clips which hold the lid in place.
3. Once the lid is removed, examine the rubber gasket that seals the lid to the filter housing. If the rubber gasket is torn or missing replace it.



Figure 5-5-24 Cab Pressurizer

4. Remove the filter retention clip by (1) pressing clip towards the filter's outer ring, then by (2) lifting the clip out by pulling up on tab. DO NOT DISCARD THE CLIP! You will need this clip to reinstall the new filter.

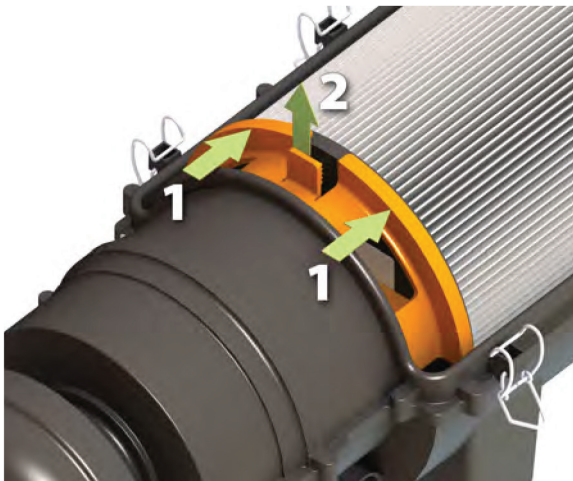


Figure 5-5-25

9. Reinstall filter retention clip by pushing filter retention clip into place. Clip will snap and lock into place.



Figure 5-5-26

5. Remove the filter by applying pressure in a motion away from the outlet of the filter box. The filter is held firmly by the rubber "O" ring seal and will require gentle but firm pressure to remove.
6. Bag and seal used filter element and dispose of according to local regulation.
7. Remove loose debris using suitable vacuum unit and clean rags - never use compressed air.
8. Lubricate O-ring seal on filter element (lubricant provided with new filter). Place in housing with open end of filter towards outlet, lift slightly with fingers to align with inside of outlet and shift towards outlet until you feel positive abutment and the O-ring seats into the groove inside the outlet.

10. Replace the lid.
11. Latch the six lid clips to seal unit
12. Reattach the flex hose to the outlet, ensuring that contamination of tubing, HVAC, and cabin air does not occur. Take care not to overtighten clamps, as this could cause "crush" damage.



CAUTION

Do not clean or reuse filter elements. Replace with new elements only. Reusing filter elements may create a health hazard.

Hydraulic Tank Breather Assemblies

The hydraulic tank breather assemblies each consist of a filter, and a check valve assembly. The check valve maintains positive pressure in the hydraulic tank (5 PSI), helping to prevent pump cavitation. Incoming air passes through the filter, keeping your hydraulic oil clean.

Periodic maintenance of the hydraulic tank breather assemblies will ensure that your hydraulic system operates at peak efficiency.

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

Service Instructions

1. Put the machine in the normal park position (see Section 4-2).
2. Shut down the machine, and employ lockout/tagout procedures.
3. Relieve pressure in the tank by opening the petcock between the breathers. See Figure 5-5-27.
4. Using a wrench, remove the breather assemblies.
5. Remove the check valves. Discard the old filters in accordance with local regulations. See Figure 5-5-28.
6. Clean the check valves with a non-corrosive solvent.
7. Assemble the cleaned check valves with new filter elements.
8. Reinstall the breather assemblies and ensure that they operate normally during operation. Make sure the petcock is closed for normal operation.

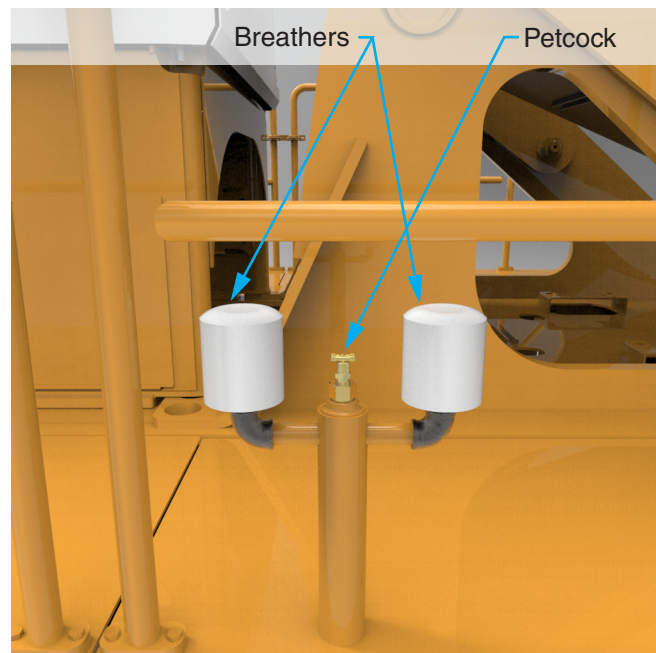


Figure 5-5-27 Hydraulic Tank Breathers

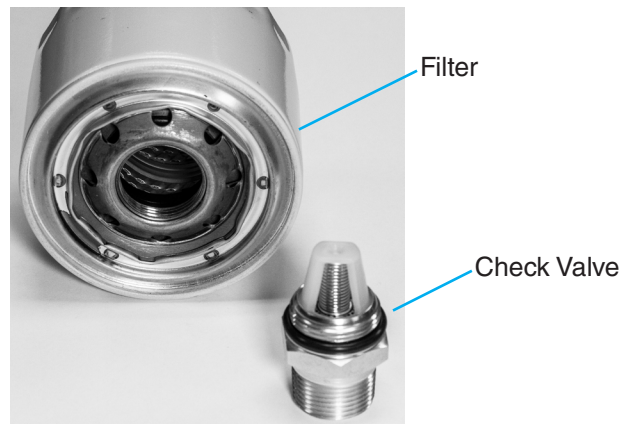


Figure 5-5-28 Breather Assembly