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Coding Information

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Title: Chassis Mounted Oil Centrifuge Filter Diagnostics (Air & Oil Leaks)

Applies To: EPA10 MaxxForce 11, 13, and 15 Engines

DESCRIPTION

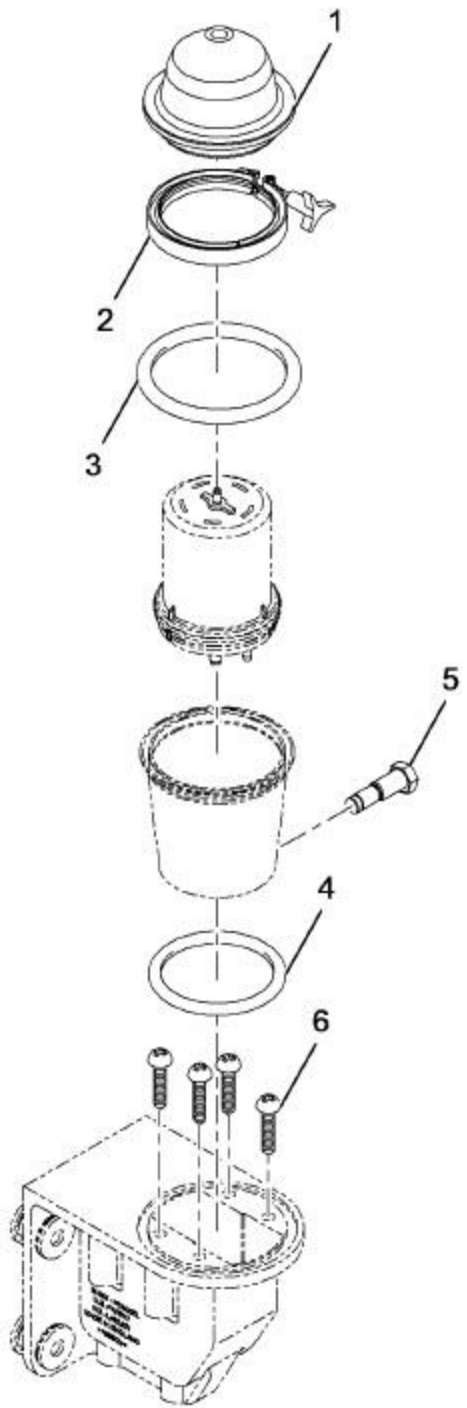
Centrifuge Filter Trouble-Shooting and Parts Lists. Many of the components on the chassis mounted soot centrifuge are serviceable to alleviate the need to replace the entire assembly.

SYMPTOMS

- Excessive Noise
- Air Leak or Air System Leaking Down
- Oil Leaks

PARTS INFORMATION

(Exploded View)



Item Number	Part Number	Description	Quantity
1	3013406C2	Cover Assembly, Centrifuge	1
2	3013407C1	Clamp, Centrifuge Oil Filter	1
3	3013376C1	Seal, Centrifuge Assy	1
4	2598201C1	Seal, O-Ring	1

5	3013570C1	Valve, Check	1
6	2598202C1	Screw, Set Hex Head	4
NOTE: The following parts are Non-Illustrated			
	2610033C1	Valve Assy, Air	1
	2601156C1	Bearing, Cone Inner	1
	2610158C1	Seal Idle Cut Out Valve	1
	2610323C1	Kit, Lower Bearing, Filter Body	
	3013473C1	Kit, Anti-Vibration Mount	

NOTE:

- **3014297C92 Kit, Cover Assembly includes Cover (Item 1) and Seal (Item 3)**
- **2606467C92 Kit, Centrifuge Oil Filter consists of Filter (Not listed) and Seal (Item 3)**

OPERATION

The oil pressure check valve opens at 36psi. It will then allow engine oil to enter the centrifuge filter.

It is normal for air to flow for a short time after stopping the engine to purge oil from the centrifuge reservoir.

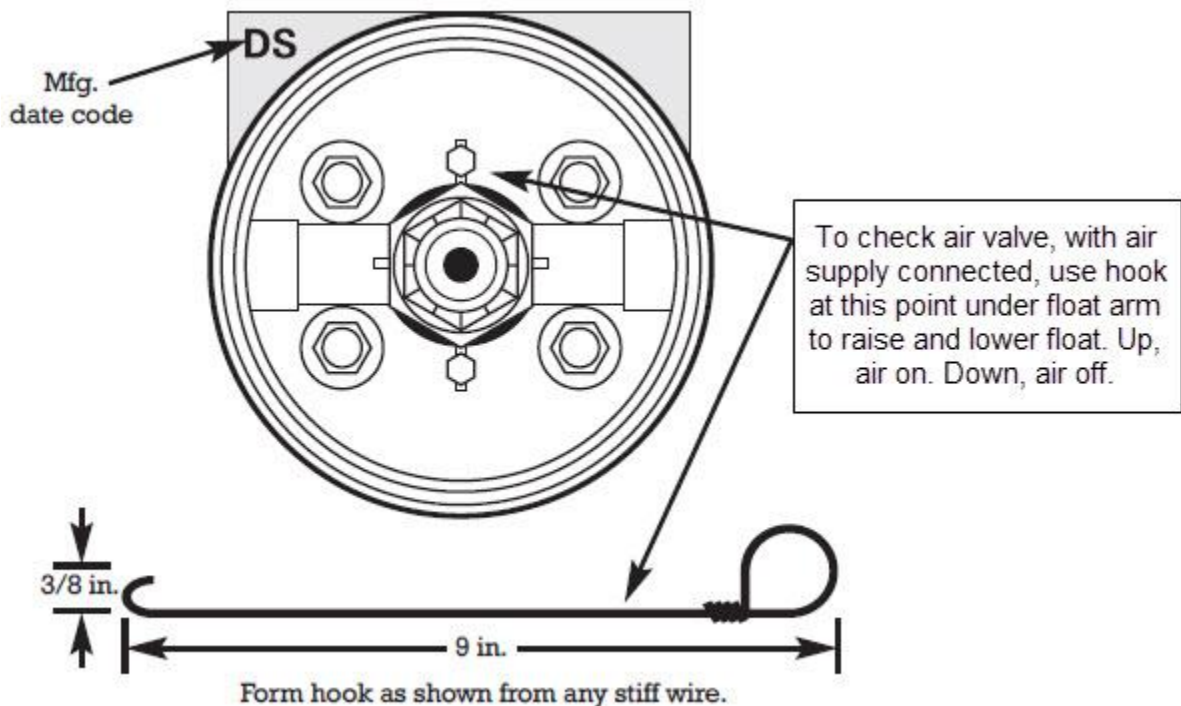
Once purged the float will drop and shut off the Control Air Valve.

TROUBLESHOOTING

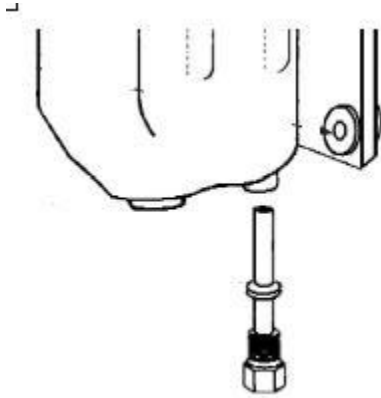
Run engine while visually inspecting assembly and listening for excessive noise, oil leaks, or air leaks

- **Symptom: Excessive vibration or Excess noise from centrifuge:**
 - **Solution: Inspect Bearings**
 - The top bearing cannot be replaced. If it is found to be bad, a replacement cover assembly kit p/n **3014297C92** will need to be used.
 - The lower bearing can be replaced using Lower Bearing Kit number p/n **2610323C1**. To replace this assembly you will need a 29mm socket to remove the plastic housing. The steel sleeve insert will need to be removed if it did not come out with the housing, as well as the spacer washer that is under the other parts. Once all parts have been removed, clean the recess. Insert the new brass bearing into the plastic housing from the bottom (threaded) side and press until it seats. Rotate the brass bearing until the hole is aligned with the hole in the housing. Insert the steel sleeve into the brass bearing. Place the new washer into the centrifuge body recess and then thread the other three parts back into the metal housing using Loctite 648. Tighten to 11 lb-ft torque.

- Only OEM filters are recommended for service changes (**2606467C92**). Fleetguard filters are slightly angled and may cause the top bearing to fall out.
- **Symptom: Internal Air Leak in Centrifuge:**
 - Float valve flows air constantly or not at all. Air tank bleeds down overnight.
 - It is normal for air to flow for a short time after stopping the engine to purge oil from the centrifuge reservoir.
 - Once purged the float will drop and shut off the Control Air Valve.
 - If the cover is removed before the oil is purged the oil reservoir will not drain.
 - The float will remain up and allow air to flow through the open valve.
 - To check float operation either re-install the cover for a few minutes until oil is purged and air stops flowing or manually check the float by pushing down on the float with a steel rod. See Tool below.



- Solution: If air valve does NOT respond, replace valve assembly p/n **2610033C1** shown below.
 - If no gasket is installed on the air valve, the air will run constantly.
 - If a valve is removed, the gasket may remain stuck in the housing. If a valve is then installed with a new gasket on it, the thickness of the two gaskets together will not allow the air valve to open.



- **Symptom: Oil leaks**

- Clean filter assembly and run engine and visually inspect filter assembly to identify leak location. The entire soot centrifuge does not need to be replaced if the oil leak originates at a serviceable component on the soot centrifuge assembly.
- Leak at Cover Seal
 - **Solution: Replace Cover Seal**
 - Remove cover and cover seal. Clean seal grooves in housing and mating surface on cover. Install a new cover seal in the housing groove, replace cover, orientate clamp uniformly over cover and housing flanges, tighten clamp handle securely by hand pressure.
- Leak at Body to Control Mechanism Seal
 - **Solution: Replace Body-to-Control-Mechanism Seal**
 - Remove cover and centrifuge turbine assembly. Remove control mechanism by loosening four cap screws. Discard seal and clean groove and mating surfaces. Replace seal with a new one and retighten cap screws alternately to 35 lb-ft torque. It is possible to rotate the body 180° if it is necessary to locate the oil inlet port on the left side. Replace the seal and retighten bolts.
- Leak at Oil Line Connections
 - **Solution: Inspect Oil Line Connections**
 - Disconnect leaking hose and remove hose adapter from port. Clean threads in port and on adapter, and inspect for damage. Reinstall adapter using a good liquid thread sealant. Reconnect hose.

OTHER RESOURCES:

- <http://www.spinnerii.com/index.cfm/lev1/1000/divId/61/Model.560HE.Flyer>
- <http://www.spinnerii.com/index.cfm/lev1/726/divId/61/How.The.Centrifuge.Works>
- http://www.spinnerii.com/files/comm_id_30/Spinner_560HE_bulletin_040611.pdf

SRT:

12 - OIL CLEANING CENTRIFUGE, REPLACE

Hours Code	Model	Engine	Qualifier 1	Qualifier 2	Qualifier 3	Brakes	Transmission	Body Style	Chassis
0.8	N12-4656U	7600	MAXXFORCE 11/13	With 2010 Emission Engines					
0.8	Q12-4656U	8600	MAXXFORCE 11/13	With 2010 Emission Engines					
0.8	R12-4656U	ProStar	MAXXFORCE 11/13	With 2010 Emission Engines					
0.8	T12-4656U	5000	MAXXFORCE 11/13	With 2010 Emission Engines					

12 - CENTRIFUGE OIL FILTER, REPLACE

Hours Code	Model	Engine	Qualifier 1	Qualifier 2	Qualifier 3	Brakes	Transmission	Body Style	Chassis
0.3	A12-4656A	Models, ALL	All Engines	With 2010 Emission Engines					

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