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|--------------------------|------------------------------------------------------|-----------------------|--------------|
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| <b>Availability:</b>     | ISIS, FleetISIS                                      | <b>Revision:</b>      | 4            |
| <b>Major System:</b>     | ENGINES                                              | <b>Created:</b>       | 4/27/2011    |
| <b>Current Language:</b> | English                                              | <b>Last Modified:</b> | 12/20/2013   |
| <b>Other Languages:</b>  | <a href="#">Français</a> , <a href="#">Español</a> , | <b>Author:</b>        | David Horner |
| <b>Viewed:</b>           | 6455                                                 |                       |              |

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## Coding Information

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**Title: Oil Centrifuge Filter Diagnostics**

**Applies To: Units equipped with 2010 Emission MaxxForce 11, 13, and 15 engines**

## DESCRIPTION

Centrifuge Filter Trouble-Shooting and Parts Lists

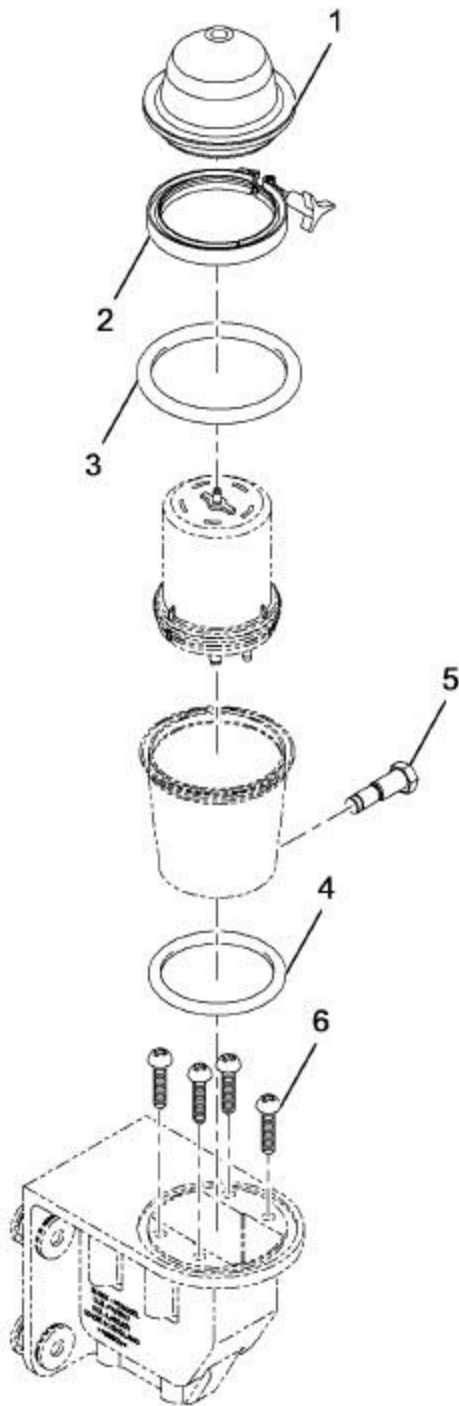
## SYMPTOMS

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

## PARTS INFORMATION

### 3013364C94 - CENTRIFUGE ASSEMBLY

(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 |
| <b>NOTE: The following parts are Non-Illustrated</b> |           |                                 |   |
|                                                      | 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       |   |

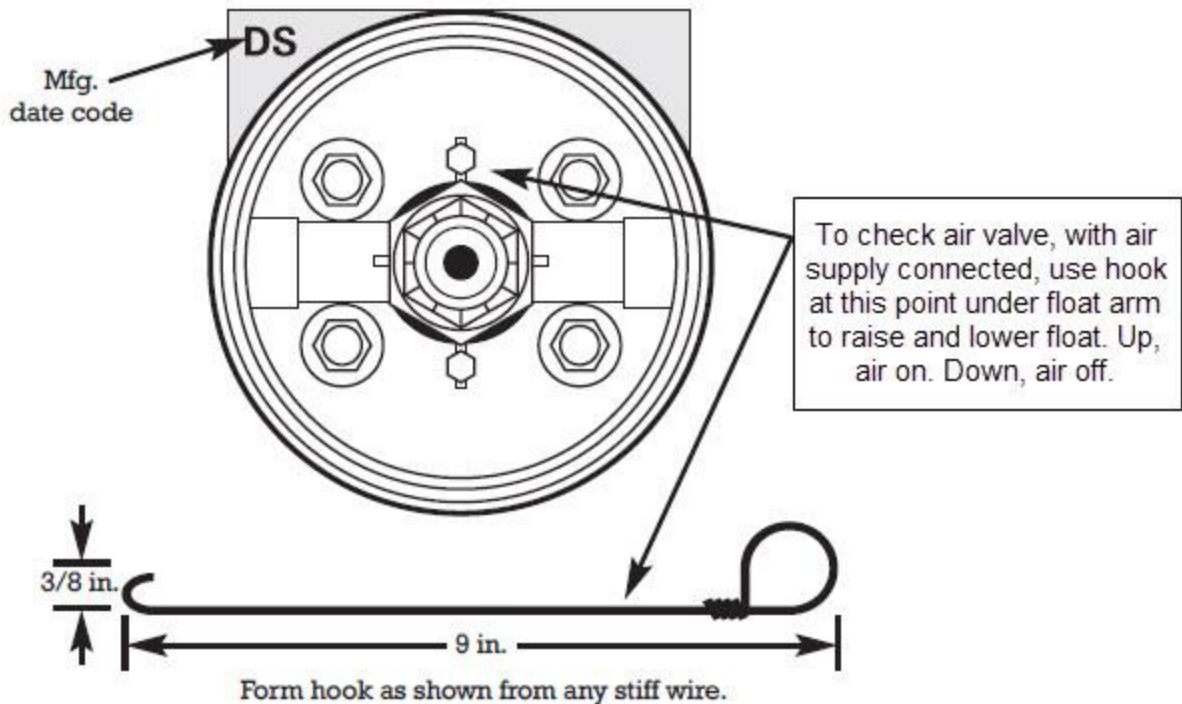
**NOTE:**

- **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)**

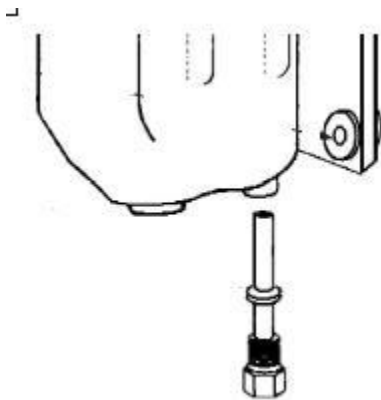
**TROUBLESHOOTING**

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

- **Problem: Excessive vibration Excess noise from centrifuge**
  - Solution: Inspect Bearings
    - The top bearing cannot be replaced. If it is found to be bad, a replacement cover assembly p/n 3013406C1 will need to be purchased. 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
- **Problem: Control Air Valve Problems**
  - Float valve flows air constantly or not at all. Air tank bleeds down overnight.
  - Note: 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: Most air control problems can be repaired without dismounting the centrifuge by renewing the air valve assembly p/n 2610033C1 shown below. Make certain that air valve seal is in place. An air valve installed without the seal may be damaged and will leak continuously.



- **Problem: Oil leaks**

- Clean filter assembly and run engine and visually inspect filter assembly to identify leak location.
- 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, position 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](http://www.spinnerii.com/files/comm_id_30/Spinner_560HE_bulletin_040611.pdf)



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