



Maintenance Bulletin (MB-0034) Version 1, March 2014

Replacing the External Oil Filter Element for HS53, 64, 74 and OS53, 74 Screw Compressors

The external oil filter elements are recommended to be changed on new systems after 2-4 days of operation (50 to 100 hours) and/or on replacement compressors.

The filters are also recommended to be changed on an annual basis during routine service of the compressor and system maintenance.

If a dirty oil filter alarm appears or if the visual dirty filter indicator turns red, the element must be replaced. The alarm occurs when the differential pressure is greater than 25psi. Another symptom of a dirty filter element can be nuisance tripping of the compressor due to the oil flow switch.

The minimum oil flow requirements for the screw compressors depending on the size of the compressor are listed below:

HS-OS53: Minimum of 6 liters per minute.

HS64-74 and OS74: Minimum of 10 liters per minute.

The oil filter element and oil filter housing are shown to the right.

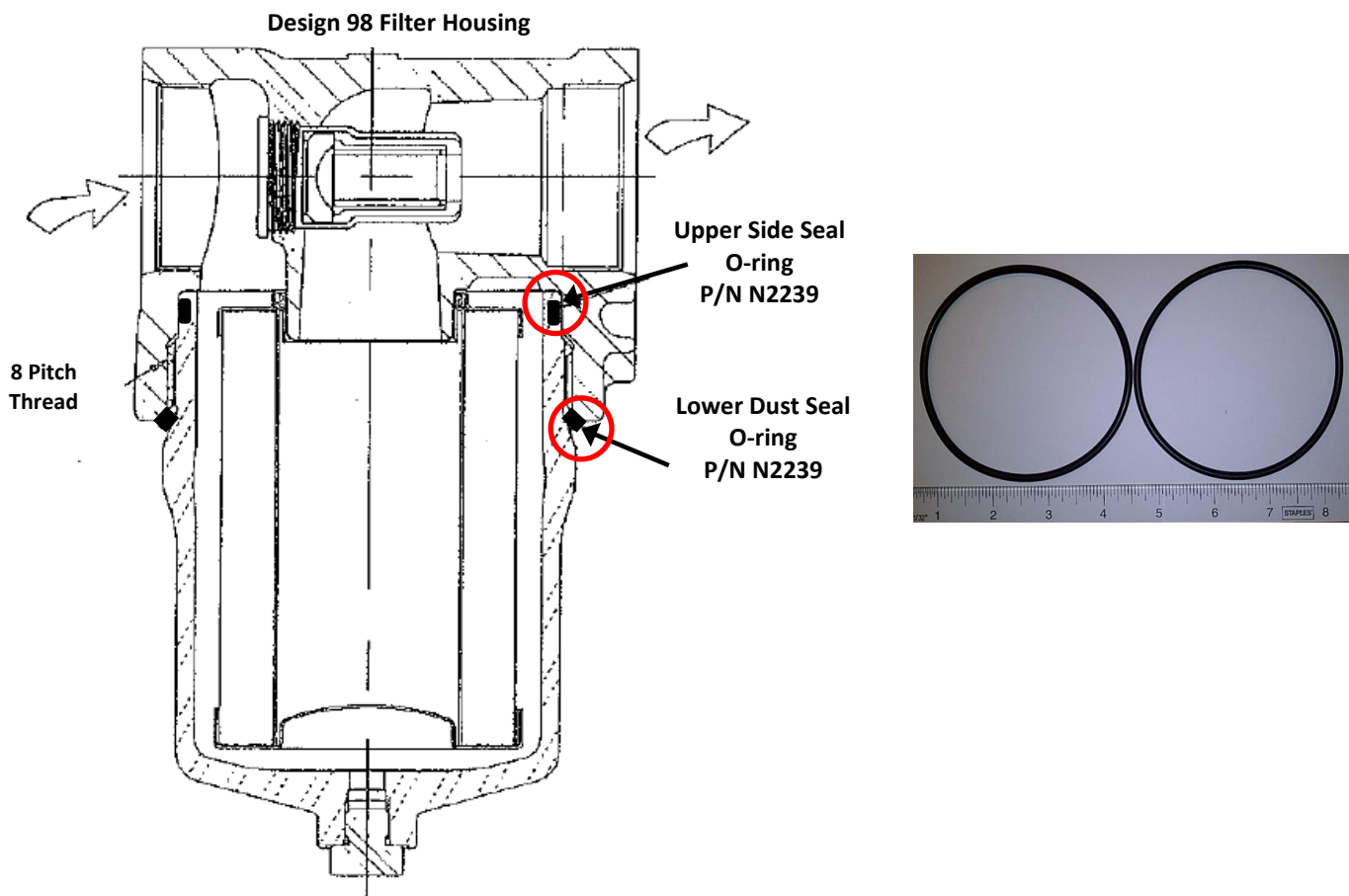


The Following Procedure will provide the general guidelines for replacing the oil filter element:

- The oil circuit supplying oil from the oil separator and/or the oil header supply must be isolated.
- All normal field practices for personnel safety and equipment should be observed.
- All normal field practices and guidelines must be followed for refrigerant handling and oil disposal.
- Ensure the compressor is isolated and all power is de-energized.
- Close the inlet and outlet isolation valves on the compressor's oil circuit.
- If the compressor does not have an oil filter housing outlet isolation valve, the compressor's suction and discharge valves will have to be closed.
- Recover the pressure from the oil supply line and/or compressor using the schrader access valves.
- When all pressure has been removed, the oil filter element can be removed.
- It is also recommended to obtain an oil sample from the oil separator for analysis when changing filter elements.

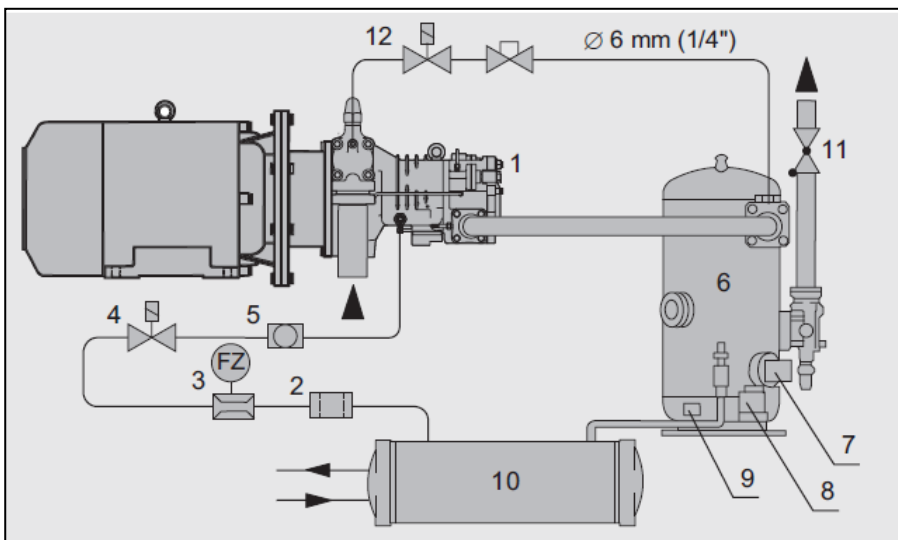
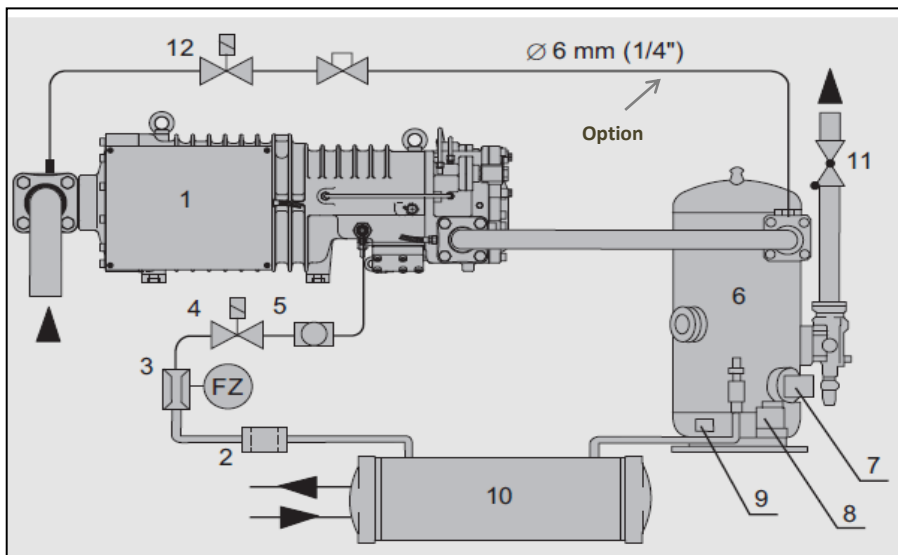
Replacing the filter element on the Design 98 filter housing:

- The filter element can be removed by removing the bowl housing. A 1" socket can be used to remove the bowl.
- Once the bowl has been removed, the filter element can be pulled down from the filter housing head assembly.
- Visually inspect the element for debris.
- Clean the bowl and inspect for any debris.
- The filter element (BITZER US part number 894-0203-02) is also supplied with (2) new o-rings which are identified by N72239 and (1) 924261. They are packed in separate bags. The single o-ring which is slightly larger in diameter is not used on this filter housing and can be discarded.
- Remove the upper side seal o-ring from the filter head housing and wipe the area clean. See diagram below.
- Lubricate the new o-ring (N72239) with the same oil in the system and install the o-ring on the upper side of the housing.
- Remove the lower dust seal o-ring and wipe this area clean.
- Lubricate the 2nd new o-ring (N72239) with the same oil in the system and install.
- The new filter element has an o-ring already installed on the inner race of the filter.
- Lubricate the inner o-ring with oil and Install the new filter element by pushing up into the filter head assembly.
- Re-install the bowl by screwing into the head assembly and torque the bowl to 45-50 ft/lbs.



- Once the new filter element and o-rings have been installed and the bowl has been torqued to the proper spec, place the oil circuit and/or compressor on a vacuum and pull down to @400 microns.
- Once a vacuum has been completed, pre-charge the oil circuit and oil filter housing with the proper oil using the schrader access valves.
- Open all isolation valves that were closed to replace the filter.
- Check for any leaks.
- ✓ **Caution:** If the compressor was also isolated to change the oil filter element, **DO NOT** start the compressor while in a vacuum.
- ✓ **Note:** If the compressor has an ESC200 or ESC201 electronic module, the reset button must be pushed to clear the original dirty oil filter alarm.
- Restart the compressor and place back into operation.
- Inspect the oil level in the separator. The normal level should be visible in the sight glass while the compressor is in operation. Adjust oil level as required by either adding or removing oil.
- Document any maintenance logs.

Typical Oil Circuit layout for the HS53, 64, 74 and OS53, 74 series

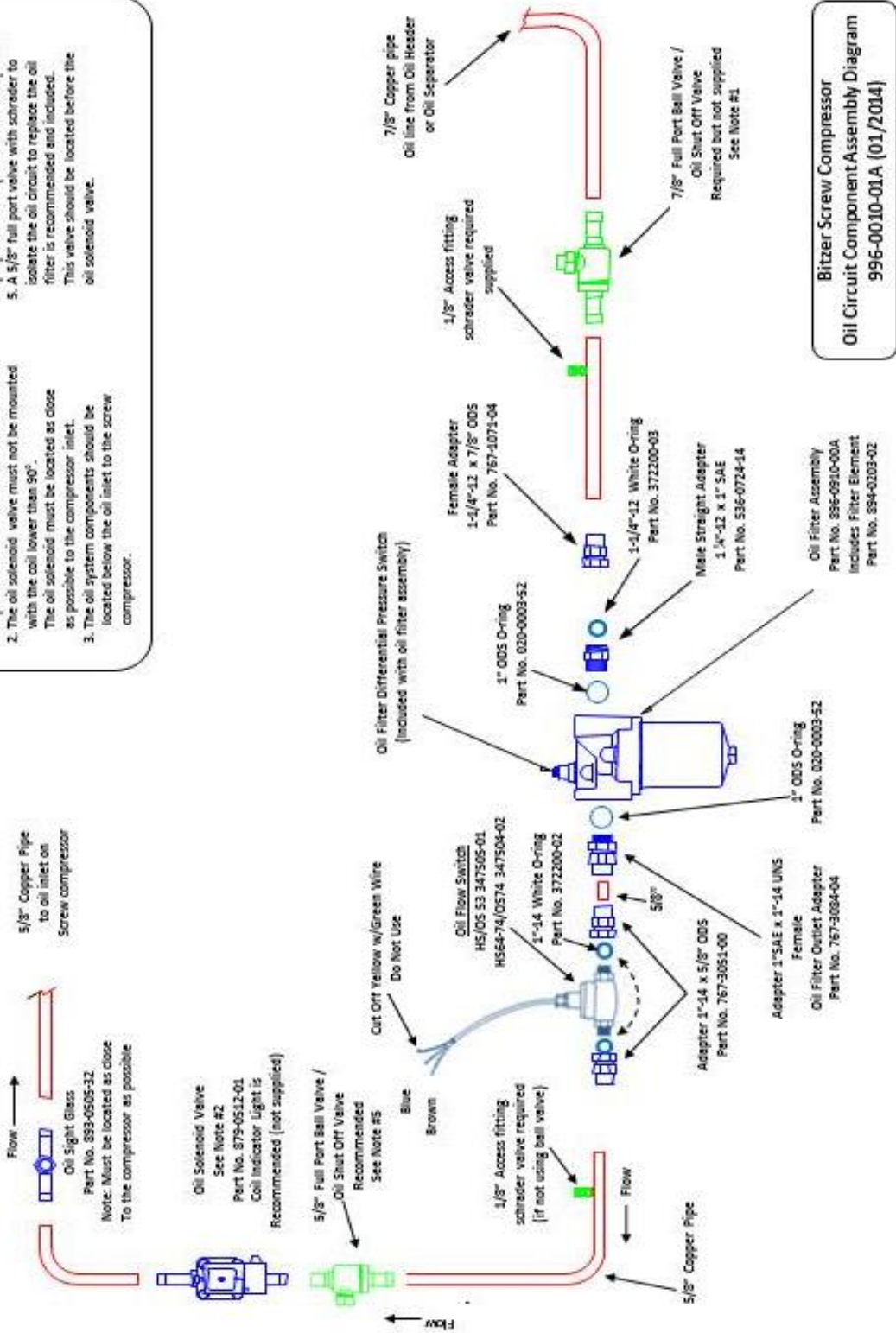


1. Compressor
2. Oil filter
3. Oil flow switch
4. Oil solenoid valve
5. Sight glass
6. Oil separator
7. Oil level control
8. Oil thermostat
9. Oil heater
10. Oil cooler (if required)
11. Check valve
12. Solenoid valve for shutoff by-pass optional
(Recommended on single compressor set-up)

HS 53, 64, 74 Oil Circuit after 01/2014

Notes:

1. An angle noto-lock valve can be used in place of this oil shutoff ball valve.
2. The oil solenoid valve must not be mounted with the coil lower than 90°. The oil solenoid must be located as close as possible to the compressor inlet.
3. The oil system components should be located below the oil inlet to the screw compressor.
4. All threaded connections must have the proper thread tape or sealant compound.
5. A 5/8" full port valve with schrader to isolate the oil circuit to replace the oil filter is recommended and included. This valve should be located before the oil solenoid valve.



**Bitzer Screw Compressor
Oil Circuit Component Assembly Diagram
996-0010-01A (01/2014)**

HS 53, 64, 74 Oil Circuit 2009 thru 2013

