



For complete information on Bitzer A/C compressor maintenance, installation, torque chart, approved oils, refer to the following Bitzer manuals found on your Technical Publications USB flash drive and on the Prevest Technical Publications web site.

- ***Bitzer kw-540-1 Maintenance Instruction***
- ***Bitzer kb-540-3 Operating Instructions***
- ***Bitzer kw-541-2 Exchanging Shaft Seal***
- ***Bitzer kw-555-3 Tightening Torques***
- ***Bitzer kt-510-5 Tech Info oils***

***Also: Prevest Maintenance Information MI18-37: LANG KK73.1 Electromagnetic Clutch Removal & Installation***



## DANGER

Park vehicle safely, apply parking brake, stop the engine. Prior to working on the vehicle, set the ignition switch to the OFF position and trip the main circuit breakers equipped with a trip button. On Commuter type vehicles, set the battery master switch (master cut-out) to the OFF position.

## SHAFT SEAL OIL COLLECTION TUBE DRAIN

The shaft seal oil collection tube (Figure 1) collects oil which seeps past the shaft seal. Remove the tube plug and drain the oil into a container for disposal. Put the cap back on the tube and place the tube into the clip bracket.

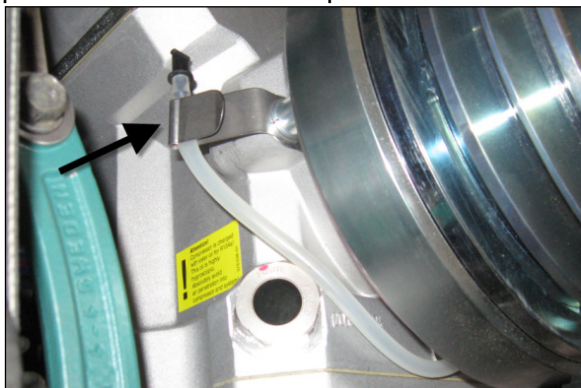


FIGURE 1: SHAFT SEAL OIL COLLECTION TUBE

## OIL COLOR AND LEVEL CHECK

1. Run the compressor for at least 15 minutes, the time required so that the oil gets clear, unclouded and stabilized (without bubbles).
2. Check the oil level **during operation**. The proper level is:
  - R.H. sight glass: between  $\frac{1}{2}$  and  $\frac{3}{4}$  of sight glass height.
  - L.H. sight glass: the full sight glass height.

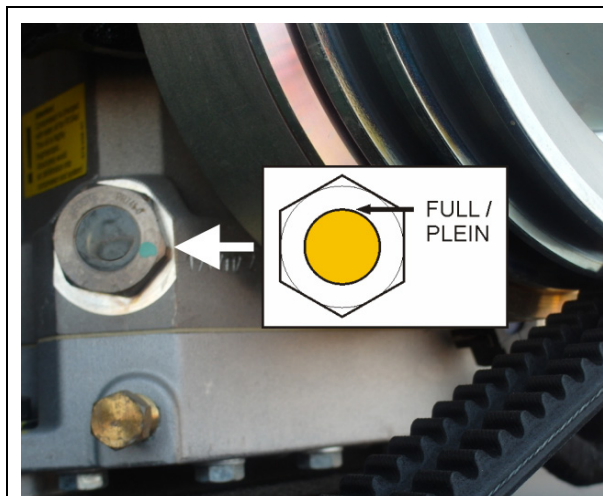


Figure 2: L.H. SIGHT GLASS

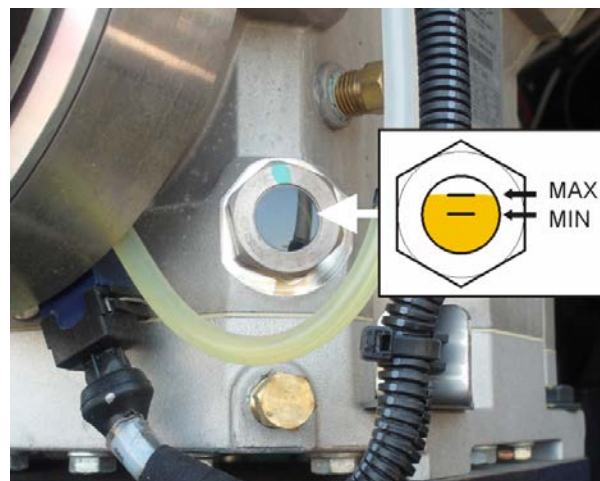
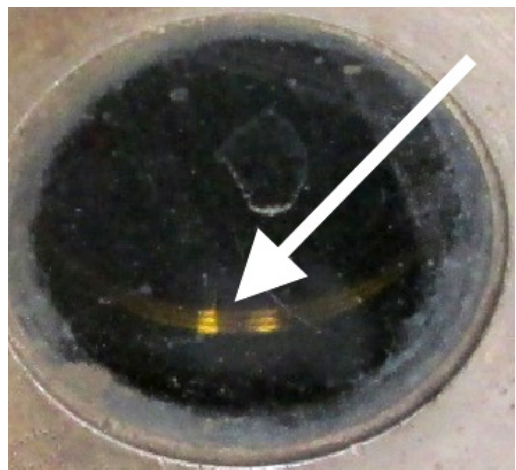





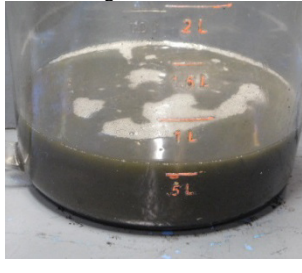
Figure 3: R.H. SIGHT GLASS

*The oil level is expected to remain the same over time except if there is a loss of refrigerant. Adding oil must be done by taking the same precautions as when changing oil in order not to introduce the moisture content of the ambient air in the air-conditioning system.*

3. Check for discoloration of the oil. It should be clear and light in color. Darkened, cloudy and contaminated oil **must be changed. Diagnose the problem.** See the following images to help you evaluate the state of the compressor oil.

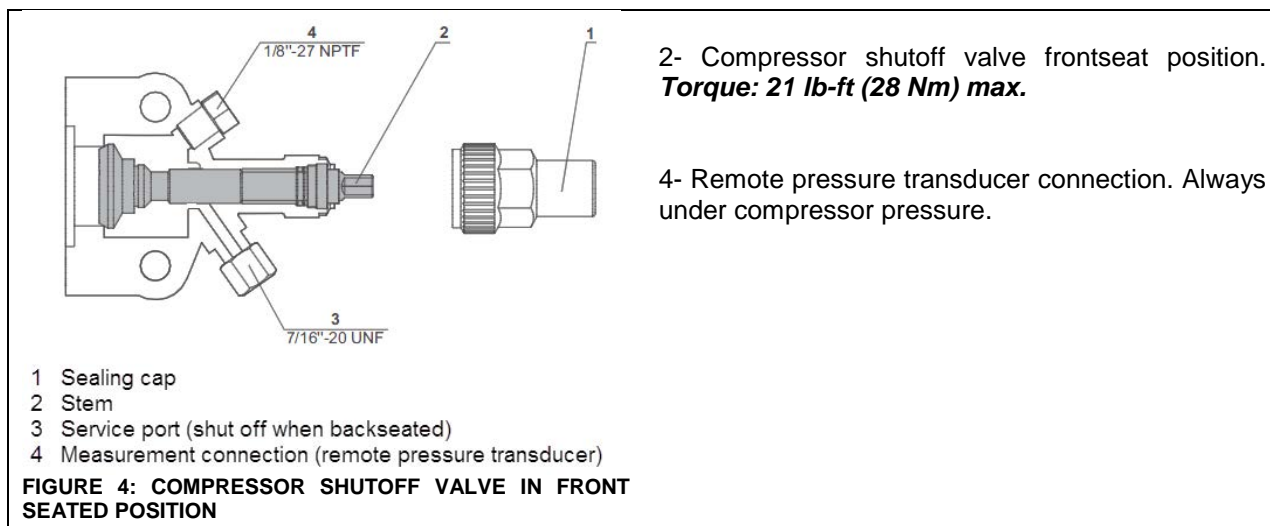
*Tip: use the reflection of light on the threads to determine the color of the oil.*

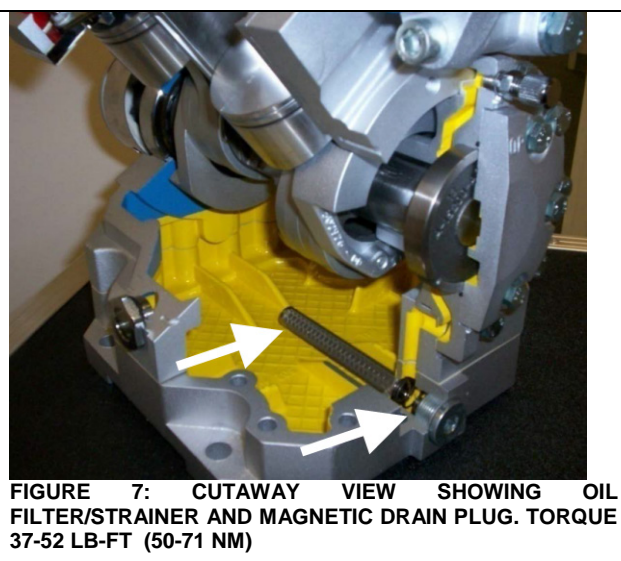
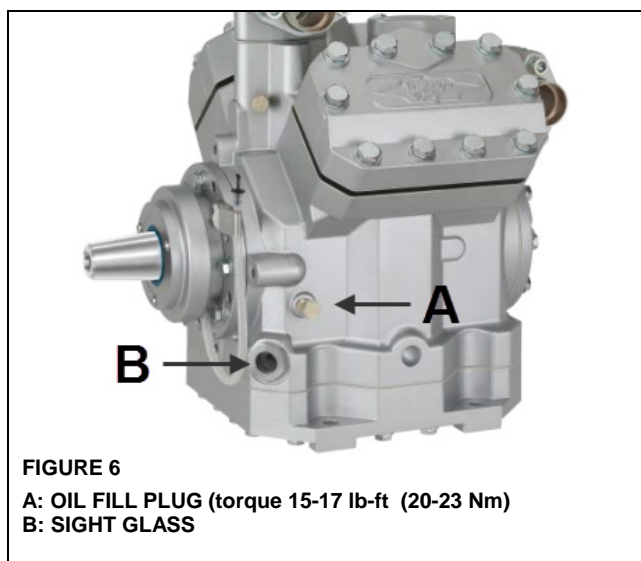
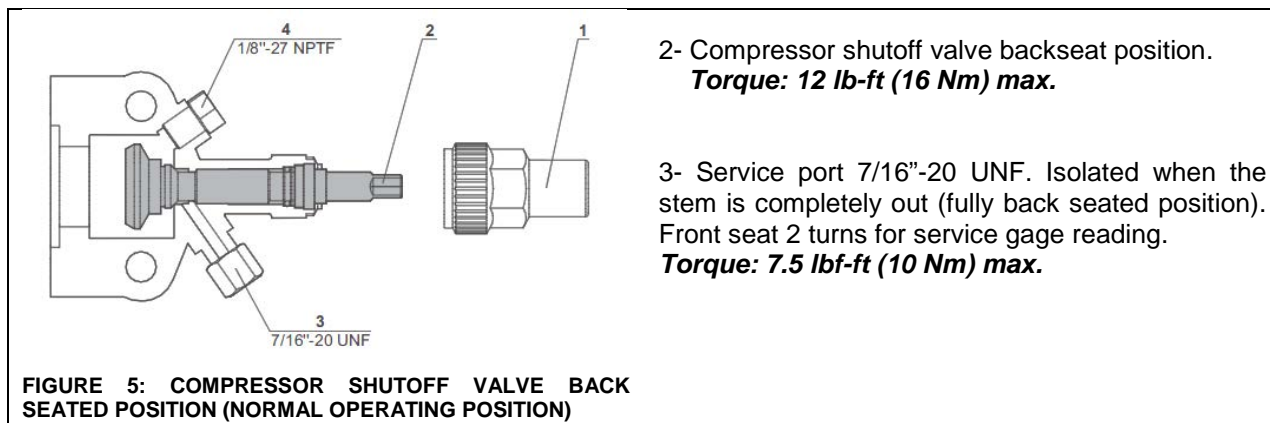


OIL EVALUATION CRITERIA			
<p>Normal</p> 	<p>Shows deterioration Should be changed soon</p> 	<p>Must be changed at once</p> 	<p>Heavily deteriorated compressor has suffered damage due to this oil</p> 

## COMPRESSOR OIL CHANGE

1. Check the oil level first and note down.
2. Connect the refrigerant recovery station to the service connections of the shut-off valves.
3. Isolate the compressor from the system. To do so, frontseat the compressor shutoff valves (*Respect the prescribed torques. Refer to Figure 4 & Figure 5 for proper torque values*).
4. Extract the refrigerant using the recovery station until ambient pressure is reached. Take note of the quantity removed.
5. Remove the magnetic drain plug (Figure 7).





**SEALING PLUGS AND SCREWS – Torque specifications by type**  
1/8"-27 NPTF : 7.5-10 lb-ft (10-13 Nm)  
1/4"-18 NPTF : 15-17 lb-ft (20-23 Nm)  
M20X1.5 & M36X1.5 : 37-44 lb-ft (50-60 Nm)  
Oil drain plug M22x1.5 : 37-52 lb-ft (50-70 NM)

6. Drain the oil into a container. Measure the quantity of oil removed.
7. Extract and clean the oil filter/strainer. Reinstall once done.
8. Clean the magnetic drain plug and reinstall (*refer to Figure 7 for torque value*).
9. Through the oil filling port, add the same amount of fresh oil. More oil should be added if the oil level was too low when checked at the beginning (*refer to Figure 6 for oil filling port plug torque value*).
10. Evacuate the compressor to 500 microns.
11. Charge the system with new refrigerant. Charge with the same quantity as recovered previously.

## Bitzer A/C compressor – oil specification

Oil type : Polyolester ISO68 for R134a

Such as :

- Bitzer BSE55 (POE)
- Castrol Icematic SW 68
- Mobil EAL Arctic 68
- Shell S4 FR-F 68, Clavus R68

For more details on oils, see Bitzer kt-510-5 Tech Info Oils available on the PrevoSt Technical Publications web site.

## PARTS / WASTE DISPOSAL

Discard according to applicable environmental regulations (Municipal/State[Prov.]/ Federal)

Access all our Service Bulletins on <http://techpub.prevoStcar.com/en/>  
Or scan the QR-Code with your smart phone

**Are you a vehicle owner?**  
E-mail us at [technicalpublications\\_prev@volvo.com](mailto:technicalpublications_prev@volvo.com) and type "ADD" in the subject to  
receive warranty bulletins applicable to your vehicle(s) by e-mail.

