

PREVOST

MAINTENANCE INFORMATION

MI18-21A

DATE: May 2018 SECTION: 22 HVAC

SUBJECT: BITZER A/C COMPRESSOR OIL CHANGE INTERVALS

REVISION: A THIS REVISION SUPERSEDES THE PREVIOUS VERSION.

07-09-2018 Images added for the evaluation of the oil condition

IMPORTANT NOTICE

This preventive maintenance is recommended by Prevost to increase your vehicle's performance. Note that no reimbursement will be awarded for carrying out this modification.

APPLICATION

ALL LICATION			
Model	VIN	VIN INCOME STATE INC. PREVOST CAR INC. TO CAME STATE IN CASE. COMM.	
ALL VEHICLES EQUIPPED WITH THE BITZER A/C COMPRESSOR			

DESCRIPTION

Change the Bitzer A/C compressor oil according to the following maintenance schedule extract. At the same time, clean the oil filter/strainer and the magnetic drain plug.

BITZER COMPRESSOR MAINTENANCE SCHEDULE			
DESCRIPTION	INTERVAL		
Drain the shaft seal oil collection tube	1 month		
Check the oil color and the oil level, top up as needed. Change the oil if it has darkened (see oil evaluation criteria in this document)	12 months		
Change the oil, clean the filter/strainer and the magnetic drain plug	36 months		

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 Prevost 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: Prevost 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

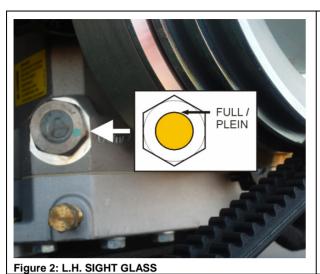
The shaft seal oil collection tube (Figure 1) collects oil which seeps past the shaft seal. Remove the tube plug and drain the oil into a container for disposal. Put the cap back on the tube and place the tube into the clip bracket.



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 ½ and ¾ of sight glass height.
 - L.H. sight glass: the full sight glass height.



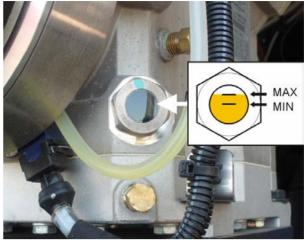
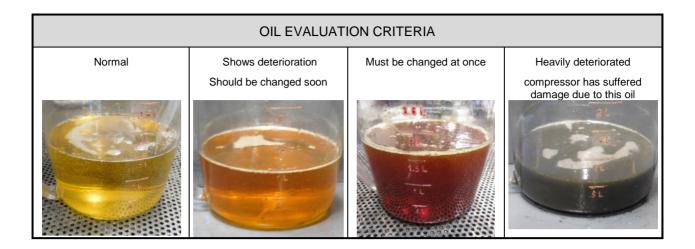


Figure 3: R.H. SIGHT GLASS

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.

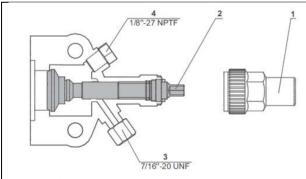
3. Check for discoloration of the oil. It should be clear and light in color. Darkened, cloudy and contaminated oil **must be changed**. **Diagnose the problem**. See the following images to help you evaluate the state of the compressor oil.





COMPRESSOR OIL CHANGE

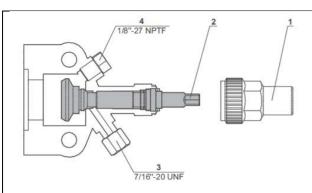
- 1. Check the oil level first and note down.
- 2. Connect the refrigerant recovery station to the service connections of the shut-off valves.
- 3. Isolate the compressor from the system. To do so, frontseat the compressor shutoff valves (Respect the prescribed torques. Refer to Figure 4 & Figure 5 for 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).



- 2- Compressor shutoff valve frontseat position. *Torque: 21 lb-ft (28 Nm) max.*
- 4- Remote pressure transducer connection. Always under compressor pressure.

- 1 Sealing cap
- 2 Stem
- 3 Service port (shut off when backseated)
- 4 Measurement connection (remote pressure transducer)

FIGURE 4: COMPRESSOR SHUTOFF VALVE IN FRONT SEATED POSITION



2- Compressor shutoff valve backseat position. *Torque: 12 lb-ft (16 Nm) max.*

3- Service port 7/16"-20 UNF. Isolated when the stem is completely out (fully back seated position). Front seat 2 turns for service gage reading. *Torque: 7.5 lbf-ft (10 Nm) max.*

FIGURE 5: COMPRESSOR SHUTOFF VALVE BACK SEATED POSITION (NORMAL OPERATING POSITION)

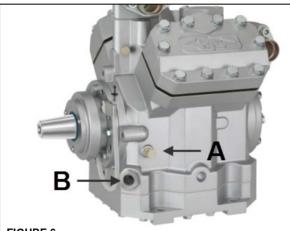


FIGURE 6

A: OIL FILL PLUG (torque 15-17 lb-ft (20-23 Nm)

B: SIGHT GLASS

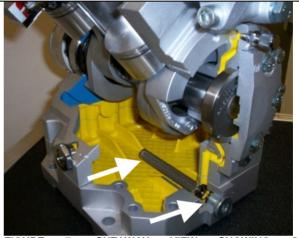


FIGURE 7: CUTAWAY VIEW SHOWING OIL FILTER/STRAINER AND MAGNETIC DRAIN PLUG. TORQUE 37-52 LB-FT (50-71 NM)

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 <u>technicalpublications prev@volvo.com</u> and type ^{*}(ADD" in the subject to receive warranty bulletins applicable to your vehicle(s) by e-mail.

