Liebert Small System MCD and PFH Condensers (8 Ton) Warranty Inspection Check Sheet

The following information must be fully completed and forwarded to your local Liebert sales office to establish your equipment warranty.

Installer_____ Address _____

_____

_____

Owner_____Address_____

_____

Owner e-mail address _____ _____

Installation Date _____

Was the unit received in good condition? ☐ **Yes** ☐ **No**

If no, has the carrier been notified? ☐ **Yes** ☐ **No**

Have the manuals been kept with unit? ☐ **Yes** ☐ **No**

PRE-START-UP

Condenser Serial Number: _____

Condenser Model Number: _____

Indoor Unit Serial Number: _____

Indoor Unit Model Number: _____

Compressor **#1** Serial Number _____

Compressor **#1** Model Number _____

Compressor **#2** Serial Number _____

Compressor **#2** Modell Number _____

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⚠ WARNING

Arc flash and electric shock hazard. Open all local and remote electric power disconnect switches, verify with a voltmeter that power is off and wear personal protective equipment per NFPA 70E before working within the electric control enclosure or any hazardous voltage electric connection enclosure. Failure to comply can cause serious injury or death.

With the electric power to the unit OFF check the following items as noted:

☐ Is condenser at least 18” from any obstructions, walls, or adjacent units?

☐ Field piping properly supported and secure.

☐ All piping secured and isolated for vibration reduction.

☐ Refrigerant lines pitched according to User Manual.

☐ Field piping trapped according to User Manual.

☐ Field piping properly sized according to the User Manual.

☐ ALL electrical connections are tight and properly terminated on Evaporator and Condenser.

☐ Heat Rejection Interlock wiring has been correctly installed between Evaporator and Condenser.

☐ Equipment is installed level.

☐ Remove all debris from unit area.

☐ Condenser fan is secure, blade rotate freely with no obstructions.

☐ All panels are securely fastened to unit?

Condenser Inspection

⚠ WARNING

Risk of electric shock, contact with high speed moving parts and hot surfaces, Can cause serious injury or death. Use extreme caution when working inside the unit cabinet of an energized unit near bare live hazardous voltage terminals, high speed moving parts such as fan blades and hot surfaces such as motors, hot gas lines

1. Check voltage at disconnect and record.

L1-L2 _____ **L2-L3** _____ **L1-L3** _____

2. Close all local and remote electric power disconnect switches. Verify with a voltmeter that power is on and the supply voltage matches the marked unit voltage rating.

⚠ WARNING

Arc flash and electric shock hazard. Wear personal protective equipment per NFPA 70E before working within the electric control enclosure or any hazardous voltage electric connection enclosure. Use extreme caution when checking the status of live hazardous voltage circuits. Failure to comply can cause serious injury or death.

- **Check unit electrical phasing with a phase meter. If phasing is incorrect, change wiring at input source to unit. Do not change any unit or component phasing.**

Air Cooled Field Charge Verification

An integral sight glass is provided with the receiver to assist in field charge verification. During charge verification set the control temperature down to keep the system running. If the system is equipped with hot gas bypass, de-energize it by removing power from the hot gas solenoid valve coil. When charge verification has been completed, replace and secure all wire connections and covers.

During operation at design ambient conditions (95 or 105°F; 35 or 41°C) the charge level will be above the sight glass in the receiver. If levels are below the sight glass an undercharge condition is likely. If levels are above the sight glass and higher discharge pressures than normal are observed an overcharge condition may be likely. However, verify that other high discharge pressure causes such as dirty coil and restricted airflow are not responsible before removing charge.

At temperatures below design ambient, refrigerant backs into the condenser coil and the level in the receiver will drop below the sight glass. If you are trying to verify charge level at lower ambient, block the condenser coil to maintain 230psig (1585kPa) discharge pressure to ensure the head pressure control valve is closed. At these conditions the charge level should be above the sight glass in the receiver.

Note:

The 5-ton high ambient, 5-ton Quiet-Line and 8-ton models consist of two condenser coils and two receivers. When restricting airflow on these units, the coils should be blocked off proportionally. If one coil is restricted significantly more than the other, liquid can remain in the restricted coil causing lower levels in the receivers. The receiver liquid level should be above the sight glasses in both receivers. There may be some variation in charge level between the two receiver sight glasses due to piping and assembly variations. When adding charge, determine which receiver level is lower and use that sight glass to gauge charge level.

Note:

If no level is visible in the sight glass, add charge until the level is in the middle of the sight glass. Check the discharge pressure during this procedure and adjust coil restrictions to maintain 230 psig (1585 kPa). Once the charge is in the middle of the sight glass, add additional system charge. After charging, unblock the coil and allow the unit to operate normally. After conditions have stabilized, restrict the coil if required to maintain 230psig (1585kPa) discharge pressure and verify that the charge level is above the sight glass.

Water/Glycol System Operation

- *If the head pressures recorded above equal **105°F** condensing temperature, no adjustment of the glycol/water regulating valve are required.*
- *If the condensing temperatures are above **110°F**, adjust the glycol/water regulating valve to lower the head pressure. If the system has balancing valves in it, these valves should be adjusted to the required GPM for this piece of equipment.*
- *After the condensing temperature has been set up properly, the system should be allowed to run for 10 to 15 minutes to obtain stable conditions.*

Entering condenser water/glycol temperature _____

Leaving condenser water/glycol temperature _____

After the refrigeration system is completely charged. Check and record the following.

3. Check compressor operating pressures and record.

#1 Compressor

Suction Pressure _____ **Discharge Pressure** _____

#2 Compressor

Suction Pressure _____ **Discharge Pressure** _____

4. Check and record superheat (should be between **10-15°F**)

Compressor #1 _____°F

Compressor #2 _____°F

5. Check and record the compressor amperage.

Compressor #1 **L1** _____ **L2** _____ **L3** _____

Compressor #2 **L1** _____ **L2** _____ **L3** _____

6. Check and record amperage of each compressor crankcase heater.

Compressor #1 CCH _____ **Compressor #2 CCH** _____

7. Check and record amperage of each receiver heater.

Receiver Heater #1_____ **Receiver Heater #2** _____

8. Check and record condenser fan amperage.

L1 _____ **L2** _____ **L3** _____

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Your start-up is now complete.

Your input is important to us. Was start up successful (no factory issues)? If yes, please check the yes box. If the start up was not successful (factory issues) please check the no box and supply detailed information below. You may also provide comments below even if you had a successful start-up.

☐ **Yes** ☐ **No**

Comments:

_____

_____

_____

_____

_____

START-UP
PERFORMED BY _____ **START-UP DATE** _____
(Please print name)

COMPANY _____ **PHONE #** _____

IMPORTANT:

This form must be properly completed and returned to your local Liebert Sales office. If you do not know who your local Liebert sales office is, call 1-800-Liebert or check our website at:

https://www.vertivco.com/en-us/products/brands/liebert/

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