



# Liebert Xtreme Density Chiller (XDC) Unit Warranty Inspection Check Sheet

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

Installer \_\_\_\_\_ Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Owner \_\_\_\_\_ Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Owner e-mail address \_\_\_\_\_ \_\_\_\_\_

Date of Installation: \_\_\_\_\_

Was the unit received in good condition?  Yes  No

If no, was the freight carrier notified?  Yes  No

Have the manuals been kept in the units?  Yes  No

## **PRE-START-UP**

**XDC Serial Number:** \_\_\_\_\_

**XDC Model Number:** \_\_\_\_\_

**Air Cooled or Drycooler Serial Number(s):** \_\_\_\_\_

**Air Cooled or Drycooler Model Number(s):** \_\_\_\_\_

**Air Cooled or Drycooler Serial Number(s):** \_\_\_\_\_

**Air Cooled or Drycooler Model Number(s):** \_\_\_\_\_

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This XDC is providing cooling fluid for:

XDO Qty \_\_\_\_\_       XDV Qty \_\_\_\_\_       XDH Qty \_\_\_\_\_  
 XDR Qty \_\_\_\_\_       XDS Qty \_\_\_\_\_

Is XDIO Communications being deployed?       Yes       No

**PUMP #1**    H.P. \_\_\_\_\_      **Serial No.** \_\_\_\_\_

**PUMP #2**    H.P. \_\_\_\_\_      **Serial No.** \_\_\_\_\_

**Tandem Compressor 1**  
**Model Number**  
\_\_\_\_\_

**Tandem Compressor 1**  
**Serial Number**  
\_\_\_\_\_

**Tandem Compressor 2**  
**Model Number**  
\_\_\_\_\_

**Tandem Compressor 2**  
**Serial Number**  
\_\_\_\_\_

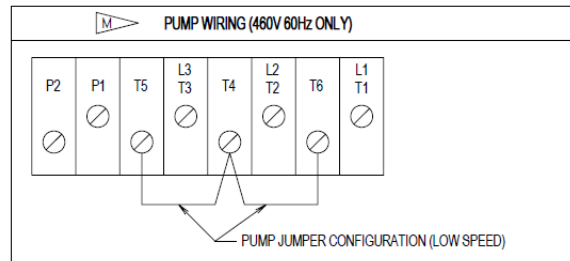
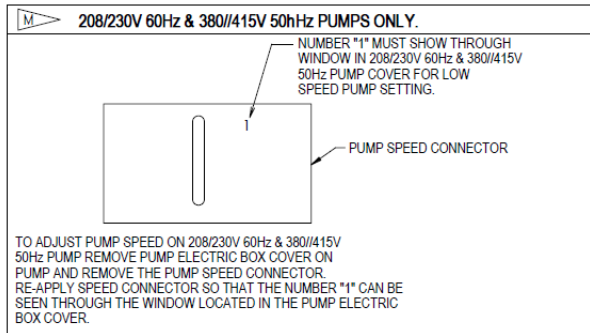
 **WARNING**

**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.**

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

- Remove the electrical cover from each pump. Verify the pumps are set-up for low speed operation.



- Internal piping clamps tight and secure.
- R134A field piping properly supported and secure.
- R134A field piping properly sized according to the User Manual.
- Hot Gas line pitched according to User Manual.
- R407C field piping trapped according to User Manual.
- R407C field piping properly sized according to the User Manual.
- ALL electrical connections are tight and properly terminated.
- Heat Rejection Interlock wiring has been correctly installed between XDC and Condenser(s)/Drycooler (70 and 71).
- Lee Temp Heater Pads are connected to a separate power source.
- XDC is charged with at least 80% of calculated charge on R407C side of the system.
- XDC is charged with at least 80% of calculated charge on R134A side of the system.
- CAN Communication cable has been correctly installed between XDP and XD Modules.
- Remote Sensors A & B are installed according to User Manual.
- Equipment is installed level.

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- Remove all debris from unit area.
- ALL isolation ball valves in the XDC are open.
- ALL isolation ball valves are open to the XD Modules.
- Filter drier by-pass ball valves are closed so that the refrigerant flow is through the filter drier.
- By-pass Flow Controllers are installed and positioned correctly per the following table.

In the table below is the recommended number of by-pass flow controllers that need to be opened based on the Cooling Modules Total Nominal kW.

<b>Liebert XDC</b>	
<b>Cooling Modules Cumulative Model Size kW</b>	<b>Required Number of Open Bypass Flow Controllers</b>
32 to 63	N/A
64 to 95	2
96 to 127	1
128 to 160	0

### Unit Inspection

*Note: Heat load is required for a proper start-up of this system.*



### **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 and hot surfaces such as motors.**

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.

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## 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.
- Check the compressors for proper rotation by bumping the contactors and watching the gauge pressures. If the pressures are equalized and the compressor sounds noisy, then compressor is running backwards.
- Check the pumps for proper rotation by bumping the contactors.

### For 460V units

Use the Grundfos rotation device provided. This device must be held against the pump housing at the inspection screw located on the end bell of the pump motor prior to energizing the pumps.

### For 208V units

View the LED on the pump.

- **Green** only indication notates **proper** rotation
- **Green & Red** indication notates **incorrect** rotation.

Pump # 1 Rotation \_\_\_\_\_

Pump # 2 Rotation \_\_\_\_\_

3. Check and record control voltage transformers for proper output. (Secondary voltage should not be under 23 VAC or exceed 27 VAC under load, change tap if necessary).

T1 \_\_\_\_\_ Volt

4. Record iCOM Software Version: \_\_\_\_\_

**Note:** The software version is located in the Network Menu that is located in Service Menus.

5. Record XDIO Software Version: \_\_\_\_\_

**Note:** The software version is located in the XDIO Menu that is located in Service Menus.

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6. Turn on fans at XD Cooling Modules.

**Note:** *If XDIO Communications is being used, the Cooling Module fans will automatically come on when the XDP is turned ON at the I/O switch.*

7. Turn unit ON at I/O switch on display.

**Note:** *If the pumps of the XDC cannot maintain flow and continue to switch over due to starting difficulties, turn the unit off and allow the receiver to refill with refrigerant. Once the receiver has a refrigerant level in the second sight glass, try to restart the XDC.*

## **Compressor Side of XDC**

### **Air Cooled Systems**

Check refrigerant level after the compressors have been operating for at least 15 minutes. Add additional refrigerant to achieve refrigerant level based on the ambient condition.

**Note:** *On the receivers with two refrigerant-level sight glasses follow the recommended Sight Glass Levels below.*

**Note:** *On receivers with three refrigerant-level sight glasses do not use the middle sight glass, use the upper and lower glasses only and follow the recommended Sight Glass Levels below.*

**Ambient Temperature** \_\_\_\_\_

**Sight Glass Levels** (Check appropriate box)

40°F (4.5°C) and lower—bottom sight glass is 3/4 full

40 to 60°F (4.5 to 15.5°C)—bottom sight glass is full

60°F (15.5°C) and higher—top sight glass is 3/4 full

a. Record Voltage to Heater Pads \_\_\_\_\_ **Volts**

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## Water/Glycol System Operation

- If the head pressures recorded below equal **105°F** condensing temperature, no adjustment of the glycol/water regulating valves are required.
- If the condensing temperatures are above **110°F**, adjust the glycol/water regulating valves 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** \_\_\_\_\_

8. Record compressor operating pressures and superheat after circuits are properly charged.

### **Compressor #1 Tandem**

**Suction Pressure:** \_\_\_\_\_      **Discharge Pressure:** \_\_\_\_\_

**Superheat:** \_\_\_\_\_

### **Compressor #2 Tandem**

**Suction Pressure:** \_\_\_\_\_      **Discharge Pressure:** \_\_\_\_\_

**Superheat:** \_\_\_\_\_

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9. Record amperages of the compressors.

### Compressor #1 Tandem

#### Compressor 1A

L1 \_\_\_\_\_ L2 \_\_\_\_\_ L3 \_\_\_\_\_ Fuse Size \_\_\_\_\_

#### Compressor 1B

L1 \_\_\_\_\_ L2 \_\_\_\_\_ L3 \_\_\_\_\_ Fuse Size \_\_\_\_\_

### Compressor #2 Tandem

#### Compressor 2A

L1 \_\_\_\_\_ L2 \_\_\_\_\_ L3 \_\_\_\_\_ Fuse Size \_\_\_\_\_

#### Compressor 2B

L1 \_\_\_\_\_ L2 \_\_\_\_\_ L3 \_\_\_\_\_ Fuse Size \_\_\_\_\_

10. Record the amperages of each compressor crankcase heater.

Compressor 1A \_\_\_\_\_ Compressor 1B \_\_\_\_\_

Compressor 2A \_\_\_\_\_ Compressor 2B \_\_\_\_\_

### **IMPORTANT NOTE:**

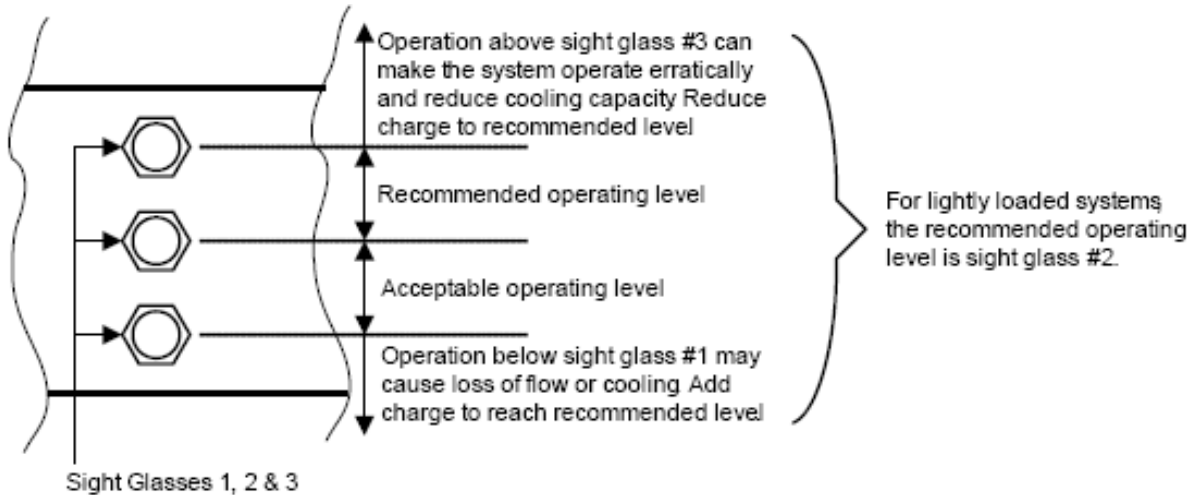
***Refrigerant oil must be added to each compressor circuit at the time of start-up. Confirm the amount of oil required for each circuit in the XDC User Manual. Fill out the tag with the additional oil amount added at each service valve for future use.***



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## Pump Side of XDC

Once constant flow is established, verify that the level in the receiver sight glass is between the 2nd and 3<sup>rd</sup> level after 10-15 minutes of operation. See diagram below.



11. Test the differential pressure switch by intentionally closing the ball valve on the discharge line of the operating pump to prevent further flow. An alarm should annunciate following this for "Loss of Flow on P1". Confirm that the switch has opened on low pressure (below 6 psi).

12. Record pump amperages after the charge in the R134A system is topped off.

**Pump #1**

L1 \_\_\_\_\_ L2 \_\_\_\_\_ L3 \_\_\_\_\_ Fuse Size \_\_\_\_\_

**Pump #2**

L1 \_\_\_\_\_ L2 \_\_\_\_\_ L3 \_\_\_\_\_ Fuse Size \_\_\_\_\_

13. Record pumps operating pressures.

**Pump #1**

Suction Pressure \_\_\_\_\_ Discharge Pressure \_\_\_\_\_

**Pump #2**

Suction Pressure \_\_\_\_\_ Discharge Pressure \_\_\_\_\_

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*Your start-up is now complete.*

Your input is important to us. Did you encounter any factory or field issues? If YES, please check the YES box and supply detailed description below. If NO, please check the NO box; however please feel free to provide any additional comments or suggestions.

YES       NO

Comments:

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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/>