



Liebert DS 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

Evaporator Serial Number: _____

Evaporator Model Number: _____

Condenser / Drycooler Serial Number: _____

Condenser / Drycooler Model Number: _____

#1 Compressor

Model Number _____ **Serial Number** _____

#2 Compressor

Model Number _____ **Serial 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:

- Internal piping clamps tight and secure on Evaporator and Condenser.
- Field piping properly supported and secure.
- Hot Gas line 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/Drycooler.
- Heat Rejection Interlock wiring has been correctly installed between Evaporator and Condenser/Drycooler (70 and 71).
- CAN Communication cable has been correctly installed between Evaporator, Condenser
- Equipment is installed level.
- Remove all debris from unit area.
- Water supply line(s), condensate pump, or gravity drain connections are tight and do not leak. Drain lines are open and clear of dirt and debris.
- Duct work is complete, and secured. (If Applicable)
- Verify Proper Water/Glycol Maintenance/Treatment has been performed.
 - Yes No (if no, conformation available please inform end user)
- Strainers Shut off valves
- Filters are installed in the unit?

Filter Size _____ **Quantity** _____

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Forward Curve Blowers (If Applicable)

Blower drive system rotates freely and belts are properly aligned and properly tensioned?

Main fan HP _____ **Voltage** _____

Motor Sheave _____ **Fan Pulley** _____ **Belt Size** _____

EC Fans (If Applicable)

EC plug fan Assemblies tight and secured?

Fan secured in **UP** position?

Fan secured in **Down** position?

Jack secured in holder?

EC Plug fan HP _____ **Voltage** _____

Evaporator 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 blower wheels and shafts, pulleys, belts, EC fan blades and hot surfaces such as motors, heater elements, hot gas lines, and humidifier bulbs

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.

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.

NOTE: Check operation of each component by utilizing the Service Menu that is located in the Service Menus on the iCOM Control.

5. Enable Manual Mode.

6. Enable Fans and record Main Fan amperage.

L1 _____ L2 _____ L3 _____ Fuse _____

L1 _____ L2 _____ L3 _____ Fuse _____

L1 _____ L2 _____ L3 _____ Fuse _____

7. Enable Reheats and record amperage. Disable Reheats after test.

RHT1 ____ / ____ RHT2 ____ / ____ RHT3 ____ / ____ Fuse _____

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NOTE: *On units with Infrared humidifiers, fill pan with water before turning on the lamps. Check water level and adjust high limit float for proper operation.*

8. Enable Humidifier and record amperage. Check for leaks at all piping connections. Disable Humidifier after test.



WARNING

Risk of electric shock and contact with extremely hot parts, can cause serious injury or death. Use extreme caution when working near bare live hazardous voltage terminals or energized humidifier bulbs.

L1 _____ L2 _____ L3 _____ Fuse _____

9. Check condensate pump for proper operation by filling pump with water. Check for leaks at all piping connections. Record pump amperage. (If Applicable)



WARNING

Risk of electric shock and contact with hot motor surfaces, Can cause serious injury or death. Use extreme caution when working near bare live hazardous voltage terminals or the energized condensate pump motor. Do not remove the condensate pump electric connection terminal cover. Use extreme caution and do not spill water on the motor or the electric connection cover.

L1 _____ L2 _____ Fuse _____

Chilled Water/Freecooling Units

- Set 3P 1/2 Actuator Open to On. Check for full valve travel. Set 3P 1/2 Actuator Open to Off.
- Set 3P 1/2 Actuator Close to On. Check for complete valve closure. Set 3P 1/2 Actuator Close to Off.
- Check for leaks at all piping connections.

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Compressorized Units

NOTES:

- *On air cooled systems an initial refrigerant charge of at least 75% to 80% of the calculated charge should be added to the circuit before starting the compressor.*
- *Digital compressor must be at fully loaded operation.*

10. Enable compressor in the Charge Mode and allow the system to operate for 10-15 minutes.

Air-Cooled Condenser w/Fan Speed

Add additional refrigerant to obtain the proper superheat and subcooling for fan speed model condensers. Refer to associated condenser warranty inspection sheet for additional information.

Air-Cooled Condenser w/Lee-Temp

On the receiver at the condenser there are two refrigerant-level sight glasses. Refrigerant level will vary with outside temperature. Check refrigerant level after the system has been on for at least 15 minutes. Add additional refrigerant to achieve refrigerant level based on the ambient condition.

Ambient Temperature _____

a. **Sight Glass Level** (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

b. 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 or Motorized Ball Valves are required.
- If the condensing temperatures are above **110°F**, adjust the glycol/water regulating valves/Motorized Ball 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.

***Note:** To adjust the head pressure with Motorized Ball Valves, go to the Service Menus and then to the Options Set-up Menu. Adjust parameter S427 (Ball Valve Setpoint Offset). The default setting is +30. The range is +0 to +70. Lowering the setpoint will decrease the head pressure and an increase in the setpoint will increase the head pressure.*

Entering condenser water/glycol temperature _____

Leaving condenser water/glycol temperature _____

11. Record Suction and Discharge Pressures.

Circuit #1

Suction Pressure _____ **Discharge Pressure** _____

Circuit #2

Suction Pressure _____ **Discharge Pressure** _____

12. Check superheat and record. Superheat should be approximately 15°.

Circuit #1

Superheat _____ °F

Circuit #2

Superheat _____ °F

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13. Check subcooling. (Refer to MC Condenser User Manual and Warranty Inspection sheet for subcooling requirement.)

Circuit #1

Subcooling _____ °F

Circuit #2

Subcooling _____ °F

14. Record Total Charge

Circuit #1 _____ LBS

Circuit #2 _____ LBS

15. Record compressor amperage.

Compressor #1

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

Compressor #2

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

16. Record compressor crankcase heater amperage.

Compressor #1 _____ **Compressor #2** _____ **Fuse** _____

NOTE: Scroll and Digital Scroll Compressor — Additional Oil Requirements
System charges over 28lbs (12.7kg) may require additional oil charge to be added. Refer to the CRV User Manual for the amount of oil required for various system charge levels and associated safety alerts. After the system has been fully charged with refrigerant, use a hand pump to add the additional oil at the suction side of the system while the system is running. The amount of oil added by field service must be recorded on the tag marked "Oil Added Field Service Record," attached to each compressor. The date of oil addition must be included as well.

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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:

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/>