Liebert CRV
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 _____ _____

Date of Installation _____

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

CRV Serial Number: _____

CRV Model Number: _____

Condenser / Drycooler Serial Number: _____

Condenser / Drycooler Model Number: _____

Compressor Serial Number: _____

Compressor Model 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 and 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

☐ Rack Sensors installed. Number of Rack Sensors _____

☐ Filters installed in the unit?

Filter Size _____ Quantity _____

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 EC fan blades and hot surfaces such as motors, heater elements, hot gas lines, and humidifier bottle.

1. Check voltage at disconnect and record.

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

⚠ 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.**

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.

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: *Test all devices through the Service Menu in the Service Menus. The fans must operate to test each device.*

5. Enable Manual Mode.

6. Enable Fans and record Main Fan amperage.

L1 _____ L2 _____ L3 _____ Fuse/Circuit Breaker _____

L1 _____ L2 _____ L3 _____ Fuse/Circuit Breaker _____

Note: *For 300mm (12 inch) CRV individual fan current draws are not required. Record only the total current draw of all fans.*

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

L1_____ L2_____ L3_____ Fuse/Circuit Breaker _____

8. Enable Humidifier; allow bottle to fill. Record amperage. Drain bottle and 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 bottle.

L1 _____ L2 _____ Fuse/Circuit Breaker _____

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 units

a. Set parameter S344 (Manual CWV (Anaout2)) to 100%. Verify the valve strokes open completely.
b. Change parameter S344 to 0%. Verify the valve closes completely.
c. Check for leaks at all piping connections.
d. Chilled water supply temperature: _____
e. Chilled water Supply GPM: _____

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**

Water/Glycol System Operation

If the system has balancing valves in it, these valves should be adjusted for the proper water flow required for the unit. After the valves have 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** _____

11. Record Suction and Discharge Pressures.

    Suction Pressure _____ **Discharge Pressure** _____

12. Check superheat and record. Superheat should be approximately 15°- 25°.

    Superheat _____**°F**

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

    Subcooling _____**°F**

14. Record Total Charge

    Circuit #1 _____ LBS

15. Record Compressor amperage.

    L1 _____ **L2** _____ **L3** _____ **Fuse/Circuit Breaker** _____

16. Disable Compressor.

17. Turn OFF Manual Mode.

18. Record compressor crankcase heater amperage. **Amperage**_____

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/

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