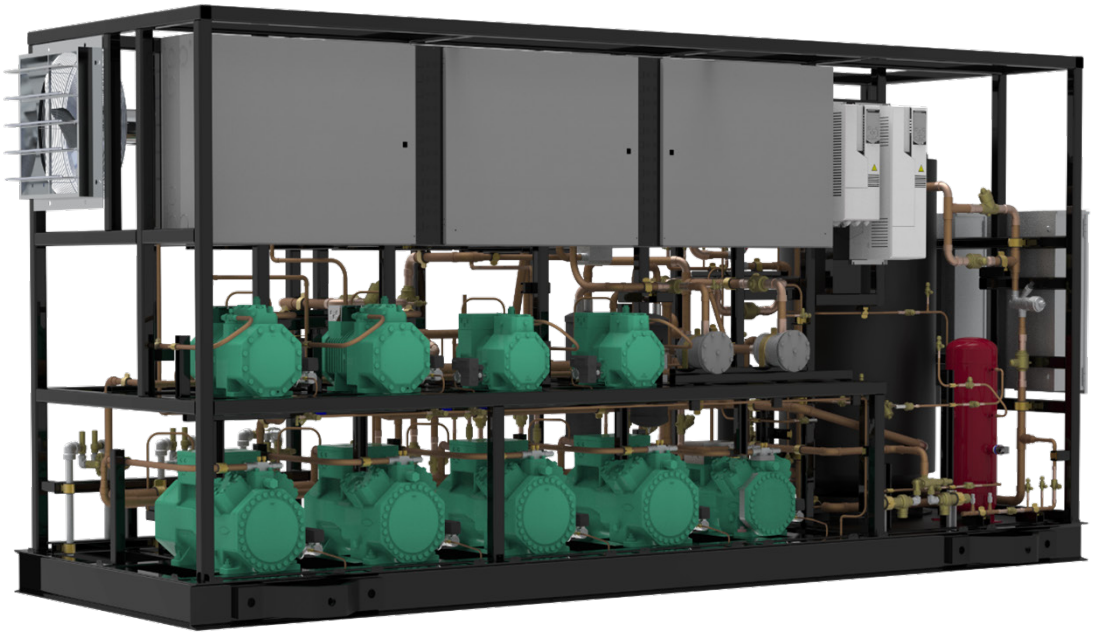
HUSSMANN®

EVOLVE™ CO_2

TRANSCRITICAL CO_2 RACK



IMPORTANT

Keep in store for future reference!

Pre-Startup Guide

P/N M001039_B
September 2024

CO_2 RACK PRE-STARTUP GUIDE

Piping, Evacuating, and Charging

- ☐ All field-installed piping completed, including cases, walk-ins, gas cooler, heat reclaim, etc.
- ☐ Remotely mounted relief valves should be installed per the installation details.
- ☐ All piping should be pressure tested per local codes.
- ☐ The system should be evacuated as described in the Hussmann Transcritical CO_2 IOM.
- ☐ The vacuum on the system should be broken using CO_2 vapor tanks to a pressure of 100 psi to prevent the formation of dry ice, as described in the Hussmann Transcritical CO_2 I/O Manual. Liquid may be used to charge the system once the pressure is above 100 psi. Enough CO_2 should be available on site in both liquid tanks and vapor tanks to fully charge the system. The CO_2 should be Refrigerant Grade CO_2 (99.9% purity) or better.
- ☐ Verify that all filters are installed on the rack, including the oil separators, suction filters, and liquid driers (field installed).
- ☐ The oil reservoir should be filled with the oil specified by the compressor manufacturer; BSE85K for Bitzer and RH68HB for Copeland. Enough oil should be available on site for the initial startup and first oil change.

Rack

- ☐ All electrical connections in the rack control panel are properly tightened.
- ☐ Main power and control power is on, and the voltage is correct.
- ☐ All rack control boards are online and communicating with the rack controller.
- ☐ All rack temperature sensors are reading correctly in the rack controller.
- ☐ All rack pressure transducer shut-off valves are open, and the transducers are reading correctly in the rack controller.
- ☐ Compressor crankcase heaters should be turned on 24 hours prior to system start up.
- ☐ There should be a minimum of 40% of the rack evaporator load for MT available for the initial startup of the system.

Gas Cooler

- ☐ All electrical connections in the gas cooler control panel are properly tightened.
- ☐ Power is on and the voltage is correct.
- ☐ Verify that the gas cooler fan staging, speed control, and rotation are correct.
- ☐ Adiabatic gas coolers should have the water turned on and drain lines completed.
- ☐ Gas cooler outlet temperature sensor(s) should be installed, insulated, and wired to the rack controller per the installation details.
- ☐ All control wiring for the gas cooler operation is installed as required. This may include wiring for communication, fan speed reference, fan staging, ambient temperature, adiabatic pre-coil temperature, alarm/status outputs, etc. See installation details for specific requirements.
- ☐ The gas cooler temperature sensor(s) are reading correctly in the rack controller.
- ☐ If equipped, the control boards installed in the gas cooler are online and communicating with the rack controller.

CO_2 RACK PRE-STARTUP GUIDE

Cases and Walk-ins

- ☐ All case controller communication wiring should be complete.
- ☐ The power for the cases and walk-in evap coils should be turned on.
- ☐ All case controllers should be addressed and communicating with the rack controller.
- ☐ All temperature sensors on the cases and walk-in evap coils are reading correctly in the case controllers.
- ☐ All pressure transducer shut-off valves are open, and the transducers are reading correctly in the case controllers.
- ☐ Verify operation of all case and walk-in evap coil fans.
- ☐ The case drain lines or evac system should be completed.
- ☐ All penetrations should be sealed.
- ☐ The case controller programming in the rack controllers is complete.
- ☐ The walk-in leak detector system should be operational.

Other

- ☐ If the rack is indoors, verify that the machine room leak detection and ventilation is functional.
- ☐ All work areas represent a safe work environment and are free of construction debris.
- ☐ The customer or contractor must provide competent personnel with proper tools and equipment and be present onsite for the entirety of the FQS visit.
- ☐ If equipped, the backup condensing unit and generator should be installed and operational.