



AN EXCHANGE OF TECHNICAL INFORMATION

Number: TL005 - 2022
Subject: Introduction to EverFRESH

Released: March 09, 2022

Carrier Transicold has upgraded the previous EverFRESH unit to a more efficient design. The optimizing of components provides greater serviceability and enhanced reliability. The system design includes an air compressor, water separator, particulate filters, fresh air solenoid, nitrogen solenoid, and a nitrogen membrane. System control and feedback is managed by our new ML5 controller and existing CO2 and O2 sensors. Components are accessible from the front of the unit for easy serviceability.

Optionally, some units may be equipped with a CO2 Injection system consisting of two CO2 injection ports and a CO2 control solenoid.

Operation and Service Manual T-374 provides more detail into system operation, description, troubleshooting and parts.

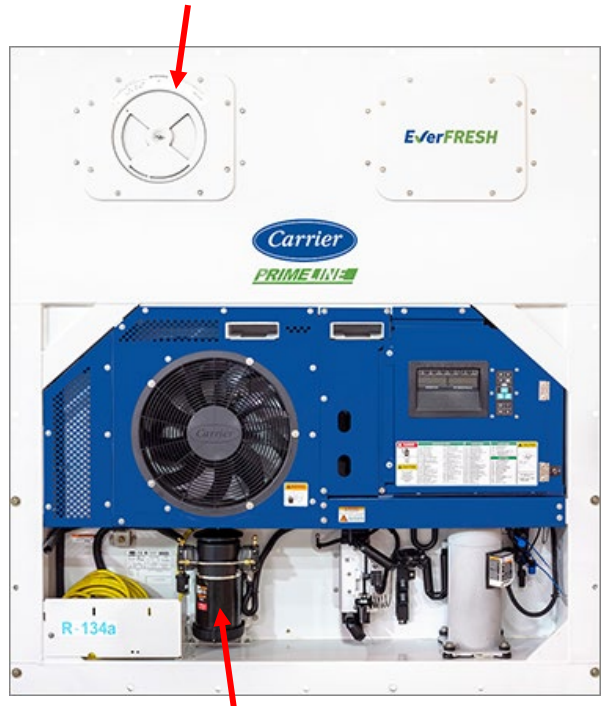
EverFRESH System Operation:

For the Pre-Trip inspection, an AUTCA selection is offered under the PTI menu. This Pre-Trip test will validate all the EverFRESH components and calibrate the CO2 and O2 sensors.

This test should be run prior to operating the unit at a frozen setpoint to allow for sensors to stabilize for calibration.

Technicians can also run a P20 test that tests all components but does not perform calibrations. This function is to assist in troubleshooting the system even if loaded with cargo.

Access to water separator, particulate filters, CO2/O2 sensor package, fresh air solenoid, nitrogen solenoid, membrane pressure transducer, optional CO2 solenoid and CO2 pressure transducer

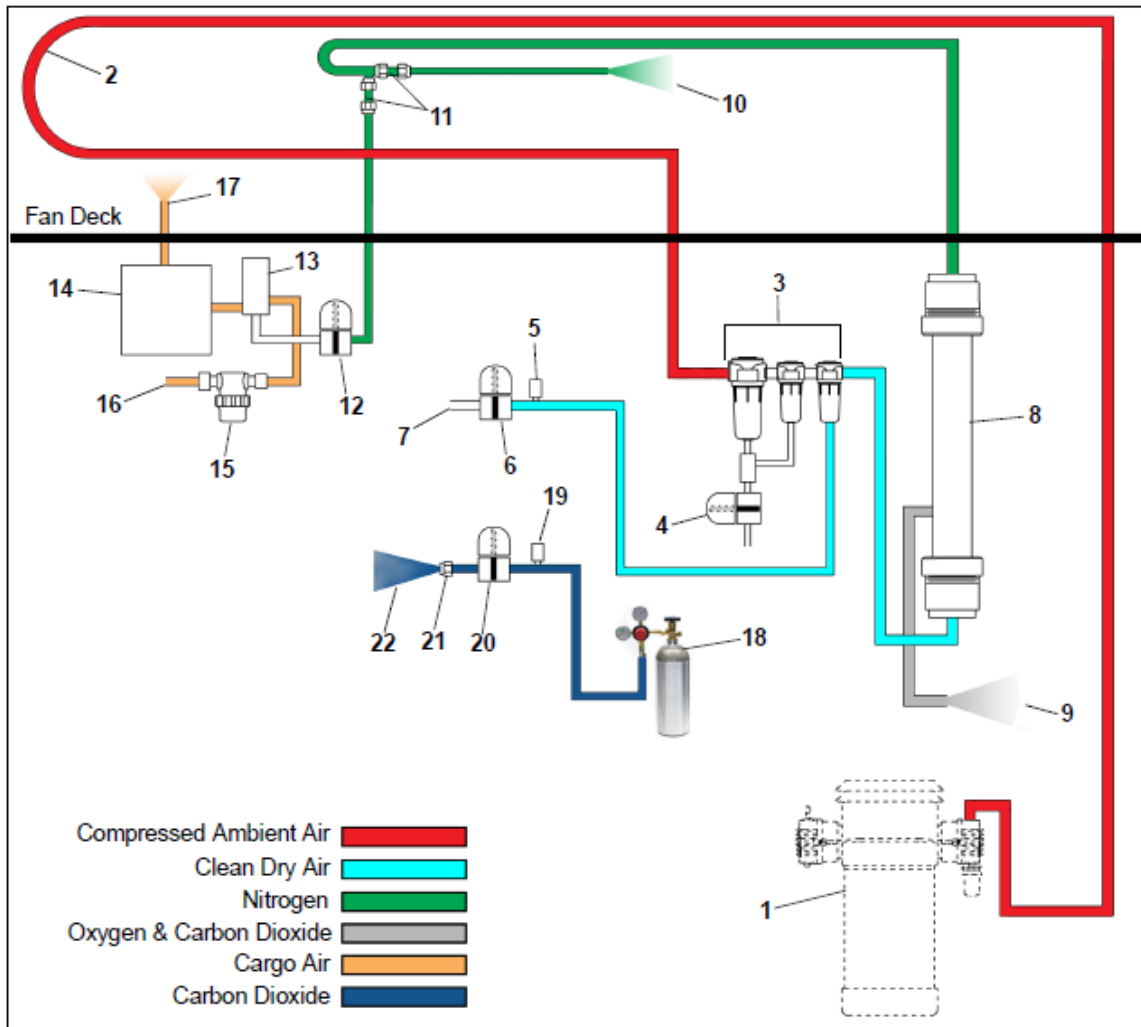


EverFRESH Air Compressor and Intake Filter

Prior to running the AUTCA, the internal box temperature needs to be greater than 10°C. Box temperatures below 10°C may result in a false failure. The test needs to run prior to running an Auto2 test.

Function code 71 (Cd71) is the code select for turning EverFRESH On or Off and for setting atmospheric setpoints. There is also a "Purge" option available in Cd71 to assist with pre-gassing of cargos. For monitoring cargos, the user can use function code 44 (Cd44) to read CO₂ and O₂ setpoints and concentration levels along with O₂ sensor voltage and Membrane Pressure Transducer readings.

EverFRESH System Layout and Parts Identification



- | | |
|---|--|
| 1) Air Compressor | 12) EverFRESH Nitrogen Valve (EN) |
| 2) Condensing Loop | 13) O ₂ Sensor |
| 3) Water Separator & Particulate Filters | 14) CO ₂ Sensor |
| 4) Water Drain Valve (WDV) | 15) Sensor Filter Assembly |
| 5) Membrane Pressure Transducer (MPT) | 16) Cargo Air Sensor Inlet |
| 6) EverFRESH Air Valve (EA) | 17) Cargo Air Sensor Outlet |
| 7) Fresh Air Supply to Cargo Space | 18) CO ₂ Injection Bottle (not included with equipment) |
| 8) Nitrogen Membrane | 19) CO ₂ Injection Pressure Transducer (IPT) |
| 9) O ₂ and CO ₂ Sent to Ambient | 20) CO ₂ Injection Valve (CSV) - Option |
| 10) Nitrogen Supply to Cargo Space | 21) CO ₂ Supply Orifice Cap |
| 11) Nitrogen Orifices (supply and sampling) | 22) CO ₂ Supply to Cargo Space - Option |

CO2 Injection Option:

There is an optional CO2 injection kit that can be added to the system that allows CO2 to be actively injected into the cargo space during transport. CO2 Injection, if configured, is turned On or Off at function code 76 (Cd76). In this configuration, a CO2 bottle is used with a regulator to maintain an input pressure of 50 PSIG, not to exceed 100 PSIG. There are two CO2 injection ports: one internal and one external. The connection is a 1/4" flare fitting with a Schrader valve.

Note: There is an easy access door on the back panel for easy access to the water separator and particulate filters for maintenance.

