

AN EXCHANGE OF TECHNICAL INFORMATION
VOLUME 21 NUMBER 1 ABOUT CARRIER TRANSCOLD CONTAINER PRODUCTS

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TechFact – Mobile Manual

In November of 2014, Carrier Transicold launched a new web portal which allows access to a new kind of manual that is easily viewed on mobile devices such as a smart phone or tablet. The first mobile manuals available were the T365 PrimeLINE with EDGE Technology and T349 NaturaLINE. Since then, the mobile manual library has grown to ten and includes ThinLINE (T363 and T368), XtendFRESH (T366 and T366S), and the Genset T4i (T343 and T345) and T4 product lines (T360 and T361).



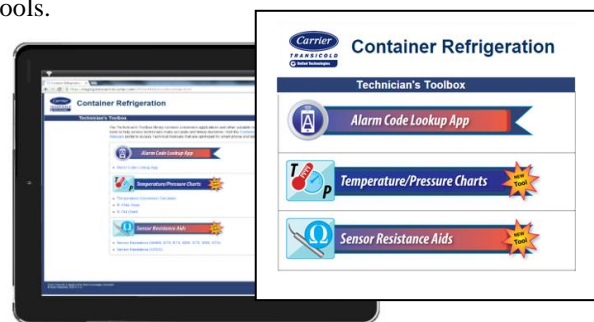
Mobile manuals allow Technical Publications to provide benefits to the end user that the traditional PDF versions cannot. Benefits include quicker download speeds, as the pages are more lightweight than the PDF version, embedding of high quality drawings and schematics, and displaying multimedia such as videos and animations. These benefits and others go a long way towards improving the quality of the technical manuals and helping the technicians to troubleshoot the units.

Since its launch, we have observed an increased flow of visitors to the Mobile Manual site with the T365 PrimeLINE with EDGE Technology leading the way.

From the November 2014 introduction through mid-June, there have been over 2,275 users visiting the manual, with just under 10,000 page views. Since April alone, there have been 1,530 users viewing approximately 5,000 pages of technical information.

With these numbers, we see an increase in usage and we expect this trend to continue as more mobile manuals are made available to the public.

In addition to the mobile manuals, we have launched a Technicians Toolbox which includes the Carrier Transicold Alarm web application, along with other web applications such as reference tables and conversion tools.



With the success of the mobile application, Carrier Transicold plans to continue to build on the Toolbox and welcomes recommendations from the field for new tools to be added, which will aid in the troubleshooting process of the units. Recommendations for additional tool applications can be provided to your regional Carrier Transicold Service Manager.

Following is the link to the Mobile Manual portal.
<https://www.transcentral.carrier.com/CPGTechPubs/portal/>

TechFact - Fuel Filter Bowl (RG / UG)

As of August 2014 production, Carrier Transicold Container has implemented a change to the 90 degree fuel filter return fitting on top of the fuel filter on both UG and RG Genset units going from a reduced flow to a full flow fitting. This change will reduce the pressure in the filter, reducing the sensitivity to the torque requirement on the filter (18ft / lbs, 2.5 m-Kg). The fitting (P/N 74-00318-00) can be added to any RG or UG genset in the field.

In parallel to this, we have developed a tool to be used when replacing the fuel filter. This tool (P/N 07-00537-00) will help ensure that the fuel filter bowl is torqued appropriately. The torque tool assembly includes a black socket (P/N 07-00537-11) and torque base (P/N 07-00537-02).

Following is an overview of the instructions to install the fitting and use the new tool.

WARNING : Be sure power is turned off and the negative battery cable is disconnected before working on the generator set.

A- Instructions for replacing the Fuel Fitting Kit (P/N 74-00318-00) / pictured:

1. Remove cover from Genset unit.
2. Drain a few ounces of fuel from filter by turning the black bleed port (drain valve) counter clockwise.
3. Remove hose clamp and discard.
4. Remove hose from fitting.
5. Remove brass fitting (with orifice) and discard.
6. Add Teflon pipe sealant to the new fitting (without orifice).
7. Install the new fitting into the fuel filter head (position fitting to the side of the head assembly).
8. Mark top of new fitting with white marker/paint pen to show fitting has been changed.
9. Inspect hose, if compromised cut off small section.
10. Reinstall hose and install new clamp.
11. Reinstall cover.

B- Instructions for replacing the Fuel Filter using the Torque Tool Assembly:

1. Bleed the fuel from the filter bowl assembly by turning the black bleed port (drain valve) counter clockwise 2 turns. Loosen the filter element to provide faster flow.
2. Close the bleed port (drain valve) once the bowl is empty.
3. Remove filter element/bowl assembly from the unit using a strap wrench.
4. Drain any excess fuel from the filter.
5. Secure tool base (P/N 07-00537-02) and element in a table vise and remove plastic bowl using the black socket tool (P/N 07-00537-11).
6. Discard used black bevel cut gasket or used blue O-ring, and lubricate the new filter bowl O-ring provided in the kit using clean diesel fuel.
7. Insert the lubricated blue O-ring gasket into the bowl's O-ring gland/slot.

74-00318-00



07-00537-02



07-00537-11



Step 5



Step 6



Step 6



Step 7



Step 10



8. Coat black threads of filter element with clean diesel fuel.
9. Reinstall the clear bowl until first contact with blue O-ring and filter element.
10. Using black socket (P/N 07-00537-11) with torque wrench, torque to 18ft/lbs. / 2.5 m-Kg.
11. Lubricate the black element square cut gasket using clean diesel fuel.
12. Fill element with clean fuel.
13. Reinstall filter element/bowl assembly to the metallic filter head assembly.
14. Using a strap wrench, tighten assembly ~ $\frac{3}{4}$ turn after gasket touches the filter head assembly.

TechFact – TechLINE Articles

Over the years Carrier Transicold has published many TechLINE articles. To assist in your continued utilization of the information, we have categorized and listed the articles alphabetically below.

Each of these articles can be found by going to the Carrier Transicold container web site at www.container.carrier.com, select Service and Support / TechLINE and scroll down to the desired article date.



Contents:

- A. **Container**, sorted by:
 - a. Articles of Introduction
 - b. Alarms, Codes & Auto PTI
 - c. Compressors
 - d. Contactors
 - e. Heaters
 - f. Motors
 - g. Refrigeration
 - h. Software
- B. **Controlled Atmosphere**
- C. **Genset**
- D. **Transcentral**

A. Container

Articles of Introduction

	TechLINE
	Qt/Yr
ACT	3rd 2007
Analyzer	4th 2003
ASC	3rd 2007
Anti-Tamper System	2nd 2014
DataBank	4th 2004
Dual Temp Unit	3rd 2006
DataCorder Storage	4th 2009
Defrost Pulsing Logic	3rd 2010
e-Autofresh	1st 2008
eAutoFresh CO2 Sensor Zero	1st 2009
EBS	2nd 2003
EliteLINE (HARP Stepper adaptor)	1st 2006
EliteLINE	4th 2001
LED Display	4th 2003
LVPS	1st 2004
Mobile Manuals	4th 2014
ML3	1st 2004
ML3 Green Label Controller	4th 2014
ML3 Old Controller Message	4th 2014
NatureFRESH	2nd 2002
NaturaLINE Introduction	2nd 2013

PC card adapter	3rd 2005
PrimeLINE	3rd 2007
PrimeLINE Diagnostics & Update	3rd 2010
PrimeLINE Controller manual bypass	3rd 2011
PrimeLINE Pressure Transducer Test	3rd 2012
PrimeLINE 561-200 New Look	2nd 2013
Quest	1st 2008
Real Time Clock Battery Replace	4th 2010
ThinLine (HARP)	3rd 2005
ThinLine 541-5xx New Look	2nd 2013
USDA and Cargo Probes	1st 2009
UVPS Repair	3rd 2011
UVPS Setting	4th 2014
VPS	2nd 2003
XtendFRESH Introduction	4th 2013
XtendFRESH Container Leak check	4th 2014
XtendFRESH PreTrip	4th 2014
XtendFRESH Prior to Servicing	4th 2014

Alarms, Codes & Auto PTI

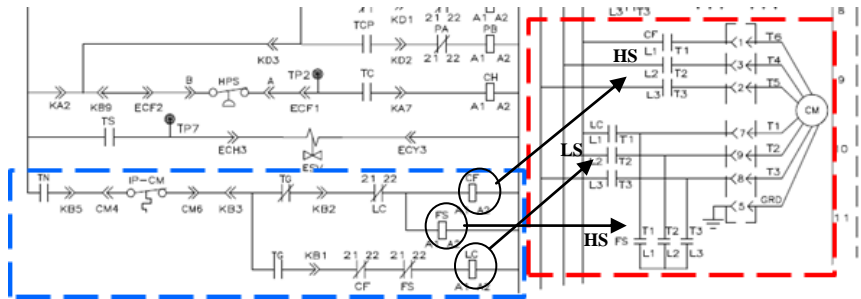
	Qt/Yr
AL#06 Enhancement	3rd 2008
AL#15 LOC	4th 2004
AL#24 Scroll Comp IP	4th 2012
AL#50 VPS	2nd 2003
AL#53 Battery Pack (deactivate)	3rd 2007
AL#62 XtendFRESH O2 out of range	4th 2014
AL#72 Out of Range	4th 2010
Alarm App	2nd 2014
All alarms defined to date	1st 2009
All alarms defined to date	3rd 2005
ERR1 Diagnostics	2nd 2013
Humidity Sensor, DPT, EEV Diagnoses	2nd 2014
dAL86 & 87 RTC Battery Diagnostics	3rd 2012
CD#16 Unit Run time comp reset	3rd 2008

CD#27 (auto defrost added)	1st 2004	LIV PrimeLINE	3rd 2008
CD#43,44,45 conf var reassignment	1st 2004	Refrigerant Quality	3rd 2012
CD#45 LVPS calibration	1st 2005	WCC Sight Glass Replacement	3rd 2012
CD#49 (# of Days to last PT)	4th 2004		
CD#59 PL Pump Down	4th 2011	Software	Qt/Yr
P#5-10,11,12	1st 2008	Bootloader Software Updating	4th 2014
P#6-5 Compressor Leak Test	4th 2013	DataLine (Acronyms)	3rd 2008
P#6-6 EL Valve Diagnostics	4th 2009	DataLine (Omni drive vs Vista)	3rd 2008
P#6-7 PL DUV/DLV Diagnostics	2nd 2014	DataBANK & Cold treatment	3rd 2012
		ID (Program from keypad)	1st 2008
Compressors	Qt/Yr	LED (Controller status)	3rd 2007
Oil check Procedure	3rd 2005	PCMCIA cards (Format)	4th 2004
ThinLine Sight Glass Elimination	3rd 2010	Pretrip Startup	1st 2008
ThinLine (Icing)	1st 2004	Probe Check Logic	3rd 2008
Scroll part # history	3rd 2006	RTC (Program from keypad)	1st 2008
Scroll ROC	3rd 2005	Unit startup (Id,software version)	3rd 2007
Scroll Start up Logic	2nd 2003		
Scroll (Trouble Shoot)	4th 2004	B. <u>Controlled Atmosphere</u>	Qt/Yr
		CA controller Programing	3rd 2012
Contactors	Qt/Yr	CO2 sensor (Trouble Shoot)	3rd 2005
Pozi-drive	3rd 2006	Spare Parts	2nd 2002
Replacement	2nd 2002		
		C. <u>Genset</u>	Qt/Yr
Heaters	Qt/Yr	Annual Inspection	4th 2004
Heater Meg ohm Reading	2nd 2014	Battery Charger Diagnostics	4th 2012
		Biodiesel fuels	3rd 2006
Motors	Qt/Yr	Dual Speed	3rd 2008
3 Phase Motors	3rd 2006	Dual Speed kit	4th 2010
Cond Motor PL EDGE Limp Home	4th 2014	Engine Serial #	3rd 2005
Evap Evaluation	3rd 2006	Generator (Bearing O-ring)	1st 2002
Evap plug adapter	4th 2003	Low Coolant Sensor	3rd 2007
Evap Motor Adapter & workaround	4th 2013	Oil filter selection	1st 2004
Evap fan blades (removal)	2nd 2003	Oil filter (Extended Life)	4th 2003
Evap Section Cleaning	4th 2010	Oil Filter Positioning	2nd 2003
Motor Diagnostics	4th 2010	Poly V-belt	1st 2006
		Startup	3rd 2011
Refrigeration	Qt/Yr	Tier 4 PowerLine Introduction	4th 2013
CareMAX Introduction	2nd 2014	Tier 4 Voltage Control Diagnostics	2nd 2014
Condenser Coil (coil 3/8 vs 7mm)	4th 2004	Tier 4i Engine	1st 2008
CO2 Refrigerant	3rd 2012	Tier 4i Engine Module Diagnostics	3rd 2010
DPRV test procedure	1st 2005		
DPRV Elimination	3rd 2010	Tier 4i Engine Speed	4th 2009
DPRV ML3/5147 kit	4th 2010		
Evacuation & Dehydration	4th 2011	D. <u>Transcentral</u>	Qt/Yr
ESV check	1st 2004	Container Matrix	4th 2011
Electronic Expansion Valve TS	1st 2009	Warranty History	1st 2006
HPS Enhancement	1st 2004	Warranty Lookup	1st 2004

TechFact - PrimeLINE® with EDGE Condenser Motor CTD# 54-00670-20 (Three Phase, Two Speed)

The PrimeLINE EDGE model unit uses a dual speed (High / Low) condenser motor with two sets of Y motor windings. To control the motor in high speed the windings are electrically connected and energized in parallel using the CF and FS Contactors. For Low speed operation the motor windings are energized in series using the LC Contactor.

- CF – Condenser Fan Contactor (High Speed)
- FS – Condenser Fan Contactor (High Speed Shorting)
- LC – Condenser Fan Contactor (Low Speed)

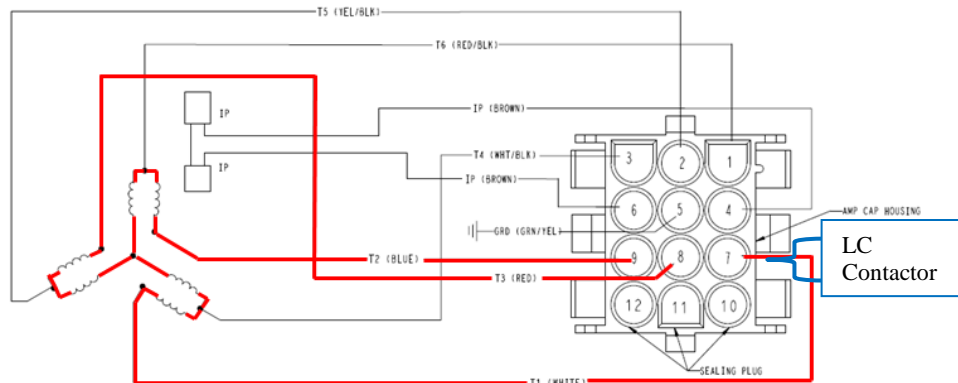


Condenser Motor (Low Speed) -

Contactor LC shall energize. When LC Contactor is energized, LC Contactor T1, T2, T3 delivers three phase power to Condenser Motor Electrical Connector Pin7, Pin9, Pin8 respectively. Condenser Motor Electrical Connector Pin7, Pin9, Pin8 then delivers three phase power to Condenser Motor Winding T1, T2, T3 respectively.

When the LC Contactor is energized, three phase power is delivered to the two sets of Y Motor Winding connected in series.

Note: Motor winding in series has higher impedance, therefore leads to lower power consumption, i.e. Low Speed application.



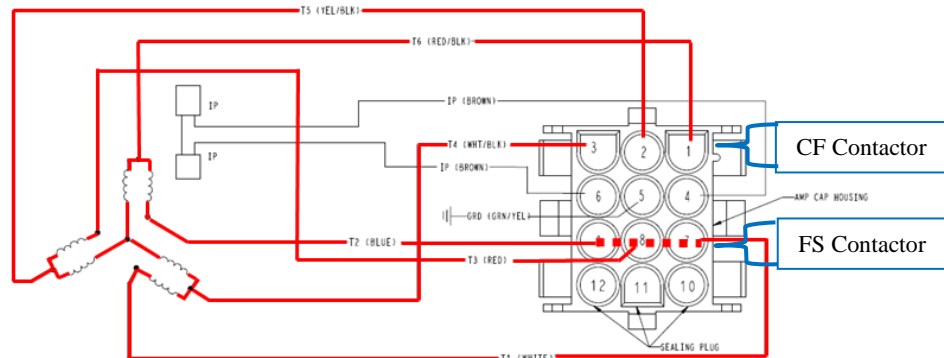
Condenser Motor (High Speed) - Both

Contactor CF and FS shall energize. When CF energizes, CF Contactor T1, T2, T3 delivers three phase power to Condenser Motor Electrical Connector Pin1, Pin3, Pin2 respectively. Condenser Motor Electrical Connector Pin1, Pin3, Pin2 then delivers three phase power to Condenser Motor Winding T6, T4, T5 respectively. Three phase power is delivered to one set of the Motor Winding (Y connection).

When FS is energized, FS Contactor L1, L2, L3 creates a “jumper” circuit to Condenser Motor Winding T1, T2, T3 respectively, three phase power (from Electrical Connector Pin1, Pin3, Pin2) is delivered to the second sets of Motor Winding (T6,T4,T5).

With the CF and FS Contactors energized, three phase power is delivered to two sets of Y Motor Winding connected in parallel.

Note: Motor winding in parallel has lower impedance, therefore leads to higher power consumption, i.e. High Speed application.



Condenser Motor Essential Notes:

The LC Contactor is electrically interlocked against CF and FS Contactor. This will prevent the CF and FS contactor to engage with the LC is energized, as this would otherwise cause an electrical failure and malfunction.

TECHLINE (November 2014 Issue) contains information on “Condenser Motor Limp Home”, a procedure written to aid installation of a Three Phase Single Speed Condenser Motor into a 69NT40-561-3XX (PrimeLINE with EDGE) unit with a dual speed motor as an emergency when a direct replacement is not readily available

TechFact – 2015 Global Training Schedule

Listed are the training courses scheduled for the remainder of 2015. Classes are subject to a minimum requirement of 12 students. Approximately 30 days prior to the class start date, registered students will receive an email confirming the class is being conducted along with logistical information. You should not make travel arrangements to attend the class until after you have received this confirmation email. To register for a class to go: <http://www.container.carrier.com> and select Training from the Service & Support tab.

Start Date	Course Description	Location
APO – Asia Pacific Operations		
9/16/2015	2 Day Container Product Update	Jakarta, Indonesia
9/24/2015	2 Day Container Product Update	Pusan, Korea
10/20/2015	3 Day Advanced Container Update	Christchurch, New Zealand
11/17/2015	3 Day Advanced Container Update	Lae, Papua New Guinea
11/18/2015	2 Day Container Product Update	Kobe, Japan
11/23/2015	3 Day Advanced Container Update	Davao, Philippines
11/26/2015	2 Day Gen Set	Davao, Philippines
EMEAR – Europe, Middle East Africa, Region		
9/1/2015	2 Day Container Product Update	Hamburg, Germany
9/7/2015	1 Week Container Basics	Durban, South Africa
9/9/2015	2 Day Container Product Update	Bremerhaven, Germany
9/15/2015	2 Day Container Product Update	Antwerp, Belgium
9/15/2015	2 Day Container Product Update	Cape Town, South Africa
10/6/2015	2 Day Container Product Update	Gdynia, Poland
10/13/2015	2 Day Container Product Update	Valencia, Spain
11/16/2015	1 Week Container Basics	Luanda, Angola
11/18/2015	2 Day Container Product Update	Mombasa, Kenya
11/25/2015	2 Day Container Product Update	West Africa
LAO – Latin America Operations		
7/27/2015	1 Week Container Basics	San Jose, Costa Rica
8/10/2015	3 Day Advanced Container Update	Santos, Brazil
8/13/2015	2 Day Gen Set	Santos, Brazil
8/25/2015	2 Day Gen Set	Puerto Barrios, Guatemala
9/7/2015	2 Day Gen Set	Lima, Peru

9/10/2015	2 Day Gen Set	Guayaquil, Ecuador
10/15/2015	1 Week Container Basics	Veracruz, Mexico
10/26/2015	1 Week Container Basics	Puerto Cortes, Honduras
11/09/2015	1 Week Container Basics	Asuncion, Paraguay
NAO – North America Operations		
8/17/2015	3 Day Advanced Container Update	Miami, FL
8/20/2015	2 Day Gen Set	Miami, FL
9/14/2015	3 Day Advanced Container Update	Toronto, Canada
9/21/2015	3 Day Advanced Container Update	Oakland, CA
9/24/2015	2 Day Gen Set	Oakland, CA
11/2/2015	1 Week Container Basics	Elizabeth, NJ

TechFact – Mandatory Part Returns (MPR)

In ongoing efforts to improve the reliability of our products, parts that fail under warranty are inspected for root cause of failure; these inspections, form the basis for continuous improvements to our products. The MPR process is the essential foundation of this ongoing process.

All parts changed under warranty should have an MPR tag attached and the part held on site for 120 days. During warranty claim submittal you will be advised if a part has to be returned under this MPR process. Unless separately advised, Part Shipping locations are;


- North America (USA and Canada) – Return to Syracuse TR20, attention Service Engineering.
- EMEAR – Return to Carrier Transcold, Rotterdam
- All other Countries – Parts should be returned to the Parts warehouse from where the part was purchased.

TechFact – Software Release Update

Listed below are the software release versions for operating and working with Carrier Transcold units. Prior to upgrading units you should seek agreement from the equipment owners.

Recip (ML2i/ML3, 5159)/ Scroll (ML2i, 5360 /ML3, 5364)
 Reciprocating Unit (ML2) – 1207
 Controlled Atmosphere – 3115
 DataLINE – 2.2 / DataBANK – 0513
 Menu – 0116, Software cards with revision greater than 5159 or 5361 must have menu 116 or an error could occur.

After completing a software upgrade, it is important for the user to check the user selectable controller selections (i.e. defrost setting, set point, etc.).

 **TechLINE is a publication of Carrier Transcold**
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