



AN EXCHANGE OF TECHNICAL INFORMATION

VOLUME 10 NUMBER 2 ABOUT CARRIER TRANSICOLD CONTAINER PRODUCTS

3rd/4th Qtr 2005

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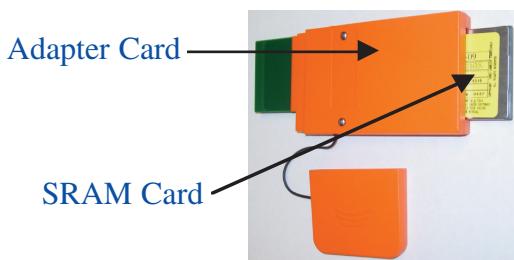
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For an ML2i controller, the card adapter will allow users to upload software and configuration files.

One SRAM card, when programmed with the Omni Drive, can hold ML2i operation and configuration software for Reciprocating, Scroll and Controlled Atmosphere container units. This eliminates the need for technicians to carry multiple cards for loading software to controllers.

The adapter, along with a separate SRAM card, can download ML2i unit data directly to the card eliminating the need to carry a PC or Data Reader to the unit. The data can then be uploaded to the PC through the Omni Drive.

For the ML2 controller, a separate SRAM card needs to be used with the adapter to upload operation and configuration software to the unit.



Once available, all required software along with installation procedures will be posted to the Internet.

□ G. Busse



Please circulate this newsletter to all of your support personnel

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Feature Article – Heater Access Panel

Carrier Transicold, model number 69NT40-541-3XX does not have a center (heater) access opening (Figure 1).

The removal of this panel resulted in taking the following service actions:

TXV – The Main TXV was moved to the upper right access panel. The TXV bulb is accessible by removing the inner 2 panel screws and loosening the three rear screws which are circled in Figure 2. The bulb is located behind the panel in Figure 2 and is within a molded foam insulator (Figure 3). It is serviced by lifting the flap and using a straight screwdriver, loosening the bulb (circled in Figure 3). The clamp is fixed in place. The bulb will slide out of the clamp. When reinstalling the bulb, slide it under the clamp and re-secure the screw using a straight screwdriver. No thermal grease is required.

New TXV Locations

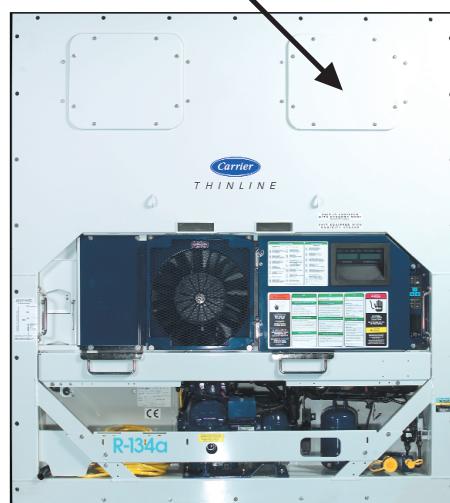


Figure 1

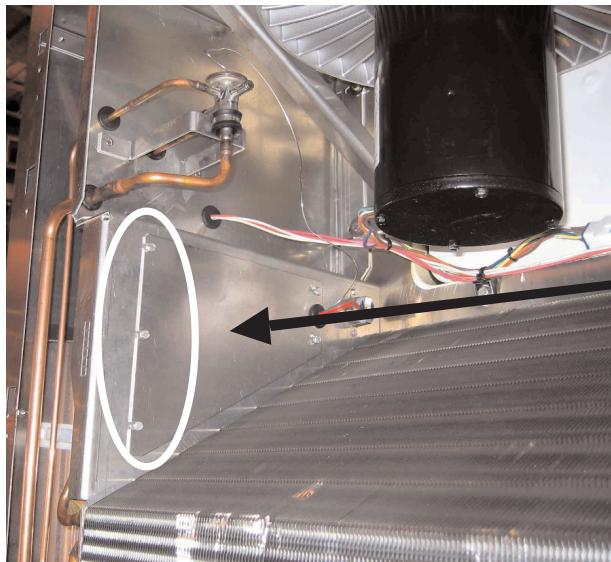


Figure 2

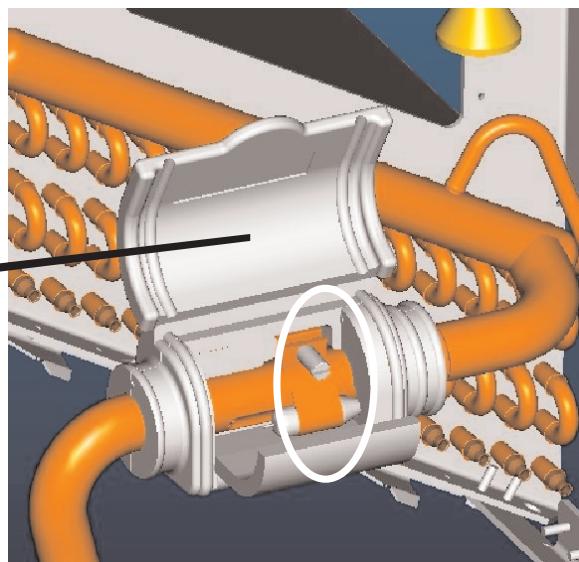


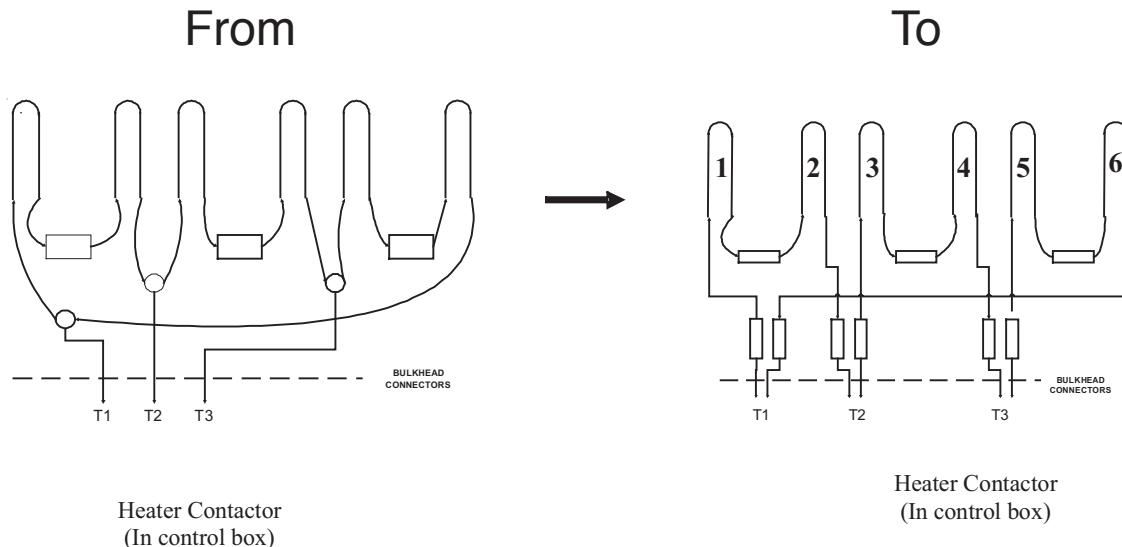
Figure 3

Heaters – The heater rods are replaced by removing the upper rear panel located on the backside of the unit. The heater connections have been relocated to the inside of the control box. This will allow for isolation of a failed heater under a loaded condition (see Figure 4).

The unit has six heaters and will defrost properly if two of the heaters are isolated. The isolation of the heater will be captured during the units next automated pre-trip as it will fail Pre-Trip test P1.

There are no new part numbers associated with these changes.

Feature Article – Heater Access Panel (cont)



Heater Configuration

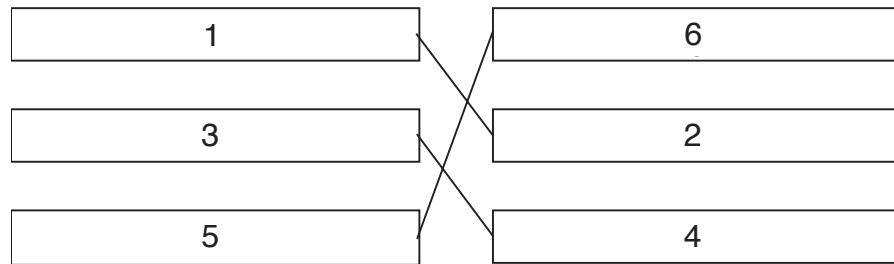


Figure 4

□ Z. Asprovski

TechTip - Oil Checkout Procedure (*Scroll Operating Unit*)

To check the compressor for proper oil level, follow the listed procedure.

1. If the unit is operating under water cooled condenser, change over to air-cooled operation.
2. Run the unit in full cool mode and make sure the suction modulation valve (SMV) is open 100% and the economizer solenoid valve is open. This can be completed by setting the setpoint 10 degrees below the current box temperature and checking code select 01 for the SMV position (Cd01 = 100%) and code select 21 for the economizer position (Cd21=Open).
3. Partially block the condenser coil inlet air. Increase the area blocked until the compressor discharge pressure is raised to approximately 14 kg/cm² (200 psig). Note: Discharge pressure can be observed via Cd14 if gauge manifold is not connected to the discharge service valve port.
4. Operate the unit in this condition for 10 minutes and observe the compressor sight glass. Oil must be visible to 2/3rd full in the sight glass. If not the case, oil must be added or removed from the system (check the operation and service manual T-327 for proper procedure / use only Mobile 32ST compressor oil).

□ Z. Asprovski

Controller & Alarm List

Recip	Scroll	Alarm	Action
swr 5100	swr 5300	AL05 Manual Defrost Switch Failure	Disable MDS
		AL06 Keypad or Harness Failure	Disable failed keys
		AL07 Fresh Air Vent Open with Frozen Setpoint (Opt.)	Display Alarm Only
		AL08 High Compressor Pressure Ratio	CLC
		AL10 CO2 Sensor Failure (Optional)	Vent opens to preselect
AL11		Evaporator Fan Motor #1 Internal Protector (Opt.)	Probe check is disabled.
AL12		Evaporator Fan Motor #2 Internal Protector (Opt.)	Probe check is disabled.
		AL13 IOE Communication Failure	C or D in P, D in F, Cd#29
		AL14 Phase Sequence Failure -- Electronic	Overridden by Pressure Delta.
		AL15 Loss of Cool	C or D in P, D in F, Cd#29
		AL16 Compressor Current High	Display Alarm Only
		AL17 Phase Sequence Failure -- Pressure	C or D in P, D in F, Cd#29
		AL18 Discharge Pressure High	Display Alarm Only
		AL19 Discharge Temperature High	CLC
AL20		AL20 Control Circuit Fuse Open	Shutdown
		AL21 Microprocessor Circuit Fuse Open	Modify temp control
AL22	AL22	Evap Fan Motor Internal Protector	Shutdown
AL23*		KA2-KB10 Jumper Disconnected	C or D in P, D in F, Cd#29
AL24*	AL23*	Loss of Phase B	C or D in P, D in F, Cd#29
AL25	AL24*	Compressor Motor Internal Protector	C or D in P, D in F, Cd#29
AL26	AL25	Condenser Fan Motor Internal Protector	C or D in P, D in F, Cd#29
AL27	AL26	All Supply & Return Air Sensor Failure	C or D in P, D in F, Cd#29
AL28	AL27	Probe Circuit Calibration Failure	Failure Action Cd#29
AL29	AL28	Low Suction Pressure	Failure Action Cd#29
AL50	AL29	AutoFresh Failure (Optional)	C or D in P, D in F, Cd#29
AL51	AL50	Fresh Air Position Sensor VPS (Optional)	Display Alarm Only
AL52	AL51	Alarm List Failure	Display Alarm Only
AL53	AL52	Alarm List Full	Display Alarm Only
AL54	AL53	NiCad Battery Pack Failure	No, off power, data recording
AL55	AL54	Primary Supply Air Sensor Failure (RTS)	Defined by Sensor Selection
AL56	AL55	DataCorder Failure	Loss of new data
AL57	AL56	Primary Return Air Sensor Failure (RTS)	Defined by Sensor Selection
AL58	AL57	Ambient Temperature Sensor Failure (AMBS)	Display Alarm Only
		Compressor High Pressure Safety (HPS)	Comp cycles off

AL59	AL59	Heat Termination Thermostat Safety (HTT)	Heaters disabled
AL60	AL60	Defrost Termination Sensor Failure	Defrost controlled by (RTS)
AL61	AL61	Heaters Failure	Display Alarm Only
AL62	AL62	Compressor Circuit Failure	Display Alarm Only
AL63	AL63	Current Over Limit	Display Alarm Only
AL64*	AL64*	Compr. Discharge Temp Over Limit CPDT(Optional)	Display Alarm Only
		Compr. Discharge Temp Over Limit (CPDT)	Display Alarm Only
AL65*	AL65*	Discharge Pressure Transducer Failure DPT (Opt.)	Display Alarm Only
		Discharge Pressure Transducer Failure (DPT)	Display Alarm Only
AL66*	AL66*	Suction Pressure Sensor Failure SPT (Optional)	Display Alarm Only
		Suction Pressure Sensor Failure (SPT)	Minimum SMV Capacity.
AL67	AL67	Humidity Sensor Failure	Dehumidification disabled.
AL68	AL68	Condenser Pressure Transducer Failure (CPT)	Disable (CPC)
AL69*	AL69*	Suction Temperature Sensor Failure CPSS (Optional)	Display Alarm Only
		Suction Temperature Sensor Failure (CPSS)	Display Alarm Only
AL70		Secondary Supply Air Sensor Failure/No DataCorder	Defined by Sensor Selection
AL71	"ERR"	Secondary Return Air Sensor Failure/No DataCorder	Defined by Sensor Selection
	"ERR"	Internal Microprocessor Failure	"ERR" # 1 to 9
Entr stpt	Entr stpt	Enter Set Point	Display Only
LO	LO	Low Main Voltage	Display Only
dAL70-91	dAL70-91	Refer to the Service Operations Manual for the DataCORDER Alarms	

C or D in P, D in F, Cd #29: In Perishable mode if option A or B is selected, action will revert to selection C (evaporator fans only). In frozen mode, all options will revert to selection D (Shutdown)

Sensor Selection DataCorder Supply and Return Probes are used as Controller Secondary Supply & Secondary Return Probes. The secondary probe (if valid) will be used when the corresponding primary probe is invalid. This substitution will be automatic. Based upon the setpoint, and what control probes are valid, the control temperature is determined as follows: For Parishable setpoints Primary Supply is used if valid, Otherwise Secondary Supply is used if valid, Otherwise Primary Return - 2°C is used if valid, Otherwise Secondary Return - 2°C is used if valid, Otherwise no control temperature is valid. For frozen setpoints Primary Return is used if valid, Otherwise Secondary Return is used if valid. Otherwise Primary Supply is used if valid, Otherwise Secondary Supply is used if valid, Otherwise no control temperature is valid
For Alarm 20 series, alarm LED will be activated and user intervention is required.

CLC (Compressor Limit Cycle) High comp pressure ratio and High Dome Temp will cause the compressor is cycled off for a period of time from three to five minutes. The condenser fans and evaporator fans continue to operate according to the cooling mode in effect. The compressor will then resume operation per the normal capacity staging logic, starting in unloaded, and may be required to remain running for a minimum run time period according to the cause of the limit cycle. The minimum run time is the period during which the trigger is ignored for a particular limit cycle cause. In all cases an SMV position reset sequence will be performed to insure that the SMV position is accurate.

F.A.Q. - Kubota Engine

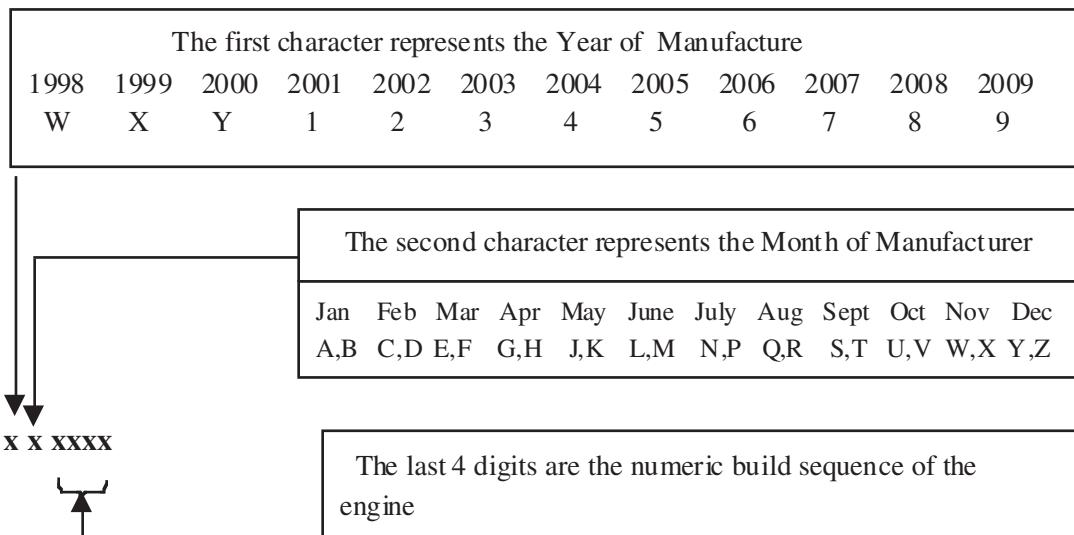
Q. I have the 69UG and 69RG model gensets, how do I interpret the engine serial numbers when it comes time to order maintenance items and what service parts manual to use?

A. Since the introduction of the 69UG and 69RG model Gensets, both products have used the 4 cylinder Kubota engine. Due to internal changes to the engine (because of Environmental Regulations), it is very important to understand the serial number sequence so that the correct service parts manual is used to order engine parts.

The Engine Model number (eg. **CT4-134DI, V2203-DI-E2BG- xxxxx**) is broken down in the following fashion.

CT4-134DI (Carrier Model Number)
V2203-DI-E2B (Kubota Model Number) } Basically, Vertical, 4 cylinder, 134 Cu.In., Direct Injection Engine.

The **xxxxx** portion (is the sequential serial number of the engine during manufacturing) which determines when the engine was built and the correct parts book to use. This serial number is broken down in the following manor.



Eg. Engine Serial Number XA0001 was built in January 1999
 1Y1234 was built in December 2001
 3Y1234 was built in December 2003

The chart below references the Engine's corresponding Service Parts Manual.

Manual Number	Engine Serial Number
62-03459	* Prior to XA0001
62-10295	Beginning with XA0001
62-10863	Beginning with 3Y0001

* Prior to January 1999 the serial number format of the engines consisted of only 5 digits, which were sequential in order of manufacturing.

□ G. Barkowski

TechTip - Troubleshooting the CO2 Sensor

The following scenarios involve the Controlled Atmosphere CO2 sensor pre-trip test failures and/or an alarm. If any of these are encountered, follow the recommendations given in the remedy section.

Failure	Possible Causes	Remedy
P4-0 Zero calibration failure	Voltage reading outside 0.95 to 1.05V (value can be found in the download raw or event data)	Sensor out of calibration Attempt a P6-0 Zero calibration Pass – Repeat P4 or auto PTI Fail – Go to P6-0 Zero Calibration Failure below
P4-2 Span check failure	If 5% gas selected Reading should be 3.5 – 6.5 V If 20% gas selected Reading should be 17 – 23 V (value can be found in the download raw or event data)	Sensor out of calibration - Attempt a P6-0 Zero calibration Pass – Repeat P4 or auto PTI Fail - Verify Gas mix certification if accurate replace senor
P6-0 Zero calibration failure	Sensor voltage is unstable or voltage outside 0.95 to 1.05V (value can be found in the download raw or event data)	Sensor unplugged, circuit broken, or damaged sensor. Insure sensor is connected and there are no breaks in the circuit. Correct any problems and re-run P6, to confirm sensor failure. If failure repeats replace sensor
AL35 Sensor failure	Sensor voltage is outside the range 0.95 to 5.05V for 30 minutes	Sensor unplugged, circuit broken, or Faulty/damaged sensor. Insure sensor is connected and there are no breaks in the circuit. Correct any problems and run P6, if sensor alarm repeats replace sensor

- In addition to the chart above, when installing a new CO2 sensor you should run Pre-trip 6 prior to performing an auto pre-trip on the CA system.
- Pre-Trip test P6-0 is an independently run test from the Auto Pre-Trip test feature.

M. Rogers

F.A.Q. - Reduced Oil Circulation Compressor

Q: Can the new ROC compressor be used as a replacement part on the older scroll units that have an oil separator?

A: The ROC (reduced oil circulation) compressor P/N 18-10128-20 is a universal replacement compressor for all EliteLINE and StreamLINE units in the field. The previous compressor 18-00095-21 should not be used as a replacement for units installed without the oil separator. Doing this will result in a loss of cooling capacity.



Z. Asprovski

F.A.Q. - Controller Analyzer

P/N: 07-00428-00

Q: What is the test cycle time for testing controllers on the analyzer?

A: Test time is 12-13 minutes to perform a full functional testing of a controller.

Q: In my Analyzer's Operation manual I see the ML3 software card (P/N: 12-50078-06) is not included with my analyzer and is not currently available. When will the ML3 software be available?

A: The ML3 analyzer software card will be available for order from RCG in the 1st quarter of 2006. ML3 analyzer software will be posted to the Internet in this same time frame.

Q: Can I test an ML2 controller on the Analyzer?

A: The analyzer is designed to test ML2i and ML3 controllers ONLY.

Q: I damaged one of the connection cables on my analyzer, are individual replacement cables available?

A: Individual cables are available from RCG. Cables carry a label identifying which connection point they serve. Replacement parts numbers are listed in the analyzers operational manual.

G. Busse

TechTip - Software Release Update

The latest software release versions for the 69NT units are:

Scroll (ML2i/ML3) – 5319

Recip (ML2i /ML3) – 5132

Recip (ML2) – 1207

ML2 DataCorder – 2104

Controlled Atmosphere – 3109

DataLine - 1.5.1

DataBank - 0509

All software can be downloaded from Transcentral within the Carrier Transicold Website except for DataLine. DataLine can be upgraded from Carrier Transicold Website at <http://www.container.carrier.com> as long as you own an original version.



TRANSICOLD

www.container.carrier.com

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Please circulate this newsletter to all of your support personnel



Emergency 24-Hour Technical Assistance
800-668-6283 (800-ONTO-CTD)

General – Warranty Returns

Carrier Transicold often receives controller and other like parts returned under warranty with no failure description. In an effort to support continual product improvement this detail is critical to our ability determine root cause.

The detail needs to be included as part of the warranty claim.

TechFact - 2006 School Schedule

Listed below is the planned schedule for Container training courses offered in 2006. Refer to the 2006 Worldwide Customer Training brochure (62-03198 rev. AL) for the course descriptions, enrollment details and fees. This information is also available on the Internet at <http://www.container.carrier.com> and click on the Training tab.

JANUARY	Program	Location
23 - 27	1-Week Container	Recife, Brazil
FEBRUARY		
6 - 10	1-Week Container	Honolulu, HI
13 - 17	1-Week Container	Davao, Philippines
MARCH		
6 - 10	1-Week Container	Seattle, WA
8 - 10	3-Day Container Product Update	Germany
13 - 17	1-Week Container	Rotterdam, NL
29 - 31	3-Day Container Product Update	Ho Chi Minh City, Vietnam
APRIL		
3 - 7	1-Week Container	Long Beach, CA
19 - 21	3-Day Container Product Update	Busan, Korea
24 - 26	3-Day Container Product Update	Yokohama, Japan
24 - 28	1-Week Container	Puerto Madryn, Argentina
MAY		
7 - 11	1-Week Container	UAE
17 - 19	3-Day Container Product Update	Vancouver, BC
22 - 24	3-Day Container Product Update	Montreal, Canada
17 - 19	3-Day Container Product Update	Hong Kong
22 - 26	1-Week Container	Qingdao, China
JUNE		
12 - 16	1-Week Container	Miami, FL
12 - 16	1-Week Container	Montevideo, Uruguay
19 - 23	1-Week Container	Guayaquil, Ecuador
19 - 21	3-Day Container Product Update	San Jose, Costa Rica



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