Connectors and adapters to convert original LLIDs to global connectors are no longer available.
All LLIDs must be upgraded to accommodate global connectors

General Service Bulletin

Tracer® CH530/CH531 Pluggable Connector System

Product Code: 0064 (PART)

⚠ SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

October 2020 **PART-SVB16E-EN**

Introduction

Read this manual thoroughly before operating or servicing this unit.

Warnings, Cautions, and Notices

Safety advisories appear throughout this manual as required. Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

The three types of advisories are defined as follows:

⚠WARNING Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠CAUTION Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It could also be used to alert against unsafe practices.

NOTICE Indicates a situation that could result in equipment or property-damage only accidents.

Important Environmental Concerns

Scientific research has shown that certain man-made chemicals can affect the earth's naturally occurring stratospheric ozone layer when released to the atmosphere. In particular, several of the identified chemicals that may affect the ozone layer are refrigerants that contain Chlorine, Fluorine and Carbon (CFCs) and those containing Hydrogen, Chlorine, Fluorine and Carbon (HCFCs). Not all refrigerants containing these compounds have the same potential impact to the environment. Trane advocates the responsible handling of all refrigerants-including industry replacements for CFCs and HCFCs such as saturated or unsaturated HFCs and HCFCs.

Important Responsible Refrigerant Practices

Trane believes that responsible refrigerant practices are important to the environment, our customers, and the air conditioning industry. All technicians who handle refrigerants must be certified according to local rules. For the USA, the Federal Clean Air Act (Section 608) sets forth the requirements for handling, reclaiming, recovering and recycling of certain refrigerants and the equipment that is used in these service procedures. In addition, some states or municipalities may have additional requirements that must also be adhered to for responsible management of refrigerants. Know the applicable laws and follow them.

⚠WARNING

Proper Field Wiring and Grounding Required!

Failure to follow code could result in death or serious injury. All field wiring MUST be performed by qualified personnel. Improperly installed and grounded field wiring poses FIRE and ELECTROCUTION hazards. To avoid these hazards, you MUST follow requirements for field wiring installation and grounding as described in NEC and your local/state electrical codes.

⚠WARNING

Personal Protective Equipment (PPE) Required!

Failure to wear proper PPE for the job being undertaken could result in death or serious injury. Technicians, in order to protect themselves from potential electrical, mechanical, and chemical hazards, MUST follow precautions in this manual and on the tags, stickers, and labels, as well as the instructions below:

- **Before installing/servicing this unit, technicians MUST put on all PPE required for the work being undertaken (Examples; cut resistant gloves/sleeves, butyl gloves, safety glasses, hard hat/bump cap, fall protection, electrical PPE and arc flash clothing). ALWAYS refer to appropriate Safety Data Sheets (SDS) and OSHA guidelines for proper PPE.**
- **When working with or around hazardous chemicals, ALWAYS refer to the appropriate SDS and OSHA/GHS (Global Harmonized System of Classification and Labeling of Chemicals) guidelines for information on allowable personal exposure levels, proper respiratory protection and handling instructions.**
- **If there is a risk of energized electrical contact, arc, or flash, technicians MUST put on all PPE in accordance with OSHA, NFPA 70E, or other country-specific requirements for arc flash protection, PRIOR to servicing the unit. NEVER PERFORM ANY SWITCHING, DISCONNECTING, OR VOLTAGE TESTING WITHOUT PROPER ELECTRICAL PPE AND ARC FLASH CLOTHING. ENSURE ELECTRICAL METERS AND EQUIPMENT ARE PROPERLY RATED FOR INTENDED VOLTAGE.**

⚠WARNING

Follow EHS Policies!

Failure to follow instructions below could result in death or serious injury.

- **All Trane personnel must follow the company's Environmental, Health and Safety (EHS) policies when performing work such as hot work, electrical, fall protection, lockout/tagout, refrigerant handling, etc. Where local regulations are more stringent than these policies, those regulations supersede these policies.**
- **Non-Trane personnel should always follow local regulations.**

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Revision History

- Part number and graphic updates
- Removed flat cable parts

Overview

The purpose of this bulletin is to advise field service technicians of a change associated with Tracer® CH530/ CH531 chiller controllers. This literature piece provides an overview to the new system and illustrates the various components utilized in a typical system. This new connector system began to ship on La Crosse, Pueblo, and Global Parts CH530/CH531 products in second quarter of 2006.

This service bulletin is informational only and does not authorize any parts or labor.

Typical product applications include La Crosse Simplex and Duplex™ CenTraVac® chiller products: CVHE, CVHF, CVHG, CDHF, CDHG, Pueblo: RTAC, RTHD, CGWF, CCAF, and Global Parts: Earthwise™ purge PRGD and CVRD chiller controllers. This bulletin does not address a safety concern, only a product change.

The new connector system will be installed on units with the following design sequence. Refer to digit 10 and 11 in the model number for the unit design sequence.

CVHE	-	4F and later
CVHF	-	2W and later
CVHG	-	2M and later
CDHF	-	1J and later
CDHG	-	1J and later
CCHC	-	2A and later (China direct drive)
CCGC	-	B0 (China gear drive)
CVRD	-	F0 and later
PRGD	-	E0 and later
RTAC	-	N0 and later (Pueblo)
RTHD	-	H0 and later (Pueblo)
CGWF/CCAF	-	D0 and later

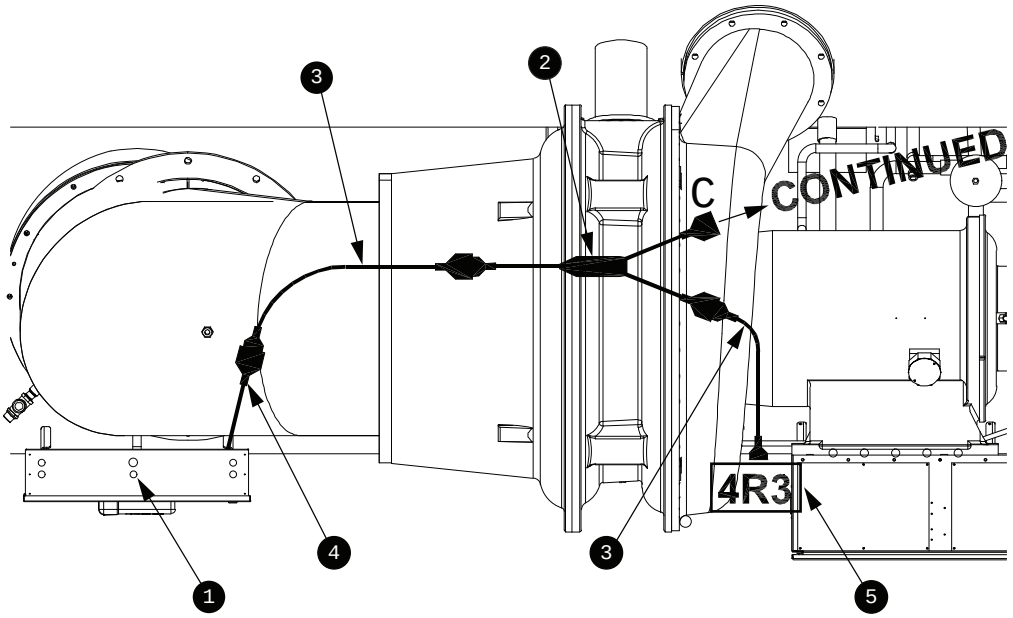
Discussion

This bulletin will:

- Explain product changes.
- Identify the various components which make up the new unit wiring system. Use it to identify parts for units that have been changed to the new system.
- Illustrate a typical system of components.

This literature piece is informational only and written to inform parts and service personnel of a product change.

Figure 1. Example of new IPC routing



1. Control Panel
2. CAB01146 - Branching harness, male to 2 female
3. CAB01149 - Short extension, male to female
4. CAB01155 - Extension, leads to female
5. TDR00334 - Transducer

Parts Information

Use the following reference table to familiarize yourself with the various parts of the new unit wiring system.

Table 1. Identification of parts

Description	Figure	Part Number
Branching harness, male to 2 female, 19.69 in (500 mm)	Figure 2, p. 6	CAB01146
Branching harness, male to 2 female, 39.37 in (1000 mm)	Figure 3, p. 6	CAB01147
Branching harness, male to 3 female, 19.69 in (500 mm)	Figure 4, p. 6	CAB01148
Short extension, male to female, 39.37 in (1000 mm)	Figure 5, p. 6	CAB01149
Long extension, male to female, 78.74 in (2000 mm)	Figure 6, p. 6	CAB01150
Extension, male to stripped leads, 39.37 in (1000 mm)	Figure 7, p. 6	CAB01152
Extension, female to stripped leads, 39.37in (1000 mm)	Figure 8, p. 6	CAB01155
Frame to panel LLID adapter, male to white LLID connector, 39.37 in (1000 mm)	Figure 9, p. 6	CAB01151
Frame to panel LLID adapter, male to white LLID connector, 78.74 in (2000 mm)	Figure 9, p. 6	CAB01153
Frame to panel LLID adapter, female to white LLID connector, 39.37 in (1000 mm)	Figure 10, p. 7	CAB01154
Cap; end (MOCAP)	-	CAP00876
Kit; cap and adhesive for sealing end of abandoned flat cable	-	KIT07430
Electronic expansion valve	-	MOD02688
Level sensor; 56 mm	-	SEN02128
Level sensor; 90 mm	-	SEN02129
Level sensor; 120 mm	-	SEN02191
Pressure transducer; 0-70 psia	-	TDR00733
Pressure transducer; 0-475 psia, NPT	-	TDR00734
Pressure transducer; 0-475 psia, FLARE	-	TDR00735
Pressure transducer; 0-700 psia, NPT	-	TDR00736
Pressure transducer; 0-700 psia, FLARE	-	TDR00737
Actuator, stepper drive for inlet guide vanes	-	ACT00680
Temperature sensor; standard	-	SEN02133
Temperature sensor; high temperature	-	SEN01960
Temperature sensor; fast response	-	SEN02039
White 4-place screw terminal connector	Figure 11, p. 7	(a)

(a) Procure locally.

New connector system:

- Aesthetically pleasing.
- Automotive industry grade.
- Sealed connector system.
- Easier connection for factory and field.
- Repeated manual dis-connection and re-connection allowed.
- No special tools required with new system.
- Supports take apart machines, supports water box removal, supports unit bus troubleshooting circuit breakdown.
- Okay to paint.

As with the existing IPC system there are proper techniques to follow:

- Do not leave unused female or male plugs on harness; use correct piece.
- Do not cut off unused plugs. An unused plug means you did not select the right parts.
- Do not tie wrap over the plug latch as this could allow plugs to separate.
- Do not attempt to repair a plug, piece parts are not available; only replacement cable assemblies are available, as listed in this literature.

⚠WARNING

Hazardous Voltage!

Failure to disconnect power before servicing could result in death or serious injury. Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized.

Important: *Do not disconnect these plugs with the IPC powered up, as this will cause communications diagnostics, and shutdown of an operating chiller.*

Figure 2. CAB01146 - Branching harness, male to 2 female, 19.69 in. (500 mm)

Figure 3. CAB01147 - Branching harness, male to 2 female, 39.37 in. (1000 mm)

Figure 4. CAB01148 - Branching harness, male to 3 female, 19.69 in. (500 mm)

Figure 5. CAB01149 - Short extension, male to female, 39.37 in. (1000 mm)

Figure 6. CAB01150 - Long extension, male to female, 78.74 in. (2000 mm)

Figure 7. CAB01152 - Extension, male to stripped leads, 39.37 in. (1000 mm)

Figure 8. CAB01155 - Extension, female to stripped leads, 39.37 in. (1000 mm)

Figure 9. CAB01151 or CAB01153 - Frame to panel LLID adapter, male to white LLID connector

Figure 10. CAB01154 - Frame to panel LLID adapter, female to white LLID connector, 39.37 in. (1000 mm)

Figure 11. Procure locally - White four place screw terminal connector (used on CTV Industrial option INDP)

Repairing a Flat Ribbon Cable

To repair an existing section of flat ribbon cable or join a round cable to the flat ribbon cable, splice each individual lead with a splice connector and seal the ends of each connector with liquid tape to prevent moisture intrusion. Cover the splice connection with heat shrink tubing.

Secure the following components locally:

1. Butt splice connectors
2. Liquid tape
3. Heat shrink tubing

Figure 12. Repairing flat ribbon cable

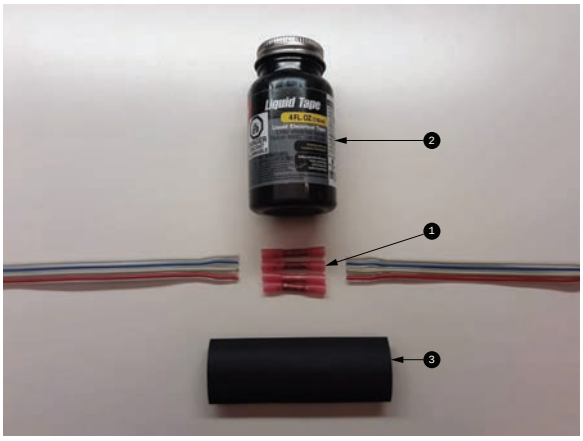


Figure 13. Flat ribbon cable

Adding a New LLID to a Flat Ribbon Cable Bus

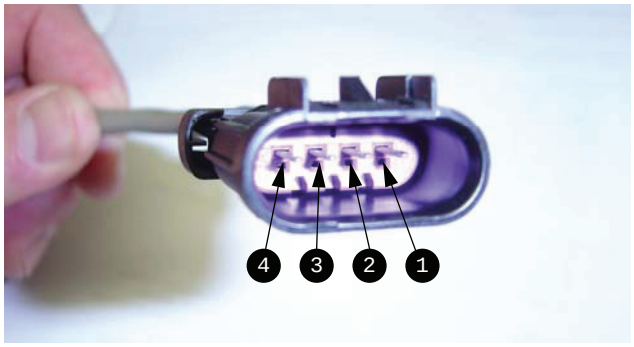
When a LLID is replaced with the new pluggable connector system, run a new branch of cable back to the power supply in the control panel. Do not attempt to splice into the flat wire cable bus. Use Table 1 to identify the necessary cable assemblies to create a new pluggable connector branch.

Plug Wire Identification

Figure 14. Female Plug wire identification (Wire color referenced to round cable)

1. IPC - (Gray)
2. IPC + (Blue)
3. Grd (Blk)
4. 24 Vdc (Red wire)

Figure 15. Male Plug wire identification (Wire color referenced to round cable)



1. IPC - (Gray)
2. IPC + (Blue)
3. Grd (Blk)
4. 24 Vdc (Red wire)

Product Changes

Units built with the design sequence listed below or later have the new connector system installed. Refer to digits 10 and 11 of the unit model number.

CVHE	-	4F and later
CVHF	-	2W and later
CVHG	-	2M and later
CDHF	-	1J and later
CDHG	-	1J and later
CCHC	-	2A and later (China direct drive)
CCGC	-	B0 (China gear drive)
CVRD	-	F0 and later
PRGD	-	E0 and later
RTAC	-	N0 and later (Pueblo)
RTHD	-	H0 and later (Pueblo)
CGWF/CCAF	-	D0 and later

Questions

Contact the Product Technical Service department with questions regarding this Service Bulletin. They can be reached at:

La Crosse	techservice@trane.com Products: CVHE, CVHF, CVHG, CDHF, CDHG, and PRGD
Pueblo	techservicepueblo@trane.com Products: RTHD, RTAC, CGWF, and CCAF
Global Parts	atechnicalservice@trane.com Products: Global Parts PRGD and CVRD

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