



Installation Instructions

Agility™ Water-cooled Chiller

Filterless Motor Compressor Retrofit

KIT19897

X39641445001

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.



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/national 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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Table of Contents

General Information	5
Purpose	5
Related Literature	5
Sample Nameplate	5
Parts List	5
Tools Required	6
Parts not Included	6
Installation	7
Shutdown Power	7
Major Component Description	7
Trane Unit Controls	8
UC800/Symbio™ 800	8
Compressor Removal	8
Output Filter Panel Removal	8
Drain Glycol Tank	9
Component Weights	11
Rigging and Lifting	11
Unit Lifting Points – Preferred Lifting Method	12
Unit Lifting Points – Alternative Lifting Method	12
Secure Filter	12
Remove Filter	12
Glycol Cooling Line Installation	13
Transition Box Installation	14
Compressor Installation	15



General Information

Chillers with the following configuration should be retrofit with a new compressor:

- Agility Model HDWA
- 300 or 400 ton units
- Built prior to February 2023
- Design sequence AD or earlier

Purpose

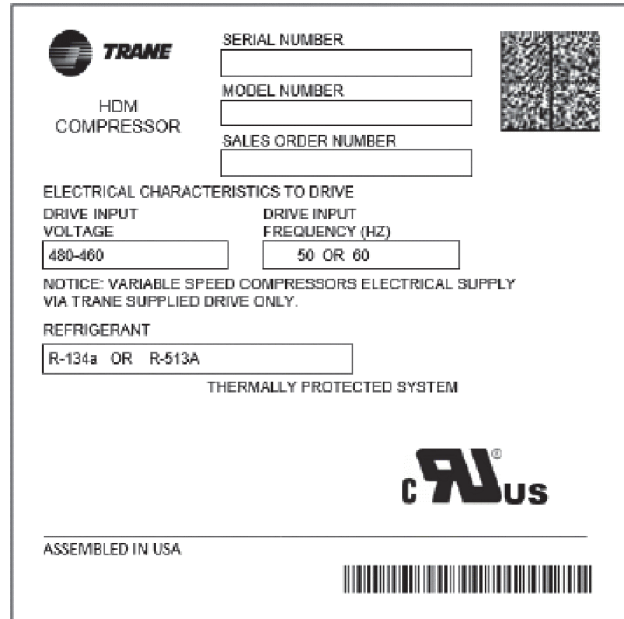
The compressor used for 300 and 400T Agility chillers built prior to February 2023 has been discontinued in production. The replacement compressor does not require the output filter. This retrofit allows the use of the newly offered compressor, and removal of output filter for older units.

Related Literature

- *Installation, Operation, and Maintenance, Agility™ Water-cooled Chillers with Symbio™ Controls* (HDWA-SVX002*-EN)
- *Service Guide, Agility™ Water-cooled Chillers with Symbio™ Controls* (HDWA-SVG002*-EN)
- *Installation Guide, Agility™ Water-cooled Chillers with Symbio™ Controls Disassembly and Reassembly* (HDWA-SVN003*-EN)
- *Programming Guide, Tracer® TU Service Tool for use with Water-cooled Agility™ Chillers with Symbio™ Controls* (HDWA-SVP002*-EN)
- *Service Manual, TR200 New D-Frame, 110-400 kW* (BAS-SVM01*-EN)
- *Programming Guide, Danfoss TR200* (BAS-SVP04*-EN)
- *HUB Solution, HDWA Agility™ Drive Configuration Instructions* (MCT10 Software Tool)
- *Installation Instructions, Symbio™ 800 Control Upgrade Kit for UC800 Adaptiview™ Display* (CDUB-SVN002*-EN)

Sample Nameplate

Figure 1. Sample nameplate



Parts List

Table 1. Parts list for KIT19897

Manufacturing Part Number	Part Description
453742500001	ASSEMBLY; TRANSITION ENCLOSURE
X13491386030	TERMINAL BLOCK; 2P
453742530001	WIRE KIT; TRANSITION HARNESS, 313MCM
X19150693001	RING TERMINAL; 50
X19210282010	WIRE TIE
X20600036020	EDGE MOLDING
X45050656010	HOSE; DRIVE COOLING, 3/4 INCH I.D. - 200 P.S.I.
X32030305030	HOSE CLAMP
453722250001	ASSEMBLY; WIRE TRAY
X19051622020	WIRE HARNESS; 1-2 BRANCHING 1000 MM
CNT09384	DANFOSS TR200 MARKII CONTROL CARD

Table 2. Compressor part numbers

Size (tons)	Part Number
300	COM13897
400	COM13896



General Information

Tools Required

- 1/8 in. and 3/8 in. wide flat head screwdrivers
- Flat head screwdriver
- Phillips screwdriver
- Torque wrench
- Socket set
- Breaker bar
- Rigging and lifting equipment
- Spreader bar
- Wrenches
- T20 torx head driver
- Danfoss MCT10 service tool
- USB cable Type A to Type B
- Wiring Tool

Parts not Included

- Glycol
- Wire ties
- Symbio™ upgrade kit (if required)

Installation

⚠ WARNING

Hazardous Voltage w/Capacitors!

Failure to disconnect power and discharge capacitors before servicing could result in death or serious injury. Disconnect all electric power, including remote disconnects and discharge all motor start/run capacitors before servicing. Follow proper lockout/tagout procedures to ensure the power cannot be inadvertently energized. For variable frequency drives or other energy storing components provided by Trane or others, refer to the appropriate manufacturer's literature for allowable waiting periods for discharge of capacitors. Verify with a CAT III or IV voltmeter rated per NFPA 70E that all capacitors have discharged.

⚠ WARNING

Refrigerant under High Pressure!

Failure to follow instructions below could result in an explosion which could result in death or serious injury or equipment damage. System contains refrigerant under high pressure. Recover refrigerant to relieve pressure before opening the system. See unit nameplate for refrigerant type. Do not use non-approved refrigerants, refrigerant substitutes, or refrigerant additives.

⚠ 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. Verify that no power is present with a voltmeter.

Shutdown Power

1. Using lockout/tagout safety procedures, shutdown main power to the chiller.
2. Open all starter and control panel disconnect switches and secure them in the open position.
3. Confirm the power is off to the chiller control panel.

Major Component Description

Figure 2. Affected chiller components

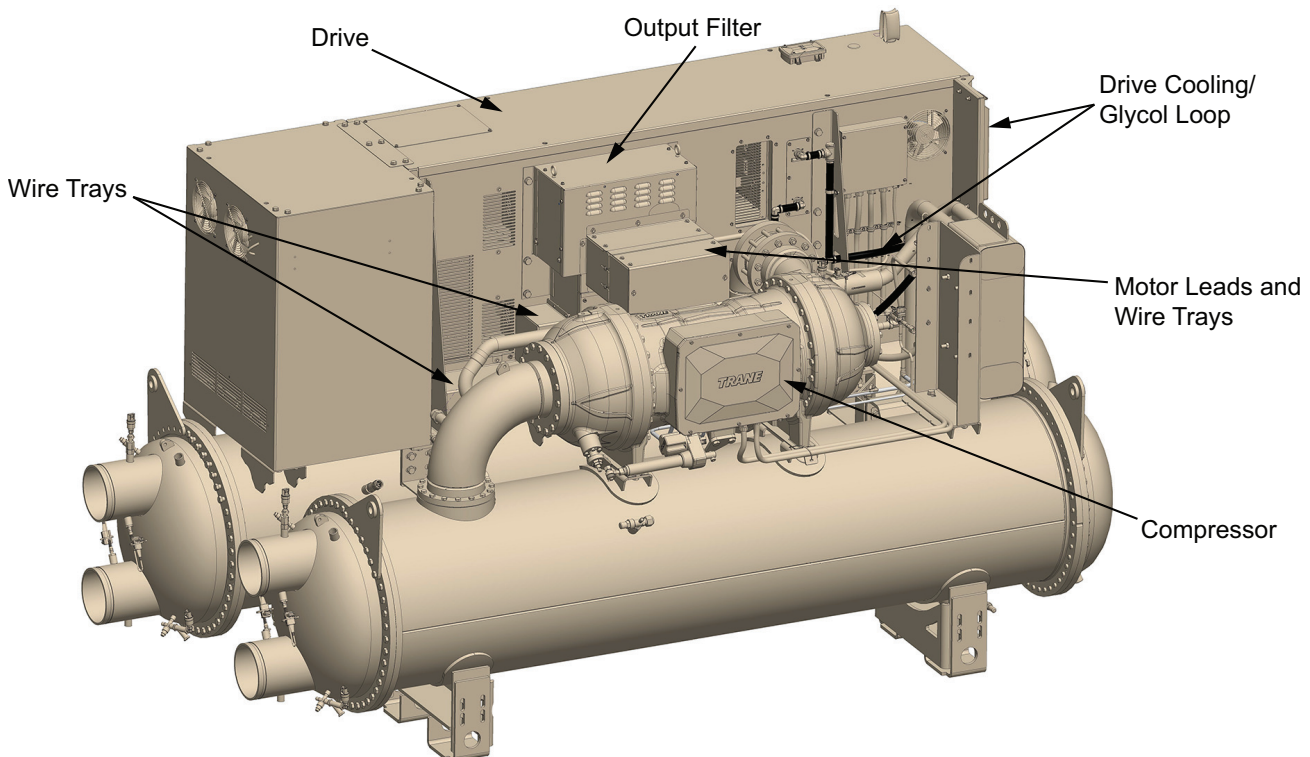
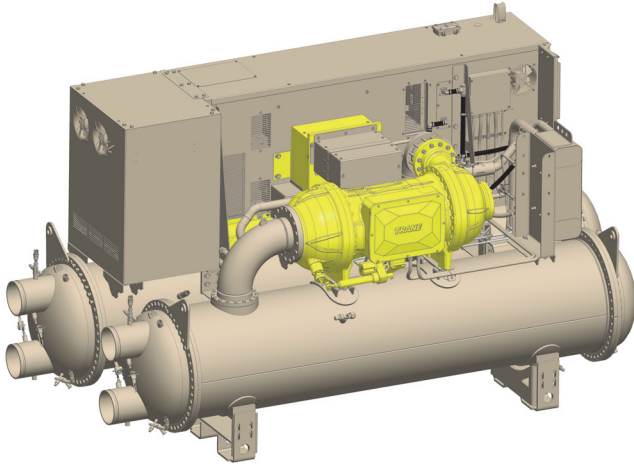


Figure 3. Retrofitted chiller components


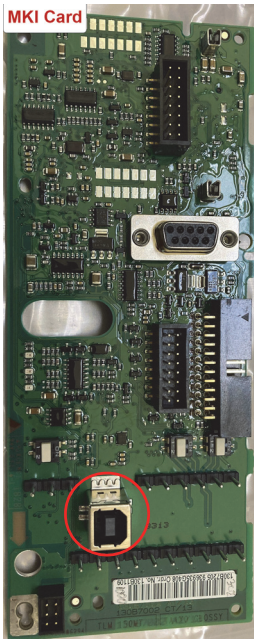
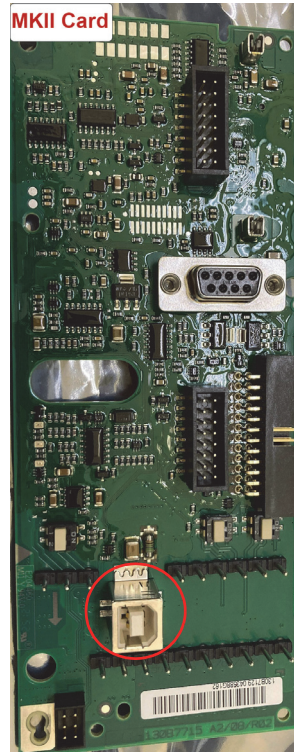
Trane Unit Controls

UC800/Symbio™ 800

If the existing chiller has UC800 controls, an upgrade to Symbio™ 800 is required as part of the compressor replacement. Follow the instructions in *Installation Instructions, Symbio™ 800 Control Upgrade Kit for UC800 Adaptiview™ Display* (CDUB-SVN002*-EN).

Danfoss TR200 Drive Control Board

- Determine the control board version using the figures below.
 - MarkI: USB connector has a black element.
 - MarkII: USB has a white element.

Figure 4. MKI card

Figure 5. MKII card


- MarkII control board does not need to be replaced.
- If control board is MarkI, replace with a MarkII version as follows:
 - Copy the configuration from the drive to your laptop. See *HUB Solution, HDWA Agility Drive Configuration Instructions* (MCT10 Software Tool).
 - Remove the MarkI control board and install the MarkII control board. See *Service Manual, TR200 New D-Frame, 110-400 kW* (BAS-SVM01*-EN), section 7.3.2 for replacement procedure.
 - Load the drive configuration from your laptop to the connected drive. See *HUB Solution, HDWA Agility Drive Configuration Instructions* (MCT10 Software Tool).

Compressor Removal

Note: *The existing compressor must be removed before filter removal. Glycol piping and transition box must be reinstalled prior to the installation of the replacement compressor.*

Remove compressor per instructions found in *Service Guide, Agility™ Water-cooled Chillers with Symbio™ Controls* (HDWA-SVG002*-EN).

Output Filter Panel Removal

Follow the procedure below for instructions for removing the existing output filter panel.

Drain Glycol Tank

1. Remove glycol system drain plug.



Drain Plug

2. Open drain valve to drain the glycol tank.



Drain Valve

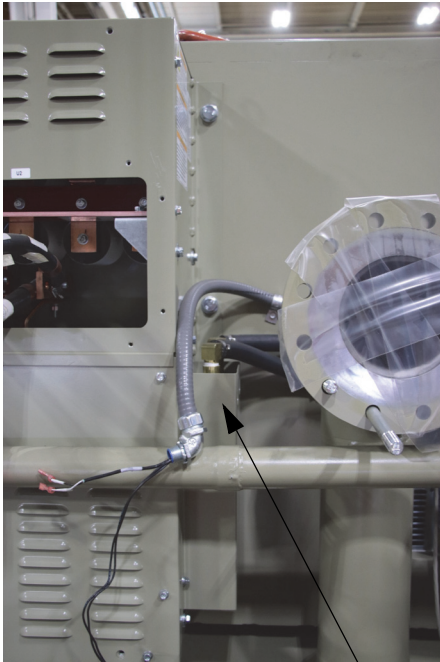
3. Remove bottom hose of heat exchanger and drain.



4. Remove top hose of heat exchanger and drain.



5. Remove hose connection cover.



Hose Cover

6. Disconnect hose fittings.



7. Remove filter bolt covers.



8. Disconnect filter output wires.

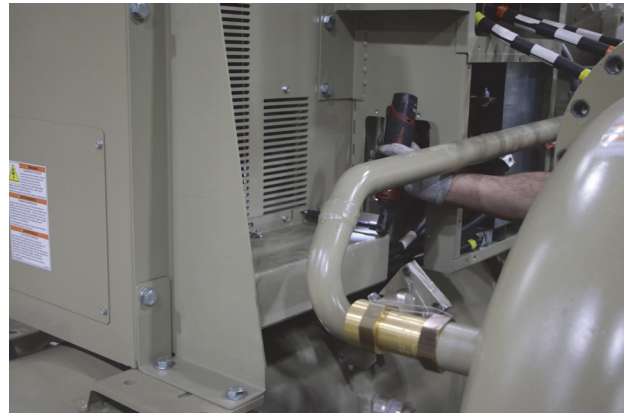




9. Remove vertical wire cover box.



10. Remove horizontal wire cover box.



Component Weights

Table 3. Component weights

Component	Weight (lb)
Existing filter	250
New buss bar enclosure	72

Rigging and Lifting

⚠ WARNING

Heavy Objects!

Failure to follow instructions below or properly lift unit could result in unit dropping and possibly crushing operator/technician which could result in death or serious injury, and equipment or property-only damage. Ensure that all the lifting equipment used is properly rated for the weight of the unit being lifted. Each of the cables (chains or slings), hooks, and shackles used to lift the unit must be capable of supporting the entire weight of the unit. Lifting cables (chains or slings) may not be of the same length. Adjust as necessary for even unit lift.

⚠ WARNING

Improper Unit Lift!

Failure to properly lift unit in a LEVEL position could result in unit dropping and possibly crushing operator/ technician which could result in death or serious injury, and equipment or property-only damage. Test lift unit approximately 24 inches (61 cm) to verify proper center of gravity lift point. To avoid dropping of unit, reposition lifting point if unit is not level.

Unit Lifting Points – Preferred Lifting Method

The preferred method for lifting a filter unit to position it for installation is to use an identical individual hoisting device at each lift point.

Figure 6. Preferred lifting method using two identical individual hoists



Unit Lifting Points – Alternative Lifting Method

If it is only possible to use a single hoisting device to lift a filter unit to position it for installation, a spreader bar should be used to allow adjusting the rigging as necessary to balance the unit around its center-of-gravity to ensure full control of the unit during lifting.

Figure 7. Alternative lifting method using a single hoist and spreader bar



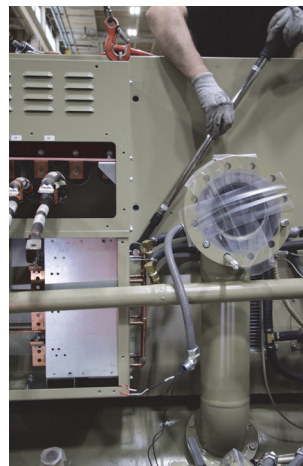
Secure Filter

1. Install lifting eyes on top of the filter.
2. Secure filter with proper lifting device.



Remove Filter

1. Remove filter bolts from the drive.



2. Lift filter away from unit.
 - a. Headroom required is: 13 3/8 inches (339 mm).
 - b. If headroom clearance is not sufficient, remove economizer flange and remove the economizer tube. Replace provided economizer O-ring during reassembly.



Glycol Cooling Line Installation

Install glycol cooling lines as described for your specific chiller application.

Figure 8. Glycol cooling lines



Figure 9. Glycol cooling line installation (single drive)

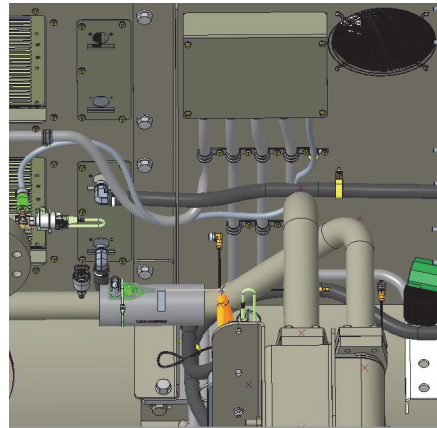
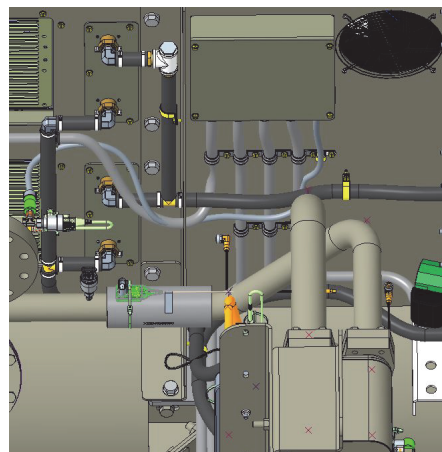


Figure 10. Glycol cooling line installation (dual drive)



1. Install the kit supplied hoses onto existing barbed fittings and secure with hose clamps.
2. Refill glycol system using amounts listed in table below and *Service Guide, Agility™ Water-cooled Chillers with Symbio™ Controls (HDWA-SVG002*-EN)*:

Drive	Glycol amount (gal)
Single	0.9
Double	1.1

Transition Box Installation

1. Using proper lifting procedures, lift transition box into place in the location of the previous filter.
2. Bolt transition box in place.



3. Route the drive wires to the transition assembly and install horizontal wire cover box.



4. Install vertical wire cover box.



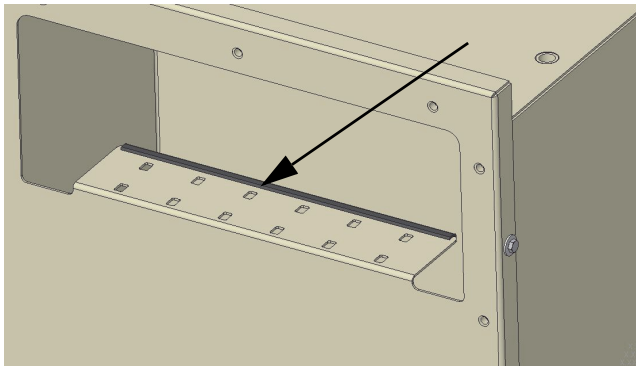
5. Fasten the wire lugs to the proper bus bars. Torque fasteners 22 to 26 ft-lb.



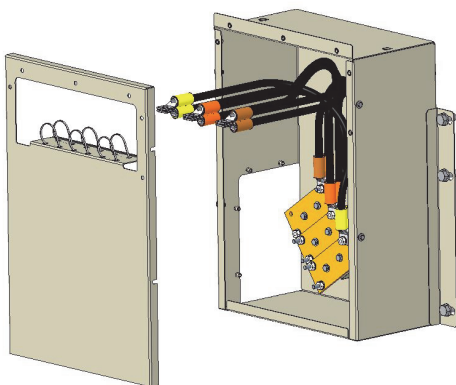
Compressor Installation



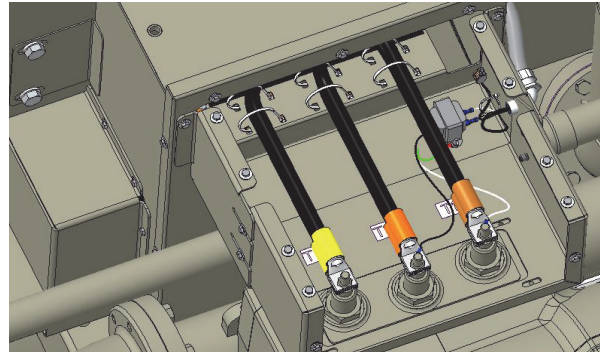
6. Install rubber edge molding onto the tie down bracket and onto the inside flange of the transition cover.



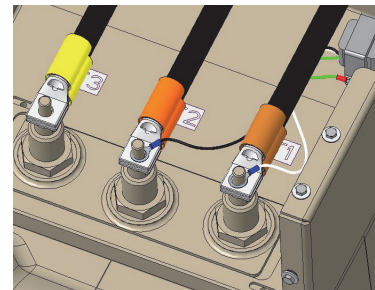
7. Secure the transition box cover.



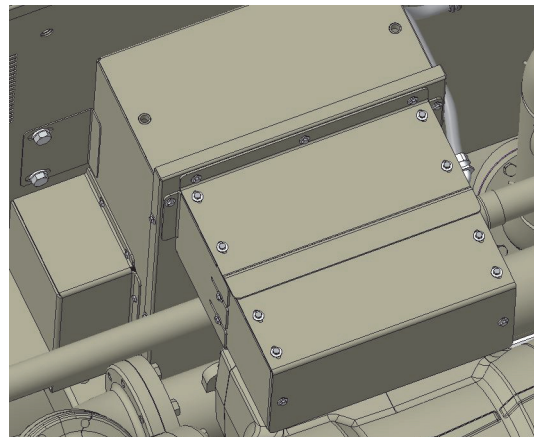
1. Complete the compressor installation per *Service Guide, Agility™ Water-cooled Chillers with Symbio™ Controls* (HDWA-SVG002*-EN).
2. Position power wires onto motor terminals and tighten wire ties so the wires do not put stress on the terminals.



3. Trim black and black/white leads on the potential transformer (4T1). Crimp on 1/2 inch diameter ring terminals and install on motor terminals as follows:
 - Black/white: T1 terminal
 - Black: T2 terminal



4. Torque nuts to 22 to 26 ft-lb (29.8 to 35.2 Nm).
5. Replace covers.



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