



Installation Instructions

Actuator Inlet Guide Vane Replacement

CenTraVac™ Chillers with UCP2 Control Panel

This document applies to service offering applications only.

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.

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TRANE
TECHNOLOGIES



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.

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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Revision History

Document updated to reflect Service Offering number.



Installation

Table 1. Tools required

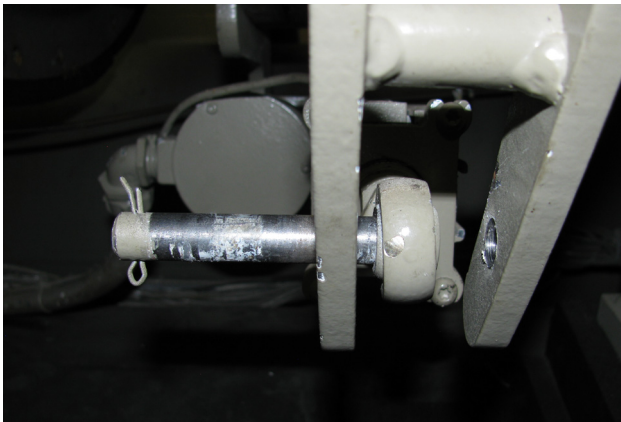
Item	Tools
1	Phillips screwdriver
2	Standard screw driver
3	Torx size T15
4	Sand paper
5	Permanent marker

⚠ WARNING

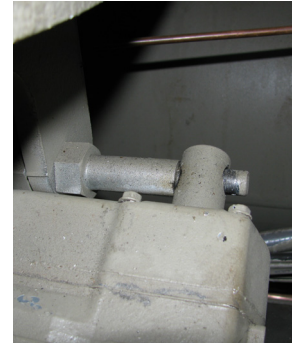
Hazardous Voltage w/Capacitors!

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.

1. Follow all lockout-tagout procedures prior to performing installation on the unit.
2. Remove the linkage pin attached to the inlet guide vanes (if necessary, use sandpaper to loosen the pin).



3. Remove the linkage pin attached to bottom compressor bracket (if necessary, use sand paper to loosen the pin).

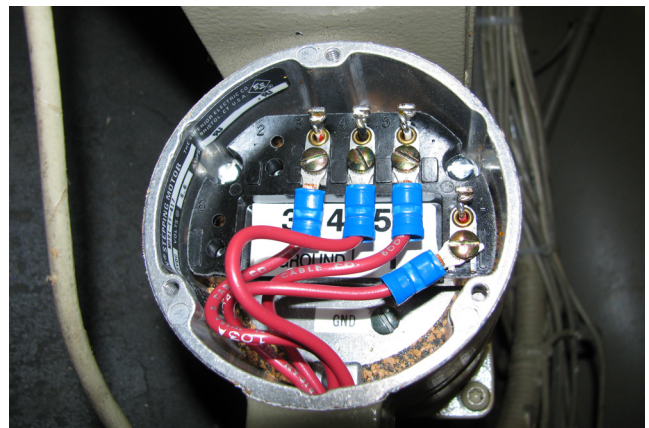


4. Keeping the conduit attached, remove the actuator.

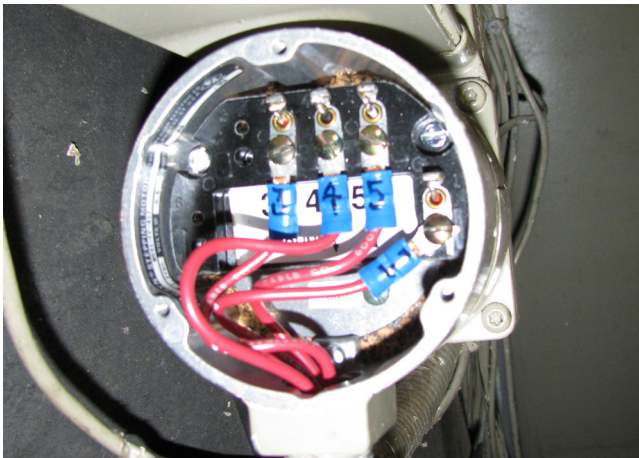
Note: The magnetic sensor attached to the outside of the actuator will not be used. The sensor and wire may be removed.



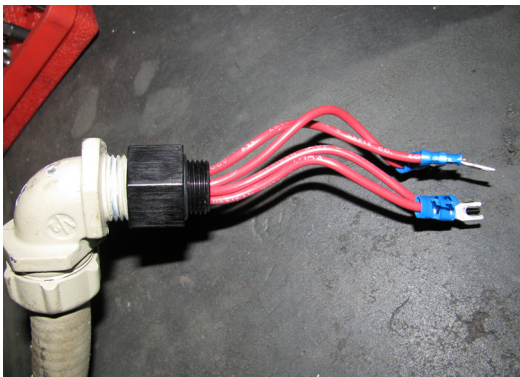
5. Remove the stepper motor terminal box plate.



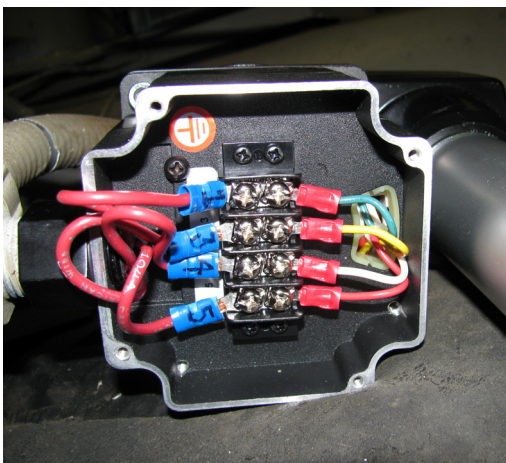
- Write the corresponding terminal numbers on the wire terminals with a permanent marker.



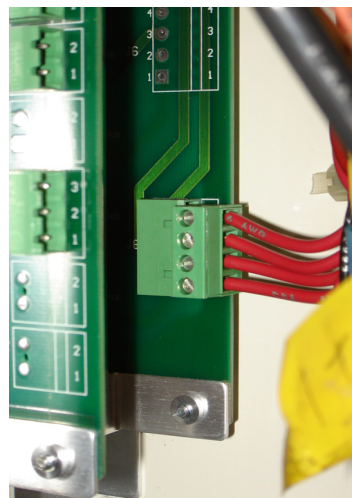
- Remove the wires from the terminals.
- Remove the conduit fitting by rotating the actuator.
- Install conduit adapter fitting.



- The terminal numbers on the new actuator have not changed. Install the new actuator wires to the same location as the existing actuator.



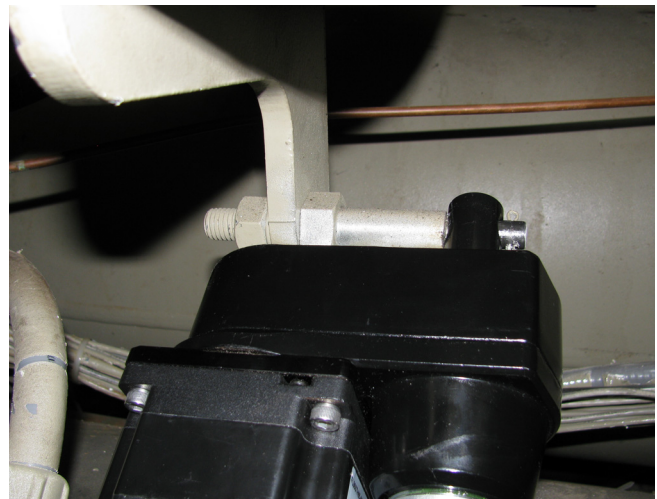
- Verify wiring installation by checking resistances (on the stepper module in the control panel):



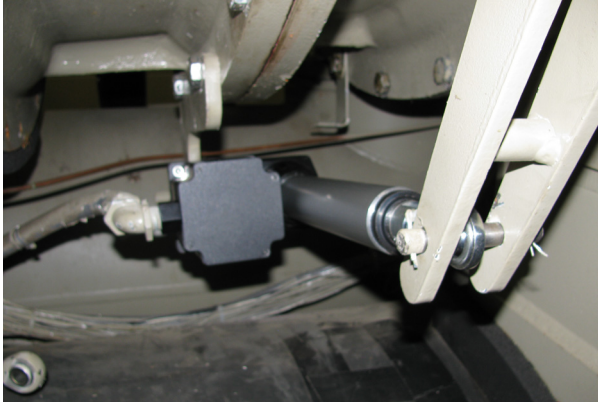
- Between the 1 and 3 terminals on 1U3 J8, there should be less than 1 W of resistance.
- Between the 2 and 4 terminals on 1U3 J8, there should also be less than 1 W of resistance.
- Between each terminal on 1U3 J8 and ground, the impedance should be approximately $25k \pm 10$ percent.

Note: Refer to wiring diagram.

- Install the new actuator (4B2) and insert the pin attached to bottom compressor bracket.



13. Install the linkage pin attached to the inlet guide vanes.



14. Install the magnetic switch (BPI) wire to 1U3 J11 pins 1 and 2.

Notes:

- *If the BPI is not properly installed, a warning diagnostic will occur: IGV BPI Not Found During Search Warning Only - Reset Not Req'd.*
- *During operation, the actuator may be slightly louder than the current actuator.*

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