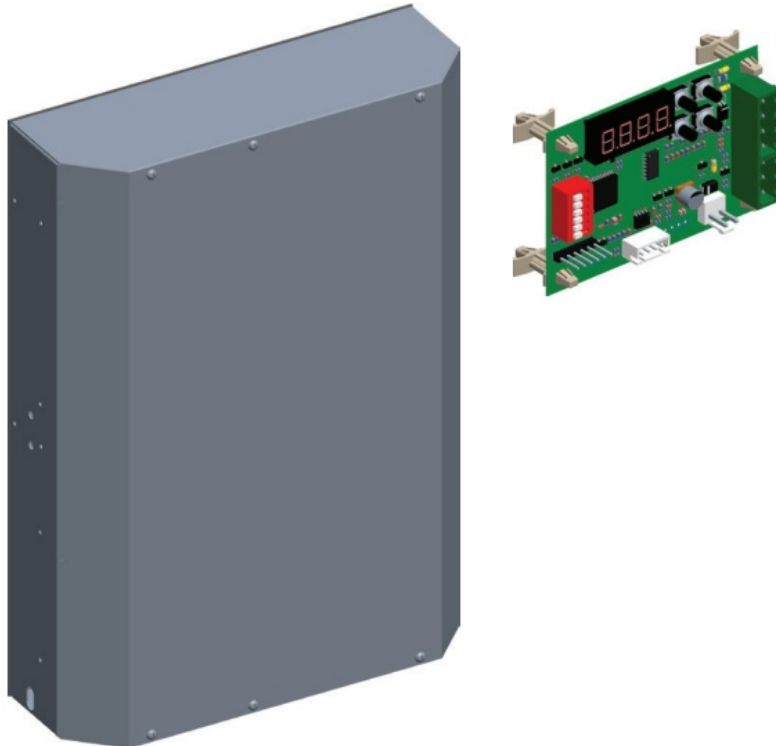


TRANE DRV03900 Variable Speed Drive Replacement Kit Installation Guide

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TRANE DRV03900 Variable Speed Drive Replacement Kit Installation Guide



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Installation Instructions



Note : Graphics in this document are for representation only. Actual model may differ in appearance.

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.

Installation Instructions



Safety Section

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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Pre-Installation

Inspection

- 1. Unpack all components of the kit.
- 2. Check carefully for shipping damage. If any damage is found, report it immediately, and file a claim against the transportation company.
- 3. Visually inspect the components for shipping damage as soon as possible after delivery, before it is stored. Concealed damage must be reported within 15 days.
- 4. If concealed damage is discovered, stop unpacking the shipment.
- 5. Do not remove damaged material from the receiving location. Take photos of the damage, if possible. The owner must provide reasonable evidence that the damage did not occur after delivery.
- 6. Notify the carrier’s terminal of damage immediately by phone and by mail. Request an immediate joint inspection of the damage by the carrier and the consignee.

Note: Do not attempt to repair any damaged parts until the parts are inspected by the carrier's representative.

Parts List

Table 1: Parts List

Quantity	Part Number	Part Description
1	X13610009040	Inverter drive
2	X13651807001	Interface module

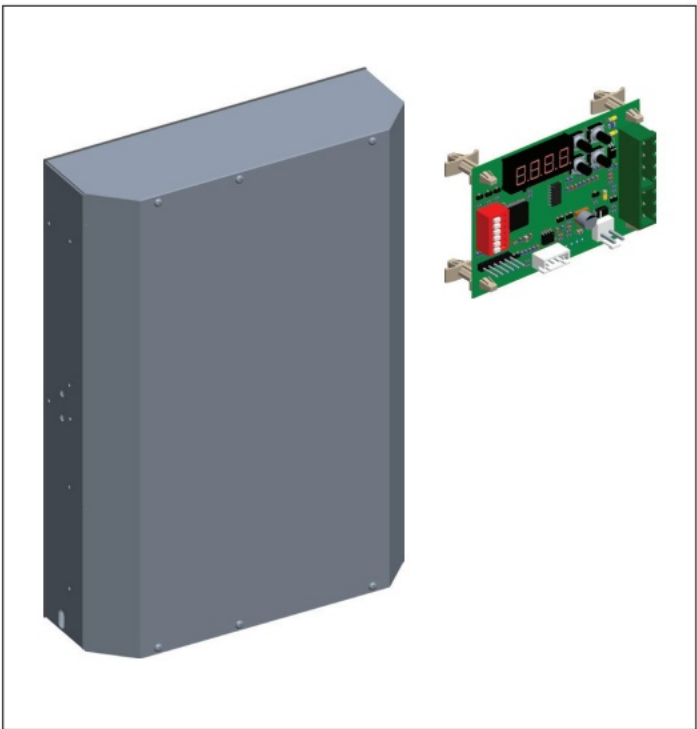


Figure 1: Variable Speed Drive and Interface Module



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.

1. Disconnect and lock out power from the unit.
2. Recover refrigerant charge from the unit.
3. Open the middle upper and condenser side panels on the front side of the unit. Refer to Figures 2 and Figure 3 for location.

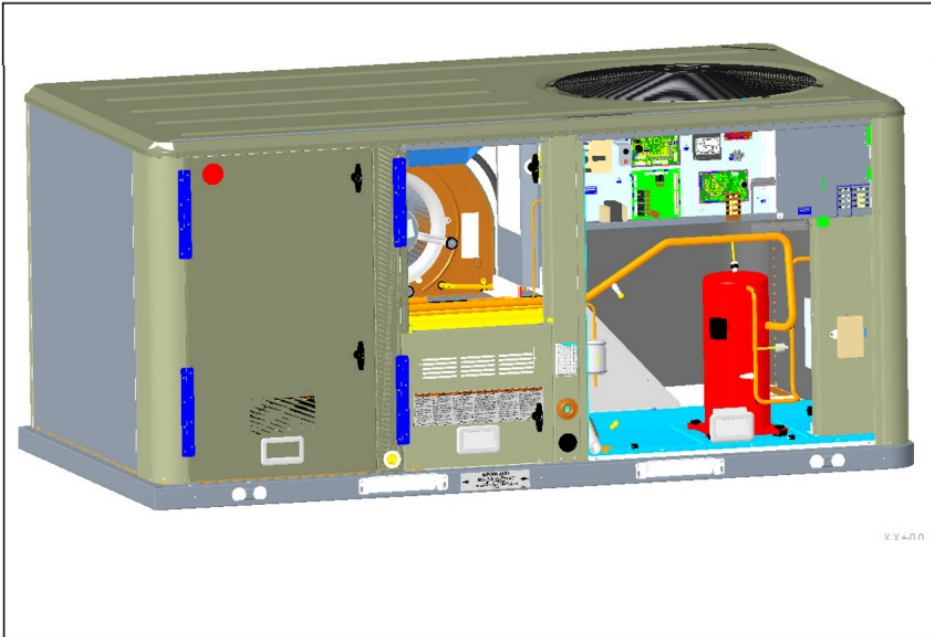


Figure 2: Precident™ – Drive and Interface Module Mounting Locations

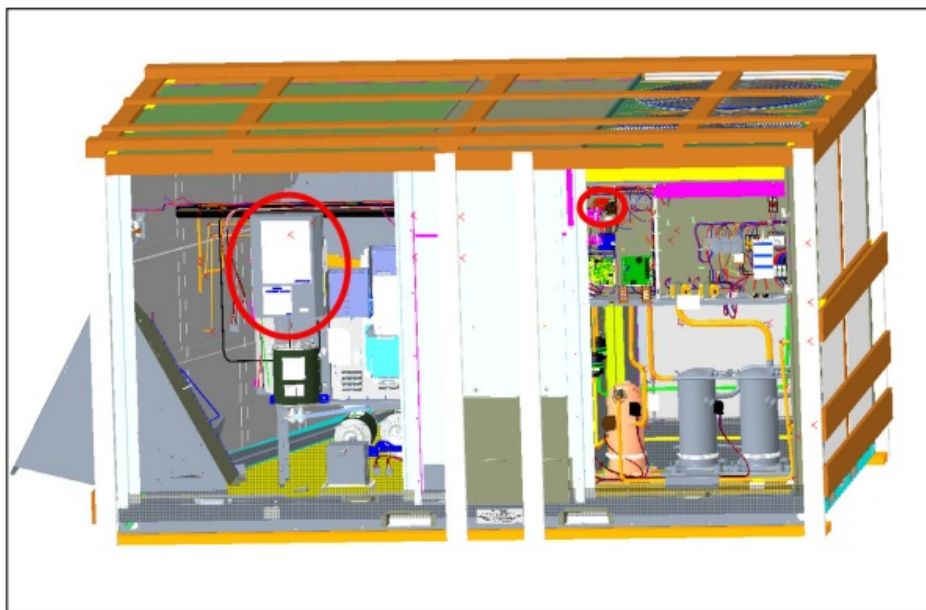


Figure 3 : Voyager™ 2 – Drive and Interface Module Mounting Locations

4. U nbraze connecting tubes between drive and manifold. Refer to Figure 4.

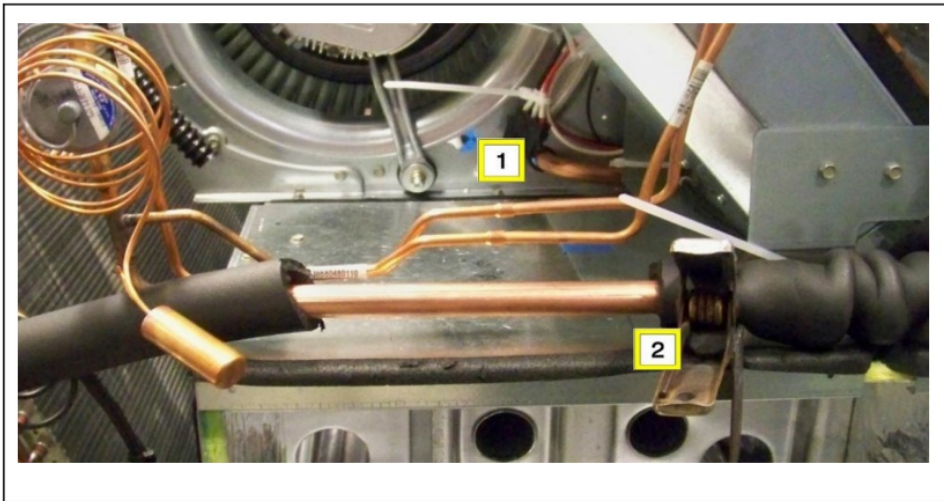


Figure 4 : Manifold Brazing

5. Remove the screws that attach the drive to the unit and remove the drive along with the support brackets. Refer to Figure 5.

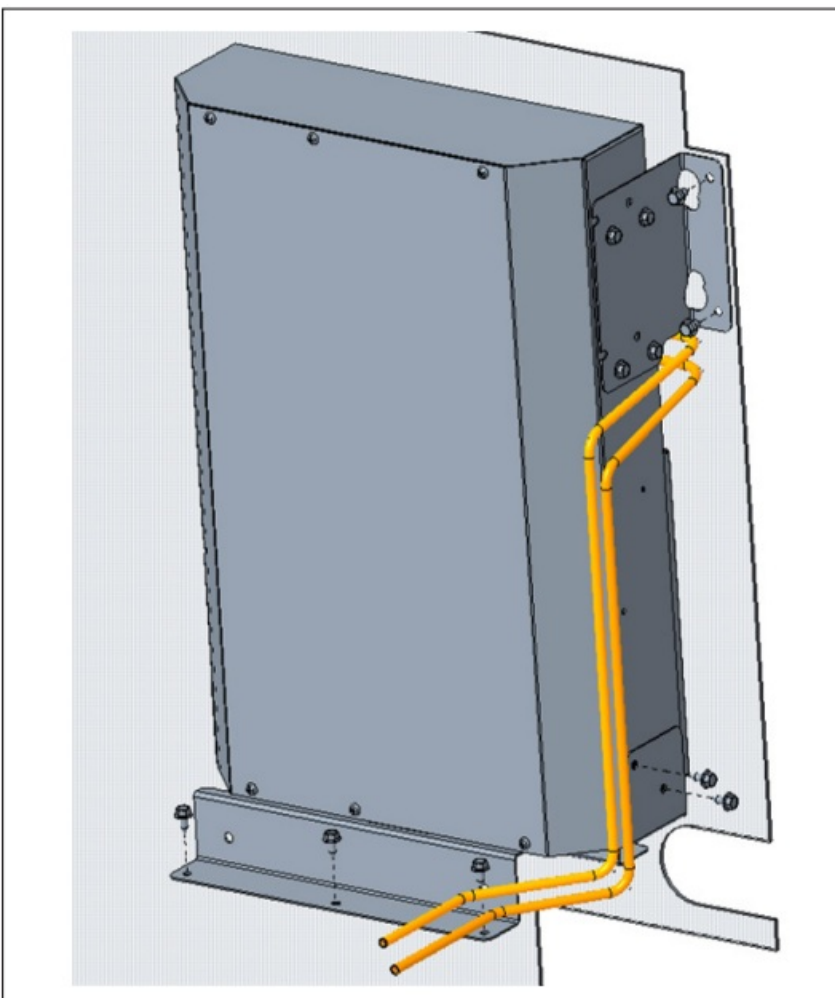
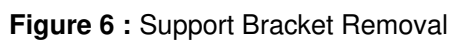


Figure 5 : Drive Removal

6. Remove the screws that attach the support brackets to the drive and remove the support brackets. Refer to Figure 6.



-
- Diagram of the CVD connector pinout:
- Left Side (PPM-34 PPF-34):**
 - 54A(RD) — 1 — CVD-1R(RD)
 - 55A(W) — 2 — CVD-1S(W)
 - 56A(BK) — 3 — CVD-1T(BK)
 - Right Side (PPM-36 PPF-36):**
 - U(RD) — 1 — 4G(RD)
 - V(W) — 2 — 6D(W)
 - W(BK) — 3 — 3W(BK)
 - Bottom (PPF-CVD PPM-CVD):**
 - 1 — 1 — 668A(BK)
 - 2 — 2 — 669A(BK)
 - 3 — 3 — 670A(BK)
 - 4 — 4 — 671A(BK)
 - 5 — 5 — 666A(BK)
 - 6 — 6 — 667A(BK)
 - 7 — 7
 - 8 — 8
 - 9 — 9

Figure 7 a : Inverter Drive (X13610009040) Connection Diagram

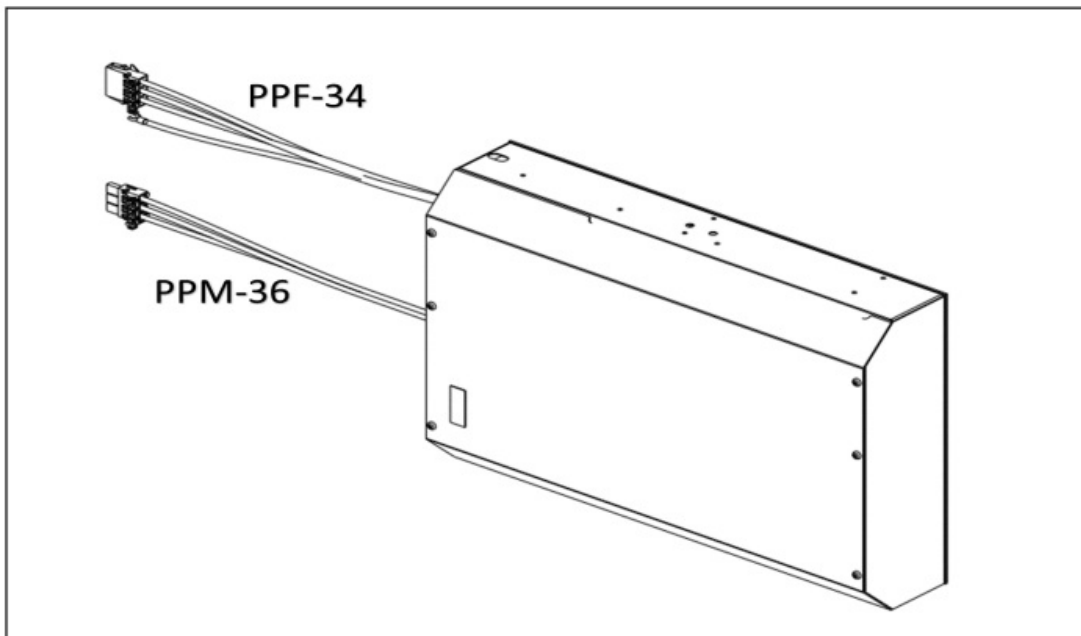


Figure 7 b : Inverter Drive (X13610009040)

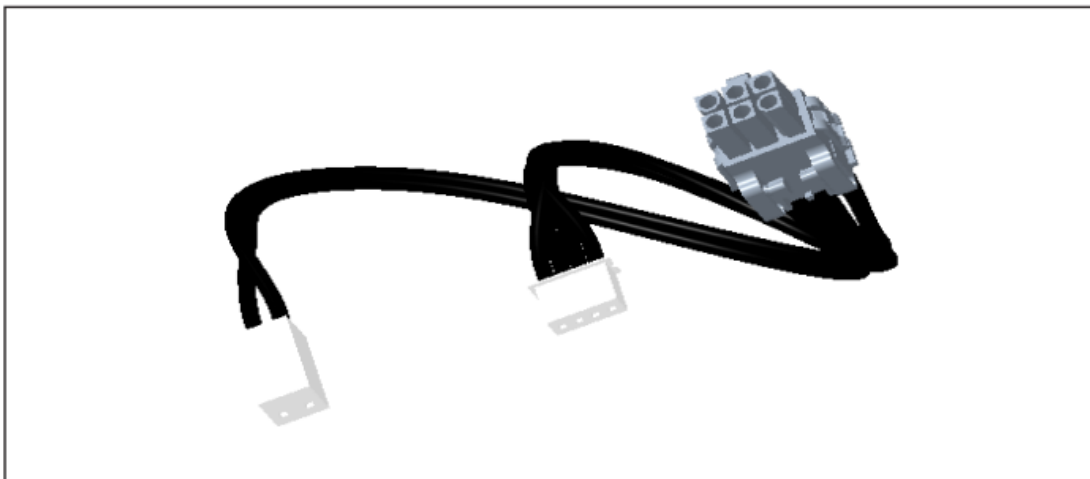


Figure 7 c : Controls Harness (438577730200)

8. Unbrazed manifold tubes at drive. Refer to Figure 8.

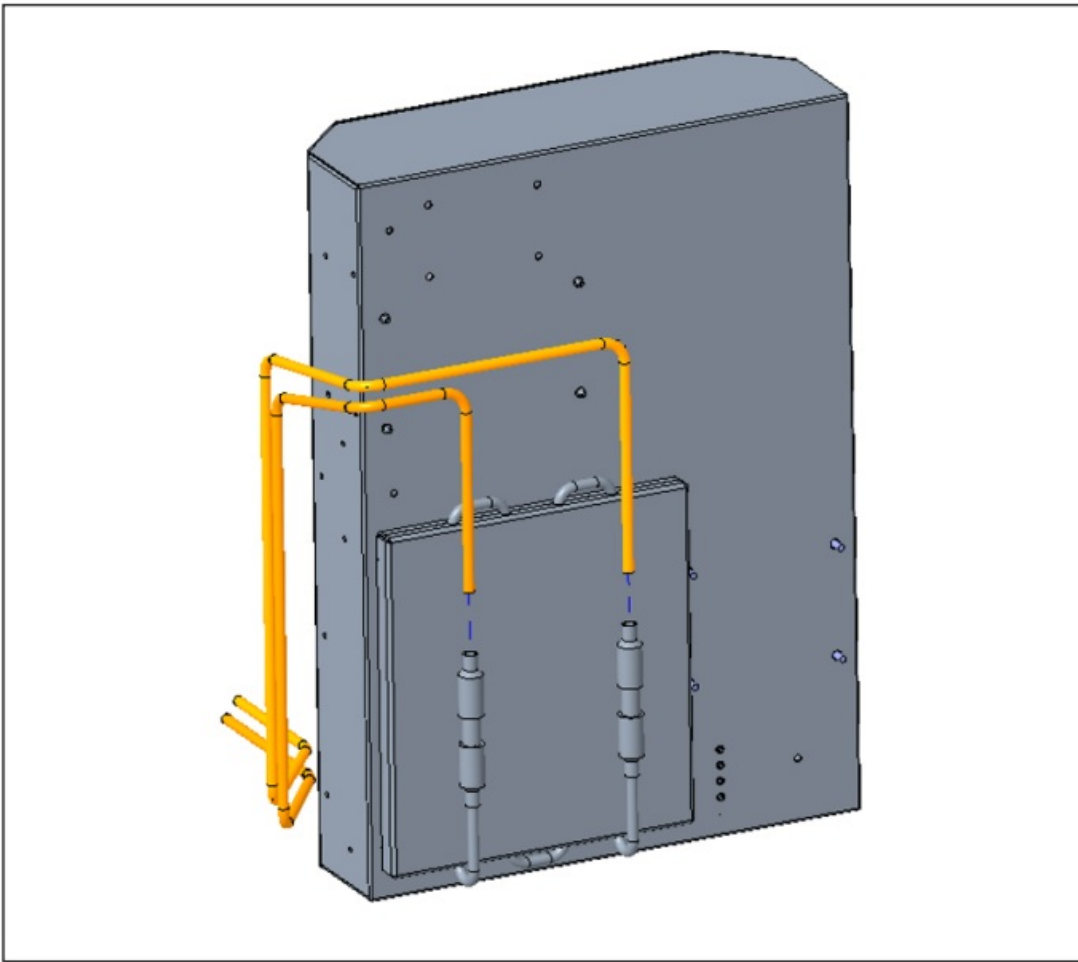


Figure 8 : Manifold Removal

9. Install the new drive (X13610009040) by performing steps 3 through 8 in reverse order.
10. Open the Control Box panel. Refer to Figure 2 and Figure 3 for location.
11. Disconnect 3 harnesses from the DIM module's CN107, CN108 (X13651608010)/CN105 (X13651807001), and CN101. Refer to Figures 9a and Figure 9b.

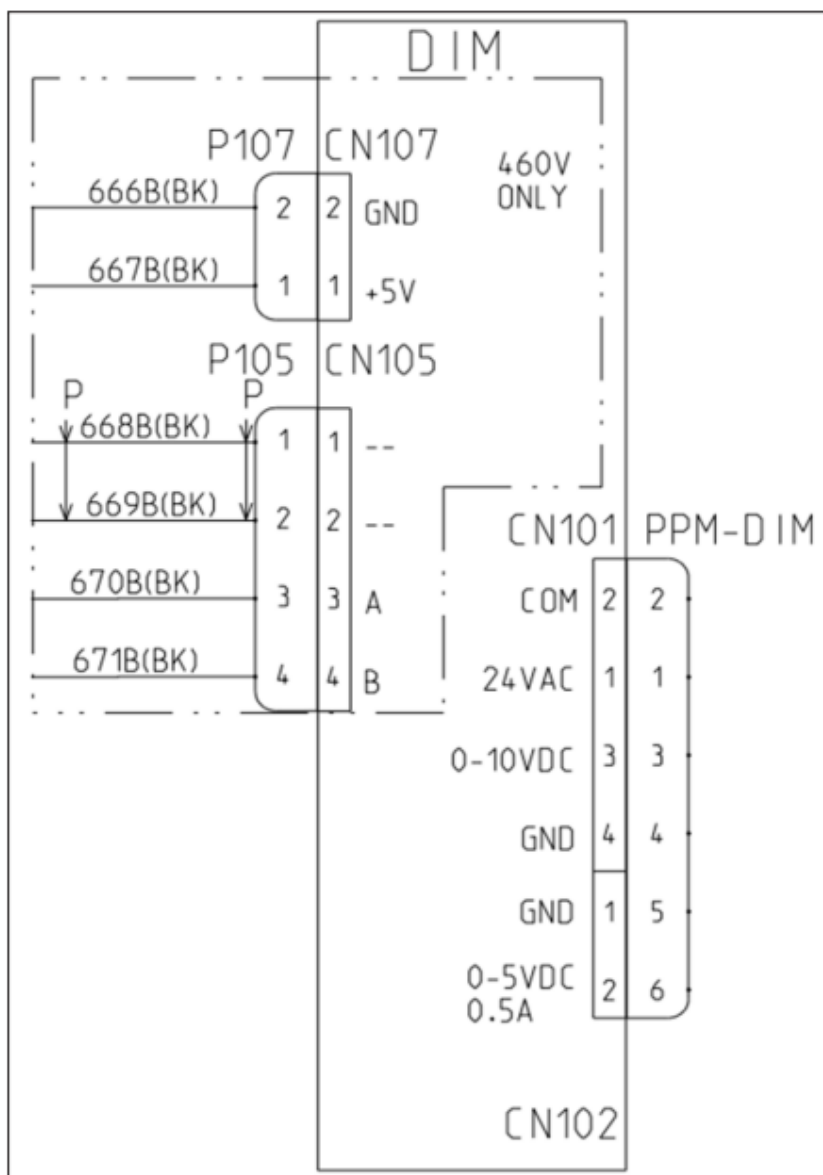


Figure 9 a : DIM Module (X13651807001) Connection Diagram



Figure 9 b : DIM Module

12. Replace the DIM module with the new DIM module (X13651807001) provided.
13. Reconnect harnesses as originally connected, with the exception of P105, which should connect to CN105 instead of CN108. Refer to Figures 10a and Figure 10b.

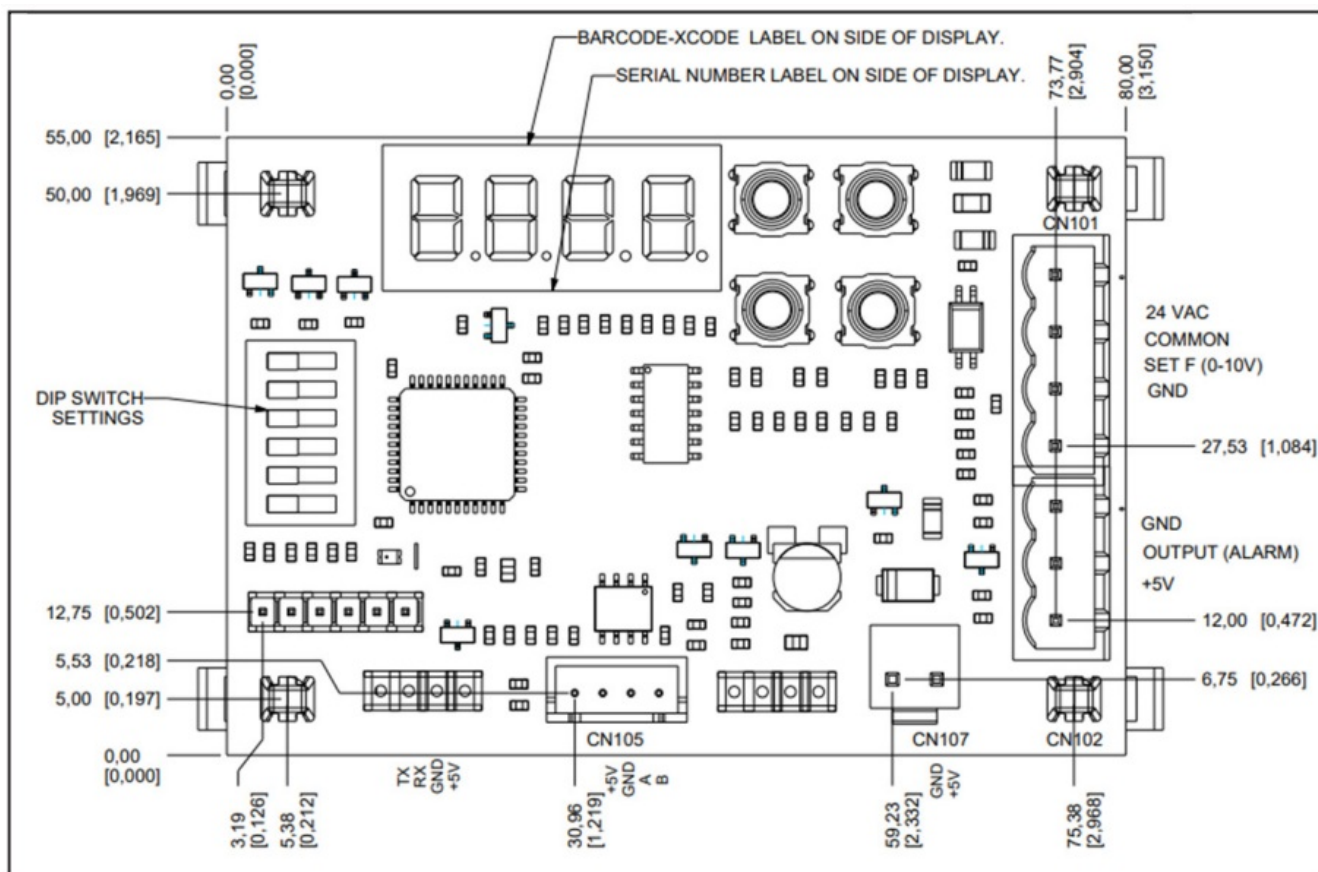


Figure 10 a : DIM Module (X13651807001) Diagram

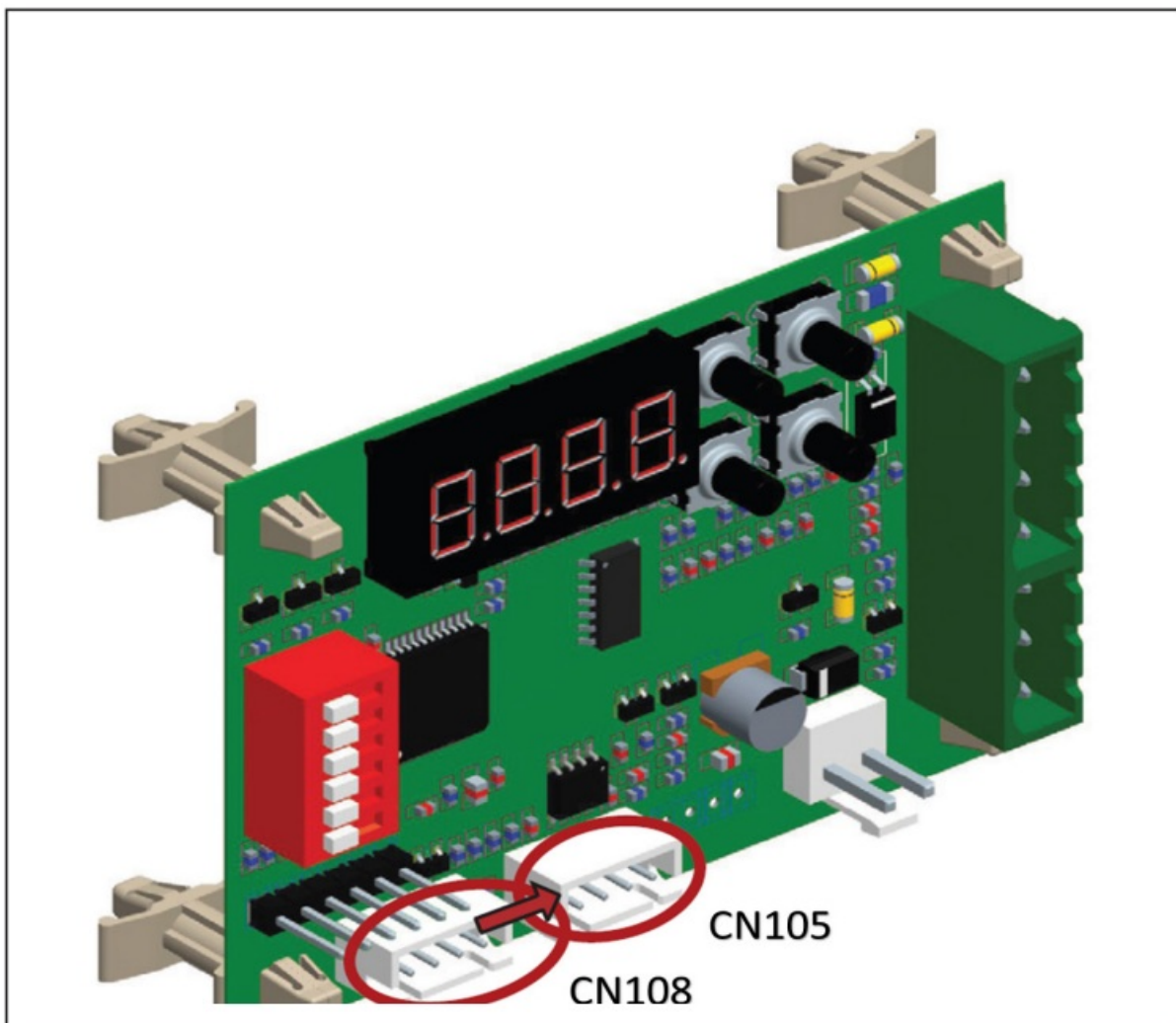


Figure 10 b : Reconnect Harnesses

14. Replace the filter drier in the unit.
15. Recharge the refrigerant.
16. Evacuate the refrigeration system.
17. Close the outer panels.
18. Reconnect all power to the unit.

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References

-  [Trane Heating & Air Conditioning](#)
- [User Manual](#)

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