Installation Instructions

Combustion Blower Motor Wiring Kit

Gas Heat

⚠ 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.

April 2020 **RT-SVN17B-EN**

Introduction

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. Failure to follow code could result in death or serious injury.

⚠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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Combustion Blower Motor Wire Harness

Installation Instructions for Staged Gas Heat

Wiring Kit Contents (KIT15855)

- Contactor (CFR)
- Wire Harness
- Screws (2)
- Wire Ties
- Installers Guide
- Wire Diagram

All Staged Gas Units

⚠

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Hazardous Voltage w/Capacitors!

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. Verify with an appropriate voltmeter that all capacitors have discharged. Failure to disconnect power and discharge capacitors before servicing could result in death or serious injury.

For additional information regarding the safe discharge of capacitors, see PROD-SVB06A-EN or PROD-SVB06A-FR

1. Secure power to the unit using proper lock out/tag out procedures.
2. Remove the panel covering the combustion blower motor compartment.
3. Locate and install the CFR contactor. Refer to Figure 1, p. 6 for Voyager III contactor location and Figure 3, p. 7 for Voyager II contactor location.
4. Determine unit voltage
   - For Voyager II instructions, continue to Step 1 under the heading, Voyager II Staged Gas Units.
   - For Voyager III instructions, continue to Step 1 under the heading, Voyager III Staged Gas Units.

Voyager II Staged Gas Units

1. Locate and unplug PPF11 - Combustion Blower Motor plug.
2. Locate the ignition board and unplug 29A (OR), W36 (BK), 23D (RD).
3. For 460/575VAC Units:
   a. On the secondary of the Ignition Transformer locate wire W14 (RD) and remove.
   b. On the secondary of the Ignition Transformer locate wire W34 (PR), 14C (GR) and remove.
   c. Remove Wire 14C (GR) from the Y2 terminal of the unit Ignition Transformer and isolate or remove from the unit entirely. This wire does not exist on 208-230VAC Units.

4. For 208-230VAC Units:
   a. On the primary of the Ignition Transformer locate wire W14 (RD) and remove.
   b. On the primary of the Ignition Transformer locate wire W34 (PR) and remove.

Voyager III Staged Gas Units

1. Locate and unplug PPF12 (and PPF11 for units with two Staged Gas Ignition Systems) - Combustion Blower Motor plug.

Important: *If the unit is a Modulating Gas Heat Unit proceed to Step 2c.*

2. For 460/575VAC Units:
   a. On the secondary of the Ignition Transformer #1 locate wire W9 and 245C at Y2 and remove.
   b. On the secondary of the Ignition Transformer #1 locate wire W13 and W22 at Y1 and remove.
   c. On the secondary of the Ignition Transformer #2 locate wire W11 at Y2 and remove.
   d. On the secondary of the Ignition Transformer #2 locate wire W15 and 237A at Y1 and remove.
   e. Locate the Ignition Board(s) and remove wires W20, W21, W13 for IGN1 and Wires 240A, 241A and W15 for IGN2.
   f. Remove Wire 250C and 245C from the Y2 terminal of the unit Ignition Transformer(s) and isolate or remove from the unit entirely. This wire does not exist on 208-230VAC Units.
3. For 208-230VAC Units:
   a. On the primary of Ignition Transformer, locate wires W14 and W12 and remove.
   b. On the primary of Ignition Transformer, locate wires W11 and W15 and remove.

All Staged Gas Units

1. Cut the wire ties and remove harness between the Ignition Transformer, Ignition Board and the Combustion Blower Motor.
2. Install the new Combustion Blower Motor Wiring Harness
3. Wire W112 to HI/Single on the Ignition Board.
4. Wire W113 to Lo on the Ignition Board.
5. Wire W110 to CBM L1 on the Ignition Board.
6. For 460/575VAC Units:
   - Wire W114 to Y1 on the Ignition Transformer.
   - Wire W118 to Y2 on the Ignition Transformer.

   For 208-230VAC Units:
   - Wire W114 to H1 on the Ignition Transformer.
   - Wire W118 to H2 for a 208VAC unit of H3 for a 230VAC unit.
7. Wire W110 and W114 to L1 on the CFR.
8. Wire W117 to terminal T1 on the CFR.
9. Wire W111 and W112 to terminal L2 on the CFR.
10. Wire W115 to terminal T2 on the CFR.
11. Control wire W113 to the CFR Coil.
12. Control wires W116 and W118 go to the other side of the CFR coil.
13. Plug the new PPM11 to PPF11 on Voyager II and PPM12 and PPF12 on Voyager III - Combustion Blower Motor plug.
14. Dress the wires using wire ties.

15. Overlay the new wiring schematic inset provided in the kit.
16. Test the unit for proper operation.
    a. Begin the test mode by shorting Test 1 and Test 2 until the heating mode is reached.
    b. Sixty (60) seconds after ignition the burner firing rate is reduced to low fire. It is at this time the contactor should pull in. The contactor will not be energized in high fire.

Figure 1. Voyager III contactor location

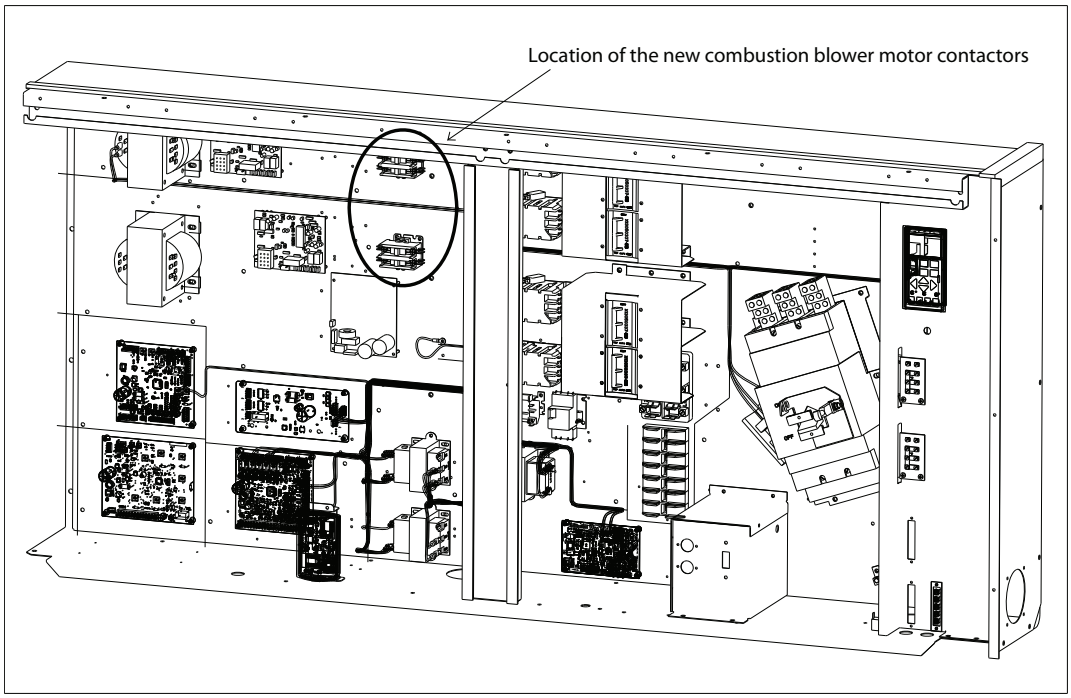


Figure 2. Combustion blower motor wiring diagram

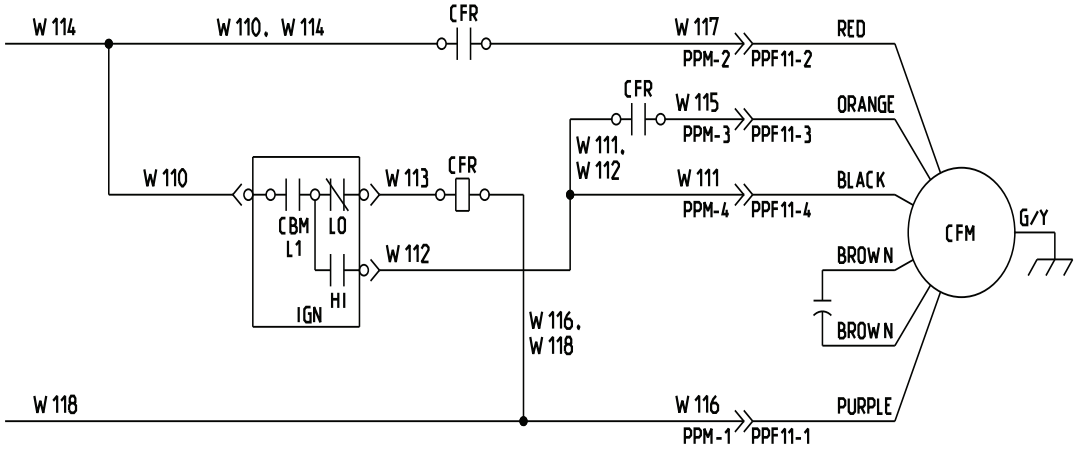
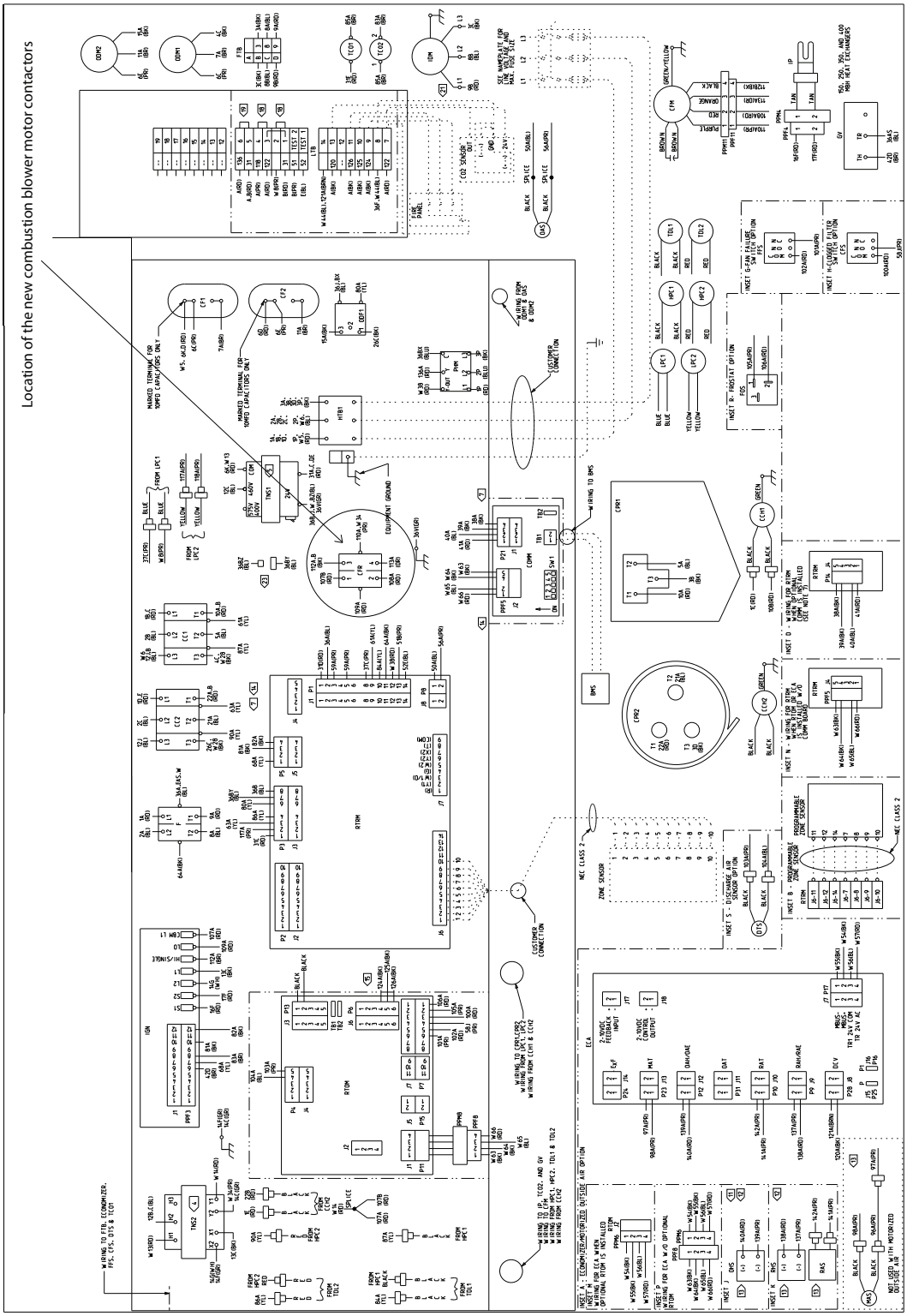


Figure 3. Voyager II contactor location



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