Installation Instructions

# Oversized Motor Kit

Foundation™ Packaged Rooftop Units

3 to 5 Tons

| Model Number: | Used With: |
|---|---|
| BAYHSMT320* | E/GB*036-060A3,4,D<br>E/GD*036-060A3,4 |
| BAYHSMT322* | E/GD*036-060AW |

**⚠ 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.**

August 2024

**ACC-SVN187D-EN**



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## Warnings, Cautions, and Notices

Read this manual thoroughly before operating or servicing this unit. 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.

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**⚠ 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.**

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**⚠ 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.**

**⚠ WARNING**

**R-454B Flammable A2L Refrigerant!**

**Failure to use proper equipment or components as described below could result in equipment failure, and possibly fire, which could result in death, serious injury, or equipment damage.**
**The equipment described in this manual uses R-454B refrigerant which is flammable (A2L). Use ONLY R-454B rated service equipment and components. For specific handling concerns with R-454B, contact your local representative.**



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## General Information

The oversized motor accessory should be used when additional CFM and/or static pressure is required.

### Inspection

1. Check carefully for shipping damage. If any damage is found, report it immediately, and file a claim against the transportation company. Replace damaged parts with authorized parts only.
2. Compare the order number on the shipping label with the accessory identification information on the ordering and shipping documents to verify that the correct accessory has been received.

## 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. Verify with a CAT III or IV voltmeter rated per NFPA 70E that all capacitors have discharged.**

**⚠ WARNING**

**Rotating Components!**

**Failure to disconnect power before servicing could result in rotating components cutting and slashing technician which 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.**

1. Remove indoor fan access panel.
2. Loosen the locknut and tension adjustment bolt on the motor plate assembly and remove the belt.

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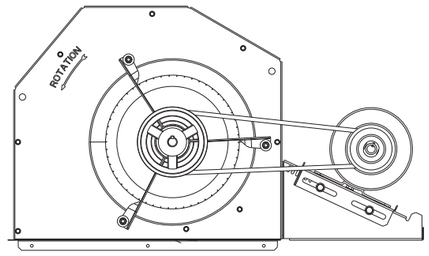
**Figure 1. Motor plate assembly**




3. Remove the fan sheave.

***Important:** The motor leads must be disconnected from the standard motor prior to removal.*

4. Disconnect the leads from the motor and leave them in place. Remove and retain the wire ties which secure the motor wires to the cabinet.
5. To disconnect the wire leads from the motor, the metal plate on the end of the motor must be removed. Loosen the screw securing the green ground wire and pull the remaining flag terminals free. Once the wires are free, loosen the screws of the wire connector where the lead wires enter the motor. Lead wires can now be pulled free of the motor.
6. Remove the three motor plate assembly securing bolts from the motor base plate and slide the motor plate assembly out.
7. Replace the fan sheave with one from the kit (refer to Table 2), but do not tighten at this time.
8. Install the correct motor sheave onto the new motor (refer to Table 2), but do not tighten.
9. Determine the correct air flow needed using the blower performance tables from unit Service Facts. Select the correct number of turns the motor sheave is to be opened, using Table 3.

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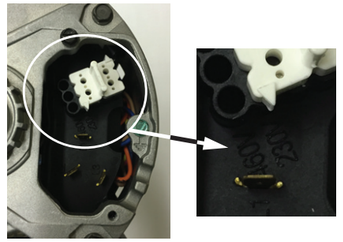
10. Loosen the motor sheave (turns open) set screw, and completely close the sheave. Open the sheave the proper number of turns as indicated in Table 3. Retighten the (turns open) and set screw to 126 to165 inch-pounds (14.2 to18.6 N-m).

***Notes:***

- *Before installing the oversized motor, confirm it is wired for the proper voltage. The 208-230/460V motor must be designated either 208-230V or 460V before it is installed in the unit. The 208-230/460V motors have plugs that must be removed, rotated, and reinstalled to indicate either HI (460V) or LO (208-230V) voltage. Plugs are located internally, behind a metal plate on the end of the motor. Refer to Figure 1. This step is not required on 575V motors since they are designed for single voltage use only and therefore do not have a plug.*
- *Do not install lead wires until after the motor has been mounted in place.*

11. Install the new motor plate assembly and secure with the bolts removed in Step 6. Torque the motor securing bolts to 192 to 228 inch-pounds.
12. Remove the metal plate on the end of the replacement motor and install and connect the lead wires (removed earlier in Step 5). Secure with the wire connector leading into the motor and replace the metal plate.

**Figure 2. Motor lead connection**



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13. Check alignment of blower sheave and motor sheave using a straight edge, and adjust if necessary. Torque the motor sheave set screw and the fan sheave set screw to 126 to 165 inch-pounds (14.2 to 18.6 N-m).
14. Install the belt.

***NOTICE***

**Equipment Damage!**

**Proper adjustment of the fan belt is important to ensure optimal unit operation. Over tightening or under tightening the fan belt can result in belt slippage and excessive wear, bearing damage, sheave misalignment, and possible failure of fan motor mounts.**

15. Adjust the tension of the fan belt. The correct operating tension for a V-belt fan drive is the lowest tension at which the belt will not slip under peak load conditions. The locknut should be tightened sufficiently so that the motor plate assembly maintains the desired belt tension.

***Note:** New V-belts tend to stretch after a a period of time. Check the belt tension periodically.*

**⚠ WARNING**

**Live Electrical Components and Moving Parts!**

**Failure to follow recommendations could result in death or serious injury. During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components and moving parts. Do not touch any electrical or moving parts. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks.**

16. Do not touch any electrical or moving parts. Close the unit disconnect switch and check the unit supply fan for proper rotation, alignment, and minimum vibration (an arrow indicating the direction of rotation is stamped into the fan housing).

***Note:** If the supply fan is rotating backwards, open the unit disconnect switch, remove the metal plate on the motor, and reverse any two of the motor leads inside the motor.*

17. Replace any wire ties (removed in Step 5) used to secure the motor leads to the cabinet.
18. Replace the access panel.

19.Close the unit disconnect switch.

**Table 1. Parts replaced during kit installation**

| Unit | Motor w/ Mounting Plate | Motor Sheave | Fan Sheave | Belt |
|---|---|---|---|---|
| E/GB*036-060A*<br>E/GD*036-060A* | X | X | X | 0 |

**Table 2. Oversized motor parts for each unit**

| Kits | Voltage | Tonnage | Motor | Motor Sheave | Fan Sheave | Belt |
|---|---|---|---|---|---|---|
| BAYHSMT320* | 208-230 - 60Hz<br>460 - 60Hz<br>380-415 - 50Hz | 3 - 60Hz | 2hp | 1VL 40 x 7/8 | AK56 x 3/4 | AX40 |
| BAYHSMT320* | 208-230 - 60Hz<br>460 - 60Hz<br>380-415 - 50Hz | 3 - 50Hz | 2hp | 1VL 40 x 7/8 | AK44 x 3/4 | AX40 |
| | | 4 - 60Hz | | | AK51 x 3/4 | |
| | | 4 - 50Hz | | | AK41 x 3/4 | |
| | | 5 - 60Hz | | | AK51 x 3/4 | |
| | | 5 - 50Hz | | | AK41 x 3/4 | |
| BAYHSMT322* | 575 - 60Hz | 3 - 60Hz | 2hp | 1VL 40 x 7/8 | AK56 x 3/4 | AX40 |
| | | 4 - 60Hz | | | AK51 x 3/4 | |
| | | 5 - 60Hz | | | AK51 x 3/4 | |



**Table 3. Oversized motor and drive fan speed (rpm)**

| Tons | Model Numbers | 6 Turns Open | 5 Turns Open | 4 Turns Open | 3 Turns Open | 2 Turns Open | 1 Turn Open | Closed |
|---|---|---|---|---|---|---|---|---|
| 3 | E/GB*036A*<br>E/GD*036A* | N/A | 888 | 954 | 1018 | 1084 | 1147 | 1211 |
| 4 | E/GB*048A*<br>E/GD*048A* | N/A | 963 | 1033 | 1097 | 1156 | 1233 | 1295 |
| 5 | E/GB*060A*<br>E/GD*060A* | N/A | 963 | 1033 | 1097 | 1156 | 1233 | 1295 |

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Supersedes ACC-SVN187C-EN (Jul 2024)