

Installation Instructions

Oversized Motor Kit

Foundation™ Packaged Rooftop Units 15 to 25 Tons

Model Numbers:	Used With:
BAYHSMT300*	E/GCC180A3,4
BAYHSMT301*	E/GCC180AW
BAYHSMT302*	E/GCC210A3, E/GCC240A3
BAYHSMT303*	E/GCC210A4, E/GCC240A4
BAYHSMT304*	E/GCC210AW, E/GCC240AW
BAYHSMT309*	EAC210AD
BAYHSMT310*	EAC240AD, EAC270AD

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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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-including industry replacements for CFCs such as HCFCs and HFCs.

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.

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Inspection

1. Inspect the shipping carton and its contents. 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 accessory model number on the shipping label with the accessory identification on the ordering and shipping document(s) to verify that the correct parts have been received.

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Notes:

- The oversized motor accessory should be used when additional CFM and/or static pressure is required.
- Since the same oversized motor kits are used with many different units, some will contain parts that won't be used every time. Therefore refer to Table 1 to determine which parts will be replaced in a particular motor kit installation. Then refer to Table 2 to determine the correct parts. Table 2 shows the proper drive components of units that have been converted to oversized motors.

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!

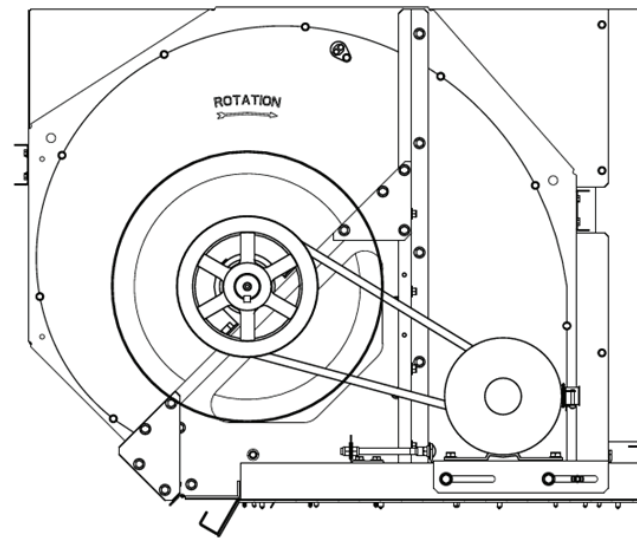
Failure to disconnect power before servicing could result in rotating components cutting and slashing technician which could result in death or serious injury. Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized.

1. Remove evaporator access panel.
2. Loosen the locknut and tension adjustment bolt on the motor plate assembly and remove the belt. A belt tightening instruction label is glued to the motor mounting plate.
3. Remove the fan sheave.

Note: The lead wires must be removed from the standard motor for use on the oversized motor.

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Figure 1. Motor plate assembly



4. The motor leads must be disconnected from the motor prior to removing the motor. 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 screw 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.

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6. Remove the four motor securing bolts from the motor base plate and slide the motor out.
7. Replace the fan sheave with one from the kit. Do not tighten.

Important:

- Before installing the oversized motor, confirm it is wired for the proper voltage.
 - The 208 to 230/460V motor must be designated either 208 to 230V or 460V before it is installed. The 208 to 230/460V motors have plugs that must be removed, rotated, and then reinstalled to indicate either HI (460V) or LO (208 to 230V) voltage. The plugs are located internally, behind a metal plate on the end of the motor.
 - This step is not required on 575V motors since they are designed for single voltage use only and do not have a plug.
8. Install the correct motor sheave onto the new motor. Do not tighten.
 9. Determine the correct airflow needed using the ship-with blower performance tables. Select the correct number of turns the motor sheave is to be opened, using Table 3.
 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. Tighten the (turns open) set screw to 126 to 165 inch pounds (14.2 to 18.6 N-m).
 11. Install the new motor and secure with the bolts removed in Step 7. Torque the motor securing bolts to 144 to 151 inch pounds (16.3 to 17.1 N-m). Do not attempt to install lead wires until after the motor has been mounted in place.
 12. 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).
 13. Install the proper belt. (Refer to Table 2).

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.

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14. 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 to confirm that the motor plate assembly maintains the desired belt tension.

Note: New "V"-belts tend to stretch after having been placed in operation. Periodically check the tension of the belt.

15. Remove the metal plate on the end of the replacement motor and install and connect the lead wires (removed earlier in Step 6). Secure with the wire connector leading into the motor and replace the metal plate.

WARNING

Live Electrical Components!

Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury. When it is necessary to work with live electrical components, have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks.

16. Being careful not to 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 and close the unit disconnect switch.

Table 1. Parts replaced during kit installation

Unit	Motor	Motor Sheave	Fan Sheave	Belt
E/GCC180-240A3,4,W	X	X	X	X
EAC210-270AD	X	X	X	X

Table 2. Oversized motor parts for each unit

Kit	Voltage	Motor	Motor Sheave	Fan Sheave	Belt
BAYHSMT300*	208-230 and 460 /60/3	5.0 HP	1VL40 x 7/8"	BK120	BX51
BAYHSMT301*	575/60/3	5.0 HP	1VL40 x 7/8"	BK120	BX51
BAYHSMT302*	208-230/60/3	7.5 HP	1VL50 X 1 1/8"	BK140	BX56
BAYHSMT303*	460/60/3	7.5 HP	1VL50 X 1 1/8"	BK140	BX56
BAYHSMT304*	575/60/3	7.5 HP	1VL50 X 1 1/8"	BK140	BX56
BAYHSMT309*	380-415	5.0 HP	1VL50 X 1 1/8"	BK120	BX53
BAYHSMT310*	380-415	7.5 HP	1VP60	BK80	BX50

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

Tons	Unit Model Number	6 Turns Open	5 Turns Open	4 Turns Open	3 Turns Open	2 Turns Open	1 Turn Open	Closed
15	E/G*C180A3,4,W	847	908	968	1029	1089	1150	N/A
17.5	E/G*C210A3,4,W	995	1048	1100	1153	1205	1257	N/A
20	E/G*C240A3,4,W	995	1048	1100	1153	1205	1257	N/A
25	E/G*C300A3,4,W	1108	1151	1194	1237	1280	1323	N/A

Note: Factory set at 3 turn open.

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