MB6BM, MB6EM, & MB6VM Series

INSTALLATION INSTRUCTIONS

MODULAR INDOOR BLOWER

IMPORTANT

Please read all information in this manual thoroughly and become familiar with the capabilities and use of your appliance before attempting to operate or maintain this unit. These instructions are primarily intended to assist qualified individuals experienced in the proper installation of this appliance. Some local codes require licensed installation / service personnel for this type of equipment. Improper installation, service, adjustment, or maintenance may cause explosion, fire, electrical shock or other hazardous conditions which may result in personal injury or property damage.

Unless otherwise noted in these instructions, only factory authorized kits or accessories may be used with this product. Keep this manual where you have easy access to it in the future. If a problem occurs, check the instructions and follow recommendations given. If these suggestions don't eliminate your problem, call your servicing contractor.

DO NOT DESTROY. PLEASE READ CAREFULLY AND KEEP IN A SAFE PLACE FOR FUTURE REFERENCE.

TABLE OF CONTENTS

The information listed below is for reference purposes only and does not necessarily have jurisdiction over local or state codes. Always consult with local authorities before installing any gas appliance.

Duct Systems

- US and CANADA: Air Conditioning Contractors Association (ACCA) Manual D, Sheet Metal and Air Conditioning Contractors National Association (SMACNA), or American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) Fundamentals Handbook

Electrical Connections

- US: National Electrical Code (NEC) ANSI/NFPA 70
- CANADA: Canadian Electrical Code CSA C22.1

General Installation

- US: Current edition of the NFGC and the NFPA 90B. For copies, contact the National Fire Protection Association Inc., Batterymarch Park, Quincy, MA 02269; or American Gas Association, 400 N. Capitol, N.W., Washington DC 20001 or www.NFPA.org
- CANADA: NSCNGPIC. For a copy, contact Standard Sales, CSA International, 178 Rexdale Boulevard, Etobicoke (Toronto), Ontario, M9W 1R3 Canada

Safety

- US: (NFGC) NFPA 54–1999/ANSI Z223.1 and the Installation Standards, Warm Air Heating and Air Conditioning Systems ANSI/NFPA 90B.
- CANADA: CAN/CGA-B149.1 and .2–M00 National Standard of Canada. (NSCNGPIC)

IMPORTANT SAFETY INFORMATION

INSTALLER: Please read all instructions before servicing this equipment. Pay attention to all safety warnings and any other special notes highlighted in the manual. Safety markings are used frequently throughout this manual to designate a degree or level of seriousness and should not be ignored. **WARNING** indicates a potentially hazardous situation that if not avoided, could result in personal injury or death. **CAUTION** indicates a potentially hazardous situation that if not avoided, may result in minor or moderate injury or property damage.

⚠ WARNING:

ELECTRICAL SHOCK, FIRE OR EXPLOSION HAZARD

Failure to follow safety warnings exactly could result in serious injury or property damage.

Improper servicing could result in dangerous operation, serious injury, death or property damage.

- **Before servicing, disconnect all electrical power to the indoor blower.**
- **When servicing controls, label all wires prior to disconnecting. Reconnect wires correctly.**
- **Verify proper operation after servicing.**

- To minimize equipment failure or personal injury, it is essential that only qualified individuals install, service, or maintain this equipment. If you do not posses mechanical skills or tools, call your local dealer for assistance.
- Follow all precautions in the literature, on tags, and on labels provided with the equipment. Read and thoroughly understand the instructions provided with the equipment prior to performing the installation and operational checkout of the equipment.
- Use caution when handling this appliance or removing components. Personal injury can occur from sharp metal edges present in all sheet metal constructed equipment.
- Do not store any of the following on, or in contact with, the unit: Rags, brooms, vacuum cleaners, or other cleaning tools, spray or aerosol cans, soap powders, bleaches, waxes, cleaning compounds, plastics or plastic containers, paper bags or other paper products, gasoline, kerosene, cigarette lighter fluid, dry cleaning fluids, paint thinners, or other volatile fluids.
- Installation of equipment may require brazing operations. Installer must comply with safety codes and wear appropriate safety equipment (safety glasses, work gloves, fire extinguisher, etc.) when performing brazing operations.
- The installer should become familiar with the units wiring diagram before making any electrical connections to the unit. See the unit wiring label or Figures 12 - 14 (pages 23 - 25).
- Always reinstall the doors on the indoor blower after servicing or cleaning/changing the filters. Do not operate the indoor blower without all doors and covers in place.

REQUIREMENTS & CODES

⚠ WARNING:

This unit must be installed in accordance with instructions outlined in this manual during the installation, service, and operation of this unit. Unqualified individuals should not attempt to interpret these instructions or install this equipment. Failure to follow safety recommendations could result in possible damage to the equipment, serious personal injury or death.

- The installer must comply with all local codes and regulations which govern the installation of this type of equipment. Local codes and regulations take precedence over any recommendations contained in these instructions. Consult local building codes for special installation requirements.
- All electrical wiring must be completed in accordance with local, state and national codes and regulations and with the National Electric Code (ANSI/NFPA 70) or in Canada the Canadian Electric Code Part 1 CSA C.22.1.
- Install this unit only in a location and position as specified on pages 4 & 5. This unit is designed only for Indoor installations and should be located with consideration of minimizing the length of the supply and return ducts. See Tables 4 - 8 (pages 18 - 20) and the rating plate for proper circulating airflow data.
- This indoor blower may be used for temporary heating of buildings or structures under construction. See the guidelines listed on page 4.

GENERAL INFORMATION

This appliance has been tested for capacity and efficiency in accordance with A.H.R.I. Standards and will provide many years of safe and dependable comfort, providing it is properly installed and maintained. Abuse, improper use, and/or improper maintenance can shorten the life of the appliance and create unsafe hazards. Please read all instructions before installing the unit.

Before You Install this Unit

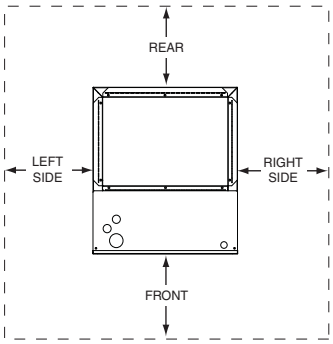
√ This equipment is securely packaged at the time of shipment and upon arrival should be carefully inspected for damage prior to installing the equipment at the job site. Claims for damage (apparent or concealed) should be filed immediately with the carrier.

√ The cooling load of the area to be conditioned must be calculated and a system of the proper capacity selected. It is recommended that the area to be conditioned be completely insulated and vapor sealed.

√ Check the electrical supply and verify the power supply is adequate for unit operation. The system must be wired and provided with circuit protection in accordance with local building codes. If there is any question concerning the power supply, contact the local power company.

√ Verify the static pressure drop of the coil, filter, and duct work do not exceed the air delivery specs of the indoor blower.

INSTALLATION CLEARANCES	
Left Side..... 0 Inches	Right Side ..... 0 Inches
Back..... 0 Inches	Front..... †See Notes



†NOTES:

Alcove Installations - Allow 24 in. minimum clearance from front of unit to nearest wall or partition for servicing. Recommended clearance is 36 in.

Closet installations - require a return air grill installed in the door or a partially louvered door across the opening for proper air circulation. For clearances 6" or greater, the closet must have an open free area of 235 in^2 minimum. For special clearances between 1" - 5", requirements are a louvered door with a minimum of 250 in^2 (1613 cm^2) free area. A fully louvered closet door is strongly recommended for both installation types.

Table 1. Minimum Unit Clearances

Locating the Indoor Blower

- Survey the job site to determine the best location for mounting the unit. Consideration should be given to availability of electric power, service access, and noise.
- The dimensions of the room or alcove must be able to accommodate the overall size of the unit and the installation clearances listed in Table 1. Physical dimensions for this indoor blower are shown in Figure 7 (page 16).
- The indoor blower should be installed before routing the refrigerant tubing.

Minimum Clearances

- This appliance must be installed in accordance with clearances listed in Table 1. The indoor blower must be installed with ample clearance for easy access to the air filter, blower assembly, heater assembly, controls, and vent connections.
- Sufficient clearance for unobstructed airflow through a louvered door must be maintained in order to achieve rated performance.

Operation of Indoor Blower During Construction

⚠ CAUTION:

Failure to follow these instructions will void the factory warranty and may significantly reduce the life or the performance of the indoor blower, and/or result in other unsafe conditions. It is the responsibility of the installing contractor to insure these provisions are met.

Operating an indoor blower in a construction environment can cause the appliance a variety of problems. Proper use of commercial portable space heating equipment during construction is recommended. This indoor blower may be used during construction if it is not in violation of any applicable codes and the following criteria are met:

- The installation must meet all applicable codes and be permanently installed according to the instructions supplied with the indoor blower. This includes electrical supply, gas supply, and duct work.
- The indoor blower must be controlled by a properly installed thermostat that complies with the current provisions of the NEC (ANSI/NFPA 70) and all applicable codes having jurisdiction. Thermostat connections must be made in accordance with instructions supplied with the indoor blower and thermostat. See pages 9 - 10.
- The installation must include a properly installed filter in the return air system with no by-pass air. The filter must be inspected frequently and replaced when necessary.
- Return air must be supplied unrestricted and located such that dust and gases from construction activity are not introduced into the circulating air system.
- Before occupying the structure: The filter must be replaced or cleaned, the duct work must be inspected and cleaned of any construction debris, and the indoor

blower must be cleaned and/or repaired if found to be dirty, damaged, or malfunctioning in any way by a qualified HVAC technician. The indoor blower shall be inspected and approved by applicable local authority even if this requires redundant inspections.
- The serial number for the indoor blower used during construction must be submitted in writing (fax and email also acceptable). This information will be used to track the long-term affects of indoor blower usage during construction. Proof of this submittal shall be available for the final inspection of the indoor blower prior to occupancy.

Plenums & Air Ducts
- Plenums and air ducts should be installed in accordance with the standards of the National Fire Protection Association Standard for Installation of Air Conditioning Systems (NFPA 90A), Standard for Installation of Residence Type Warm Air Heating and Air Conditioning Systems (NFPA 90B), and all applicable local codes. NFPA publications are available by writing to: National Fire Protection Association, Batterymarch Park, Quincy, ME 02269 or visit www.NFPA.org online.

⚠ WARNING:

All return ducts must be secured to the indoor blower using appropriate methods. All return ducts must be adequately sealed. When return air is provided through the bottom of the unit, the joint between the indoor blower and the return air plenum must be air tight.

Return air and circulating air ducts must not be connected to any other heat producing device such as a fireplace insert, stove, etc. This may result in fire, explosion, carbon monoxide poisoning, personal injury, or property damage.

- Design the duct work according to methods described by the Air Conditioning Contractors of America (ACCA).
- This unit is designed only for use with a return and supply duct. The return air duct must have the same free area as the opening provided on the blower coil unit. The ducts should be appropriately sized to the capacity of the indoor blower to ensure its proper airflow rating.
- This unit should be located with consideration of minimizing the length of the supply and return ducts. See Tables 4 - 8 (pages 18 - 20) and the rating plate for proper circulating airflow data.
- Whenever the supply or return air ducts pass through the floor, a 1/4" thick noncombustible resilient gasket must be used between the duct, unit and floor
- Use transition fittings if the supply and/or return air openings of the unit do not match the duct openings. These transitions should be dimensioned in accordance with standard practice as specified in the ASHRAE recommendations for duct transitions.
- The supply air ductwork must be of noncombustible material for the first 24 inches from the unit. Some installations with a short, straight run from the unit to the first branch takeoff may require acoustical lining inside the supply air ductwork. Consult with local codes for requirements specific to your area.
- Flexible connectors should be used between the unit and the ductwork to prevent transmission of vibration from the unit to the structure. If electric heater kits are installed, heat resistant material must be used for the flexible connector at the supply air end of the unit.
- It is good practice to seal all connections and joints with industrial grade sealing tape or liquid sealant. Requirements for sealing ducts vary from region to region. Consult with local codes for requirements specific to your area.

Supply Air Connections

The supply air must be delivered to the heated space by duct(s) secured to the blower's casing, running full size and without interruption. Tape or seal all seams if required by local code.

Upflow & Horizontal Applications: To attach the supply air duct, bend the flanges (on top of the unit) outward 90° with a pair of wide duct pliers. Position the duct on top of the blower and secure together with sheet metal screws.

Downflow Applications: Position the blower over the duct and secure together with sheet metal screws.

Return Air Connections

The return air must be delivered to the blower by duct(s) secured to the casing, running full size and without interruption. Tape or seal all seams if required by local code.

Upflow & Horizontal Applications: Position the blower over the duct and secure together with sheet metal screws.

Downflow Applications: To attach the supply air duct, bend the furnace flanges outward 90° with a pair of wide duct pliers. Position the duct on top of the cased coil and secure together with sheet metal screws.

Acoustical Duct Work
- Certain installations may require the use of acoustical lining inside the supply duct work. Acoustical insulation must be in accordance with the current revision of the Sheet Metal and Air Conditioning Contractors National Association (SMACNA) application standard for duct liners. Duct lining must be UL classified batts or blankets with a fire hazard classification of FHC-25/50 or less.
- Fiber duct work may be used in place of internal duct liners if the fiber duct work is in accordance with the current revision of the SMACNA construction standard on fibrous glass ducts. Fibrous duct work and internal acoustical lining must be NFPA Class 1 air ducts when tested per UL Standard 181 for Class 1 ducts.

- Damping ducts, flexible vibration isolators, or pleated media-style filters on the return air inlet of the indoor blower may be used to reduce the transmission of equipment noise eminating from the indoor blower. These treatments can produce a quieter installation, particularly in the heated space. However, they can increase the pressure drop in the duct system. Care must be taken to maintain the proper maximum pressure rise across the indoor blower, temperature rise and flow rate. This may mean increasing the duct size and/or reducing the blower speed. These treatments must be constructed and installed in accordance with NFPA and SMACNA construction standards. Consult with local codes for special requirements. For best sound performance, be sure to install all the needed gaskets and grommets around penetrations into the indoor blower, such as for electrical wiring.

Air Filters

⚠ WARNING:

Never operate the indoor blower without a filter or with doors removed. Dust and lint can build up on internal components, resulting in loss of efficiency, equipment damage, and possible fire.

MB6 Series indoor blowers are not equipped with filter racking; however, NORDYNE strongly recommends that a filter be located in the return air duct system. Installing the filter and replacing it every 3 months will increase air quality throughout the home.

Unconditioned Spaces

All duct work passing through unconditioned space must be properly insulated to minimize duct losses and prevent condensation. Use insulation with an outer vapor barrier. Consult your Distributor for the recommended type and thickness of insulation for your area as required by local codes.

Condensate Drainage

⚠ CAUTION:

The indoor blower must be level to ensure proper condensate drainage. An unlevel installation may result in structural damage, premature equipment failure, or possible personal injury.

- Modular indoor blowers are intended to be mated with specific NORDYNE C6 cased coils. To ensure proper condensate drainage, the unit must be installed in a level position within 1/4 inch over the height, width, and depth of the unit. The best system performance will be obtained if the unit is located in a centralized position with respect to the air distribution system. Refer to the Installation Instructions supplied with the Cased Coil for proper condensate drain connections.
- If the indoor blower is located in or above a living space where damage may result from condensate overflow, an auxiliary drain pan should be installed under the unit. A separate drain line should extend from the pan to a conspicuous point and serve as an alarm indicating that the primary drain is restricted. As an alternative to a separate drain line, an approved water level indicator or float switch device should be used to shut down the unit in the event water is detected in the auxiliary pan.
- During system checkout, inspect the drain line and connections to verify proper condensate drainage.
- Methods for disposing of condensate vary according to local codes. Refer to local codes or authority having jurisidiction for restrictions and proper condensate disposal requirements.

INDOOR BLOWER INSTALLATION

The MB6 Series indoor blower is shipped ready for vertical upflow installation and is approved for attic, basement, alcove/closet or crawlspace installation with zero clearance to combustibles. They may also be applied in downflow or horizontal left and right discharge applications. See Table 1 (page 4) for required installation clearances. **This appliance is only for indoor use.**

NOTE: For shipping purposes, the front and rear joining brackets are located in the unit's heater box. Remove these two items from the heater box before beginning.

- The unit must be leveled at installation and attached to a properly installed duct system.
- The surface that the indoor blower is mounted on must provide sound physical support of the unit.
- The indoor blower must be installed so that all electrical components are protected from water.
- If a louvered door is installed across the front of this unit, the appliance must be mounted flush or behind front edge of finished wall.
- Modular indoor blowers are intended to be mated with specific NORDYNE C6 cased coils. Reference the Technical Specifications for coil mating combinations.

Upflow Installation

The MB6 Series indoor blower is shipped from the factory ready for upflow configuration as shown in Figure 1 (page 7). Return air must must enter from the bottom of the unit.

1. Remove the bracket above the door of the cased coil. Retain the screws for later use. **NOTE:** Before mating the modular unit with the cased coil, clean the mating surfaces on both units and apply the black neoprene gasket tape to the top of the coil case (except the rear surface). Make sure there are no gaps on the front and side flanges.
2. Carefully place the modular air handler on top of the cased coil making sure not to damage the cased coil flanges. The units will be flush in front with an overhang in the back as shown in Figure 2 (page 7).

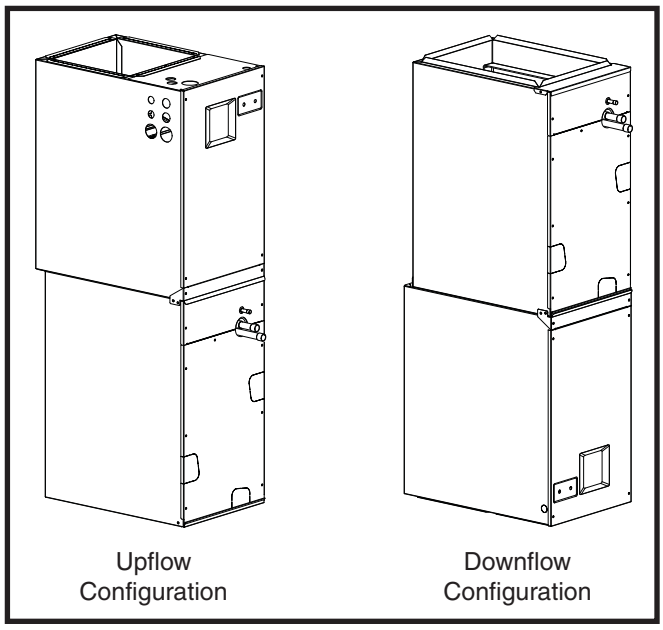


Figure 1. Upflow & Downflow Installation

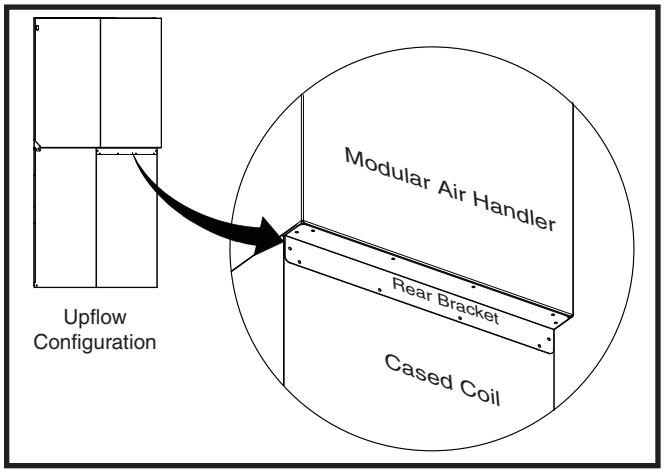


Figure 2. Rear Bracket Installation - (Upflow Only)

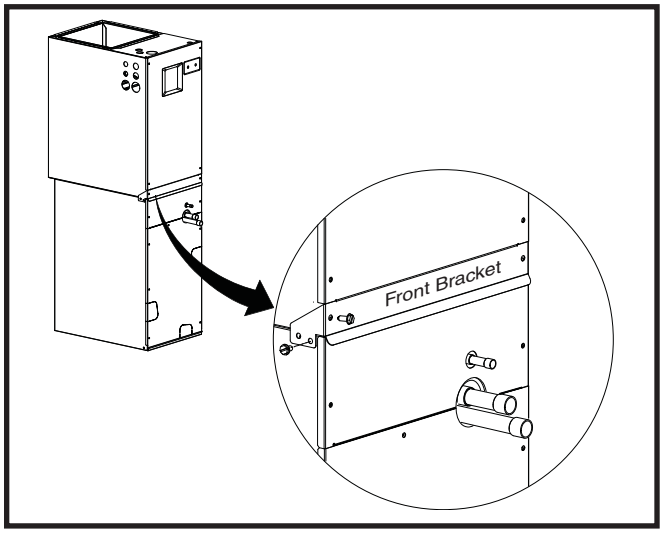


Figure 3. Front Bracket Installation - (Upflow Only)

3. Remove the lower front bracket (Figure 9, page 17) from the modular unit. Retain the screws for later use.
4. Attach the front joining bracket to the front of the modular unit. Align the screw holes in the bracket with the holes from the lower front bracket and the top panel of the coil case. See Figure 3.
5. Secure the bracket with the screws removed earlier in steps 1 & 2.
6. Attach the rear joining bracket to the backside of the modular unit and cased coil. Position the bracket so that it is flush with the sides and back of the units with the 1/2" insulation facing the rear gap between the units.
7. Secure the rear bracket with self tapping screws.

Downflow Installation

The MB6 Series Modular Air Handler may be installed in a downflow configuration as shown in Figure 1. Return air must enter through the top of the unit.

1. Remove the lower front bracket (Figure 9, page 17) from the modular unit. Retain the screws for later use.
2. Remove the door from the cased coil and the screws (on the side of the cased coil) securing the lower tie bar in place. Retain the screws for later use. **NOTE:** Before mating the modular unit with the cased coil, clean the mating surfaces on both units.
3. Flip the modular unit upside down and apply the black neoprene gasket tape to the top of the indoor blower. **NOTE:** The blowers flanged surface is now beneath the air handler and will connect with the supply air duct.

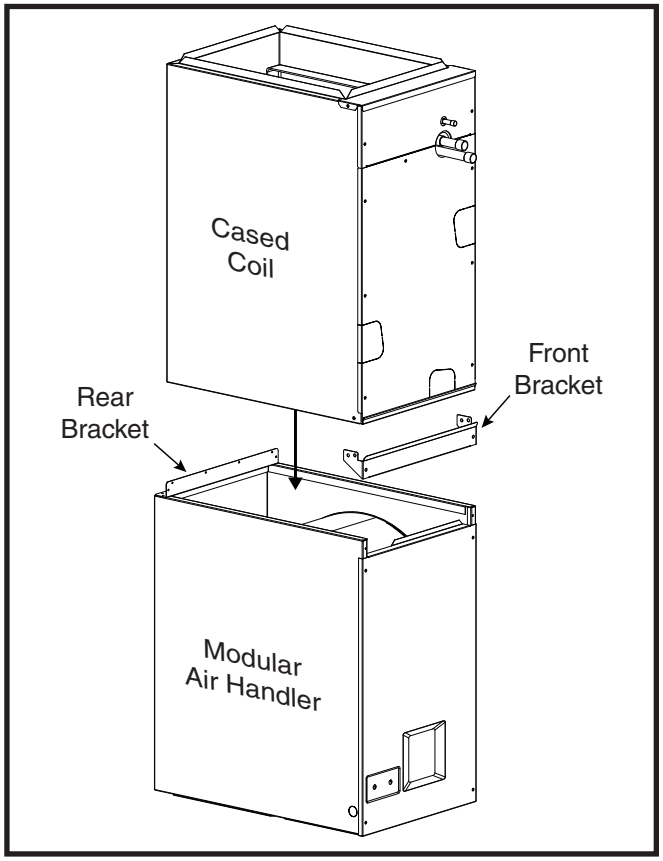


Figure 4. Downflow Brackets

4. Carefully place the cased coil on top of the modular air handler. **NOTE:** Make sure the units are flush in the front and on the sides with a “step” fit in the back and that there are no gaps on the sides. See Figure 4.
5. Attach the front joining bracket to the cased coil and the air handler. Align the screw holes in the bracket with the holes where the lower front bracket and lower tie bar were attached.
6. Secure the bracket to the modular unit and the cased coil with the screws removed earlier in steps 1 & 2.
7. Attach the rear joining bracket to the backside of the modular unit. Position the bracket so that it is flush with the sides and back of the units with the 1/2” insulation facing the rear gap between the units.
8. Secure the rear bracket to the modular unit and cased coil with self-tapping screws.

Horizontal Installation

MB6 indoor blowers are shipped from the factory ready for horizontal left applications and horizontal right applications. The blowers can be installed horizontally in an attic, basement, crawl space or alcove. They can also be suspended from a ceiling in a basement or utility room in either a right to left airflow or left to right airflow. A typical installation of the unit in a suspended horizontal application is shown in Figure 5.

When mating the blower and coil for horizontal left or right applications, reference the upflow mating directions on pages 6 & 7. Make sure to account for the coil orientation by configuring the coil drain pan assembly properly. Multi-position procedures are also available in the cased coil Installation Instructions supplied with the unit.

NOTES:

- In many applications when joined with a C6 cased coil, the shorter horizontal drain pan extension which is included with the MB6 must be used. This is to avoid any interference with the extension included with the C6 and the blower.
- indoor blowers may or may not be shipped from the factory with all the parts required for horizontal left applications and horizontal right applications. If your unit does not have parts for a horizontal application, a kit is available.

If suspending the indoor blower from the ceiling, assemble a support frame (Figure 4) using slotted iron channel and full threaded rod. Fasten the frame together with nuts, washers, and lockwashers. Secure the support frame to the rafters with lag bolts. The indoor blower can also be suspended using steel straps around each end of the unit. The straps should be attached to the indoor blower with sheet metal screws and to the rafters with bolts.

Horizontal Left Installations

1. Remove the coil access door.
2. Remove the plug from one of the threaded holes in the horizontal drain pan. Completely remove the webbing in the threaded holes of the horizontal drain pan.

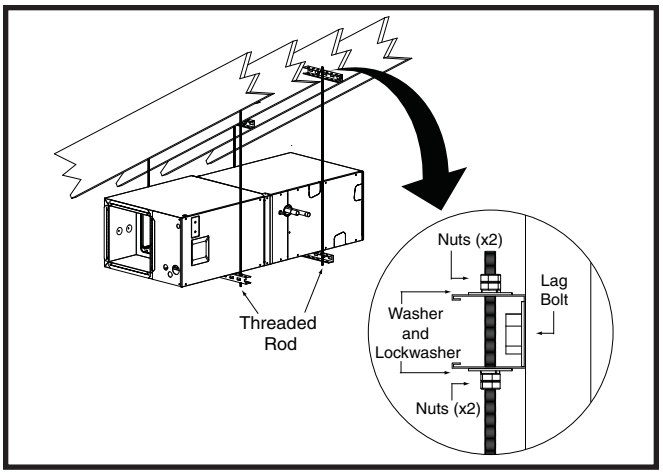


Figure 5. Unit Horizontally Suspended

IMPORTANT: If the webbing is not removed, the condensate will not drain properly and ceiling damage may occur.

3. Insert the plug (from horizontal drain pan) into the open and unused drain hole in the drain pan at the bottom of the unit to block bypass air.
4. Remove the corresponding drain line knockout from the coil access door to allow access to the horizontal drain.
5. Replace the door and attach the drain line.

Horizontal Right Installations

1. Remove the coil access door. Unscrew the line-set tube close-off plate from the front left cabinet rail.
2. Slide the coil and drain pan assembly out of the unit.
3. Remove the sheet metal hairpin covers (if supplied) from the back of the coil and discard.
4. Place the horizontal drain pan on the opposite side of the coil. On units with 2 sets of knockouts, remove the other set of knockouts in the coil spacing plates and insert support rod.
5. Slide the coil and the horizontal drain pan assembly back into the unit. Re-attach the tube close off plate.
6. Remove the plug from one of the threaded holes in the horizontal drain pan. Completely remove the webbing located in the threaded holes of the drain pan. **IMPORTANT:** If the webbing is not removed, the condensate will not drain properly and ceiling damage may occur.
7. Insert the plug (from horizontal drain pan) into the open and unused drain hole in the drain pan at the bottom of the unit to block bypass air.
8. Remove the corresponding drain line knockout from the coil access door to allow access to the horizontal drain.
9. Replace the door and attach the drain line.

ELECTRICAL CONNECTIONS

⚠ WARNING:

ELECTRICAL SHOCK, FIRE OR EXPLOSION HAZARD

Failure to follow safety warnings exactly could result in serious injury or property damage.

Improper servicing could result in dangerous operation, serious injury, death or property damage.

- **Before servicing, disconnect all electrical power to the indoor blower.**
- **When servicing controls, label all wires prior to disconnecting. Reconnect wires correctly**.
- **Verify proper operation after servicing.**

- Electrical connections must be in compliance with all applicable local codes and ordinances, and with the current revision of the National Electric Code (ANSI/NFPA 70).
- For Canadian installations, the electrical connections and grounding shall comply with the current Canadian Electrical Code (CSA C22.1 and/or local codes).

Pre-Electrical Checklist:

√ Verify the voltage, frequency, and phase of the supply source match the specifications on the unit rating plate.

√ Verify that the service provided by the utility is sufficient to handle the additional load imposed by this equipment. See the unit wiring label or Table 2 (page 10) for proper high and low voltage wiring.

√ Verify factory wiring is in accordance with the unit wiring diagram (Figures 12 - 14, pages 23 - 25). Verify none of the connections loosened during shipping or installation.

Line Voltage

- **An electrical disconnect must be located within sight of and readily accessible to the unit**. This switch shall be capable of electrically de-energizing the outdoor unit. See unit data label for proper incoming field wiring. Any other wiring methods must be acceptable to authority having jurisdiction.
- It is recommended that the line voltage to the unit be supplied from a dedicated branch circuit containing the correct fuse or circuit breaker for the unit.
- Overcurrent protection must be provided at the branch circuit distribution panel and sized as shown on the unit rating label and according to applicable local codes. See the unit rating plate and Table 2 (page 10) for maximum circuit ampacity and maximum overcurrent protection limits.
- The installer should become familiar with the wiring diagram/schematic before making any electrical connections to the unit. See the unit wiring label or Figures 12 - 14.
- Use only copper wire for the line voltage power supply to this unit. Use proper code agency listed conduit and a conduit connector for connecting the supply wires to the unit. Aluminum supply wire may be used if a heater kit is installed.
- If replacing any of the original wires supplied with the unit, the replacement wire must be copper wire consisting of the same gauge and temperature rating.
- Provide power supply for the unit in accordance with the unit wiring diagram, and the unit rating plate. Use UL listed conduit and conduit connectors for connecting the supply wires to the unit and for proper grounding. Field supplied bushings for the power supply cables must be added to support and protect the power supply cables.
- All 208/230 Volt units are shipped from the factory wired for 240 volt operation. For 208V operation, remove the lead from the transformer terminal marked 240V and connect it to the terminal marked 208V.

Grounding

⚠ WARNING:

The unit cabinet must have an uninterrupted or unbroken electrical ground to minimize personal injury if an electrical fault should occur. Do not use gas piping as an electrical ground!

This unit must be electrically grounded in accordance with local codes or, in the absence of local codes, with the National Electrical Code (ANSI/NFPA 70) or the CSA C22.1 Electrical Code. Use the grounding lug provided in the control box for grounding the unit.

Thermostat Connections

- Thermostat connections shall be in accordance with the instructions supplied with the thermostat and the indoor equipment. The low voltage wires must be properly connected to the units low voltage terminal block.
- A single stage thermostat is used with this equipment and must operate in conjunction with any installed accessories. Typical AC and heat pump connections are shown in Figure 6 (page 12).

⚠ CAUTION:

Isolation must be maintained from the external Class 2 output of any transformer in a cooling circuit. Use a thermostat with isolating contacts to prevent inter-connection of Class 2 outputs.

- Where local codes require that the thermostat wiring must be routed through a conduit or raceway, splices can be made inside the unit; however, all wiring must be NEC Class 1 and must be separated from incoming power leads.
- The thermostat should be mounted about 5 feet above the floor on an inside wall. DO NOT install the thermostat

on an outside wall or any other location where its operation may be adversely affected by radiant heat from fireplaces, sunlight, or lighting fixtures, and convective heat from warm air registers or electrical appliances. Refer to the thermostat manufacturer's instruction sheet for detailed mounting and installation information.

- Install the grommet (packed with the unit) in the hole for low-voltage wires. Connect the low-voltage wiring to the thermostat and the outdoor unit and the appropriate screw terminal located on the control board. **NOTE:** When the low voltage wires are positioned in this grommet, the grommet will prevent chafing and/or shorting of the low voltage leads.

Important! On variable speed models when the unit is used in an air conditioning system, connect the **O** terminal to the **Y** terminal. See Figure 6 (page 12)**.**

Control Board

The control board in the indoor blower controls the timing sequence of the elements. Depending on the thermostat connection, there are multiple timing sequence variations that can be chosen. See Table 3 (page 11) for element sequence timing. The board also is equipped with a 3 second blower on delay and a 15 second blower off delay. See Figures 9 - 11 (pages 21 & 22).

Twinning

MB6 indoor blowers are not supplied with a built in twinning capability. To connect two indoor blowers to a common single stage AC condensing unit or heat pump, a twinning kit is available for field installation. **Please follow the instructions supplied with the kit.**

NOTE: Variable speed indoor blowers cannot be twinned.

Heater Kits

Field-installed electric heater kits are available. Instructions for installing the electric heaters are included with the heaters. See heater kit information can be found in the Technical Specifications.

Indoor blowers set up with 15 kw or more of electric heat will normally be configured for multiple-circuit power supply. They may, however, be connected to a single-circuit power supply with the addition of a single circuit accessory kit (See Technical Specifications). Select the wire size and over-current protection in accordance with the minimum circuit ampacity and maximum over-current protection shown in Table 2.

Aux. Heat Installed (Nom. KW)			Single Phase, 240 VAC, 50 & 60Hz						Single Phase, 208 VAC, 60Hz					
			NONE	005H	008H	010H	015H	020H	NONE	005H	008H	010H	015H	020H
Single Circuit		***Min. Circuit Amp.	7.5	32.5	46.6	57.5	82.5	107.5	7.5	29.1	41.2	50.8	72.4	94.0
		*Wire AWG 75ºC	14	8	8(6**)	6	4(3**)	2	14	10(8**)	8	6	4	3
		Maximum Over-current Rating	15	40	50	60	90	125	15	30	50	60	80	100
Multiple Circuit	Circuit A	***Min. Circuit Amp.	7.5	32.5	46.6	57.5	57.5	57.5	7.5	29.1	41.2	50.8	50.8	50.8
		*Wire AWG 60ºC	14	8	6	4	4	4	14	10(8**)	6	6	6	6
		*Wire AWG 75ºC	14	8	8(6**)	6	6	6	14	10(8**)	8	6	6	6
		Maximum Over-current Rating	15	40	50	60	60	60	15	30	50	60	60	60
	Circuit B	***Min. Circuit Amp.	-	-	-	-	25.0	50.0	-	-	-	-	21.6	43.3
		*Wire AWG 60ºC	-	-	-	-	10	6	-	-	-	-	10	6
		*Wire AWG 75ºC	-	-	-	-	10	8	-	-	-	-	10	8
		Maximum Over-current Rating	-	-	-	-	30	60	-	-	-	-	25	50
	Circuit C	***Min. Circuit Amp.	-	-	-	-	-	-	-	-	-	-	-	-
		*Wire AWG 60ºC	-	-	-	-	-	-	-	-	-	-	-	-
		*Wire AWG 75ºC	-	-	-	-	-	-	-	-	-	-	-	-
		Maximum Over-current Rating	-	-	-	-	-	-	-	-	-	-	-	-

*All wire sizes for copper conductors only, based on NEC Table 310-16.

**Required for C-cabinet variable speed.

***Circuit ampacity slightly higher for variable speed. See label on blower.

Table 2. Minimum Circuit Ampacity & Maximum Overcurrent Protection

When electric heat packages with circuit breakers are field-installed, the circuit breaker may be used as a disconnecting means in most applications. Reference the NEC and local codes for disconnect requirements.

If a heater kit is installed:
The MB6 indoor blower is shipped from the factory without an electric heater kit installed. If Electric heat is desired, the H6HK heater kit may be purchased separately and field installed. Determine the correct size heater kit for your unit by referring to the list below or the units rating label.

A Size Cabinet..... 15Kw max
B Size Cabinet..... 20Kw max
C Size Cabinet..... 20Kw max

1. Connect the 2 wire plug of the indoor blower to the mating 2 wire plug of the heater kit.
2. Connect the line voltage leads to the circuit breaker or terminal block provided.
3. Connect the heater kit plug with the mating receptacle on the indoor blower control board.

If a heater kit is not installed:
1. Remove the 2 wire plug of the indoor blower by cutting the wires and discarding the plug.
2. Strip the ends of the 2 indoor blower wires and connect to the line-voltage leads with the 2 wire nuts provided.

Control Signal	Operation	Board Action
W1 only	On	Stage 1 Heat on instantly Heat blower on after 3 second delay Stage 3 & 5 Heat on after 1 minute delay Stage 2 Heat on after 2 minute delay Stage 4 & 6 Heat on after 3 minute delay
	Off	Heat stages off instantly Blower off after 15 second delay
W1 & W2	On	Stage 1 Heat on instantly Heat blower on after 3 second delay Stage 3 & 5 Heat on after 10 second delay Stage 2 Heat on after 20 second delay Stage 4 & 6 Heat on after 30 second delay
	Off	Heat stages off instantly Blower off after 15 second delay
W1 & Y/Y2	On	Stage 1 Heat on instantly Cool blower on after 3 second delay Stage 3 & 5 Heat on after 1 minute delay Stage 2 Heat on after 2 minute delay Stage 4 & 6 Heat on after 3 minute delay
	Off	Heat stages & Cool blower off instantly Heat blower energizes and then turns off after 15 second delay
W1, W2 & Y/Y2	On	Stage 1 Heat on instantly Cool blower on after 3 second delay Stage 3 & 5 Heat on after 10 second delay Stage 2 Heat on after 20 second delay Stage 4 & 6 Heat on after 30 second delay
	Off	Heat stages and Cool blower off instantly Heat blower energizes and then turns off after 15 second delay

Table 3. Heating Element Logic

Optional Humidistat
(MB6VM Models Only)
The optional humidistat may be installed in the return air duct to provide excellent humidity control when needed and maximum system capacity and energy efficiency when humidity levels are normal. The humidistat senses when humidity in the return air stream is above a preset level (field adjustable) and sends a signal to the motor to reduce the airflow so that more moisture may be removed until the humidity level drops. The indoor blower is pre-programmed for humidistat operation.

Remove jumper connector installed between the two terminals marked **HUM** on the variable speed board.

Install the humidistat in the return air duct as directed in the installation instructions included with the kit. Wire the humidistat through the low-voltage wire entrance in the indoor blower to the control board terminal marked **DEHUM**. Wire the humidistat to open on rise in humidity.

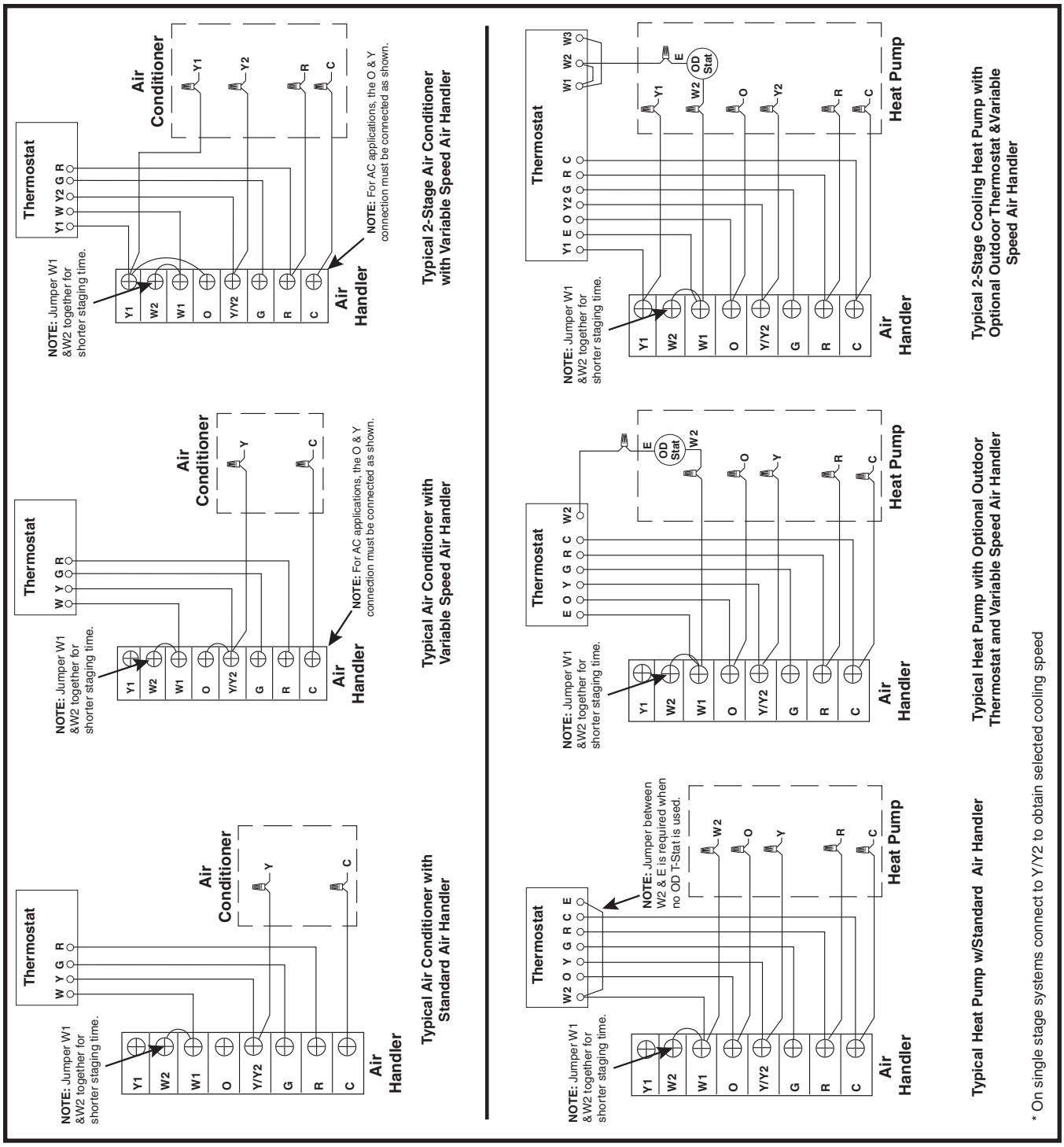


Figure 6. Typical Air Conditioner & Heat Pump System Connections

STARTUP & ADJUSTMENTS

Before You Start the Unit

Prior to start-up, complete the following inspections:

√ Verify the unit is level and properly located with adequate clearances for servicing the unit. See Table 1 (page 4).
√ Check condensate drain line(s) for proper drainage.
√ Verify the surrounding area and top of the unit is free from obstructions and debris.
√ Check all duct connections. Make sure the duct work is adequately sealed to prevent air leakage.
√ Check all coil connections for leaks.
√ Verify that the line voltage power leads are securely connected and the unit is properly grounded. Make sure all doors are installed before restoring power to the unit
√ Verify the thermostat is wired correctly. Make sure all low voltage wires are securely connected to the correct leads of the low voltage terminal strip.
√ Verify the power supply branch circuit overcurrent protection is sized properly.
√ Verify filter is properly and securely installed.

Air Circulation Check

Running the Blower Continuously

Set the thermostat's system mode to **OFF** and the thermostat's fan mode to **ON**. The blower motor should run continuously. Check for air delivery at the register(s). Make sure that there are no obstructions at the registers or in the ducts.

NOTE: If blower is turning opposite of arrow direction, shut off main power to the unit and switch any two field wires at the disconnect. **DO NOT** alter unit wiring.

System Cooling

1. Set the thermostat's system mode to **COOL** and fan mode to **AUTO**. Lower the thermostat's temperature mode below room temperature and observe that the blower energizes. Check the air being discharged at the register is cooler than room temperature. Verify unit refrigerant pressures are in order. Blower should be turning in direction indicated by arrow.

   NOTE: DO NOT alter unit wiring. Listen for any unusual noises. Locate the source and correct as needed.

2. Allow the unit to run for several minutes and then set the thermostat's temperature above room temperature. Verify the blower cycles off with the thermostat.

System Heating

1. Set the thermostat's system mode to **HEAT** and the fan mode to **AUTO**. Increase the thermostat's temperature above room temperature and observe that the blower energizes. Check the air being discharged at the register is warmer than room temperature.
2. Allow the unit to run for several minutes and then set the thermostat's temperature below room temperature. Verify the blower cycles off with the thermostat.

Turning the Blower Off

Set thermostat's fan mode to **AUTO**, the blower will shut down immediately.

Blower Configurations

Determining Nominal System Capacity

To select the appropriate airflows for the indoor blower, the nominal system capacity must be known. The nominal system capacity is always the nominal capacity of the outdoor unit. However, in some situations the nominal system capacity may not be the same as the capacity rating of the indoor blower. Always refer to the outdoor units capacity rating to determine the nominal system capacity.

Proper Blower Speed for Multi-Speed Units
(MB6BM & MB6EM Models)

⚠ CAUTION:

To avoid personal injury or property damage, make sure the motor leads do not come into contact with any uninsulated metal components of the unit.

The blower speed is preset at the factory for operation at the same speed for heating and cooling, by using the jumping terminal on the blower motor and connecting it to the desired speed with both the red and black wires connected to the jumping terminal. **NOTE:** The control board is programmed with a 40 second off delay in the cooling mode for optimum system performance and efficiency.

For optimum system performance and comfort, it may be necessary to change the factory set speed. See Tables 4-8 (pages 18-20) for airflow data. To change the blower speed:

1. Disconnect all electrical power to the unit and remove the upper door.
2. Remove the black and red wires from the blower motor jumping terminal. Discard the blower motor jumping terminal.
3. Connect the heating speed wire (red) and the cooling speed wire (black) to the desired blower speed marked on the terminal block of the blower motor. For standard 3-speed motors:
   - Terminal 4 = High speed
   - Terminal 5 = Medium speed
   - Terminal 6 = Low speed

   MB6EM units equipped with selectable blower speeds:
   - Terminal 1 = Low speed
   - Terminal 2 = Medium Low speed
   - Terminal 3 = Medium speed
   - Terminal 4 = Medium High speed
   - Terminal 5 = High speed

4. Replace the upper door and secure it to the unit.
5. Restore power to the unit.

Variable Speed Units (MB6VM Models)
Variable Speed units have been designed to give the installer maximum flexibility to optimize system performance, efficiency, and comfort. Because there are so many different ways to set up the indoor blower it is important to read and follow these directions carefully.

Variable speed air handlers are equipped with a microprocessor-controlled variable speed motor that is pre-programmed to deliver optimum airflow in a variety of conditions and system configurations. See Figure 11.

Before operation, the indoor blower must be configured to match the unit with the system, system options, and climatic conditions. When configured, the indoor blower responds directly to the thermostat inputs, as well as the optional humidistat (see page 11). During normal operation, the motor will gradually change speeds during start-up, shut down, when thermostat inputs change, and when the duct static pressure changes (vents closed or opened, filter clogging, etc.). The indoor blower is configured by setting the selector switches and removing jumper connectors.

Selecting continuous low speed fan operation
The indoor blower is equipped with an option of continuous low speed fan operation. When **G** is energized without **Y/Y2**, the indoor blower will operate using a percentage of the cooling speed. With **G** & **Y/Y2** or **Y/Y2** energized, the indoor blower will operate in the selected cooling speed (including 40 sec blower-off delay).

Selecting Basic Cooling/Heat Pump Airflow
The basic cooling/heat-pump airflow is selected by setting switches 1 through 4 on the thermostat input board (located on the blower). All airflows for other modes of operation (except electric heat) are determined by this basic setting. FAN ONLY would deliver 50% of the selected cooling airflow. Table 6 (page 20) lists the basic airflow values versus the airflow selector switch settings and ranges of basic air flow settings recommended for each nominal system capacity.

- When operating in the heat pump mode, a higher basic airflow setting will increase the energy efficiency and capacity but will also decrease the supply air temperature.
- For maximum capacity and energy efficiency, select an airflow at or near the top of the range for that nominal capacity.
- For maximum dehumidification, select an airflow near the middle or bottom of the range for that nominal capacity. Additional information on humidity control can be found in the Humidistat and Delay Setting sections.
- For thermostats with a dehumidifier output, use a field supplied wire to connect the thermostat's dehumidifier output to the terminal marked **DHUM**. The thermostat should be set so that the **DHUM** output should be high (positive) when dehumidification is needed. See also Optional Humidistat section on page 11.

IMPORTANT! If coil icing is observed, the basic cooling/heat-pump airflow selected may be too low. Verify the setting selected is within the range shown in Table # and that the the system is properly charged. Please refer to the instructions supplied with the outdoor unit. If icing continues to occur, raise the selected airflow one or two steps.

NOTES:
- The CFM values listed in Table 6 are not dependent on duct static pressure. The variable speed motor automatically compensates for changes in duct static pressure (within the limits of the motor).
- Variable speed indoor blowers with SEER ratings higher than 15 are matched with a 2-stage cooling outdoor unit. They are programmed to operate at 75% of the selected airflow while the system is in the lo-cool mode and 100% of the selected airflow while in hi-cool mode.

Selecting Minimum Electric Heat Airflow
The minimum electric heat airflow setting controls the minimum air flow that will be produced whenever electric heater kits are used. When the electric heater kit is energized along with a heat pump, the airflow may be higher depending on the basic cooling/heat-pump airflow setting. The minimum electric heat airflow is selected by setting switches 5 & 6. Recommended switch settings are listed in Table 7 (page 20). **NOTE:** The minimum electric heat airflow setting may be set higher, but must never be set lower than the setting shown in Table 6.

Selecting the Delay Profile
Delay profile selection controls the start-up and shut-down characteristics of the air handler. By varying the start-up and shut-down characteristics of the air handler the system can be optimized for energy efficiency, humidity control, and comfort. The delay profile is selected by setting switches 7 and 8. See Table 8 (page 20).

Select **Delay A** or "Delay B" for highest energy efficiency. **Delay A** has a two-step "on" delay. The blower will begin operation at 31% airflow for 30 seconds. The second step operation is 75% airflow for 30 seconds. After the two-step "on" delay has been completed, the blower operation will be 100% until the thermostat has been satisfied. **Delay A** also provides a 60 second "off" delay at 50% airflow.

Delay B has a single step 30 second "on" delay at 50% airflow. **Delay B** also provides a 90 second "off" delay at 50% airflow. Select the delay profile which is most suited to the application.

The **DHUM** delay profile may be used when humidity control is desired without the use of the optional humidistat. If the **DHUM** delay profile is selected, the air handler will run at 75% airflow for the first 10 minutes of each cooling cycle. If the **DHUM** delay profile is selected, the basic cooling/heat-pump speed should be selected at or near the top of the range for that nominal capacity (see Table 6).

UNIT MAINTENANCE

Proper maintenance is most important to achieve the best performance from an indoor blower. Some of the components and their locations are shown in Figure 8 (page 17). If any component of the indoor blower must be replaced, use only factory authorized replacement parts specified in the Replacement Parts List provided online.

⚠ WARNING:

ELECTRICAL SHOCK, FIRE OR EXPLOSION HAZARD

Failure to follow safety warnings exactly could result in serious injury or property damage.

Improper servicing could result in dangerous operation, serious injury, death or property damage.

- **Before servicing, disconnect all electrical power to the indoor blower.**
- **When servicing controls, label all wires prior to disconnecting. Reconnect wires correctly**.
- **Verify proper operation after servicing.**

- These maintenance instructions are primarily intended to assist qualified technicians experienced in the proper maintenance and operation of this appliance.
- Always reinstall the doors on the indoor blower after servicing or cleaning/changing the filters. Do not operate the indoor blower without all doors and covers in place.
- To achieve the best performance and minimize equipment failure, it is recommended that a yearly maintenance checkup be performed. At a minimum, this check should include the following items:

Air Filter(s)

⚠ WARNING:

Never operate the indoor blower without a filter in place. Dust and lint in the return air can build up on internal components, resulting in loss of efficiency, equipment damage, and possible fire.

Inspect and replace the air filter at the beginning of heating and cooling season. It is recommended that the filter be cleaned or replaced monthly. Newly built or recently renovated homes may require more frequent changing until the construction dust has minimized. Filters designed to remove smaller particles such as pollen, may require additional maintenance.

Blower Compartment

Dirt and lint can create excessive loads on the motor resulting in higher than normal operating temperatures and shortened service life. It is recommended that the blower compartment be cleaned of dirt or lint that may have accumulated in the compartment or on the blower and motor as part of the annual inspection.

Blower Fan Wheel

Inspect the blower wheel blades for accumulations of dirt and clean if necessary. Inspect mounting nut for tightness.

Blower Motor & Assembly

Inspect the blower assembly and motor mounting brackets for tightness and corrosion. Correct deficiencies if necessary. The blower motor contains sealed bearings and under normal operating conditions, no maintenance is necessary for the life of the equipment.

Cooling Coil

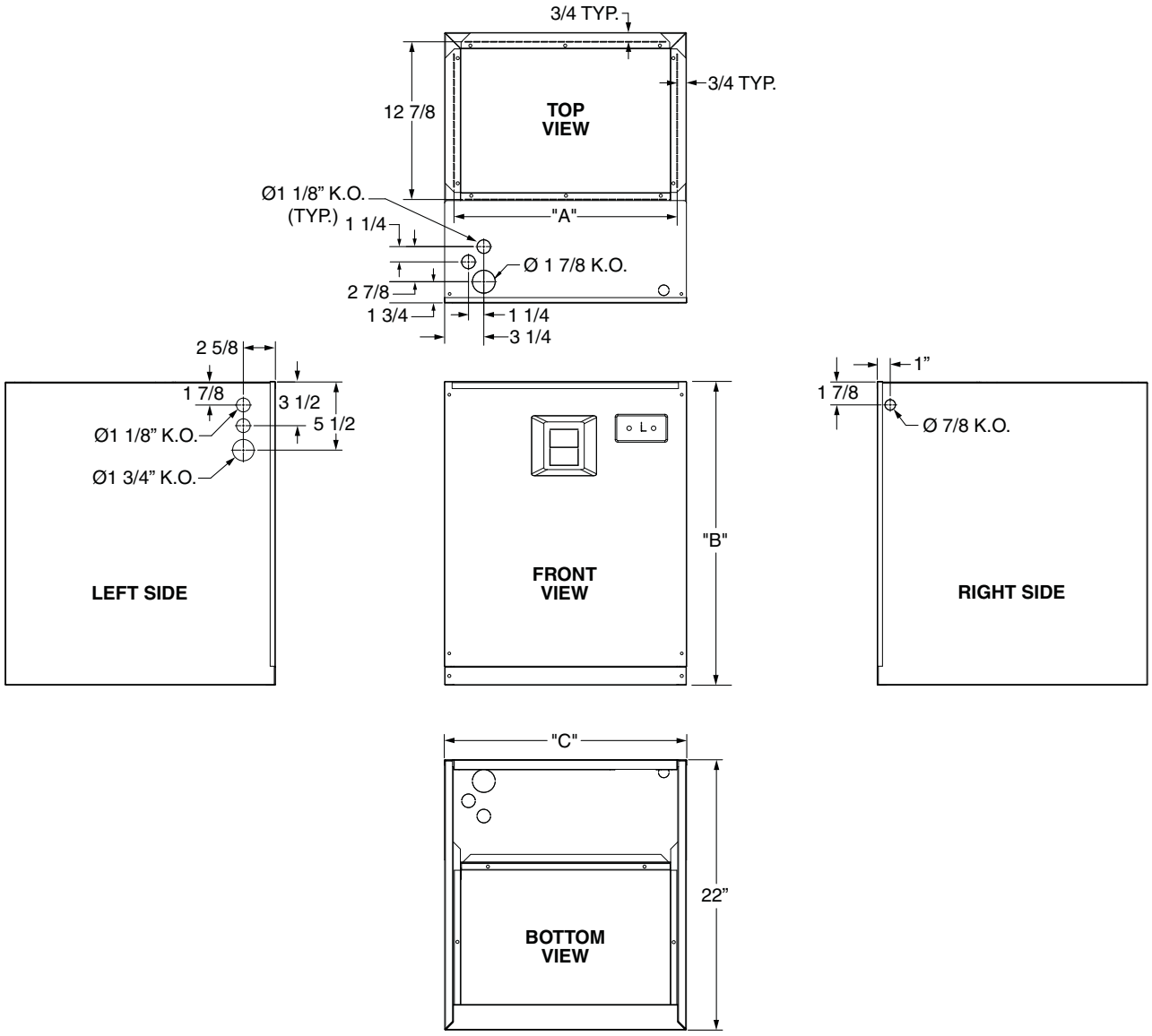
Inspect the cooling coil, drain pan, and condensate drain at the beginning of each cooling season for cleanliness. Clean these components as necessary using a mild detergent and water. After cleaning, flush the coil, drain pan, and condensate drain to remove all detergent. **IMPORTANT:** Use caution when cleaning these components so that the insulation does not get wet.

TROUBLESHOOTING

If the indoor blower fails to operate, check the following:

- Is the electric turned on?
- Is the thermostat operating properly?
- Are the blower compartment door(s) in place?
- Is the indoor blower disconnect closed?
- Has the circuit breaker tripped or the control board fuse burned open?
- Are any manual reset switches open?
- Is the filter dirty or plugged?

FIGURES & TABLES



Cabinet Size	Dimension A	Dimension B	Dimension C
A	12-3/4	24-3/4	14-1/4
B	12-3/4	24-3/4	17-1/2
C	18-1/4	27-1/2	21

Figure 7. MB6 Series Physical Dimensions

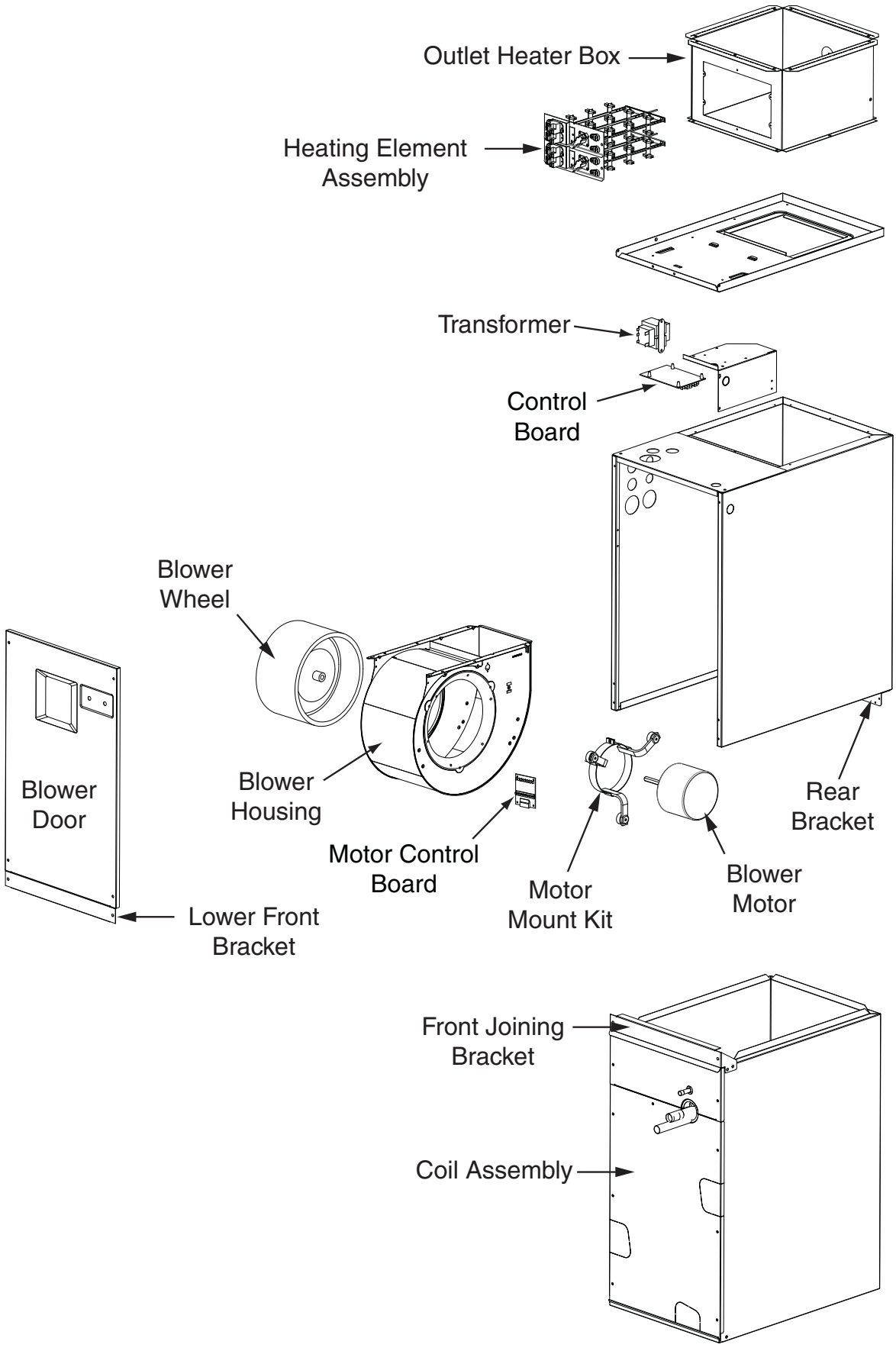


Figure 8. MB6 Series Components

BLOWER PERFORMANCE DATA

MB6BM Airflow Data

Dry Coil ESP		0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80
0800 A-Cabinet	Low	685	645	605	565	515	465	405	345
	Corrected ESP[1]		*0.07*	*0.19*	*0.30*	*0.42*	*0.53*	*0.65*	*0.76*
	Med	860	825	780	735	680	625	565	500
	Corrected ESP[1]			*0.11*	*0.23*	*0.36*	*0.48*	*0.60*	*0.72*
	High	1070	1025	975	920	860	800	730	660
	Corrected ESP[1]				*0.14*	*0.27*	*0.40*	*0.53*	*0.67*
1200 A-Cabinet	Low	850	825	795	755	705	645	580	510
	Corrected ESP[1]		*0.04*	*0.15*	*0.27*	*0.38*	*0.50*	*0.62*	*0.74*
	Med	1120	1085	1045	995	940	875	800	715
	Corrected ESP[1]			*0.04*	*0.17*	*0.29*	*0.42*	*0.55*	*0.68*
	High	1275	1235	1185	1130	1070	1005	935	860
	Corrected ESP[1]				*0.10*	*0.23*	*0.36*	*0.49*	*0.63*
1200 B-Cabinet	Low	995	955	910	845	780	705	610	530
	Corrected ESP[1]		*0.08*	*0.19*	*0.31*	*0.42*	*0.54*	*0.65*	*0.76*
	Med	1335	1290	1235	1175	1100	1015	925	805
	Corrected ESP[1]			*0.10*	*0.22*	*0.34*	*0.46*	*0.59*	*0.71*
	High	1470	1425	1360	1300	1225	1135	1050	920
	Corrected ESP[1]				*0.08*	*0.22*	*0.37*	*0.51*	*0.65*
1600 C-Cabinet	Low	1035	1005	970	925	875	825	770	710
	Corrected ESP[1]		*0.11*	*0.22*	*0.33*	*0.44*	*0.54*	*0.65*	*0.76*
	Med	1635	1595	1525	1475	1405	1305	1210	1060
	Corrected ESP[1]			*0.08*	*0.20*	*0.32*	*0.44*	*0.57*	*0.69*
	High	1910	1840	1760	1685	1595	1495	1395	1250
	Corrected ESP[1]				*0.14*	*0.26*	*0.39*	*0.52*	*0.65*
2000 C-Cabinet	Low	1520	1510	1500	1485	1465	1440	1415	1385
	Corrected ESP[1]		*0.11*	*0.21*	*0.31*	*0.42*	*0.52*	*0.62*	*0.72*
	Med	1900	1885	1860	1830	1790	1740	1680	1620
	Corrected ESP[1]		*0.06*	*0.16*	*0.27*	*0.37*	*0.48*	*0.59*	*0.70*
	High	2245	2195	2135	2080	2015	1950	1885	1800
	Corrected ESP[1]			*0.12*	*0.23*	*0.34*	*0.45*	*0.56*	*0.67*

[1] ESP estimate with wet coil and filter

Table 4. Airflow Data for MB6BM Indoor Blowers

MB6EM Airflow Data

Dry Coil ESP		0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80
1200 A-Cabinet	Tap 1	840	800	760	715	670	625	580	530
	Corrected ESP[1]		*0.08*	*0.19*	*0.30*	*0.42*	*0.53*	*0.64*	*0.75*
	Tap 2	881	846	810	772	733	693	652	609
	Corrected ESP[1]		*0.07*	*0.18*	*0.29*	*0.40*	*0.51*	*0.62*	*0.73*
	Tap 3	976	942	907	872	836	799	761	722
	Corrected ESP[1]		*0.03*	*0.15*	*0.26*	*0.37*	*0.48*	*0.59*	*0.70*
	Tap 4	1250	1224	1194	1159	1119	1074	1025	971
	Corrected ESP[1]				*0.08*	*0.20*	*0.33*	*0.45*	*0.58*
	Tap 5	1380	1338	1293	1243	1189	1131	1068	1001
	Corrected ESP[1]				*0.03*	*0.16*	*0.30*	*0.43*	*0.56*
1600 B-Cabinet	Tap 1	1000	858	738	639	562	506	473	460
	Corrected ESP[1]		*0.04*	*0.18*	*0.31*	*0.43*	*0.54*	*0.65*	*0.75*
	Tap 2	1099	1014	935	864	800	743	693	650
	Corrected ESP[1]			*0.11*	*0.24*	*0.36*	*0.48*	*0.60*	*0.71*
	Tap 3	1318	1277	1234	1187	1139	1087	1033	976
	Corrected ESP[1]			*0.06*	*0.18*	*0.30*	*0.41*	*0.53*	*0.65*
	Tap 4	1502	1466	1428	1388	1345	1299	1251	1201
	Corrected ESP[1]				*0.10*	*0.21*	*0.33*	*0.45*	*0.57*
	Tap 5	1624	1592	1557	1520	1480	1438	1393	1346
	Corrected ESP[1]				*0.04*	*0.15*	*0.27*	*0.39*	*0.51*
2000 C-Cabinet	Tap 1	1273	1211	1150	1089	1028	968	907	847
	Corrected ESP[1]		*0.11*	*0.22*	*0.33*	*0.44*	*0.54*	*0.65*	*0.76*
	Tap 2	1501	1452	1402	1352	1303	1253	1204	1155
	Corrected ESP[1]		*0.07*	*0.18*	*0.29*	*0.40*	*0.50*	*0.61*	*0.72*
	Tap 3	1697	1654	1610	1564	1517	1469	1420	1370
	Corrected ESP[1]		*0.03*	*0.14*	*0.25*	*0.36*	*0.47*	*0.58*	*0.68*
	Tap 4	1891	1851	1811	1769	1728	1685	1643	1599
	Corrected ESP[1]			*0.10*	*0.21*	*0.32*	*0.43*	*0.53*	*0.64*
	Tap 5	2096	2056	2015	1974	1932	1890	1847	1803
	Corrected ESP[1]			*0.05*	*0.16*	*0.27*	*0.38*	*0.49*	*0.60*

[1] ESP estimate with wet coil and filter

Table 5. Airflow Data for MB6EM Indoor Blowers

A-CABINET								
CFM	Switch Number				Nominal Capacity			
	1	2	3	4	1.5	2	2.5	3
540	0	0	0	1				
600	0	0	0	0				
660	0	0	1	0				
715	1	0	0	1				
790	1	0	0	0				
870	1	0	1	0				
915	0	1	0	1				
955	1	1	0	1				
1015	0	1	0	0				
1060	0	1	1	0				
1075	1	1	0	0				
1165	1	1	1	0				

B-CABINET										
CFM	Switch Number				Nominal Capacity					
	1	2	3	4	1.5	2	2.5	3	3.5	4
720	0	0	0	1						
800	0	0	0	0						
850	1	0	0	1						
880	0	0	1	0						
945	1	0	0	0						
1040	1	0	1	0						
1085	0	1	0	1						
1140	1	1	0	1						
1205	0	1	0	0						
1265	1	1	0	0						
1325	0	1	1	0						
1390	1	1	1	0						

C-CABINET								
CFM	Switch Number				Nominal Capacity			
	1	2	3	4	3	3.5	4	5
1075	0	0	0	1				
1135	1	0	0	1				
1225	0	0	0	0				
1295	1	0	0	0				
1380	0	0	1	0				
1460	1	0	1	0				
1525	0	1	0	1				
1625	1	1	0	1				
1740	0	1	0	0				
1860	1	1	0	0				
1960	0	1	1	0				
2090	1	1	1	0				

Table 6. Air Flow Selection for MB6VM Variable Speed Models

A-CABINET									
Nominal KW	CFM	Switch Number							
		1	2	3	4	5	6	7	8
0-5	700					0	0		
6-9	800					1	0		
10-14	950					0	1		
15	1100					1	1		

B-CABINET									
Nominal KW	CFM	Switch Number							
		1	2	3	4	5	6	7	8
0-5	700					0	0		
6-10	800					1	0		
11-15	950					0	1		
16-20	110					1	1		

C-CABINET									
Nominal KW	CFM	Switch Number							
		1	2	3	4	5	6	7	8
0-9	700					0	0		
10-14	950					1	0		
15-20	1100					0	1		
21-30	1500					1	1		

Table 7. MB6VM Minimum Electric Heat Air Flow

Delay Description	Switch Number							
	1	2	3	4	5	6	7	8
Delay A							0	0
Delay B							0	1
No Delay							1	0
De-Hum							1	1

NOTE: 0=Off, 1= On

Table 8. MB6VM Delay Settings (All Variable Speed Models)

ELECTRICAL DIAGRAMS

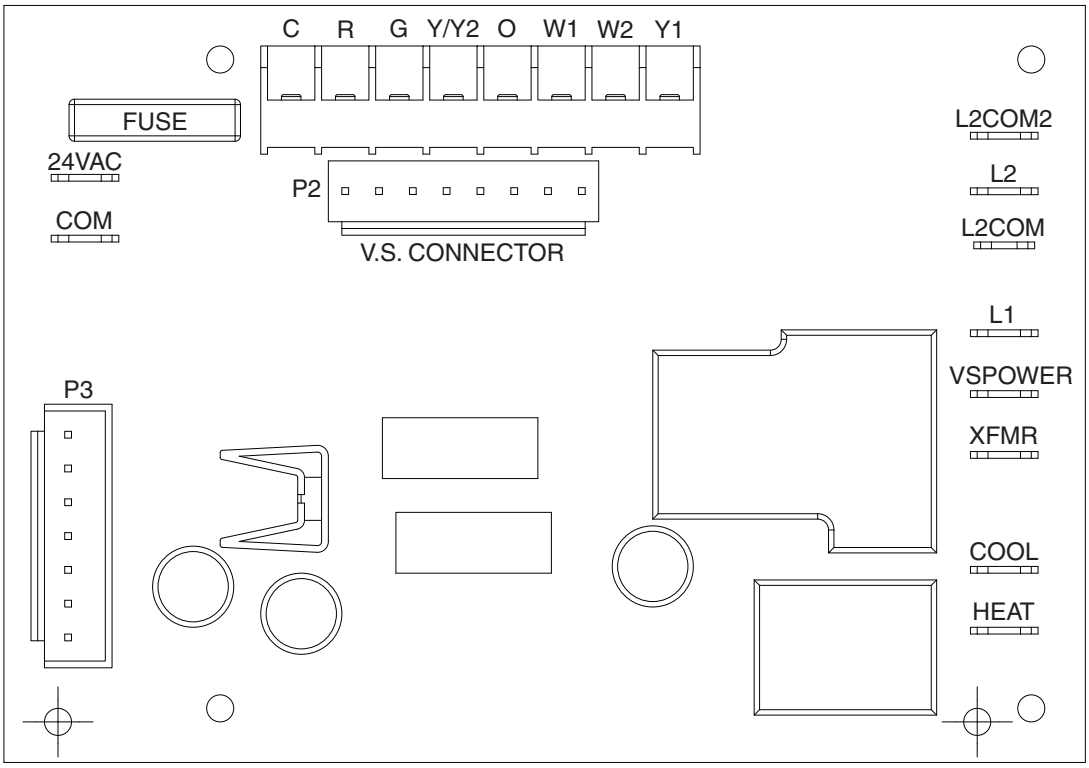


Figure 9. MB6BM & MB6VM Control Board

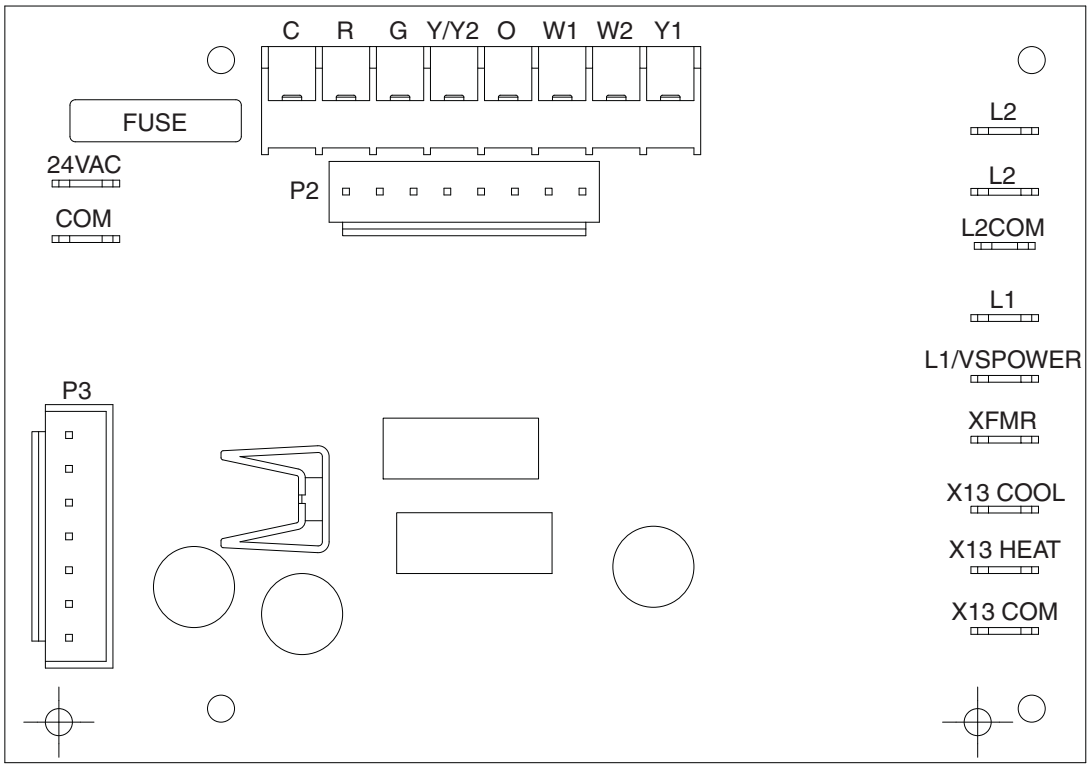


Figure 10. MB6EM Control Board

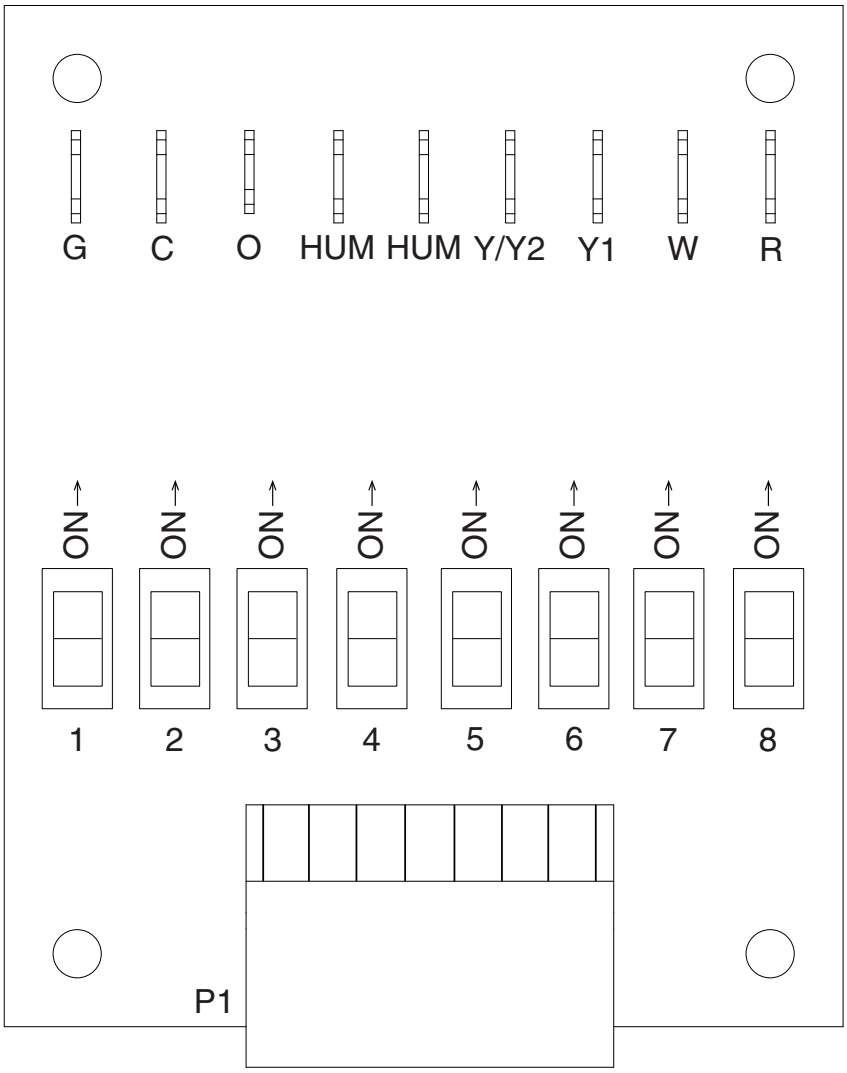
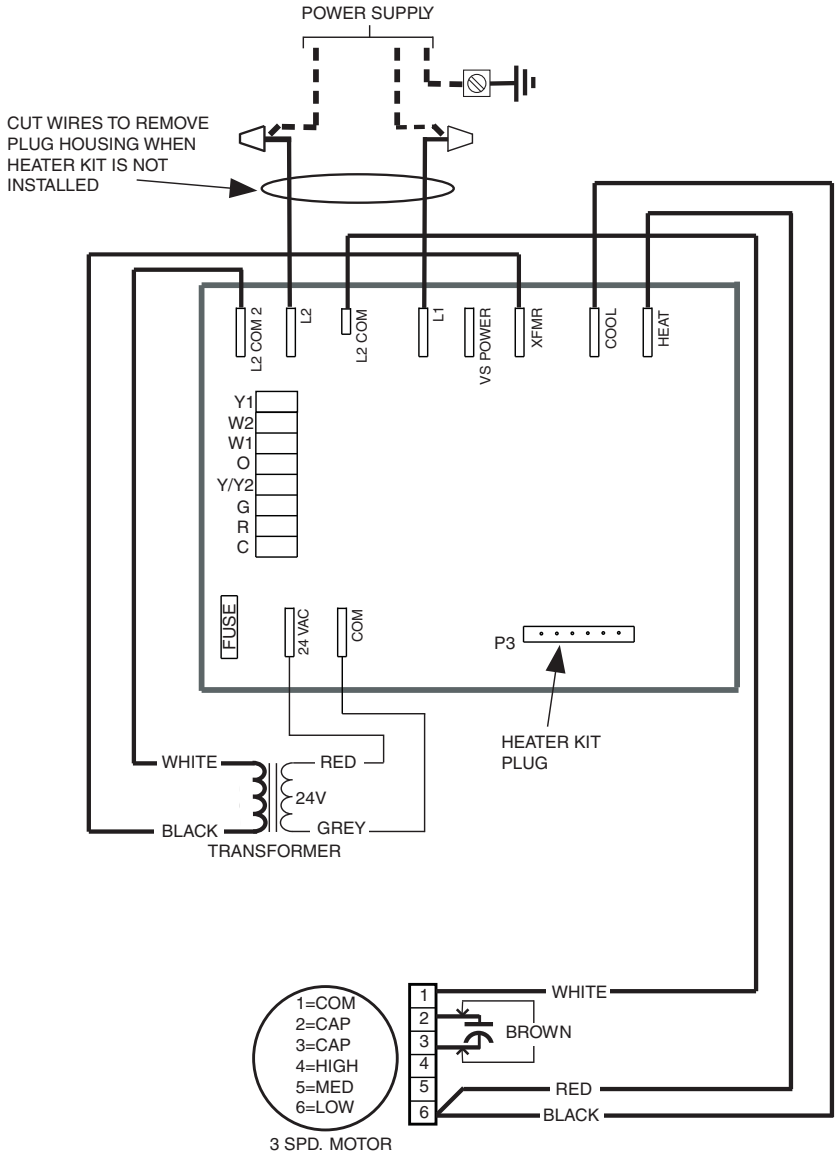


Figure 11. Variable Speed Motor Control Board

WIRING DIAGRAM

Air Handler



NOTES:

1. **The blower motor speed tap connection may not be as shown. See the Installation Instructions.**
2. **Disconnect all power before servicing.**
3. **Transformer may have a dual voltage primary tap. Match the tap position with the supply voltage used.**
4. **If the internal wiring is replaced, use only 105°C copper wire of the same gauge.**

BLOWER MOTOR PLUG	
1 = COM	1
2 = CAP	2
3 = CAP	3
4 = HIGH	4
5 = MED	5
6 = LOW	6

Legend

Field Wiring	- - - - - - -
Factory Wiring	
Low Voltage	———
High Voltage	———

710538A

710538A

Figure 12. Wiring Diagram for MB6BM Series Indoor Blower

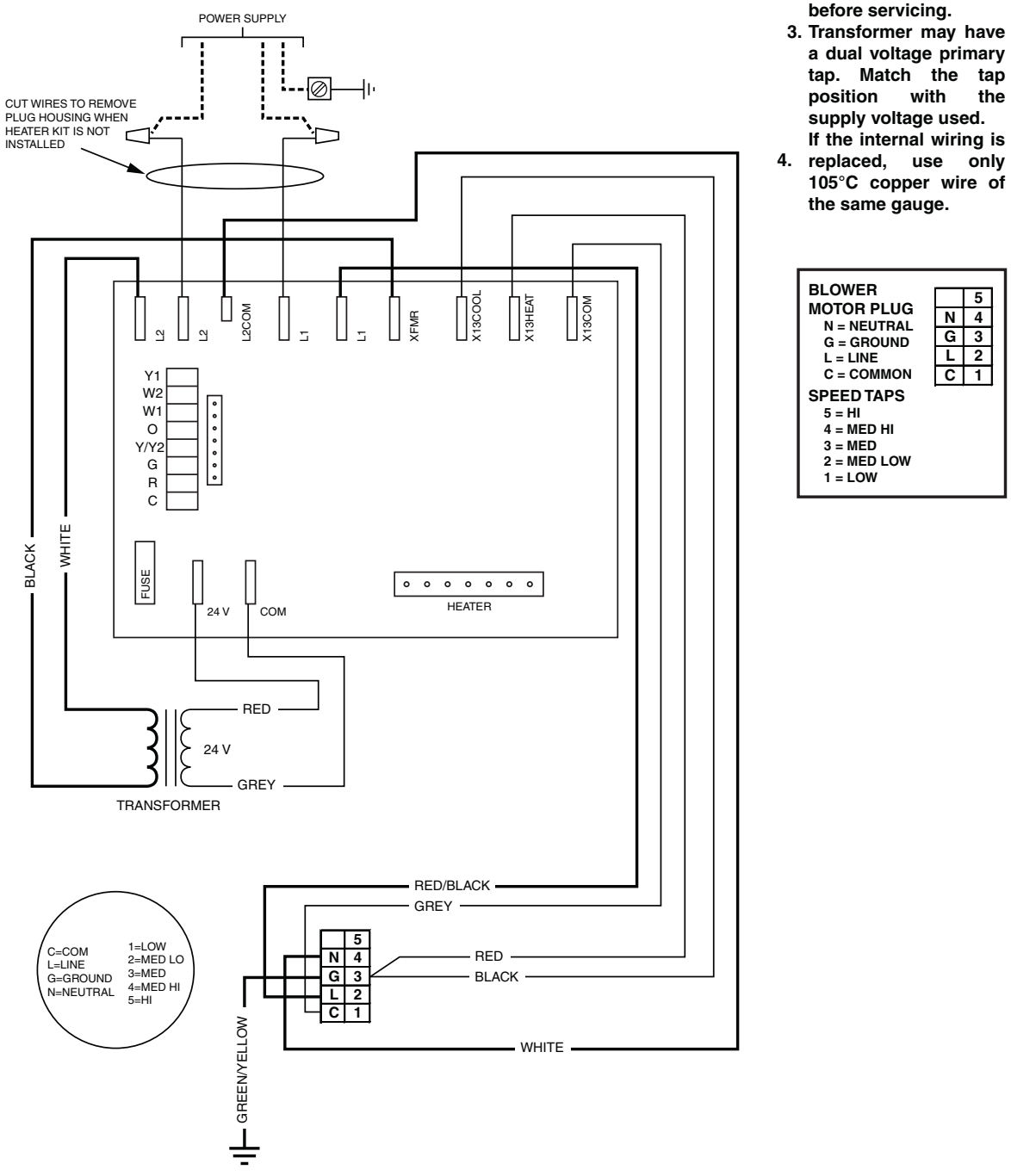
WIRING DIAGRAM

Air Handler

X13 MOTOR

NOTES:

1. **The blower motor speed tap connection may not be as shown. See the Installation Instructions.**
2. **Disconnect all power before servicing.**
3. **Transformer may have a dual voltage primary tap. Match the tap position with the supply voltage used.**
4. **If the internal wiring is replaced, use only 105°C copper wire of the same gauge.**



BLOWER MOTOR PLUG

- **N = NEUTRAL**
- **G = GROUND**
- **L = LINE**
- **C = COMMON**

	5
N	4
G	3
L	2
C	1

SPEED TAPS

- **5 = HI**
- **4 = MED HI**
- **3 = MED**
- **2 = MED LOW**
- **1 = LOW**

LEGEND:

FIELD WIRING	- - - - -
LOW VOLTAGE	———
HIGH VOLTAGE	———

710545B
(Replaces 710545A)
0310

Figure 13. Wiring Diagram for MB6EM Series Indoor Blower

Motor Settings

Delay Settings (all models)

Delay Desc	Switch Number 7	8
Delay A	0	0
Delay B	0	1
No Delay	1	0
De-Hum	1	1

NOTE: 1 = ON
0 = OFF

CFM			Switch Number			
A-Cabinet	**B-Cabinet**	**C-Cabinet**	1	2	3	4
540	720	1075	**0**	**0**	**0**	**1**
600	800	1225	**0**	**0**	**0**	**0**
660	880	1380	**0**	**0**	**1**	**0**
715	850	1135	**1**	**0**	**0**	**1**
790	945	1295	**1**	**0**	**0**	**0**
870	1040	1460	**1**	**0**	**1**	**0**
915	1085	1525	**0**	**1**	**0**	**1**
955	1140	1625	**1**	**1**	**0**	**1**
1015	1205	1740	**0**	**1**	**0**	**0**
1060	1325	1960	**0**	**1**	**1**	**0**
1075	1265	1860	**1**	**1**	**0**	**0**
1165	1390	2090	**1**	**1**	**1**	**0**

Minimum Electric Heat Air-Flow

Nom. KW	CFM			Switch Number	
	A-Cabinet	**B-Cabinet**	**C-Cabinet**	5	6
0-5	700	700	-	**0**	**0**
0-9	-	-	700	**0**	**0**
6-9	800	-	-	**1**	**0**
6-10	-	800	-	**1**	**0**
10-14	950	-	-	**0**	**1**
10-14	-	-	950	**1**	**0**
11-15	-	950	-	**0**	**1**
15	1100	-	-	**1**	**1**
15-20	-	-	1100	**0**	**1**
16-20	-	1100	-	**1**	**1**
21-30	-	-	1500	**1**	**1**

(Modular blower supports 20kW heat max.)

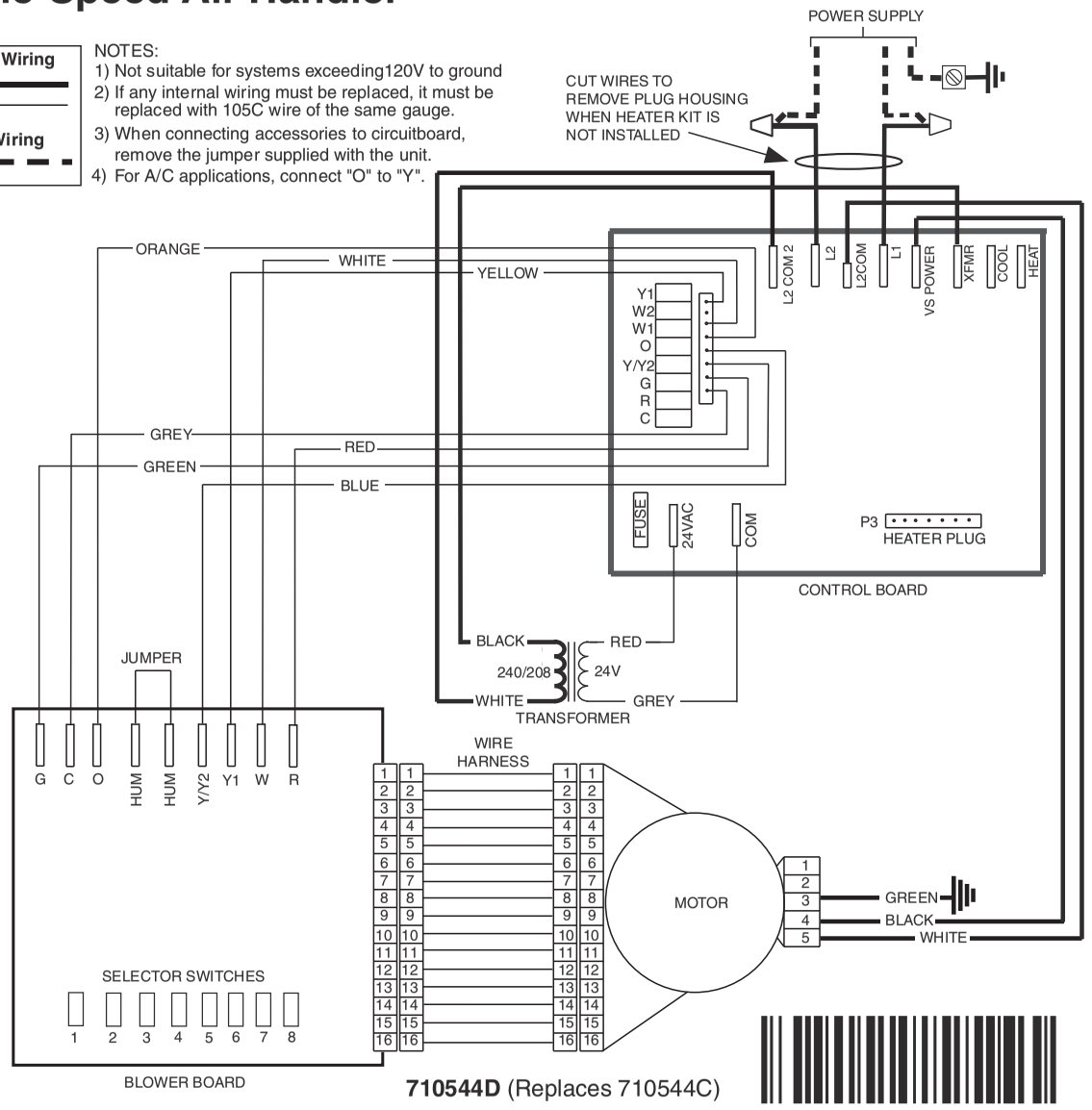
WIRING DIAGRAM

Variable Speed Air Handler

Factory Wiring
High Voltage
Low Voltage

Field Wiring
High Voltage

NOTES:
1) Not suitable for systems exceeding120V to ground
2) If any internal wiring must be replaced, it must be replaced with 105C wire of the same gauge.
3) When connecting accessories to circuitboard, remove the jumper supplied with the unit.
4) For A/C applications, connect "O" to "Y".



710544D (Replaces 710544C)

Figure 14. Wiring Diagram for MB6VM Series Indoor Blower

INSTALLATION / PERFORMANCE CHECK LIST

ATTENTION INSTALLERS:

It is your responsibility to know this product better than your customer. This includes being able to install the product according to strict safety guidelines and instructing the customer on how to operate and maintain the equipment for the life of the product. Safety should always be the deciding factor when installing this product and using common sense plays an important role as well. Pay attention to all safety warnings and any other special notes highlighted in the manual. Improper installation of the indoor blower or failure to follow safety warnings could result in serious injury, death, or property damage.

These instructions are primarily intended to assist qualified individuals experienced in the proper installation of this appliance. Some local codes require licensed installation/service personnel for this type of equipment. Please read all instructions carefully before starting the installation. Return these instructions to the customer's package for future reference.

INSTALLER NAME:		
CITY:	STATE:	
INSTALLATION ADDRESS:		
CITY:	STATE:	
UNIT MODEL #		
UNIT SERIAL #		
Minimum clearances per page 4?	YES	NO
Is the unit properly installed and leveled?	YES	NO
Does condensate drain properly in both drain tubes?	YES	NO
Has the owner's information been reviewed with the home-owner?	YES	NO
Has the literature package been left near the appliance?	YES	NO

ELECTRICAL SYSTEM:		
Electrical connections tight?	YES	NO
Line voltage polarity correct?	YES	NO
Supply Voltage: _____(V)		
Has the thermostat been calibrated?	YES	NO
Is the thermostat level?	YES	NO
Is the heat anticipator setting correct?	YES	NO

VENTING SYSTEM:		
Is there adequate fresh air supply for ventilation?	YES	NO
Vent free from restrictions?	YES	NO
Filter properly installed?	YES	NO
Filter clean?	YES	NO
Flue connections tight?	YES	NO
Is there proper draft?	YES	NO
Return Air Temp: _____(° F)		
Supply Air Temp: _____(° F)		
Temperature Rise: _____(° F)		

⚠ WARNING:

PROPOSITION 65 WARNING: This product contains chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.

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708891C (Replaces 708891B)