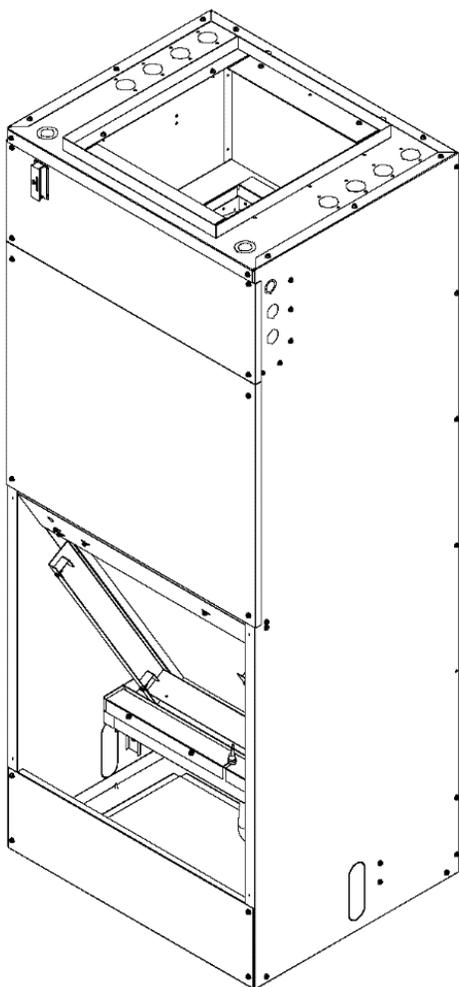


Installation, Operation, & Maintenance

IOM6604
Rev. B 03/26

CR SERIES VERTICAL HYDRONIC FAN COIL



ATTENTION:

Read all instructions thoroughly and retain all manuals for future reference.

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In accordance with its policy of continuous product improvement, First, Co. and AE-Air reserve the right to modify, change, or discontinue specifications or designs at any time without notice and without incurring obligation.

The warranty may be void unless the Startup & Performance Checklist is completed and returned to the warrantor. If the HVAC unit is not installed properly, the warranty will be void, as the manufacturer cannot be held accountable for problems that stem from improper installation.

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WARNING



Do NOT modify this product or install unauthorized components. Doing so will void all warranties, may impair system operation and performance, and can create hazardous conditions for service personnel and occupants. No company employee or contractor is authorized to waive this requirement.



WARNING



Service on this equipment shall be performed only by personnel who are properly trained and qualified in the installation, adjustment, servicing, maintenance, or repair procedures described in this manual. Where licensing is required, service must be performed only by licensed personnel. The manufacturer assumes no responsibility for injury or property damage resulting from improper service or procedures.

Improper installation, adjustment, servicing, maintenance, or repair, or attempts to perform these tasks without proper training, can result in equipment damage, property damage, serious personal injury, or death. Service personnel assume full responsibility for any injury or property damage arising from improper procedures.

First Co. / AE-Air reserves the right to change, alter, or update data, design features, and specifications without prior notice.

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SAFETY CONSIDERATIONS



1. Read this entire Installation, Operation, and Maintenance (IOM) manual before starting installation.
2. These instructions are a general guide. Always follow all national, state, and local codes.
3. Do not alter the product. Do not use unauthorized parts. Doing so will:
 - a. Void the warranty
 - b. Reduce performance
 - c. Cause equipment failure
 - d. Create unsafe conditions
 No employee or contractor may override this requirement.
4. Only trained, licensed, and factory-authorized personnel may install or service this unit.
5. Use only factory-authorized kits and accessories. Follow the instructions provided with each kit during installation.

RECOGNIZE THE FOLLOWING SAFETY NOTATIONS

This manual and the equipment use safety symbols and labels.

These labels identify hazards and important information.

- **WARNING** – Risk of serious injury, death, or property damage
- **CAUTION** – Risk of minor or moderate injury
- **ATTENTION** – Important installation or service information

Symbols may indicate:

- Electric shock hazard
- Fire or explosion hazard
- Flammable materials
- Read instructions before operating
- Service information required

| | |
|---|---|
|  | Service indicator; read technical manual |
|  | Operator's manual; operating instructions |
|  | Read the instructions |
|  | Class III Construction |

| | | |
|--|---------------|---|
|  | DANGER |  |
| Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. | | |

| | | |
|--|------------------------------|--|
|  | WARNING |  |
|  | ELECTRIC SHOCK HAZARD |  |
| This warning signifies potential electrical shock hazards that could result in personal injury or death. | | |

| | | |
|---|---------------------------------|---|
|  | WARNING |  |
|  | FIRE OR EXPLOSION HAZARD |  |
| This warning indicates potential fire or explosion hazards that could result in personal injury or death. | | |

| | | |
|--|----------------|---|
|  | WARNING |  |
| Indicates a potentially hazardous situation or unsafe practice that could result in severe personal injury or death and/or damage to property. | | |

| | | |
|---|----------------|---|
|  | CAUTION |  |
| Indicates a potentially hazardous situation that may result in minor or moderate personal injury. | | |

| | | |
|--|------------------|---|
|  | ATTENTION |  |
| Provides important installation, operation, or maintenance information that is not hazard-related. | | |

SAFETY CONSIDERATIONS (CONT.)

WARNING

ELECTRIC SHOCK HAZARD

Before servicing unit, always turn off all power to unit. There may be more than one disconnect switch. Electrical shock can cause personal injury or death.

WARNING

ELECTRIC SHOCK HAZARD

All electrical and service access panels must be secured in their proper place before operating equipment.

WARNING

When the unit is operating, internal components rotate at high speeds. Always wear proper personal protection equipment (PPE) and avoid contact to prevent personal injury.

WARNING

Use multiple people when moving and installing these units. Failure to do so could result in injury or death.

WARNING

Contact with metal edges and corners can result in injury. Protective gloves should be worn when handling. Exercise caution when installing and servicing unit.

CAUTION

Do not operate these units during construction. Dirt and debris can clog mechanical components and filters, potentially causing system damage. Do not operate these units without a filter.

The manufacturer does not warrant equipment subjected to misuse.

CAUTION

All materials in this shipment were inspected at the factory and released to the carrier in good condition. Upon receipt, immediately perform a visual inspection of all cartons. Note any signs of rough handling or visible damage on the delivery receipt, and inspect the material in the presence of the carrier's representative. If damage is identified, file a claim with the carrier at once.

CAUTION

Clear the surrounding area of all tools, equipment, and debris before operating the unit.

CAUTION

This unit may be installed at altitudes up to 10,000 ft. (3,048 m).

ATTENTION

The installation of this unit, including all field wiring, ductwork, and related equipment, must comply with the requirements of the National Electrical Code (NEC), ANSI/NFPA 70 in the United States, as well as all applicable state and local codes. Local authorities having jurisdiction must be consulted prior to installation. Where conflicts exist, applicable codes and regulations shall take precedence over the instructions contained in this manual.

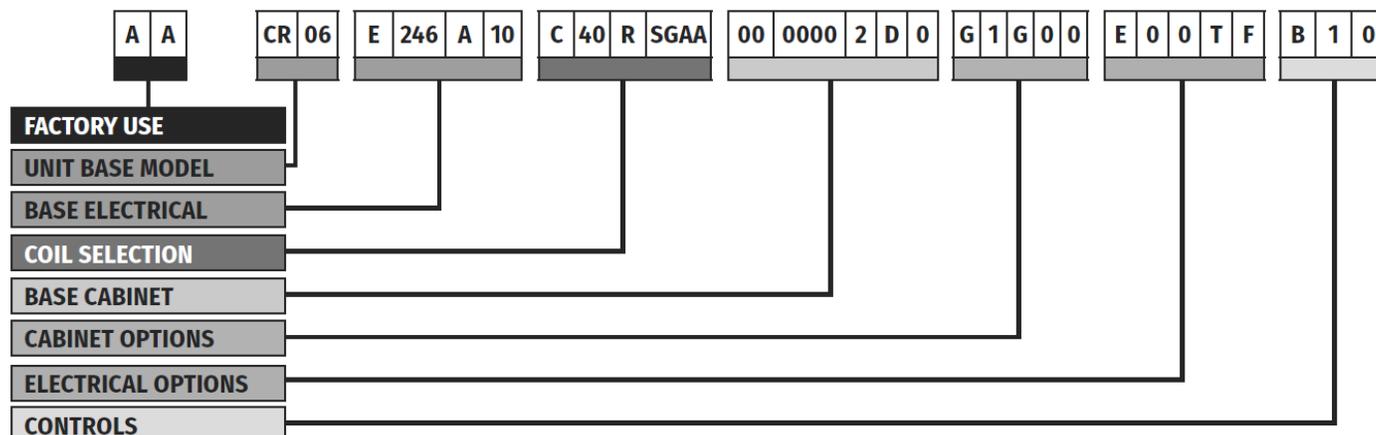
In Canada, all electrical work must comply with CSA C22.1.

ATTENTION

This appliance must be installed in a location that is not accessible to the general public.

This appliance is approved for INDOOR USE ONLY.

MODEL NOMENCLATURE



| FACTORY USE | |
|-------------|-------------------------------|
| REVISION | A - Revision A |
| BRAND | A - AE Air F - First Co. |

| UNIT BASE MODEL | |
|-----------------|--|
| MODEL | CR Commercial Vertical Hydronic Fan Coil with Chilled/Hot Water or Electric Heat |
| SIZE | 04 - 400 Nominal CFM 06 - 600 Nominal CFM 08 - 800 Nominal CFM 10 - 1,000 Nominal CFM 12 - 1,200 Nominal CFM |

| BASE ELECTRICAL | |
|-----------------|--|
| MOTOR TYPE | E ECM (3-Speed) |
| VOLTAGE | 126 - 120V / 1PH / 60Hz 246 - 208-240V / 1PH / 60Hz 276 - 277V / 1PH / 60Hz 208 - 208V / 1PH / 60Hz |
| CONTROL VOLTAGE | A - 24V CONTROL |
| ELECTRIC HEAT | 00 - None 01 - 1kW 02 - 2kW 03 - 3kW 04 - 4kW 05 - 5kW 06 - 6kW 08 - 8kW 10 - 10kW |

| COIL SELECTION | |
|----------------|--|
| SYSTEM | A - 2 Pipe Cooling B - 2 Pipe Heating C - 2 Pipe Heat/Cool D - 2 Pipe Heat/Cool/Aux Heat E - 2 Pipe Cool/Electric Heat F - 4 Pipe Heat/Cool |
| COIL ROWS | 20 - 2 Row 31 - 3/1 Row 21 - 2/1 Row 32 - 3/2 Row 22 - 2/2 Row 41 - 4/1 Row 30 - 3 Row 42 - 4/2 Row 40 - 4 Row |
| COIL HANDLING | L - Left Hand Coil R - Right Hand Coil |
| CONNECTION | S - Single Hand Side |
| COIL WRAPPER | G - Galvanized Steel |
| FIN MATERIAL | A - Aluminum |
| PRESSURE TEST | A - 350 PSI (2,413 kPa) |

| BASE CABINET | |
|----------------------|--|
| HEIGHT | 00 - 00" STD (Standard) |
| CONFIGURATION | 0000 - STD Cabinet |
| INSULATION THICKNESS | 2 - 0.5" Insulation |
| INSULATION TYPE | D - Fiberglass Dual Density F - Foil Faced C - Closed Cell |
| INSTALLATION | 0 - STD (Standard) |

| CABINET OPTIONS | |
|-----------------|--|
| DRAIN PAN | G - Galvanized S - Stainless Steel |
| FILTER FRAME | 1 - 1.0" - 2.0" Frame (Convertible) |
| FILTER OPTION | 0 - 1.0" TA Standard A - 2.0" MERV 10 B - 2.0" MERV 11 C - 2.0" MERV 13 G - 1.0" MERV 10 |
| OPTION 1 | 0 - None |
| OPTION 2 | 0 - None |

| ELECTRICAL OPTIONS | |
|--------------------|---|
| SERVICE SWITCH | 0 - None A - 15A Toggle Switch D - 30A Toggle Switch E - 40A Toggle Switch F - 50A Toggle Switch P - 60A Pull Switch |
| FUSES | 0 - None |
| HEATER RELAY | 0 - None E - Electro-Mechanical |
| TSTAT CONNECTION | T - Terminal Block |
| FLOAT SWITCH | 0 - None F - Float Switch |

| CONTROLS | |
|----------------|---|
| THERMOSTATS | 0 - None F - Fan Switch Only (T422) A - Non Programmable Manual (T420) B - Non Programmable Auto (T421) C - Non Programmable w/LCD (T426) D - Programmable w/LCD (T427) E - Programmable w/Large LCD (T428) G - Non Programmable Manual (T200) H - Non Programmable Auto (T201) |
| TSTAT LOCATION | 2 - Remote Mount |
| TSTAT OPTION | A - Auto Changeover M - Manual Changeover |

MODEL NOMENCLATURE (CONT.)

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------|--|---------------|---------------|---------------|---------------|--|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| A | 2 | S | S | 4 | 30 | 0 | 0 | B | 0 | B | E | | | | | | | | | | | | | | | |
| VALVE SIZE | A - 1/2" Piping B - 3/4" Piping | | | | | | | | | | | | | | | | | | | | | | | | | |
| VALVE TYPE | 2 - 2-Way 3 - 3-Way | | | | | | | | | | | | | | | | | | | | | | | | | |
| ACTUATOR TYPE | 0 - None S - On/Off 24V | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRESSURE DIFFERENTIAL | 0 - None S - 30.0 PSI (206 kPa) | | | | | M - 75.0 PSI (51.0 kPa) H - 125 PSI (861 kPa) | | | | | | | | | | | | | | | | | | | | |
| FLOW CONTROL | 0 - None 4 - 1/2" Autoflow 6 - 3/4" Autoflow M - 1/2" Circuit Setter N - 3/4" Circuit Setter | | | | | | | | | | | | | | | | | | | | | | | | | |
| AUTOFLOW | 00 - NONE | 05 - 0.50 GPM | 06 - 0.63 GPM | 07 - 0.75 GPM | 10 - 1.00 GPM | 11 - 1.13 GPM | 12 - 1.25 GPM | 15 - 1.50 GPM | 16 - 1.63 GPM | 17 - 1.75 GPM | 20 - 2.00 GPM | 22 - 2.25 GPM | 25 - 2.50 GPM | 30 - 3.00 GPM | 32 - 3.25 GPM | 35 - 3.50 GPM | 40 - 4.00 GPM | 45 - 4.50 GPM | 50 - 5.00 GPM | 55 - 5.50 GPM | 60 - 6.00 GPM | 65 - 6.50 GPM | 70 - 7.00 GPM | 75 - 7.50 GPM | 80 - 8.00 GPM | 90 - 9.00 GPM |
| ISOLATION VALVE | 0 - None B - Ball Valve | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRESSURE PORTS | 0 - None C - PT Ports Coil Manifold E - PT Ports Water Connection | | | | | | | | | | | | | | | | | | | | | | | | | |
| STRAINER | 0 - None S - Strainer B - Strainer With Blowdown | | | | | | | | | | | | | | | | | | | | | | | | | |
| AQUASTAT | 0 - None 1 - Changeover 2 - Changeover Aux. Heat | | | | | | | | | | | | | | | | | | | | | | | | | |
| COIL CONNECTION | B - Brazed U - Union | | | | | | | | | | | | | | | | | | | | | | | | | |
| END CONNECTION | E - Swaged T - Threaded (MPT) | | | | | H - Threaded (FPT)(STD) S - Cut | | | | | | | | | | | | | | | | | | | | |

GENERAL

These instructions apply only to the installation of CR units. For all other related equipment, refer to the manufacturer's installation instructions.

The manufacturer does not warrant equipment that has been exposed to construction contaminants such as metal chips, dust, drywall debris, tape, paint overspray, or similar materials. These conditions can cause equipment failure and may result in personal injury or property damage.

The manufacturer is not responsible for equipment installed in violation of applicable codes or regulations.

Do not exceed a water temperature of **180°F [82.0°C]** at the hydronic coil.

All materials were inspected at the factory and shipped in good condition.

When the shipment arrives:

1. Inspect all cartons right away.
2. Look for signs of rough handling or damage.
3. Note any visible damage on the delivery receipt.
4. Inspect the shipment with the carrier's representative present.
5. If damage is found, file a claim with the carrier immediately.

Installation of the air handler should be performed only by a licensed contractor to ensure proper installation and the safety of the installer.

| |
|--|
|  ATTENTION  |
| Clearances listed are service clearances. Any work requiring removal of the unit may require removal of sheetrock in recessed applications. |

UNIT LOCATION

The unit can be installed in a recessed wall or a closet. Do not locate the unit in areas subject to freezing temperatures or where high humidity conditions may cause cabinet condensation. CR units are available with top and side water connections. Handing of the unit is determined by facing the front of the unit. Allow additional clearance as required for water piping, electrical connections, and duct connections.

UNITS ARE ONLY INTENDED FOR INDOOR INSTALLATION!

| |
|--|
|  ATTENTION  |
| Ensure the unit is securely mounted and that the supporting structure is capable of safely supporting the full operating weight of the equipment. Properly select, locate, and size all anchors to provide a safe, stable, and durable installation. |

FURRED-IN (RECESSED) INSTALLATION

6.0" [15.2 cm] of clearance is recommended on the water connection side (Top or side of the unit) for any unit with threaded hose connections to allow adequate space for bending of the hose, as well as removal of the hose for maintenance. Zero clearance can be maintained on the remaining sides of the unit. Zero clearance can be maintained on all sides with **brazed connections** and **pipe fitting connections**.

CLOSET INSTALLATION

Top Water Connections

6.0" [15.2 cm] of clearance is recommended above the unit for any configuration with threaded hose connections to allow adequate space for bending of the hose, as well as removal of the hose for maintenance. Zero clearance can be maintained on all sides with **brazed connections** and **pipe fitting connections**.

Side Water Connections

12.0" [30.5 cm] of clearance is recommended on the handing side of the unit to allow adequate space for bending of the hose, as well as removal of the hose for maintenance. Zero clearance can be maintained on all sides with **brazed connections** and **pipe fitting connections**.

PHYSICAL DATA

| Table 1: Physical Dimensions (in) [cm] | | | |
|--|---------------------------|----------------------------|---------------------------|
| Unit Model | Filter Size | CW and HW Coil Connections | Duct Opening |
| 4 – 6 CR | 14.0 x 18.0 [35.6 x 45.7] | 5/8" O.D | 12.0 x 12.0 [30.5 x 30.5] |
| 8 CR | 18.0 x 18.0 [45.7 x 45.7] | 5/8" O.D | 12.0 x 12.0 [30.5 x 30.5] |
| 10 CR | 18.0 x 18.0 [45.7 x 45.7] | 5/8" O.D | 16.0 x 14.0 [40.6 x 35.6] |
| 12 CR | 18.0 x 20.0 [45.7 x 50.8] | 5/8" O.D | 16.0 x 14.0 [40.6 x 35.6] |

NOTE:

- The FNPT connection is on top of the unit. The optional sweat methods are provided in the Nomenclature section.

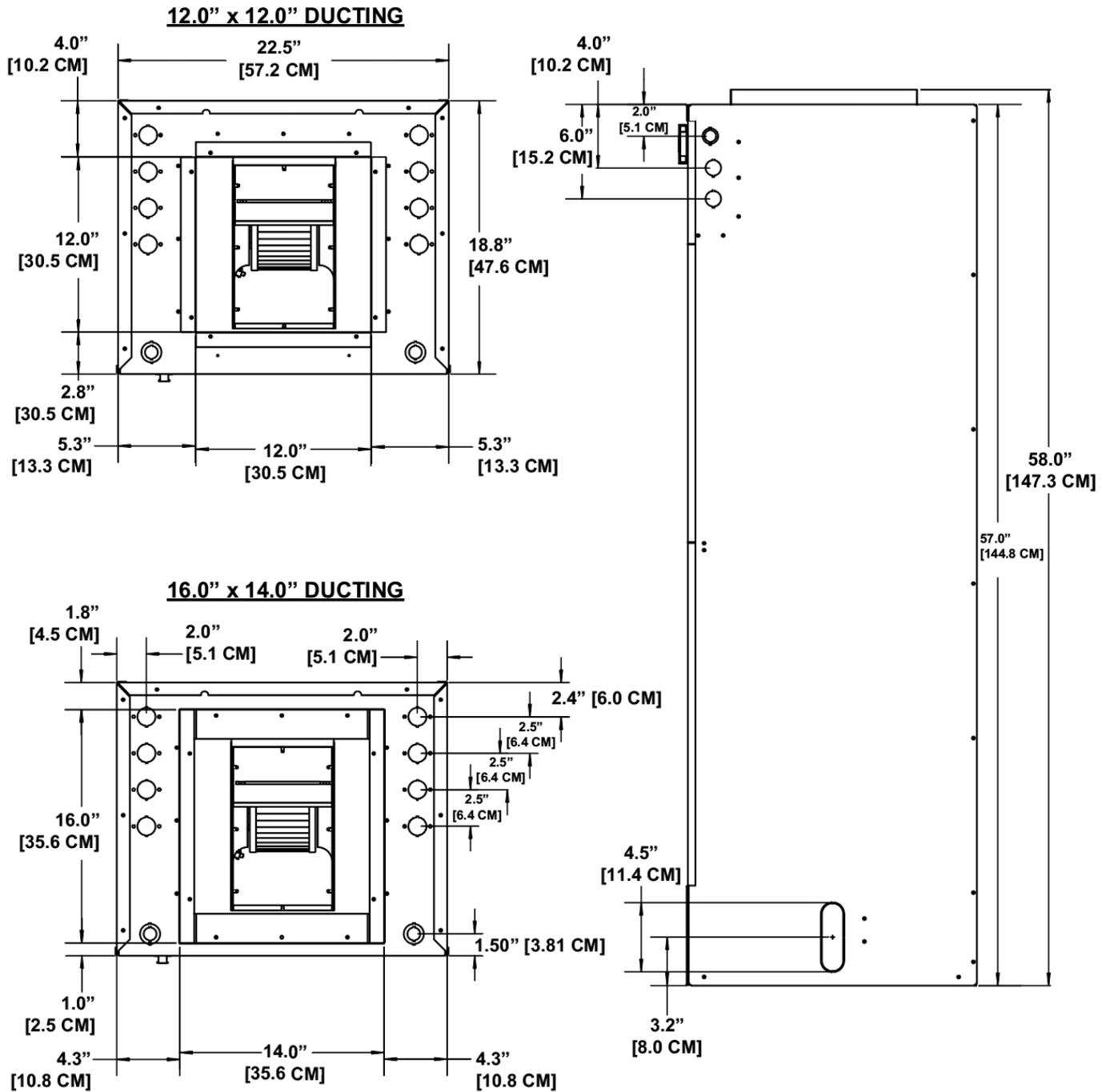


Figure 1 – Physical Dimensions

PHYSICAL DATA (CONT.)

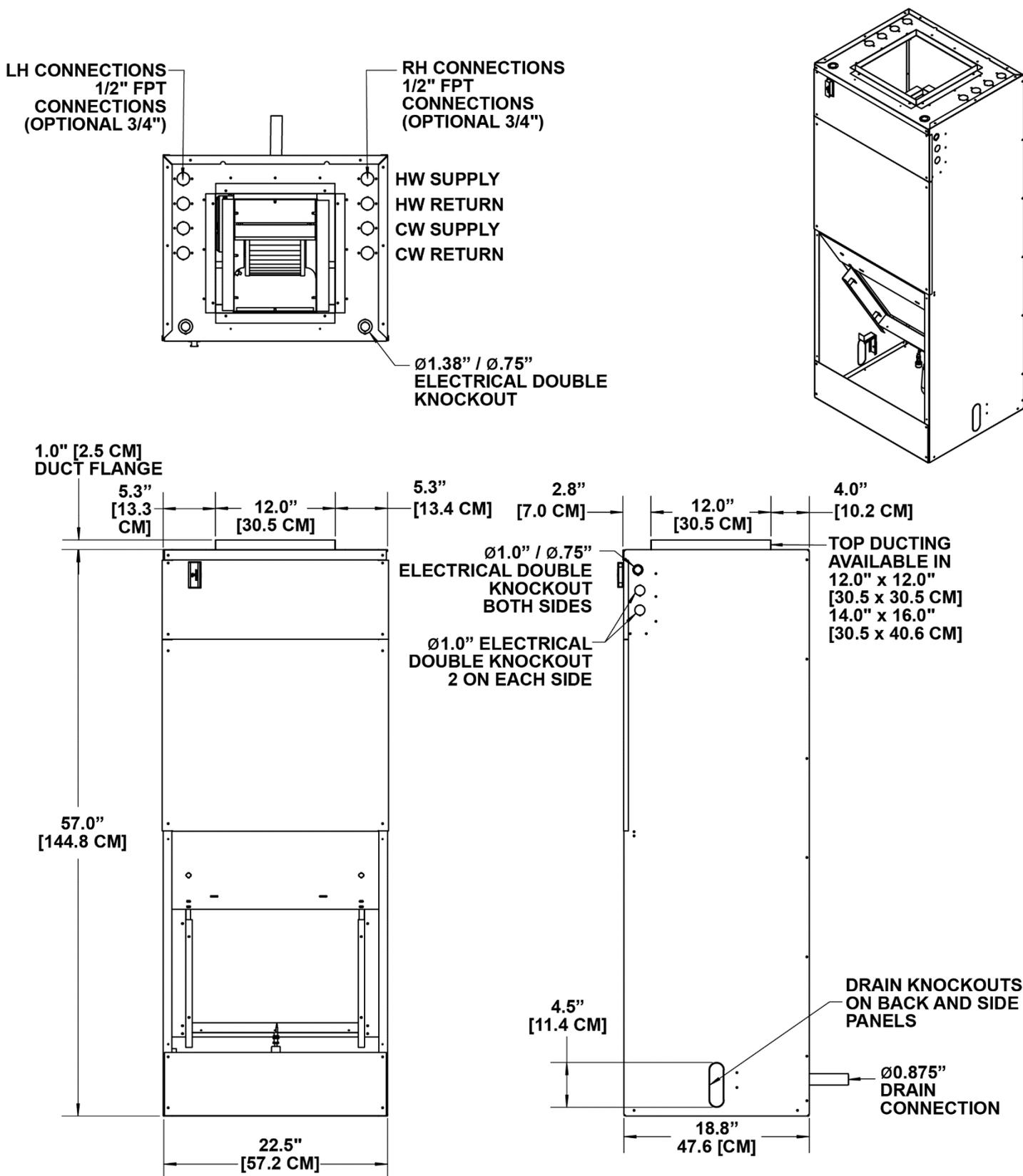


Figure 2 - Physical Dimensions (Cont.)

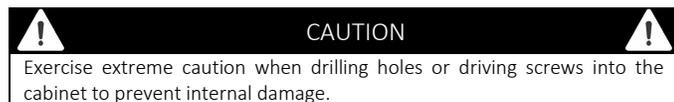
INSTALLATION

INSTALLATION PRECAUTIONS

Installation of the air handler must be performed by a licensed contractor to ensure proper installation and safe operation.

Follow these guidelines during installation:

1. Use proper tools and equipment for all work.
2. Before performing any wiring or service work, disconnect and lock out all electrical power to the air handler.
3. Verify that a permanent and uninterrupted ground connection is installed before energizing the unit.
4. Review the unit nameplate and wiring diagram to confirm the correct voltage and control configuration. Wiring may vary between units.
5. When soldering or brazing near the unit, keep a fire extinguisher nearby. Use heat shields or wet rags to protect valves and nearby components.
6. Internal components rotate at high speed when the unit is operating.
7. Install the unit level or slightly pitched toward the drain connection to ensure proper condensate drainage.
8. Before operation, verify that condensate will drain properly to the drain connection.
9. Ensure the drain pan is clean and free of debris before starting the unit.
10. Verify that the air filter is installed correctly.
11. Use the directional arrows on the filter to confirm proper airflow direction.
12. Ensure the air distribution system does not exceed the unit's rated external static pressure.



Install the unit in accordance with all applicable national and local codes.

These units are designed for **vertical installation** and **indoor use only**. The units are listed for installation with **zero clearance to combustible materials**, including the fan coil cabinet, discharge plenum, and connecting ductwork.

Provide adequate service access to the unit. If access is through a removable wall panel, allow enough space to remove the blower assembly and access electrical and plumbing components.

CHECK EQUIPMENT

1. Unpack the unit and move it to the installation location.
2. Remove all packaging material without damaging the unit.
3. Inspect the unit before installation.

INSTALLING AIR HANDLER

Install the unit level and plumb to ensure proper operation. The unit must be positioned so condensate drains toward the drain connection.

Use care when drilling holes or installing screws in the cabinet. Avoid damaging internal components.

MOUNTING

Secure the fan coil so the mounting structure can safely support its weight.

All mounting anchors must:

- Be properly placed
- Be correctly sized
- Provide long-term support

HUNG ON CLOSET WALL

Using mounting kit 90PK3, the air handler may be mounted on a wall. Brackets and screws are provided for both:

- The closet wall
- The air handler

Install sound-isolating material to reduce noise transfer.

RECESSED IN A WALL

The unit may be recessed into a partition wall. Use the recommended support framing shown in the installation figures. The front of the unit must be flush with the finished drywall surface. This installation requires the optional louvered wall panel. The panel must be ordered separately.

INSTALLATION (CONT.)

RECESSED IN A WALL

After drywall is installed:

- Secure the wall panel and frame to the studs using screws or nails.

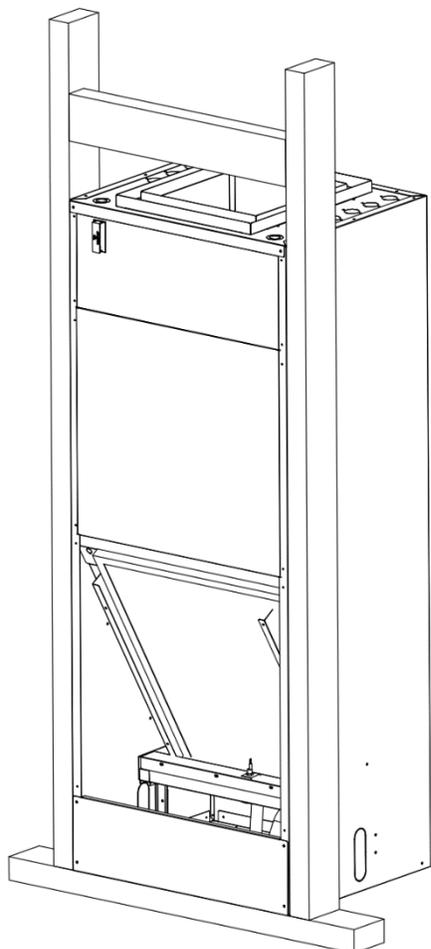


Figure 3 – Recessed in a wall

CLOSET PLATFORM – FRONT RETURN

The fan coil may be installed on a platform:

- Secure the unit to the platform using screws or nails.
- Knockouts are available on sides and rear of the unit for the drain line connection. Select the most convenient knockout for factory installed P-Trap connection to drain line.

Allow enough clearance at the front of the unit to:

- Access electrical controls
- Remove the motor and blower assembly for service

Front clearance should be approximately equal to the depth of the fan coil.

ELECTRICAL DATA

| ! WARNING ! |
|--|
| ELECTRIC SHOCK HAZARD |
| Disconnect all power supplies before servicing. Lock out/tag out to prevent accidental electrical shock. |
| Use copper conductors only. |
| Install all parts and panels before operating. |
| Failure to follow these warnings can result in injury or death. |

| ! ATTENTION ! |
|---|
| Before making electrical connections, verify that the supply voltage, frequency, and phase match the information on the unit nameplate. |
| Confirm that the electrical service can handle the load required by the equipment. |
| Follow the unit wiring diagram for all high-voltage and low-voltage field wiring . All wiring must comply with the National Electrical Code (NEC) and all applicable local codes. |
| Use copper conductors only . |

LINE VOLTAGE CONNECTIONS

Each unit includes wiring diagrams and nameplate data to guide field wiring.

Ground the unit in accordance with NEC and all local electrical codes.

Inspect all factory wiring and connections to ensure they were not loosened during shipment or installation.

Route the field power supply to the **control box at the front of the return air opening**. Install wiring in accordance with the unit wiring diagram and all applicable codes.

Standard controls are mounted in a **22.0" x 8.0" [558 x 203 mm] control box** located on the front of the cabinet.

Some units include a **Class 2 transformer for the 24-volt control circuit**. If additional equipment also includes a Class 2 transformer, do not connect the outputs of the two transformers together. Use a thermostat with **isolating contacts** to keep the control circuits separated.

ELECTRICAL DATA (CONT.)

LINE VOLTAGE CONNECTIONS (CONTINUED)

WARNING

Before servicing or performing maintenance on the system, turn OFF the main power to the unit. Failure to do so may result in electrical shock, causing personal injury or death.

WARNING

All factory-supplied devices for field installation must be wired exactly as shown on the provided wiring diagram. Failure to comply may damage components and void all warranties.

WARNING

Provide a permanent, uninterrupted equipment ground in accordance with NEC (ANSI/NFPA 70) and applicable local codes. The grounding path may be copper conductor or approved metal conduit installed per code.

Failure to follow this warning may result in electrical shock, fire, personal injury, or death.

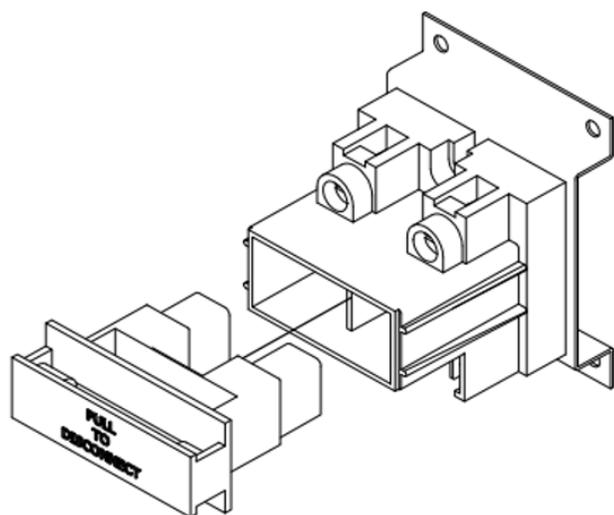


Figure 4 – Control Box, Switch 120/240V

ATTENTION

Use agency-listed conduit and connectors for supply wiring to the unit to ensure proper grounding. If reducing washers are used at the conduit connection, provide a separate equipment grounding conductor.

CONTROL WIRING

Use **18 AWG thermostat wire with color-coded insulation** rated for at least 95.0°F [35.0°C] for wire runs up to 100 ft [30.5 m].

For wire runs longer than 100 ft [30.5 m], use 16 AWG wire.

Follow all applicable local building codes and the current edition of the National Electrical Code (NFPA 70).

In Canada, follow the current edition of the Canadian Electrical Code CSA C22.1.

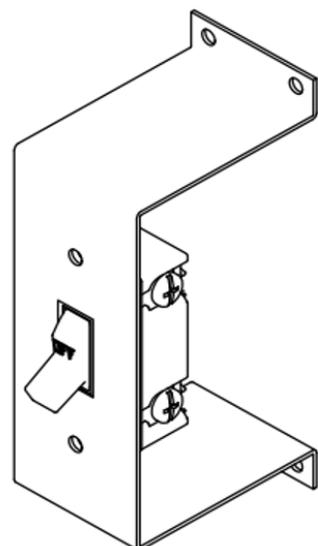


Figure 5 – Toggle Switch, 277V

ELECTRICAL DATA (CONT.)

| Table 2: CR Electrical Data | | | | | | | | | | | | | | | |
|-----------------------------|--------------------------|------|------|--------|--------|--------|------------|------|------|-----------------------------|------|------|-----------------------------------|------|------|
| Unit Model | Electrical Heat Capacity | | | | | | Total Amps | | | Min. Circuit Ampacity (MCA) | | | Max. Overcurrent Protection (MOP) | | |
| | kW | | | BTUH | | | | | | | | | | | |
| | 240V | 208V | 277V | 240V | 208V | 277V | 240V | 208V | 277V | 240V | 208V | 277V | 240V | 208V | 277V |
| 4CR | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.6 | 2.5 | 2.6 | 3.0 | 3.0 | 3.0 | 15.0 | 15.0 | 15.0 |
| | 1 | 0.8 | 1.0 | 3,400 | 2,600 | 3,400 | 6.8 | 6.1 | 6.2 | 8.0 | 8.0 | 8.0 | 15.0 | 15.0 | 15.0 |
| | 2 | 1.5 | 2.0 | 6,800 | 5,100 | 6,800 | 10.9 | 9.7 | 9.8 | 14.0 | 12.0 | 12.0 | 20.0 | 20.0 | 20.0 |
| | 3 | 2.3 | 3.0 | 10,200 | 7,700 | 10,200 | 15.1 | 13.3 | 13.4 | 19.0 | 17.0 | 17.0 | 25.0 | 20.0 | 20.0 |
| | 4 | 3.0 | 4.0 | 13,600 | 10,200 | 13,600 | 19.3 | 16.9 | 17.0 | 24.0 | 21.0 | 21.0 | 30.0 | 25.0 | 25.0 |
| 6CR | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.6 | 2.5 | 2.6 | 3.0 | 3.0 | 3.0 | 15.0 | 15.0 | 15.0 |
| | 2 | 1.5 | 2.0 | 6,800 | 5,100 | 6,800 | 10.9 | 9.7 | 9.8 | 14.0 | 12.0 | 12.0 | 20.0 | 20.0 | 20.0 |
| | 3 | 2.3 | 3.0 | 10,200 | 7,700 | 10,200 | 15.1 | 13.3 | 13.4 | 19.0 | 17.0 | 17.0 | 25.0 | 20.0 | 20.0 |
| | 4 | 3.0 | 4.0 | 13,600 | 10,200 | 13,600 | 19.3 | 16.9 | 17.0 | 24.0 | 21.0 | 21.0 | 30.0 | 25.0 | 25.0 |
| | 5 | 3.8 | 5.0 | 17,000 | 12,800 | 17,000 | 23.4 | 20.5 | 20.7 | 29.0 | 26.0 | 26.0 | 30.0 | 30.0 | 30.0 |
| 8CR | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.6 | 2.5 | 2.6 | 3.0 | 3.0 | 3.0 | 15.0 | 15.0 | 15.0 |
| | 3 | 2.3 | 3.0 | 10,200 | 7,700 | 10,200 | 15.1 | 13.3 | 13.4 | 19.0 | 17.0 | 17.0 | 25.0 | 20.0 | 20.0 |
| | 4 | 3.0 | 4.0 | 13,600 | 10,200 | 13,600 | 19.3 | 16.9 | 17.0 | 24.0 | 21.0 | 21.0 | 30.0 | 25.0 | 25.0 |
| | 5 | 3.8 | 5.0 | 17,000 | 12,800 | 17,000 | 23.4 | 20.5 | 20.7 | 29.0 | 26.0 | 26.0 | 30.0 | 30.0 | 30.0 |
| | 6 | 4.5 | 6.0 | 20,500 | 15,400 | 20,500 | 27.6 | 24.1 | 24.3 | 35.0 | 30.0 | 30.0 | 35.0 | 30.0 | 35.0 |
| | 8 | 6.0 | 8.0 | 27,300 | 20,500 | 27,300 | 35.9 | 31.3 | 31.5 | 45.0 | 39.0 | 39.0 | 50.0 | 40.0 | 40.0 |
| 10CR | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.8 | 3.7 | 3.6 | 5.0 | 5.0 | 5.0 | 15.0 | 15.0 | 15.0 |
| | 3 | 2.3 | 3.0 | 10,200 | 7,700 | 10,200 | 16.3 | 14.5 | 14.4 | 20.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 |
| | 5 | 3.8 | 5.0 | 17,000 | 12,800 | 17,000 | 24.6 | 21.7 | 21.7 | 31.0 | 27.0 | 27.0 | 35.0 | 35.0 | 30.0 |
| | 6 | 4.5 | 6.0 | 20,500 | 15,400 | 20,500 | 28.8 | 25.3 | 25.3 | 36.0 | 32.0 | 32.0 | 40.0 | 35.0 | 35.0 |
| | 8 | 6.0 | 8.0 | 27,300 | 20,500 | 27,300 | 37.1 | 32.5 | 32.5 | 46.0 | 41.0 | 41.0 | 50.0 | 50.0 | 50.0 |
| 12CR | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.8 | 3.7 | 3.6 | 5.0 | 5.0 | 5.0 | 15.0 | 15.0 | 15.0 |
| | 3 | 2.3 | 3.0 | 10,200 | 7,700 | 10,200 | 16.3 | 14.5 | 14.4 | 20.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 |
| | 5 | 3.8 | 5.0 | 17,000 | 12,800 | 17,000 | 24.6 | 21.7 | 21.7 | 31.0 | 27.0 | 27.0 | 35.0 | 35.0 | 30.0 |
| | 6 | 4.5 | 6.0 | 20,500 | 15,400 | 20,500 | 28.8 | 25.3 | 25.3 | 36.0 | 32.0 | 32.0 | 40.0 | 35.0 | 35.0 |
| | 8 | 6.0 | 8.0 | 27,300 | 20,500 | 27,300 | 37.1 | 32.5 | 32.5 | 46.0 | 41.0 | 41.0 | 50.0 | 50.0 | 50.0 |
| | 10 | 7.5 | 10.0 | 34,100 | 25,600 | 34,100 | 45.5 | 39.8 | 39.7 | 57.0 | 50.0 | 50.0 | 60.0 | 50.0 | 50.0 |

| Table 3: CR 120V Electrical Data | | | | | |
|----------------------------------|----------|---------|-----|-----|------|
| Unit Model | Motor HP | Voltage | FLA | MCA | MOP |
| 4CR | 1/3 | 120 | 4.8 | 6.0 | 15.0 |
| 6CR | 1/3 | 120 | 4.8 | 6.0 | 15.0 |
| 8CR | 1/3 | 120 | 6.8 | 8.5 | 15.0 |
| 10CR | 1/2 | 120 | 6.8 | 8.5 | 15.0 |
| 12CR | 1/2 | 120 | 6.8 | 8.5 | 15.0 |

PERFORMANCE DATA

| Table 4: Cooling Capacities | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------|-------------|------|-----|--------------------------|---|------|------|--------------------|------|------|---------------------|------|------|---------------------------------------|------|------|--------------------|------|------|---------------------|------|------|
| Model | Nominal CFM | Rows | GPM | ΔP (ft H ₂ O) | 75.0°F [23.8°C] DB / 63.0°F [17.2°C] WB | | | | | | | | | 80.0°F [26.7°C] DB/67.0°F [17.2°C] WB | | | | | | | | |
| | | | | | 40.0°F [4.4°C] EWT | | | 45.0°F [7.2°C] EWT | | | 50.0°F [10.0°C] EWT | | | 40.0°F[4.4°C] EWT | | | 45.0°F [7.2°C] EWT | | | 50.0°F [10.0°C] EWT | | |
| | | | | | TH | SH | TR | TH | SH | TR | TH | SH | TR | TH | SH | TR | TH | SH | TR | TH | SH | TR |
| 04 | 400 | 2 | 1.5 | 5.6 | 10.2 | 8.3 | 13.5 | 8.4 | 7.5 | 11.2 | 6.9 | 6.8 | 9.1 | 12.2 | 9.1 | 16.1 | 10.3 | 8.3 | 13.6 | 8.5 | 7.7 | 11.2 |
| | | | 2.0 | 9.5 | 11.5 | 8.9 | 11.4 | 9.4 | 8.0 | 9.3 | 7.5 | 7.2 | 7.4 | 13.8 | 9.9 | 13.7 | 11.6 | 9.0 | 11.5 | 9.4 | 8.1 | 9.3 |
| 04 | 400 | 3 | 2.5 | 14.4 | 12.5 | 9.4 | 9.9 | 10.1 | 8.4 | 8.0 | 7.9 | 7.5 | 6.3 | 15.1 | 10.5 | 12.0 | 12.6 | 9.4 | 10.0 | 10.1 | 8.5 | 8.1 |
| | | | 1.5 | 7.3 | 11.5 | 9.2 | 15.2 | 9.5 | 8.4 | 12.6 | 7.8 | 7.6 | 10.3 | 13.7 | 10.2 | 18.2 | 11.6 | 9.3 | 15.3 | 10.7 | 9.0 | 10.7 |
| 06 | 600 | 3 | 2.0 | 10.2 | 13.1 | 10.0 | 13.1 | 10.7 | 9.0 | 10.6 | 8.5 | 8.0 | 8.4 | 15.9 | 11.1 | 15.8 | 13.2 | 10.0 | 13.1 | 11.6 | 9.4 | 9.3 |
| | | | 2.5 | 13.6 | 14.4 | 10.6 | 11.4 | 11.6 | 9.4 | 9.2 | 9.0 | 8.3 | 7.2 | 17.4 | 11.8 | 13.8 | 14.5 | 10.6 | 11.5 | 12.3 | 9.8 | 8.2 |
| 06 | 600 | 4 | 3.0 | 5.3 | 17.6 | 14.0 | 11.6 | 14.4 | 12.6 | 9.5 | 11.6 | 11.3 | 7.7 | 21.1 | 15.4 | 14.0 | 17.7 | 14.0 | 11.7 | 14.4 | 12.8 | 9.6 |
| | | | 3.5 | 7.1 | 18.7 | 14.5 | 10.6 | 15.2 | 13.1 | 8.6 | 12.1 | 11.6 | 6.9 | 22.6 | 16.1 | 12.8 | 18.9 | 14.6 | 10.7 | 15.3 | 13.2 | 8.7 |
| 06 | 600 | 4 | 4.0 | 9.1 | 19.7 | 15.0 | 9.8 | 15.9 | 13.4 | 7.9 | 12.5 | 11.8 | 6.2 | 23.8 | 16.6 | 11.8 | 19.8 | 15.0 | 9.9 | 16.0 | 13.5 | 8.0 |
| | | | 3.0 | 5.1 | 21.3 | 15.9 | 10.6 | 17.2 | 14.2 | 8.6 | 13.6 | 12.6 | 6.8 | 25.8 | 17.7 | 12.8 | 21.5 | 15.9 | 10.7 | 17.3 | 14.3 | 8.6 |
| 08 | 800 | 3 | 3.5 | 6.3 | 22.3 | 16.4 | 9.9 | 18.0 | 14.5 | 7.9 | 14.0 | 12.8 | 6.2 | 27.1 | 18.3 | 11.9 | 22.5 | 16.4 | 10.0 | 18.0 | 14.6 | 8.0 |
| | | | 4.0 | 7.7 | 23.2 | 16.8 | 9.2 | 18.6 | 14.8 | 7.4 | 14.4 | 13.0 | 5.7 | 28.2 | 18.8 | 11.2 | 23.4 | 16.8 | 9.3 | 18.7 | 14.9 | 7.4 |
| 08 | 800 | 4 | 4.0 | 6.7 | 23.2 | 18.5 | 11.5 | 19.0 | 16.7 | 9.4 | 15.4 | 15.0 | 7.7 | 27.9 | 20.4 | 13.8 | 23.3 | 18.6 | 11.6 | 19.1 | 17.0 | 9.5 |
| | | | 5.0 | 10.2 | 25.3 | 19.5 | 10.1 | 20.5 | 17.5 | 8.2 | 16.3 | 15.5 | 6.5 | 30.6 | 21.6 | 12.2 | 25.5 | 19.6 | 10.2 | 20.6 | 17.7 | 8.2 |
| 08 | 800 | 4 | 6.0 | 14.4 | 27.0 | 20.3 | 8.9 | 21.8 | 18.1 | 7.2 | 17.0 | 16.0 | 5.6 | 32.8 | 22.6 | 10.8 | 27.2 | 20.3 | 9.0 | 21.9 | 18.3 | 7.3 |
| | | | 4.0 | 5.8 | 26.8 | 20.5 | 10.6 | 21.8 | 18.4 | 8.7 | 17.3 | 16.4 | 6.9 | 32.5 | 22.8 | 12.9 | 27.0 | 20.6 | 10.7 | 21.9 | 18.6 | 8.7 |
| 10 | 1,000 | 3 | 5.0 | 8.1 | 28.8 | 21.5 | 9.5 | 23.3 | 19.0 | 7.7 | 18.2 | 16.9 | 6.0 | 35.2 | 23.9 | 11.6 | 29.1 | 21.5 | 9.6 | 23.4 | 19.2 | 7.8 |
| | | | 6.0 | 10.9 | 30.5 | 22.2 | 8.6 | 24.5 | 19.6 | 7.0 | 18.9 | 17.2 | 5.4 | 37.1 | 24.8 | 10.5 | 30.9 | 22.2 | 8.8 | 24.6 | 19.7 | 7.0 |
| 10 | 1,000 | 4 | 5.0 | 12.2 | 28.8 | 23.0 | 10.4 | 23.5 | 20.7 | 8.5 | 19.0 | 18.6 | 6.9 | 34.7 | 25.3 | 12.5 | 29.0 | 23.1 | 10.5 | 23.6 | 21.0 | 8.6 |
| | | | 5.5 | 14.3 | 29.8 | 23.4 | 9.9 | 24.2 | 21.1 | 8.0 | 19.4 | 18.8 | 6.4 | 35.9 | 25.9 | 11.9 | 29.9 | 23.6 | 9.9 | 24.3 | 21.4 | 8.1 |
| 10 | 1,000 | 4 | 6.0 | 16.7 | 30.6 | 23.8 | 9.4 | 24.9 | 21.4 | 7.6 | 19.8 | 19.0 | 6.1 | 37.0 | 26.4 | 11.3 | 30.9 | 23.9 | 9.4 | 24.9 | 21.6 | 7.6 |
| | | | 5.5 | 6.8 | 30.6 | 24.2 | 11.1 | 25.0 | 21.8 | 9.0 | 20.3 | 19.7 | 7.4 | 36.8 | 26.8 | 13.3 | 30.8 | 24.4 | 11.2 | 25.2 | 22.1 | 9.1 |
| 12 | 1,200 | 4 | 6.0 | 8.1 | 31.7 | 24.8 | 10.5 | 25.9 | 22.3 | 8.6 | 20.8 | 20.0 | 6.9 | 38.5 | 27.5 | 12.7 | 32.0 | 24.9 | 10.6 | 26.0 | 22.5 | 8.6 |
| | | | 6.5 | 9.4 | 32.7 | 25.3 | 10.0 | 26.6 | 22.6 | 8.1 | 21.2 | 20.2 | 6.5 | 39.8 | 28.1 | 12.2 | 33.0 | 25.4 | 10.1 | 26.7 | 22.9 | 8.2 |
| 12 | 1,200 | 4 | 8.0 | 8.4 | 35.5 | 28.4 | 11.7 | 29.1 | 25.7 | 9.6 | 23.8 | 23.2 | 7.9 | 42.6 | 31.4 | 14.1 | 35.7 | 28.7 | 11.8 | 29.2 | 26.1 | 9.7 |
| | | | 7.0 | 11.2 | 37.8 | 29.5 | 10.7 | 30.8 | 26.5 | 8.7 | 24.8 | 23.8 | 7.1 | 45.6 | 32.8 | 12.9 | 38.0 | 29.7 | 10.8 | 30.9 | 26.8 | 8.8 |
| | | | 8.0 | 14.5 | 39.8 | 30.5 | 9.9 | 32.3 | 27.2 | 8.0 | 25.6 | 24.3 | 6.4 | 48.4 | 33.9 | 12.0 | 40.1 | 30.6 | 10.0 | 32.4 | 27.5 | 8.1 |

First Co. / AE-Air reserves the right to change, alter, or update data, design features, and specifications without prior notice.

PERFORMANCE DATA (CONT.)

| Table 5: 1-Row Heating Capacities | | | | | | | | | | | | |
|-----------------------------------|-------------|------|-----|---|------------------------------|--------------|------------------------------|--------------|------------------------------|--------------|------------------------------|--------------|
| Unit Model | Nominal CFM | Rows | GPM | Heating Data (70.0°F [21.1°C] Entering Air) | | | | | | | | |
| | | | | ΔP (ft H ₂ O) | BTUH @180.0°F [82.2°C] | LVG Air°F | BTUH @160.0°F [71.1°C] | LVG Air°F | BTUH @140.0°F [60.0°C] | LVG Air°F | BTUH @120.0°F [48.9°C] | LVG Air°F |
| 4CR | 400 | 1 | 1.3 | 2.0 | 20.8 | 120 | 16.8 | 111 | 12.8 | 102.3 | 8.9 | 93.3 |
| | | | 1.5 | 2.8 | 21.8 | 123 | 17.6 | 113 | 13.5 | 103.7 | 9.4 | 94.3 |
| | | | 1.8 | 3.8 | 22.6 | 124 | 18.2 | 115 | 14.0 | 104.8 | 9.7 | 95.1 |
| 6CR | 600 | 1 | 1.0 | 1.3 | 22.9 | 108 | 18.5 | 101 | 14.1 | 94.5 | 9.8 | 87.9 |
| | | | 1.5 | 2.8 | 26.5 | 113 | 21.4 | 106 | 16.3 | 97.8 | 11.3 | 90.2 |
| | | | 2.0 | 4.9 | 28.6 | 116 | 23.1 | 108 | 17.7 | 99.8 | 12.3 | 91.7 |
| 8CR | 800 | 1 | 1.0 | 1.6 | 27.3 | 104 | 22.1 | 98 | 16.9 | 92.2 | 11.7 | 86.4 |
| | | | 1.5 | 3.4 | 32.3 | 110 | 26.1 | 103 | 19.9 | 95.7 | 13.9 | 88.8 |
| | | | 2.0 | 5.7 | 35.4 | 113 | 28.6 | 106 | 21.9 | 97.9 | 15.2 | 90.3 |
| 10CR | 1,000 | 1 | 1.5 | 3.4 | 35.1 | 105 | 28.4 | 99 | 21.7 | 92.7 | 15.0 | 86.7 |
| | | | 2.0 | 5.7 | 38.9 | 109 | 31.4 | 102 | 24.0 | 94.9 | 16.7 | 88.2 |
| | | | 2.5 | 8.6 | 41.6 | 111 | 33.6 | 104 | 25.7 | 96.4 | 17.9 | 89.3 |
| 12CR | 1,200 | 1 | 2.0 | 2.0 | 43.2 | 106 | 35.0 | 100 | 26.7 | 93.3 | 18.6 | 87.1 |
| | | | 2.5 | 3.1 | 46.5 | 108 | 37.6 | 102 | 28.8 | 94.9 | 20.0 | 88.2 |
| | | | 3.0 | 4.3 | 49.0 | 110 | 39.6 | 103 | 30.3 | 96.0 | 21.1 | 89.0 |

Note:

- Above capacities are at nominal CFM conditions. Maximum discharge air temperature must not exceed 145°F [62.8°C] at actual CFM.

| Table 6: 2-Row Heating Capacities | | | | | | | | | | | | |
|-----------------------------------|-------------|------|-----|---|------------------------------|--------------|------------------------------|--------------|------------------------------|--------------|------------------------------|--------------|
| Unit Model | Nominal CFM | Rows | GPM | Heating Data (70.0°F [21.1°C] Entering Air) | | | | | | | | |
| | | | | ΔP (ft H ₂ O) | BTUH @180.0°F [82.2°C] | LVG Air°F | BTUH @160.0°F [71.1°C] | LVG Air°F | BTUH @140.0°F [60.0°C] | LVG Air°F | BTUH @120.0°F [48.9°C] | LVG Air°F |
| 4CR | 400 | 2 | 1.0 | 2.1 | 26.7 | 134 | 21.6 | 122 | 16.6 | 111 | 11.6 | 99.4 |
| | | | 1.3 | 3.2 | 29.0 | 139 | 23.5 | 127 | 18.0 | 114 | 12.6 | 102 |
| | | | 1.5 | 4.5 | 30.7 | 143 | 24.9 | 130 | 19.1 | 117 | 13.3 | 103 |
| 6CR | 600 | 2 | 1.5 | 4.9 | 37.8 | 130 | 30.6 | 120 | 23.5 | 109 | 16.4 | 97.9 |
| | | | 2.0 | 8.3 | 41.6 | 136 | 33.7 | 124 | 25.9 | 112 | 18.0 | 100 |
| | | | 2.5 | 12.4 | 44.1 | 140 | 35.8 | 127 | 27.5 | 115 | 19.2 | 102 |
| 8CR | 800 | 2 | 2.5 | 7.7 | 56.2 | 137 | 45.5 | 125 | 34.9 | 113 | 24.3 | 101 |
| | | | 3.0 | 10.2 | 58.4 | 140 | 47.3 | 127 | 36.3 | 114 | 25.3 | 102 |
| | | | 3.5 | 13.1 | 60.1 | 141 | 48.7 | 129 | 37.3 | 116 | 26.0 | 103 |
| 10CR | 1,000 | 2 | 3.0 | 7.7 | 62.9 | 130 | 50.9 | 119 | 39.0 | 109 | 27.2 | 97.8 |
| | | | 3.5 | 10.3 | 65.8 | 133 | 53.3 | 122 | 40.8 | 110 | 28.5 | 98.9 |
| | | | 4.0 | 13.1 | 68.1 | 135 | 55.2 | 123 | 42.3 | 112 | 29.5 | 99.9 |
| 12CR | 1,200 | 2 | 4.0 | 7.4 | 75.5 | 130 | 61.1 | 119 | 46.7 | 109 | 32.5 | 97.7 |
| | | | 4.5 | 9.2 | 78.0 | 132 | 63.1 | 121 | 48.3 | 110 | 33.6 | 98.5 |
| | | | 5.0 | 11.3 | 80.0 | 134 | 64.8 | 122 | 49.6 | 111 | 34.6 | 99.2 |

Note:

- Above capacities are at nominal CFM conditions. Maximum discharge air temperature must not exceed 145°F [62.8°C] at actual CFM.

PERFORMANCE DATA (CONT.)

| Table 7: Blower Performance | | | | | | | | | | | |
|-----------------------------|----------|-------------|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Unit Model | Motor HP | Speed Tap | CFM vs External Static Pressure | | | | | | | | |
| | | | 0.0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 |
| 4CR | 1/3 | High | 555 | 520 | 495 | 465 | 440 | 410 | 315 | — | — |
| | | Medium-High | 485 | 455 | 430 | 395 | 360 | 340 | 315 | — | — |
| | | Medium-Low | 420 | 370 | 345 | 310 | 275 | 270 | — | — | — |
| | | Low | 355 | 310 | 265 | 235 | 220 | — | — | — | — |
| 6CR | 1/3 | High | 785 | 760 | 740 | 720 | 700 | 680 | 665 | 645 | 625 |
| | | Medium-High | 690 | 675 | 645 | 615 | 585 | 560 | 540 | 530 | 525 |
| | | Medium-Low | 550 | 515 | 490 | 465 | 445 | 420 | 395 | 375 | 360 |
| | | Low | 430 | 400 | 365 | 330 | 305 | 285 | 255 | 220 | 200 |
| 8CR | 1/3 | High | 990 | 960 | 930 | 910 | 870 | 850 | 780 | 720 | 660 |
| | | Medium-High | 845 | 815 | 785 | 765 | 740 | 720 | 690 | 665 | 620 |
| | | Medium-Low | 715 | 680 | 655 | 625 | 595 | 565 | 540 | 515 | 505 |
| | | Low | 595 | 555 | 520 | 485 | 445 | 435 | — | — | — |
| 10CR | 1/2 | High | 1,250 | 1,225 | 1,195 | 1,155 | 1,120 | 1,090 | 1,045 | 1,020 | 985 |
| | | Medium-High | 1,000 | 970 | 940 | 910 | 880 | 860 | 830 | 810 | 790 |
| | | Medium-Low | 910 | 870 | 840 | 810 | 785 | 760 | 735 | 705 | 680 |
| | | Low | 770 | 730 | 695 | 660 | 630 | 600 | 575 | 545 | 515 |
| 12CR | 1/2 | High | 1,310 | 1,285 | 1,265 | 1,240 | 1,215 | 1,190 | 1,160 | 1,135 | 1,095 |
| | | Medium-High | 1,175 | 1,150 | 1,125 | 1,105 | 1,065 | 1,040 | 1,010 | 990 | 945 |
| | | Medium-Low | 1,100 | 1,075 | 1,050 | 1,020 | 990 | 960 | 935 | 890 | 860 |
| | | Low | 960 | 930 | 900 | 865 | 825 | 785 | 750 | 725 | 695 |

Notes:

1. Airflow data shown is with a dry coil at 70.0°F [21.1°C] DB EAT and with standard 1.0" [2.5 cm] throw-away filter.
2. "-" denotes operation not recommended.

WIRING DIAGRAMS

SEE NAMEPLATE FOR PROPER VOLTAGE

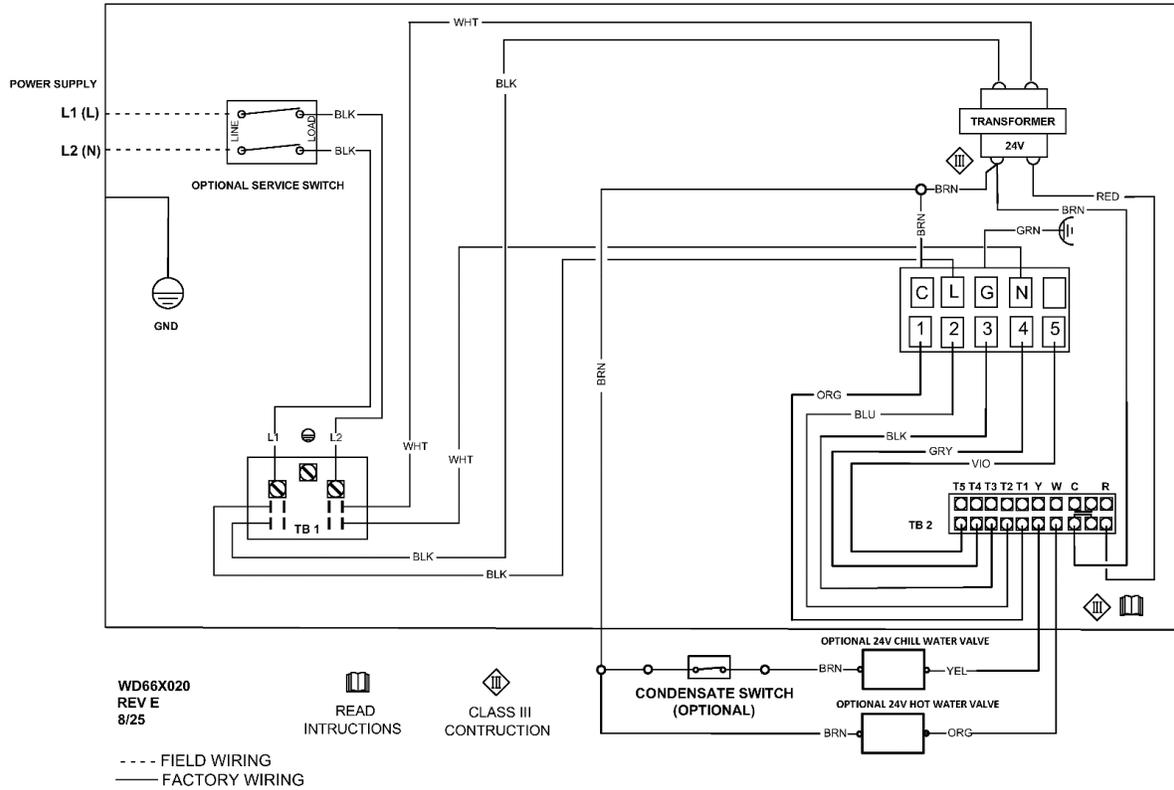


Figure 6 - WD66X020, CR 120/208/240/277

SEE NAMEPLATE FOR PROPER VOLTAGE

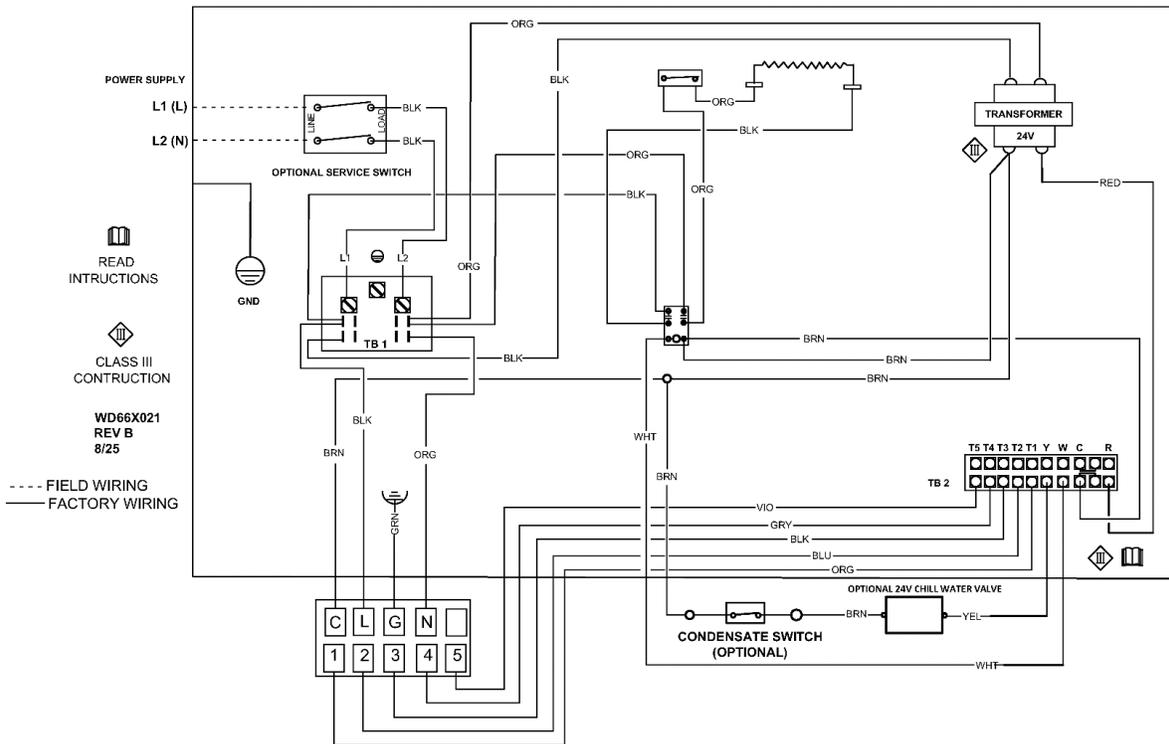


Figure 7 - WD66X021, CR 120/208/240/277, Options 1 HTR

WIRING DIAGRAMS (CONT.)

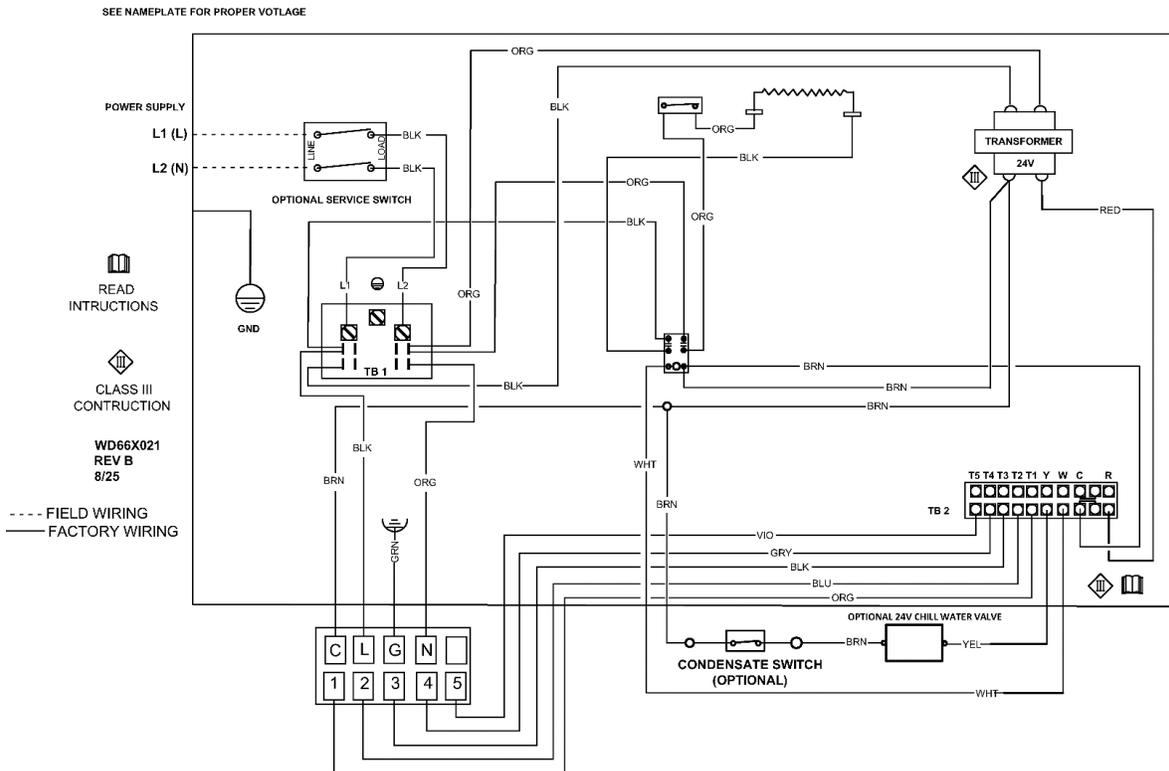


Figure 8 - WD66X021, CR 120/208/240/277, Options 1 HTR

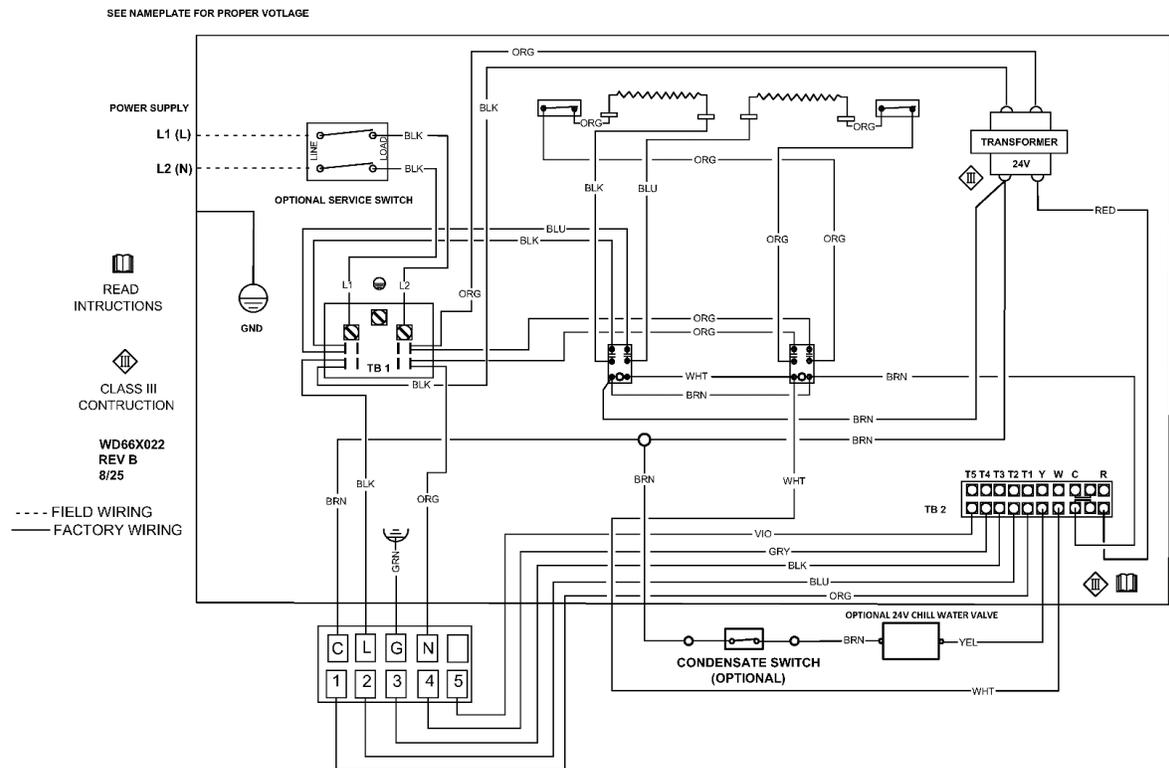


Figure 9 - WD66X022, CR 120/208/240/277, Options 2 HTR

START UP

WARNING

ELECTRIC SHOCK HAZARD

Electrically ground air handler. Connect ground wire to ground terminal marked by the protective earthing symbol IEC 60417-5019.

Failure to do so can result in injury or death.

WARNING

DO NOT touch any rotating component with any object. Damage to the equipment and personal injury can occur.

WARNING

Any device such as a fan switch or thermostat that has been furnished by the factory for field installation must be wired in strict accordance with the wiring diagram that is supplied with the unit. Failure to do so could result in damage to components and will void all warranties.

PRE-START UP CHECKS

Before starting the unit, complete the following checks:

1. Verify the supply voltage matches the unit nameplate.
2. Confirm the unit is properly grounded.
3. With power off, check that blower wheel set screws are tight and that the blower wheel rotates freely and quietly.
4. Verify the air handler is securely installed.
5. Verify the unit is accessible for future service.
6. Confirm the condensate drain line is properly sized, trapped, pitched, and tested.
 - a. Pour approximately one pint of water into the drain pan to verify proper drainage. Remove the air filter and slowly pour water through the slots in front of the coil. Reinstall the air filter after testing.
7. Ensure all cabinet openings and wiring penetrations are sealed.
8. Verify a clean filter of the correct size is installed.
9. Confirm all access panels are installed and secured.

WARNING

Some transformers are multi-voltage. It is crucial to refer to unit wiring diagram, transformers wiring diagram as well as unit voltage to ensure proper connections and operation safety.

CAUTION

High-efficiency brushless DC motors are wired with power applied at all times. Low voltage thermostat demand will control its use. Refer to unit Wiring Diagram for proper wiring connections.

COOLING SEASON

At the beginning of the cooling season, gradually lower the chilled water temperature to prevent excessive humidity inside the building.

Follow this procedure:

1. In spring or early summer, begin operation with chilled water at approximately **70.0°F [21.1°C]**.
2. Set the fan speed on all associated air handlers to **low or medium**.
3. Keep the building closed to outside air during initial operation.
4. Reduce the chilled water temperature by approximately **2.0°F [-16.6°C] per day** until the system reaches the design water temperature.

CONDENSATION

Condensation may form inside the cabinet if the unit cools below the room dew point while operating in high humidity with little or no airflow.

Automatic water flow valves are recommended to prevent this condition by allowing chilled water to bypass the coil when the unit is not operating.

If the system does not include automatic water flow control, constant fan operation, or a positive coil shutoff when the unit is off, the installing contractor must start the system in a way that prevents condensation inside the unit.

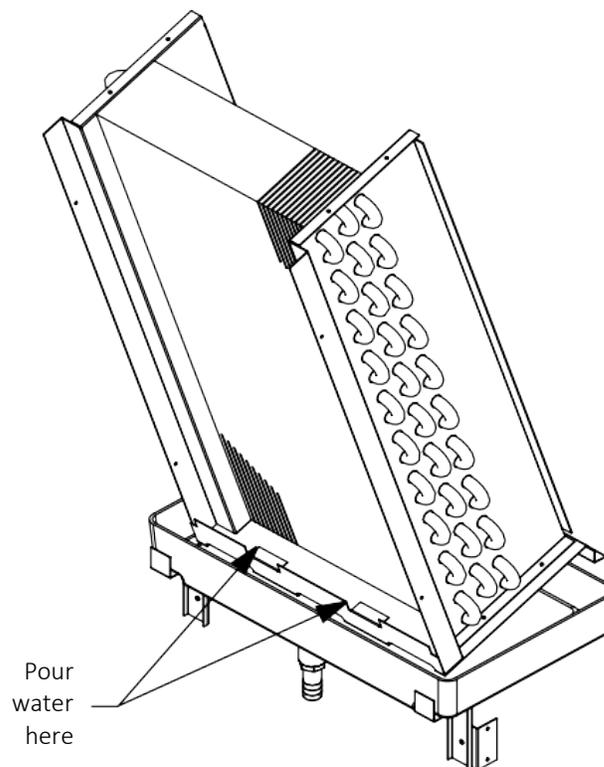


Figure 10 - Coil/Drain Pan assembly

OPERATION & MAINTENANCE

WARNING

ELECTRIC SHOCK HAZARD

Service and maintenance to internal components and wiring must not be performed until the main disconnect switch is turned off. Failure to do so will result in electrical shock causing personal injury or death.

ATTENTION

Periodic maintenance is required to maintain performance and reduce the risk of equipment failure. Establish a preventive maintenance program and have the unit serviced regularly by a qualified contractor.

MONTHLY CHECK LIST

1. Inspect the coil and air filter. Clean or replace as required.
2. Inspect the drain pan. Keep it clean so condensate can flow freely through the drain line.
3. Inspect supply and return air openings for dust or fiber buildup. Clean as needed.

YEARLY CHECK LIST

1. Clean the blower motor. Oil if required.
2. Inspect the unit casing for corrosion and loose fasteners. Tighten as needed.
3. Inspect the blower wheel and housing for dirt or looseness. Clean, adjust, and tighten as needed.
4. Inspect all coil connections for leaks. Inspect coil fins for dirt or damage. Clean or repair as required.
5. Inspect hoses for wear or deterioration. Replace as needed, or replace every seven years.
6. Check electrical connections for tightness. Verify proper control operation at the beginning of each heating and cooling season.
7. If valve package strainers are installed, clean according to the strainer manufacturer's instructions.

BLOWER ASSEMBLY

Inspect and clean the blower annually as part of normal maintenance. Keeping the blower wheel clean helps prevent imbalance and vibration.

Inspect the blower wheel for dust, debris, or filter fibers. Clean using a brush or compressed air as needed.

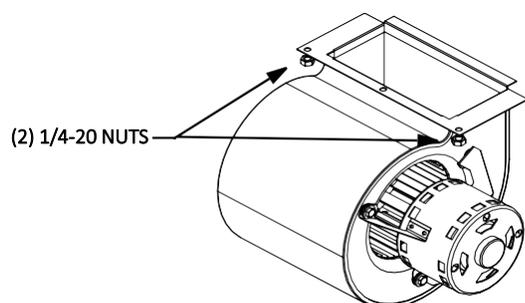


Figure 11 - Blower Assembly

BLOWER HOUSING REMOVAL

Disconnect the fan harness from the motor using the quick-release tab on the connector at the right end of the motor. Support the blower housing and motor before removing hardware.

Remove the two nuts at the front of the blower housing assembly. Rotate the blower assembly downward and pull the assembly out of the cabinet.

MOTOR

Check motor wiring connections for tightness and verify wiring matches the unit wiring diagram.

Clean the blower motor annually as part of routine maintenance.

WARNING

ELECTRIC SHOCK HAZARD

Units with ECM motors have line voltage power applied at all times. Make sure power is disconnected before servicing.

FILTER

Inspect the air filter regularly. Clean or replace the filter as required to maintain proper airflow and system performance.

A dirty or clogged filter will reduce airflow and system efficiency. Always reinstall the filter with the airflow arrow pointing in the correct direction.

CAUTION

Do not operate the unit without a filter installed.

COIL

Inspect the coil periodically for dirt or debris that may restrict airflow or reduce heat transfer.

If the coil becomes dirty, clean it using a soft brush, vacuum, or a non-corrosive coil cleaner suitable for HVAC equipment. Take care not to damage the coil fins during cleaning.

Keep the area around the coil clean to help maintain proper airflow.

COIL CLEANING

If coil cleaning is required, remove accumulated dirt and debris carefully to avoid damaging the fins, with the following process:

1. Use a soft brush or vacuum to remove loose debris.
 - a. If necessary, apply an approved coil cleaner and rinse thoroughly according to the cleaner manufacturer's instructions.
2. Allow the coil to dry before returning the unit to operation.

OPERATION & MAINTENANCE (CONT.)

DRAIN PIPING

Inspect the condensate drain piping to ensure it is clear and properly connected.

The drain line must be properly trapped and pitched to allow condensate to flow freely away from the unit. Remove any obstructions that may restrict drainage.

DRAIN PAN AND P-TRAP

Inspect the drain pan and P-trap at the beginning of each cooling season. Dust and debris may enter the unit through the supply louver and collect in the drain system.

The rubber P-trap is secured to the drain pan nipple and drain riser with two clamps: one spring clamp and one worm-gear clamp. The spring clamp can be opened using pliers. The worm-gear clamp can be loosened using a **5/16" nut driver**.

DRAIN PAN REMOVAL

1. Remove the two mounting brackets located on the sides of the cabinet. Set the brackets aside.
2. Disconnect the P-trap from the drain pan.
3. Pull down and then up to remove the drain pan from the cabinet.
4. Note the insertion depth of the P-trap on the drain riser so it can be reinstalled at the same depth.
5. Remove the P-trap from the drain riser.

P-TRAP CLEANING

Debris will naturally settle in the bottom of the trap. Clean the trap thoroughly using soap and water in a utility sink or container.

DRAIN PAN AND P-TRAP REINSTALLATION

1. Install the P-trap onto the drain riser using the worm-gear clamp. Maintain the same insertion depth noted during removal.
2. Slide the spring clamp onto the hose a few inches from the end, with the clamp tangs facing forward.
3. Reinstall the drain pan in the cabinet and secure it with the mounting brackets.
4. Reconnect the hose to the drain pan and slide the spring clamp into position to secure the connection.

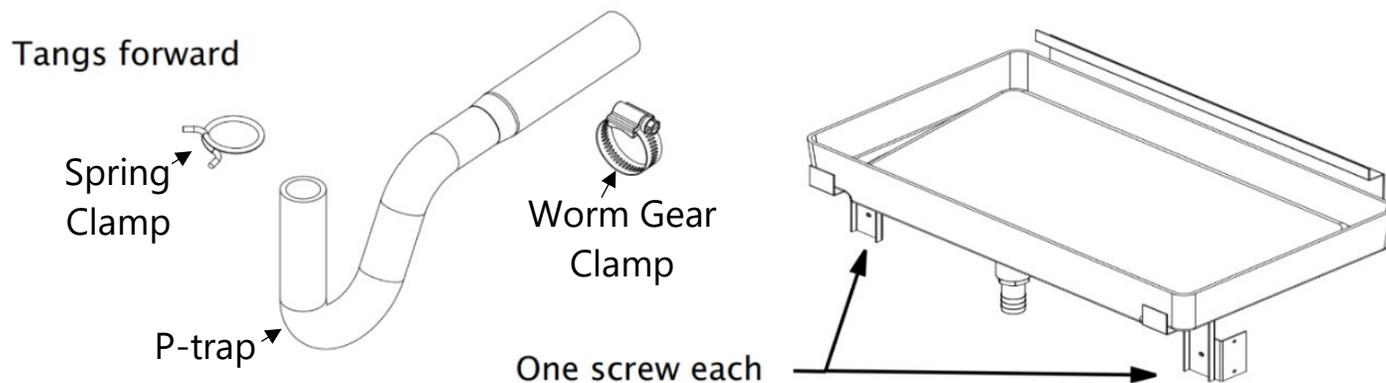


Figure 12 - Drain Pan and P-Trap Dismounting

REPLACEMENT PARTS

Table 8: Replacement Part List

| Replacement Part | Item Number | Description |
|--------------------|-----------------|--|
| Water Coil | Contact Factory | 3/8" Water Coil |
| Blower Wheel | W94 | Wheel 9D X 4W (Size 4 & 6) |
| Blower Wheel | W39 | Wheel 10D X 6W (Size 8 & 10) |
| Blower Wheel | W35 | Wheel 10D x 8W (Size 12 only) |
| Relay Transformer | E1332 | Transformer, 120/24V (120) |
| Relay Transformer | E137 | Transformer, 208-240/24V (208-240) |
| Relay Transformer | E1355 | Transformer, 277/24V (277) |
| Terminal Block | E161 | Terminal Block, 120V |
| Terminal Block | E16210020 | Terminal Block, 10 Pole |
| Service Switch | E184 | Service Switch, (120-240V) |
| Service Switch | E1831 | Service Switch, (277V) |
| Drain Pan Assembly | 360-148-1 | Drain Pan Asm, 4-12 CW-R, SS, Not Coated |
| Drain Pan Assembly | 360-148-1C | Drain Pan Asm, 4-12 CW-R, SS, Coated |
| Filter | AF18141 | 18" x 14" x 1" MERV 3/4 (Size 4 & 6) |
| Filter | AF18181 | 18" x 18" x 1" MERV 3/4 (Size 8 & 10) |
| Filter | AF18201 | 18" x 20" x 1" MERV 3/4 (Size 12 only) |
| Replacement Motor | 9MVX033430 | Size 4, 120V |
| Replacement Motor | 9MVX033436 | Size 4, 208-240V |
| Replacement Motor | 9MVX033441 | Size 4, 277V |
| Replacement Motor | 9MVX033431 | Size 6, 120V |
| Replacement Motor | 9MVX033437 | Size 6, 208-240V |
| Replacement Motor | 9MVX033442 | Size 6, 277V |
| Replacement Motor | 9MVX033432 | Size 8, 120V |
| Replacement Motor | 9MVX033438 | Size 8, 208-240V |
| Replacement Motor | 9MVX033443 | Size 8, 277V |
| Replacement Motor | 9MVX033433 | Size 10, 120V |
| Replacement Motor | 9MVX033439 | Size 10, 208-240V |
| Replacement Motor | 9MVX033444 | Size 10, 277V |
| Replacement Motor | 9MVX033434 | Size 12, 120V |
| Replacement Motor | 9MVX033440 | Size 12, 208-240V |
| Replacement Motor | 9MVX033445 | Size 12, 277V |

NOTES



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The manufacturer works to continually improve its products. It reserves the right to change design and specifications without notice.

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