



MANUAL – INSTALLATION

Direct-Drive Horizontal Blower Coils

BCHD

v200 – Issue Date: 11/30/22

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PRICE[®]

DIRECT-DRIVE HORIZONTAL BLOWER COILS

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DIRECT-DRIVE HORIZONTAL BLOWER COILS

PRODUCT OVERVIEW

Safety Precautions

- A. Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
- B. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.
- C. Use this unit only in the manner intended by the manufacturer. If you have any questions, contact the manufacturer:

In the United States

2975 Shawnee Ridge Court
Suwanee, Georgia USA 30024
Ph: 770.623.8050
Fax: 770.623.6404

*In Canada or International Export
Sales Office*

638 Raleigh Street
Winnipeg, Manitoba
Canada R2K 3Z9
Ph: 204.669.4220
Fax: 204.663.2715

- D. Before servicing or cleaning unit, switch power off at service panel and lock service panel to prevent power from being switched on accidentally.
- E. Protect flammable materials nearby when brazing, Use flame and heat protection barriers where needed. Always have a fire extinguisher ready.
- F. The manufacturer assumes no responsibility for personal injury or property damage resulting from improper handling, installation, service or operation of the product.

Caution to Contractors

Blower Coil units are not intended for use as temporary heat or ventilation sources during building construction. The coil units are not designed nor equipped to operate in a dusty construction environment. Recirculating fan wheels can become coated in construction dust, resulting in an unbalanced wheel. This in turn can contribute to reduced motor life. Inlet air filters, if supplied, would provide little protection as they would quickly become plugged with construction dust.

Receiving Inspection

All Price Blower Coil units are inspected before shipment. After unpacking the assembly, check it for damage. If any damage to the products is found, report it immediately to the delivery carrier. Ensure that all packing material is removed from the inside of the unit, especially around the blower wheel and coil section.

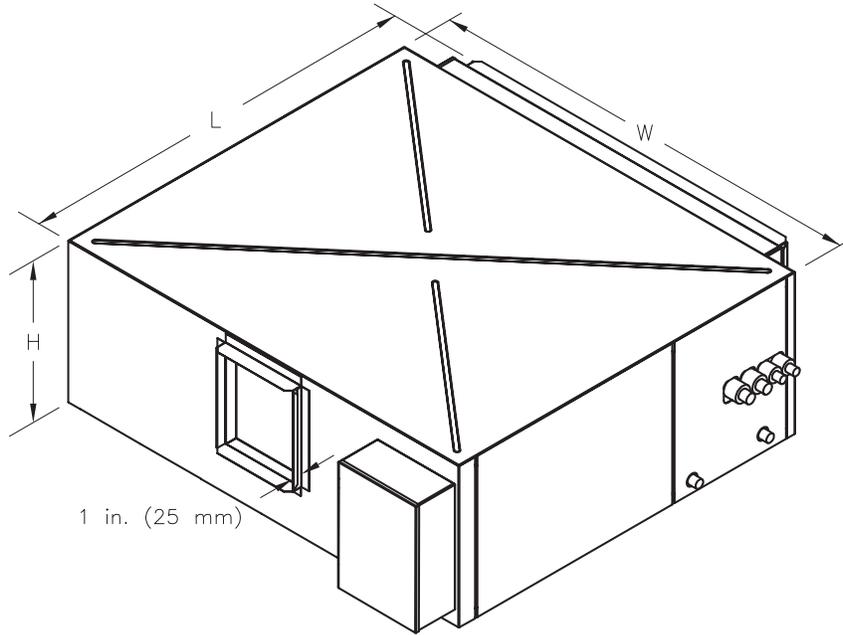
BCHD ▼



DIRECT-DRIVE HORIZONTAL BLOWER COILS

PRODUCT OVERVIEW

DIMENSIONAL DATA - BCHD ▼



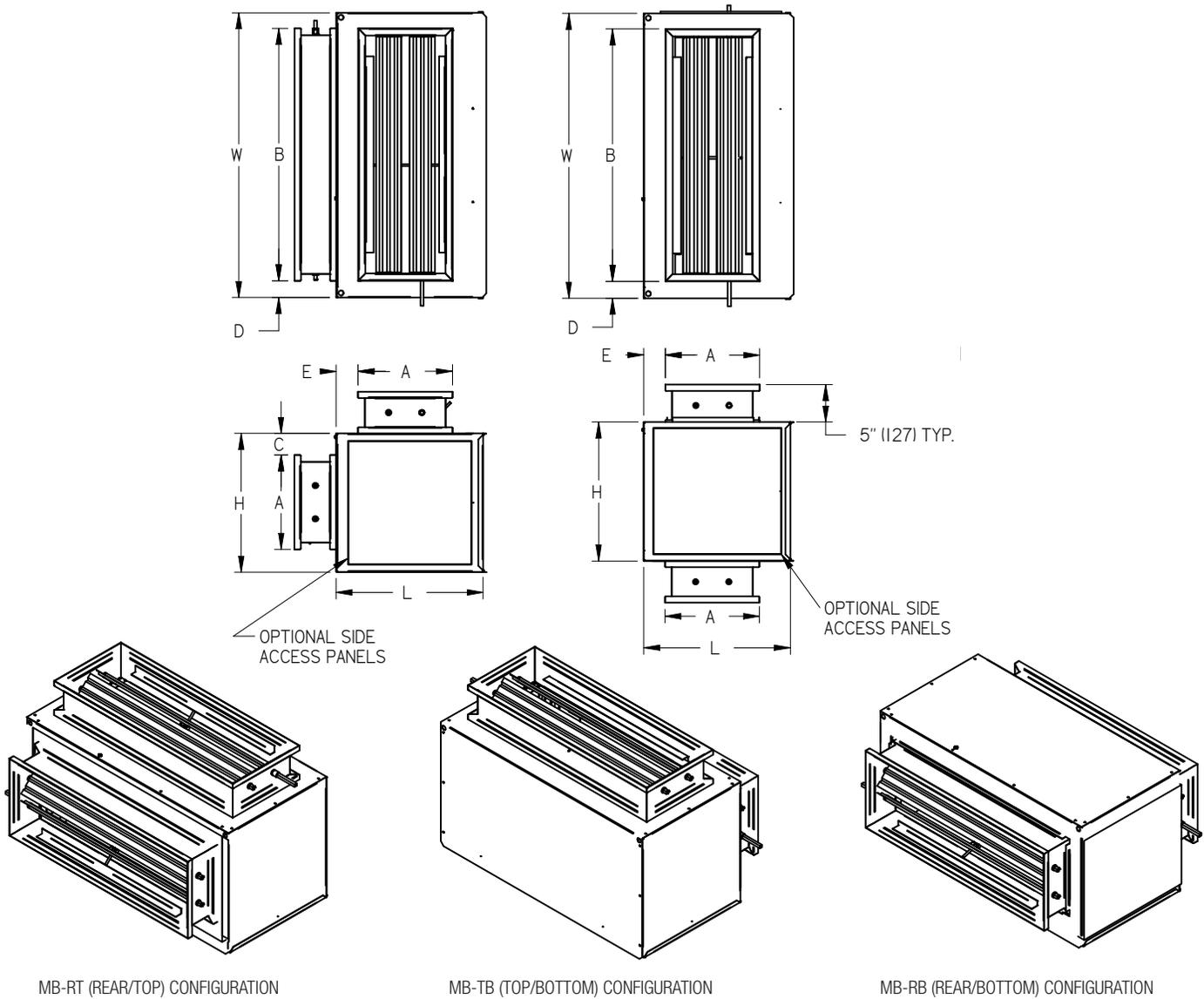
| Size | Length (L) | Width (W) | Height (H) |
|------|----------------------|------------------|---------------------|
| 08 | 46 7/8 in. (1191 mm) | 30 in. (762 mm) | 15 1/2 in. (394 mm) |
| 12 | | 38 in. (965 mm) | |
| 16 | | 44 in. (1118 mm) | 19 in. (483 mm) |
| 20 | 53 7/8 in. (1368 mm) | 50 in. (1270 mm) | 25 in. (635 mm) |
| 30 | | 52 in. (1321 mm) | |
| 40 | | 65 in. (1651 mm) | |

DIRECT-DRIVE HORIZONTAL BLOWER COILS

PRODUCT OVERVIEW

DIMENSIONAL DATA - BCHD - BLOWER COIL HORIZONTAL WITH MIXING BOX ▼

All metric dimensions () are soft converted. Imperial dimensions are converted to metric and rounded to the nearest millimeter.



Dimensional Data - IP (in.) / SI [mm]

| Unit Size | A | B | C | D | E | L | W | H |
|-----------|-----------|-----------|---------|---------|---------|-----------|------------|-----------|
| 08 | 9¼ [235] | 16¼ [413] | 2⅞ [54] | 2⅞ [54] | 1⅝ [41] | 14⅞ [359] | 20¼ [514] | 13¼ [337] |
| 12 | 9¼ [235] | 24¼ [616] | 2⅞ [54] | 2⅞ [54] | 1⅝ [41] | 14⅞ [359] | 28¼ [718] | 13¼ [337] |
| 16 | 11¼ [286] | 30¼ [768] | 2⅞ [60] | 2⅞ [54] | 1⅞ [48] | 17⅞ [454] | 34¼ [870] | 16¼ [425] |
| 20 | 11¼ [286] | 36¼ [921] | 2⅞ [60] | 2⅞ [54] | 1⅞ [48] | 17⅞ [454] | 40¼ [1022] | 16¼ [425] |
| 30 | 16¼ [413] | 37¼ [946] | 3⅞ [86] | 2⅞ [54] | 2⅞ [73] | 23⅞ [600] | 41¼ [1048] | 22¼ [578] |
| 40 | 16¼ [413] | 48 [1219] | 3⅞ [86] | 3¼ [83] | 2⅞ [73] | 23⅞ [600] | 54¼ [1378] | 22¼ [578] |

DIRECT-DRIVE HORIZONTAL BLOWER COILS

INSTALLATION & MOUNTING INSTRUCTIONS

General

Price Blower Coils are designed to be durable and manufactured for sturdy construction. The units must still be handled with great care and no force or pressure applied to the coil or piping. When handled, the unit should be carried in an upright position holding onto the mounting points on the horizontal units and holding onto the bottom of the vertical units. Do not handle the unit using coil stubout connectors, as damage may occur at brazed joint(s). The blower coils are not suitable for outdoor installations. The units should never be stored or installed where it may be subjected to a hostile environment such as rain, snow, or extreme temperatures. Care must be taken during and after installation to prevent foreign material such as paint, drywall mud or dust from entering the drain pan or the motor or blower wheels. Failure to do so may have serious effects on the unit performance and may cause premature failure if foreign material is allowed to be deposited into the motor or blower. Some job conditions may require the unit to be covered temporarily until installation.

WARNING: Do not tamper with control components.

Electrical Connection

CAUTION: Disconnect all incoming power before any electrical installation or service is performed on the unit(s). All field wiring is to be in accordance with the National Electrical Code ANSI/NFPA No. 70 or the Canadian Electrical Code, Part 1, CSA Standard C 22.1. Refer to the product identification label on each unit for information to determine the field wire size. Check voltage requirements prior to power supply connection. Refer to the electrical label located near the electrical control box and also refer to the schematic drawing provided on the underside of the electrical control box cover. If upon energizing the electric motor excessive noise is apparent, shut down the unit. Determine the cause by checking for packing materials, etc. and re-energize after corrective action has been taken.

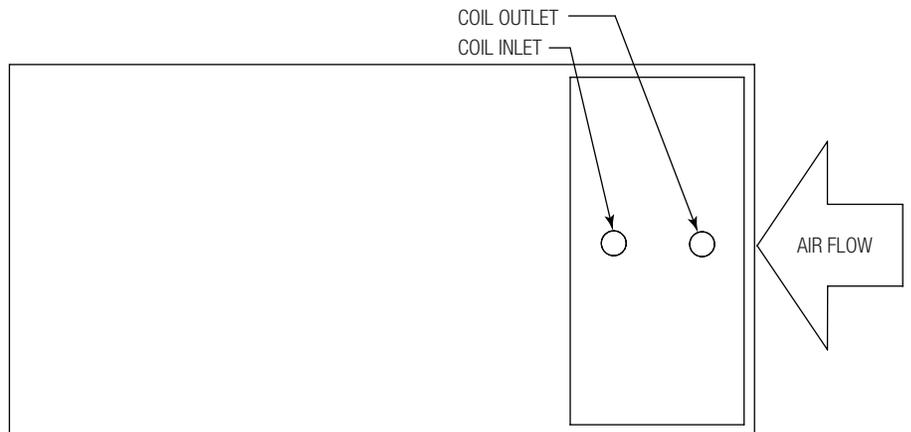
Cooling/Heating Pipe Connections

The piping must be installed in a counter flow configuration to achieve optimal performance. The water inlet should be located on the leaving air side of the coil and the outlet should be located on the entering air side of the coil as shown below.

The valve packages are easily damaged when introduced to excessive amounts of heat. Great caution must be made when the connections are made with “sweat” or solder joints. The valve must be in the open position during all soldering and brazing operations. Heat should be dissipated with a wet cloth wrapped around the valve body. Automatic valves must have the control cartridge removed for soldering.

Mounting the Unit

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DIRECT-DRIVE HORIZONTAL BLOWER COILS

INSTALLATION & MOUNTING INSTRUCTIONS

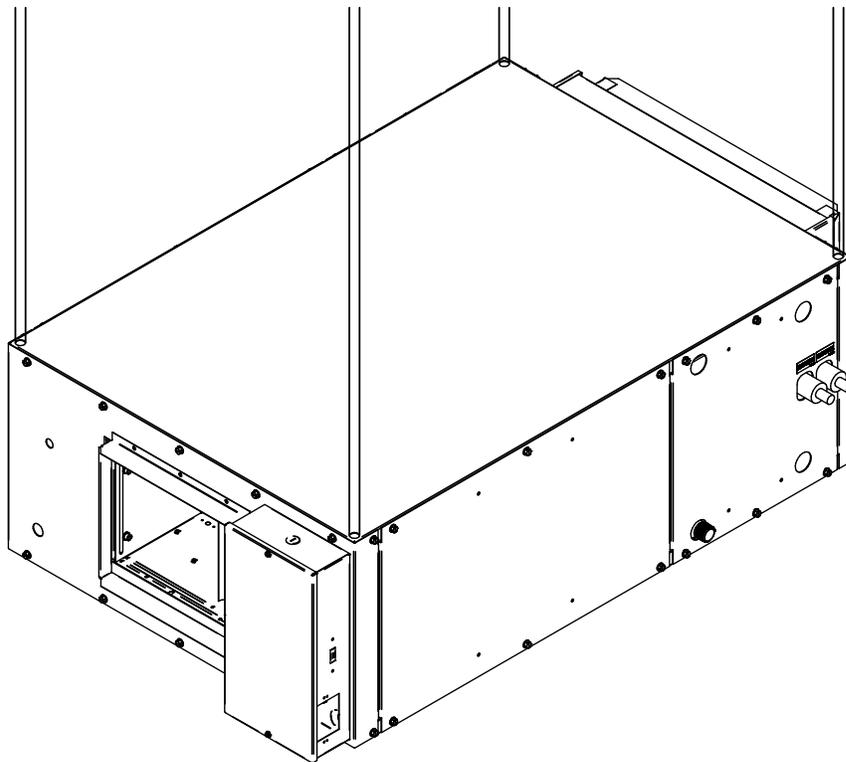
Install ductwork to comply with ASHRAE Fundamentals Handbook, local building codes and the National Electric Code. Locate unit support in accordance with the mechanical and structural plans.

Hanging rods should be securely attached to joints or to mounting anchors which are properly secured to slab construction with lugs or poured in place anchors. All units are equipped with 5/8" knockouts in each corner of top and bottom panels for suspension rods to pass through as shown to the right.

Do not use Hanger brackets to install unit. Ensure the unit is installed so there is sufficient clearance for normal servicing. The drain pan is sloped toward the outlet connection when the unit is installed level and plumb. Ensure main power to the unit has been disconnected prior to performing any electrical work or inspection of the circuitry.

WARNING: Ensure that the mechanical fastener used on the hanger rod forms a lock so that it is incapable of vibrating loose. Serious injury and/or property damage may occur if the unit is not properly mounted.

CAPTION ▼



DIRECT-DRIVE HORIZONTAL BLOWER COILS

INSTALLATION & MOUNTING INSTRUCTIONS

BCHD Field Reversible Coil Instructions

Price Blower Coils are equipped with Field Reversible Coils, meaning they can be changed from left hand to right hand arrangement. The example below details how to change the coil configuration from LH to RH.

1. Remove the filter access panels, coil stub-out panel and coil access panel (**Figure 1**).
2. Remove the 6 screws on the inlet of the unit holding the coils in place (**Figure 2**).
3. Slide the coil and drain pan out of the unit. Remove the coils from the drain pan (**Figure 3**).
4. Where the drain pan was resting, there will be an angled bracket with two screws. Remove the screws and relocate them to the side of the unit furthest from where the new drain will be located. This ensures the drain pan is sloped properly (**Figure 4**).
5. Rotate the drain pan 180° so that the drain connection is on the desired side. Ensure the drain pan is resting on the angle bracket.
6. Flip the coils so that the connections are on the desired side. Note that the air will still enter the coil through the same face (**Figure 5**).
7. Re-attach the coil to the unit using the 6 screws removed in step 2.
8. Re-attach the coil access panel, coil stub-out panel, and the filter access panels.

FIGURE 1 ▼

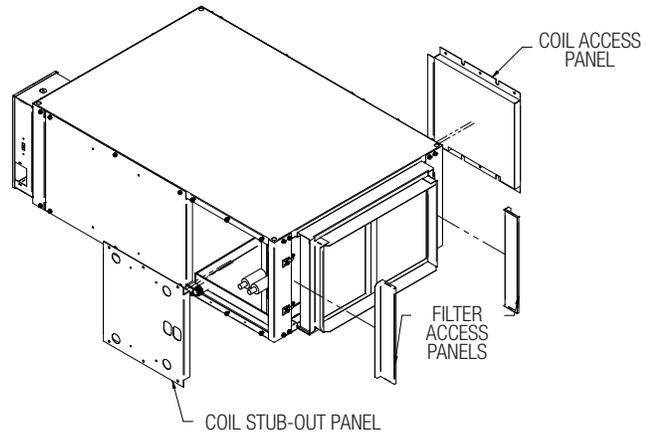


FIGURE 2 ▼

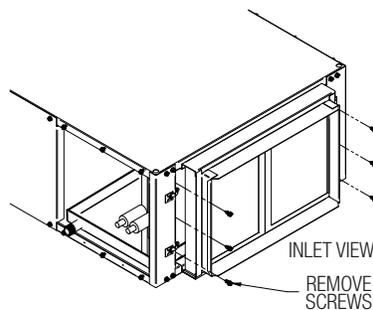


FIGURE 3 ▼

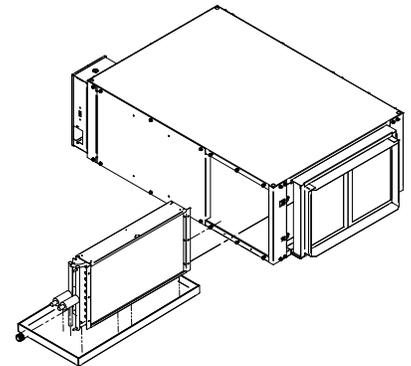


FIGURE 4 ▼

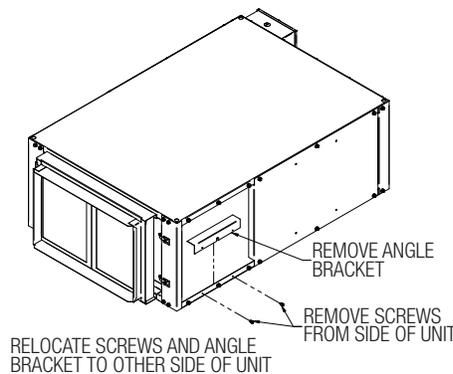
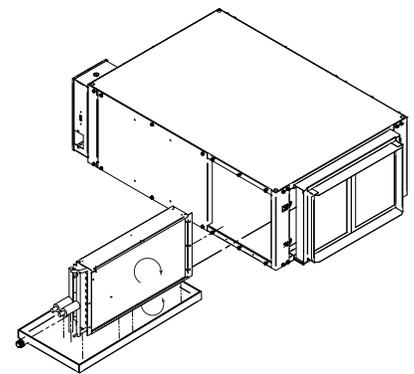


FIGURE 5 ▼



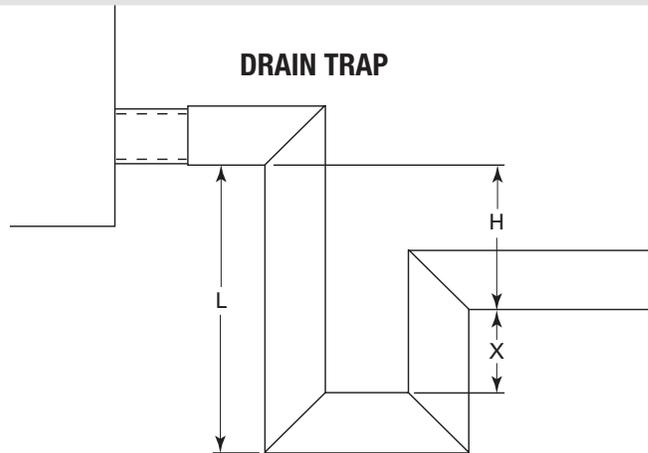
DIRECT-DRIVE HORIZONTAL BLOWER COILS

INSTALLATION & MOUNTING INSTRUCTIONS

Drain Connection and Trap

Drain lines should be the same size as the drain connection and require a drain trap to allow proper drainage of the coil condensate. Failure to install a proper trap will cause excessive amounts of condensate to pool in the drain pan which can lead to condensate carryover.

CAPTION ▼



| |
|---|
| H = INTERNAL STATIC PRESSURE OF THE UNIT + 1" |
| X = ½ OF "H" |
| L = H + X + PIPE DIAMETER |

DIRECT-DRIVE HORIZONTAL BLOWER COILS

INSTALLATION & MOUNTING INSTRUCTIONS

Start Up & Operation

General

Before beginning start up operation, familiarize yourself with the unit, options, accessories, controls so you understand proper system operation. All personnel should have a good working knowledge of general start-up procedures and have the appropriate start-up and balancing guides available for consultation.

Cooling/Heating

Prior to the water system start-up and balancing, the chilled/hot water systems should be flushed to clean out dirt and debris, which may have collected in the piping during construction. During this procedure, all unit service valves must be in the closed position. This prevents foreign matter from entering the unit and clogging the valves and metering devices. Filters should be installed in the piping mains to prevent this material from entering the units during normal operation. During system filling, air venting from the unit is accomplished by the use of the standard manual air vent fitting installed on the coil. The air vent screw should be turned counterclockwise no more than 1-½ turns to operate the air vent.

CAUTION: The air vent provided on the unit is not intended to replace the main system air vents and may not release air trapped in other parts of the system. Inspect the entire system for potential air traps and vent those areas as required, independently. In addition, some systems may require repeated venting over a period of time to properly eliminate air from the system.

Air System Balancing

All duct-work must be complete and connected, and all grilles, filters, access doors and panels must be properly installed to establish actual system operating conditions BEFORE beginning air balancing operations. Each individual unit and attached duct-work is a unique system with its own operating characteristics. For this reason, air balancing is normally done by balance specialists who are familiar with all procedures required to properly establish air distribution and fan system operating conditions. These procedures should not be attempted by unqualified personnel. After the proper system operation is established, the actual unit air delivery and the actual fan motor amperage draw for each unit should be recorded in a convenient place for future reference.

The manufacturer assumes no responsibility for undesirable

system operation due to improper design, equipment or component selection, and/or installation of ductwork, grilles, and other field supplied components.

Water System Balancing

A complete knowledge of the hydronic system, its components, and controls is essential to proper water system balancing and this procedure should not be attempted by unqualified personnel. The system must be complete and all components must be in operating condition BEFORE beginning water system balancing operations. Each hydronic system has different operating characteristics depending on the devices and controls in the system. The actual balancing technique may vary from one system to another. After the proper system operation is established, the appropriate system operating conditions such as various water temperatures and flow rates should be recorded in a convenient place for future reference. Before and during water system balancing, conditions may exist which can result in noticeable water noise or undesired valve operation due to incorrect system pressures. After the entire system is balanced, these conditions will not exist on properly designed systems.

DIRECT-DRIVE HORIZONTAL BLOWER COILS

MAINTENANCE

Fan and Motor

1. Disconnect all incoming power before servicing the unit.
2. Price Blower Coil units are supplied with permanently lubricated motors.
3. The blower and motor should be inspected annually for accumulation of dust and dirt. Clean as necessary.
4. Blower and motor can be accessed without disconnecting ductwork.

CAUTION: Motor may be very hot. Ensure motor has cooled before service.

| MOTOR INFORMATION | | | | | |
|-------------------|--------------------|----------------|------|------|------|
| Unit Size | Nominal Horsepower | Full Load Amps | | | |
| | | 115V | 208V | 240V | 277V |
| 08 | 1/2 | 7.7 | 5.0 | 4.3 | 4.1 |
| 12 | 3/4 | 9.6 | 7.3 | 6.8 | 5.5 |
| 16 | 1 | 12.8 | 9.4 | 9.1 | 6.9 |
| 20 | 1 | 12.8 | 9.4 | 9.1 | 6.9 |
| 30 | 2 Motors @ 3/4 | 19.2 | 14.6 | 13.6 | 11.0 |
| 40 | 2 Motors @ 1 | 25.6 | 18.8 | 18.2 | 13.8 |

NOTES:

- FLA for sizes 30 & 40 include dual motors.
- Actual nameplate amps may vary but will not exceed values shown.
- ECM motors are impedance protected and provides the same protection as a thermal overload motor. This complies with VL 2111 overheating protection for motors.

Coils

1. Disconnect all incoming power before servicing the unit.
2. Coils can be inspected through either bottom or side access panels. To service the coils, remove the coil service door.
3. The coil should be inspected periodically for accumulation of dust and dirt. Clean as necessary. Cleaning can be done by brushing the coils in the direction of the fins as to not damage them. Compressed air can also be used to blow out the dust particles in the coil. Vacuum up all dust particles so they can not damage the blower and motor.
4. Clean drain pan as required. To remove the drain pan, disconnect and remove the coils.

Filter(s)

1. Inspect return air filters on a regular basis to avoid excessive restriction of air flow. Clean or replace filters as required. Filter can be accessed from either side of unit or from the bottom.

CAUTION: Do not operate unit without filters or filter access panels installed.

2. Replacement filter sizes are listed below.

| Unit | H (in) | W (in) | Quantity |
|------|--------|--------|----------|
| 08 | 14.375 | 10.875 | 2 |
| 12 | 14.375 | 14.875 | 2 |
| 16 | 18 | 18 | 2 |
| 20 | 18 | 20.750 | 2 |
| 30 | 23.875 | 21.375 | 2 |
| 40 | 23.875 | 27.875 | 2 |

DIRECT-DRIVE HORIZONTAL BLOWER COILS

MAINTENANCE

Replacement Parts

| Component | Part # | Description | Unit Size |
|--------------|------------|---|-----------------|
| Motors | 019179-003 | 3/4 HP, 115-277V | Size 30 |
| | 019179-004 | 1 HP, 115-277V | Size 16, 20, 40 |
| | 019179-007 | 1/2 HP, 115-277V, Remote-mount | Size 08 |
| | 019179-008 | 3/4 HP, 115-277V, Remote-mount | Size 12 |
| Motor Mounts | 019732-001 | Belly Band, 3 Leg, 120 deg, 5.6 Diameter | Size 08, 12 |
| | 019733-001 | Belly Band, 4 Leg, 70/110 deg, 5.6 Diameter | Size 16, 20, 30 |
| | 019734-002 | Belly Band, 4 Leg, 90 deg, 5.6 Diameter | Size 40 |
| Blowers | 100185-003 | 100-6R | Size 08, 12 |
| | 100186-007 | 120-11T | Size 40 |
| | 100092-004 | 100-10T | Size 16, 20, 30 |

DIRECT-DRIVE HORIZONTAL BLOWER COILS

MAINTENANCE

| Component | Part # | Description | Unit Size |
|--|-----------------------|-----------------------|-----------|
| Coils NOTE: XX in Coil Part # represents the number of circuits in the coil. | 023441-1XX | BCH Water Coil, 6 Row | Size 08 |
| | 023441-2XX | BCH Water Coil, 6 Row | Size 12 |
| | 023441-3XX | BCH Water Coil, 6 Row | Size 16 |
| | 023441-4XX | BCH Water Coil, 6 Row | Size 20 |
| | 023441-5XX | BCH Water Coil, 6 Row | Size 30 |
| | 023441-6XX | BCH Water Coil, 6 Row | Size 40 |
| | 023442-1XX | BCH Water Coil, 4 Row | Size 08 |
| | 023442-2XX | BCH Water Coil, 4 Row | Size 12 |
| | 023442-3XX | BCH Water Coil, 4 Row | Size 16 |
| | 023442-4XX | BCH Water Coil, 4 Row | Size 20 |
| | 023442-5XX | BCH Water Coil, 4 Row | Size 30 |
| | 023442-6XX | BCH Water Coil, 4 Row | Size 40 |
| | 023443-1XX | BCH Water Coil, 1 Row | Size 08 |
| | 023443-2XX | BCH Water Coil, 1 Row | Size 12 |
| | 023443-3XX | BCH Water Coil, 1 Row | Size 16 |
| | 023443-4XX | BCH Water Coil, 1 Row | Size 20 |
| | 023443-5XX | BCH Water Coil, 1 Row | Size 30 |
| | 023443-6XX | BCH Water Coil, 1 Row | Size 40 |
| | 023444-1XX | BCH Water Coil, 2 Row | Size 08 |
| | 023444-2XX | BCH Water Coil, 2 Row | Size 12 |
| | 023444-3XX | BCH Water Coil, 2 Row | Size 16 |
| | 023444-4XX | BCH Water Coil, 2 Row | Size 20 |
| | 023444-5XX | BCH Water Coil, 2 Row | Size 30 |
| | 023444-6XX | BCH Water Coil, 2 Row | Size 40 |
| | 023445-1XX | BCH Water Coil, 3 Row | Size 08 |
| | 023445-2XX | BCH Water Coil, 3 Row | Size 12 |
| | 023445-3XX | BCH Water Coil, 3 Row | Size 16 |
| | 023445-4XX | BCH Water Coil, 3 Row | Size 20 |
| | 023445-5XX | BCH Water Coil, 3 Row | Size 30 |
| | 023445-6XX | BCH Water Coil, 3 Row | Size 40 |
| | 023447-1XX | BCH Water Coil, 8 Row | Size 08 |
| | 023447-2XX | BCH Water Coil, 8 Row | Size 12 |
| | 023447-3XX | BCH Water Coil, 8 Row | Size 16 |
| | 023447-4XX | BCH Water Coil, 8 Row | Size 20 |
| 023447-5XX | BCH Water Coil, 8 Row | Size 30 | |
| 023447-6XX | BCH Water Coil, 8 Row | Size 40 | |

DIRECT-DRIVE HORIZONTAL BLOWER COILS

MAINTENANCE

| Component | Part # | Description | Unit Size |
|--------------------|------------|------------------------------------|--|
| Filters | 042313-001 | 2" Merv 8 filter, 14.375 x 10.875 | Size 08 |
| | 042313-002 | 2" Merv 8 filter, 14.375 x 14.875 | Size 12 |
| | 042313-005 | 2" Merv 8 filter, 23.875 x 21.375 | Size 30 |
| | 042313-006 | 2" Merv 8 filter, 23.875 x 27.875 | Size 40 |
| | 042313-060 | 2" Merv 8 filter, 18.000 x 18.000 | Size 16 |
| | 042313-061 | 2" Merv 8 filter, 18.000 x 20.750 | Size 20 |
| | 042314-001 | 2" Merv 13 filter, 14.375 x 10.875 | Size 08 |
| | 042314-002 | 2" Merv 13 filter, 14.375 x 14.875 | Size 12 |
| | 042314-005 | 2" Merv 13 filter, 23.875 x 21.375 | Size 30 |
| | 042314-006 | 2" Merv 13 filter, 23.875 x 27.875 | Size 40 |
| | 042314-044 | 2" Merv 13 filter, 18.000 x 18.000 | Size 16 |
| | 042314-045 | 2" Merv 13 filter, 18.000 x 20.750 | Size 20 |
| Disconnect Switch | 019903-001 | 1 Pole, 115/277V | Size 08, 12, 16, 20 - 115V or 277V motor |
| | 019903-003 | 2 Pole, 115-277V | Size 08, 12, 16, 20 - 208V or 240V motor Size 30, 40 - all motors |
| Control Components | 232953-100 | ECM Speed Controller | All Sizes |
| | 019186-002 | 6 Foot Speed Controller Cable | Size 16, 20, 30, 40 |
| | 019186-015 | 2 Foot Speed Controller Cable | Size 08, 12 |
| | 019064-013 | Low Voltage Terminal Block | All Sizes |
| | 019949-002 | High Voltage Terminal Block | All Sizes |
| | 019436-001 | 115/24V Transformer, 50VA | All Sizes |
| | 019436-009 | 24/24V Transformer, 50VA | All Sizes |
| | 019436-011 | 208-240/24V Transformer, 50 VA | All Sizes |
| | 019439-001 | 277/24V Transformer, 50VA | All Sizes |
| Fuse Block | 019459-001 | Fuse Block 600V 30A | All Sizes |

DIRECT-DRIVE HORIZONTAL BLOWER COILS

MAINTENANCE

Installation Checklist

Receiving & Inspection

- Receiving & inspection
- Unit received undamaged
- All parts accounted for
- Unit arrangement/hand correct

Handling and Installation

- Unit mounted level and plumb
- Correct electrical service
- Proper access available for unit and components
- Correct overcurrent protection provided
- Correct service switch/disconnect provided
- Code compliance for all components
- Shipping screws and hardware removed
- Unit protected from dirt and foreign matter
- Set screws tightened

Cooling/Heating Connections

- Unit mounted level and plumb
- Proper access available for unit and components
- Correct chilled water line to the unit
- Correct hot water line to the unit
- Code compliance for all components
- Drain pan sloped properly

Ductwork Connections

- All ductwork, grilles, filters and access panels are installed
- Correct supply and return grille type and size
- Insulate ductwork as required
- Control outside air to protect from heat/cold

Electrical Connections

- Refer to unit wiring diagram
- Wiring in code compliance
- Connect power service

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