

Installation, Operation, & Maintenance

IOM 7602
Rev. B 07/25

VCB, VFB, VSB & WCB SERIES Vertical Console Fan Coil Units

ATTENTION:

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



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The Manufacturer works to continually improve its products and as a result, it reserves the right to change design and specifications without notice.



WARNING/AVERTISSEMENT



These instructions are intended as an aid to qualified, licensed, service personnel for proper installation, adjustment and operation of this unit. Read these instructions thoroughly before attempting installation or operation. Failure to follow these instructions may result in improper installation, adjustment, service or maintenance possibly resulting in fire, electrical shock, property damage, personal injury or death.

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SAFETY CONSIDERATIONS

1. **READ THE ENTIRE MANUAL BEFORE STARTING THE INSTALLATION.**
2. Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock, or other conditions which may cause personal injury damage.
3. Consult a qualified licensed installer, service agency, or your distributor for information assistance. The qualified licensed installer or service agency must use factory-authorized kits or accessories when servicing this product.
4. Refer to the individual instructions packaged with kits or accessories when installing.
5. Follow all safety codes.
6. Read these instructions thoroughly and follow all warnings or cautions attached to the unit. Consult local building codes and National Electrical Code (NEC) for special requirements.

This appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.

Children should be supervised to ensure that they do not play with the appliance

Use adequate personal protection equipment when installing and performing maintenance. After switching off and locking-out an electrical disconnect, verify a safe condition with an electrical tester. Discharge a capacitor before handling any PSC motor and wiring. Use eye protection, cut resistant gloves and sleeves to protect against metal edges and screws.

RECOGNIZE THE FOLLOWING SAFETY NOTATIONS THROUGHOUT THIS MANUAL AND POSTED ON THE EQUIPMENT:

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

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

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

	IMPORTANT	
Suggests important procedure steps to insure proper installation, reliability, or operation		

	WARNING	
	FIRE OR EXPLOSION HAZARD	
Indicates a potential fire or explosion hazard that could result in personal injury, death and /or property damage.		

	NOTE	
Used to highlight suggestions, which may result in enhanced installation, reliability or operation		

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

SAFETY ACKNOWLEDGMENTS



NOTE



This unit may be installed at altitudes up to 10,000 ft.
(3048 m)



WARNING



These instructions are intended to aid qualified, licensed, service personnel in proper installation, adjustment and operation of this unit. Read these instructions thoroughly before attempting installation or operation. Failure to follow these instructions may result in improper installation, adjustment, service or maintenance possibly resulting in fire, electrical shock, property damage, personal injury or death



CAUTION



All appropriate personal protection equipment should be worn when servicing or maintaining this unit. Personal injury can result from sharp metal edges, moving parts, and hot or cold surfaces.



WARNING



ELECTRIC SHOCK HAZARD



Disconnect all power supplies before servicing. Lock out/tag out to prevent accidental electrical shock.



WARNING



FIRE OR EXPLOSION HAZARD



Failure to follow safety warnings exactly could result in property damage, dangerous operation, serious injury, or death. Improper servicing could result in dangerous operation, serious injury, death, or property damage.

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



WARNING



Do not exceed the maximum operating pressure listed on the unit rating plate.



WARNING



Do not exceed 180° F (82° C) water temperature in the coil.



WARNING



- Always wear eye protection.
- When fan coil is operating, some components are operating at high speeds. Do not touch rotating items with any object
- Return and secure all electrical and service access panels in their proper place.
- Clear surrounding area of all tools, equipment and debris.
- Check the entire unit to ensure its cleanliness



WARNING



Do not exceed 400 psig (27.6 bar) pressure in the water coil.



CAUTION



Unit must not be operated in any mode during building construction due to excessive airborne dust and debris. Also, the unit must never run under any circumstances without an air filter in place.



CAUTION



Extreme caution must be taken that no internal damage will result if screws or holes are drilled into the cabinet.

SAFETY ACKNOWLEDGMENTS CONTINUED



WARNING



- Always wear eye protection when working on equipment.
- Before servicing unit, always turn off all power to unit. There may be more than one disconnects switch. Electrical shock can cause personal injury or death.
- When fan coil is operating, some components are operating at high speeds. Personal injury can result from touching these items with any object.
- All electrical and service access panels must be secured in their proper place before operating equipment.
- Clear surrounding area of all tools, equipment and debris before operating unit.

GENERAL INFORMATION

The manufacturer assumes no responsibility for equipment installed in violation of any code requirement.

These instructions give information relative to the installation of these fan coil units only. For other related equipment refer to the proper instructions. Material in this shipment has been inspected at the factory and released to the transportation agency in good condition. When received, a visual inspection of all cartons should be made immediately. Any evidence of rough handling or apparent damage should be noted on the delivery receipt and the material inspected in the presence of the carrier's representative. If damage is found, a claim should be filed against the carrier immediately.

The installer must adhere strictly to all local and national code requirements pertaining to the installation of this equipment.

These units are designed to be installed vertically with zero clearance to combustible materials.

PRE-INSTALLATION CONSIDERATIONS

1. Determine location for mounting the unit to insure best air circulation within the room.
2. Determine proper cabinet orientation. (See **Figure 1.**)
3. Determine routing of water lines and electrical service to unit.
4. A condensate line will need to be routed to an open drain trap.
5. Location of unit must be in an area providing adequate access to the unit since all components must be serviced from the front of the unit.
6. WCB unit must be wall mounted a minimum of 6 inches above the floor.

DETERMINATION OF RIGHT/LEFT HAND REFERENCES

1. Right-hand / Left-hand determination is based on looking at the fan coil unit from the front.
2. Right-hand units have the thermostat / control box on the left-hand side and the coil / valve connections and drain pan are on the right-hand side.
3. Left-hand units have the thermostat / control box on the right-hand side and the coil / valve connections and drain pan are on the left-hand side.

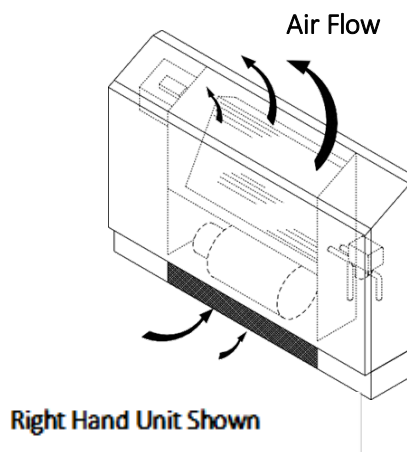


Figure 1

VSB/VFB SERIES (Floor Exposed)

1. Mounting location must allow enough clearance to permit removal of cabinet panels.
2. After selecting the location for the unit, remove the front panel. The front panel must be removed on the VS or VF unit to gain access to the coil, drain connections and electrical junction box. To accomplish this, pull firmly on the lower cabinet door (each side) (Figure 2) until the cabinet releases from its friction fastener. Proceed to lift the door assembly straight up and off the cabinet frame.



Figure 2

3. Position the unit in its permanent location, making sure it is level to ensure proper drainage and operation, and secure the unit in place. Two 1/2-inch holes have been provided on each end of the unit for securing the unit to the wall along with two 5/16-inch holes on each end of the cabinet frame to secure cabinet frame to wall. It is recommended that all mounting holes be used for proper installation. (Figure 3)



Figure 3

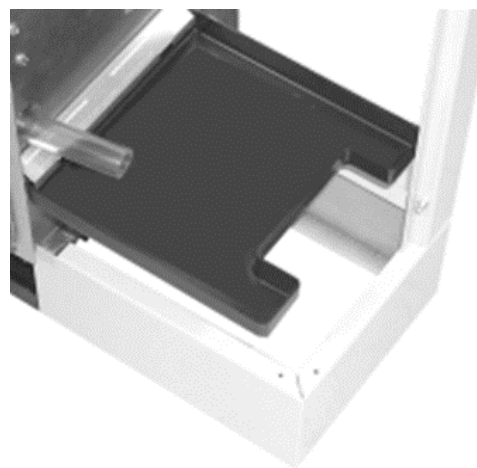


Figure 4

4. Note the 1-1/2" x 4-1/2" indentation in the plastic drain pan (Figure 4). This area is provided for the supply and return runouts if they are brought up from below the pan. All piping must be well insulated to prevent sweating. There is a 0.84" OD condensate drain connection on the secondary drain pan suitable to receive a standard 3/4" PVC coupling / elbow. Remove or cover the secondary drain pan before soldering the supply and return coil connections as hot solder or the torch flame may damage the pan.

VSB/VFB SERIES (Floor Exposed) CONTINUED

5. Solder the 5/8" coil connections in accordance with local codes and regulations.
6. After coil connections have been made, check for leaks and bleed the air from the system by venting each coil. (**Figure 5**)



Figure 5

VCB SERIES (Concealed Applications)

1. Mounting location must allow enough clearance to permit the removal of screws that secure the cabinet panels.
2. After selecting the location for the unit, remove the front panel.
3. Position the unit in its permanent location, making sure it is level to ensure proper drainage and operation, and secure the unit in place. Two 1/2-inch holes have been provided on each end of the unit for securing the unit to the wall. It is recommended that all four mounting holes be used for proper installation. (**Figure 6**)



Figure 6

4. Note the 1-1/2" x 4-1/2" indentation in the plastic drain pan (**Figure 3**). This area is provided for the supply and return runouts if they are brought up from below the pan. All piping must be well insulated to prevent sweating. There is a 0.84" OD condensate drain connection on the secondary drain pan suitable to receive a standard 3/4" PVC coupling / elbow. Remove or cover the secondary drain pan before soldering the supply and return coil connections as hot solder or the torch flame may damage the pan.
5. Solder the 5/8" coil connections in accordance with local codes and regulations.
6. After coil connections have been made, check for leaks and bleed the air from the system by venting each coil. (**Figure 5**)
7. Refer to catalog data for the particular unit to make sure that the external static pressure of the duct and grille are within the limits of the unit. The duct should be designed for velocities in accordance with the methods outlined in the ASHRAE guidebooks.

It is recommended that airborne noise be controlled with sound absorbing materials and by installing a flexible connection between the unit and ductwork.

8. Replace the front panel and secure with screws.

WCB SERIES (Recessed Wall)

1. Mounting location must allow enough clearance to permit the removal of all mechanical parts within the unit. Unit must be wall mounted such that the bottom of the unit is 6 inches above the floor to allow the wall panel proper clearance for mounting.
2. Frame the unit as required so the front panel of the wall unit will be flush with the drywall surface when installed.
3. Frame around the perimeter of the unit as required for securing the drywall. See figure 6 for required drywall openings for each unit.
4. Mount the unit in its permanent location, making sure it is level to ensure proper drainage and operation, and secure the unit in place. Two 1/2-inch holes have been provided on each end of the unit for securing the unit to the studs. It is recommended that all four mounting holes be used for proper installation. **(Figure 5)**
5. Note the 1-1/2" x 4-1/2" indentation in the plastic drain pan (Figure 3). This area is provided for the supply and return runouts if they are brought up from below the pan. All piping must be well insulated to prevent sweating. There is a 0.84" OD condensate drain connection on the secondary drain pan suitable to receive a standard 3/4" PVC coupling / elbow.
8. After drywall has been installed recheck to make sure the unit's front panel is flush with the exterior drywall surface. If not, shimming the unit may be required to obtain a seal between the unit and wall panel.
9. Install the wall panel to the front of the unit using the 1/4-20 x 1-1/2" long painted Phillips head screws (4 or 6 depending on the unit size). 1/4" cage nuts are located in the slotted front panel of the unit for the panel screws to attach to. Tighten the screws until the panel is secure with a good fit against the wall.
10. Filter change / replacement can be performed by removing the lower return air grille to access the filter within the unit.

MODEL NUMBER	DRYWALL CUT-OUT DIMENSION HEIGHT x WIDTH
3WCB	28" x 42"
4WCB	28" x 50"
6WCB	28" x 58"
8WCB	28" x 66"
10WCB	28" x 74"
12WCB	28" x 82"

TABLE 1

* Cut-out should be a minimum of 6 inches above the floor

Remove or cover the secondary drain pan before soldering the supply and return coil connections as hot solder or the torch flame may damage the pan.



WARNING



Proper framing and unit location is critical for unit performance. Wall panel is required to seal against the unit panel so there is no air leakage

6. Solder the 5/8" coil connections in accordance with local codes and regulations.
7. After coil connections have been made, check for leaks and bleed the air from the system by venting each coil. **(Figure 5)**

ELECTRICAL

All wiring must comply with local and national code requirements. The customer or contractor is to provide branch circuit overcurrent protection and disconnect means. Units are provided with wiring diagrams located on the blower housing, and nameplate data to provide information required for necessary field wiring.

Bring the field electrical wiring into the back of the end compartment opposite the coil connections to the control box. (Figure 7, Unit mounted controls shown) There is a 7/8" hole in the control box bottom. Connect power supply in accordance to wiring diagram.



Figure 7

CONDENSATE DRAIN LINE

Drain line installation must adhere to all code requirements. The plastic drain pan is to be located under the coil / valve connections supported by its mounting bracket. Make sure drain pan is level for proper drainage.

The drain pan connection is suitable to receive a standard 3/4" PVC coupling or elbow. Route the condensate line such that it will have adequate slope from the pan to the drain. After condensate line has been run, make sure plastic drain line from blower plate nipple is routed to plastic drain pan and plastic cap is installed on another nipple on the blower plate.



NOTE



All chilled water piping not located over the drain pan must be insulated by the installing contractor to prevent condensation damage.

- On units with plastic drain pans DO NOT tighten more than hand tight.



WARNING



On units with plastic drain pans the drain connections must be made hand tight only.

THERMOSTAT / CONTROL WIRING

UNIT MOUNTED THERMOSTAT:

A thermostat is factory mounted and wired. Once power is applied to the unit, it is ready to operate. All standard thermostats have continuous fan if system switch is on.

REMOTE OR WALL MOUNTED THERMOSTAT:

If a remote or wall mounted thermostat is used, all wiring is field supplied and must meet local and national code requirements. Refer to unit wiring diagram for proper connections.

SYSTEM START-UP

- Prior to start-up, inspect the blower to assure the wheels turn freely without rubbing on the housing.
- Pressurize water coil by opening water valves and bleeding the air from the coil and system.
- Check 2-way or 3-way valves for proper operation by energizing thermostat accordingly.
- Check that blower motor operates on all three speeds.
- Replace unit cover panel by interlocking top / back edge with cabinet frame. Watch to see that unit mounted thermostat protrudes through the cutout of the cover panel. Align ball pin on each side with cabinet frame and push firmly to engage and lock.
- Check to make sure filter is installed correctly within the filter channels on each side. Rotate filter retaining rod, on lower front edge of cabinet door, so that it is under the filter then push the rod upward into the cabinet door.

MAINTENANCE

1. The filters must be cleaned to maintain optimum performance. The air filter should be cleaned or replaced every 30 days or more frequently if severe conditions exist. The filter is a permanent type and may be removed and washed with a garden hose. Filter should be completely dry before reinstalling. To remove the filter, rotate the retaining rod holding the front edge of the filter so it can drop below the front panel of the cabinet then pull outward to remove. To reinstall the filter, slide the filter into the filter channels on both sides of the unit. Rotate filter retaining rod, on lower front edge of cabinet door, so that it is under the filter then push the rod upward into the cabinet door.
2. The condensate drain pan can pick up lint and dirt, especially with dirty filters. Inspect the drain pan twice a year to avoid the possibility of overflow.
3. The coil must be clean to obtain maximum performance. Check once a year under normal operating conditions and, if dirty, brush or vacuum clean. Care must be taken not to damage the aluminum fins while cleaning.
4. If motor service is required, it can be removed in the following manner:
 - a. Disconnect electrical power to the unit at the disconnect switch and lock out.
 - b. Remove two screws, securing blower deck to unit.
 - c. Locate motor lead wires where they connect to the side panel, (lower rear on the electrical box side).
 - d. The quick connect plug needs to be squeezed on top and bottom to release it from its socket. (Dual motor units have two plugs)
 - e. Now slide blower / motor deck out of unit to service.
 - f. Reverse process to install.
5. On units equipped with back fresh air intake, the insect screen may be removed for cleaning by lifting the intake box slightly and pulling it out



CAUTION



Fin edges are sharp and a potential injury hazard.

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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