Comfort-Aire | Century

MB COMPACT HIGH-CAPACITY SERIES

INSTALLATION, OPERATION & MAINTENANCE MANUAL

Part#: 97B0150N02 | Revised: March 25, 2026

Models: MB 072-300
60Hz – R-454B



Models:
MB
072-300

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Heat Controller works continually to improve its products. As a result, the design and specifications of each product at the time of order may be changed without notice and may not be as described herein. Please contact Heat Controller's Customer Service Department at 517-787-2100 for specific information on the current design and specifications. Statements and other information contained herein are not express warranties and do not form the basis of any bargain between the parties, but are merely Heat Controller's opinion or commendation of its products.

Model Nomenclature

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
M	B	L	0	7	2	B	K	C	3	0	C	0	1	S

PRODUCT NAME
M = R-454B Refrigerant

MODEL TYPE
B = Compact High-Capacity Series

SUPPLY/RETURN CONFIGURATION

Horizontal		
Supply	Return	
	Left	Right
Straight	L	R
Back	B	P

Vertical	
Return/Supply	Option
Front/Top	F
Back/Top	C
Back/Front	G
Front/Back	H

SIZE

072	168[1]
096	192[1]
120	240[1]
	300[1]

REVISION
B = Current

VOLTAGE

3 Phase 60 Hz	With RDS
208/230	K
460	L
575	M

CONTROLS

Control	Standard	MPC
CXM2	C	N
CXM2 with Disconnect[3]	W	R

STANDARD
S = Standard

BLOWER MOTOR

Belt Drive		Single-Point Power	Dual-Point Power
Standard Motor	Standard RPM	1	A
	Low RPM	2	B
	High RPM	3	C
Large Motor	Standard RPM	4	D
	High RPM	5	E
	VFD[6]	6	F

EXTENDED OPTIONS[5]
0 = Standard, None
W = Waterside Economizer

DRAIN PAN/HEAT EXCHANGER OPTIONS
C = Standard Drain Pan, Noncoated Air Coil
S = Stainless-Steel Drain Pan, Noncoated Air Coil
E = Standard Drain Pan, E-Coated Air Coil
M = Stainless-Steel Drain Pan, E-Coated Air Coil

WATER OPTIONS

Horizontal				
Option	Coax			
	Copper		Cupronickel	
Water Side	Left	Right	Left	Right
None	0		1	

Vertical				
Option	Coax			
	Copper		Cupronickel	
Water Side	Left	Right	Left	Right
None	0	Z	1	2
MWV	M	V	3	4
MOD/MWV	C	N	5	6

CABINET OPTIONS

Cabinet	Sound Attenuation Package	Rail / Frame[4]		
		1"	2"	4"
Extended Range	No	1	J	Q
	Yes	2	L	T
Standard Range	No	3	N	U
	Yes	4	F	V

Notes:
1. Only available on Vertical configurations
2. 575V option not available for configurations with VFD
3. Disconnect control option not available on configurations with Dual-Point Power
4. Horizontal units come standard with filter rails; filter frames are field-installed accessories
   Vertical units come standard with filter frames
5. Waterside Economizer is only available for configurations with Extended Range cabinet
   Waterside Economizer is not available on Vertical Back-supply configurations
6. A VFD is required when the large motor option is specified on unit size 240

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Attentions, Cautions, and Warnings

SAFETY

Warnings, cautions, and notices appear throughout this manual. Read these items carefully before attempting any installation, service, or troubleshooting of the equipment.

DANGER: Indicates an immediate hazardous situation, which if not avoided will result in death or serious injury. DANGER labels on unit access panels must be observed.

WARNING: Indicates a potentially hazardous situation, which if not avoided could result in death or serious injury.

CAUTION: Indicates a potentially hazardous situation or an unsafe practice, which if not avoided could result in minor or moderate injury or product or property damage.

NOTICE: Notification of installation, operation, or maintenance information, which is important, but which is not hazard-related.

⚠ WARNING



Disconnect power supply(ies) before servicing. Refer servicing to qualified service personnel. Electric shock hazard. May result in injury or death!

⚠ WARNING

To avoid the release of refrigerant into the atmosphere, the refrigerant circuit of this unit must be serviced only by technicians who meet local, state, and federal proficiency requirements.

⚠ WARNING

The installation of water-source heat pumps and all associated components, parts, and accessories which make up the installation shall be in accordance with the regulations of ALL authorities having jurisdiction and MUST conform to all applicable codes. It is the responsibility of the installing contractor to determine and comply with ALL applicable codes and regulations.

⚠ WARNING

The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater).

⚠ WARNING

If an R-454B unit is connected to one or more rooms via an air duct system, and is installed in a room with an area less than A_{min} or has an Effective Dispersal Volume less than minimum, that room shall be without continuously operating open flames or other POTENTIAL IGNITION SOURCES. A flame-producing device may be installed in the same space if the device is provided with an effective flame arrest.

⚠ WARNING

All refrigerant discharged from this unit must be recovered WITHOUT EXCEPTION. Technicians must follow industry accepted guidelines and all local, state, and federal statutes for the recovery and disposal of refrigerants. If a compressor is removed from this unit, refrigerant circuit oil will remain in the compressor. To avoid leakage of compressor oil, refrigerant lines of the compressor must be sealed after it is removed.

⚠ WARNING

This appliance is not intended for use 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 concerning use of the appliance by a person responsible for their safety.

⚠ WARNING

An unventilated area where the appliance using FLAMMABLE REFRIGERANTS is installed shall be so constructed that should any refrigerant leak, it will not stagnate so as to create a fire or explosion hazard.

⚠ WARNING

Auxiliary devices which may be a POTENTIAL IGNITION SOURCE shall not be installed in the duct work. Examples of such POTENTIAL IGNITION SOURCES are hot surfaces with a temperature exceeding 1,292°F (700°C)

⚠ WARNING

An unventilated area where a water source heat pump is installed and surpasses a R-454B refrigerant charge of 62 oz (1.76 kg), shall be without continuously operating open flames (for example an operating gas appliance) or other POTENTIAL IGNITION SOURCES (for example, an operating electric heater, hot surfaces).

⚠ WARNING

Only auxiliary electric heaters approved by the manufacturer shall be installed in connecting ductwork. The installation of any other auxiliary devices is beyond the manufacturer's responsibility.

⚠ WARNING

For mechanical ventilation, the lower edge of the air extraction opening where air is exhausted from the room shall not be more than 3.94 inches (100 mm) above the floor. The location where the mechanical ventilation air extracted from the space is discharged shall be separated by a sufficient distance, but not less than 9.84 feet (3 m), from mechanical ventilation air intake openings, to prevent recirculation to the space.

⚠ WARNING

Children being supervised are NOT to play with the appliance.

⚠ WARNING

Do not pierce or burn.

⚠ WARNING

Be aware that refrigerants may not contain odor.

Attentions, Cautions, and Warnings

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⚠ CAUTION

DO NOT store or install units in corrosive environments or in locations subject to temperature or humidity extremes (e.g., attics, garages, rooftops, etc.). Corrosive conditions and high temperature or humidity can significantly reduce performance, reliability, and service life. Always move and store units in an upright position. Tilting units on their sides will cause equipment damage.

⚠ CAUTION

CUT HAZARD - Failure to follow this caution may result in personal injury. Sheet metal parts may have sharp edges or burrs. Use care and wear appropriate protective clothing, safety glasses and gloves when handling parts and servicing heat pumps.

⚠ CAUTION

To avoid equipment damage, DO NOT use these units as a source of heating or cooling during the construction process. The mechanical components and filters can quickly become clogged with construction dirt and debris, which may cause system damage and void product warranty.

⚠ CAUTION

All three phase scroll compressors must have direction of rotation verified at startup. Verification is achieved by checking compressor Amp draw. Amp draw will be substantially lower compared to nameplate values. Additionally, reverse rotation results in an elevated sound level compared to correct rotation. Reverse rotation will result in compressor internal overload trip within several minutes. Verify compressor type before proceeding.

⚠ NOTICE

Servicing shall be performed only as recommended by the manufacturer.

⚠ NOTICE

REFRIGERANT SENSORS for REFRIGERANT DETECTION SYSTEMS shall only be replaced with sensors specified by the appliance manufacturer.

⚠ NOTICE

An unconditioned attic is not considered natural ventilation.

⚠ NOTICE

This unit is equipped with electrically powered safety measures.
To be effective, the unit must be electrically powered at all times after installation, other than when servicing.

⚠ NOTICE

For Installation Only in Locations Not Accessible to the General Public.

⚠ NOTICE

Maximum external statics must be adhered to in order to maintain minimum CFM.

⚠ NOTICE

LEAK DETECTION SYSTEM installed. Unit must be powered except for service.

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General Information

INSPECTION

Upon receipt of the equipment, carefully check the shipment against the bill of lading. Make sure all units have been received. Inspect the packaging of each unit, and inspect each unit for damage. Ensure that the carrier makes proper notation of any shortages or damage on all copies of the freight bill and completes a common carrier inspection report. Concealed damage not discovered during unloading must be reported to the carrier within 15 days of receipt of shipment. If not filed within 15 days, the freight company can deny the claim without recourse.

NOTE: It is the responsibility of the purchaser to file all necessary claims with the carrier. Notify your equipment supplier of all damage within 15 days of shipment.

STORAGE

Equipment should be stored in its original packaging in a clean, dry area. Store units in an upright position at all times. You may stack vertical configurations a maximum of two units high and horizontal configurations a maximum of three units high.

UNIT PROTECTION

Cover units on the job site with either the original packaging or an equivalent protective covering. Cap the open ends of pipes stored on the job site. In areas where painting, plastering, and/or spraying has not been completed, all due precautions must be taken to avoid physical damage to the units and contamination by foreign material. Physical damage and contamination may prevent proper startup and may result in costly equipment cleanup.

Examine all pipes, fittings, and valves before installing any of the system components. Remove any dirt or debris found in or on these components.

PRE-INSTALLATION

Installation, Operation, and Maintenance instructions are provided with each unit. Horizontal equipment is designed for installation above false ceiling or in a ceiling plenum. Other unit configurations are typically installed in a mechanical room. The installation site chosen should include adequate service clearance around the unit. Before unit startup, read all manuals and become familiar with the unit and its operation. Thoroughly check the system before operation.

PREPARE UNITS FOR INSTALLATION AS FOLLOWS:

1. Compare the electrical data on the unit nameplate with ordering and shipping information to verify that the correct unit has been shipped.
2. Keep the cabinet covered with the original packaging until installation is complete and all plastering, painting, etc. is finished.
3. Verify refrigerant tubing is free of kinks or dents and that it does not touch other unit components.
4. Inspect all electrical connections. Connections must be clean and tight at the terminals.
5. Remove any blower support packaging (water-to-air units only).
6. Some airflow patterns are field convertible (horizontal units only). Locate the airflow conversion section of this IOM.

CHECKS TO THE AREA

Prior to beginning work on systems containing FLAMMABLE REFRIGERANTS, safety checks are necessary to ensure that the risk of ignition is minimized. For repair to the REFRIGERATING SYSTEM, these steps shall be completed prior to conducting work on the system.

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Work Procedure

Work shall be undertaken under a controlled procedure so as to minimize the risk of a flammable gas or vapor being present while the work is being performed.

General Work Area

All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out. Work in confined spaces shall be avoided.

Checking for Presence of Refrigerant

The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially toxic or flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with all applicable refrigerants, i.e. non-sparking, adequately sealed or intrinsically safe.

Presence of Fire Extinguisher

If any hot work is to be conducted on the refrigeration equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO_2 fire extinguisher adjacent to the charging area.

No Ignition Sources

No person carrying out work in relation to a REFRIGERATION SYSTEM which involves exposing any pipe work shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which refrigerant can possibly be released to the surrounding space. Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. "No Smoking" signs shall be displayed.

Ventilated Area

Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

Checks to the Refrigeration Equipment

The following checks shall be applied to installations using FLAMMABLE REFRIGERANTS:

- The actual REFRIGERANT CHARGE is in accordance with the room size within which the refrigerant containing parts are installed
- The ventilation machinery and outlets are operating adequately and are not obstructed
- If an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant
- Marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected
- Refrigerant piping or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded

Checks to Electrical Devices

Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment so all parties are advised.

Initial safety checks shall include:

- Capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking
- That no live electrical components and wiring are exposed while charging, recovering, or purging the system
- That there is continuity of earth bonding

General Information

REPAIR TO INTRINSICALLY SAFE COMPONENTS

Intrinsically safe components must be replaced.

CABLING

Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects. The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.

REQUIRED AREA FOR INSTALLATION

The minimum room area of the space (A_{min}) or a minimum room area of conditioned space (TA_{min}) shall be corrected for unit's location altitude by multiplying A_{min} or TA_{min} by the applicable altitude adjustment factor (AF) for building ground-level altitude (H_{alt}) in feet or meters, as shown in the **Altitude Adjustment** table.

NOTE:

- You can use Imperial or Metric measurements to calculate A_{min} or TA_{min}.
- The maximum allowable altitude of installation for this product is 6,561 ft (2,000 m).

Table 1: Altitude Adjustment

H_{alt} ft (m)	AF
0 (0)	1.00
656 (200)	1.00
1,312 (400)	1.00
1,968 (600)	1.00
2,624 (800)	1.02
3,280 (1,000)	1.05
3,937 (1,200)	1.07
4,593 (1,400)	1.10
5,249 (1,600)	1.12
5,905 (1,800)	1.15
6,561 (2,000)	1.18

Minimum Installation Area

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MINIMUM INSTALLATION AREA

Minimum area where a blower-equipped unit must be installed, and mechanical/natural ventilation is not required

Model	Charge (oz)	Configuration	Minimum Installation Area ft² (m²) [A_{min}]			
			Floor	Window	Wall	Ceiling
MB072	54	Vertical	186	70	46	40
		Horizontal	186	70	46	40
MB096	62	Vertical	213	80	53	46
		Horizontal	213	80	53	46
MB120	66	Vertical	227	85	57	49
		Horizontal	213	80	53	46
MB168	94	Vertical	323	121	81	69
MB192	103	Vertical	354	133	89	76
MB240	134	Vertical	461	173	115	99
MB300	184	Vertical	633	237	158	136

A_{min} = Minimum area where unit is installed where unit has incorporated airflow

h_{inst} (floor) = 0.0 ft (0.0 m)

h_{inst} (window) = 3.3 ft (1.0 m)

h_{inst} (wall) = 5.9 ft (1.8 m)

h_{inst} (ceiling) = 7.2 ft (2.2 m)

Minimum area and CFM requirements for the conditioned space

Model	Charge (oz)	Minimum CFM [Q_{min}]	
		TA_{min} (ft²)	Q_{min} (ft³/min)
MB072	54	2.77	91
MB096	62	3.18	105
MB120	66	3.38	112
MB168	94	4.82	159
MB192	103	5.28	174
MB240	134	6.87	227
MB300	184	9.43	311

TA_{min} = Minimum conditioned area for venting leaked refrigerant

Q_{min} = Minimum ventilation flow rate for conditioned space if space is less than TA_{min}

Minimum area of opening for natural ventilation

Model	Charge (oz)	A_{nv} (in²)
MB072	54	98.70
MB096	62	105.76
MB120	66	109.12
MB168	94	130.22
MB192	103	136.31
MB240	134	155.48
MB300	184	182.19

A_{nv} = Minimum natural ventilation area opening

When the openings for connected rooms or natural ventilation are required, apply the following conditions:

- The area of any openings above 11.8 inches (300 mm) from the floor shall not be considered in determining compliance with Anv_{min}.
- At least 50% of the required opening area Anv_{min} shall be below 7.8 inches (200 mm) from the floor.
- The bottom of the lowest openings shall not be higher than the point of release when the unit is installed and not more than 3.9 inches (100 mm) from the floor.
- Openings are permanent openings which cannot be closed.
- For openings extending to the floor, the height shall not be less than 0.78 inch (20 mm) above the surface of the floor covering.
- A second higher opening shall be provided. The total size of the second opening shall not be less than 50% of minimum opening area for Anv_{min} and shall be at least 3.3 ft (1.5 m) above the floor.

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Refrigerant System Servicing

REFRIGERANT SYSTEM

To maintain sealed circuit integrity, do not install service gauges unless unit operation appears abnormal. Reference the operating charts for pressures and temperatures. Verify that air and water flow rates are at proper levels before servicing the refrigerant circuit.

Removal and Evacuation

When breaking into the refrigerant circuit to make repairs - or for any other purpose - conventional procedures shall be used. However, for flammable refrigerants it is important that best practice be followed, since flammability is a consideration. The following procedure shall be adhered to:

- Safely remove refrigerant following local and national regulations
- Evacuate
- Purge the circuit with Inert gas
- Evacuate
- Continuously flush or purge with Inert gas when using flame to open circuit
- Open the circuit

The refrigerant charge shall be recovered into the correct recovery cylinders. For appliances containing flammable refrigerants, the system shall be purged with oxygen-free nitrogen to render the appliance safe. This process might need to be repeated several times. Compressed air or oxygen shall not be used for purging refrigerant systems.

For appliances containing flammable refrigerants, refrigerant purging shall be achieved by breaking the vacuum in the system with oxygen-free nitrogen and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum (optional for FLAMMABLE REFRIGERANT). This process shall be repeated until no refrigerant is remains in the system (optional for FLAMMABLE REFRIGERANT). When the final oxygen-free nitrogen charge is used, the system shall be vented down to atmospheric pressure to enable work to take place.

The outlet for the vacuum pump shall not be close to any potential ignition sources, and ventilation shall be available.

Charging Procedures

In addition to conventional charging procedures, the following requirements shall be followed:

- Ensure that contamination of different refrigerants does not occur when using charging equipment
- Hoses or lines shall be as short as possible to minimize the amount of refrigerant contained in them
- Cylinders shall be kept in an appropriate position according to the instructions
- Ensure that the REFRIGERATION SYSTEM Is earthed prior to charging the system with refrigerant
- Label the system when charging is complete (if not already)
- Extreme care shall be taken not to overfill the REFRIGERATION SYSTEM

Prior to recharging the system, it shall be pressure-tested with the appropriate purging gas. The system shall be leak-tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

Leak Detection

Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used.

The following leak detection methods are deemed acceptable for all refrigerant systems.

Electronic leak detectors may be used to detect refrigerant leaks but, in the case of FLAMMABLE REFRIGERANTS, the sensitivity may not be adequate, or may need re-calibration. Detection equipment shall be calibrated in a refrigerant-free area. Ensure that the detector is not a potential source of Ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the lower flammability limit of the refrigerant and shall be calibrated to the refrigerant employed, and the appropriate percentage of gas (25% maximum) is confirmed.

Refrigerant System Servicing

Leak detection fluids are also suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipework.

NOTE:
Examples of leak detection fluids are:

- Bubble method
- Fluorescent method agents

If a leak is suspected, all naked flames shall be removed/extinguished.

If a refrigerant leak that requires brazing is identified, all of the refrigerant shall be recovered from the system, or isolated (by means of shutoff valves) in a part of the system remote from the leak. Removal of refrigerant shall be according to Removal and Evacuation section.

DECOMMISSIONING

Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail. It is recommended good practice that all refrigerants are recovered safely. Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of recovered refrigerant. It is essential that electrical power is available before the task is commenced.

1. Become familiar with the equipment and its operation
2. Isolate system electrically
3. Before attempting the procedure, ensure that:
    - Mechanical handling equipment is available, if required, for handling refrigerant cylinders
    - All personal protective equipment is available and being used correctly
    - The recovery process is supervised at all times by a competent person
    - Recovery equipment and cylinders conform to the appropriate standards
4. Pump down refrigerant system, if possible
5. If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system
6. Make sure that cylinder is situated on the scales before recovery takes place
7. Start the recovery machine and operate in accordance with instructions
8. Do not overfill cylinders (no more than 80% volume liquid charge)
9. Do not exceed the maximum working pressure of the cylinder, even temporarily
10. When the cylinders have been filled correctly and the process completed, ensure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off
11. Recovered refrigerant shall not be charged into another REFRIGERATING SYSTEM unless it has been cleaned and checked

Labeling - Upon decommissioning, equipment shall be labeled stating that is has been decommissioned and emptied of refrigerant. The label shall be dated and signed.

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Refrigerant System Servicing

RECOVERY

When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.

When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge is available. All cylinders to be used are designated for the recovered refrigerant and labeled for that refrigerant (i.e. special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure-relief valve and associated shutoff valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.

The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of the flammable refrigerant. If in doubt, the manufacturer should be consulted.

In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition.

The recovered refrigerant shall be processed according to local legislation in the correct recovery cylinder, and the relevant waste transfer note arranged. Do not mix refrigerants in recovery units and especially not in cylinders.

If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The compressor body shall not be heated by an open flame or other ignition sources to accelerate this process. When oil is drained from a system, it shall be carried out safely.

Physical Data

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MB Physical Data

Standard Range Cabinet										
Configuration	**Horizontal**			**Vertical**						
Unit Size	**072**	**096**	**120**	**072**	**096**	**120**	**168**	**192**	**240**	**300**
Compressor Type	Scroll			Scroll						
Number of Circuits (Compressors)	2			2						
Refrigerant Leak Detection System	R	R	R	R	R	R	R	R	R	R
Number of Sensors	2	2	2	2	2	2	2	2	2	2
Factory Charge R-454B (oz) [kg] per Circuit	54 [1.5]	62 [1.8]	66 [1.9]	54 [1.5]	62 [1.8]	66 [1.9]	94 [2.7]	103 [2.9]	134 [3.8]	184 [5.2]
Blower Motor										
Standard Motor (hp) [kW]	1 [0.75]	2 [1.49]	3 [2.23]	1 [0.75]	2 [1.49]	3 [2.23]			5 [3.73]	7.5 [5.60]
Large Motor[1] (hp) [kW]	2 [1.49]	3 [2.23]	5 [3.73]	2 [1.49]	3 [2.23]	5 [3.73]			7.5 [5.60]	10 [7.46]
Water Connections										
FPT (in) [mm]	1-1/4" [31.8]		1-1/2" [38.1]	1-1/4" [31.8]		1-1/2" [38.1]	2" [50.8]			2-1/2" [63.5]
Coax Data										
Number of Coaxes per Circuit	1			1			2		3	
Volume per Coax (gallon) [liter]	1.62 [6.13]	2.40 [9.08]	2.40 [9.08]	1.62 [6.13]	2.40 [9.08]	2.40 [9.08]	3.62 [13.70]	4.83 [18.28]	4.90 [18.55]	7.39 [27.98]
Condensate Connection Size										
FPT (in) [mm]	3/4" [19.1]			1" [25.4]						
Miscellaneous Data										
Filter Standard - 1" [2.54cm] Throwaway (qty) (in) [cm]	(QTY.3) 16 x 20 [40.6 x 50.8]			(QTY.4) 20 x 20 [50.8 x 50.8]			(QTY.4) 20 x 25 [50.80 x 63.5]			
	(QTY.1) 20 x 20 [50.8 x 50.8]						(QTY.2) 20 x 30 [50.80 x 76.2]			
Weight - Operating (lbs) [kg]	586 [265.8]	644 [292.1]	698 [316.6]	586 [265.8]	644 [292.1]	698 [316.6]	1069 [484.9]	1164 [528.0]	1184 [537.1]	1297 [588.3]
Weight - Packaged (lbs) [kg]	626 [283.9]	684 [310.3]	738 [334.8]	626 [283.9]	684 [310.3]	738 [334.8]	1149 [521.2]	1244 [564.3]	1264 [573.3]	1377 [624.6]
Corner Weights - Standard Configuration										
Compressor Section - Left Front (lb) [kg]	101 [46]	120 [52]	137 [62]							
Control Box - Right Front (lb) [kg]	235 [107]	254 [115]	271 [123]							
Air Coil Side - Back (lb) [kg]	70 [32]	80 [36]	90 [41]							
Blower Side - Back (lb) [kg]	180 [82]	190 [86]	200 [91]							
Extended Range Cabinet with Waterside Economizer										
Dimensions										
Standard Weight - Operating (lbs.) [kg]	586 [265.8]	644 [292.1]	698 [316.6]	586 [265.8]	644 [292.1]	698 [316.6]	1,069 [484.9]	1,164 [528.0]	1,184 [537.1]	1,297 [588.3]
Standard Weight - Packaged (lbs.) [kg]	626 [283.9]	684 [310.3]	738 [334.8]	626 [283.9]	684 [310.3]	738 [334.8]	1,149 [521.2]	1,244 [564.3]	1,264 [573.3]	1,377 [624.6]
WSE Unit Weight - Operating (lbs.) [kg]	838 [380.1]	921 [417.7]	998 [452.7]	762 [345.5]	837 [379.7]	907 [411.6]	1,529 [693.4]	1,665 [755]	1,693 [768]	1,855 [841.3]
WSE Unit Weight - Packaged (lbs.) [kg]	900 [408.2]	978 [443.7]	1,008 [457.2]	814 [369.1]	889 [403.3]	962 [436.4]	1,643 [745.3]	1,779 [806.9]	1,808 [819.9]	1,974 [895.4]
Air Coil Volume (gal) [L]	4.0 [15.1]	4.4 [16.7]		4.3 [16.3]	4.8 [18.2]		9.7 [36.7]		19.0 [71.9]	
Corner Weights										
Compressor Section - Left Front (lb) [kg]	154 [70]	169 [77]	183 [83]							
Control Box - Right Front (lb) [kg]	331 [150]	364 [165]	394 [179]							
Air Coil Side - Back (lb) [kg]	104 [47]	115 [52]	124 [56]							
Blower Side - Back (lb) [kg]	249 [113]	273 [124]	296 [134]							

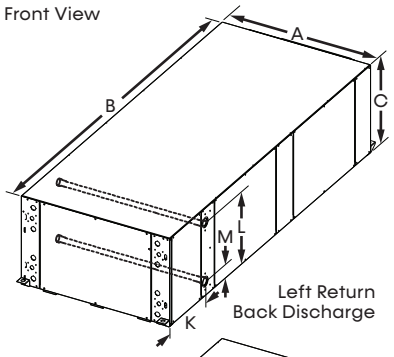
- O = Optional, R = Required

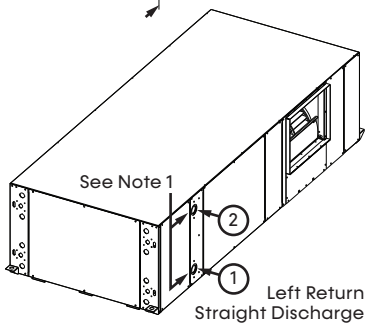
1. VFD Option comes with Large motor option

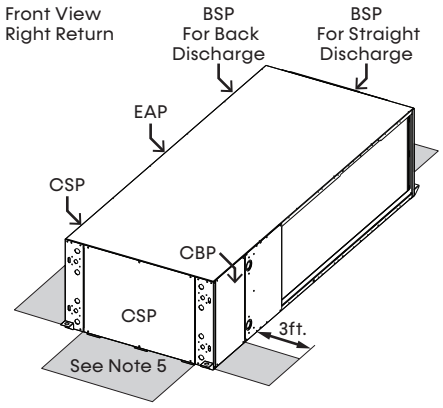
Models:
MB
072-300

Dimensional Data
MB072-120 Horizontal

Unit Size		Overall Cabinet			Discharge Connections Duct Flange				Water Connections			Electrical Knockouts								Return Air Connections Using Return Air Opening					
		A	B	C	D	E	F	G	K	L	M	O		P				Q		S		T	U	V	
		Width	Depth	Height	Side Offset	Supply Width	Supply Height	Supply Offset		Water Outlet	Water Inlet	1	2	1	2	3	4	1	2	Return Depth		Return Height	Unit Top Height	072	096-120
												1-1/8" (2.9 cm)	7/8" (2.2 cm)	1-1/8" (2.9 cm)				7/8" (2.2 cm)		072	096-120				
072-120	inch	36.3	84.9	21.6	13.9	17.1	13.5	7.4	15.0	18.0	3.5	3.0	2.7	19.4	14.3	7.3	2.1	16.8	4.8	55.0	65.0	18.0	1.0	28.9	18.9
	cm	92.2	215.6	54.9	35.2	43.4	34.3	19.8	38.1	45.7	8.9	7.6	6.8	49.2	36.3	18.6	5.4	42.7	12.2	139.7	165.1	45.7	2.5	73.4	48.0





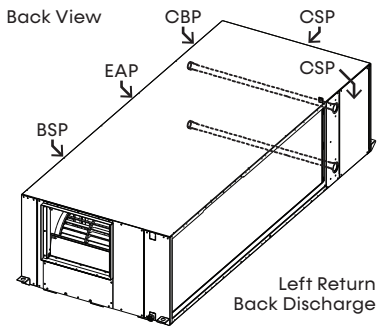


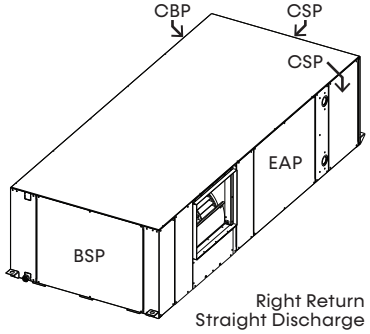
LEGEND

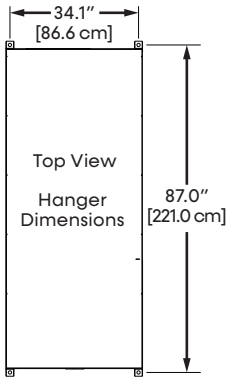
BSP = Blower Service Panel
CSP = Compressor Service Panel
CBP = Control Box Panel
EAP = Expansion Valve Access Panel

NOTES

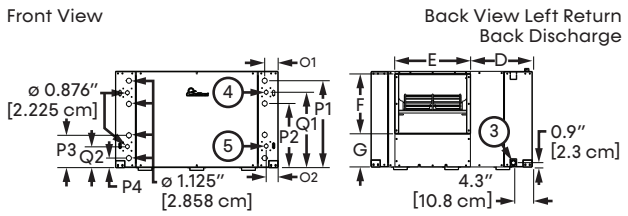
1. Water inlet and water outlet connections are field configurable on either side (left or right) of the unit.
2. Condensate drain is ¾-inch FPT and is located on cabinet end opposite the compressor.
3. Electrical access is configurable on either side (left or right) of the front.
4. If the control box is configured on one side, it can be field converted to the opposite side. Conversion should only be attempted by a qualified service technician.
5. Units require 3 feet (90.1 cm) of clearance for water connections, CSP, CBP, EAP, and BSP service access. Service access is required at all removable panels locations and the installer should take care to comply with all building codes and allow adequate clearance for future field service.
6. Overall cabinet width dimensions do not include filter rail and duct flange.
7. Units are shipped with air filter rails that are not suitable for supporting return air ductwork. An air filter frame with duct mounting collar is available to order as an accessory.

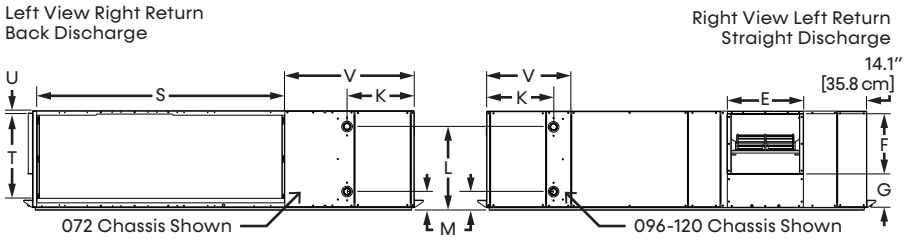






Legend	MB072-096	MB120
① Water Inlet[1]	1-1/4" FPT	1-1/2" FPT
② Water Outlet[1]	1-1/4" FPT	1-1/2" FPT
③ Condensate Drain[2]	1" FPT	
④ High Voltage Access[3]	1-3/8" (3.49 cm)	
⑤ Low Voltage Access[3]	7/8" (2.2 cm)	

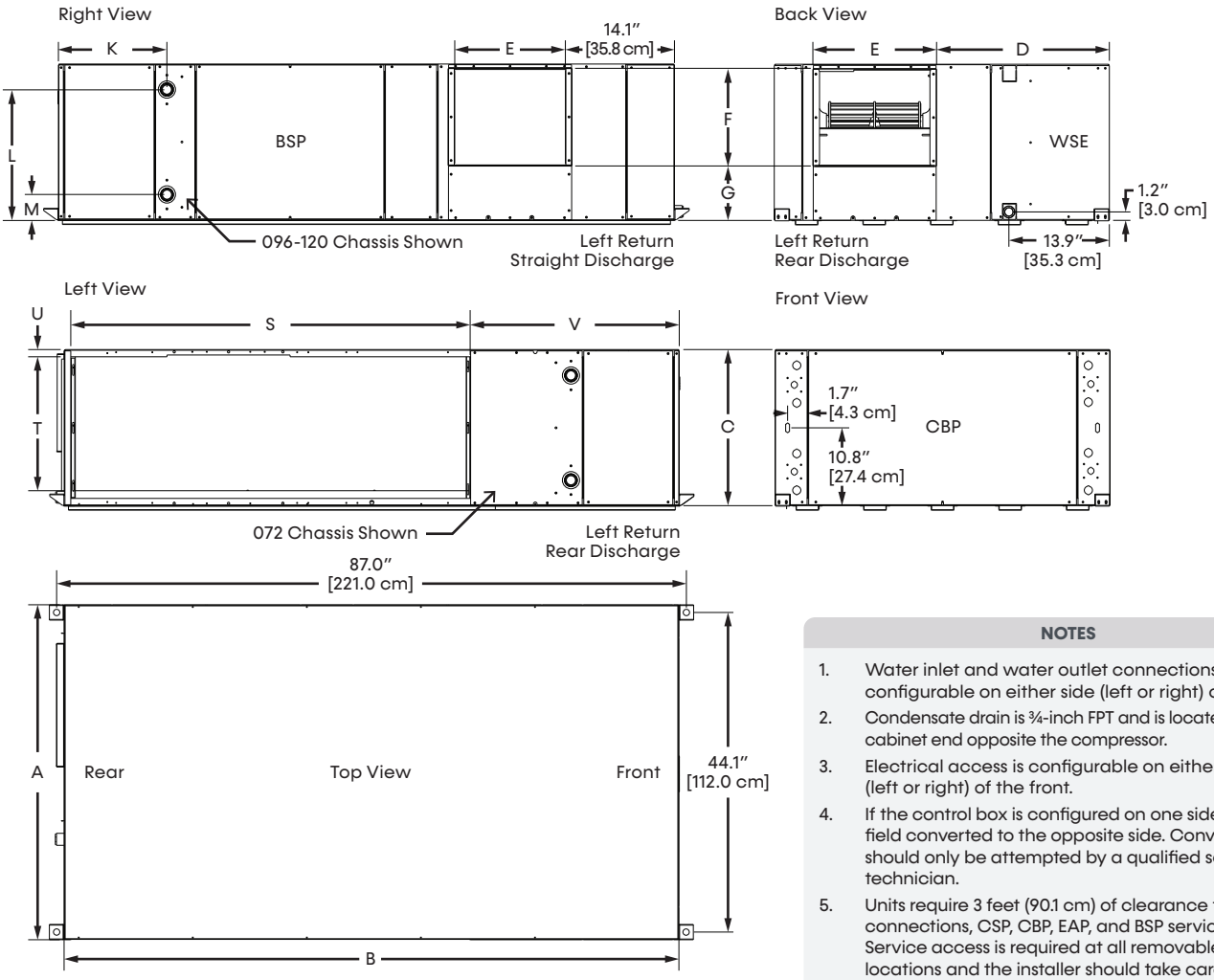




Dimensional Data
MB072-120 with WSE Horizontal

Models:
MB
072-300

Unit Size		Overall Cabinet			Discharge Connections Duct Flange				Water Connections			Electrical Knockouts								Return Air Connections Using Return Air Opening					
		A	B	C	D	E	F	G	K	L	M	O		P				Q		S		T	U	V	
										1	2	1	2	1	2	3	4	1	2	Return Depth					
		Width	Depth	Height	Side Offset	Supply Width	Supply Height	Supply Offset		Water Outlet	Water Inlet	1-1/8" (2.9 cm)	7/8" (2.2 cm)	1-1/8" (2.9 cm)				7/8" (2.2 cm)		072	096-120	Return Height	Unit Top Height	072	096-120
072-120	inch	46.3	84.9	21.6	23.9	17.1	13.5	7.4	15.0	18.0	3.5	3.0	2.7	19.4	14.3	7.2	2.1	16.8	4.7	55.1	61.0	18.5	1.0	28.9	22.8
	cm	117.6	215.6	54.8	60.6	43.4	34.3	18.8	38.1	45.7	8.9	7.6	6.8	49.2	36.3	18.3	5.4	42.7	11.9	140.0	154.9	47.0	2.5	73.4	57.9



LEGEND

BSP = Blower Service Panel
CSP = Compressor Service Panel
CBP = Control Box Panel
EAP = Expansion Valve Access Panel
WSE = Waterside Economizer

NOTES

1. Water inlet and water outlet connections are configurable on either side (left or right) of the unit.
2. Condensate drain is ¾-inch FPT and is located on cabinet end opposite the compressor.
3. Electrical access is configurable on either side (left or right) of the front.
4. If the control box is configured on one side, it can be field converted to the opposite side. Conversion should only be attempted by a qualified service technician.
5. Units require 3 feet (90.1 cm) of clearance for water connections, CSP, CBP, EAP, and BSP service access. Service access is required at all removable panels locations and the installer should take care to comply with all building codes and allow adequate clearance for future field service.
6. Overall cabinet width dimensions do not include filter rail and duct flange.
7. Units are shipped with air-filter rails that are not suitable for supporting return air ductwork. An air filter frame with duct mounting collar is available to order as an accessory.

Models:
MB
072-300

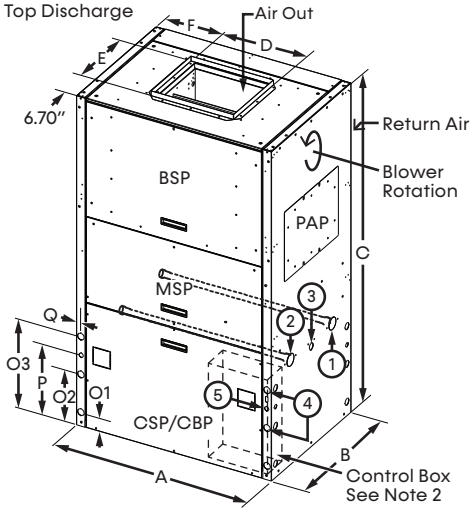
Dimensional Data
MB072-120 Vertical

Unit Size		Overall Cabinet			Discharge Connections Duct Flange			Water Connections				Electrical Knockouts					Return Air Connections Using Return Air Opening			
		A	B	C	D	E	F	K	L	M	N	O			P	Q	S	T	U	V
								1	2	3		1	2	3						
		Width	Depth	Height	Supply Width	Supply Height	Side Offset	Water In	Water Out	Condensate	Connection Height	1-3/8" (3.5cm)			7/8" (2.2 cm)		Return Width	Return Height		
072	inch	41.0	29.0	69.8	17.5	14.8	11.9	22.0	7.2	14.6	22.3	3.0	11.0	19.0	15.0	0.9	36.3	29.4	28.6	4.5
	cm	104.1	73.3	177.3	44.5	37.6	30.2	55.9	18.3	37.1	56.6	7.6	27.9	48.3	38.1	2.3	92.2	74.7	72.6	11.4
096-120	inch	41.0	29.0	69.8	17.5	14.8	11.9	22.0	7.2	14.6	22.3	3.0	11.0	19.0	15.0	0.9	36.0	35.1	28.6	2.6
	cm	104.1	73.3	177.3	44.5	37.6	30.2	55.9	18.3	37.1	56.6	7.6	27.9	48.3	38.1	2.3	91.4	89.2	72.6	6.6

NOTES

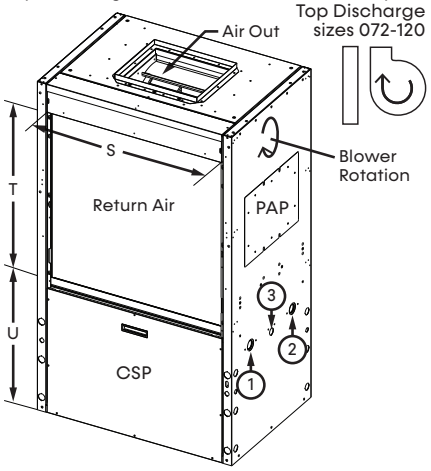
1. Condensate drain is available on either side (left or right) of unit. Drain hose and drain connection will be tied inside the unit. Installer will untie the drain hose, form trap, and connect to the condensate drain hole of installer's choice.
2. Electrical access is available on either side (left or right) of unit and is also available in the front on the left or right side of the unit.
3. Overall cabinet dimensions do not include duct flange or filter rails.
4. Units require 3 feet (90.1 cm) of clearance for water connections, CSP, CBP, MSP, and BSP service access. Service access is required at all removable panels locations and installer should take care to comply with all building codes and allow adequate clearance for future field service.
5. Filter removal is from right or left side of filter frame, allow 3 feet (61 cm) of access for servicing.

Front View
Top Discharge

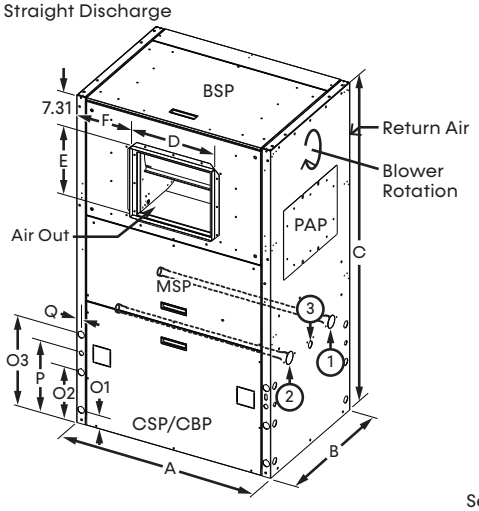


Rear View
Top Discharge

Blower to Air Coil relationship for Top Discharge sizes 072-120

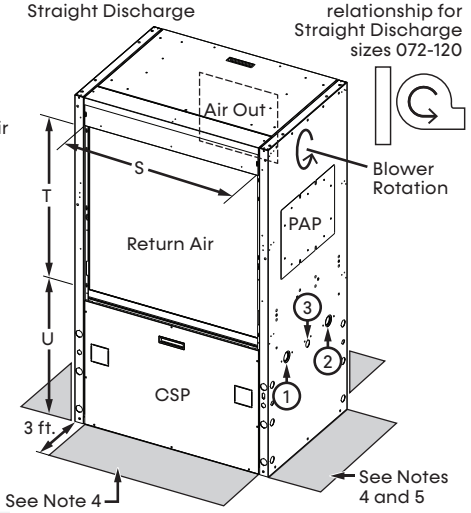


Front View
Straight Discharge

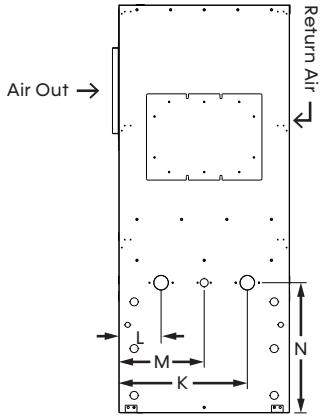


Rear View
Straight Discharge

Blower to Air Coil relationship for Straight Discharge sizes 072-120



Right Side View
Straight Discharge



Notes	MB072-096	MB120
① Water Inlet[1]	1-1/4" FPT	1-1/2" FPT
② Water Outlet[1]	1-1/4" FPT	1-1/2" FPT
③ Condensate Drain[2]	1" FPT	
④ High Voltage Access[3]	1-3/8" (3.49 cm)	
⑤ Low Voltage Access[3]	7/8" (2.2 cm)	

LEGEND

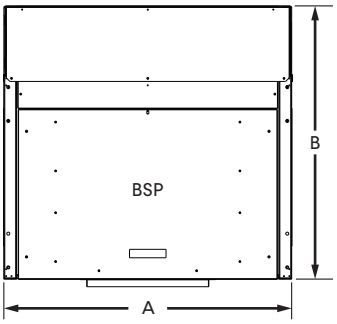
BSP = Blower Service Panel
CBP = Control Box Panel
CSP = Compressor Service Panel
MSP = Motor Service Panel
PAP = Pulley Access Panel

Dimensional Data
MB072-120 with WSE Vertical

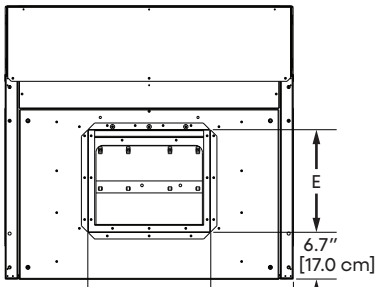
Models:
MB
072-300

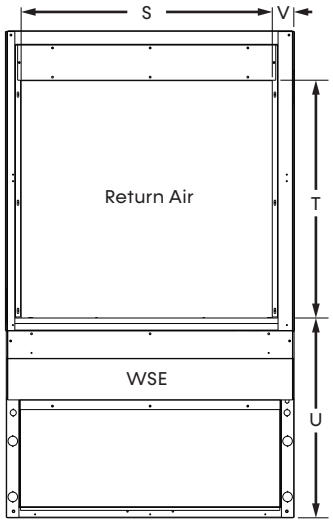
Unit Size		Overall Cabinet			Discharge Connections Duct Flange			Water Connections				Electrical Knockouts					Return Air Connections Using Return Air Opening			
		A	B	C	D	E	F	K	L	M	N	O			P	Q	S	T	U	V
								1	2	3		1	2	3						
		Width	Depth	Height	Supply Width	Supply Height	Side Offset	Water In	Water Out	Condensate	Connection Height						Return Width	Return Height		Return Side Offset
072	inch	41.3	39.2	69.8	17.5	14.7	11.9	22.0	7.2	14.6	22.3	3.0	11.0	19.0	15.1	0.9	34.0	31.6	28.6	3.6
	cm	104.9	99.6	177.3	44.5	37.3	30.2	55.9	18.3	37.1	56.6	7.6	27.9	48.3	38.4	2.3	86.4	80.3	72.7	9.1
096-120	inch	41.3	39.2	69.8	17.5	14.7	11.9	22.3	6.9	14.6	22.3	3.0	11.0	19.0	15.1	0.9	36.0	34.1	28.6	3.0
	cm	104.9	99.6	177.3	44.5	37.3	30.2	56.6	17.5	37.1	56.6	7.6	27.9	48.3	38.4	2.3	91.4	86.6	72.7	7.5

Top View
Rear Return Front Discharge

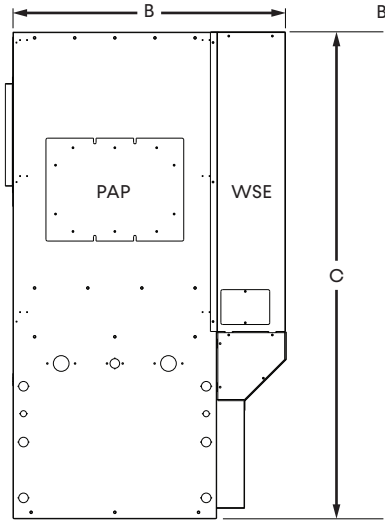


Top View
Rear Return Top Discharge

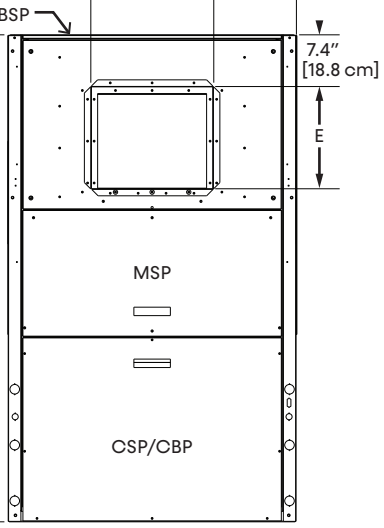




Back View
Rear Return Front Discharge



Right Side View



Front View
Rear Return Front Discharge

NOTES

See the standard configuration for water connection and electrical knockout dimensions.

1. While clear access to all removable panels may not be required, installer should take care to comply with all building codes and allow adequate clearance for future field service.
2. Units require 3 feet (91 cm) of clearance for water connections, WSE coil air bleed, CBP, CSP, BSP, PAP, and MSP.
3. Condensate drain is internally trapped, externally vented.
4. For top discharge units, BSP is on front. For front discharge units, BSP is on top. Allow 3 feet above unit for service.

LEGEND

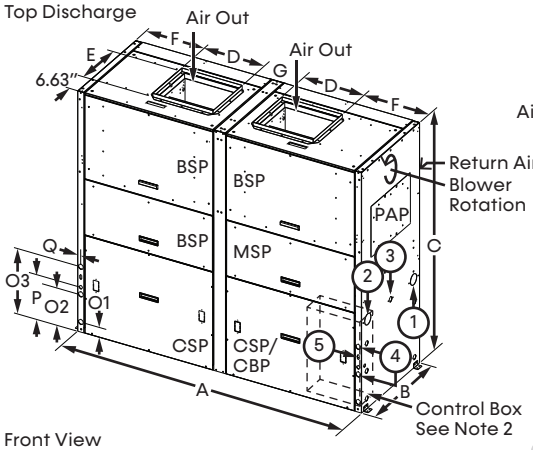
BSP = Blower Service Panel
CSP = Compressor Service Panel
CBP = Control Box Panel
MSP = Motor Service Panel
PAP = Pulley Access Panel
WSE = Waterside Economizer

Models:
MB
072-300

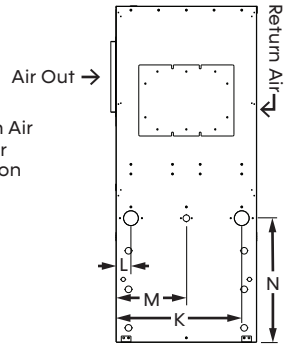
Dimensional Data
MB168-240 Vertical

Unit Size		Overall Cabinet			Discharge Connections Duct Flange				Water Connections				Electrical Knockouts					Return Air Connections Using Return Air Opening			
		A	B	C	D	E	F	G	K	L	M	N	O			P	Q	S	T	U	V
									1	2	3		1	2	3						
		Width	Depth	Height	Supply Width	Supply Height	Side Offset	Center Offset	Water In	Water Out	Condensate	Connection Height	1-3/8" (3.5cm)			7/8" (2.2 cm)		Return Width	Return Height		
168-240	inch	82.3	29.2	69.8	17.5	14.7	17.9	11.5	26.2	3.1	14.6	25.8	3.0	11.0	19.0	13.0	0.9	77.2	35.0	31.0	2.6
	cm	209.0	74.2	177.3	44.5	37.3	45.5	29.2	66.5	7.9	37.1	65.5	7.6	27.9	48.3	33.0	2.3	196.1	88.9	78.7	6.6

Front View
Top Discharge

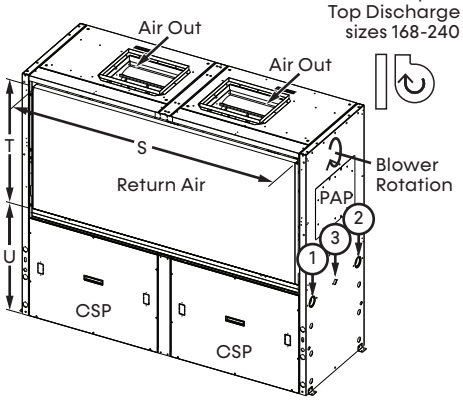


Front Return Rear Discharge (FR/RD)

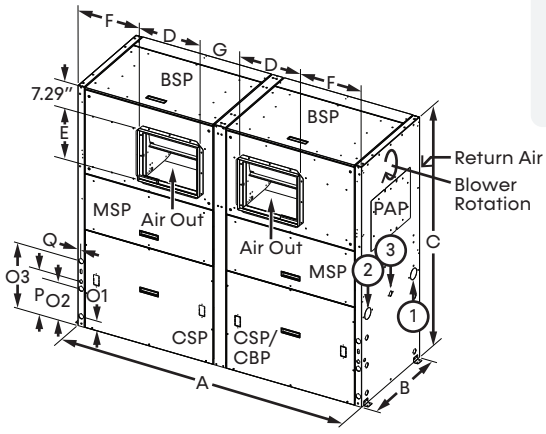


Rear View
Top Discharge

Blower to Air Coil relationship for Top Discharge sizes 168-240



Front View
Straight Discharge

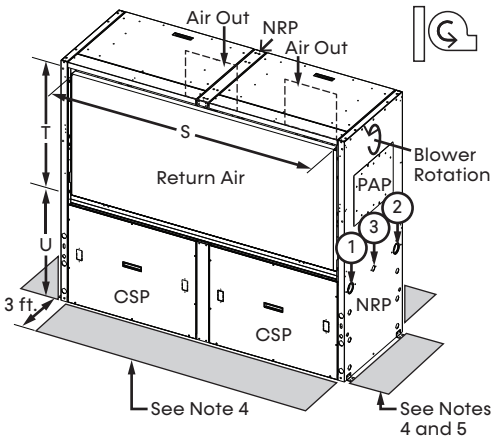


LEGEND

BSP = Blower Service Panel
CBP = Control Box Panel
CSP = Compressor Service Panel
MSP = Motor Service Panel
PAP = Pulley Access Panel

Rear View
Straight Discharge

Blower to Air Coil relationship for Straight Discharge sizes 168-240



NOTES

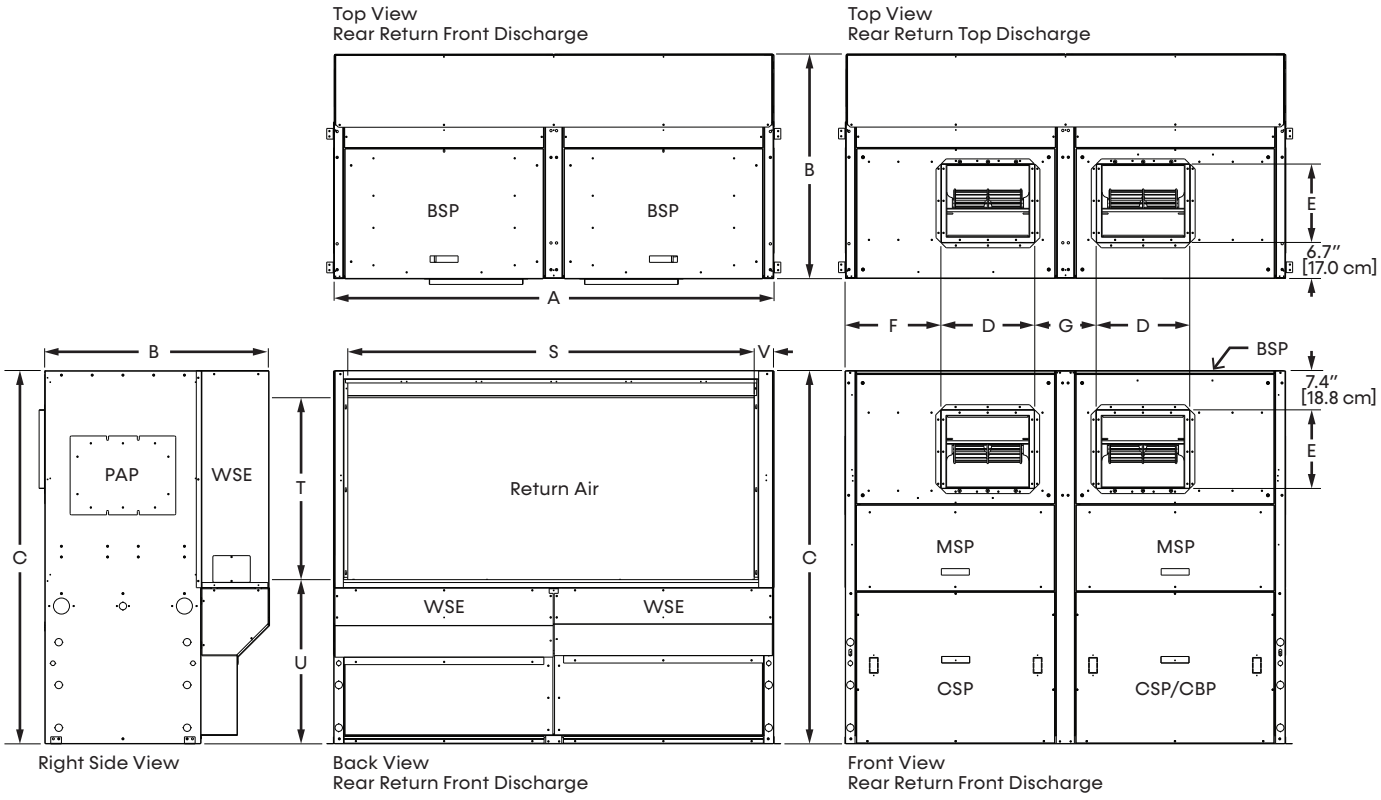
1. Condensate drain is available on either side (left or right) of unit. Drain hose and drain connection will be tied inside the unit. The installer will untie the drain hose, form trap, and connect to the condensate drain hole of installer's choice.
2. Electrical access is available on either side (left or right) of unit and is also available in the front on the left or right side of the unit.
3. Overall cabinet height and depth dimensions do not include duct flange or filter rails.
4. Units require 3 feet (91 cm) of clearance for water connections, CBP, CSP, MSP, and BSP service access. Service access is required at all removable panels locations and installer should take care to comply with all building codes and allow adequate clearance for future field service.
5. Filter removal is from right or left side of filter frame, allow 3 feet (91 cm) of access for servicing.

Legend	MB168-240
① Water Inlet	2" FPT
② Water Outlet	2" FPT
③ Condensate Drain[1]	1" FPT
④ High Voltage Access[2]	1-3/8" (3.49 cm)
⑤ Low Voltage Access[2]	7/8" (2.2 cm)

Dimensional Data
MB168-240 with WSE Vertical

Models:
MB
072-300

Unit Size		Overall Cabinet			Discharge Connections Duct Flange				Water Connections				Electrical Knockouts					Return Air Connections Using Return Air Opening			
		A	B	C	D	E	F	G	K	L	M	N	O			P	Q	S	T	U	V
									1	2	3		1	2	3						
		Width	Depth	Height	Supply Width	Supply Height	Side Offset	Center Offset	Water In	Water Out	Condensate	Connection Height						Return Width	Return Height		Return Side Offset
168-240	inch	82.3	42.0	69.8	17.5	14.7	17.9	11.5	26.1	3.1	14.6	25.8	3.0	11.0	19.0	15.1	0.9	76.0	34.0	30.7	3.6
	cm	209.0	106.7	177.3	44.5	37.3	45.5	29.3	66.3	7.9	37.1	65.5	7.6	27.9	48.3	38.4	2.3	193.0	86.4	78.0	9.1



NOTES

See the standard configuration for water connection and electrical knockout dimensions.

1. While clear access to all removable panels may not be required, the installer should take care to comply with all building codes and allow adequate clearance for future field service.
2. Units require 3 feet (91 cm) of clearance for water connections, WSE coil air bleed, CBP, CSP, BSP, PAP, and MSP.
3. Condensate drain is internally trapped, externally vented.
4. For top discharge units, BSP is on front. For front discharge units, BSP is on top. Allow 3 feet above unit for service.

LEGEND

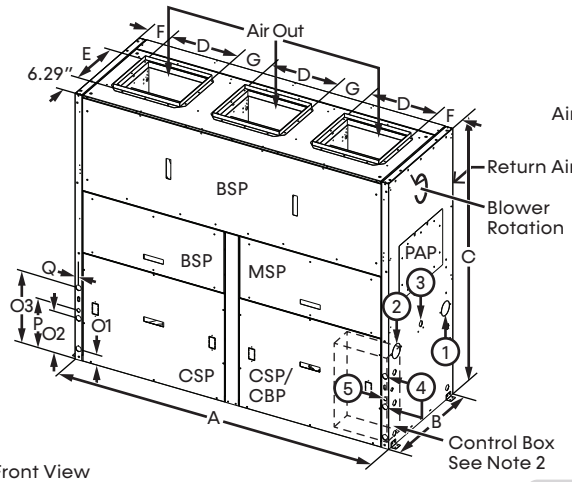
BSP = Blower Service Panel
CSP = Compressor Service Panel
CBP = Control Box Panel
MSP = Motor Service Panel
PAP = Pulley Access Panel
WSE = Waterside Economizer

Models:
MB
072-300

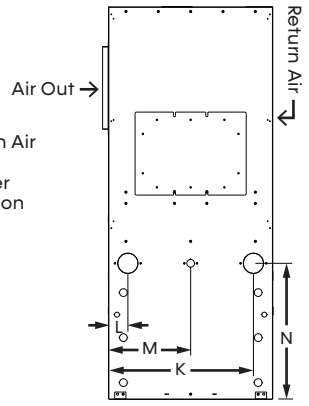
Dimensional Data
MB300 Vertical

Unit Size		Overall Cabinet			Discharge Connections Duct Flange				Water Connections				Electrical Knockouts					Return Air Connections Using Return Air Opening			
		A	B	C	D	E	F	G	K	L	M	N	O			P	Q	S	T	U	V
									1	2	3		1	2	3						
		Width	Depth	Height	Supply Width	Supply Height	Side Offset	Center Offset	Water In	Water Out	Condensate	Connection Height	1-3/8" (3.5cm)			7/8" (2.2 cm)		Return Width	Return Height		
300	inch	82.3	29.2	69.8	17.5	14.7	6.3	8.6	25.8	3.4	14.6	24.2	3.0	11.0	19.0	13.0	0.9	77.2	35.0	31.0	2.6
	cm	209.0	74.2	177.3	44.5	37.3	16.0	21.8	65.5	8.6	37.1	61.5	7.6	27.7	48.3	33.0	2.3	196.1	88.9	78.7	6.6

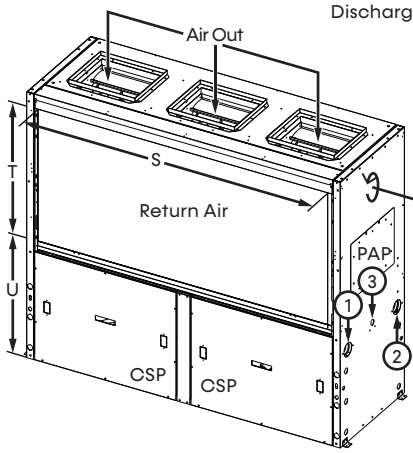
Front View
Top Discharge



Right Side View
Straight Discharge



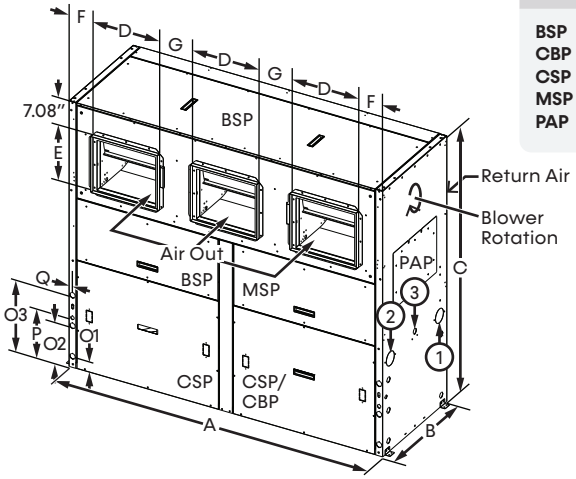
Rear Return
Top Discharge



Blower to Air Coil relationship for Top Discharge size 300



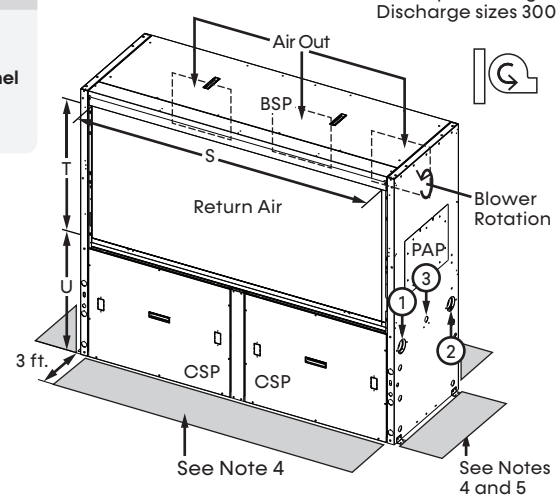
Front View
Straight Discharge



LEGEND

BSP = Blower Service Panel
CBP = Control Box Panel
CSP = Compressor Service Panel
MSP = Motor Service Panel
PAP = Pulley Access Panel

Rear View
Straight Discharge



Blower to Air Coil relationship for Straight Discharge sizes 300

NOTES

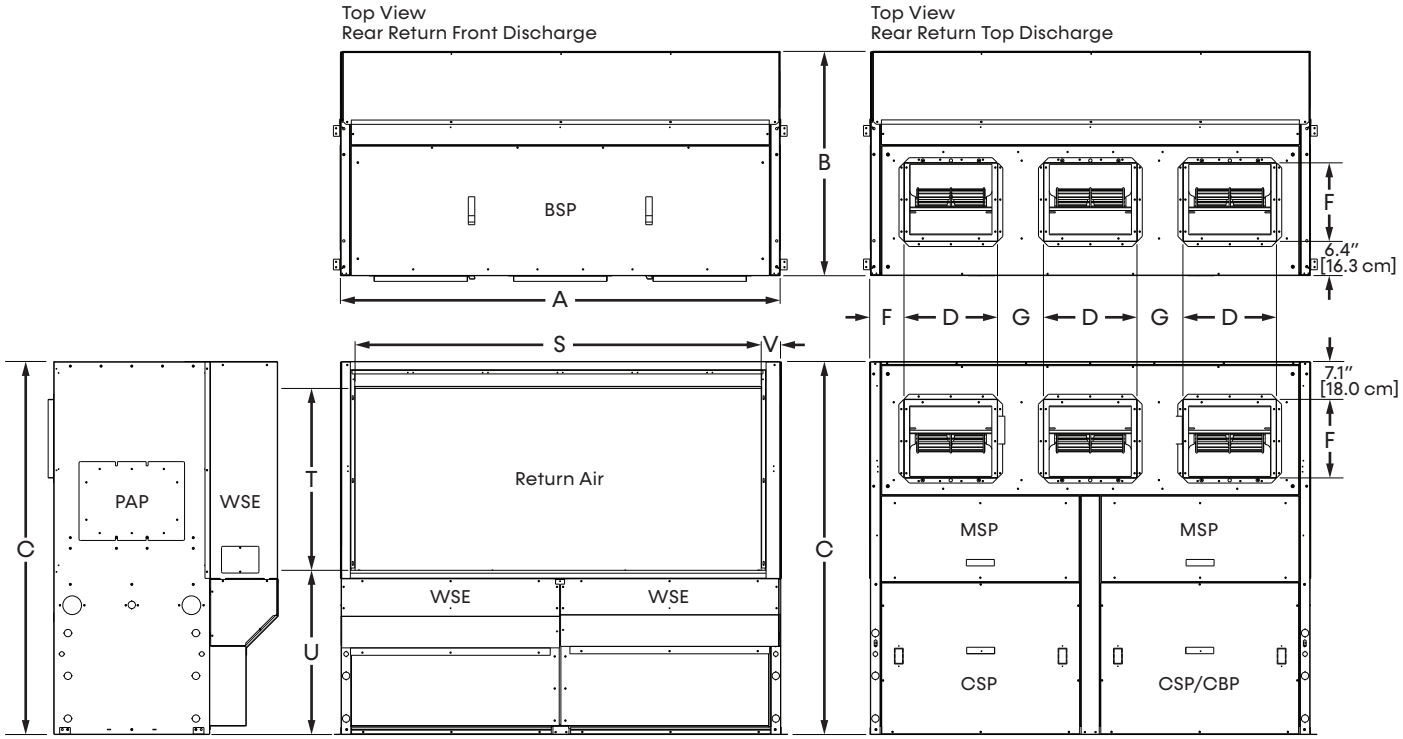
1. Condensate drain is available on either side (left or right) of unit. Drain hose and drain connection are tied inside the unit. The installer will untie the drain hose, form trap, and connect to the condensate drain hole of installer's choice.
2. Electrical access is available on either side (left or right) of unit and is also available in the front on the left or right side of the unit.
3. Overall cabinet height and depth dimension does not include duct flange for or filter rails.
4. Units require 3 feet (91 cm) of clearance, CBP, CSP, MSP and BSP service access. While access to all removable panels may not be required, the installer should take care to comply with all building codes and allow adequate clearance for future field service.
5. Filter removal is from right or left side of filter frame, allow 3 feet (91 cm) of access for servicing.

Legend	MB300
① Water Inlet	2-1/2" FPT
② Water Outlet	2-1/2" FPT
③ Condensate Drain[1]	1" FPT
④ High Voltage Access[2]	1-3/8" (3.49 cm)
⑤ Low Voltage Access[2]	7/8" (2.2 cm)

Dimensional Data
MB300 with WSE Vertical

Models:
MB
072-300

Unit Size		Overall Cabinet			Discharge Connections Duct Flange				Water Connections				Electrical Knockouts					Return Air Connections Using Return Air Opening			
		A	B	C	D	E	F	G	K	L	M	N	O			P	Q	S	T	U	V
									1	2	3		1	2	3						
		Width	Depth	Height	Supply Width	Supply Height	Side Offset	Center Offset	Water In	Water Out	Condensate	Connection Height						Return Width	Return Height		Return Side Offset
300	inch	82.3	42.0	69.8	17.5	14.7	6.4	8.6	25.8	3.4	14.6	24.2	3.0	11.0	19.0	15.1	0.9	76.0	34.0	30.7	3.6
	cm	209.0	106.7	177.3	44.5	37.3	16.3	21.8	65.5	8.6	37.1	61.5	7.6	27.9	48.3	38.4	2.3	193.0	86.4	78.0	9.1



NOTES

See the standard configuration for water connection and electrical knockout dimensions.

1. While clear access to all removable panels may not be required, installer should take care to comply with all building codes and allow adequate clearance for future field service.
2. Units require 3 feet (91 cm) of clearance for water connections, WSE coil air bleed, CBP, CSP, BSP, PAP, and MSP.
3. Condensate drain is internally trapped, externally vented.
4. For top discharge units, BSP is on front. For front discharge units, BSP is on top. Allow 3 feet above unit for service.

LEGEND

BSP = Blower Service Panel
CSP = Compressor Service Panel
CBP = Control Box Panel
MSP = Motor Service Panel
PAP = Pulley Access Panel
WSE = Waterside Economizer

Models:
MB
072-300

Horizontal Installation

HORIZONTAL UNIT LOCATION

Units are not designed for outdoor installation. Locate the unit in an INDOOR area that allows enough space for service personnel to perform typical maintenance or repairs without removing unit from the ceiling. Horizontal units are typically installed above a false ceiling or in a ceiling plenum. Never install units in areas subject to freezing or where humidity levels could cause cabinet condensation (such as unconditioned spaces subject to 100% outside air). Consideration should be given to access for easy removal of the filter and access panels. Provide sufficient room to make water, electrical, and duct connection(s). Allow 3-feet (91 cm) clearance for servicing unit through all access panels.

Make provisions for return air to freely enter the space by means of a louvered door or other means If the unit is located in a confined space, such as a closet. Remove any access panel screws that may be difficult to remove after the unit is installed prior to setting the unit. Use the **Typical Horizontal Unit Installation** figure for an example of a typical installation. Refer to the unit submittal data or engineering design guide for dimensional data.

Conform to the following guidelines when selecting unit location:

- Provide a hinged access door in concealed spline or plaster ceilings. Provide removable ceiling tiles in T-bar or lay-in ceilings. Refer to horizontal unit dimensions for specific series and model in the unit's Product Catalog. Size the access opening to accommodate the service technician during the removal or replacement of the compressor, control, or blower assembly. Provide access to hanger brackets, water valves and fittings. Provide screwdriver clearance to access panels, discharge collars and all electrical connections.
- DO NOT obstruct the space beneath the unit with piping, electrical cables, and other items that prohibit future removal of components or the unit.
- Use a manual portable jack/lift to lift and support the weight of the unit during installation and servicing.

The installation of water-source heat pump units and all associated components, parts and accessories which make up the installation shall be in accordance with the regulations of ALL authorities having jurisdiction and MUST conform to all applicable codes. It is the responsibility of the installing contractor to determine and comply with ALL applicable codes and regulations.
NOTE: Minimum clearances for installation are the same as the minimum required service clearances. Consult the service clearances or reference of installation clearances for more information.

MOUNTING HORIZONTAL UNITS

Horizontal units have four hanger brackets partially attached at the factory, one at each corner. Enclosed within the unit there is a hanger kit hardware bag containing vibration isolation grommets, washers, screws and a hanger installation instruction page. One additional screw from the hardware bag must be added to each hanger bracket before unit installation. Tighten each screw to 75 in-lbs (8.5 Nm). See the **Hanger Bracket** figure for reference. Refer to the hanger installation instruction page contained in the hardware bag for details of final hanger bracket attachment and unit suspension.

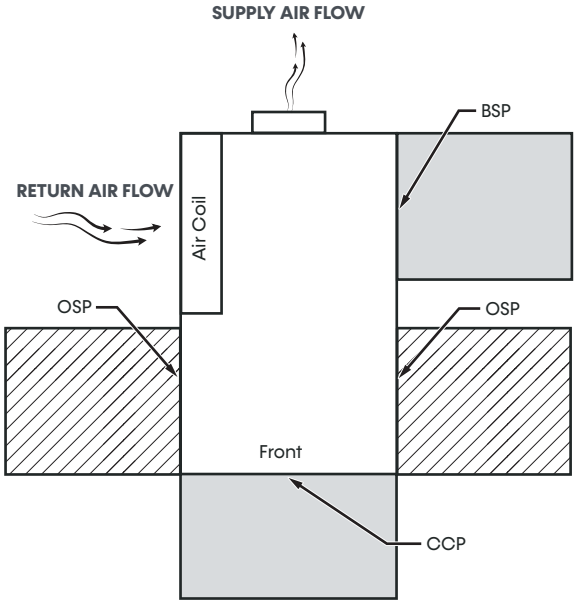
Use four (4) field-supplied threaded rods and factory-provided vibration isolators to suspend the unit. Safely lift the unit into position supporting the bottom of the unit. Ensure the top of the unit is not in contact with any external objects. Connect the top end of the four all-thread rods, slide rods through the brackets and grommet then assemble washers and double nuts at each rod. Ensure that the unit is approximately level and that the threaded rod extends past the nuts.

Pitch the unit toward the drain as shown in the **Horizontal Unit Pitch** figure to improve the condensate drainage.

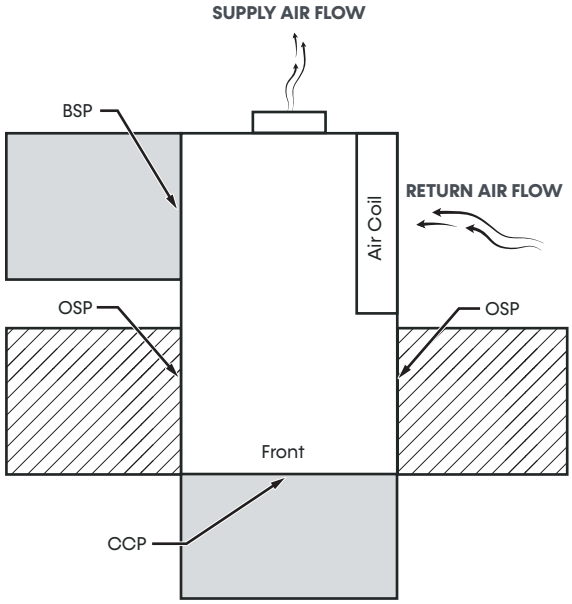
Horizontal Installation Service Access

Models:
MB
072-300

LEFT RETURN BACK DISCHARGE

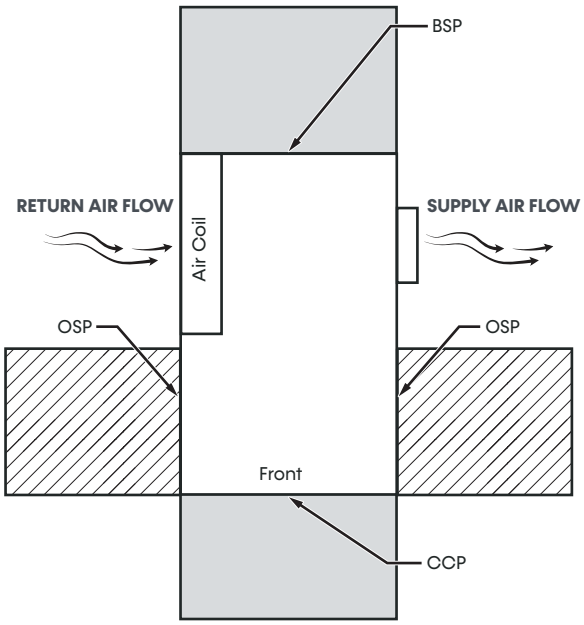


RIGHT RETURN BACK DISCHARGE

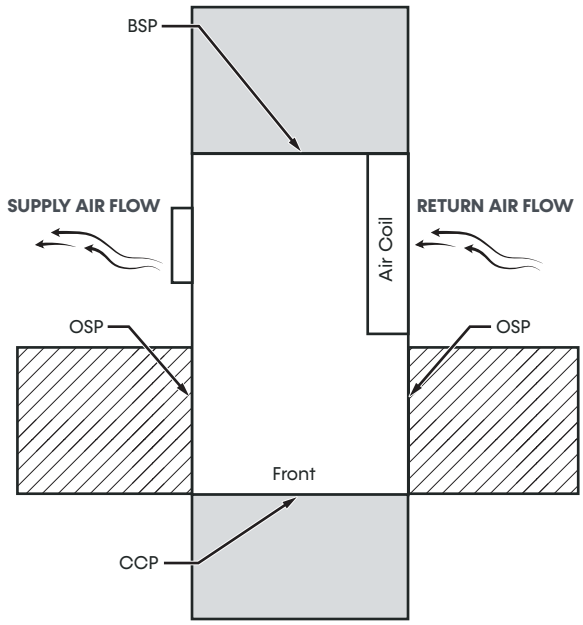


CCP

LEFT RETURN STRAIGHT DISCHARGE



RIGHT RETURN STRAIGHT DISCHARGE



NOTES

1. While clear access to all removable panels is not required, installer should take care to comply with all building codes and allow adequate clearance for future field service.
2. CCP and BSP requires 2-feet of service access.
3. Blower service access is through back panel on straight discharge units or through panel opposite air coil on back discharge units.
4. OSP are removable panels that provide additional access to the units interior. Clear access to OSP panels is not required and they are not to be used in place of the mandatory CCP and BSP panels.

= Mandatory Service Access 2-foot (61 cm)

= Optional Service Access 2-foot (61 cm)

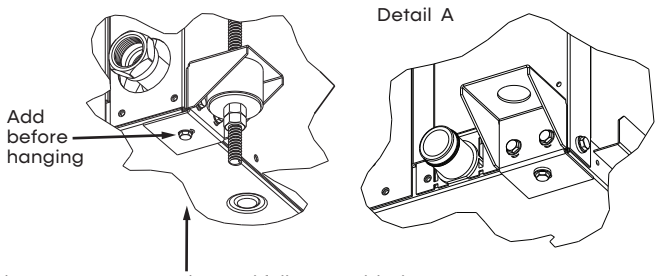
LEGEND

CCP = CONTROL/COMPRESSOR ACCESS
BSP = BLOWER SERVICE PANEL
OSP = OPTIONAL SERVICE PANEL (NOT REQUIRED)

Models:
MB
072-300

Horizontal Installation

Figure 1: Hanger Bracket



View: Water connection end fully assembled
(Unit pictured for hanger bracket reference)
(Water hardware may vary per unit model)

Figure 2: Horizontal Unit Pitch

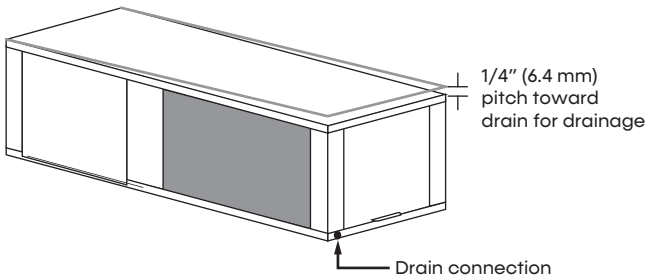
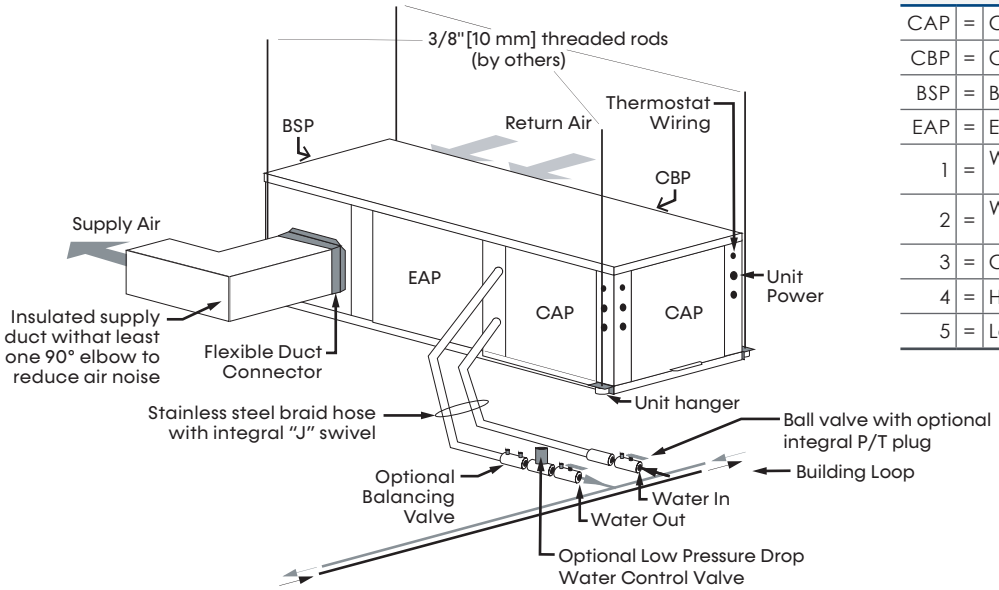


Figure 3: Typical Horizontal Unit Installation



Legend inch (cm)		
CAP	=	Compressor Access Panel
CBP	=	Control Box Panel
BSP	=	Blower Service Panel
EAP	=	Expansion Valve Access Panel
1	=	Water Outlet - 1-1/4 (3.2) FPT (072-096) 1-1/2 (3.8) FPT (120)
2	=	Water Inlet - 1-1/4 (3.2) FPT (072-096) 1-1/2 (3.8) FPT (120)
3	=	Condensate 3/4 (1.9) FPT
4	=	High Voltage 1-1/8 (2.9) KO
5	=	Low Voltage 7/8 (2.2) KO

NOTES

1. Service access is required for all removable panels and installer should take care to comply with all building codes and allow adequate clearance for future field service.
2. Water inlet and water outlet connections are available on either side (left or right) of the unit.
3. Condensate drain is ¾-inch FPT and is located on cabinet end opposite the compressor.
4. Electrical access is available on either side (left or right) of the front.
5. Electric box is on right side. It can be field converted to left side. Conversion should only be attempted by qualified service technician. If electric box relocated to opposite side, and water connected to opposite side, then this access is not required.
6. Units require 3 feet (90.1 cm) of clearance for water connections, CAP, CBP, EAP, and BSP service access.
7. Overall cabinet width dimensions does not include filter rail and duct flange.
8. Units are shipped with air-filter rails that are not suitable for supporting return air ductwork. An air-filter frame with duct-mounting collar is available as an accessory.

AIR COIL

To obtain maximum performance, the air coil should be cleaned before startup. A 10% solution of dishwasher detergent and water is recommended for both sides of the coil. A thorough water rinse should follow. **Do not use ultraviolet-based antibacterial systems.**

⚠ NOTICE

Installation Note - Ducted Return: Many horizontal WSHPs are installed in a return air ceiling plenum application (above ceiling). Vertical WSHPs are commonly installed in a mechanical room with free return (e.g. louvered door). Filter rails are the industry standard and are included on commercial heat pumps only for holding the filter. For ducted return applications, the filter rail must be removed and replaced with a duct flange or filter frame. Canvas or flexible connectors should also be used to minimize vibration between the unit and ductwork.

Horizontal Installation

Models:
MB
072-300

CONDENSATE PIPING

A condensate drain line must be installed and pitched away from the unit to allow for proper drainage. This connection must meet all local plumbing/building codes.

Pitch the unit toward the drain as shown in the **Horizontal Condensate Connection** figure to improve the condensate drainage.

Install condensate trap at each unit with the top of the trap positioned below the unit condensate drain connection as shown in Horizontal Unit Pitch. Design the depth of the trap (water-seal) based upon the amount of ESP capability of the blower (where 2 inches [51 mm] of ESP capability requires 2 inches [51 mm] of trap depth). As a general rule, 1½-inch [38 mm] trap depth is the minimum.

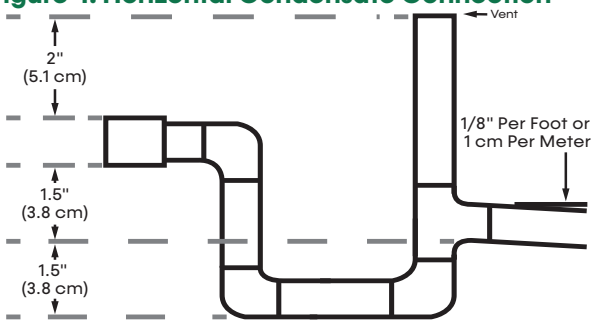
Each unit must be installed with its own individual trap and connection to the condensate line (main) or riser. Provide a means to flush or blow out the condensate line. DO NOT install multiple units with a common trap and/or vent.

Always vent the condensate line when dirt or air can collect in the line or a long horizontal drain line is required. Also vent when large units are working against higher external static pressure than other units connected to the same condensate main since this may cause poor drainage for all units on the line. **WHEN A VENT IS INSTALLED IN THE DRAIN LINE, IT MUST BE LOCATED AFTER THE TRAP IN THE DIRECTION OF THE CONDENSATE FLOW.**

STANDARD & STAINLESS STEEL DRAIN PANS

The condensate connection is female pipe thread. Field-provided male adapter required for condensate drain connection.

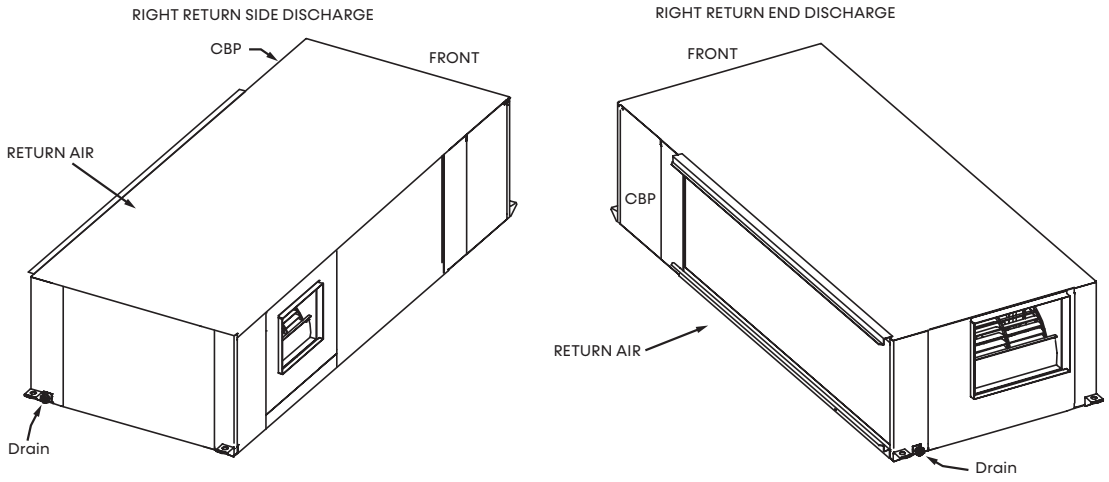
Figure 4: Horizontal Condensate Connection



⚠ CAUTION

Ensure condensate line is pitched toward drain ⅛ inch per foot [11 mm per m] of run.

Figure 5: Right Return Side Discharge to Back



Models:
MB
072-300

Horizontal Installation

DUCT SYSTEM INSTALLATION

Proper duct sizing and design is critical to the performance of the unit. The duct system should be designed to allow adequate and even airflow through the unit during operation. Air flow through the unit MUST be at or above the minimum rated airflow for a given unit size to avoid equipment damage. Duct systems should be designed for quiet operation. Refer to the following horizontal and vertical duct system example figures:

- **Typical Horizontal Unit Installation**
- **Typical Vertical Unit Installation**

A flexible connector is recommended for both discharge and return air duct connections on metal duct systems to eliminate the transfer of vibration to the duct system. To maximize sound attenuation of the unit blower, the supply and return plenums should include internal fiberglass duct liner or be constructed from ductboard for the first few feet. Application of the unit to uninsulated ductwork in an unconditioned space is not recommended, as the unit's performance may be adversely affected.

Include at least one 90-degree elbow in the supply duct to reduce air noise. If air noise or excessive air flow is a problem, adjust the blower speed. For airflow charts, consult submittal data for the series and model of the specific unit.

If the unit is connected to existing ductwork, a previous check should have been made to ensure that the ductwork has the capacity to handle the airflow required for the unit. If ducting is too small, as in the replacement of a heating only system, a larger ductwork should be installed. All existing ductwork should be checked for leaks and repaired as necessary.

An unventilated area where water-source heat pump is installed and surpasses a R-454B refrigerant charge of 62 oz (1.76 kg), shall be without continuously operating open flames (for example an operating gas appliance) or other POTENTIAL IGNITION SOURCES (for example an operating electric heater, hot surfaces).

Only auxiliary electric heaters approved by the manufacturer shall be installed in connecting ductwork. The installation of any other auxiliary devices is beyond the manufacturer's responsibility.

For duct-connected units, false ceilings or drop ceilings may be used as a return air plenum as long as the the manufacturer RDS is installed as shown in the **RDS Installation** figure in the *Electrical Refrigerant Detection System* section.

⚠ WARNING

Ducts connected to an appliance shall not contain a POTENTIAL IGNITION SOURCE.

⚠ WARNING

Keep any required ventilation openings clear of obstruction.

⚠ WARNING

For mechanical ventilation, the lower edge of the air extraction opening where air is exhausted from the room shall not be more than 3.94 inches (100 mm) above the floor. The location where the mechanical ventilation air extracted from the space is discharged shall be separated by a sufficient distance, but not less than 9.84 feet (3 m), from mechanical ventilation air intake openings, to prevent recirculation to the space.

Horizontal Installation
Field Conversion of Air Discharge

Models:
MB
072-300

⚠ WARNING

To prevent injury or death from electrical shock, disconnect electrical power source.

OVERVIEW

Horizontal units can be field converted between straight (side) and back (end) discharge using the instructions below.

NOTE: It is not possible to field convert return air between left or right return models due to the necessity of refrigeration copper piping changes.

PREPARATION

Field conversion must be completed on the ground. If the unit is already hung, it should be taken down for the field conversion. Place in a well-lighted area. Conversion should only be attempted by a qualified service technician.

SIDE-TO-BACK DISCHARGE CONVERSION

1. Remove back panel and side access panel
2. Loosen two motor-slide nuts, raise motor-slide assembly and remove belt and motor sheave.
3. Remove blower sheave. Remove motor bolts and carefully remove motor.
4. Remove two motor clips and reattach to opposite side.
5. Unbolt (three per side) complete housing assembly.
6. Rotate complete assembly into new position. Locate over mounting holes in base, reattach using three bolts per side.
7. Mount motor, motor sheave, blower sheave and belt. Make sure wires are not pinched and not over sharp edges. Adjust motor downward to tighten belt. Raise or lower motor slide assembly with adjusting bolt and retighten two slide nuts. Check for correct tension (See Tensioning V-Belt Drives page). Rewire motor (at contactor) for correct rotation. Spin blower wheel to ensure wheel is not obstructed.
8. Replace two panels.

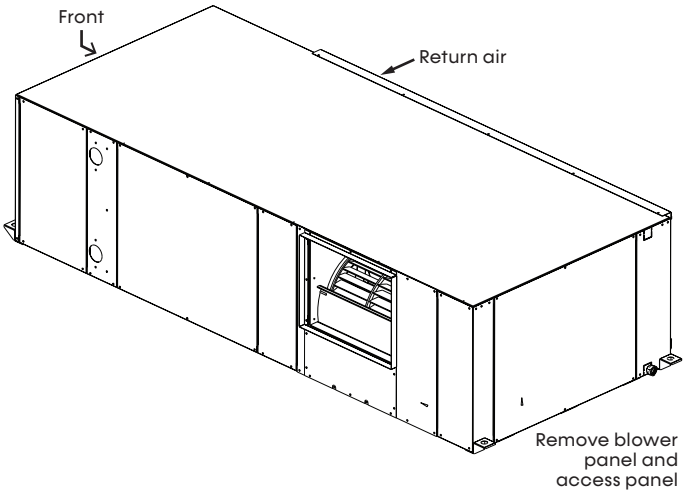
BACK-TO-SIDE DISCHARGE CONVERSION

If the discharge is changed from back to side, use Side-to-Back conversion steps noting that illustrations are reversed.

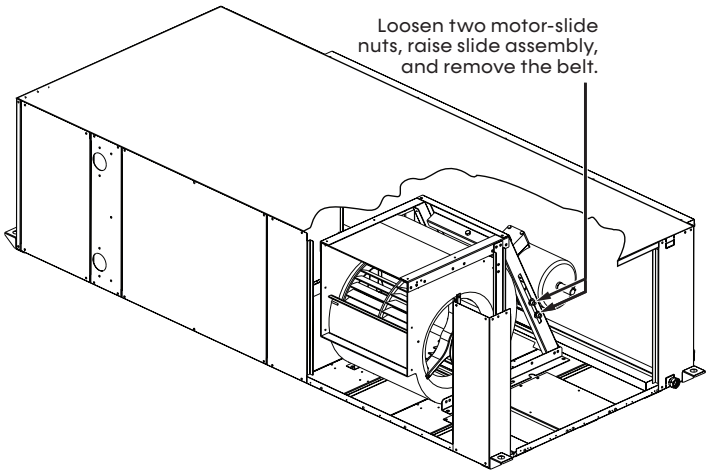
LEFT VERSUS RIGHT RETURN

It is not possible to field convert return air between left or right return models due to the necessity of refrigeration copper piping changes. However, the conversion process of side to back or back to side discharge for either right or left return configuration is the same. In some cases, it may be possible to rotate the entire unit 180 degrees if the return air connection needs to be on the opposite side. Rotating the unit moves the piping to the other end of the unit.

Step 1: Remove Blower Panel and Access Panel



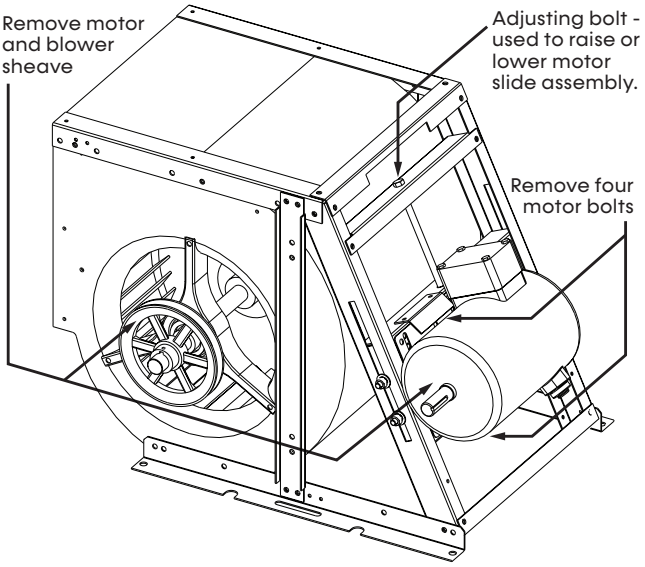
Step 2: Access Blower Housing Assembly



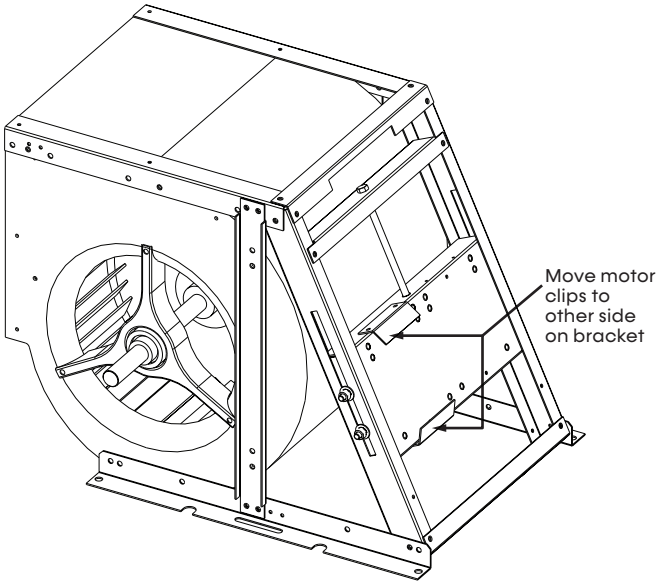
Models:
MB
072-300

Horizontal Installation
Field Conversion of Air Discharge

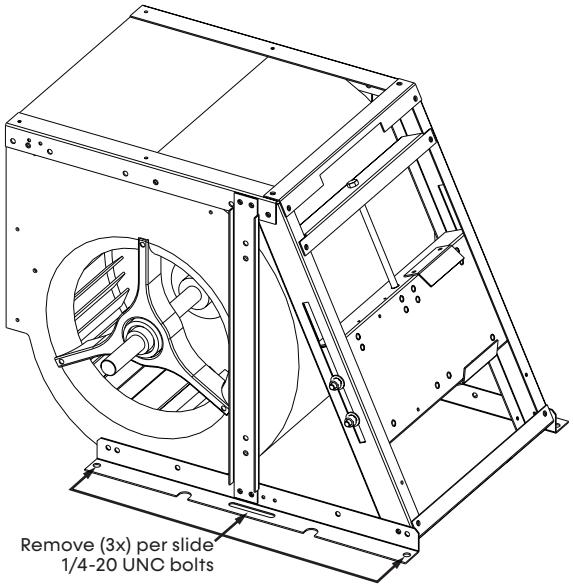
Step 3: Prepare Blower Housing Assembly



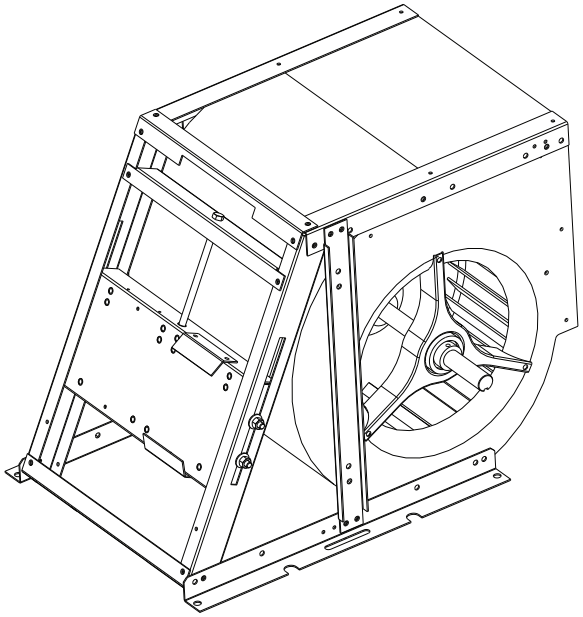
Step 4: Change Motor Clip Orientation



Step 5: Remove Bolts



Step 6: Rotate Blower Housing and Bolt Down



Rotate entire blower housing assembly to rest at back end of the unit. Locate housing holes and bolt down using previous 1/4-20 UNC bolts (3x) each side.