



FAN COIL AIR CONDITIONERS

INSTALLATION, OPERATION, & MAINTENANCE

NEW RELEASE

Form 115.20-NOM4 (105)

MODELS: YMB, YMB-HW, YMBE

YMB Series

(2-pipe, cooling and heating)
(Replaces the MH Series)

YMB-HW Series

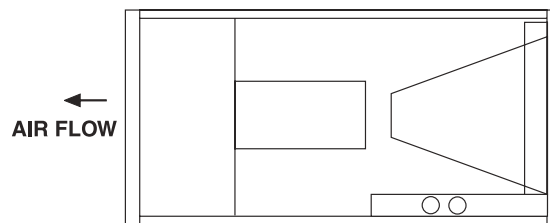
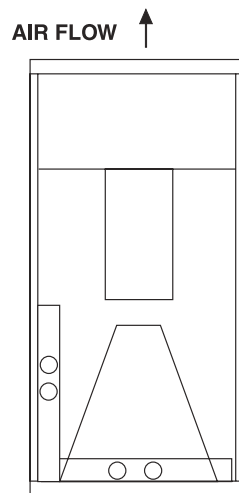
(4-pipe, cooling and heating)
(Replaces the MH-HW Series)

YMBE Series

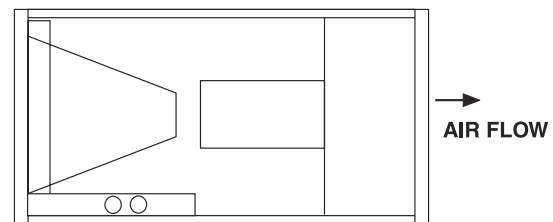
(2-pipe, cooling with electric heat)
(Replaces the MHE Series)



00781VIP



(STANDARD HORIZONTAL POSITION)



(ALTERNATE HORIZONTAL POSITION)
(FIELD-CONVERTIBLE)

LD07966

(See page 3 for details)

Notes:

1. For proper operation, control valve must be normally closed.
2. Aquastats provided where required.
3. Electric Heat is only available in the YMBE series. These units require a remote thermostat (low voltage 4 wire thermostat).

******* WARNING TO INSTALLER, SERVICE PERSONNEL AND OWNER *******

Altering the product or replacing parts with non-authorized factory parts voids all warranty or implied warranty and may result in adverse operational performance and/or a possible hazardous safety condition to service personnel and occupants. Company employees and/or contractors are not authorized to waive this warning.

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Reference Documents:

- Engineering Guide, Direct Drive YMB Models Form115.20-EG4 (Latest)
- Parts List, Fan Coil Air Conditioners Form 115.20-RP2 (Latest)

These documents can be ordered through Publications Dept.
 or downloaded @ <http://intranet.york.com/web0003/library/default.asp>

TABLE 1 – SHIPPING WEIGHTS (LBS)

MODEL	WT.	MODEL	WT.	MODEL	WT.
8YMB	115	8YMB-HW	120	8YMBE	115
12YMB	120	10/12YMB-HW	135	12YMBE	120
16/20YMB	210	16YMB-HW 20YMB-HW	210 264	16/20YMBE	210

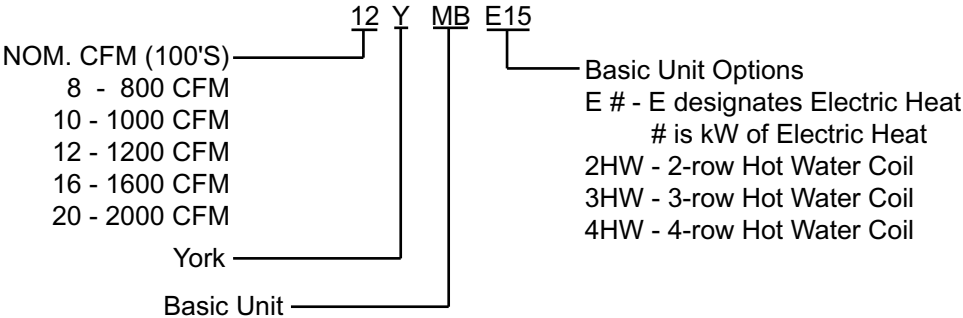


FIG. 1 – UNIT NOMENCLATURE

INSTALLATION

RECEIVING

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.

STORAGE

If the equipment is not to be immediately installed, store it in a dry location with the motor protected against moisture, dust, corrosion and physical damage.

DESCRIPTION

The YMB Series 2-pipe fan coil comes with a 4-row cooling / heating coil and a 120V multi-speed motor.

The YMBE Series 240V, 2-pipe fan coil comes with a 4 row-cooling coil, 240V multi-speed motor, 240/24 transformer, and up to 25kW of factory installed electric heat. Models with more than 10kW also include a circuit breaker for branch circuit protection. Control voltage is 24V.

The YMBE Series fan coil comes with a 4-row cooling coil, 277V multi-speed motor, and up to 10kW of factory installed heat. A unit mounted disconnect is standard.

The YMB-HW Series 4-pipe fan coil includes a 4 row cooling coil, a 2, 3, or 4 row heating coil installed in the reheat position, and a 120V multi-speed motor.

HORIZONTAL APPLICATION

These fan coil units are factory assembled for horizontal left side down application without any modification required. To convert to horizontal right side down, remove horizontal drain pan and A-coil assembly, flip horizontal drain pan over to right side and reinstall horizontal drain pan and A-coil into cabinet. Secure forward edge of horizontal drain pan with angle bracket. The unit should be leveled in such a way that there is slope toward the condensate drain nipple to assure positive drainage.

WIRING

All wiring must comply with the local and national code requirements. Units are provided with wiring diagrams and nameplate data to provide information required for necessary field wiring. All wiring must comply with local and national code requirements.



Any devices such as fan switches or thermostats that have been furnished by the factory for field installation must be wired in strict accordance with the wiring diagram that is supplied with the unit. Failure to do so could result in damage or injury.

YMBE SERIES

Fan coil units with 10kW or less electric heat are provided with a terminal block for connection of one electrical service. Units with 15 kW and 20kW are provided with dual circuit breakers for the connection of two electrical services and units with 25kW are provided with three circuit breakers for the connection of three separate electrical services (*see Figure 2 & 3*).

These units may be provided with a class 2 transformer for 24-volt control circuits. Should any add-on equipment also have a class 2 transformer furnished, care must be taken to prevent interconnecting outputs of the two transformers by using a thermostat with isolating contacts.

INSTALLATION

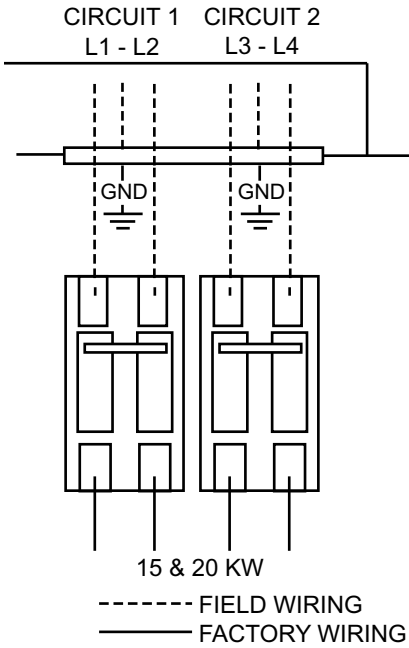


FIG. 2 – YMBE WIRING CONNECTIONS, 15 & 20 KW

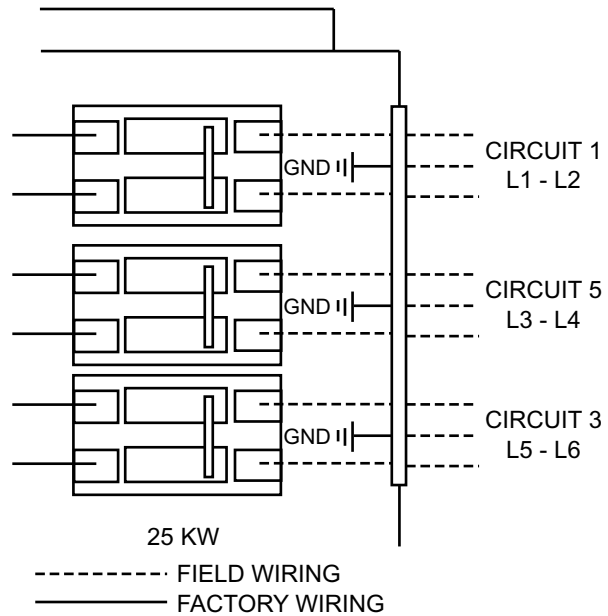


FIG. 3 – YMBE WIRING CONNECTIONS, 25 KW

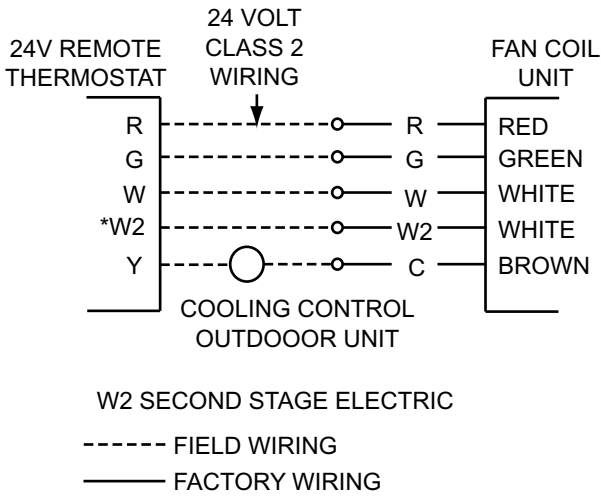


FIG. 4 – STANDARD LOW VOLTAGE WIRING

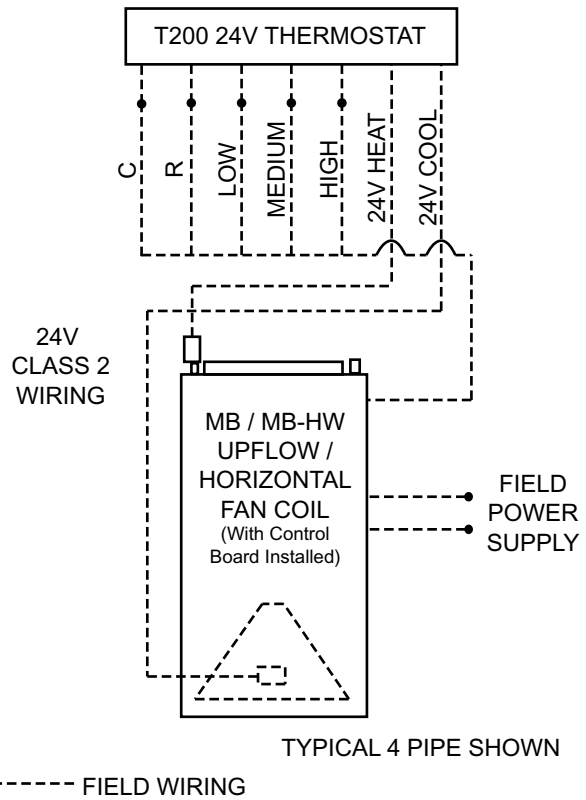


FIG. 5 – T200 THERMOSTAT W/CONTROLLER OPTION

INSTALLATION

YMB, YMB-HW:

- 1) Separate cooling and heating coils (4 row cooling coil)
- 2) 120V multi-speed motor.
- 3) Vertical / Horizontal drain pan (right-to left and left-to right airflow)
- 4) Manual air vent
- 5) Throw away filter

YMBE:

- 1) Factory installed electric heat
- 2) 208/240 volt Motor
- 3) 240/24 transformer
- 4) Circuit breaker disconnect (above 10 kW)
- 5) Manual air vent
- 6) Throwaway filter
- 7) Vertical / Horizontal drain pan (right-to left and left-to right airflow)
- 8) 277 available / 10 kW maximum

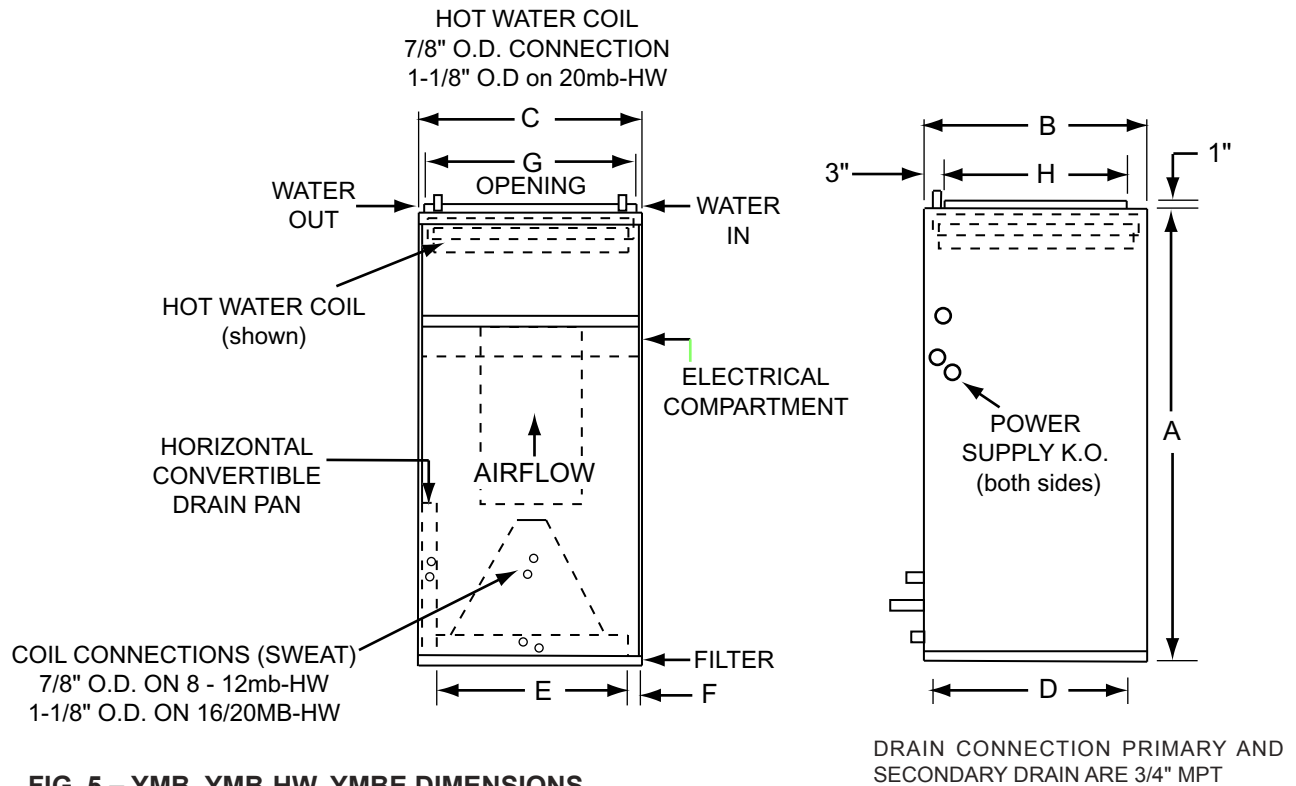


FIG. 5 – YMB, YMB-HW, YMBE DIMENSIONS

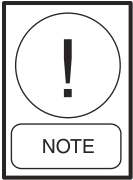
TABLE 2 – PHYSICAL DIMENSIONS (INCHES)

MODEL	A	B	C	D	E	F	G	H	FILTER SIZE
8YMB 8YMB-HW 8YMBE	40	20	20	18-1/2	16	2	18	16	18 X 20 X 1
12YMB 10/12YMB-HW	42	23	20	21-1/2	16	2	18	19	20 X 22 X 1
12YMBE	42	23	20	21-1/2	16	2	18	17	
16/20YMB 16YMB-HW	48	28	21-1/4	26-1/4	17-1/4	2	18	24	20 X 25 X 1
16/20YMBE	48	23	21-1/4	22-1/4	17	2	19-7/8	18-1/2	
20YMB-HW	52	28	25-1/4	26-1/2	21-1/4	2	22	24	14 X 24 X 1 (2 REQUIRED)

INSTALLATION

PIPING

The supply and return piping must be adequately sized to meet the design water flow requirements as specified for the specific installation (*see table 3 for connection sizes*). All chilled water piping must be insulated to prevent condensation. It is also recommended that all piping be insulated to prevent freezing when piping is run in an unconditioned space.



Coil freeze protection is recommended for applications where the fan coil is located in ambient air locations (attics, crawl spaces, etc.) or within structures that may be unoccupied during freezing conditions. Consult the factory for additional information.

PIPING PRECAUTIONS

- Flush all piping prior to connection to remove all debris.
- Use wet cotton rags to cool valve bodies when soldering.
- Open all valves (midway for hand valves, manually open on motorized valves) prior to soldering.
- When soldering to bronze or brass, heat the piping while in the socket/cup and begin introducing the solder when the flux boils rapidly. Avoid direct flame into the solder joint.

- Heat can only be applied to the cup of the valve body for a minimal time before damage occurs (even with the use of wet rags).
- Avoid rapid quenching of solder joints, as this will produce joints of inferior quality.
- Connect all piping per accepted industry standards and observe all regulations governing installation of piping systems. When all connections are complete, the system must be pressure tested. Repair any solder joint leaks and gently tighten any leaking valve packing nuts and piping accessories as required. Hydronic systems are not designed to hold pressurized air and should only be tested with water.



When connecting piping or valve kits to fan coil units, do not bend or reposition the coil header tubing for alignment purposes. This could cause a tubing fracture resulting in a water leak when water pressure is applied to the system.

DRAIN PIPING

Condensate drain lines must be installed with adequate slope away from the unit to assure positive drain age. Since the drain pan is located on the suction side of the blower, a negative pressure exists at the drain pan and a minimum trap of 1-1/2 inches must be provided in the drain line to assure proper drainage.

Drain connections, primary and secondary, are 3/4" MPT.

TABLE 3 – COIL CONNECTIONS

COOLING COIL CONNECTIONS (INCHES)	
YMB, YMBE, YMB-HW	
SIZES 8, 10, 12	7/8" ODS
SIZES 16, 20	1-1/8" ODS
HEATING COIL CONNECTIONS (INCHES)	
YMB-HW	
SIZES 8, 10, 12, 16	7/8" ODS
SIZE 20	1-1/8" ODS

FAN COILS START-UP CHECKLIST

INSTALL CHECKLIST

<input type="checkbox"/> Equipment received as ordered.
<input type="checkbox"/> Unit checked for damage interior and exterior.
<input type="checkbox"/> Make sure all ductwork is complete and available for full air flow.
<input type="checkbox"/> Unit installed level to ensure proper drainage and operation.
<input type="checkbox"/> Unit installed with proper clearances.
<input type="checkbox"/> Ensure condensate water will drain toward the drain connection. An overflow drain may be required as a back up to a clogged primary drain.
<input type="checkbox"/> Check that coil(s), valves and piping have been leak checked and insulated as required.
<input type="checkbox"/> Main coil drain pan must be properly trapped and charged with water before units are started.
<input type="checkbox"/> Ensure that all air has been vented from the system.
<input type="checkbox"/> Return valves to their proper operating positions prior to start-up.
<input type="checkbox"/> Repair any solder joint leaks and gently tighten any leaking valve packing nuts and piping accessories as required.
<input type="checkbox"/> Install all panels.

CLEANING CHECKLIST

<input type="checkbox"/> Installer has cleaned out interior.
<input type="checkbox"/> Ensure drain pan free from foreign material.
<input type="checkbox"/> Ensure air filters are clean, installed properly and secured. Use the directional arrows or other information on the filter to determine the proper flow direction.

CONTROLS CHECKLIST

<input type="checkbox"/> Check that supply voltage matches nameplate data.
<input type="checkbox"/> Ensure that the unit is properly grounded.
<input type="checkbox"/> Controls installation complete
<input type="checkbox"/> Check all electrical connections for tightness.
<input type="checkbox"/> Review electrical print for correct wiring.

Fan INSPECTION - *The fan should be inspected and cleaned, in conjunction with maintenance of the motor and bearings. It is important to keep the wheel clean in order to avoid imbalance and vibration.*

<input type="checkbox"/> Check tightness of fan bearing locking collar.
<input type="checkbox"/> With power off, check blower wheel set screws for tightness and ensure that the blower wheel(s) rotate freely and quietly.
<input type="checkbox"/> Check tightness of all motor base and mounting bolts.
<input type="checkbox"/> Check motor connections to ensure that they are secure and made in accordance with the wiring diagram
<input type="checkbox"/> Rotate all moving components manually. Adjust as required.
<i>NOTE: If the motor and fan have not been operated in the last (4) four weeks or more, lubricate all the bearings and rotate the motor and fan monthly to prevent moisture from accumulating in the bearings. (See Form 50.20-NM3, Long Term Storage)</i>

MAINTENANCE

MOTOR

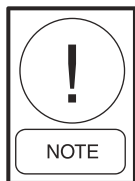
The blower motor should be cleaned annually and if it has oiling ports, it should be oiled with a good grade of SAE 20 oil. Normally a few drops of oil in each bearing is sufficient.

COIL

The coil must be kept clean by any of the following methods.

1. Cleaning with low-pressure compressed air.
2. Flushing or rinsing with water (a detergent is advisable for greasy surfaces).

FILTERS



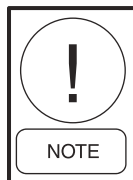
Clean or Replace Air Filters Regularly

The intervals at which filters require replacement depend on local conditions.

Because of dust and lint in the room, room-air filters load up much more rapidly than outdoor-air filters. Under normal conditions, the room air filter requires replacement every six to eight weeks.

To ensure proper maintenance of the filters, it is best to follow an organized maintenance procedure. The following one is recommended:

Divide the total number of units on the job into six equal groups. Each week inspect, clean or replace the filters in each group, in rotation. This insures a uniform servicing interval. The interval may be lengthened or shortened as determined by experience. If inspection shows only the room-air filter to be dirty, this one alone should be replaced.



Dirty filters reduce the air and heating capacities of the Unit Ventilator. When the filters are excessively dirty, the unit heating capacity will be so reduced that it is ineffective for heating the room. When a room fails to heat, always check the filters.

CLEAN UNIT INTERIOR

Once a year clean the fans and coils of the unit thoroughly. Remove the access panel as necessary.

Wipe the interior of the unit clean with a rag. Wipe the motor and inside and outside of the fan housings. (In cooling units, clean out the drain pan.)

