

**YVC****MODEL YVC -Vertical Concealed Model**

The **YVC** model fan coil is designed to be furred into the wall where the supply and return or both are connected to short runs of ductwork. These units are often used for perimeter heating and cooling of offices, corridors, hospitals, apartments, hotels, and other multi-room buildings.

**YVF/YVS****MODEL YVS / YVF -Vertical Cabinet Models YVS (Slant Top), YVF (Flat Top)**

The **YVS / YVF** model fan coils have the addition of an attractive, painted cabinet to blend with any decor. These units will have heavy-duty stamped face louvered grilles (Style A), plastic discharge grilles (Style A), or metal grilles (Style B). These units are typically installed in plain sight, under windows or against walls in schools, hospitals, office buildings, and other institutions.

**YWC****MODEL YWC -Vertical Recessed Wall Model**

The **YWC** model fan coil is designed to be recessed into the wall. These units are engineered to be quiet and designed to be easy to install and service. These units are ideal for perimeter heating and cooling in hotels, apartments, hospitals, public office buildings, offices, corridors, and other multi-room buildings. This unit comes standard with a decorative wall panel for front supply and return air.

**Notes:**

1. 2-Pipe units have one water coil. 4-Pipe units have two water coils.
2. Changeover is used to select heating or cooling mode.
3. YORK International does not recommend "fan cycle" applications for cooling on unit mounted thermostats.
4. For proper operation, control valve must be normally closed.
5. Aquastats provided where required.

**\*\*\*\*\* 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.

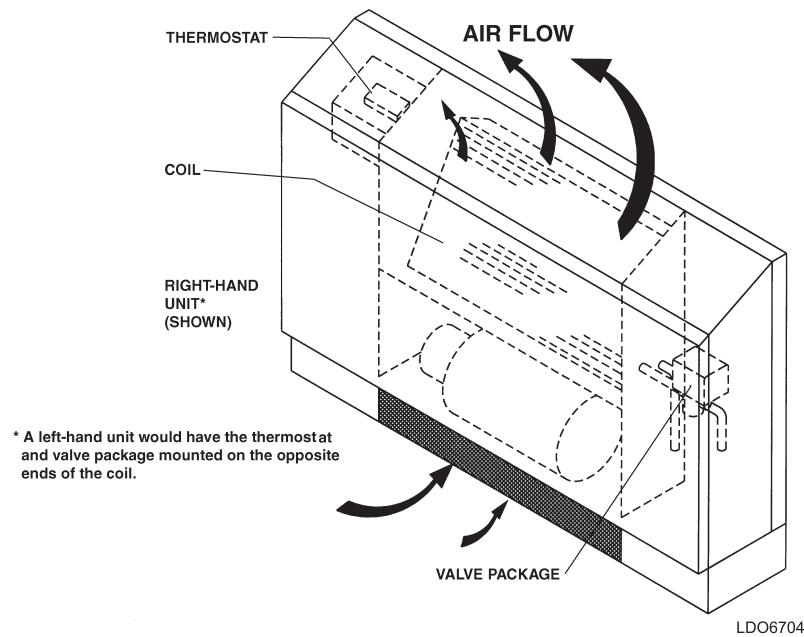
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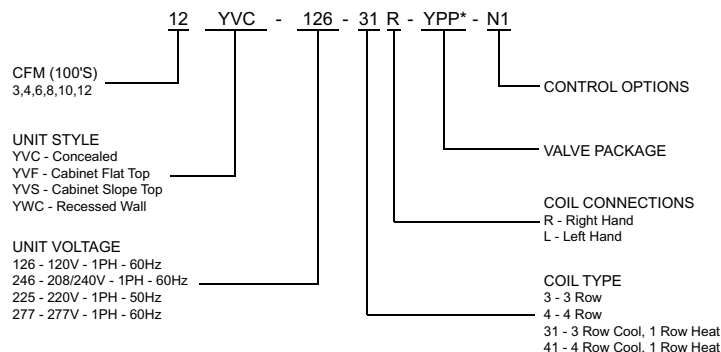
### Reference Documents:

- IOM for YH (Horizontal Units)                      Form 115.20-NOM3 (Latest)
- IOM for YSHW, YSHX                                  Form 115.22-NOM5 (Latest)
- IOM for YSVW, YSVX                                  Form 115.22-NOM2(Latest)
- Parts List    Form 115.20-RP2(Latest)

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



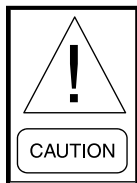
**FIG. 1 – VERTICAL UNITS ONLY - YVC, YWC, YVF, YVS AIR FLOW**



## 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.



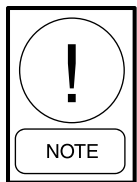
***If damage is found, a claim should be filed against the carrier immediately.***

### 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.

### PREPARE WALL FOR MOUNTING

Depending upon building construction, provisions for mounting the unit must be made by the contractor according to architects' drawings.



***It is recommended that all mounting holes be used for proper installation.***



***Unit must not be operated during building construction due to excessive airborne dust and debris. The units must not be operated under any circumstances without an air filter in place.***

### YVS / YVF UNIT STYLE (VERTICAL CABINET)

*See Fig 7 for unit details and dimensions.*

Mounting location must allow enough clearance to permit the removal of screws that secure the cabinet panels. After selecting the location for the unit, remove the front panel. The front panel must be removed on the YVS or YVF unit to gain access to the coil, drain connections and electrical junction box. To accomplish this:

1. Pull firmly on the lower cabinet door (each side) until the cabinet releases from its friction fastener.
2. Proceed to lift the door assembly straight up and off the cabinet frame.

### YVC UNIT STYLE ( VERTICAL CONCEALED)

*See Fig 8 for unit details and dimensions.*

Mounting location must allow enough clearance to permit the removal of screws that secure the cabinet panels. After selecting the location for the unit:

1. Remove the front panel.
2. Position the unit in its permanent location, making sure it is level to insure proper drainage and operation, and secure the unit in place.
3. Secure the unit to the wall using the four, 1/2 inch holes provided (two on each end of the unit).

Access must be provided for servicing the unit. If this access is provided by a removable panel, ample space must be allowed for access to electrical and plumbing controls.

### YWC UNIT STYLE (RECESSED WALL)

*See Fig 9 for unit details and dimensions.*

Mounting location must allow enough clearance to permit the removal of all mechanical parts within the unit.

1. Frame the unit as required so the front panel of the wall unit will be flush with the drywall surface when installed.
2. Frame around the perimeter of the unit as required for securing the drywall. *See Table 1* below for drywall openings.

MODEL NUMBER	DRYWALL CUTOUT DIM HT x WD
3YWC	28 x 42
4YWC	28 x 50
6YWC	28 x 58
8YWC	28 x 66
10YWC	28 x 74
12YWC	28 x 82

**TABLE 1 – DRYWALL OPENINGS**

## INSTALLATION

3. Mount the unit in its permanent location; making sure it is level to insure proper drainage and operation. 2 – ½” holes have been provided on each end of the unit for securing the unit to the wall studs.
4. After the drywall has been installed, recheck to make sure the unit's front panel is flush with the exterior drywall surface. Shimming of the unit may be required to get a seal between the unit and panel.
5. Install the wall panel to the front of the unit using the ¼-20 x 1-1/2” long, painted, Phillips head screws (4 on unit sizes 3,4,6 and 8; 6 on unit sizes 10 and 12). ¼” cage nuts are located in the slotted front panel of the unit.
6. Remove the lower return air grille to get access to the filter.

## WIRING

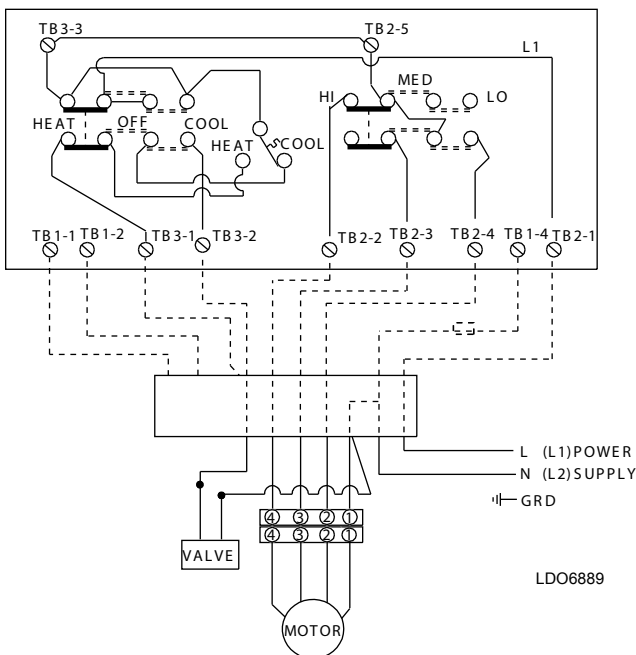
All wiring must comply with the local and national code requirements. Units are provided with wiring diagrams and nameplate data to provide information required for necessary field wiring.

For power wiring a control box is provided on the cabinet for connection of power supply and is located on the opposite side of piping.

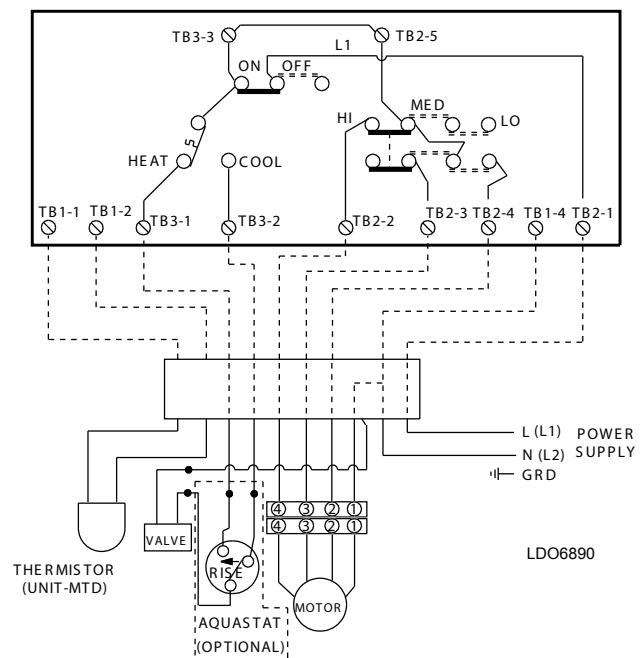


**Any devices such as fan switches or thermostats that have been furnished by the factory for field installation must be wired in strict accordance with the wiring diagram that is supplied with the unit. Failure to do so could result in damage or injury.**

## 2-PIPE HEAT / COOL



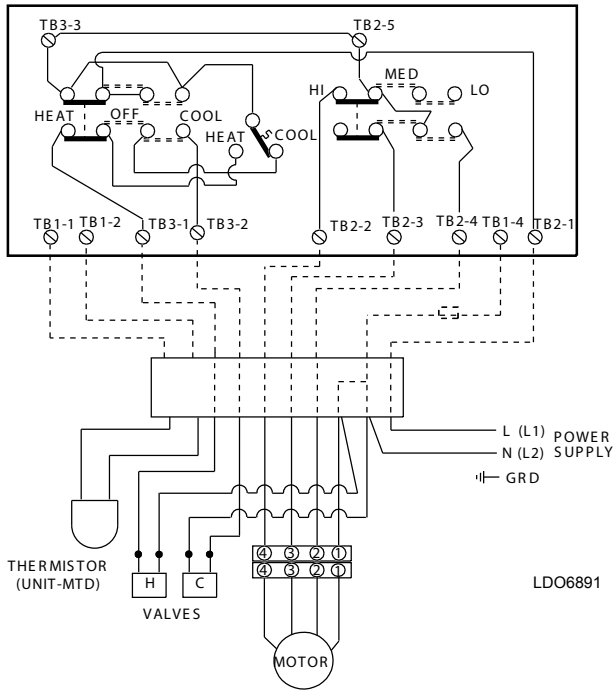
**FIG. 2 - MANUAL CHANGEOVER,  
CONTINUOUS FAN, T420 THERMOSTAT.  
NO AQUASTAT LOCKOUT**



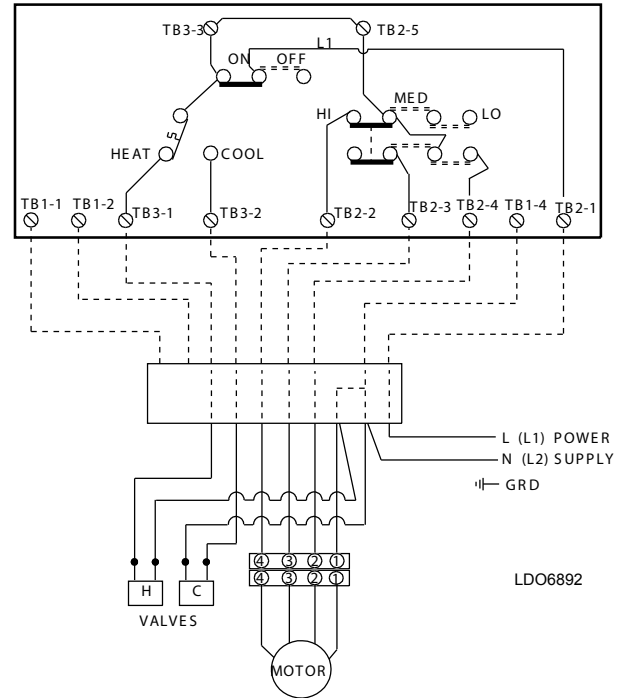
**FIG. 3 - AUTO CHANGEOVER,  
CONTINUOUS FAN, T421 THERMOSTAT.**

# INSTALLATION

## 4-PIPE HEAT / COOL



**FIG. 4 - MANUAL CHANGEOVER, CONTINUOUS FAN, T420 THERMOSTAT.**



**FIG. 5 - AUTO CHANGEOVER, CONTINUOUS FAN, T421 THERMOSTAT.**

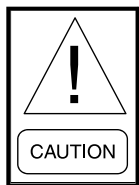
### PIPING

These units employ a hydronic coil designed for use with either hot or chilled water.

All piping must be adequately sized to meet the design water flow requirements as specified for the specific installation. Piping must be installed in accordance with all applicable codes.

### PIPE SIZES

- Tubing connections are 5/8" OD on all models.
- Manual air vents are provided standard on all coils.
- All chilled water piping must be insulated to prevent condensation.



***Prior to connecting to the fan coil, all external piping must be purged of debris.***



***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.***

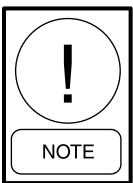
### PRECAUTIONS

1. Flush all field piping prior to connection to remove all debris.
2. Use wet cotton rags to cool valve bodies when soldering.
3. Open all valves (mid-way for hand valves, manually open on motorized valves) prior to soldering.
4. 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.
5. 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).

## INSTALLATION

6. Avoid rapid quenching of solder joints, as this will produce joints of inferior quality.
7. The valve package will not support the weight of the connecting pipes. All pipes, which are connected to the units, must be completely supported prior to connection to the unit.
8. Provisions must be made for expansion and contraction of piping systems. All horizontal and vertical risers, including runouts, must be able to withstand significant movement with temperature changes. Failure to do so will result in damage and failure of piping, fittings and valves throughout the building.
9. Never insulate the heads or motorized portion of control valves. Damage can occur in the form of excessive heat build up and interference to the operation and moving parts will result.
10. All piping made in the field should be installed with consideration of additional space for any electrical routing that may be required.
11. Hydronic systems are not designed to hold pressurized air and should only be tested with water.

After the system has been proven leak free, all lines and valve control packages must be insulated as specified on the building plans.



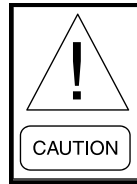
**Many valve packages will not physically allow all components to fit over an auxiliary drain pan. It is the installers responsibility to ensure adequate condensation prevention. The installer must also ensure that there is no condensate drippage onto electrical components beneath insulated components.**

### DRAIN PIPING

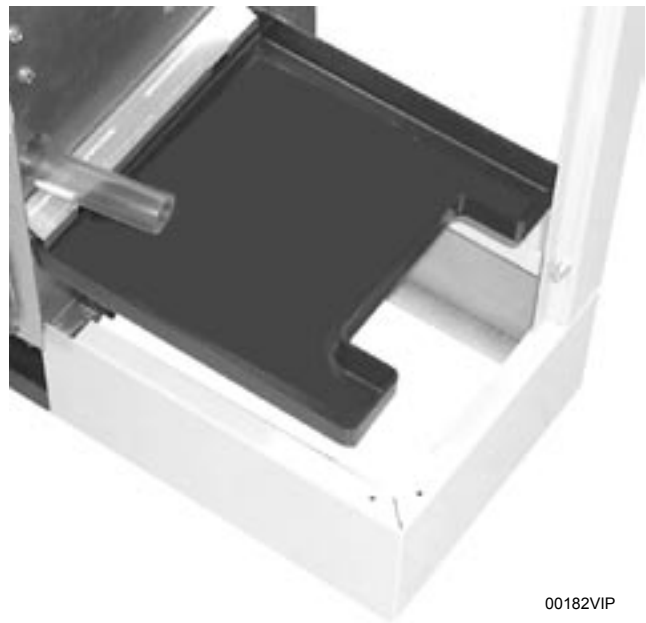
Drain line installation must adhere to all code requirements. The plastic auxiliary drain pan is to be located under the coil/valve connections supported by its mounting bracket. Make sure drain pan is level for proper drainage.

The auxiliary 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 auxiliary drain pan and plastic cap is installed on other nipple on the blower plate.

Note the 1-1/2" x 4-1/2" indentation in the plastic drain pan (see Figure 6). 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.



***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.***

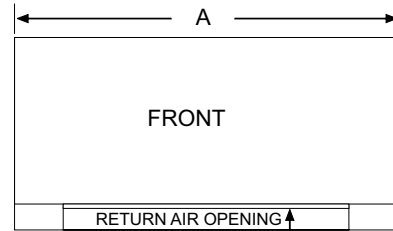
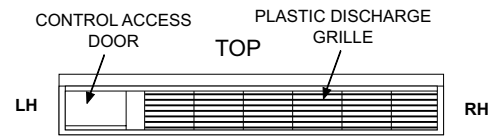


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**FIG. 6 - DRAIN PAN**

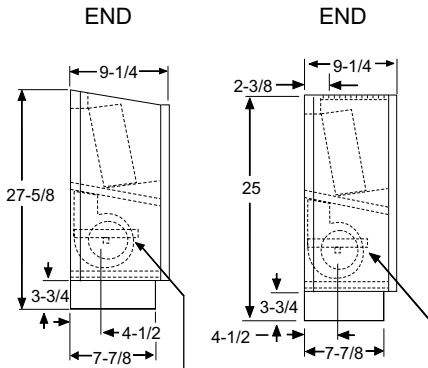
# INSTALLATION

GENERAL DIMENSIONS						
SIZE MODEL	3	4	6	8	10	12
DIM "A"	43	51	59	67	75	83



LEFT HAND UNIT SHOWN

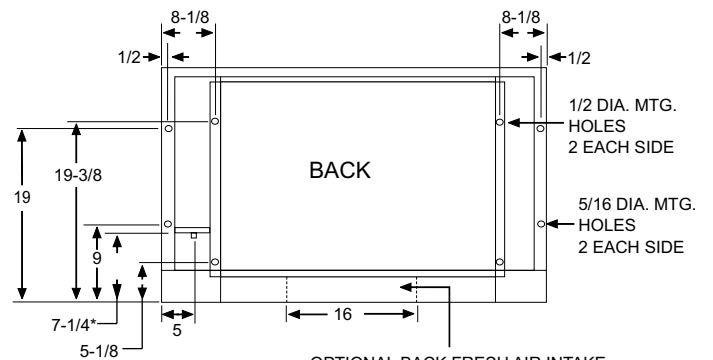
1/2" PERMANENT FILTER REMOVABLE THRU RETURN AIR OPENING



SECONDARY PLASTIC DRAIN PAN 0.84 O.D. FOR 3/4" PVC PIPE

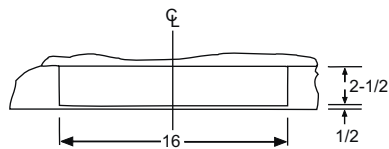
YVS

YVF



OPTIONAL BACK FRESH AIR INTAKE DAMPER AND INSECT SCREEN (SEE DETAIL)

\*DIMENSIONS MAY VARY FOR UNITS WITH NONSTANDARD VALVE PACKAGES



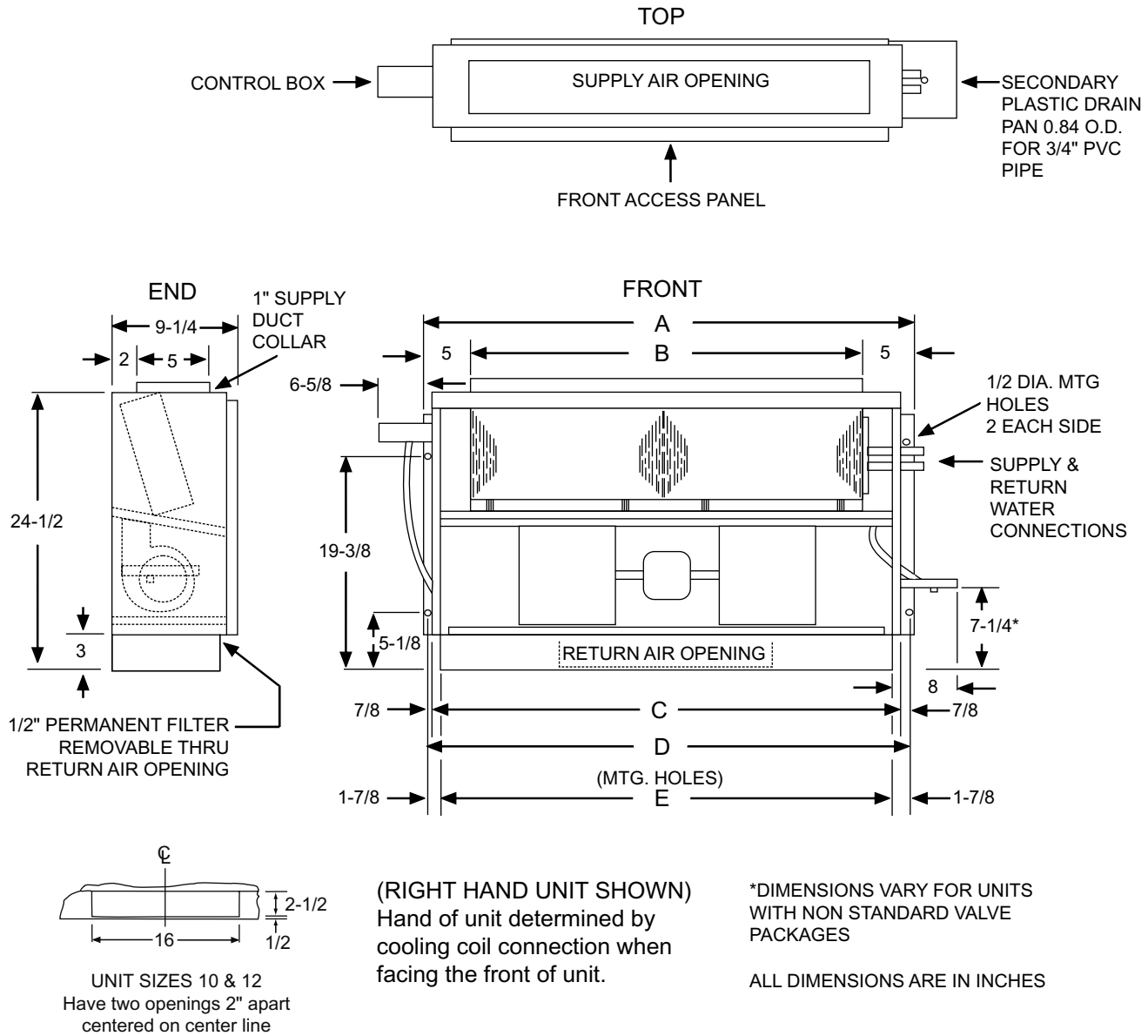
UNIT SIZES 10 & 12  
Have two openings 2" apart centered on center line

COIL CONNECTION	
COOLING	HEATING
5/8" O.D.	5/8" O.D.
SWEAT	SWEAT

LDO10373

FIG. 7 - FAN COIL UNITS - DIRECT DRIVE, MODEL YVS & YVF

# INSTALLATION



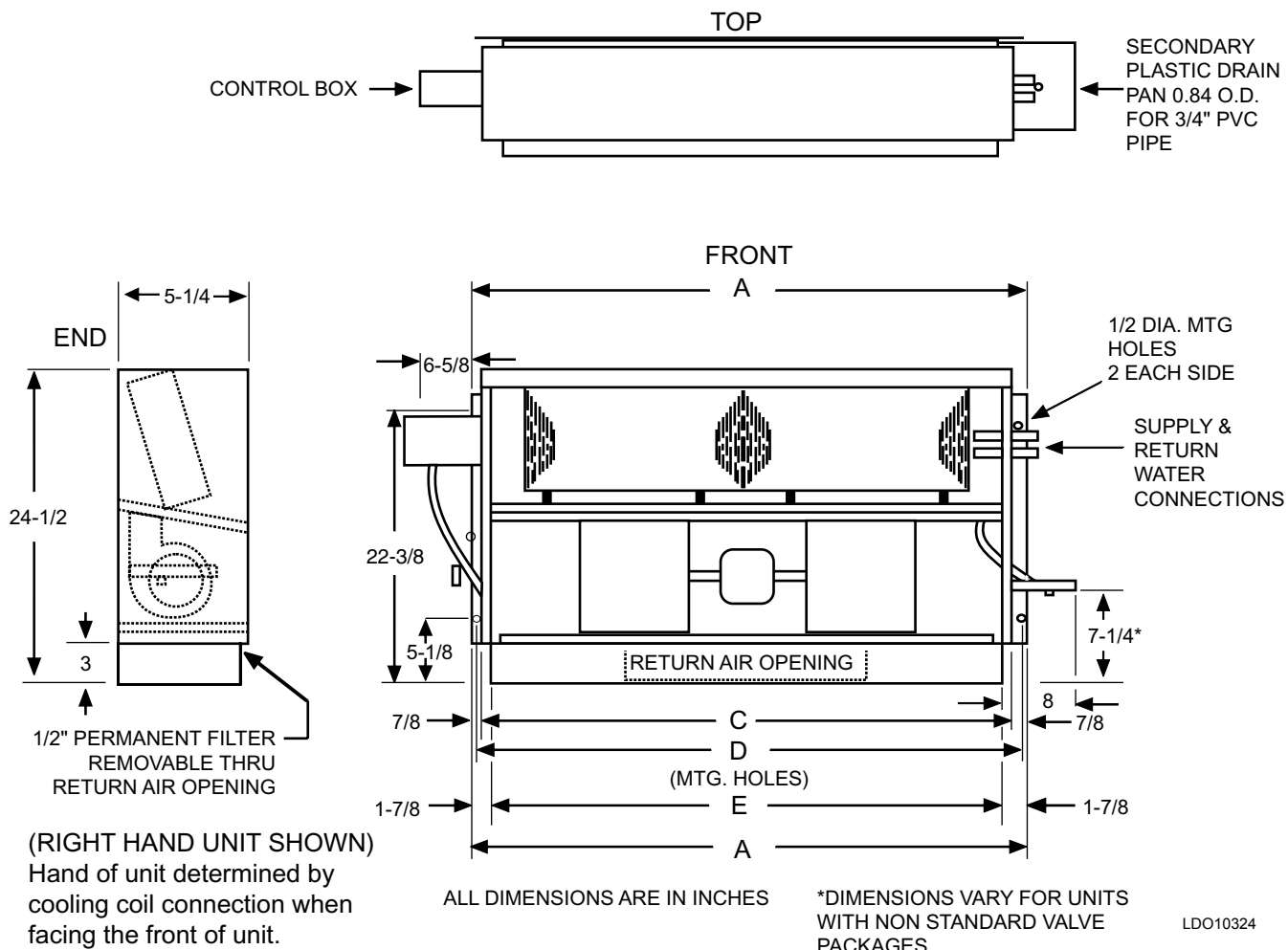
LDO10367

GENERAL DIMENSIONS IN INCHES					
MODEL	A	B	C	D	E
3 YVC	27-1/2	18	25-1/2	26-1/2	22-3/4
4 YVC	35-1/2	26	33-1/2	34-1/2	31-3/4
6 YVC	43-1/2	34	41-1/2	42-1/2	39-3/4
8 YVC	51-1/2	42	49-1/2	50-1/2	47-3/4
10 YVC	59-1/2	50	57-1/2	58-1/2	55-3/4
12 YVC	67-1/2	58	65-1/2	66-1/2	63-3/4

FIG. 8 - FAN COIL UNITS - DIRECT DRIVE, MODEL YVC



# INSTALLATION

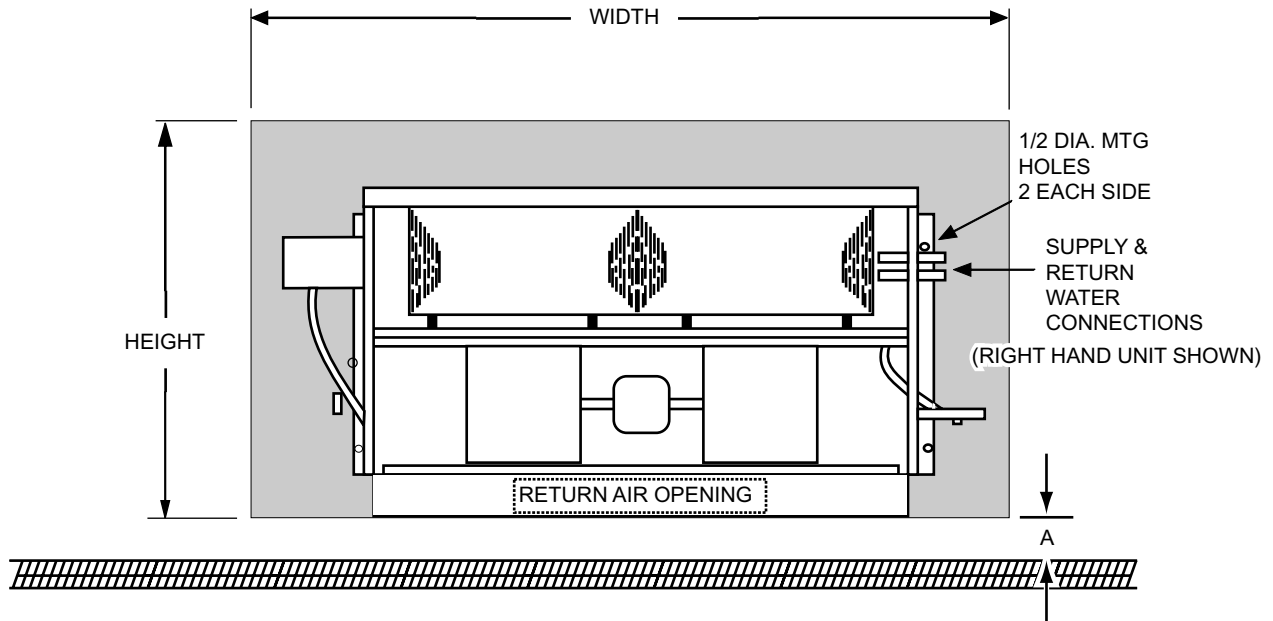


LDO10324

GENERAL DIMENSIONS IN INCHES						
MODEL	A	C	D	E	COIL CONN SIZE	
					COOLING	HEATING
3 YWC	27-1/2	25-1/2	26-1/2	22-3/4	5/8 O.D. SWEAT	5/8 O.D. SWEAT
4 YWC	35-1/2	33-1/2	34-1/2	31-3/4		
6 YWC	43-1/2	41-1/2	42-1/2	39-3/4		
8 YWC	51-1/2	49-1/2	50-1/2	47-3/4		
10 YWC	59-1/2	57-1/2	58-1/2	55-3/4		
12 YWC	67-1/2	65-1/2	66-1/2	63-3/4		

FIG. 9 - FAN COIL UNIT DIMENSIONS - DIRECT DRIVE, MODEL YWC

# INSTALLATION



MODEL DRYWALL CUTOUT DIMENSIONS			
MODEL	HEIGHT	WIDTH	MINIMUM HEIGHT ABOVE FLOOR (A)
3YWC	28"	42"	6"
4YWC	28	50"	6"
6YWC	28	58"	6"
8YWC	28	68"	6"
10YWC	28	74"	6"
12YWC	28	82"	6"

FIG. 10 - YWC FAN COIL INSTALLATION LOCATION DIMENSIONS

## INSTALLATION

### 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.
<i>NOTE: If the m□ monthly to prevent moisture from accumulating in the bearings. (See Form 50.20-NM3, Long Term Storage)</i>

#### 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.

<b>Fan INSPECTION</b> - <i>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.</i>
<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.

# 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.

If motor service is required, it can be removed in the following manner:

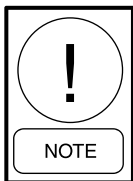
1. Disconnect electrical power to the unit at the disconnect switch and lock out.
2. Remove two screws, securing blower deck to unit.
3. Locate motor lead wires where they connect to the side panel, (lower rear on the electrical box side).
4. The quick connect plug needs to be squeezed on top and bottom to release it from its socket (dual motor units have two plugs).
5. Now slide blower / motor deck out of unit to service.
6. Reverse process to install.

## COIL

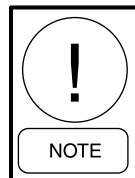
The coil must be kept clean by any of the following methods.

1. Cleaning with low-pressure compressed air.
2. Flushing or rinsing with water (a detergent is advisable for greasy surfaces).
3. Prior to the water system start-up and balancing, the chilled/hot water systems should be flushed to clean out dirt and debris, which may have accumulated during construction. All unit service valves are to be closed during this process. Strainers are to be installed in the piping mains to prevent this material from entering the units during normal operation.

## FILTERS



***Clean or Replace Air Filters Regularly***



***Dirty filters reduce the air and heating capacities of the Unit. 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.)



**A JOHNSON CONTROLS COMPANY**

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