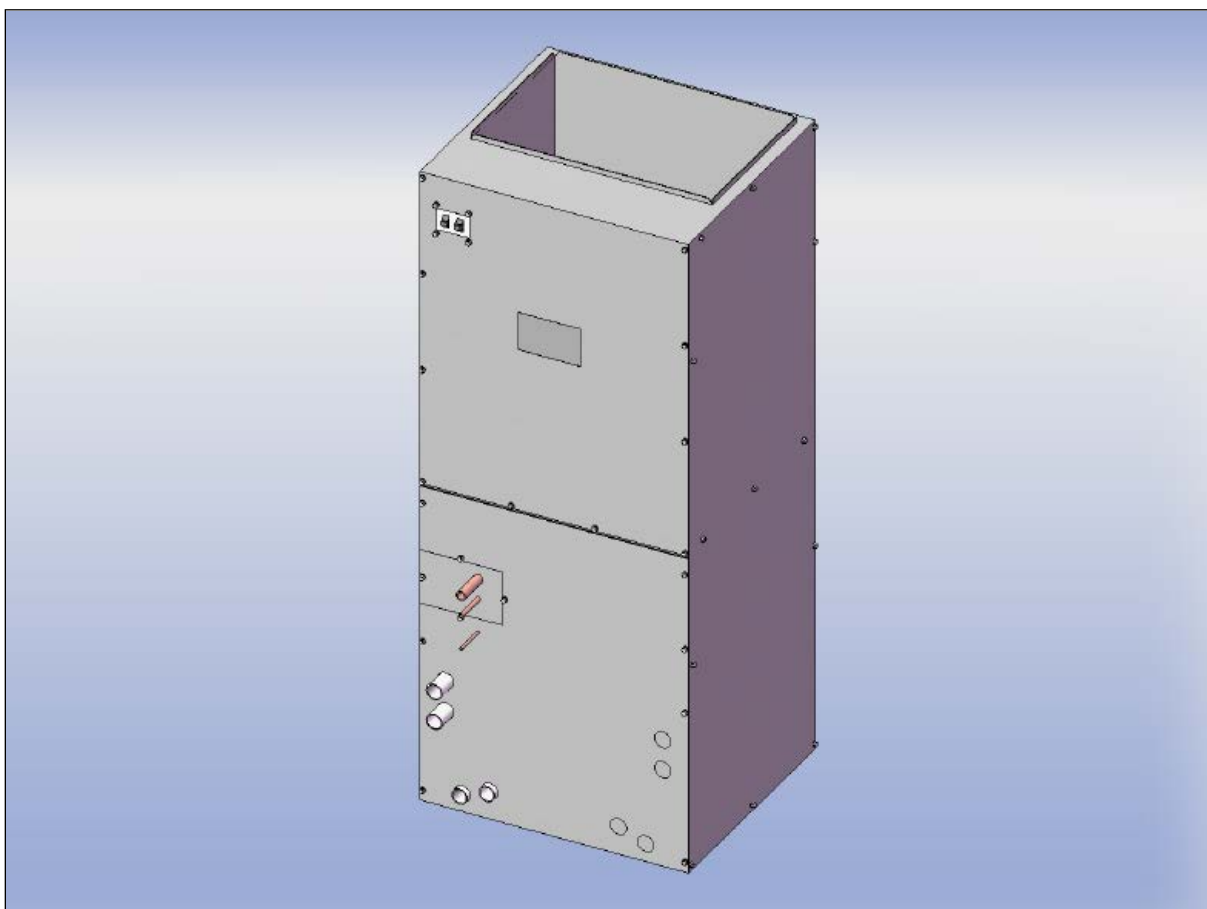




EARTHLINKED
TECHNOLOGIES

EarthLinked®
AVS Series Air Handlers
Installation Manual for
R-407C SC, SD and SW Compressor Units in
Heat/Cool or Cool Only Applications

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Disclaimer

Proper installation and service of EarthLinked® Heating and Cooling System Components is essential to reliable performance. All EarthLinked® components must be installed and serviced by an authorized, trained technician who has successfully completed the training class and passed the final examination. Installation and service must be made in accordance with the instructions set forth herein and in the system installation manual. Failure to provide installation and service by an authorized, trained installer in a manner consistent with the subject manual will nullify the limited warranty coverage for the system.

READ THE SYSTEM INSTALLATION MANUAL FOR ADDITIONAL DETAILS.

Earthlinked Technologies shall not be liable for any defect, unsatisfactory performance, damage or loss, whether direct or consequential, relative to the design, manufacture, construction, application or installation of the field specified components.

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CSI # 23 80 00

Pre-Installation

These air handlers are for application to Heat/Cool and Cool Only applications!

Upon receipt of the air handler, carefully check the Earthlinked Technologies model number on the package and on the air handler unit against the air handler model ordered.

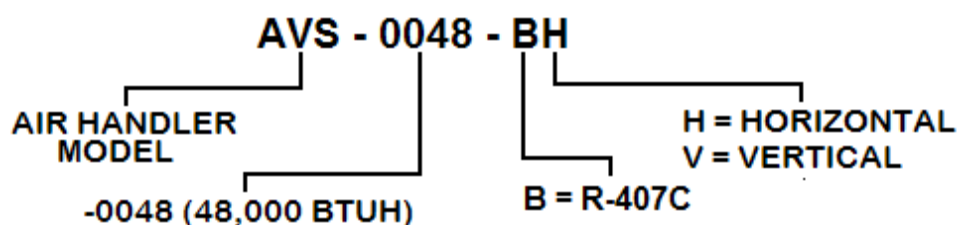


IMPORTANT

Air Handlers must be matched with the **compressor unit capacity** and the **system refrigerant** as shown in the table below. Air Handlers must be applied in the position for which they are marked:

H = Horizontal and V = Vertical

AIR HANDLER MODEL MATCH TABLE



AIR HANDLER MODEL	REFRIGERANT	POSITION	COMPRESSOR UNIT MODEL/CAPACITY	HEATER KW
AVS – 0018 - BV	R-407C	VERTICAL	-018 (18,000 BTUH)	5
AVS – 0018 - BH	R-407C	HORIZONTAL		
AVS – 0024 - BV	R-407C	VERTICAL	-024 (24,000 BTUH)	5
AVS – 0024 - BH	R-407C	HORIZONTAL		
AVS – 0030 - BV	R-407C	VERTICAL	-030 (30,000 BTUH)	10
AVS – 0030 - BH	R-407C	HORIZONTAL		
AVS – 0036 - BV	R-407C	VERTICAL	-036 (36,000 BTUH)	10
AVS – 0036 - BH	R-407C	HORIZONTAL		
AVS – 0042 - BV	R-407C	VERTICAL	-042 (42,000 BTUH)	15
AVS – 0042 - BH	R-407C	HORIZONTAL		
AVS – 0048 - BV	R-407C	VERTICAL	-048 (48,000 BTUH)	15
AVS – 0048 - BH	R-407C	HORIZONTAL		
AVS – 0060 - BV	R-407C	VERTICAL	-060 (60,000 BTUH)	20
AVS – 0060 - BH	R-407C	HORIZONTAL		
AVS – 0068 - BV	R-407C	VERTICAL	-072 (72,000 BTUH)	20



****WARNING!**

Model AVS-0068-*V Air Handler can be applied in the VERTICAL position only! Application in the horizontal position may cause leakage of moisture in the cooling mode of operation with moisture damage to the system and surrounding structure.

If it is necessary to change the installed position of the air handler in the field, the conversion process is described in this manual under **Thermal Bulb Location and Field Conversion**.

AVS Electrical Connections and Air Flow

The variable speed AVS Series air handler control board and field wiring diagram are illustrated in Figure 1.

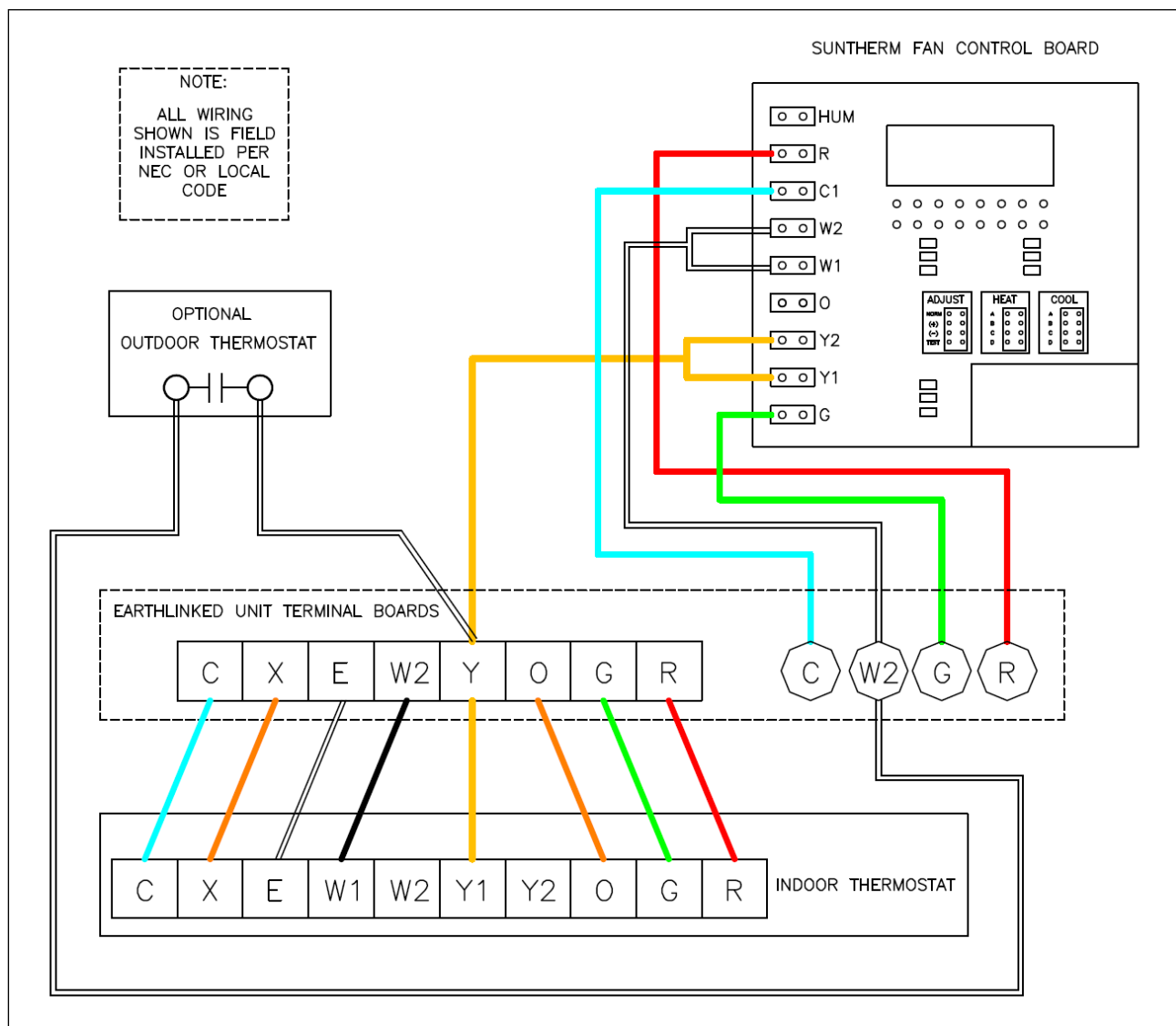


Figure 5. AVS Series Air Handler Control Panel and Field Wiring

The blower speeds can be adjusted by changing the jumper settings on the control board as appropriate.

Heat and Cool panels: “A” is the highest speed and “D” is the lowest speed.

Adjust panel: “NORM” is the normal airflow. “+” is more airflow. “-” is less airflow.

Test panel: NOT FOR FIELD ADJUSTMENT. FOR FACTORY USE ONLY.



IMPORTANT!

The air handler shall provide an air flow rate of 400 CFM per nominal Ton of capacity to achieve the specified EarthLinked® system performance. Air handler jumper settings must be checked at installation and adjusted as necessary, in accordance with the external static pressure of the specific air distribution system, to provide 400 CFM/Ton air flow. The table in Figure 6 provides air flow (in CFM), external static pressure (in inches of water column) and jumper setting information for the acceptable range of field specific operating conditions.

Model Number	Jumper	CFM @ 0.10"	CFM @ 0.20"	CFM @ 0.30"	CFM @ 0.40"	CFM @ 0.50"
AVS-0018-B* AVS-0024-B*	A	839	832	818	811	801
	B	743	728	716	712	704
	C	704	688	679	672	663
	D	628	619	610	596	586
AVS-0030-B* AVS-0036-B* AVS-0042-B* AVS-0048-B* AVS-0060-B*	A	1957	1919	1900	1871	1947
	B	1576	1565	1547	1517	1487
	C	1495	1482	1451	1432	1409
	D	1411	1385	1372	1338	1311
AVS-0068-BV	A	2393	2393	2393	2393	2388
	B	2227	2227	2221	2221	2221
	C	2012	2012	2005	2005	2005
	D	1795	1795	1795	1795	1795
AVS-0068-BV ("+ adjustment)	A	2481	2481	2475	2464	2417
	B	2441	2441	2441	2435	2399
	C	2327	2327	2327	2321	2315
	D	2081	2081	2081	2081	2075

Figure 6. AVS Series Variable Speed Air Handler – Air Flow

AVS Dimensions and Electrical Ratings

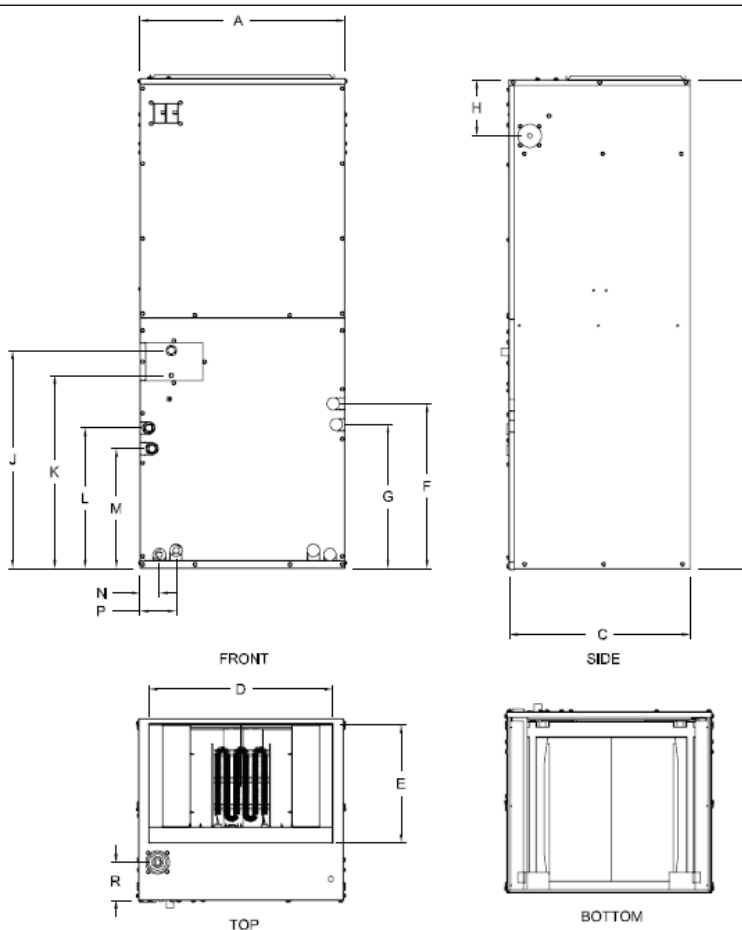
MODEL NOMENCLATURE
AVS - 0060 - BV

Air Handler
Variable Speed

0060 = 60,000 BTUH

C = R - 410A
B = R - 407C

V = Vertical
H = Horizontal



DIMENSIONAL DATA FOR AVS SERIES AIR HANDLERS															
MODEL	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R
AVS - 0018/24 - B*	17.65	42.80	21.02	15.60	12.56	13.50	10.93	6.82	16.79	13.80	10.92	10.81	2.04	1.54	5.02
AVS - 0030/36 - B*	24.50	56.89	21.81	23.35	21.25	19.75	17.25	6.75	26.17	23.17	16.86	16.86	2.30	4.35	4.50
AVS - 0042/48 - B*															
AVS - 0060 - B*															
AVS - 0068 - BV															

Note: All Dimension Are Approximate. All Dimensions Are Rounded.

AVS SERIES AIR HANDLER ELECTRICAL DATA							
Model	Electric Heater***		Motor Nameplate Amps @ 240V	240V MCA* per Circuit		240V OCP** per Circuit	
	KW 240V	BTUH 240V		1	2	1	2
AVS - 0018/24 - B*	5	17,065	2.8	28.8	-	35.0	-
AVS - 0030/36 - B*	10	34,130	6.8	55.7	-	60.00	-
AVS - 0042/48 - B*	15	51,200	6.8	29.6	55.7	40.0	70.0
AVS - 0060 - B*	20	68,260	6.8	55.7	55.7	70.0	70.0
AVS - 0068 - BV	20	68,260	8.5	55.7	55.7	70.0	70.0

*Minimum Circuit Ampacity **Overcurrent Protection Device, must be HACR type circuit breaker or time delay fuse

***For 208 Volt, use .75 correction factor for kW and BTUH

Figure 7. AVS Series Variable Speed Air Handler Dimensions and Electrical Ratings.

Thermal Bulb and Field Conversion

The air handler is shipped from ETI as it was ordered, either for vertical or horizontal installation. Figure 8 illustrates an air handler shipped from the factory with the TXV thermal bulb attached to the suction tube.

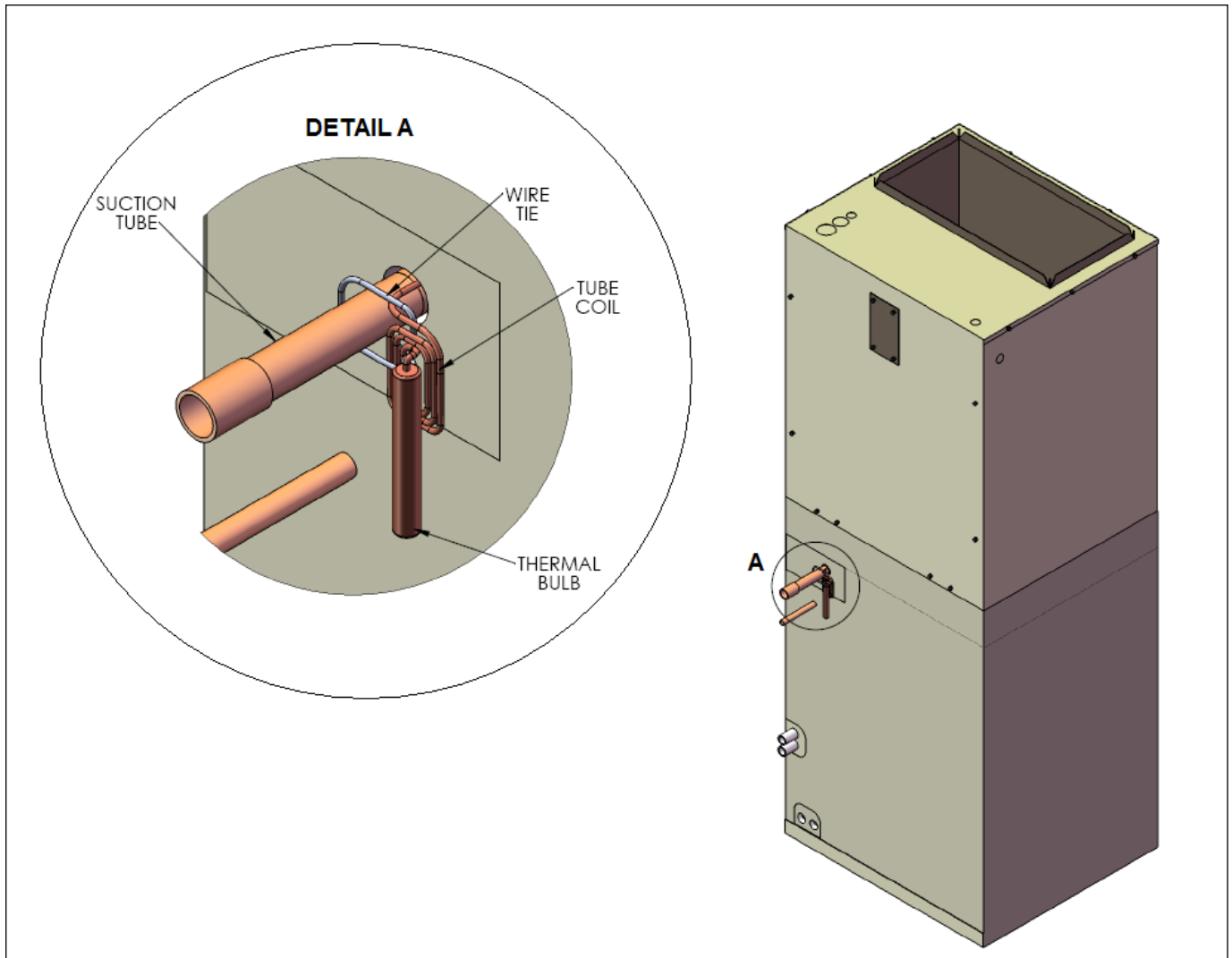


Figure 8. Air Handler and Thermal Bulb as shipped

The thermal bulb must be located and clamped to a **HORIZONTAL** extension of this suction tube, with options for the suction tube extension illustrated in Figure 9. This shows the suction tube directional options for **an air handler that is to be installed in the VERTICAL direction.**

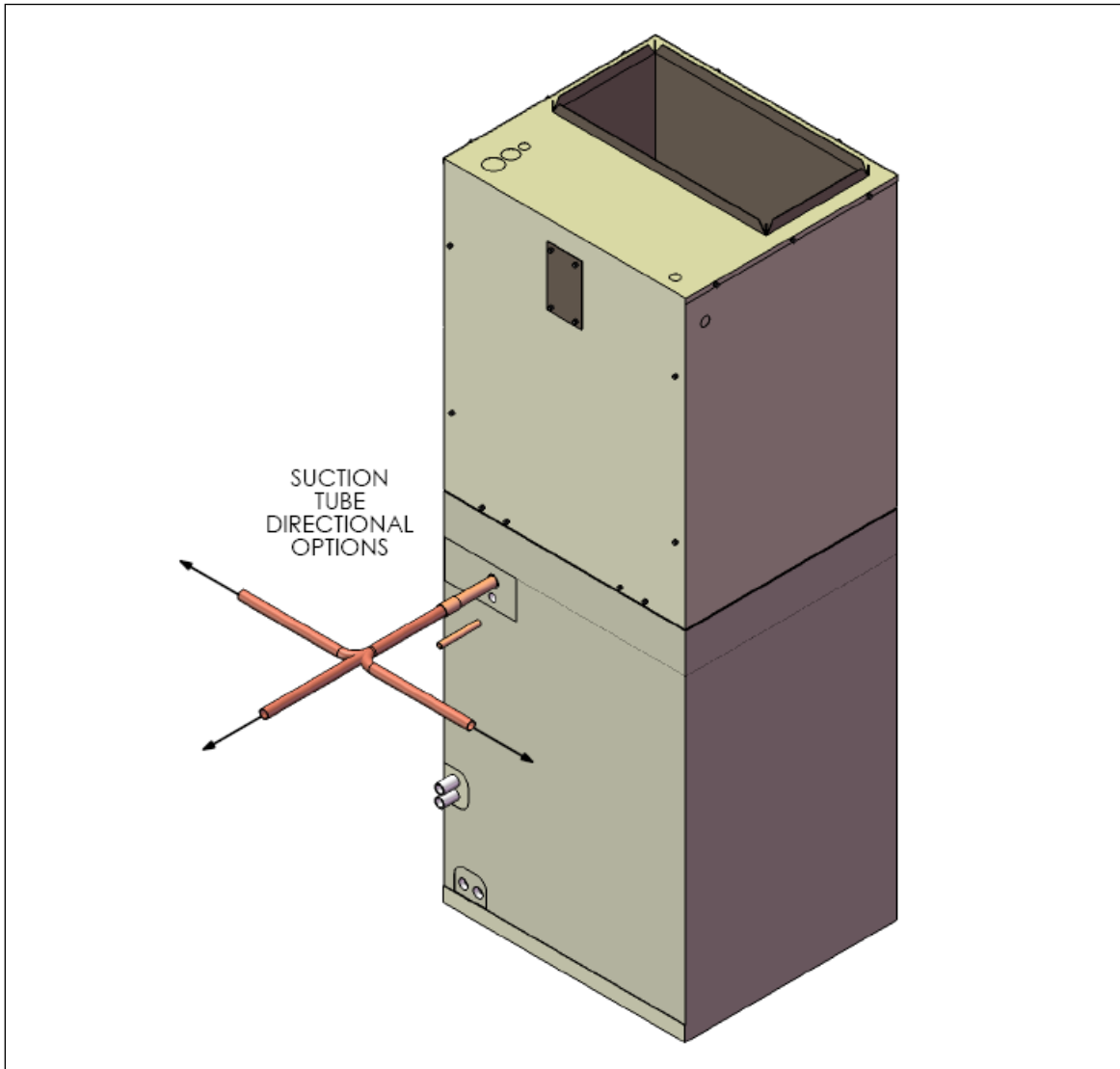


Figure 9. Horizontal Suction Line Options – VERTICAL Air Handler Installation



IMPORTANT!

The thermal bulb **MUST** be installed on a **HORIZONTAL** extension of the suction tube when the air handler is in its **APPLIED** position!

If the air handler is field converted, the thermal bulb must be re-located so that it is on the **HORIZONTAL** suction tube extension.

Figure 10 illustrates locating the thermal bulb on the suction line extension. It shall be located at least 6 inches downstream of any fitting or bend in the suction tube extension, and at the 3:00, 4:00, 8:00 or 9:00 o'clock positions.

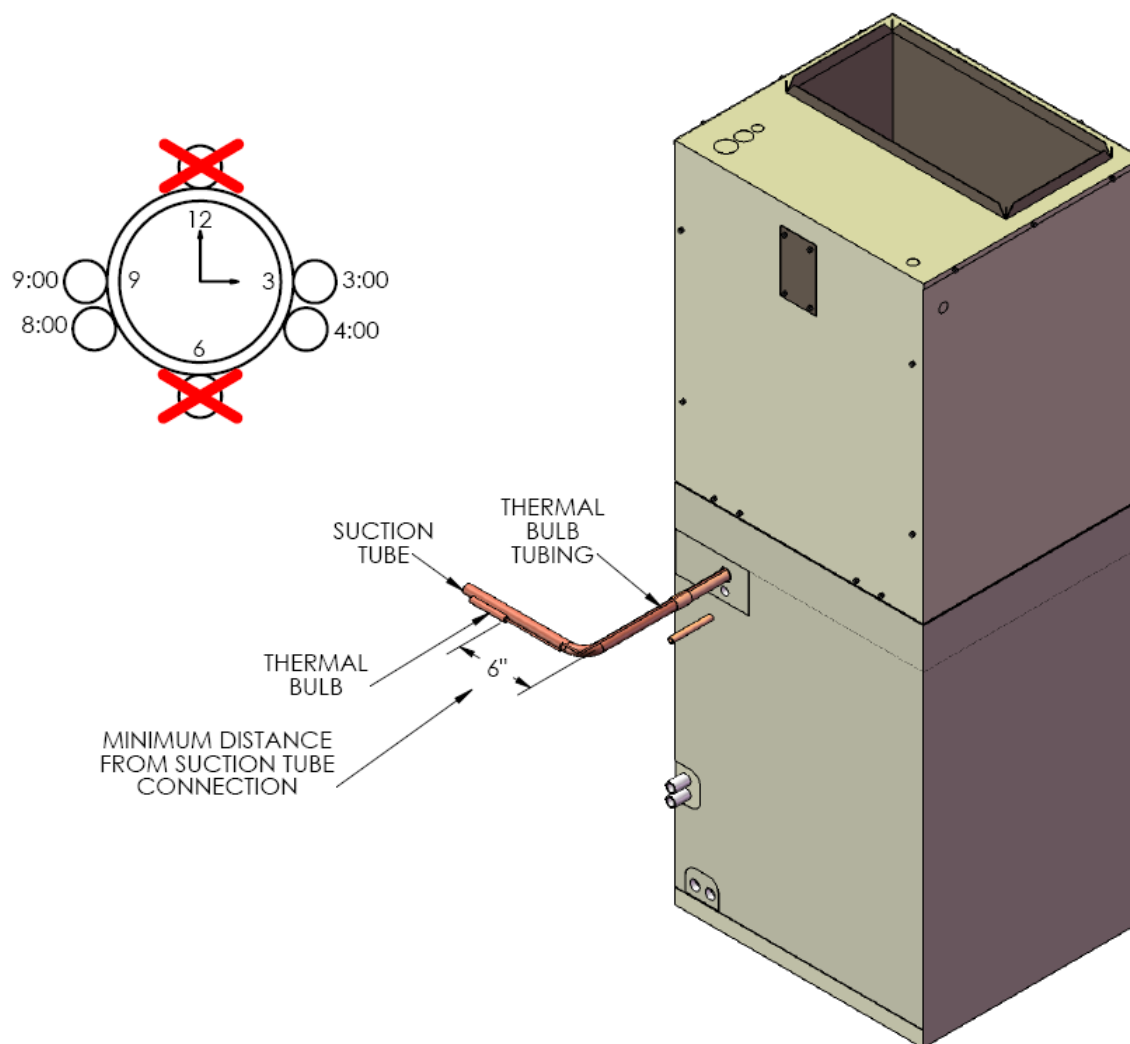


Figure 10. Positioning the Thermal Bulb

Clamp the thermal bulb firmly against the clean suction tube extension and parallel to it, as shown in Figure 11, to ensure good thermal contact along the entire length of the thermal bulb.

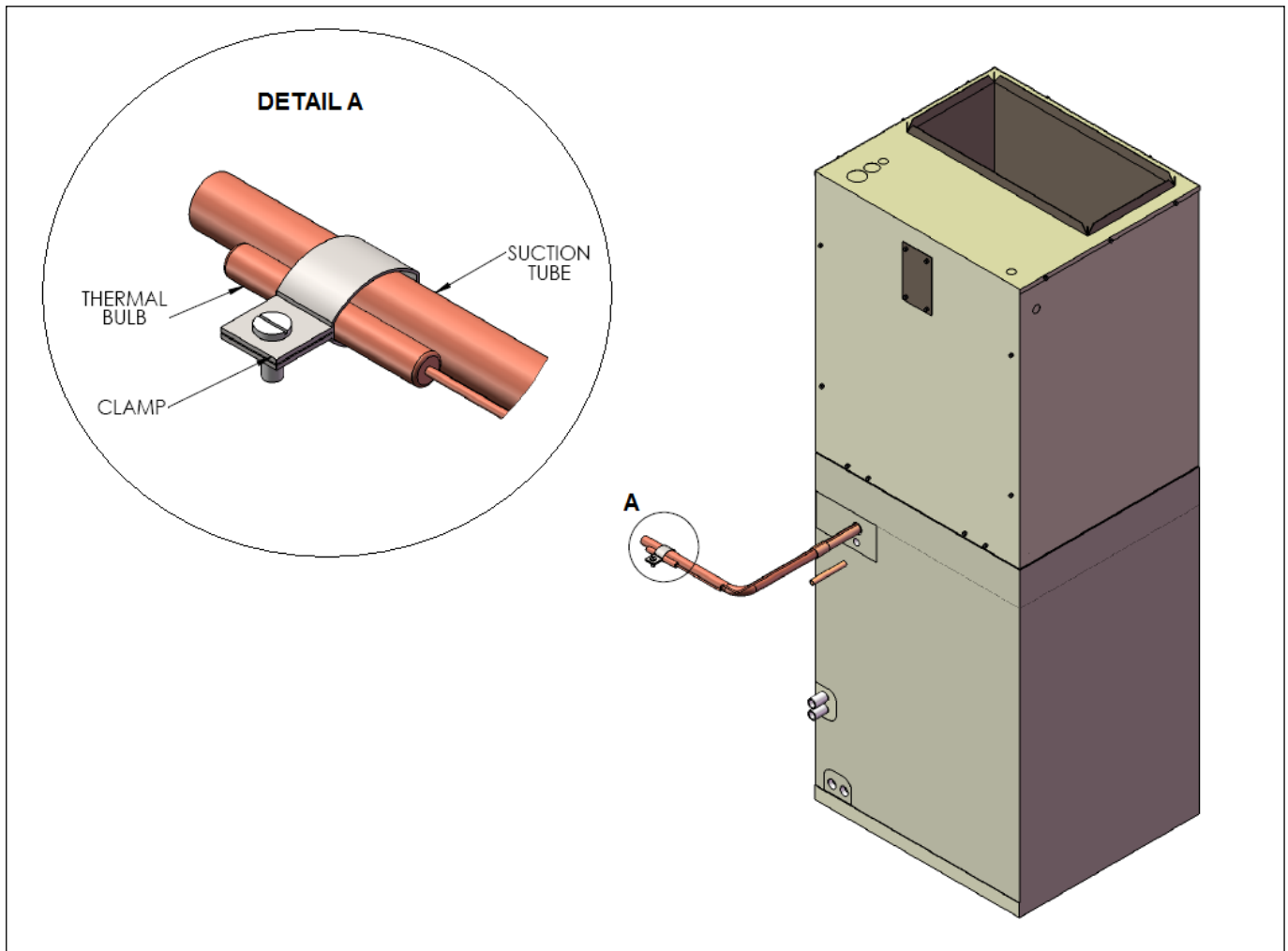


Figure 11. Clamp the Thermal Bulb to the Suction Line Extension

After the thermal bulb is secured with the clamp, wrap the provided insulation around the thermal bulb and suction tube extension to isolate the thermal bulb from the surrounding air as shown in Figure 12. Apply the wire tie to hold the thermal bulb tube secure against the suction line as shown in Figure 12.

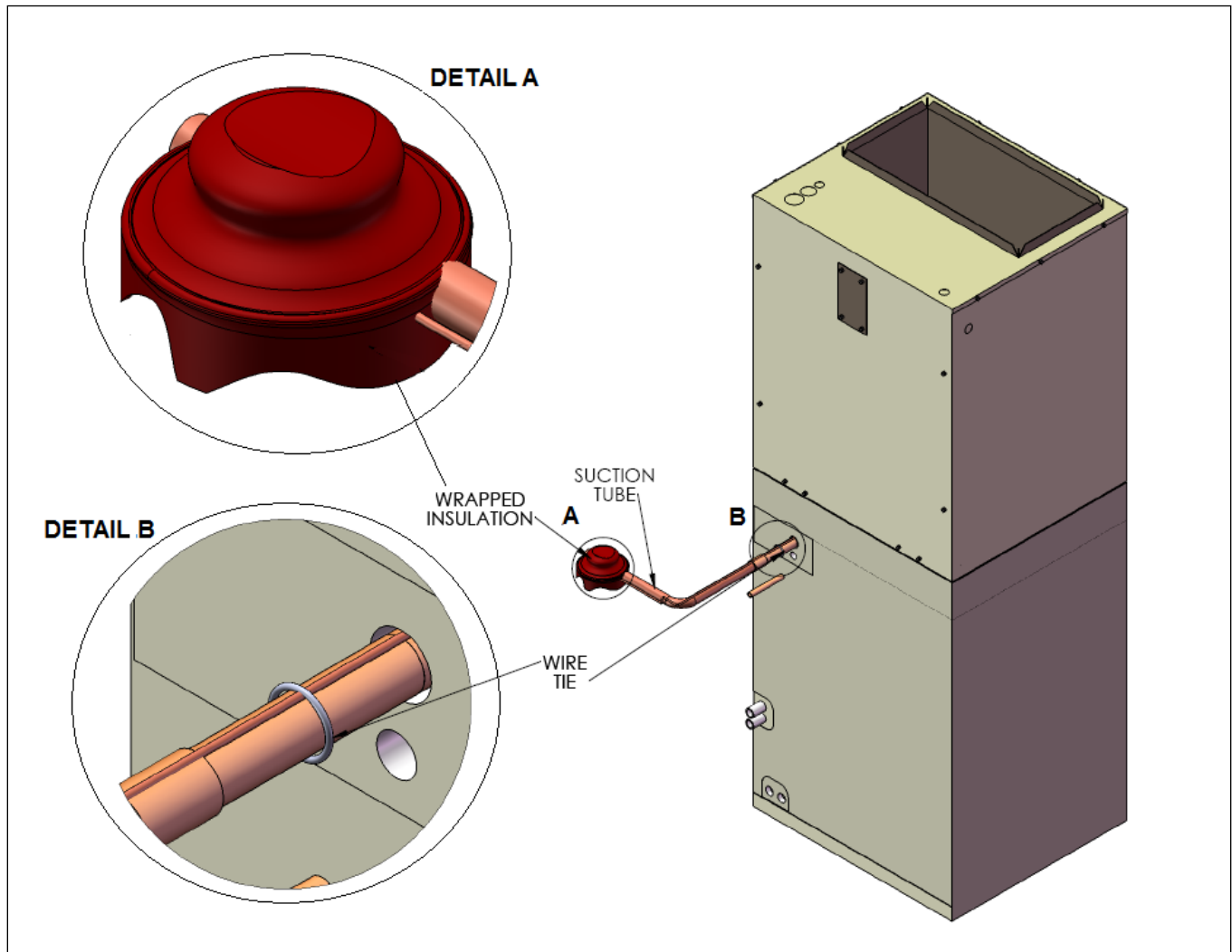


Figure 12. Insulate the Thermal Bulb and Suction Line

If it is necessary to change the installed position of the air handler in the field, a two step process is required:

1. The thermal bulb on the suction line extension must be re-located so the thermal bulb is on a HORIZONTAL section of the suction line extension, as shown in Figures 10 and 11, with the thermal bulb located in the 3:00, 4:00, 8:00 or 9:00 o'clock positions as illustrated. Wrap the thermal bulb with the insulation as shown in Figure 12.
2. The distributor must be reoriented so that in its final installation position it is vertical (up or down) to ensure equal distribution of refrigerant to each of the coil circuits. Rotate the distributor 90° in steps, while simultaneously reconfiguring the coil feeder tubes to avoid kinking and ensure smooth refrigerant flow to the circuits. When completed, the reconfigured distributor and feeder tube arrangement should look similar to those in Figure 13.

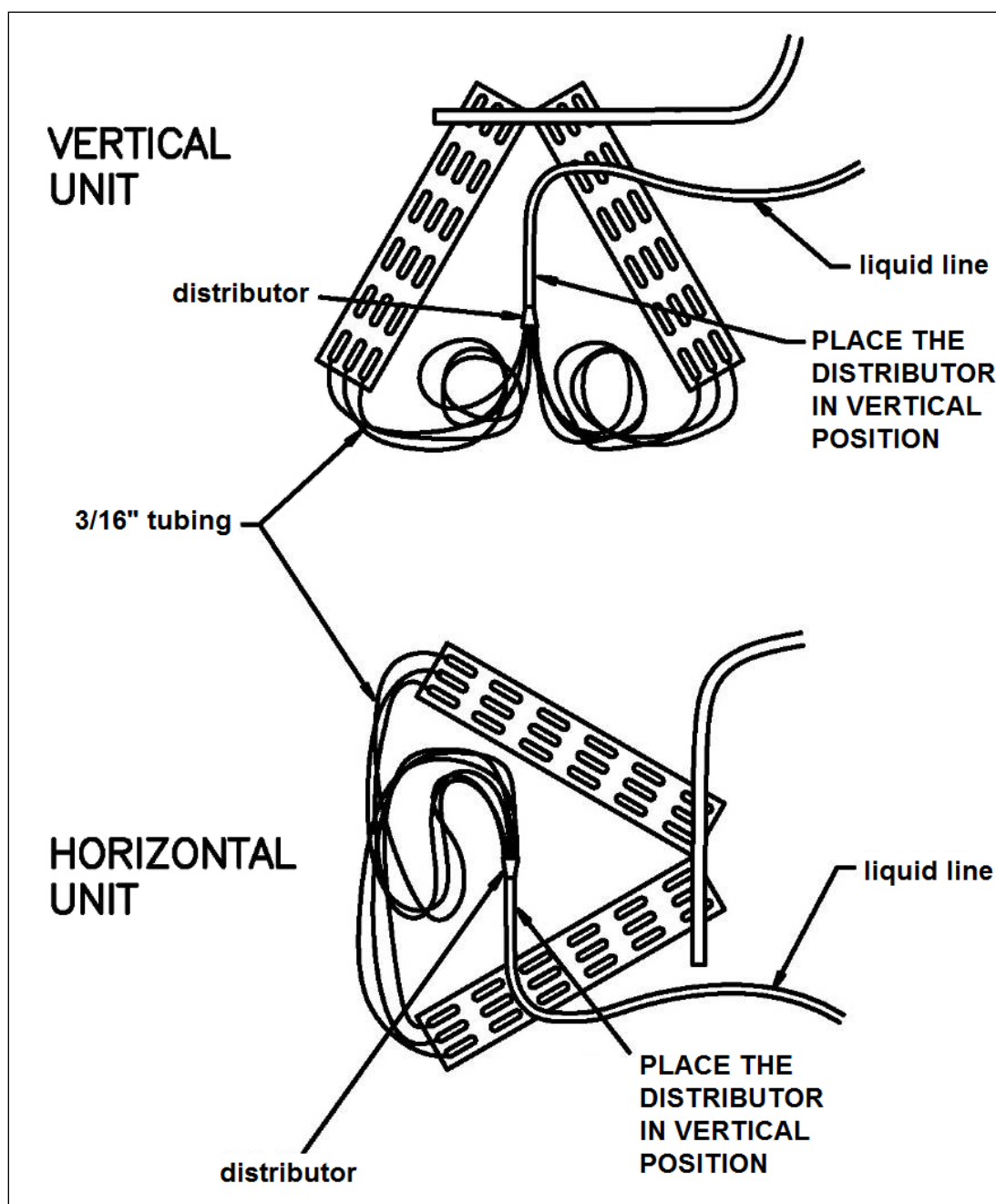


Figure 13. Typical Air Handler/Cased Coil After Conversion

Service Parts

Order TXV subassemblies for the AVS air handlers from Earthlinked Technologies, by the following numbers:

COMPRESSOR UNIT MODEL/CAPACITY	AIR HANDLER MODEL	TXV SERVICE PART NO
-018 (18,000 BTUH)	AVS-0018-B*	TXV-018B
-024 (24,000 BTUH)	AVS-0024-B*	TXV-024B
-030 (30,000 BTUH)	AVS-0030-B*	TXV-030B
-036 (36,000 BTUH)	AVS-0036-B*	TXV-036B
-042 (42,000 BTUH)	AVS-0042-B*	TXV-042B
-048 (48,000 BTUH)	AVS-0048-B*	TXV-048B
-060 (60,000 BTUH)	AVS-0060-B*	TXV-060B
-072 (72,000 BTUH)	AVS-0068-BV	TXV-072B

The AVS Air Handler Limited Parts Warranty and Service Parts Listing are on pages 20 thru 22. For service parts replacement, **call ETI Product Support at 1-863-701-0096** for information.



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SINGLE PIECE AIR HANDLER INSTALLATION INSTRUCTIONS

DX and Chilled Water Cooling / Electric and Hot Water Heating

GENERAL INFORMATION

This single piece air handler provides the flexibility for installation in any upflow, downflow, or horizontal application. These versatile models may be used with or without electric or hot water heat. The direct drive 3 speed or optional ECM or CT variable speed motors provide a selection of air volume to match any application.

The unit can be positioned for bottom return air in the upflow position, top return air in the downflow position and end return air in the horizontal position.

NOTE: See field installed down flow conversion kit installation instructions.

INSPECTION

As soon as a unit is received, it should be inspected for possible damage during transit. If damage is evident, the extent of the damage should be noted on the carrier's delivery receipt. A separate request for inspection by the carrier's agent should be made in writing. See local Distributor for more information. Summit Manufacturing assumes no liability for freight damage.

Installation of accessories or field conversion should be accomplished before setting the unit in place or connection any wiring, electric heat, duct, or piping.

REFERENCE

This instruction should be used in conjunction with instructions supplied with each field installed accessory as well as outdoor section.

Installer should pay particular attention to the words; **NOTE**, **CAUTION**, and **WARNING**.

NOTES are intended to clarify or make the installation easier.

A CAUTION identifies procedure which, if not followed carefully, could result in personal injury, property damage or product damage.

A WARNING is given to alert the installer that severe personal injury, death or equipment damage may result if installation procedures are not handled properly.

LIMITATIONS

These units must be wired and installed in accordance with all national and local codes. Voltage limits are as follows.

Air Handler Voltage	Voltage Code	Normal Oper. Voltage Range
120/60/1	A	104-126
208/230/60/1	B	187-253

LOCATION

Location is usually predetermined. Check with owner's or dealer's installation plans. If location has not been decided, consider the following in choosing a suitable location.

1. Select a location with adequate structural support, space for service access, clearance for return and supply duct connections.

NOTE: Service access is generally specified by local codes.

2. Normal operating sound levels may be objectionable if the air handler is placed directly over some rooms such as bedrooms, study, etc.
3. Precautions should be taken to locate the unit and duct work so that supply air does not short circuit to the return air.
4. Select a location that will permit installation of condensate drain line to an open drain.

NOTE: When the coil is installed in a draw-thru application, it is recommended to trap the primary and secondary drain line. If the secondary drain is not used, it must be capped.

5. When the evaporator coil is installed in an attic or above a finished ceiling, an auxiliary drain pan should be provided under the coil as is specified by most local building codes.
6. Proper electrical supply must be available.
7. Clearances must also be taken into consideration, and provided for as follows:
 - a. Refrigerant piping and connections are located in the front.
 - b. Maintenance and servicing through the front or access side of the unit with both sides and rear of unit having zero clearance.
 - c. Condensate drain lines are connected in the front (clear of filter).
 - d. When no electric heat is used, the unit as well as all duct work and plenum are designed for zero clearance to combustible materials.

CAUTION

If electric heat is used, a minimum clearance of 1" Must be maintained on all sides of the supply air Duct and/or plenum continuously for up to 3'

MS-Installation Instructions 052209-3



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SINGLE PIECE AIR HANDLER INSTALLATION INSTRUCTIONS DX and Chilled Water Cooling / Electric and Hot Water Heating

INSTALLATION/OPERATION SAFETY RULES:

1. Read these rules and instructions carefully. Failure to follow these rules and the installation instructions could cause a malfunction of the unit, and a possible safety hazard. Keep these instructions nearby the unit for future reference.
2. While this unit has been designed and manufactured to comply with National codes, it is the installer's responsibility to install this unit to comply with National codes and/or prevailing local codes and regulations. Suntherm assumes no responsibility for units installed in violation of any code or regulation.
3. Before servicing, allow unit to cool.
WARNING: ALWAYS SHUT OFF ELECTRICITY WHEN WORKING ON UNIT. This will prevent any electrical shocks or burns.
4. Ground the unit to prevent electric shock. All electrical wiring should be in accordance with the National Electric Code.
5. Duct work must be installed in accordance with the standards of the National Fire Protection Association (NFPA) for the installation of Air Conditioning, Warm Air Heating and Ventilating Systems (NFPA 90A and 90B). Duct work in non-conditioned spaces must be insulated to prevent formation of condensate and for maximum efficiency.
6. The safety testing agency label appearing on these units covers the unit and factory installed coil (if provided) only. It does not cover any other equipment. Exterior surface of cabinet may sweat when units is installed in a non-conditioned space such as an attic or garage. Installer must provide protection such as full size auxiliary drain pan on all units installed in a non-conditioned space to prevent damage from condensation runoff. It is recommended that units installed in non-conditioned spaces be insulated with 1" thick fiberglass with the vapor barrier on the outside.
7. While designed to operate quietly when properly installed, several steps should be taken insure this. Use of isolation pads when mounting unit, flexible duct collars for discharge, and use of acoustical duct liners are all good installation practices that promote quiet operation.

8. Cabinet insulation is rated for R-4.2 (standard). Some jurisdictions require R-6.0 on installations in a non-conditioned space. Add insulation 1" thick to exterior of unit to comply in these jurisdictions, putting the vapor barrier on the outside.

WARNING:

Hot water can scald. Water heated to a temperature which will satisfy space heating can scald and permanently injure a person upon contact. Some people are more likely to be permanently injured by hot water than others. These include the elderly, children, the infirm, physically or mentally handicapped. Check local, State, and National codes requiring a certain temperature water at the hot water tap. Special precautions must be used in addition to using the lowest possible temperature setting that satisfies your hot water needs. A Tempering device such as a mixing valve, should be used at the hot water taps, or water heater.

UNPACKING THE UNIT:

The unit should be unpacked on receipt and if any damage is found, follow the instructions under "INSPECTION" on page 1.

This air handler is completely assembled. (NOTE: Electric heat can be ordered as factory or field installed, if field installed, refer to the separate installation instructions provided with the heat kit.) Only electrical power, thermostat wiring, hot water piping (if applicable) and duct connections are needed for installation. DX coils will also require refrigerant and condensate drain connections. Some units may have motor supports over the motor shaft. Remove these supports as necessary.

MINIMUM CLEARANCES:

These units have a 0" minimum clearance to combustible materials rating from all cabinet surfaces. The unit should be installed with serviceability clearance of 30" from the front of the unit. The unit can be serviced entirely from the front, including replacing the filter. Be sure to route primary and secondary condensate drain piping so as not to obstruct replacement of filter.

ARRANGEMENT:

Unit is shipped from the factory arranged to be installed in a vertical upflow or horizontal right to left air flow position (standard) or field convertible to a horizontal left to right air flow position.

MS-Installation Instructions 052209-4



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SINGLE PIECE AIR HANDLER INSTALLATION INSTRUCTIONS

DX and Chilled Water Cooling / Electric and Hot Water Heating

UPFLOW APPLICATION:

In an upflow installation the discharge outlet is at the top. Care should be taken to insure unit is level to permit proper condensate drainage. Normal upflow installation will be in a closet or basement. If installed in a closet, the closet should have a platform framed in, with an opening at the top of the platform centered in the closet. Connect the supply air outlet to a plenum. Install return air grilles from outside the closet to space below the platform. Platform must be at least 12" above the floor. If installed in a basement, run supply and return duct work in accordance with local codes.

HORIZONTAL APPLICATION:

Horizontal applications will normally be used in an attic or crawl space. This type of installation requires a return air duct be attached to the unit inlet. The opposite end of the return air duct is attached to a return air filter grille through the ceiling or wall. Remove air filter from unit if filter grille is used. The unit is shipped in right to left configuration. For left to right applications (before connecting drains, refrigerant or water piping) remove coil and doors and move horizontal pan to right side. Reinstall coil and doors.

DOWNFLOW APPLICATION:

Contact distributor for proper downflow conversion kit. Hydronic heat units cannot be used in the down flow position.

CAUTION:

It is mandatory to use an emergency auxiliary drain pan with any coil or air handler installed in an attic or above a finished ceiling.

ELECTRICAL WIRING:

Refer to the unit nameplate for specific electrical data.

CAUTION:

Disconnect power at main fuse or circuit breaker distribution panel before wiring unit to prevent shock or fire hazard.

POWER WIRING:

Unit is suitable for use with copper conductors. Tighten all wire connectors. Take care not to damage heater ceramic insulators on electric heat models. For correct field wire size see unit nameplate and field wiring table inside electrical compartment door. Use 75°C minimum wire in unit wiring compartment. Units larger than 10 KW will require multiple sets of power conductors.

NOTE: See unit for complete wiring diagram located on blower housing.

CONTROL WIRING:

Field connections to the low voltage leads are made using appropriate field supplied wiring connectors. Consult installation instructions provided with accessory items for specific information on control wiring. Use 18 AWG minimum copper conductors for control wiring up to 50' between units. 16 AWG control conductors are recommended for lengths between 50' and 100'. Class 2 wiring is acceptable. Take care not to short control leads, transformer burnout could result. Some manufacturer's outdoor units are equipped with a 24 volt control transformer. If this type of outdoor unit is used with this air handler, use a thermostat with isolating contacts to prevent inter-connection of two separate Class 2 circuits. Set thermostat heat anticipator at 0.15 amps for units 12KW or smaller, set at .30 amps for 15 KW and larger.

BLOWER MOTOR:

CONSTANT SPEED MOTOR:

Two factory selected motor speed leads are connected to the blower relay to provide automatic speed change for heating and cooling airflow volumes. The pre-selected motor speeds would normally not have to be changed in the field. All models contain a blower time delay relay (TDR 10-30 seconds) that delays the blower turning on and off when the thermostat calls for "Fan Only" or "Cooling". The TDR improves energy efficiency.

VARIABLE SPEED MOTORS:

Electronic commutated and constant torque motors are factory programmed and cannot be re-programmed in the field. ECM motors have (4) jumper settings, and CT motors have (5) speed taps. Refer to blower performance data located in the SunTherm Technical Guide for selection of jumper or tap settings that best fits this application.

NOTE: All 208/230 volt motors are factory programmed for "0" second fan "ON" delay for use with electric heat. Motor must energize with electric heat. All 115 volt motors are factory programmed for "30" second fan "ON" delay for use with hydronic heat.

MS-Installation Instructions 052209-5



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SINGLE PIECE AIR HANDLER INSTALLATION INSTRUCTIONS

DX and Chilled Water Cooling / Electric and Hot Water Heating

PIPING:

DX REFRIGERANT PIPING:

Air handlers with DX type evaporator coils require liquid and suction piping sized in accordance with condensing unit manufacturer's recommendations. The evaporator coils have sweat copper connections. Refrigerant lines should be soldered with silver solder or other high temperature brazing alloy. The suction must be insulated for satisfactory operation. An oil trap must be installed in all vertical suction risers. An additional oil trap must be installed every 15' for risers over 15' in height. If the condensing unit is located over the evaporator coil, an "inverted" oil trap must be installed at the top of the suction riser. Horizontal suction line runs should be sloped 1" every 20' toward the condensing unit. The manufacturer recommends that dry nitrogen be flowed through the refrigerant lines during the soldering operation. Liquid line is capped. NOTE: Pressure drop in liquid must not exceed 30 psi or erratic operation and thermostatic expansion damage will occur.

CHILLED WATER PIPING:

All piping must be supported independent of coils to prevent vibration and stress on coil headers. Swing joints or flexible fittings must be provided to absorb expansion and contraction strains. Rigid piping reduces the effectiveness of vibration isolators.

Water piping should always be connected so that the entering water is on the leaving side of the coil. Coils must be adequately vented in order to prevent air binding. Units are provided with manual air vents mounted through the manifold panel.

HOT WATER PIPING:

If a residential water heater is used for space heating water, do not exceed a distance of 70' between the air handler and the water heater. The water heater should be the quick recovery type. Air handler and water heater must be located indoors and not subject to freezing temperatures.

WARNING:

Air handler must be located so that if any connections should leak, water will not cause damage to the adjacent area. When such locations can't be avoided, a suitable drain pan should be installed under the air handler, not over 1-1/2" deep, with minimum length and width at least 2" greater than the air handler dimensions and connected to an adequate drain. Under no circumstances is the manufacturer to be held liable for any water damage in connection with this air handler.

HOT WATER PIPING: Continued).

Total piping should not exceed 140'. All piping should be 3/4" copper or approved PVC. It is recommended that the water shut-off valve for the water heater be located close to the water heater. Isolation valves are also recommended.

It is recommended that any devices installed, which could create a closed system, have a by-pass and/or the system have an expansion tank to relieve the pressure built up by thermal expansion in the water system.

WARNING:

Toxic chemicals such as used for treatment of boilers or non-potable water heating appliances shall never be introduced into a potable water space heating system.

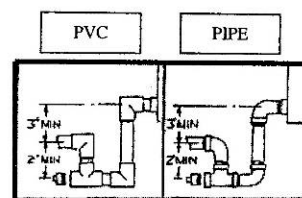
WARNING:

When the system required water at temperatures higher than required for other uses, a means such as a mixing valve shall be installed to temper the water for those uses in order to reduce the scald hazard potential.

After piping has been installed, allow the system to fill with water and check connections for leaks. To insure complete filling of the system, follow start-up procedure.

CONDENSATE DRAIN PIPING:

The air handler "A" coil drain pan has two 3/4" NPT female primary and two secondary connections (left or right hand). Horizontal pan has two 3/4" NPT female, one primary and one secondary. Piping from each fitting used is to have 1-1/2" minimum trap and each run in such a manner as to provide enough slope for adequate drainage to a visible area. Do not pipe these two fittings together into a common drain. Cap unused connection.



Typical Condensate Traps

AIR FILTER:

A clean, appropriately sized filter must be used or system damage will occur. Filters are not supplied with this air handler, a field installed filter accessory is available.

MS-Installation Instructions 052209-6



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SINGLE PIECE AIR HANDLER INSTALLATION INSTRUCTIONS DX and Chilled Water Cooling / Electric and Hot Water Heating

CHECK TEST AND START UP:

UNITS WITH ELECTRIC HEAT:

The unit should be tested after the system has been completely installed to determine proper operation. Unit is equipped with heater time delay controls. All heating elements should turn on within one minute.

NOTE:

Circuit breakers are equipped with a visual "visi-trip" red flag indicator. If red indicator shows that circuit breaker has tripped, this indicated that a problem exists in your system which should be corrected before resetting breaker.

UNITS WITH HOT WATER HEATING:

NOTE:

Heating system should not be switched on until system is filled and hot water coil vented.

1. Fill and pressurize the water heater and air handler.
2. The water heater should be started.
3. Vent air from the water tank by opening a hot water spigot.
4. Vent and flush the supply and return lines by attaching a hose to the volume purge valve and running purge water to a safe location. Run approximately 5 gallons of water at a high flow rate to purge.
5. Energize the unit by switching on the line voltage source and the thermostat. The fan and pump should start simultaneously. The water coil should become warm after a few minutes of operation.
6. Units are rated at temperatures of 130° -180° F. Set water source temperature at design temperature and take proper safeguards for water usage at supply points as per local codes and safety considerations.

SYSTEM SHUT-DOWN:

For short periods of time during freezing temperatures if the system is to be left unused, to prevent freezing of the air handler and piping, do the following. Do not turn the system off, and the air handlers thermostat left on the heat setting. If the water heater and air handler must be shut down for extended periods, a qualified service technician should insure that the air handler and coil are completely drained of water

PERIODIC MAINTENANCE:

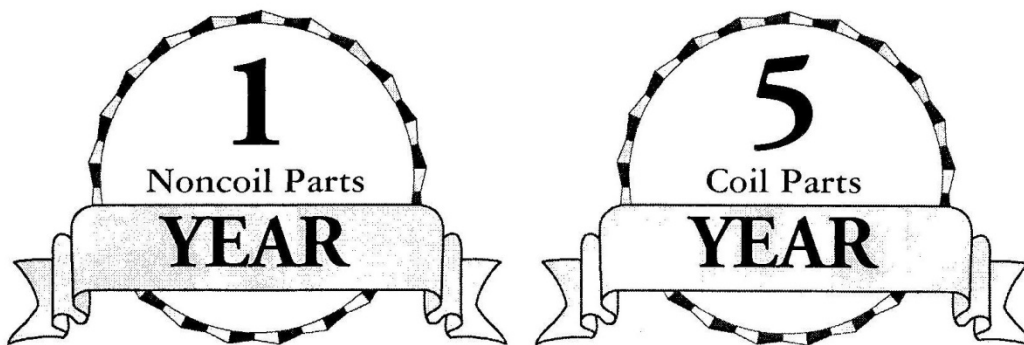
The filter must be changed monthly to permit proper airflow for safe and efficient operation. All other maintenance should be performed by a licensed technician.

<p>⚠ WARNING</p> <p>ELECTRICAL SHOCK or UNIT DAMAGE HAZARD</p> <p>Failure to follow this warning could result in personal injury, or death.</p> <p>Turn off the main (remote) disconnect device before working on incoming (field) wiring.</p> <p>Incoming (field) wires on the line side of the disconnect found in the fan coil unit remain live, even when the pull out is removed. Service and maintenance to incoming (field) wiring cannot be performed until the main disconnect switch (remote to the unit) is turned off.</p>
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MS-Installation Instructions 052209-7



LIMITED REPLACEMENT PARTS WARRANTIES



These limited parts warranties are provided by SunTherm, Inc. on products manufactured beginning May 1, 1993. SunTherm products will be warranted to be free of defective materials and workmanship under normal use and service for 1 year from date of manufacture for Noncoil Parts and for 5 years for Coil parts. In the event of a defect, contact your SunTherm Representative or our warranty department for authorization to replace or repair defective product. This warranty is limited to original purchaser only at the place of original installation.

501 Terminal Road ■ Fort Worth, TX 76106 ■ 800-444-6354 ■ Fax 800-944-6354

Spec. Furn.-185 010101



MORTEX PRODUCTS, INC.
501 TERMINAL ROAD
FORT WORTH, TEXAS 76106
Phone 817-624-0820 Fax 817-624-8581

BASIC REPLACEMENT PARTS

Contact Factory For Parts Not Listed

ETI Model AVS-0024-B*		
Qty.	Part #	Description
1	R69AD0001	9 X 6 Blower Assembly
1	R65BV0001	1/3 HP 208/240V ECM Motor 208/240V
1	R65BV0025	1/3 HP 208/240V X-13 Motor 208/240V
1	R65BU0168	1/3 HP 208/240V PSC Motor 208/240V
1	R68AE0003	ECM Motor Control Board
1	R68DE0001	10 MFD/370V Capacitor
1	R68DE0002	15 MFD/370V Capacitor
1	R68DE0003	5 MFD/370V Capacitor
1	R68DE0004	25 MFD/370V Capacitor
1	R68AA0003	208/240-24V Transformer
1	R68DC0001	Ground Lug
1	R68DC0018	Power Terminal Block
1	R68AB0001	Fan Relay for X-13 and PSC Motor
5 KW Electric Heat		
1	R86CG0073	5 KW Element
1	R68CA0003	Limit Switch
1	R68AD0003	Single Pole Heat Sequencer (PSC Motors Only)
1	R68AB0008	Single Pole Heat Relay (X-13 & ECM Motors Only)
1	R68BAD013	30 Amp Circuit Breaker
DRAIN PANS (PLASTIC)		
1	R86EB0202	16.625" W x 19.000" D - Vertical (71AA0013)
1	R86EB0252	20.250" H x 19.500" D - Horizontal (71AA0046)

AVS-0024-B* coil: CA024A8Y3ETI-44A



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BASIC REPLACEMENT PARTS

Contact Factory For Parts Not Listed

ETI Models AVS-0036/-0048/-0060/-0068-B*		
Qty.	Part #	Description
1	R69AD0017	12 x 9 Blower Assembly (MS**37,42,48,60)
1	R69AD0019	12 x 10 Blower Assembly (MS**72)
1	R65BV0003	3/4 HP 208/240V ECM Motor (MS**37,42,48,60)
1	R65BV0027	3/4 HP 208/240V X-13 Motor (MS**37,42,48,60)
1	R65BU0160	3/4 HP 208/240V PSC Motor (MS**37,42,48,60)
1	R65BV0004	1 HP 208/240V ECM Motor (MS**72)
1	R65BV0028	1 HP 208/240V X-13 Motor (MS**72)
1	R68AE0003	ECM Motor Control Board
1	R68DE0001	10 MFD/370V Capacitor
1	R68DE0002	15 MFD/370V Capacitor
1	R68DE0003	5 MFD/370V Capacitor
1	R68DE0004	25 MFD/370V Capacitor
1	R68AA0003	208/240-24V Transformer
1	R68DC0001	Ground Lug
1	R68DC0018	Power Terminal Block
1	R68AB0001	Fan Relay for X-13 and PSC Motor
10 KW Electric Heat		
1	R86CG0074	10 KW Element
2	R68CA0003	Limit Switch
1	R68AD0002	Double Pole Heat Sequencer (PSC Motors Only)
1	R68AB0007	Double Pole Heat Relay (X-13 & ECM Motors Only)
1	R68BAD018	60 Amp Circuit Breaker
15 KW Electric Heat		
1	R86CG0075	15 KW Element
3	R68CA0003	Limit Switch
1	R68AD0002	Double Pole Heat Sequencer (PSC Motors Only)
1	R68AB0007	Double Pole Heat Relay (X-13 & ECM Motors Only)
1	R68AD0003	Single Pole Heat Sequencer (PSC Motors Only)
1	R68AB0008	Single Pole Heat Relay (X-13 & ECM Motors Only)
1	R68BAD018	60 Amp Circuit Breaker
1	R68BAD013	30 Amp Circuit Breaker
20 KW Electric Heat		
2	R86CG0074	10 KW Element
4	R68CA0003	Limit Switch
2	R68AD0002	Double Pole Heat Sequencer (PSC Motors Only)
2	R68AB0007	Double Pole Heat Relay (X-13 & ECM Motors Only)
2	R68BAD018	60 Amp Circuit Breaker
DRAIN PANS (PLASTIC)		
1	R86EB0250	23.625" W x 20.500" D - Vertical (71AA0038)
1	R86EB0251	30.125" H x 20.750" D - Horizontal (71AA0037)

AVS-0036-B* coil: CA036A8Y4ETI-45A

AVS-0048-B* coil: CA048A9Y6ETI-18A

AVS-0060-B* coil: CA060A9Y6ETI-18A

AVS-0068-BV coil: CA072A999ETI-18A