



©2009 Lennox Industries Inc.
Dallas, Texas, USA

RETAIN THESE INSTRUCTIONS FOR FUTURE REFERENCE

NOTICE TO INSTALLER

This unit includes an air handler control board which must be configured before unit start-up to ensure proper operation. See Jumper and Link Guide on page 15 and *Configuring Unit* section starting on page 24.

! IMPORTANT

The Clean Air Act of 1990 bans the intentional venting of refrigerant (CFCs, HCFCs and HFCs) as of July 1, 1992. Approved methods of recovery, recycling or reclaiming must be followed. Fines and/or incarceration may be levied for noncompliance.

! WARNING

Improper installation, adjustment, alteration, service or maintenance can cause personal injury, loss of life, or damage to property.

Installation and service must be performed by a licensed professional installer (or equivalent) or a service agency.

INSTALLATION INSTRUCTIONS

Dave Lennox Signature® Collection CBX40UHV Units

AIR HANDLER
506065-01
02/09
Supersedes 01/09

TPD Technical
Publications
Litho U.S.A.

Table of Contents

CBX40UHV Upflow Unit Dimensions	2
CBX40UHV Horizontal LH/RH Unit Dimensions ...	3
Installation Clearances	3
Shipping and Packing List	4
General Information	4
Requirements	4
Installing the Unit	4
Brazing Connections	7
Installing the Condensate Drain	8
Inspecting and Replacing Filters	9
Sealing the Unit	10
Making Electrical Connections	10
Field Wiring Connections	16
Air Handler Control Button, Display and Jumpers ..	16
Target CFM Tables	21
Configuring Unit	24
Error Code Recall Mode	31
Indoor Blower Test	32
Repairing Cabinet Insulation	33
Accessories	33

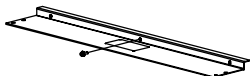
IMPORTANT INFORMATION TO INSTALLER

CHECK FOR AND REMOVE THE FOLLOWING ITEMS BEFORE OPERATING UNIT.

A BLOWER HOUSING SUPPORT PAD.



B TOP CAP SHIPPING BRACKET (REPLACE SCREWS IN TOP CAP AFTER REMOVAL).



C HORIZONTAL DRAIN PAN (SEE UPFLOW APPLICATIONS ON PAGE 5 AND DOWNFLOW APPLICATIONS ON PAGE 6)

D REFRIGERANT LINE PLUGS (SEE BRAZING CONNECTION ON PAGE 7).

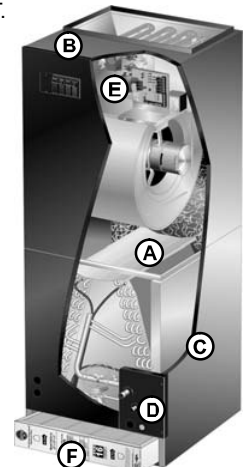
E CONFIGURE/DETECTING ELECTRIC HEAT SECTION ON PAGE 24. SEE PAGE 15 FOR JUMPER AND LINK GUIDE.

F MERV16 AIR FILTER WHICH IS ENCLOSED IN PLASTIC BAG. (BAG MUST BE REMOVED DURING INSTALLATION)..



SEE TABLE 5 FOR FILTER SIZES AND CATALOG NUMBERS.

G UNIT COMES FROM FACTORY COMPLETELY ASSEMBLED FOR UP-FLOW AND HORIZONTAL APPLICATIONS. AIR HANDLER CAN BE USED IN DOWN-FLOW APPLICATIONS BY USING THE OPTIONAL DOWN-FLOW CONVERSION KITS SHOWN ON PAGE 6 OF THIS INSTRUCTION.



IMPORTANT: CONFIGURATION OF AIR HANDLER CONTROL BOARD MUST BE CHECKED BEFORE START-UP TO ENSURE PROPER SYSTEM OPERATION. SEE JUMPER AND LINK GUIDE ON PAGE 15 AND CONFIGURING UNIT SECTION STARTING ON PAGE 24.



CBX40UHV Upflow Unit Dimensions - Inches (Millimeters)

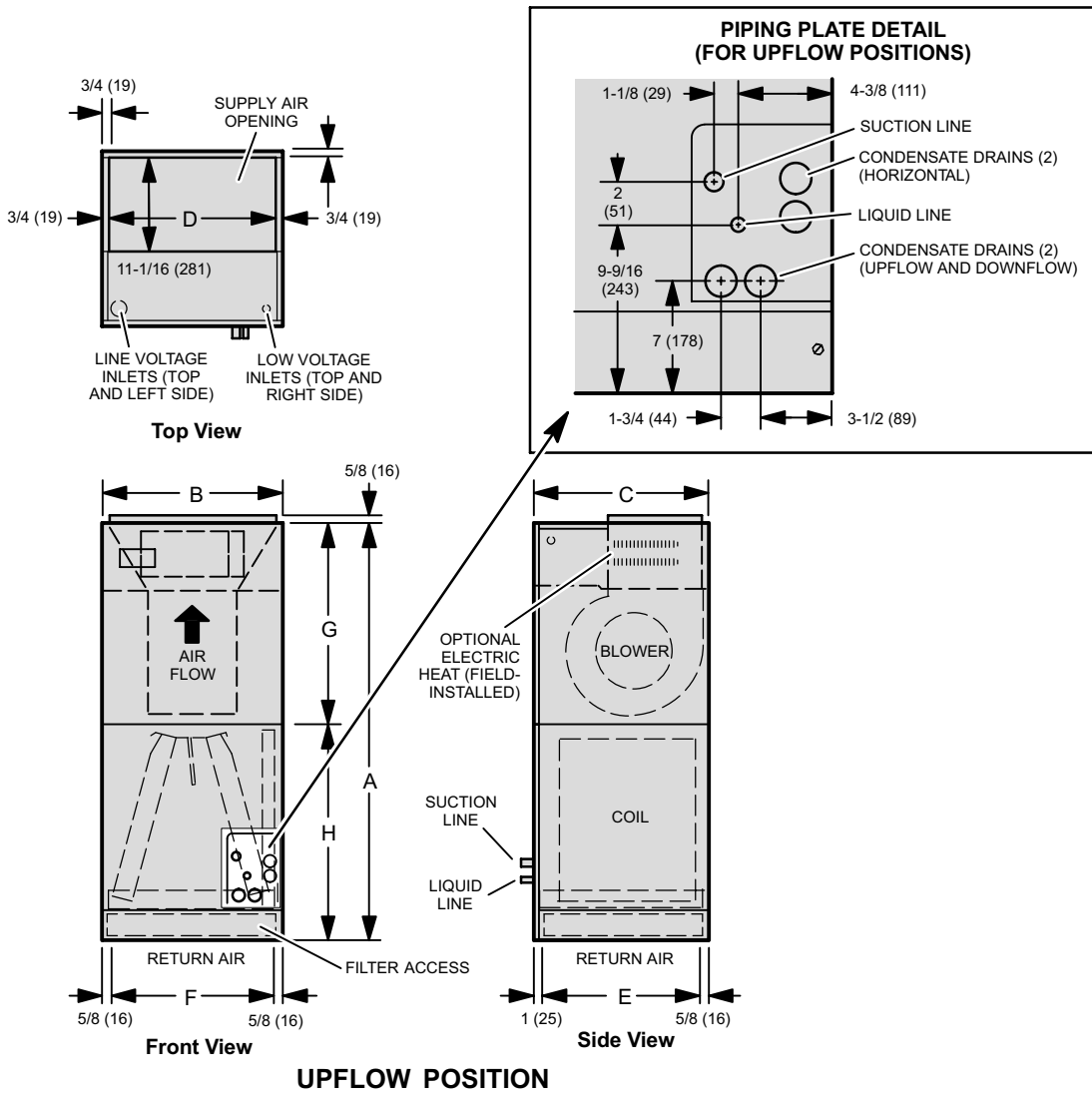
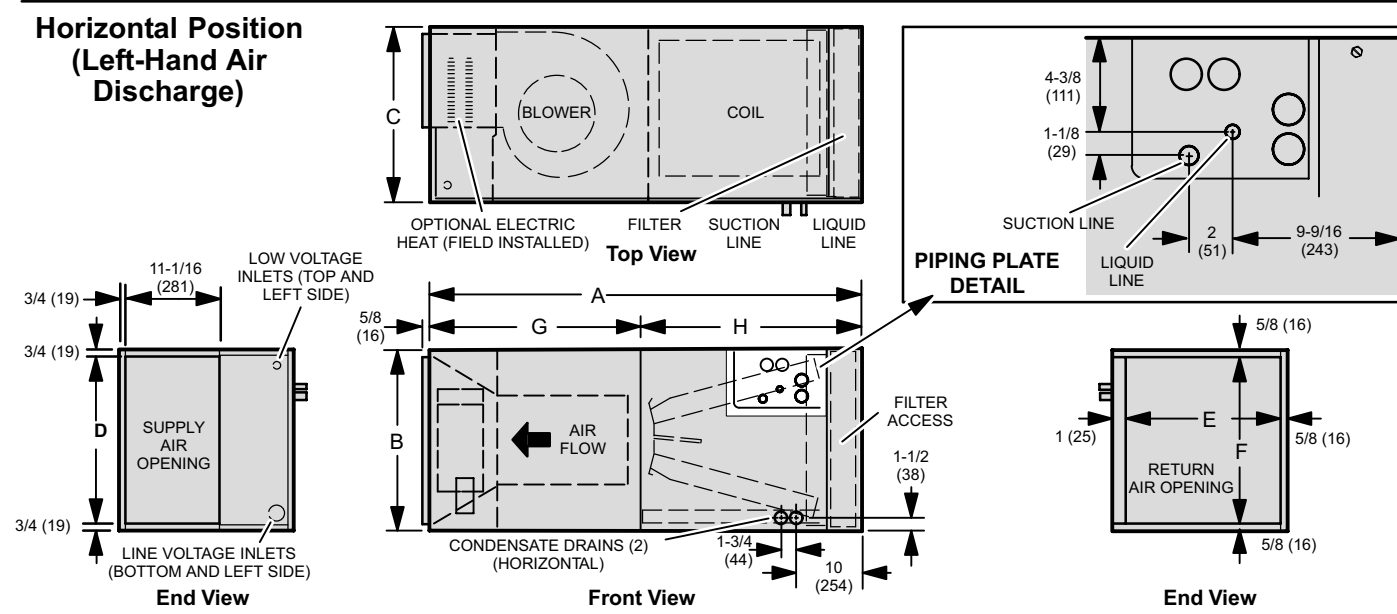
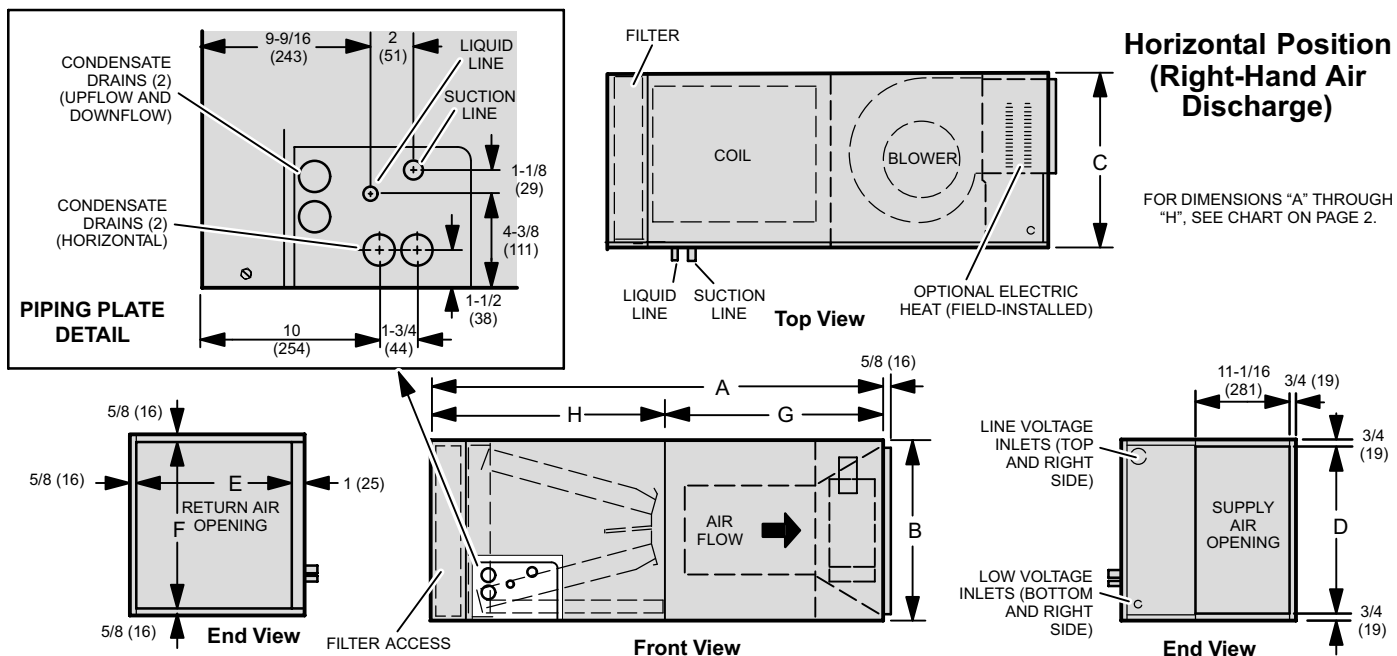


Table 1. CBX40UHV Model Dimensions (Upflow, LH and RH Horizontal Applications)

Dim.	-024/-030/-036	-042/-048/-060
	in. (mm)	in. (mm)
A	55-1/4 (1403)	62-3/4 (1594)
B	21-1/4 (540)	21-1/4 (540)
C	22-5/8 (575)	25-5/8 (575)
D	19-3/4 (502)	19-3/4 (502)
E	21 (533)	23 (584)
F	20 (508)	21 (533)
G	26-3/8 (670)	27-7/8 (708)
H	28-7/8 (733)	34-7/8 (886)

CBX40UHV Horizontal Left- and Right-Hand Unit Dimensions - Inches (mm)



Installation Clearances	
Cabinet	0 inch (0 mm)
To Plenum	1 inch (25 mm)
To Outlet Duct within 3 feet (914 mm)	1 inch (25 mm)
Floor	See Note #1
Service / Maintenance	See Note #2

1 Units installed on combustible floors in the down-flow position with electric heat require optional down-flow additive base.

2 Front Service Access - 24 inches (610mm) minimum.

NOTE - If cabinet depth is more than 24 inches (610 mm), allow a minimum of the cabinet depth plus 2 inches (51 mm).

⚠ CAUTION

Physical contact with metal edges and corners while applying excessive force or rapid motion can result in personal injury. Be aware of, and use caution when working near these areas during installation or while servicing this equipment.

⚠ WARNING

During blower operation, the ECM motor emits energy that may interfere with pacemaker operation. Interference is reduced by both the sheet metal cabinet and distance.

WARNING

Product contains fiberglass wool.

Disturbing the insulation in this product during installation, maintenance, or repair will expose you to fiberglass wool. Breathing this may cause lung cancer. (Fiberglass wool is known to the State of California to cause cancer.)

Fiberglass wool may also cause respiratory, skin, and eye irritation.

To reduce exposure to this substance or for further information, consult material safety data sheets available from address shown below, or contact your supervisor.

**Lennox Industries Inc.
P.O. Box 799900
Dallas, TX 75379-9900**

WARNING

Electric Shock Hazard.

Can cause injury or death.

Foil-faced insulation has conductive characteristics similar to metal. Be sure there are no electrical connections within a 1/2" of the insulation. If the foil-faced insulation comes in contact with electrical voltage, the foil could provide a path for current to pass through to the outer metal cabinet. While the current produced may not be enough to trip existing electrical safety devices (e.g. fuses or circuit breakers), the current can be enough to cause an electric shock hazard that could cause personal injury or death.

Shipping and Packing List

Package 1 of 1 contains the following:

1 — Assembled air handler unit

General Information

The Dave Lennox Signature™ Collection CBX40UHV air handler units are designed for installation with optional field-installed electric heat and a matched remote outdoor unit that is charged with HFC-410A refrigerant. These units, designed for indoor installation in multiple positions, are completely assembled for upflow and horizontal right-hand air discharge before being shipped from the factory.

NOTE - For downflow or horizontal left-hand air discharge, certain field modifications are required.

These instructions are intended as a general guide and do not supersede local or national codes in any way. Consult authorities having jurisdiction before installation. Check equipment for shipping damage; if found, immediately report damage to the last carrier.

Requirements

In addition to conforming to manufacturer's installation instructions and local municipal building codes, installation of Lennox air handler units (with or without optional electric heat), **MUST** conform with the following National Fire Protection Association (NFPA) standards:

- NFPA No. 90A - Standard for Installation of Air Conditioning and Ventilation Systems
- NFPA No. 90B - Standard for Installation of Residence Type Warm Air Heating and Air Conditioning Systems

This unit is approved for installation clearance to combustible material as stated on the unit rating plate. Accessibility and service clearances must take precedence over combustible material clearances.

Installing the Unit

WARNING

Improper installation of the air handler can result in personal injury or death.

Do not allow external combustion products or other contaminants to enter the return air system or to be mixed with air that will be supplied to the living space. Use sheet metal screws and joint tape or duct mastic to seal return air system to air handler. In platform installations, the air handler should be sealed airtight to the return air plenum. A door must never be used as a portion of the return air duct system. The base must provide a stable support and an airtight seal to the air handler. Allow absolutely no sagging, cracks, gaps, etc.

For no reason should return and supply air duct systems ever be connected to or from other heating devices such as a fireplace or stove, etc. Fire, explosion, carbon monoxide poisoning, personal injury and/or property damage could result.

DISASSEMBLE AND REASSEMBLE AIR HANDLER UNIT

To disassemble:

1. Remove access panels.
2. Remove both blower and coil assemblies. This will lighten the cabinet for lifting.
3. Remove one screw from the left and right posts inside the unit. Remove one screw from each side on the back of the unit. Unit sections will now separate.

To reassemble:

1. Align cabinet sections together.
2. Reinstall screws.
3. Replace blower and coil assemblies.
4. Replace access panel.

UPFLOW APPLICATION

Use the following procedures to configure the unit for upflow operations:

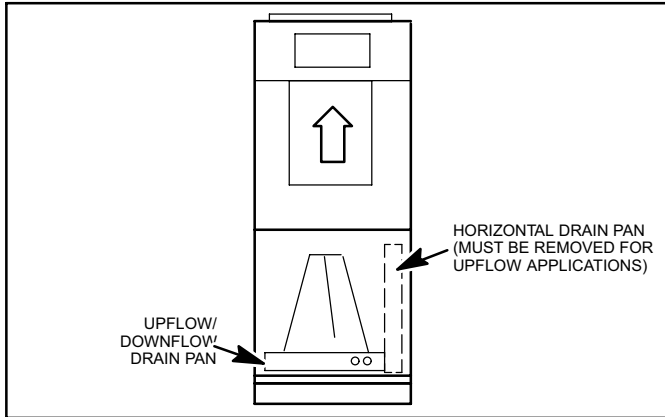


Figure 1. Upflow Configuration

1. The horizontal drain pan must be removed when the coil blower is installed in the upflow position. Removing horizontal drain pan will improve airflow.
2. After removing horizontal drain pan, place the unit in desired location. Set unit so that it is level. Connect return and supply air plenums as required using sheet metal screws as illustrated in Figure 1.
3. Install units that have no return air plenum on a stand that is at least 14" (356 mm) from the floor to allow for proper air return. Lennox offers an optional upflow unit stand as listed in table 2.

Table 2. Optional Side Return Stand (Upflow Only)

Model/Size	Kit Number
CBX40UHV-All Sizes	45K32

HORIZONTAL RIGHT-HAND AIR DISCHARGE APPLICATION

Use the following procedures to configure the unit for horizontal right-hand air discharge operations:

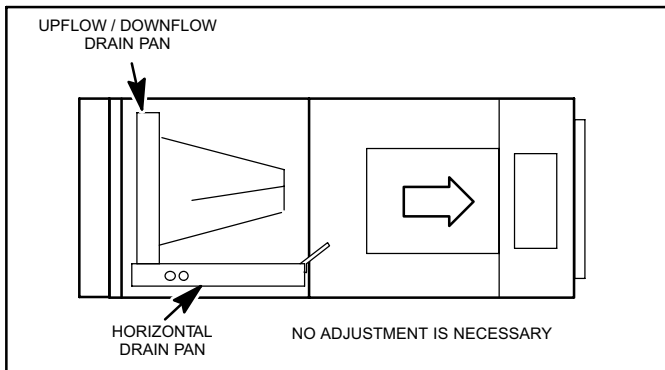


Figure 2. Right-Hand Air Discharge Configuration

NOTE - When a coil is located above a finished space, a 3/4" (19.1MM) overflow drain line must be installed and connected to a safety pan or to the secondary drain outlet of the coil. Refer to local codes.

1. No further adjustment is necessary. Set unit so that it is sloped 1/4" (6.35 mm) towards the drain pan end of the unit.
2. If the unit is suspended, the entire length of the cabinet must be supported. If you use a chain or strap, use a piece of angle iron or sheet metal attached to the unit (either above or below) to support the length of the cabinet. Use securing screws no longer than 1/2" (12.7mm) to avoid damaging the coil or filter as illustrated in Figure 3. Use sheet metal screws to connect the return and supply air plenums as required.

HORIZONTAL RIGHT-HAND AIR DISCHARGE APPLICATION IN HIGH HUMIDITY AREAS

For horizontal applications in high humidity areas, seal around the drain pan connections plus liquid and suction lines, to prevent humid air from infiltrating into the unit.

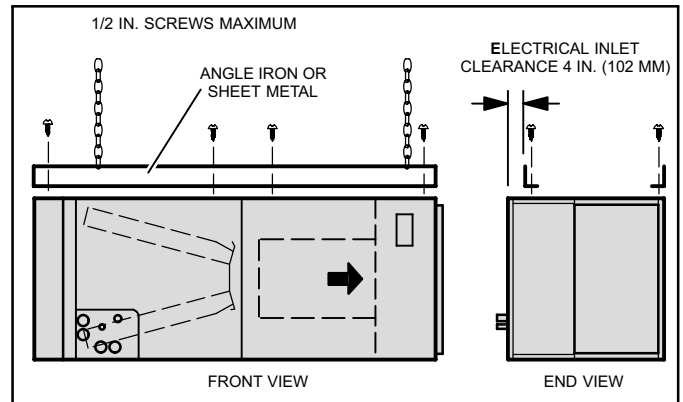


Figure 3. Suspending Horizontal Unit

⚠ IMPORTANT

When removing the coil, there is possible danger of equipment damage and personal injury. Be careful when removing the coil assembly from a unit installed in right- or left-hand applications. The coil may tip into the drain pan once it is clear of the cabinet. Support the coil when removing it.

HORIZONTAL LEFT-HAND AIR DISCHARGE APPLICATION

Use the following procedures to configure the unit for horizontal left-hand air discharge operations:

1. Pull the coil assembly from unit. Remove the horizontal drain pan.
2. Remove the drain plugs from back drain holes on horizontal drain pan and reinstall them on front holes.

⚠ IMPORTANT

After removal of drain pan plug(s), check drain hole(s) to verify that drain opening is fully open and free of any debris. Also check to make sure that no debris has fallen into the drain pan during installation that may plug up the drain opening.

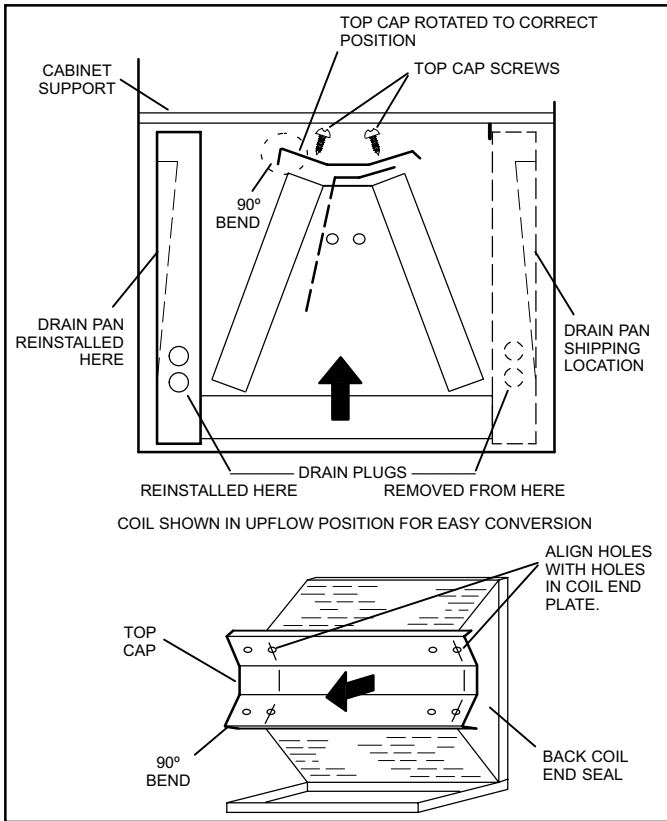


Figure 4. Field Modification for Left-Hand Air Discharge

3. Rotate drain pan 180° front-to-back and install it on the opposite side of the coil.
4. Remove screws from top cap. Remove horizontal drip shield screw located in the center of the back coil end seal as illustrated in Figure 4.
5. Rotate horizontal drip shield 180° front to back.
6. Remove plastic plug from left hole on coil front end seal and reinstall plug in back hole. Reinstall horizontal drip shield screw in front coil end seal. Drip shield should drain downward into horizontal drain pan inside coil.
7. Rotate top cap 180° front-to-back and align with unused screw holes. Holes must align with front and back coil end plates. The top cap has a 45° bend on one side and a 90° bend on the other. The 90° bend must be on the same side as the horizontal drain pan as illustrated in Figure 4.

NOTE - Be very careful when you reinstall the screws into coil end plate engaging holes. Misaligned screws may damage the coil.

8. From the upflow position, flip cabinet 90° to the left and set into place. Replace coil assembly. Secure coil in place by bending down the tab on the cabinet support rail as illustrated in Figure 4.

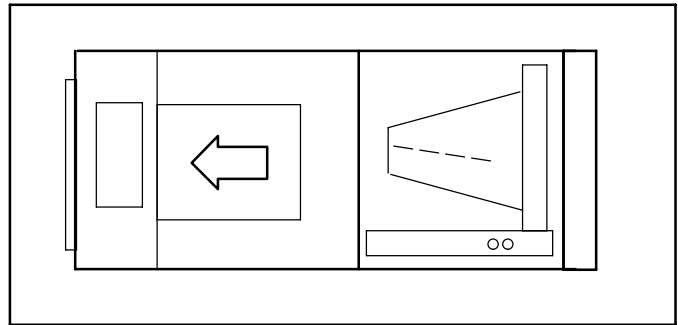


Figure 5. Left-Hand Discharge Configuration

9. Knock out drain seal plate from access door. Secure plate to cabinet front flange with screw provided.
10. Flip access door and replace it on the unit.
11. Set unit so that it is sloped 1/4 inch toward the drain pan end of the unit. Connect return and supply air plenums as required using sheet metal screws.
12. If suspending the unit, it must be supported along the entire length of the cabinet. If using chain or strap, use a piece of angle iron or sheet metal attached to the unit (either above or below) so that the full length of the cabinet is supported. Use securing screws no longer than 1/2" (12.7mm) to avoid damage to coil or filter as illustrated in Figure 3. Connect return and supply air plenums as required using sheet metal screws.

DOWNFLOW APPLICATION

Use the installation instructions provided with the downflow kit.

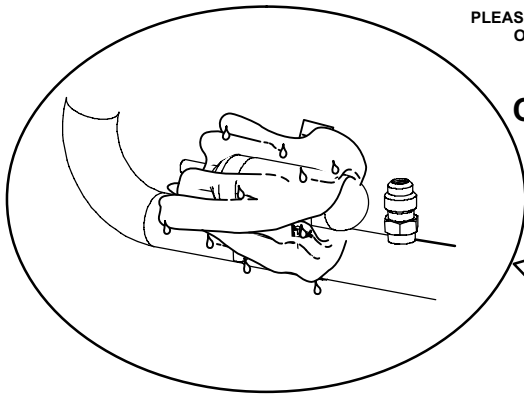
Table 3. Optional Downflow Conversion Kits (Downflow Only)

Model/Size	Kit Numbers
CBX40UHV-024, -030, and -036	83M57
CBX40UHV-042, -048, and -060	43W10

In downflow applications when used with a ECB40 heat section, a Downflow Additive Base Kit (44K15) will be required. Installation instructions are included with the reference kit.

Brazing Connections

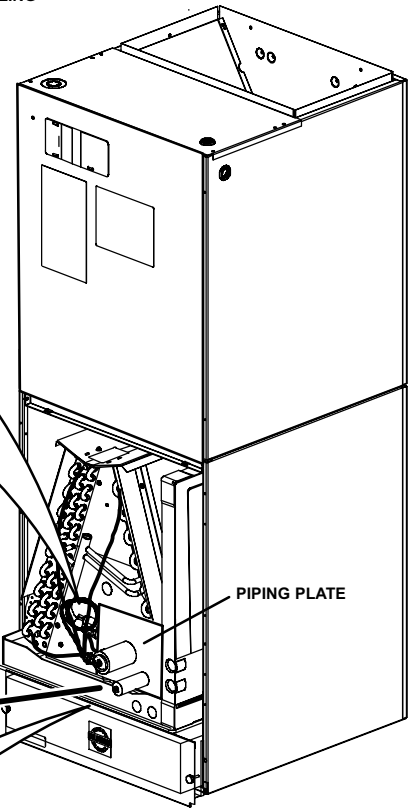
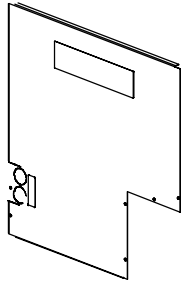
PLEASE READ IMPORTANT ISSUES CONCERNING BRAZING OPERATIONS ON PAGE 8 BEFORE PROCEEDING.



C USE A WET RAG TO PROTECT CTXV SENSING BULB WHEN BRAZING SUCTION LINE CONNECTIONS.

NOTE - REFER TO OUTDOOR UNIT INSTALLATION INSTRUCTIONS FOR REFRIGERANT PIPING SIZE REQUIREMENTS.

A REMOVE ACCESS PANEL

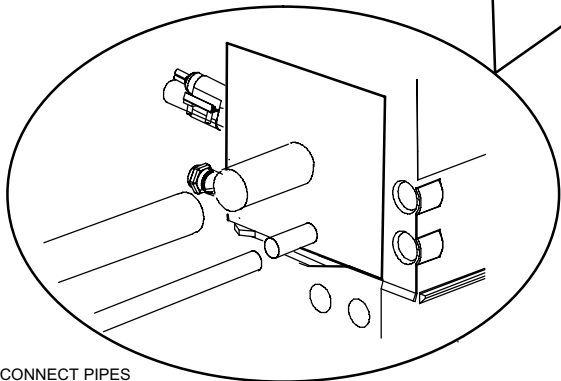


PIPING PLATE

B REMOVE RUBBER PLUG FROM BOTH LIQUID AND SUCTION LINES

NOTE - CBX40UHV SERIES UNITS USE NITROGEN OR DRY AIR AS A HOLDING CHARGE. IF THERE IS NO PRESSURE WHEN THE RUBBER PLUGS ARE REMOVED, CHECK THE COIL FOR LEAKS BEFORE INSTALLING.

D EITHER REMOVE OR PUSH PIPE WRAPPING BACK THROUGH HOLE IN PIPING PLATE BEFORE LINE SET CONNECTION AND BRAZING.

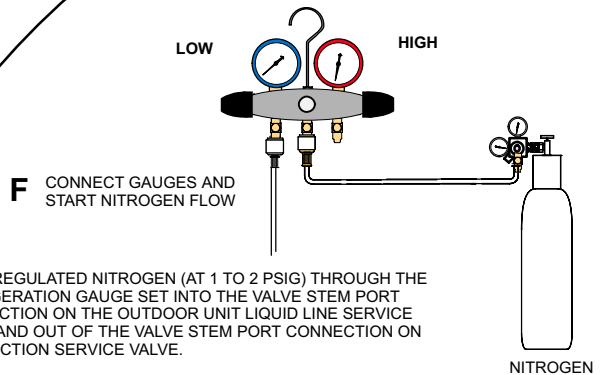


E CONNECT PIPES

NOTE - REFRIGERANT LINE SETS SHOULD BE ROUTED TO ALLOW FILTER ACCESSIBILITY.

G PLACE A WET RAG AGAINST PIPING PLATE AND AROUND THE SUCTION LINE CONNECTION. A

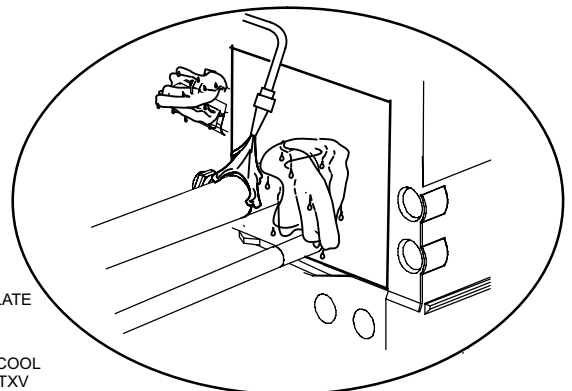
H BRAZE CONNECTION. ALLOW PIPE TO COOL BEFORE REMOVING WET RAG FROM CTXV SENSING BULB AND PIPING PANEL AREA.



F CONNECT GAUGES AND START NITROGEN FLOW

FLOW REGULATED NITROGEN (AT 1 TO 2 PSIG) THROUGH THE REFRIGERATION GAUGE SET INTO THE VALVE STEM PORT CONNECTION ON THE OUTDOOR UNIT LIQUID LINE SERVICE VALVE AND OUT OF THE VALVE STEM PORT CONNECTION ON THE SUCTION SERVICE VALVE.

NITROGEN



I REPEAT PREVIOUS PROCEDURE FOR LIQUID LINE.

REFER TO INSTRUCTIONS PROVIDED WITH OUTDOOR UNIT FOR LEAK TESTING, EVACUATING AND CHARGING PROCEDURES

⚠ WARNING

Polyol ester (POE) oils used with HFC-410A refrigerant absorb moisture very quickly. It is very important that the refrigerant system be kept closed as much as possible. **DO NOT** remove line set caps or service valve stub caps until you are ready to make connections.

⚠ WARNING



Danger of fire. Bleeding the refrigerant charge from only the high side may result in the low side shell and suction tubing being pressurized. Application of a brazing torch while pressurized may result in ignition of the refrigerant and oil mixture - check the high and low pressures before unbrazing.

⚠ WARNING



When using a high pressure gas such as dry nitrogen to pressurize a refrigeration or air conditioning system, use a regulator that can control the pressure down to 1 or 2 psig (6.9 to 13.8 kPa).

⚠ CAUTION

Brazing alloys and flux contain materials which are hazardous to your health.

Avoid breathing vapors or fumes from brazing operations. Perform operations only in well ventilated areas.

Wear gloves and protective goggles or face shield to protect against burns.

Wash hands with soap and water after handling brazing alloys and flux.

⚠ IMPORTANT

To prevent the build up of high levels of nitrogen when purging, be sure it is done in a well ventilated area. Purge low pressure nitrogen (1 to 2 psig) through the refrigerant piping during brazing. This will help to prevent oxidation and the introduction of moisture into a system.

All CBX40UHV air handlers are equipped with a factory-installed, internally mounted check expansion valve (CTXV), which is suitable for use in HFC-410A applications.

Table 4. CBX40UHV Refrigerant Connections

Models	Liquid Line	Vapor/ Suction Line
-024, -030, and -036	3/8 (10)	3/4 (19)
-042, and -048	3/8 (10)	7/8 (22)
-060	3/8 (10)	7/8 (22)

Installing the Condensate Drain

⚠ IMPORTANT

After removal of drain pan plug(s), check drain hole(s) to verify that drain opening is fully open and free of any debris. Also check to make sure that no debris has fallen into the drain pan during installation that may plug up the drain opening.

Connect main condensate drain and route downward to an open drain or sump. Do not connect drain to a closed waste system. See Figure 7 for typical condensate trap configuration.

It is recommended that the auxiliary drain be connected to a drain line for all units. If auxiliary drain is not connected, it must be plugged with provided cap. For downflow units, the auxiliary drain **MUST** be connected and routed to a drain. See Figure 6 for auxiliary and main drain locations.

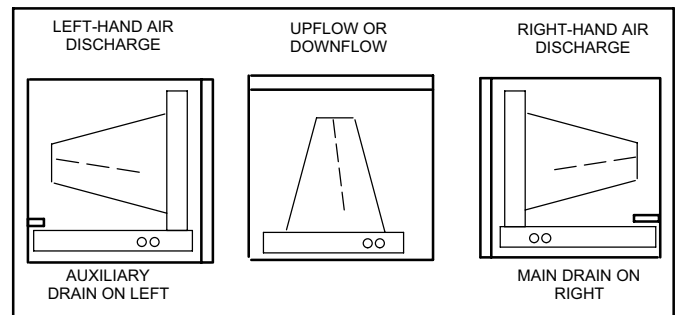


Figure 6. Auxiliary and Main Drain Locations

The following additional practices are recommended to ensure condensate removal:

- Drain piping should not be smaller than the drain connections at drain pan.
- Auxiliary drain should run to an area where homeowner will notice it draining. The auxiliary drain line does not require venting or a trap. Refer to local codes.

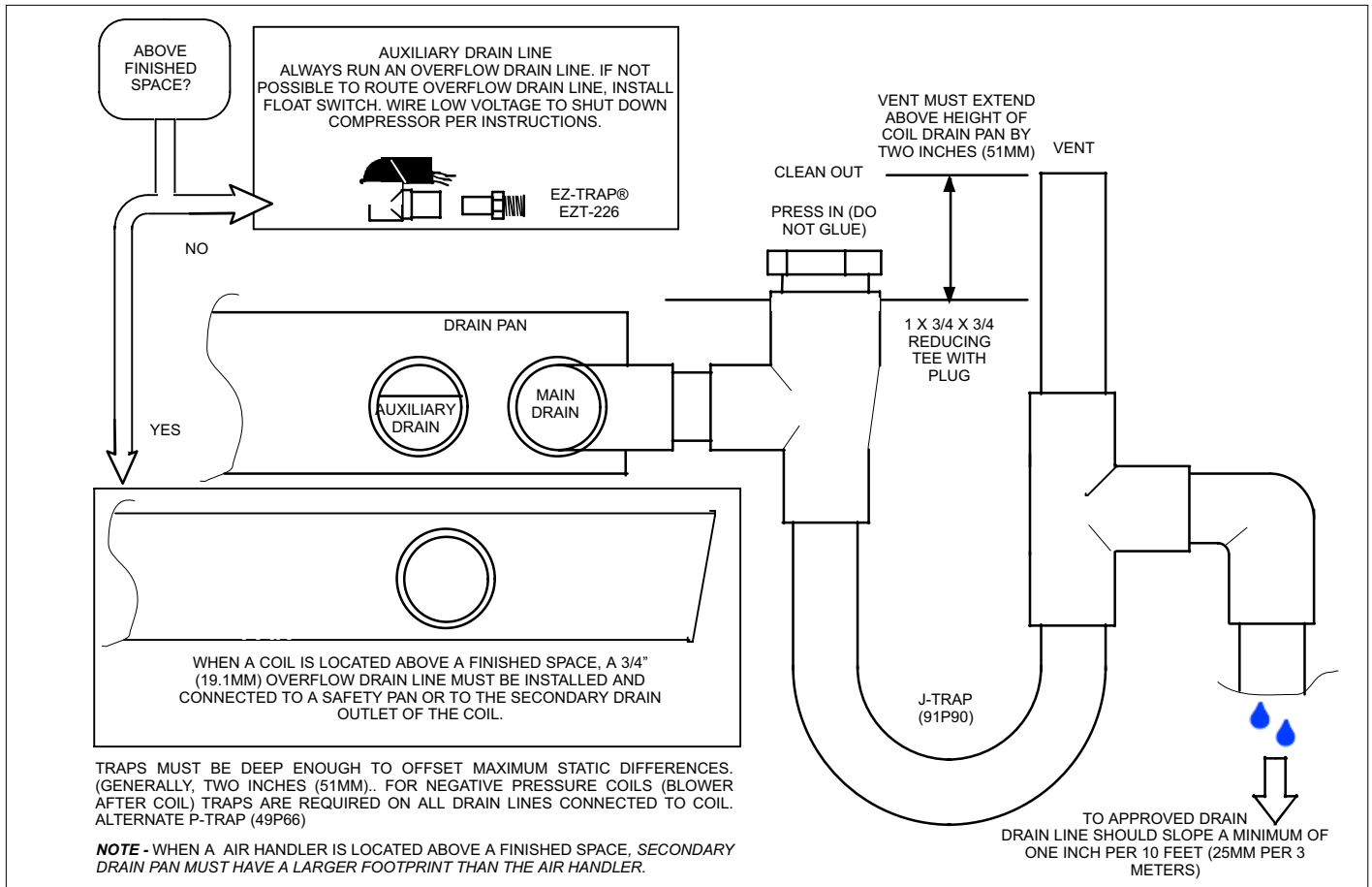


Figure 7. Typical Condensate Drain

Inspecting and Replacing Filters

⚠ IMPORTANT

Filter access door must be in place during unit operation. Excessive warm air entering the unit from unconditioned space may result in water blow-off problems.

Filters may be duct-mounted or installed in the cabinet. The air handler comes from the factory with an installed 5" - MERV 16 filter in a sealed plastic bag. Note that filter access door fits over access panel. Air will leak if the access panel is placed over the filter door.

⚠ IMPORTANT

Plastic bag must be removed from filter.

Filters should be inspected monthly and must be cleaned or replaced when dirty to assure proper air handler operation.

To replace filter:

1. Loosen the thumbscrews holding the filter door in place.
2. Slide the filter out of the guides on either side of cabinet.
3. Insert new filter.
4. Replace door.

Air Handler comes from factory with 5" - MERV 16 filter. (Filter section can be modified to accept a 1" filter). See table below for replacement filter sizes.

Table 5. MERV16 Disposable Filter (five inch)
Dimensions (CBX40UHV)

Unit Model No.	Filter Size Inches (mm)	Catalog #
CBX40UHV-024, -030 and -036	20 x 20 x 5 (508 x 508 x 127)	X7935
-CBX40UHV-048, -042, and -060	20 x 25 x 5 (508 x 635 x 127)	X6675

Table 6. Disposable Filter (one inch)
Dimensions (CBX40UHV)

Unit Model No.	Filter Size Inches (mm)	Catalog #
CBX40UHV-024, -030 and -036	20 x 20 x 1 (508 x 508 x 25)	X1963
-CBX40UHV-048, -042, and -060	20 x 25 x 1 (508 x 635 x 25)	X1970

NOTE - To use one inch filter bend tabs up as illustrated in Figure 8.

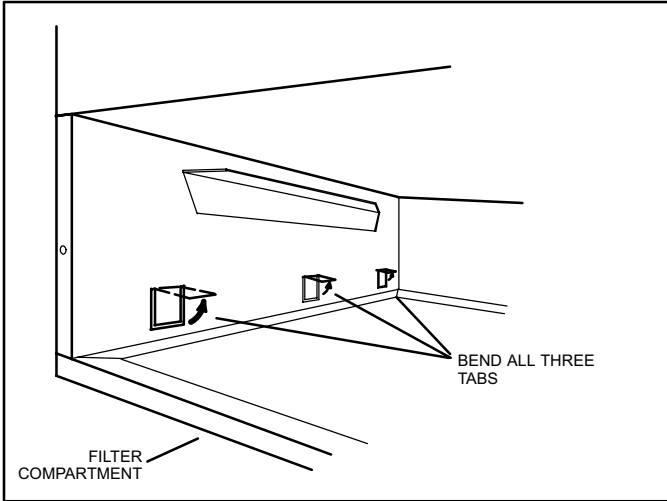


Figure 8. One Inch Filter Tabs

Sealing the Unit

Seal the unit so that warm air is not allowed from the unconditioned space into the cabinet. Warm air introduces moisture, which results in water blow-off problems. This is especially important when the unit is installed in an unconditioned area.

Making Electrical Connections

Wiring must conform to the current National Electric Code ANSI/NFPA No. 70, or Canadian Electric Code Part I, CSA Standard C22.1, and local building codes. Refer to following wiring diagrams. See unit nameplate for minimum circuit ampacity and maximum over-current protection size.

! WARNING

Run 24V Class II wiring only through specified low voltage opening. Run line voltage wiring only through specified high voltage opening. Do not combine voltage in one opening.

Select the proper supply circuit conductors in accordance with tables 310-16 and 310-17 in the National Electric Code, ANSI/NFPA No. 70 or tables 1 through 4 in the Canadian Electric Code, Part I, CSA Standard C22.1.

This unit is provided with knockout holes for conduit. Refer to Figure 13 for unit schematic wiring diagram. Refer to Figures 9 through 10 on page 11 for typical field wiring.

Separate openings have been provided for 24V low voltage and line voltage. Refer to the dimension illustration of specific location.

! CAUTION

USE COPPER CONDUCTORS ONLY.

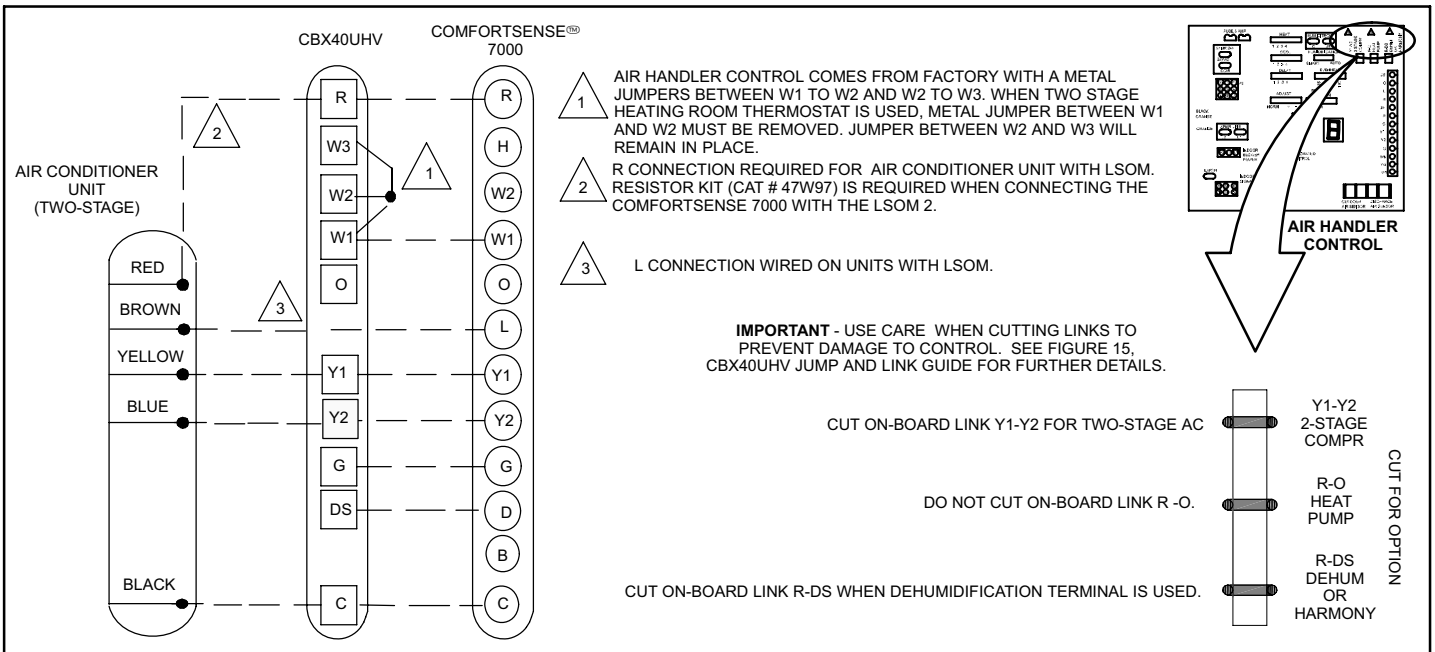


Figure 9. Field Wiring — Cooling Application

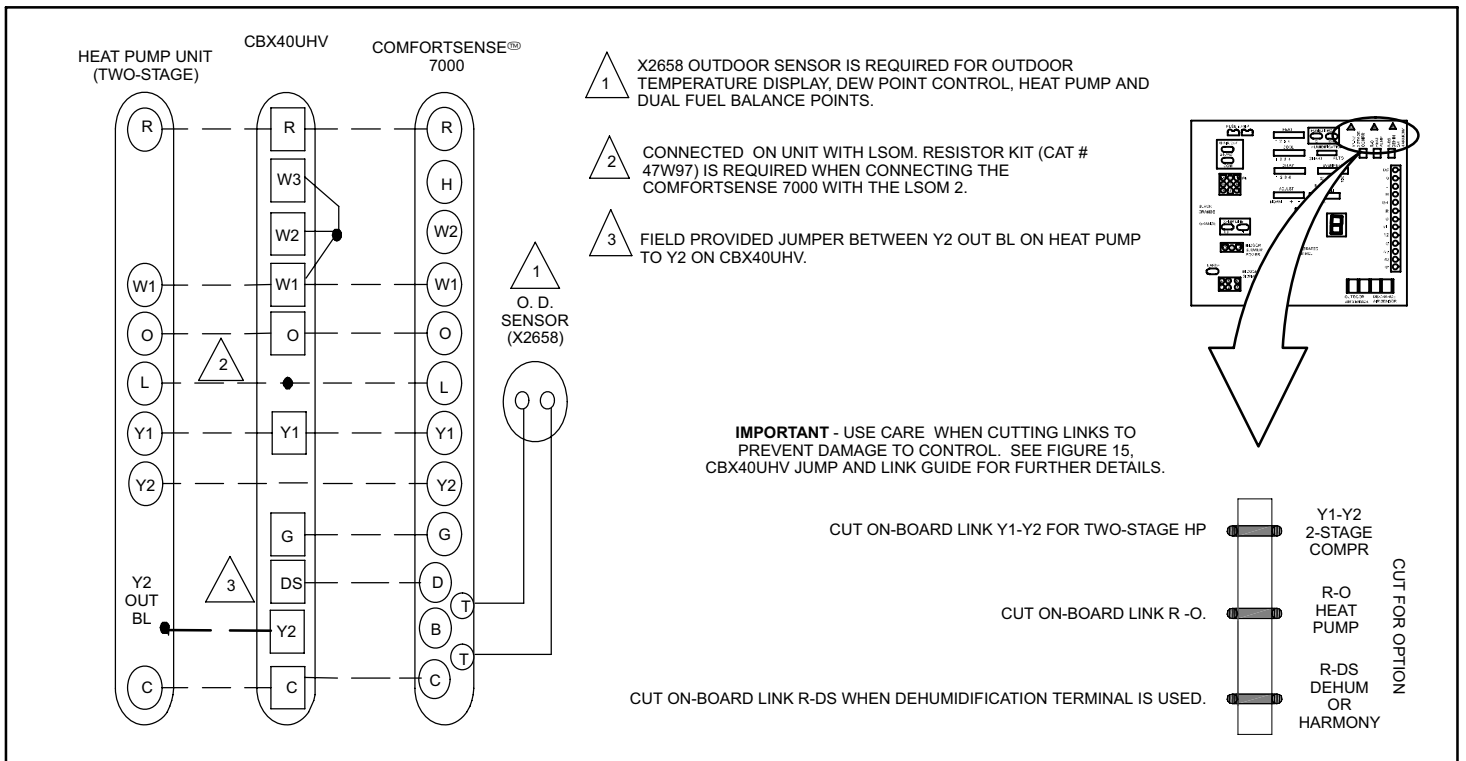


Figure 10. Field Wiring — Heat Pump

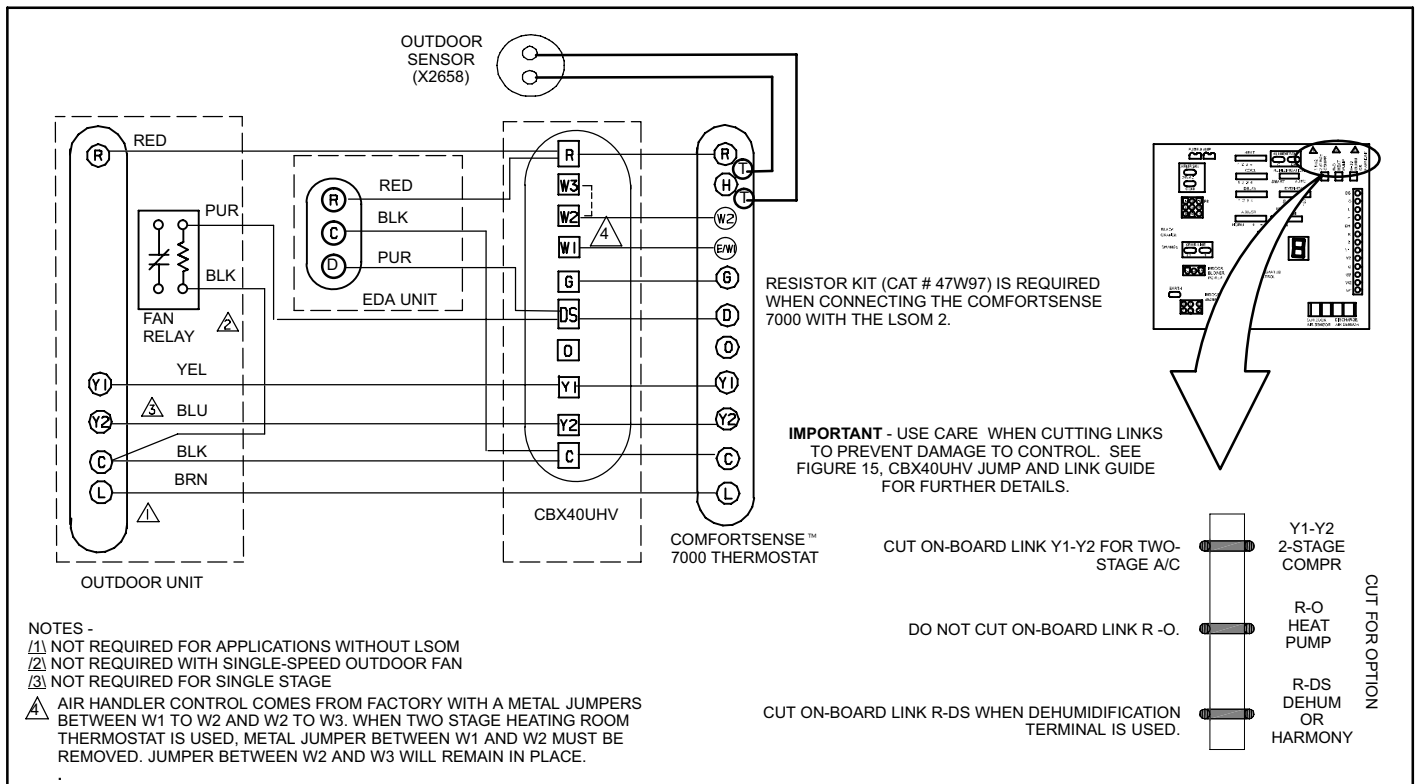


Figure 11. Cooling Application — Humiditrol® and Second-Stage Outdoor Fan Relay Wiring.

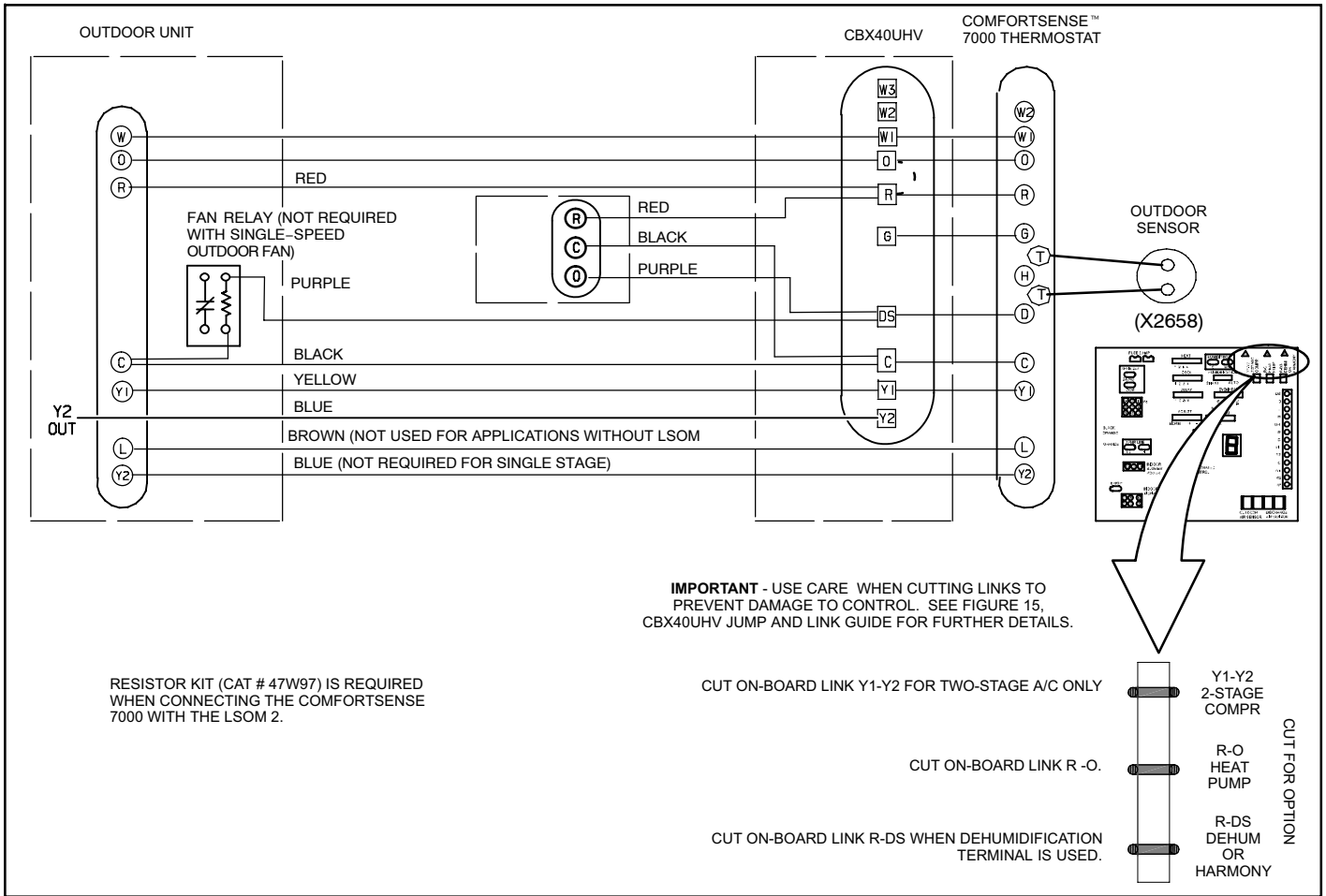


Figure 12. Heat Pump Application — Humiditrol® and Second-Stage Outdoor Fan Relay Wiring.

KEY	DESCRIPTION
A92	CONTROL-INTEGRATED
B3	MOTOR-BLOWER
J48	JACK-MOTOR VARIABLE SPEED
J49	JACK-MOTOR VARIABLE SPEED
P2	PLUG-ELECTRIC HEAT
P48	PLUG-MOTOR VARIABLE SPEED
P49	PLUG-MOTOR VARIABLE SPEED
T1	TRANSFORMER-CONTROL



RECOMMENDED BLOWER SPEED TAP SELECTION				
SPEED TAP SELECTION				
BLOWER COIL	COOL		HEAT	
	CONDENSING UNIT	HEAT PUMP	CONDENSING UNIT WITH ELECTRIC HEAT ONLY	HEAT PUMP WITH ELECTRIC HEAT
-024	COOL PIN #3	COOL PIN #3	HEAT PIN #4	HEAT PIN #4
-030	COOL PIN #3	COOL PIN #3	HEAT PIN #4	HEAT PIN #4
-036	COOL PIN #3	COOL PIN #3	HEAT PIN #4	HEAT PIN #4
-042	COOL PIN #3	COOL PIN #3	HEAT PIN #3	HEAT PIN #3
-048	COOL PIN #2	COOL PIN #2	HEAT PIN #1	HEAT PIN #1
-060	COOL PIN #3	COOL PIN #3	HEAT PIN #1	HEAT PIN #1

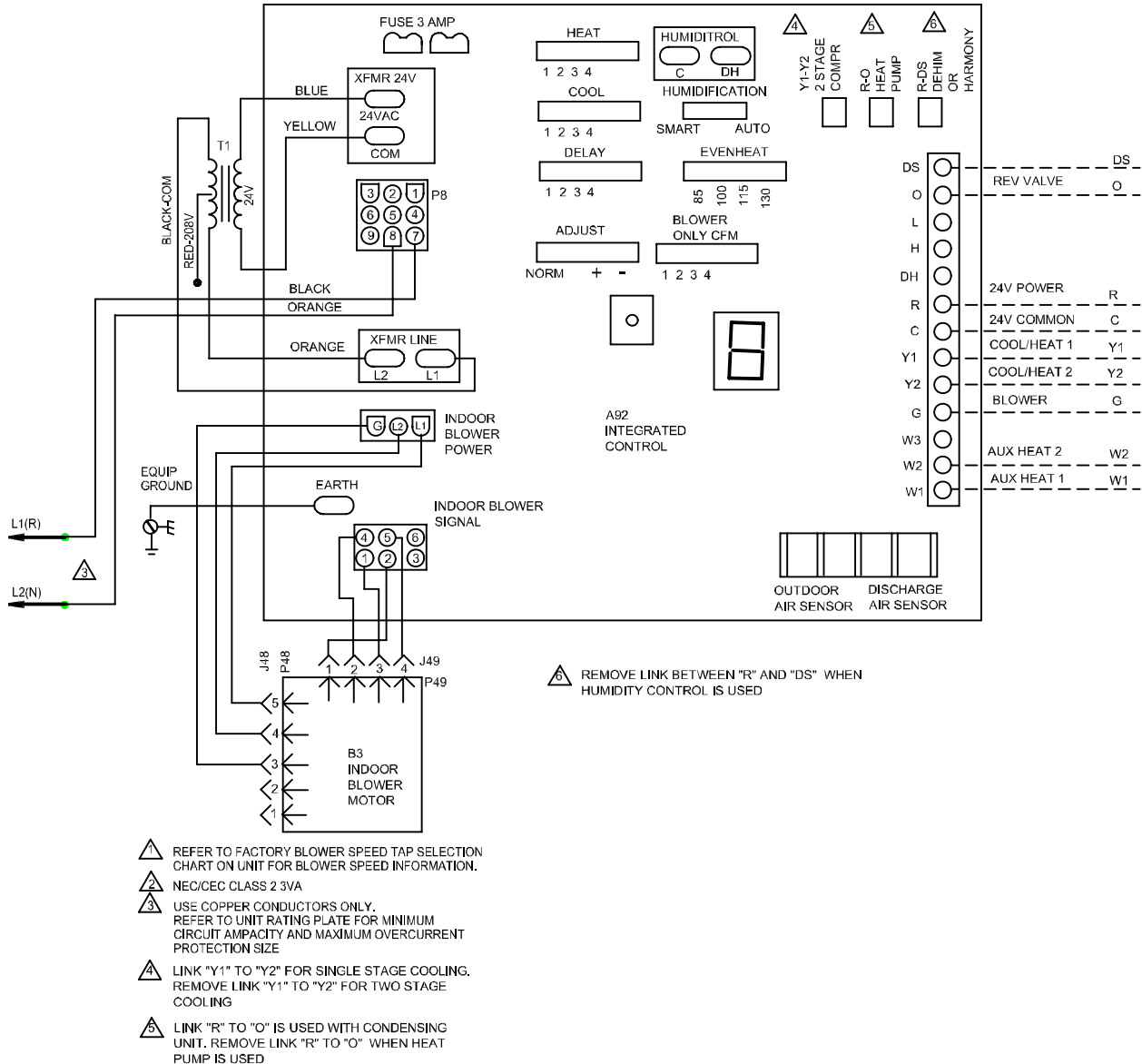


Figure 13. CBX40UHV Air Handler Unit Typical Wiring Diagram

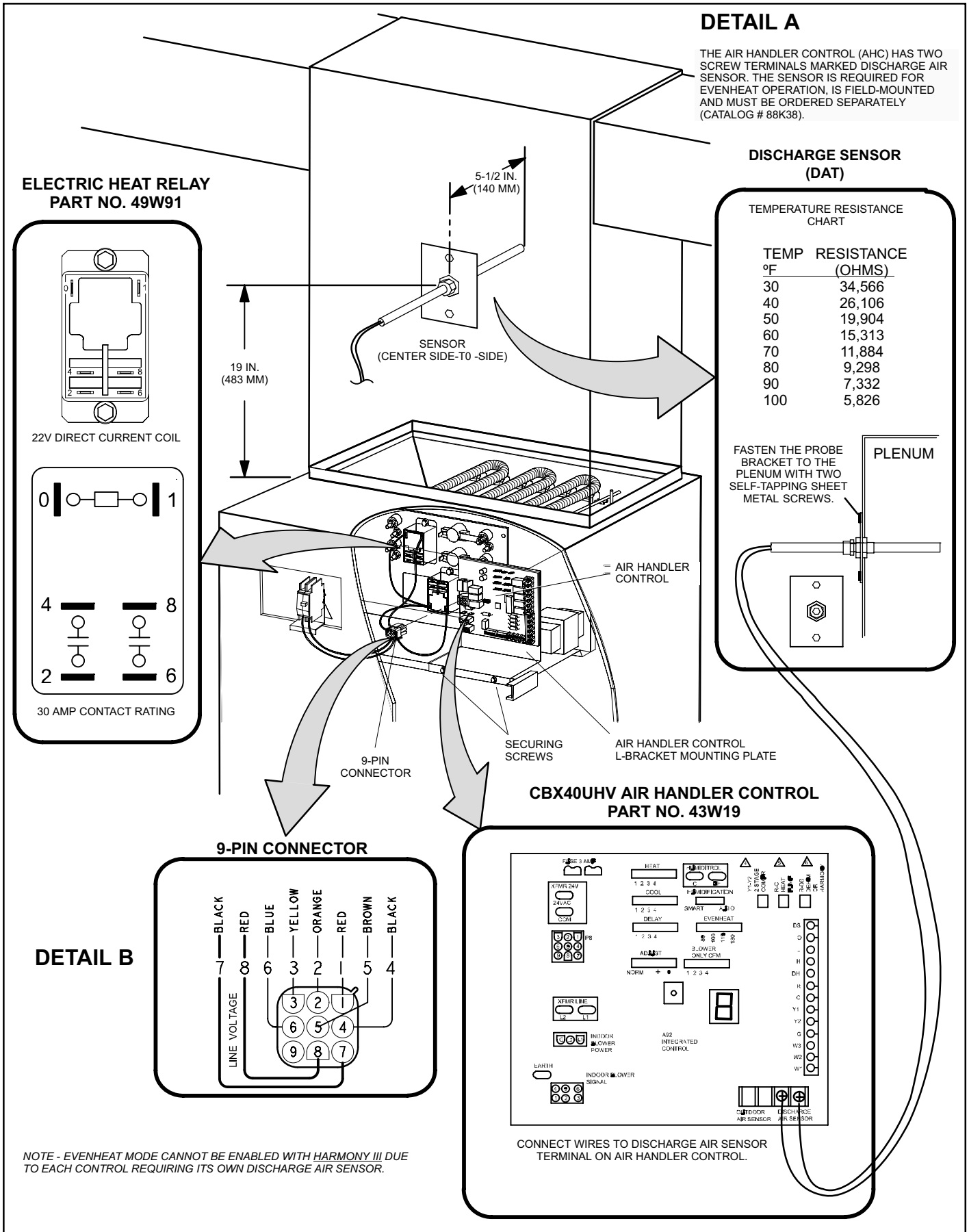


Figure 14. Component Connections

Field Wiring Connections

The Air Handler Control manages electric heat, indoor blower and accessory controls. The Air Handler Control also provides system configuration and air-flow adjustments plus diagnostic capabilities.

DISCHARGE SENSOR (DAT)

The Air Handler Control has two screw terminals marked **Discharge Air Sensor**. The sensor is **REQUIRED** for EVENHEAT operation and is field mounted and ordered separately, use Lennox Catalog # 88K38.

In the EVENHEAT mode, the discharge air sensor cycles the electric heating elements as needed to maintain the Air Handler control EVENHEAT jumper selected discharge setpoint.

The discharge air sensor should be mounted downstream of the electric heat elements as illustrated in Figure 14, Detail A. It must be placed in a location with unobstructed airflow, where other accessories (such as humidifiers, UV lights, etc.) will not interfere with its accuracy.

Wiring distance between the Air Handler Control and the discharge air sensor should not exceed 10' (3m) when wired with 18-gauge thermostat wire.

OUTDOOR AIR SENSOR

These terminals are for **FUTURE USE**. (DO NOT USE).

AIR HANDLER CONTROL 9-PIN CONNECTOR

1. Air Handler ONLY - 2-wire harness (Wired to points 7 and 8) from the factory provides 230 volt power to Air Handler Control.
2. Air Handler with ECB40 Electric Heat - 8-wire harness (Wired as noted in table 7)

NOTE - See Figure 14, Detail B for wire colors.

Table 7 - Electric Heat Connector Pin Interface

Position	Function / Description
1	Heat stage 1 relay coil
2	Heat stage 2 relay coil
3	Relay coil return (current sense shunt to "C" earth ground)
4	Heat stage 3 relay coil
5	Heat stage 4 relay coil
6	Heat stage 5 relay coil
7	L1 230VAC supply from heater kit
8	L2 230 VAC supply from heater kit
9	Not Used

THERMOSTAT CONNECTIONS

Table 8. Air Handler Control Connections

Label	Function
W1	First-stage heating demand.
W2	Second stage heating demand. W1 input must be active to recognize second stage heat demand. .
W3	Third stage heating demand. W1 and W2 inputs must be active to recognize third stage heat demand.
G	Fan control input.
Y1 and Y2	First and second stage cooling inputs.
C	24VAC Common.
R	24VAC power.
DH	24VAC output for Humiditrol
H	24VAC output for humidification.
L	For Future Use ONLY. (DO NOT USE)
O	Reversing Valve input. (Energized by thermostat in cooling mode.)
DS	Blower speed control input for Harmony Zoning or thermostat de-humidification control.

Air Handler Control Button, Display and Jumpers

Use Figure 17 as reference for jumper settings. If any of the reference jumpers are missing, the Air Handler Control will display Error Code **130** as per table 10, and the Air Handler Control will automatically use the **factory default** setting show in figure 15)

IMPORTANT

Before changing any clippable links or jumper settings, make sure the motor has completely stopped. Any changes will not take place while the motor is running.

PUSH BUTTON

An on-board push button is provided for the purpose of placing the Air Handler Control in different operation modes and can be used to recall stored error codes. When button is pushed and held, Air Handler Control will cycle through a menu of options depending on current operating mode. Every three seconds a new menu item will be displayed. If the button is released while that item is shown on the display, Air Handler Control will enter displayed operating mode, or execute defined operation sequence for that menu option. Once all items on menu have been displayed the menu resumes from the beginning (if button is still held).

DISPLAY

An on-board 7-segment light emitting diode display (LED) with the decimal point display indicates general system status information such as mode of operation, indoor blower CFM and error codes. Multi-character strings are displayed with character ON for one second, OFF for 0.5 seconds and one second pause between the character groups.

JUMPERS

Humidification - Humidification type selection is a three positions jumper (two selection options) that controls the status of H terminal on the thermostat block. Configurations are as follows:

- If jumper is missing, H terminal will be de-energized.
- If jumper is installed in **SMART** Humidification position (DEFAULT), H terminal is active if heat demand is present and indoor blower is running.
- If jumper is installed in **AUTO** Humidification position, H terminal is energized whenever indoor blower is running.

EvenHeat - Target Discharge Air Temperature selection is a four position jumper used to set discharge air temperatures for EVENHEAT operation.

NOTE - Optional Discharge Air Temperature Sensor, Lennox Catalog # 88K38 is REQUIRED for EVENHEAT operation and must be ordered separately.

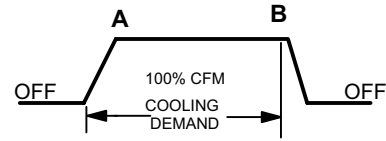
1. **Blower Only CFM** - A four position jumper is used to select Indoor blower CFM for continuous operation.
2. **Heat** - A four position jumper is used to select Indoor Blower CFM for electrical heat by placing the jumper in proper position. Actual CFM values for different air handler sizes are shown in tables 11 through 17.
3. **Cool** - A four position jumper is used to select Cooling Indoor Blower CFM by placing the jumper in proper position. Actual CFM values for different air handler sizes are shown in tables 11 through 17.
4. **Delay** - Indoor Blower Cooling Profile, Delay for Cooling and heat pump operations are selected by placing the jumper in appropriate position on five pin header (four position options).

- When operating a heat pump, delay profiles 1 and 2 are only applicable.
- When operating a heat pump, and profiles 3 and 4 are selected, the Air Handler Control will default to profile 1.

If the jumper is missing the Air Handler Control will activate the *Configuration Jumper is Missing* alarm and will automatically use the default factory setting in table 10. See Figure 15 for jumper configurations.

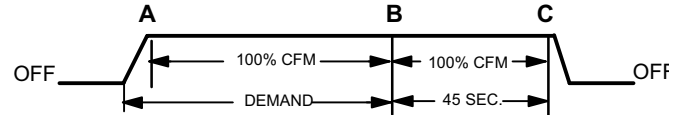
Delay Profile 1

- A. When cool or heat pump demand is initiated, motor ramps up to 100% and runs at 100% until demand is satisfied.
- B. Once demand is met, motor ramps down to stop.



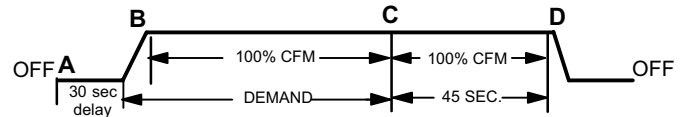
Delay Profile 2

Cooling:



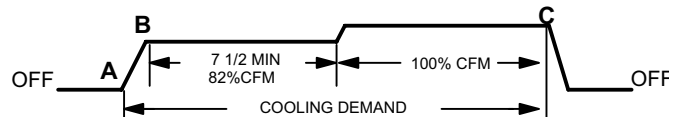
- A. When cool demand is initiated, motor ramps up to 100% and runs at 100% until demand is satisfied.
- B. Once demand is met, motor runs at 100% for 45 seconds.
- C. Motor ramps down to stop.

Heat Pump:



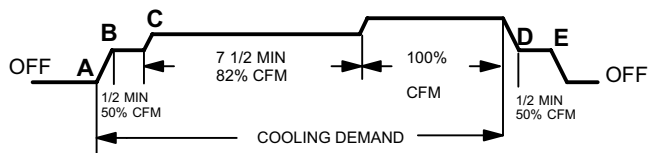
- A. When heat pump demand is initiated, 30 seconds motor on delay starts
- B. After the motor on delays expires, motor ramps up to 100% and runs at 100% until demand is satisfied.
- C. Once demand is met, motor runs at 100% for 45 seconds.
- D. Motor ramps down to stop.

Delay Profile 3



- A. When cool demand is initiated, motor ramps up to 82%
- B. Motor runs at 82% for approximately 7.5 minutes and then ramp up to 100% (unless the demand has been satisfied) and motor runs at 100% until demand is satisfied.
- C. Once demand is met, motor ramps down to stop

Delay Profile 4



- A. When cool demand is initiated, motor ramps up to 50%
- B. Motor runs at 50% for 30 seconds and ramps up to 82%
- C. Motor runs at 82% for approximately 7.5 minutes and then ramp up to 100% (unless the demand has been satisfied) and motor runs at 100% until demand is satisfied.
- D. Once demand is met, motor runs at 50% for 30 seconds.
- E. Motor ramps down to stop

F. **Adjust** - Five pin header (three positions) is used to select the Indoor Blower CFM Adjustment value by placing the jumper in appropriate position.

- If **NORM** is selected, indoor blower runs at normal speeds.
- If **+** is selected, indoor blower runs at approximately 10% higher speed than NORM setting.
- If **-** is selected, indoor blower runs at approximately 10% lower speed than NORM setting.

If the jumper is missing the Air Handler Control will activate the *Configuration Jumper is Missing* alarm in and will automatically use the default factory setting in table 10. See Figure 15 for jumper configurations. Actual CFM values for different air handler sizes are shown in tables 11 through 17.

Table 9 - Seven-Segment Status Display

Seven-Segment LED Display	Action
5789U	Unit Size Code (number or letter) displayed represents air handler model size and capacity. See <i>Configuring Unit Size Codes</i> in Figure 17.
≡	If three horizontal bars are displayed, board does not recognize air handler model size and capacity. See <i>Configuring Unit Size Codes</i> in Figure 17.
.	Idle mode (decimal point / no unit operation)
A	Delivered CFM. Example: A 1200
C	Stage Cooling (Shows active cooling stages) C1 or C2
d	Dehumidification mode (Unit in dehumidification mode only)
d F	Shown only while in active defrost (Y, W and O call)
H	Stage heating (Shows number of active electric heat pilot relays) H1 or H2 or H3
h	Stage heat pump (shows active heat pump stages) h1 or h2
U	Discharge air sensor temperature (indoor blower must be operating) U 105

FIELD TEST MODE (NOTE - BOARD MUST BE IN IDLE MODE)

Seven-Segment LED Display		Action
Solid	-	To enter Field Test Mode , push and hold button until solid - appears, release button. Display will blink.
Blinking	-	Push and hold button until required symbol displays. H A or P

CONFIGURING ELECTRIC HEAT SECTIONS

Seven-Segment LED Display		Action
Solid	H	Release push button - control will cycle the indoor blower motor on to the selected heat speed and stage the electric heat relays on and off to automatically detect number of electric heat sections. Control will store the number of electric heat sections. Control will automatically exit Field Test Mode . IMPORTANT: After electric heat is installed - the control must be manually configured to detect number of heating sections.

INDOOR BLOWER TEST

Seven-Segment LED Display		Action
Solid	A	Release push button - control cycles indoor blower on for ten seconds at 70% of maximum air for selected capacity size unit. Control will automatically exit Field Test Mode

CONFIGURING UNIT SIZE CODES

Seven-Segment LED Display		Action
Solid	P	Release push button - This mode allows the field to select a unit size code (number or letter) that matches the air handler model size and capacity. IMPORTANT: All field replacement controls may be manually configured to confirm air handler model size and capacity.
Blinking	P	Push and hold button - Control will display each unit size code (letter or number) for different air handler models for three seconds. When the correct unit size code is displayed, release button. Selected code will flash for a ten second period. During that period, hold push button for three seconds to store code. Once code is stored, control will automatically exit Field Test Mode . (If ten second period expires or push button is held less than three seconds, control will automatically exit Field Test Mode and go into idle mode without storing unit size code. If this happens, configuring function must be repeated).

ERROR CODE RECALL MODE (NOTE - CONTROL MUST BE IN IDLE MODE)

Seven-Segment LED Display		Action
Solid	E	To enter Error Code Recall Mode , push and hold button until solid E appears, then release button. Control will display up to ten error codes stored in memory. If E000 is displayed, there are no stored error codes.
Solid	≡	To exit Error Code Recall Mode push and hold button until solid three horizontal bars appear, then release button. <i>NOTE - Error codes are not cleared</i>
Solid	C	To clear error codes stored in memory, continue to hold push button while the three horizontal bars are displayed. Release push button when solid c is displayed. Display will blink.
Blinking	C	Push button to confirm command to delete codes. Error codes are cleared.

Table 10 - Error Codes

Error Code	Status of Air Handler
1 10	Line voltage low (Voltage lower than nameplate rating)
1 13	Line voltage high (Voltage higher than nameplate rating)
1 14	No 60 hertz power (Check voltage and frequency)
1 15	24 volts low (18 or less volts)
130	Configuration jumper(s) is missing on board.
20 1	Indoor blower communication failure including power outage.
202	Incorrect air handler model size and capacity selected. Check for proper configuring under <i>Configuring Unit Size Codes</i> .
203	No air handler model size and capacity selected. Check for proper configuring under <i>Configuring Unit Size Codes</i> .
292	Indoor blower motor unable to start (seized bearing, stuck wheel, etc.).
295	Indoor blower motor over temperature (motor trip on internal protector)
3 10	Discharge air temperature sensor (DATS) out of range. Code is activated during Field Test Mode .
3 12	Restricted airflow - Indoor blower motor is running at a reduced CFM (cutback mode **)
350	Heat call with non-configured or mis-configured electric heat. Check for proper configuring under <i>Configuring Electric Heat Stages</i> .
35 1	Heat section / Stage 1 failed (Pilot relay contacts did not close or the relay coil in electric heat did not energizing)
352	Heat section / Stage 2 failed. Same as
353	Heat section / Stage 3 failed. Same as
354	Heat section / Stage 4 failed. Same as
355	Heat section / Stage 5 failed. Same as

** Cutback Mode - The variable speed motor has pre-set speed and torque limiters to protect the motor from damage caused by operating out of its designed parameters (0 through 0.80 in. w.g. total external static pressure).

Target CFM Tables

Table 11 - CBX40UHV-024 CFM Targets

COOL/HEAT PUMP TABLE (C00L)					ELECTRIC HEAT TABLE (HEAT)				
JUMPER SELECTION					JUMPERS SELECTION				
1	2	3	4	(ADJUST)	1	2	3	4	(ADJUST)
465	690	900	1050	“+”	715	855	1000	1130	“+”
425	620	825	950	NORM	670	770	900	1035	NORM
385	560	735	850	“-”	580	700	800	930	“-”

Low Cool CFM = 70% of Cool table.

Table 12 - CBX40UHV-030 CFM Targets

COOL/HEAT PUMP TABLE (C00L)					ELECTRIC HEAT TABLE (HEAT)				
JUMPER SELECTION					JUMPERS SELECTION				
1	2	3	4	(ADJUST)	1	2	3	4	(ADJUST)
660	880	1100	1320	“+”	800	935	1070	1210	“+”
600	800	1000	1200	NORM	725	850	975	1100	NORM
540	720	900	1080	“-”	580	765	880	990	“-”

Low Cool CFM = 70% of Cool table.

Table 13 - CBX40UHV-036 CFM Targets

COOL/HEAT PUMP TABLE (C00L)					ELECTRIC HEAT TABLE (HEAT)				
JUMPER SELECTION					JUMPERS SELECTION				
1	2	3	4	(ADJUST)	1	2	3	4	(ADJUST)
1090	1225	1380	1545	“+”	1230	1335	1445	1545	“+”
975	1125	1275	1400	NORM	1120	1215	1315	1400	NORM
900	1000	1135	1265	“-”	1010	1185	1200	1265	“-”

Low Cool CFM = 70% of Cool table.

Table 14 - CBX40UHV-042 CFM Targets

COOL/HEAT PUMP TABLE (C00L)					ELECTRIC HEAT TABLE (HEAT)				
JUMPER SELECTION					JUMPERS SELECTION				
1	2	3	4	(ADJUST)	1	2	3	4	(ADJUST)
1100	1320	1540	1760	“+”	1100	1320	1540	1760	“+”
1000	1200	1400	1600	NORM	1000	1200	1400	1600	NORM
900	1080	1260	1440	“-”	900	1080	1260	1440	“-”

Low Cool CFM = 70% of Cool table.

Table 15 - CBX40UHV-048/-060 CFM Targets

COOL/HEAT PUMP TABLE (COOL)					ELECTRIC HEAT TABLE (HEAT)				
JUMPER SELECTION					JUMPERS SELECTION				
1	2	3	4	(ADJUST)	1	2	3	4	(ADJUST)
1625	1820	2055	2145	“+”	1850	1960	2090	2150	“+”
1425	1625	1805	2005	NORM	1705	1800	1900	2005	NORM
1205	1375	1555	1725	“-”	1560	1625	1720	1770	“-”

Low Cool CFM = 70% of Cool table.

Table 16. CBX40UHV with ComfortSense™ 7000 Thermostat and Single-Stage Outdoor Unit Operating Sequence

Operating Sequence		System Demand							System Response			
System Condition	Step	Thermostat Demand					Relative Humidity		Comp	Air Handler CFM (COOL)	Comments	
		Y1	Y2	O	G	W1	W2	Status				D
NO CALL FOR DEHUMIDIFICATION												
Normal Operation	1	On		On	On			Acceptable	24 VAC	High	100%	Compressor and indoor air handler follow thermostat demand
BASIC MODE (Only active on a Y1 thermostat demand)												
Normal Operation	1	On		On	On			Acceptable	24 VAC	High	100%	ComfortSense™ 7000 thermostat energizes Y1 and de-energizes D on a call for dehumidification. <i>NOTE - No over cooling.</i>
Dehumidification Call	2	On		On	On			Demand	0 VAC	High	70%	
PRECISION MODE (Operates independent of a Y1 thermostat demand)												
Normal Operation	1	On		On	On			Acceptable	24 VAC	High	100%	Dehumidification mode begins when humidity is greater than set point
Dehumidification call	2	On		On	On			Demand	0 VAC	High	70%	
Dehumidification call ONLY	1	On		On	On			Demand	0 VAC	High	70%	ComfortSense™ 7000 will keep outdoor unit energized after cooling temperature setpoint has been reach in order to maintain room humidity setpoint. <i>NOTE - Allow to over cool 2°F from cooling set point.</i>

Table 17. CBX40UHV, with ComfortSense™ 7000 Thermostat and Two-Stage Outdoor Unit Operating Sequence

Operating Sequence		System Demand								System Response		
System Condition	Step	Thermostat Demand						Relative Humidity		Compressor	Air Handler CFM (COOL)	Comments
		Y1	Y2	O	G	W1	W2	Status	D			
No Call for Dehumidification												
Normal Operation - Y1	1	On		On	On			Acceptable	24 VAC	Low	70%	Compressor and indoor air handler follow thermostat demand
Normal Operation - Y2	2	On	On	On	On			Acceptable	24 VAC	High	100%	
Room Thermostat Calls for First-Stage Cooling												
BASIC MODE (Only active on a Y1 thermostat demand)												
Normal Operation	1	On		On	On			Acceptable	24 VAC	Low	70%	ComfortSense™ 7000 thermostat energizes Y2 and de-energizes D on a call for dehumidification <i>NOTE - No over cooling.</i>
Dehumidification Call	2	On	On	On	On			Demand	0 VAC	High	70%	
PRECISION MODE (Operates independent of a Y1 thermostat demand)												
Normal Operation	1	On		On	On			Acceptable	24 VAC	Low	70%	Dehumidification mode begins when humidity is greater than set point ComfortSense™ 7000 thermostat will keep outdoor unit energized after cooling temperature setpoint has been reached in order to maintain room humidity setpoint. <i>NOTE - Allow to over cool 2°F from cooling set point.</i>
Dehumidification call	2	On	On	On	On			Demand	0 VAC	High	70%	
Dehumidification call ONLY	1	On	On	On	On			Demand	0 VAC	High	70%	
Room Thermostat Calls for First- and Second-Stage Cooling												
BASIC MODE (Only active on a Y1 thermostat demand)												
Normal Operation	1	On	On	On	On			Acceptable	24 VAC	High	100%	ComfortSense™ 7000 thermostat energizes Y2 and de-energizes D on a call for dehumidification <i>NOTE - No over cooling.</i>
Dehumidification Call	2	On	On	On	On			Demand	0 VAC	High	70%	
PRECISION MODE (Operates independent of a Y1 thermostat demand)												
Normal Operation	1	On	On	On	On			Acceptable	24 VAC	High	100%	Dehumidification mode begins when humidity is greater than set point ComfortSense™ 7000 thermostat will keep outdoor unit energized after cooling temperature setpoint has been reached in order to maintain room humidity setpoint. <i>NOTE - Allow to over cool 2°F from cooling set point.</i>
Dehumidification call	2	On	On	On	On			Demand	0 VAC	High	70%	
Dehumidification call ONLY	1	On	On	On	On			Demand	0 VAC	High	70%	

Configuring Unit

This section identifies the requirements for configuring the air handler unit for unit size, heat mode selection and EvenHeat.

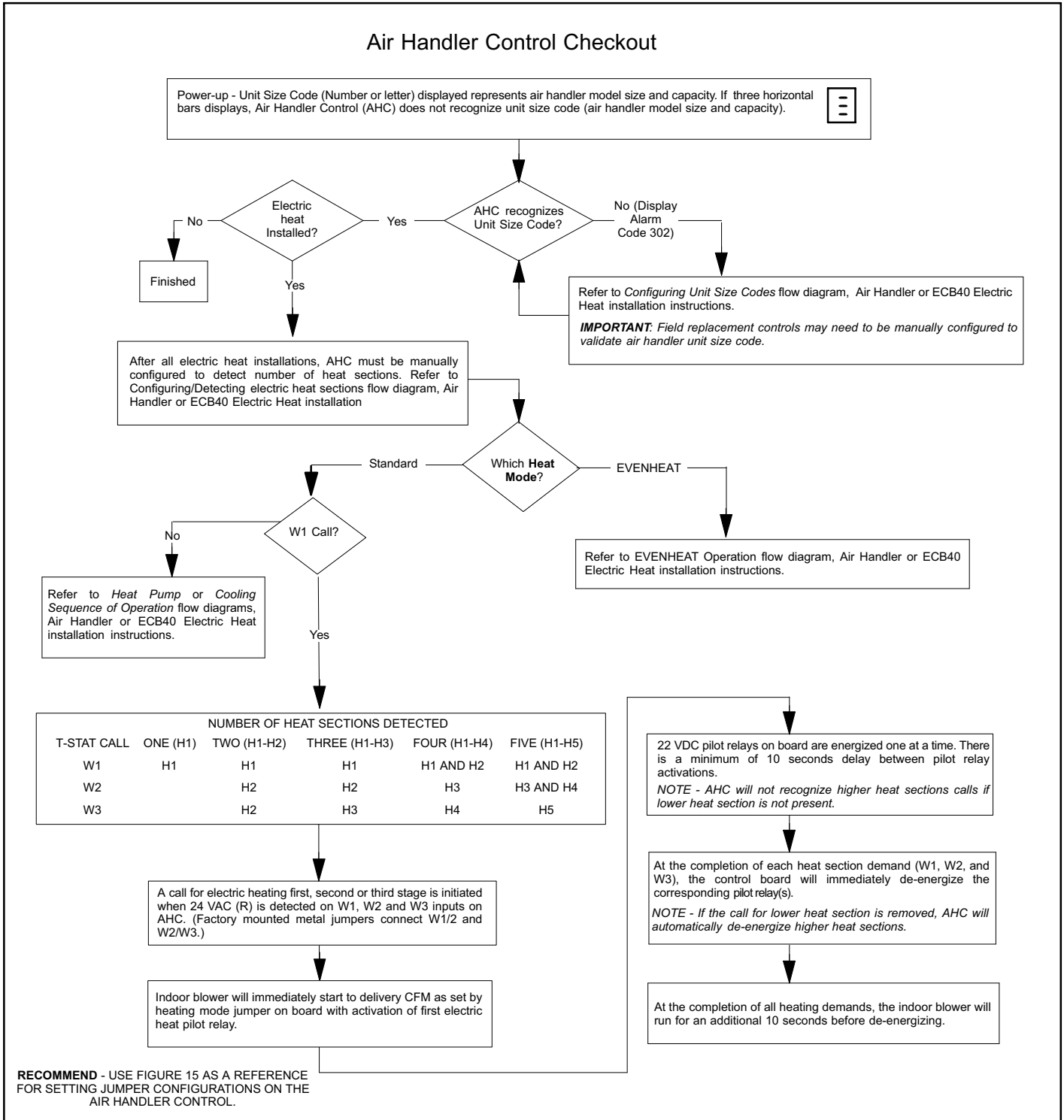


Figure 16. Air Handler Control Checkout

Configuring Unit Size Codes (Model Number)

Power-up - Unit Size Code (number or letter) displayed represents unit size code (air handler model size and capacity). If three horizontal bars display, Air Handler Control (AHC) does not recognize **unit size code** (air handler model size and capacity).

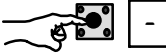


AHC in **IDLE** mode
(No heating, cooling or indoor fan operation)

Yes

No

To enter **Field Test Mode**, Push and hold button next to 7-segment LED display until **dash** symbol appears, release button.



Solid **dash** starts blinking on 7-segment LED display.

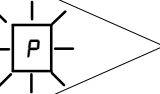


Push and hold button until the solid **P** symbol is displayed on the 7-segment LED, then release button. This mode allows the user to select a unit size code (number or letter) that matches the air handler model size and capacity.



IMPORTANT: Field replacement controls may need to be manually configured to validate air handler unit size code.

Solid **P** starts blinking on 7-Segment LED



Push and hold button to allow AHC to display unit size code (letter or number) for each different air handler model for three seconds.

Turn room thermostat to **OFF**

UNIT SIZE CODE	AIR HANDLER MODEL
0	Future
1	Future
2	Future
3	Future
4	Future
5	Future
6	CBX40UHV-024
7	CBX40UHV-030
8	CBX40UHV-036
9	CBX40UHV-042
L	CBX40UHV-048
U	CBX40UHV-060

When the correct unit sized code is displayed, release button. Selected code will flash for 10 second period. During that period, hold push button until code stops blinking. AHC will store code in memory and will automatically exit **Field Test Mode** and reset. (If then second period expires or push button is held less than three seconds, control will automatically exit **Field Test Mode** and go into **IDLE** mode without storing unit size code. If this happens, configuring function must be repeated).

Verify that the selected unit size code is correct and stored in non-volatile memory by cycling the 24 volt power to the AHC. (At 24 volt power-up of the AHC, the 7-segment LED will display a unit size code. If three horizontal bars display, board does not recognize unit size code. Programming function must be repeated)



Figure 17. Configure Unit Size Codes

Configuring/Detecting Electric Heat Sections

IMPORTANT: All electric heat installations require the Air Handler Control (AHC) to be manually configured to detect number of heat sections.

NOTE - All field replacement AHC will require configuring/detecting electric heat sections.

RECOMMEND - USE FIGURE 15 AS A REFERENCE FOR SETTING JUMPER CONFIGURATIONS ON THE AIR HANDLER CONTROL.

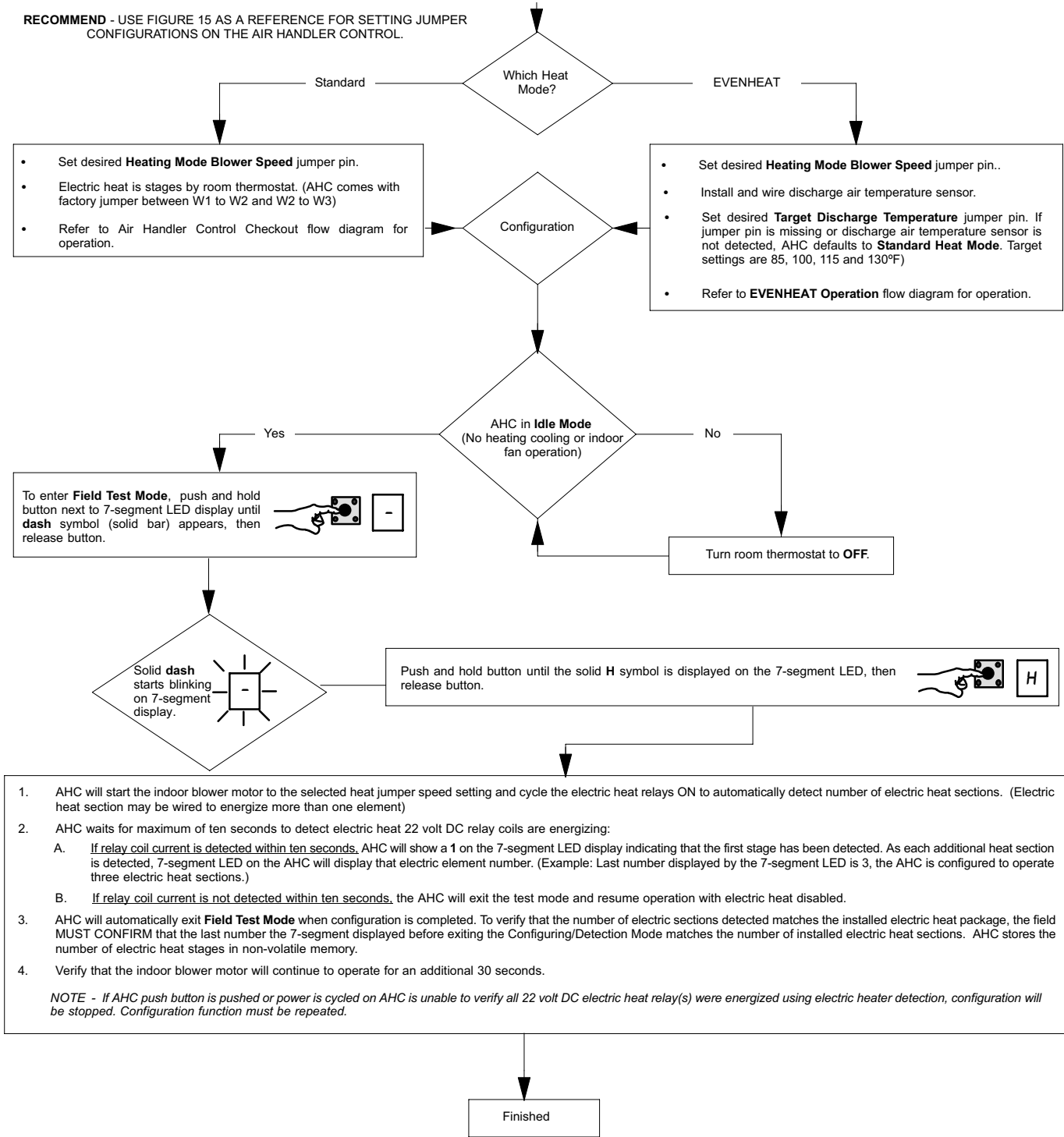


Figure 18. Heat Mode Selection

EVENHEAT Operation

Inputs Room Thermostat Demand Y1	Outputs		
	Target Discharge Air Temperature Set at @ 85°F	Target Discharge Air Temperature Set at @ 100°F	Target Discharge Air Temperature Set at @ 115/130°F
Y1 + Y2	Heat Pump First Stage	Heat Pump First and Second Stage	Heat Pump First and Second Stage + First Electric Heat Section (H1)
Y1 (with or without Y2) + W1 and/or W2	Heat Pump First and Second Stage	Heat Pump First and Second Stage + First Electric Heat Section (H1)	Heat Pump First and Second Stage + First Electric Heat Section (H1) + Second Electric Heat Section (H2) if number of electric heater sections detected is more than two.
W1 and/or W2	Heat Pump First and Second Stage + First Electric heat Section (H1)	Heat Pump First and Second Stage + First Electric Heat Section + Second Electric Heat Section (H2) if number of electric heater sections detected is more than two.	Heat Pump First and Second Stage + First Electric Heat Section (H1) Second Electric Heat Section (H2) if number of electric heater sections detected is more than two.
	First Electric heat Section (H1)	First Electric Heat Section (H1) + Second Electric Heat Section (H2) if number of electric heater sections detected is more than two.	First Electric Heat Section (H1) + Second Electric Heat Section (H2) if number of electric heater sections detected is more than two.

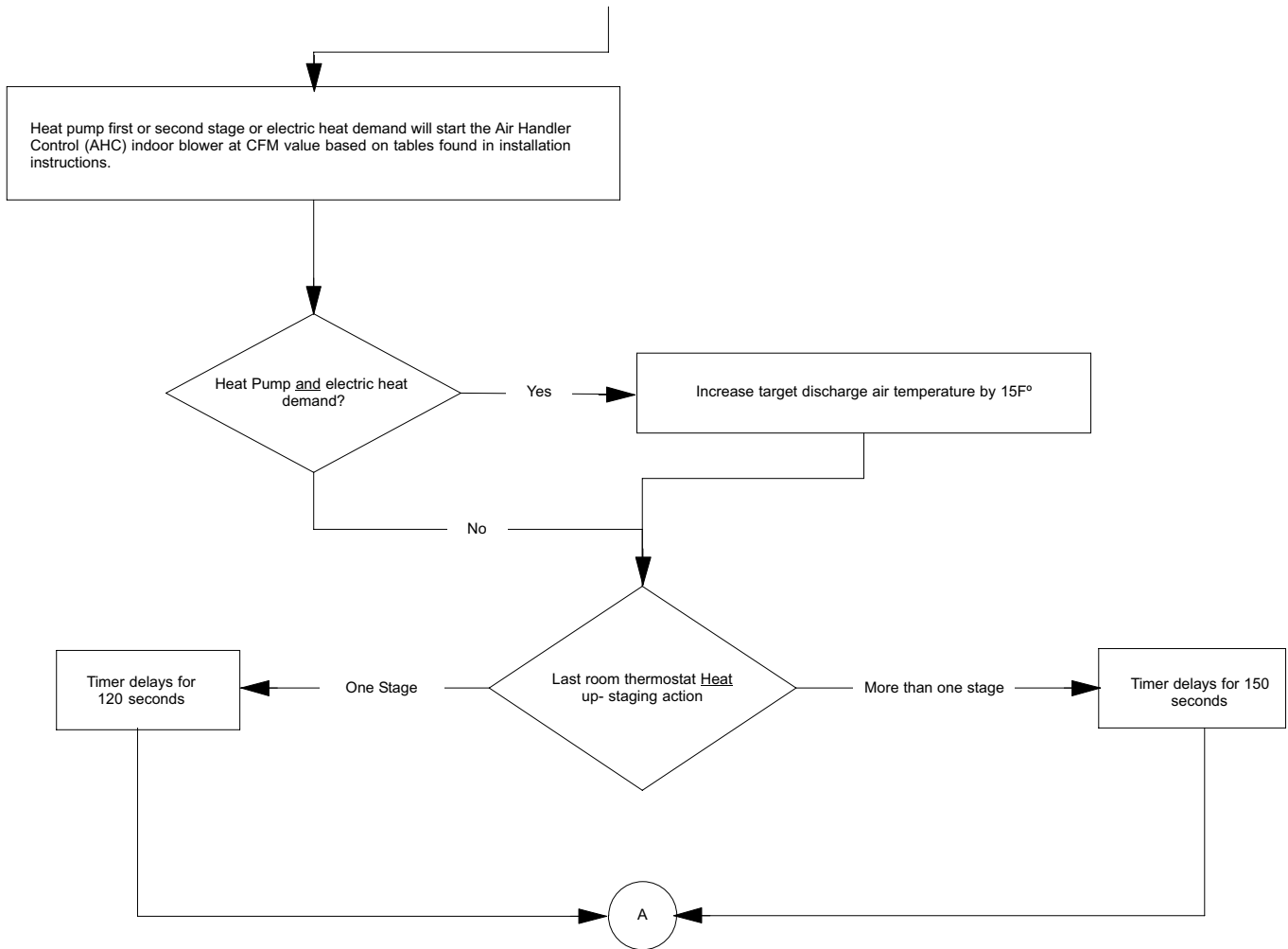


Figure 19. EVENHEAT Operation (1 of 2)

EVENHEAT Operation

Note 1 Activation delay

- 120 seconds if one heat stage is or deactivated
- 150 seconds if more than one stage is activated or deactivated.

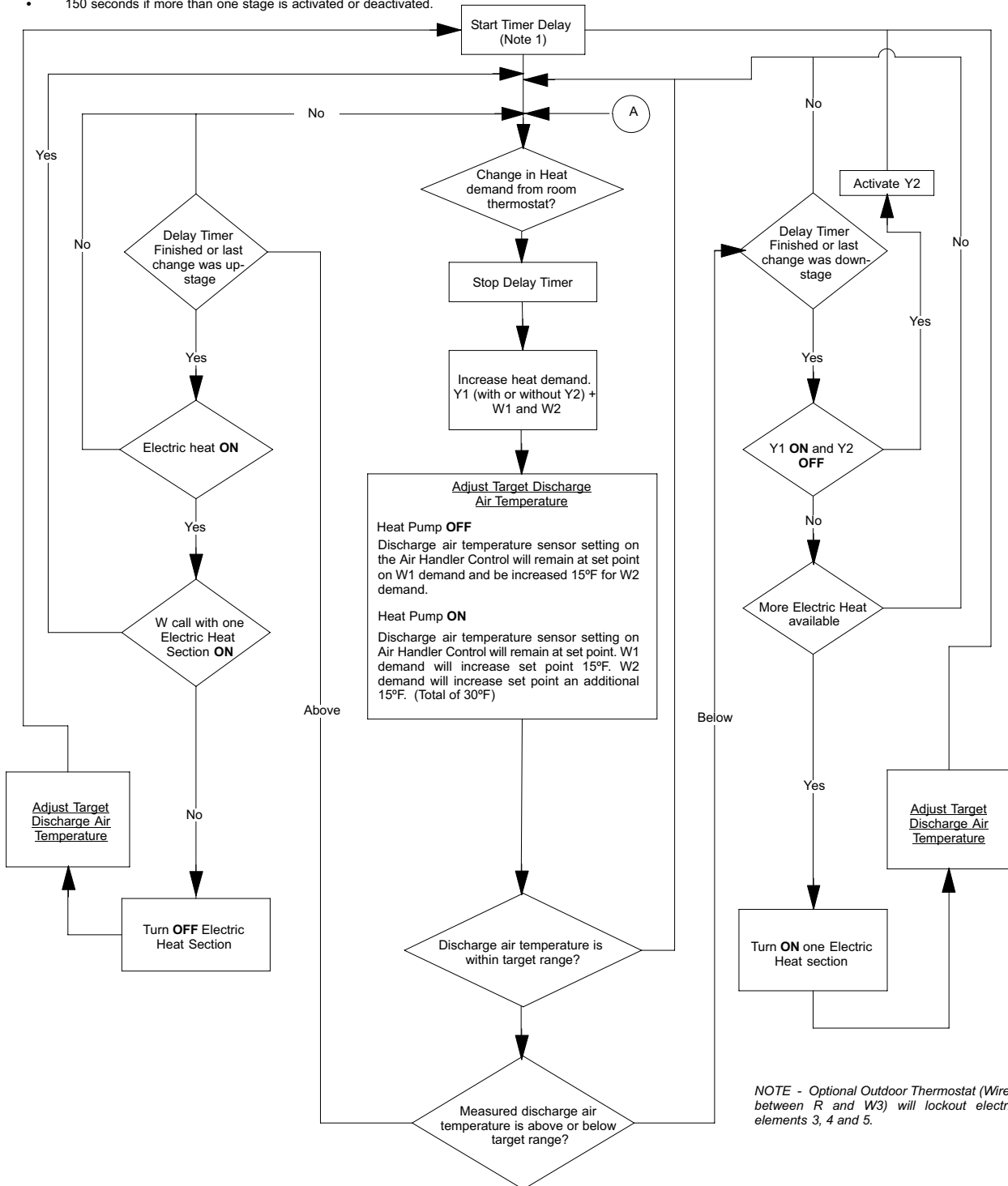
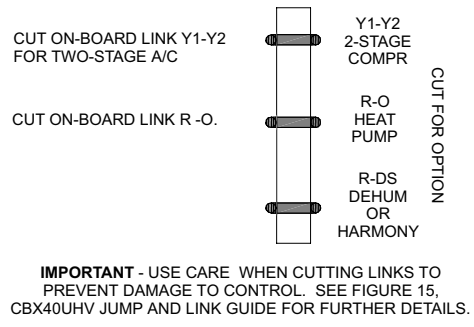


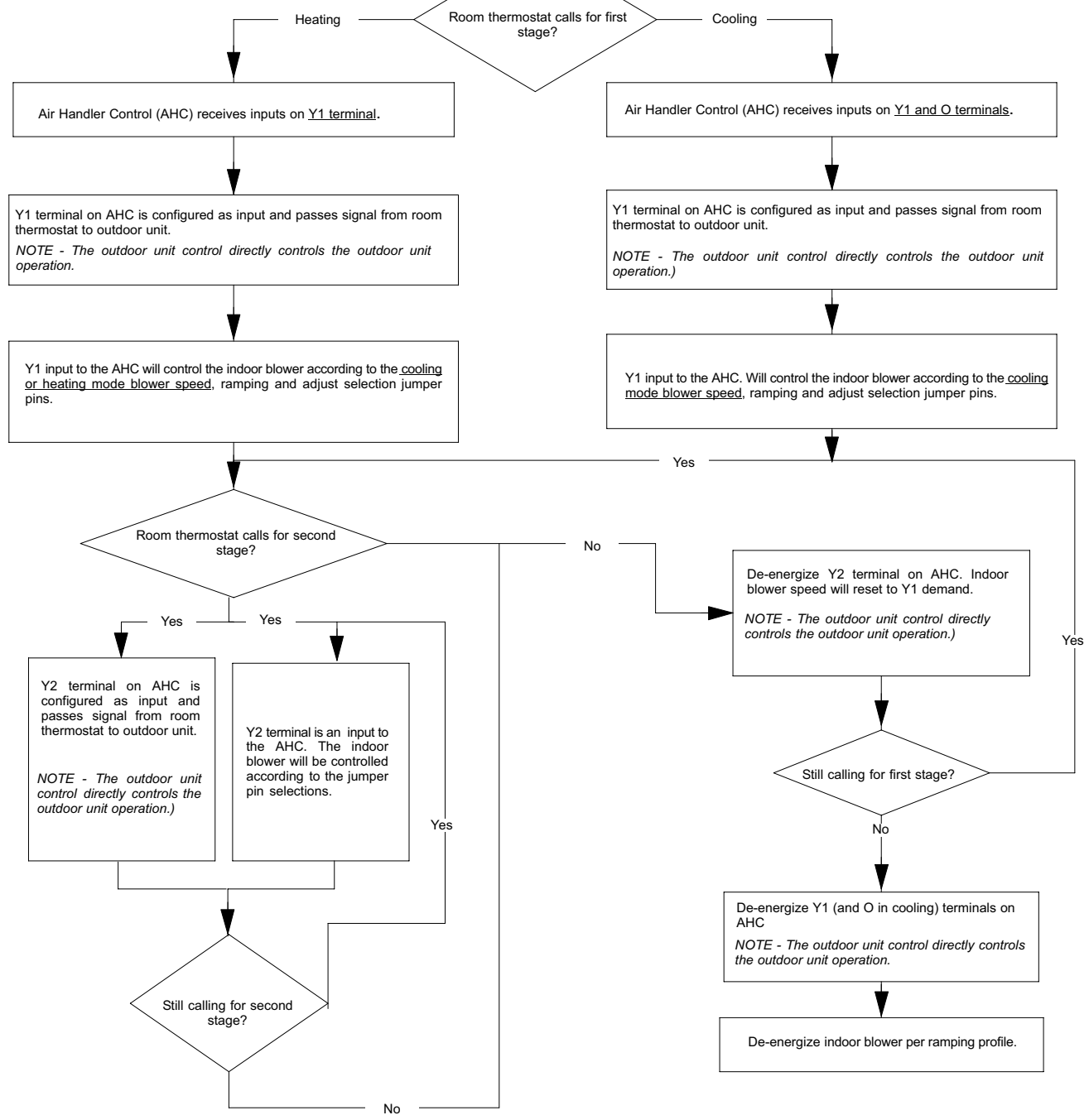
Figure 20. EVENHEAT Operation (2 of 2)

Heat Pump Operation (Heating and Cooling)

- Air Handler Control (AHC) Indoor Blower Mode Speed and Profiles settings**
- Set **Cooling Mode Blower Speed** jumper pin . (Low and high indoor blower CFM settings are identical for cooling and heat pump)
 - Set Blower Adjust Selection jumper pin.
 - Set Cooling Mode Blower Ramping jumper pin (Cooling calls - All ramping profiles are active) (Heating calls - Only ramping profiles 1 and 2 are active. If profiles 3 or 4 are selected, AHC will default to profile 1)
 - Profile 1 does not provide any ramping profiles.
 - Profile 2 provides a 30 second indoor blower ON delay at the start of a heat pump heating demand. (45 second indoor blower **OFF** delay)
 - Simultaneous Heat Pump and electric heat call: Indoor Blower will operate at the highest CFM requested by the heat pump or the electric heat blower speed selection.
- Single or Two-Stage Unit**
- AHC on-board link must be cut between Y1 and Y2 to allow two stage cooling operation.
 - AHC on-board link must be cut between R and O to allow heat pump operation.



RECOMMEND - USE FIGURE 15 AS A REFERENCE FOR SETTING JUMPER CONFIGURATIONS ON THE AIR HANDLER CONTROL.



Cooling Operation

Air Handler Control (AHC) Indoor Blower Mode Speed and Profiles settings

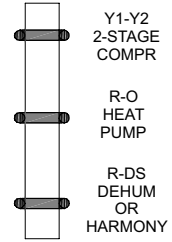
1. Set **Cooling Mode Blower Speed** jumper pin.
2. Set **Cooling Mode Blower Ramping** jumper pin.
3. Set **Blower Adjust Selection** jumper pin.

Single or Two-Stage Unit

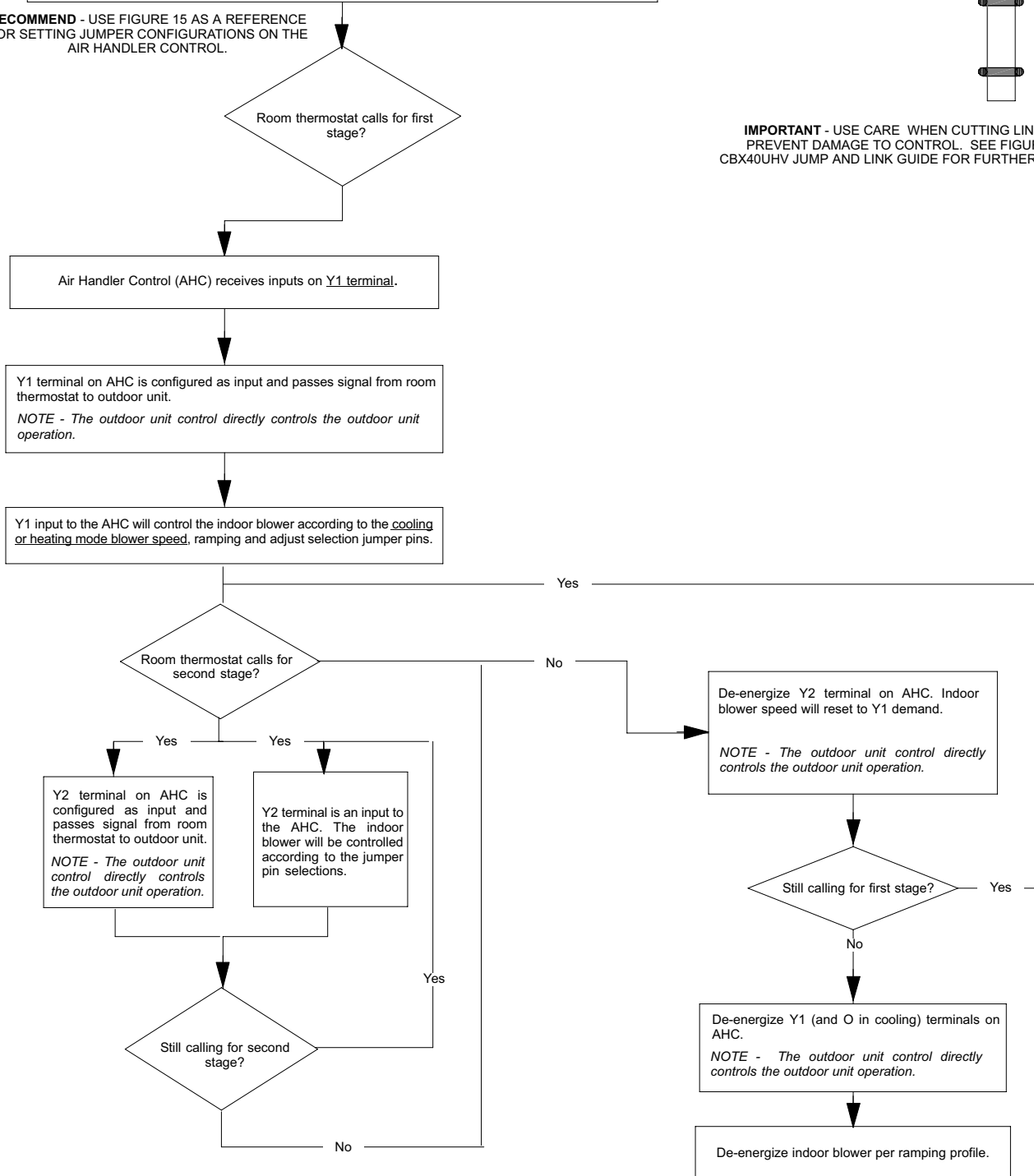
AHC on-board link must be cut between Y1 and Y2 to allow 2 stage cooling operation.

RECOMMEND - USE FIGURE 15 AS A REFERENCE FOR SETTING JUMPER CONFIGURATIONS ON THE AIR HANDLER CONTROL.

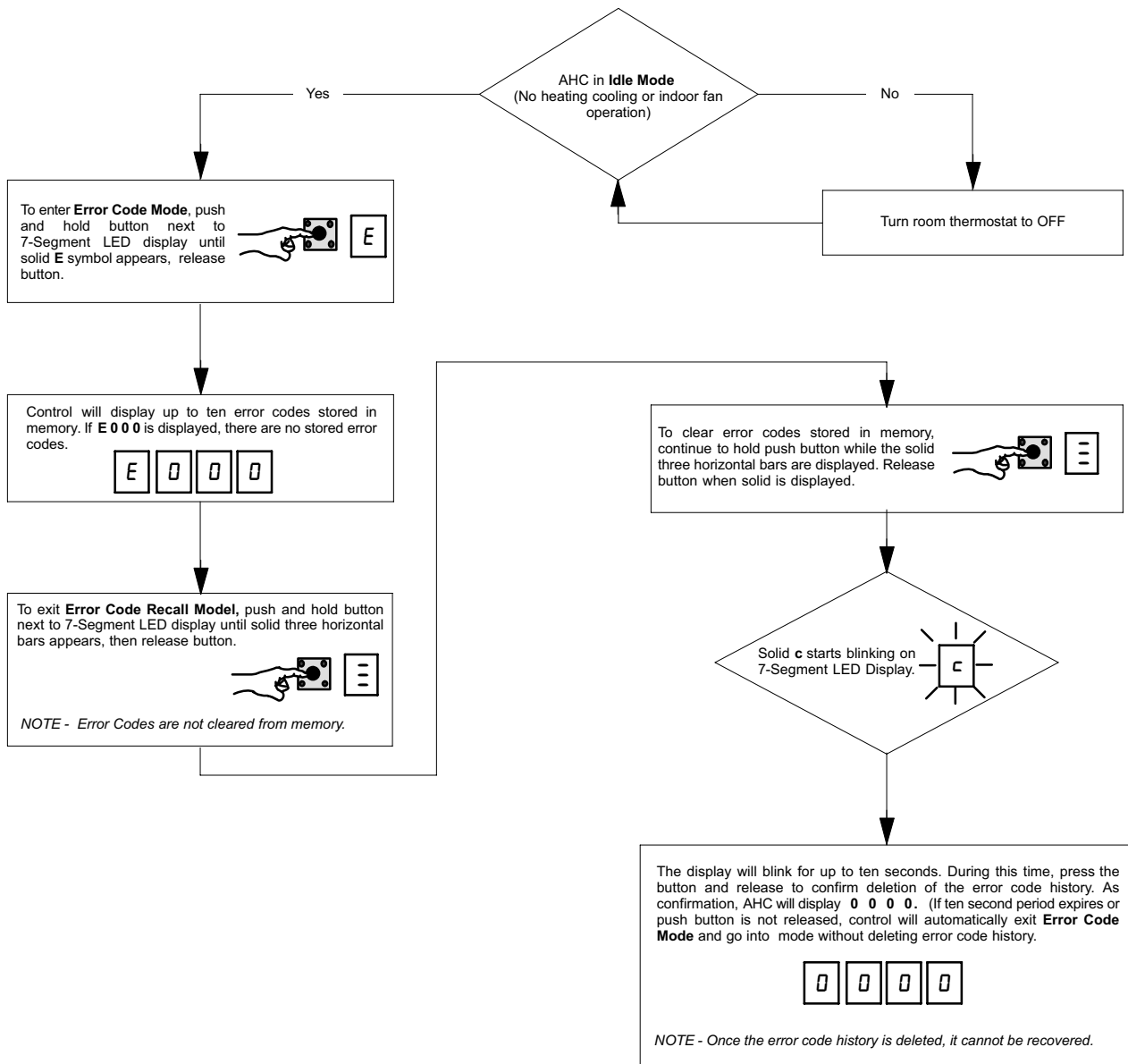
CUT ON-BOARD LINK Y1-Y2 FOR TWO-STAGE A/C



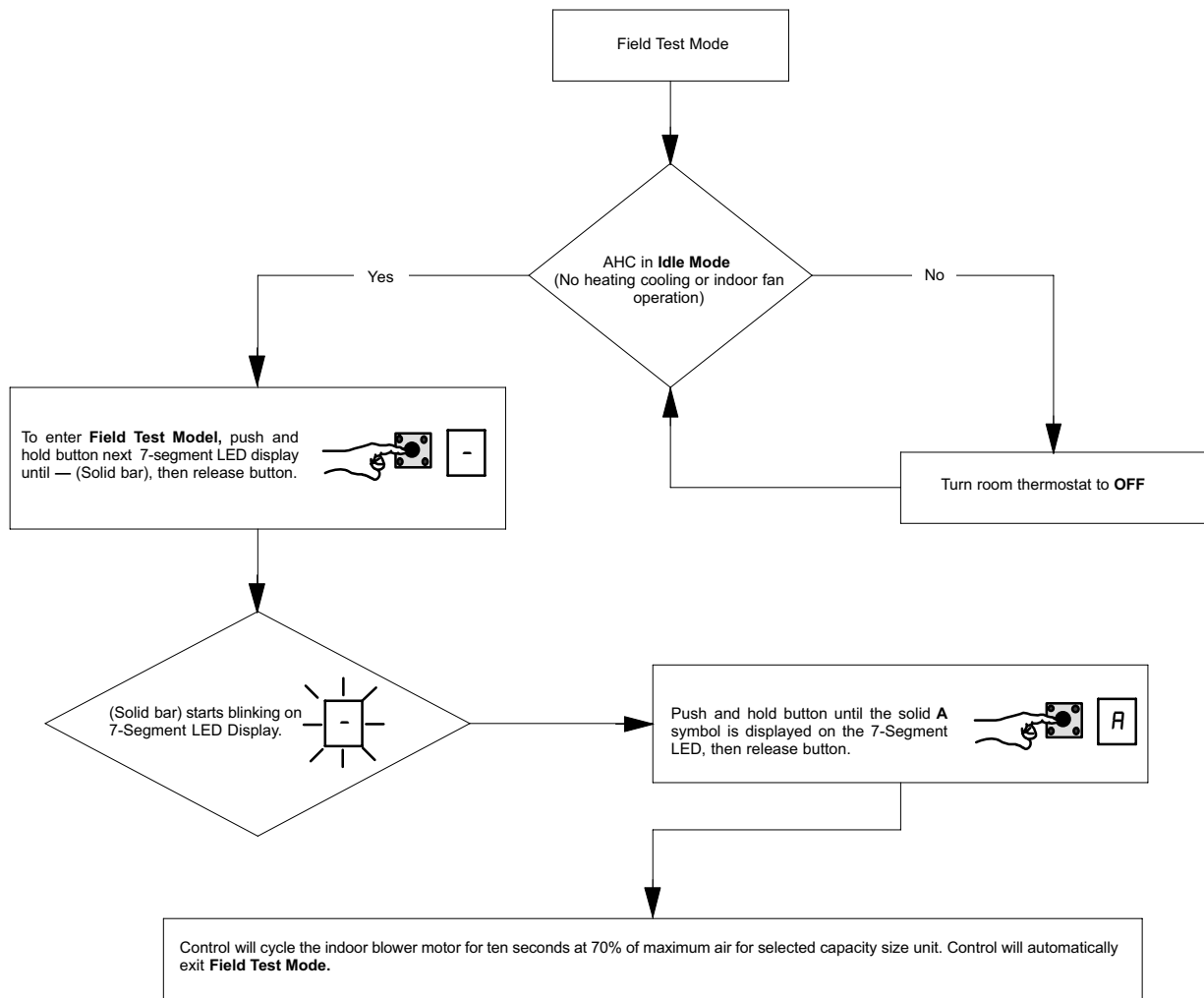
IMPORTANT - USE CARE WHEN CUTTING LINKS TO PREVENT DAMAGE TO CONTROL. SEE FIGURE 15, CBX40UHV JUMP AND LINK GUIDE FOR FURTHER DETAILS.



Error Code / Recall Mode



Indoor Blower Test



Repairing Cabinet Insulation

! IMPORTANT

DAMAGED INSULATION MUST BE REPAIRED OR REPLACED before the unit is put back into operation. Insulation loses its insulating value when wet, damaged, separated or torn.

Mat- or foil-faced insulation is installed in indoor equipment to provide a barrier between outside air conditions (surrounding ambient temperature and humidity) and the varying conditions inside the unit. If the insulation barrier is damaged (wet, ripped, torn or separated from the cabinet walls), the surrounding ambient air will affect the inside surface temperature of the cabinet. The temperature /humidity difference between the inside and outside of the cabinet can cause condensation on the inside or outside of the cabinet which leads to sheet metal corrosion and subsequently, component failure.

REPAIRING DAMAGED INSULATION

Areas of condensation on the cabinet surface are an indication that the insulation is in need of repair.

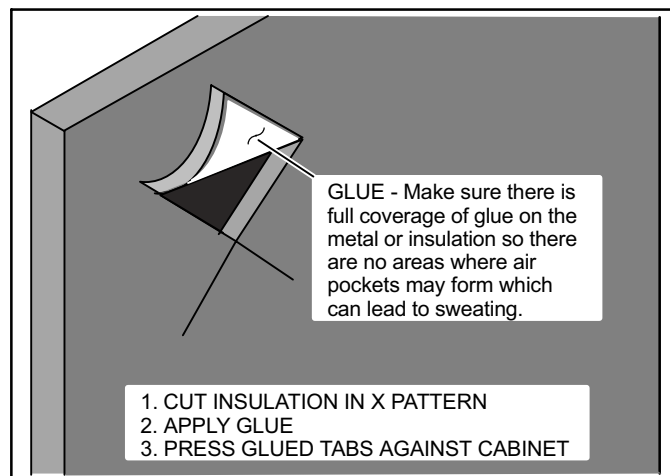


Figure 21. Repairing Insulation

If the insulation in need of repair is otherwise in good condition, the insulation should be cut in an X pattern, peeled open, glued with an appropriate all-purpose glue and placed back against the cabinet surface, being careful to not overly compress the insulation so the insulation can retain its original thickness. If such repair is not possible, replace the insulation. If using foil-faced insulation, any cut, tear, or separations in the insulation surface must be taped with a similar foil-faced tape.

Accessories

Down-Flow Accessories	CAT#
Down-flow Combustible Floor Base (CBX40UHV-024, -030, -036.)	34J73

Down-Flow Conversion Kit (CBX40UHV-024, -030, -036)	83M57
Down-Flow Conversion Kit (CBX40UHV-042, -048, -060)	43W10
Electric Heat Accessories	CAT#
Electric Heat 208/240-1ph – terminal Strip Models	
ECB40-2.5-1P	34W86
ECB40-5-1P	34W87
ECB40-6-1P	34W88
ECB40-8-1P	34W89
Electric Heat 208/240-1ph – Circuit Breaker Models	
ECB40-5CB-1P	34W90
ECB40-6CB-1P	34W91
ECB40-8CB-1P	34W92
ECB40-9CB-1P	34W93
ECB40-12.5CB-1P	34W94
ECB40-15CB-1P	34W95
ECB40-20CB-1P	34W96
ECB40-25CB-1P	34W97
Electric Heat 208/240-3ph – terminal Strip Models	
ECB40-8-1Y	34W98
ECB40-10-1Y	34W99
Electric Heat 208/240-3ph – Circuit Breaker Models	
ECB40-15CB-1Y	35W00
ECB40-20CB-1Y	35W01
ECB40-25CB-1Y	35W02
Circuit Breaker cover	93M85
Mounting Accessories	CAT#
Horizontal Support frame Kit	56J18
Side return Unit Stand (Up-Flow Only)	45K32
Single Point Power Source Control Box	21H39
Wall Hanging Bracket Kit (Up-Flow Only)	45K30
Air Filters	CAT#
MERV 10 FILTER 20 X 20 X 5	X0585
MERV 10 FILTER 20 X 25 X 5	X6673
MERV 16 FILTER 20 X 20 X 5	X7935
MERV 16 FILTER 20 X 25 X 5	X6675
FILTER 1" 20 X 20 X 1	X1963
FILTER 1" 20 X 25 X 1	X1970
MERV 10 (EXPANDABLE) 20 X 20 X 5	X8305
MERV 10 (EXPANDABLE) 20 X 25 X 5	X8304
MERV 16 (EXPANDABLE) 20 X 20 X 5	X8308
MERV 16 (EXPANDABLE) 20 X 25 X 5	X8307