# INSTALLATION INSTRUCTIONS

## Elite® Series CB30U Units

AIR HANDLER
505,340M
07/07
Supersedes 504,720M

Technical Publications
Litho U.S.A.

### ⚠ WARNING

**Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Installation and service must be performed by a qualified installer or service agency.**

### ⚠ 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.**

### ⚠ 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.**

### ⚠ IMPORTANT

**This unit must be matched with an indoor coil as specified in Lennox Engineering Handbook. Coils previously charged with HCFC-22 must be flushed.**

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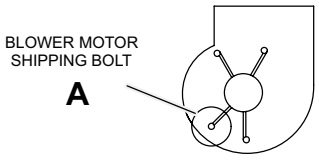
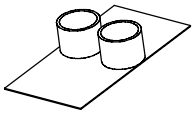
**RETAIN THESE INSTRUCTIONS FOR FUTURE REFERENCE**

## IMPORTANT INFORMATION TO INSTALLER

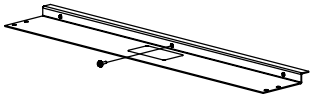
CHECK FOR AND REMOVE THE FOLLOWING ITEMS BEFORE OPERATING UNIT.



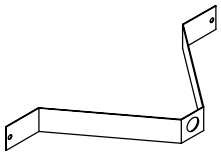
BLOWER MOTOR SHIPPING BOLT
**A**



BLOWER HOUSING SUPPORT PAD
**B**

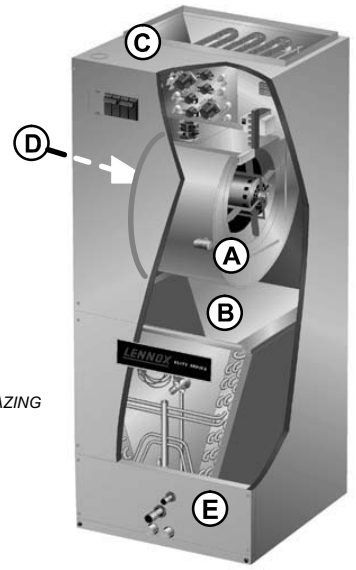


TOP CAP SHIPPING BRACKET (REPLACE SCREWS IN TOP CAP AFTER REMOVAL)
**C**

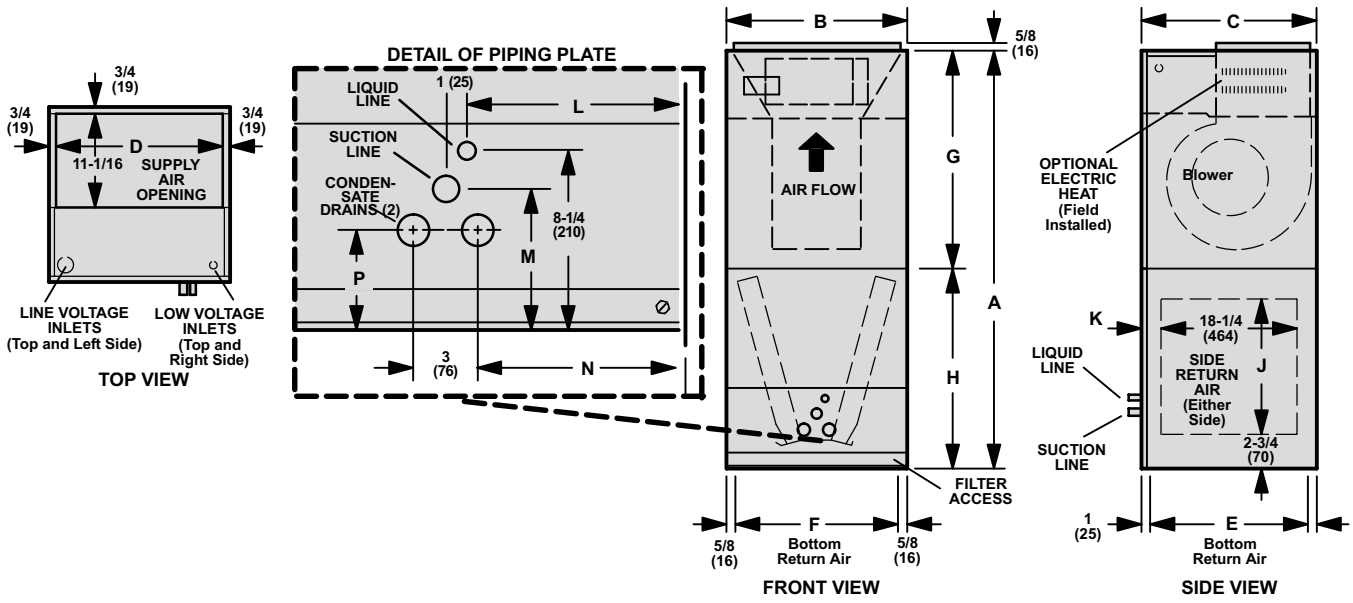


BLOWER MOTOR SHIPPING BRACKET
**D**

REFRIGERANT LINE CAPS [SEE *BRAZING CONNECTION* ON PAGE 4]
**E**

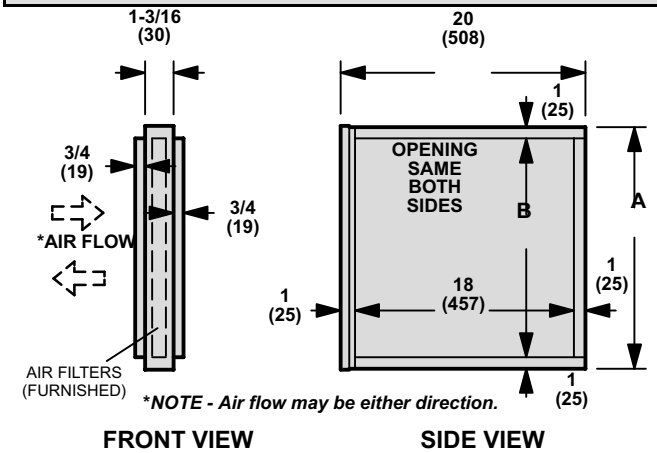


## CB30U Up-flow Unit Dimensions - Inches (mm)




| Model No. | CB30U-21/26 | | CB30U-31 | | CB30U-41/46 | | CB30U-51 / CB30U-65 | |
|---|---|---|---|---|---|---|---|---|
| | inch | mm | inch | mm | inch | mm | inch | mm |
| A | 45-1/4 | 1149 | 49-1/4 | 1251 | 52-1/2 | 1334 | 58-1/2 | 1486 |
| B | 16-1/4 | 413 | 21-1/4 | 540 | 21-1/4 | 540 | 21-1/4 | 540 |
| C | 20-5/8 | 524 | 20-5/8 | 524 | 22-5/8 | 575 | 24-5/8 | 625 |
| D | 14-3/4 | 375 | 19-3/4 | 502 | 19-3/4 | 502 | 19-3/4 | 502 |
| E | 19 | 483 | 19 | 483 | 21 | 533 | 23 | 584 |
| F | 15 | 351 | 20 | 508 | 20 | 508 | 20 | 508 |
| G | - - - | - - - | - - - | - - - | - - - | - - - | 27-7/8 | 708 |
| H | - - - | - - - | - - - | - - - | - - - | - - - | 30-5/8 | 778 |
| J | 14-1/4 | 362 | 18-1/4 | 464 | 18-1/4 | 464 | 18-1/4 | 464 |
| K | 1-1/8 | 29 | 1-1/8 | 29 | 2-1/8 | 54 | 3-1/8 | 79 |
| L | 7-1/8 | 181 | 9-5/8 | 244 | 9-5/8 | 244 | 9-5/8 | 244 |
| M | 6-1/4 | 159 | 6-1/2 | 165 | 6-1/2 | 165 | 6-1/2 | 165 |
| N | 6-5/8 | 168 | 9-1/8 | 232 | 9-1/8 | 232 | 9-1/8 | 323 |
| P | 4-1/8 | 105 | 4-9/16 | 116 | 4-9/16 | 116 | 4-9/16 | 116 |

## CB30U Up-Flow Side Return Air Filter Adapter




| Model Number | CB30U-21/26 | | CB30U-31 , CB30U-41/46 CB30U-51 and CB30U-65 | |
|---|---|---|---|---|
| | Inch | mm | Inch | mm |
| A | 16 | 406 | 20 | 508 |
| B | 14 | 356 | 18 | 457 |



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# ⚠ 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**

## General Information

The CB30U series air handler units are designed for installation with optional field-installed electric heat and a matched remote outdoor unit. These units are for indoor installation only. The CB30U units are designed for up-flow operations with either bottom or side return air applications.

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.

## Shipping and Packing List

Package 1 of 1 contains the following:

1—Assembled air handler unit

## 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 clearances to combustible materials as listed on the unit rating plate which is located on the unit. Accessibility and service clearances must take precedence over combustible material clearances.

## Installing the Unit

# ⚠ WARNING

**Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Installation and service must be performed by a qualified installer or service agency.**

CB30U units come from the factory ready for up-flow, bottom return installation. This unit is not designed for down-flow or horizontal discharge. Return air for the CB30U may be either from the bottom or sides of the unit. Side return air applications require some field modifications.

# ⚠ IMPORTANT

**Remove corrugated padding between the Blower and coil assembly before operation on -41, -46, -51 and -65 units.**

**DISASSEMBLE/REASSEMBLE AIR HANDLER UNITS**

The air handler units consists of two factory-assembled sections. It may be necessary to disassemble the sections when positioning the unit for installation.

**To disassemble:**

Step 1. Remove access panels.

Step 2. Remove both blower and coil assemblies. This will lighten the cabinet for lifting.

Step 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:**

Step 1. Align cabinet sections together.

Step 2. Reinstall screws.

Step 3. Replace blower and coil assemblies.

Step 4. Replace access panel.

**UP-FLOW APPLICATION**

Use the following procedures to configure the unit for up-flow operations:

Step 1. Remove access panels and corrugated padding between the blower and coil assembly before operation.

Step 2. Place unit in desired location. Set unit so that it is level. Connect return and supply air plenums as required using sheet metal screws.

Step 3. Mount units that have no return air plenum on a stand at least 14" from the floor for proper air return. Lennox offers an optional up-flow unit stand as listed in table 1.

**Table 1. Optional Unit Side Stand (Up-Flow Only)**

| Model | Kit Number |
|---|---|
| -21, -26, and -31 | 45K31 |
| -41 through -65. | 45K32 |

### SIDE RETURN AIR APPLICATIONS

The CB30U unit is shipped from the factory ready for bottom return air application. You can order an optional side return air filter kit as listed in table 2.

**Table 2. Optional Side Return Air Filter Kit**

| Model | Kit Number |
|---|---|
| -21 and -26 | 65K23 |
| All other models | 65K24 |

Use the following procedures to configure the unit for side return air operations:

Step 1. Remove the coil access panel.

Step 2. Remove the coil assembly from the cabinet.

Step 3. Cut the side or sides of the cabinet used for return air according to the dimensions given in figure 1 and table 1. For -41, 46, -51 and -65 units, it is recommended that return air come into the unit from both sides. Therefore, both sides of the cabinet should be cut for these units.

Step 4. Set the unit so that it is level. Seal the bottom opening of the cabinet.

Step 5. Connect the return and supply air plenums as required.

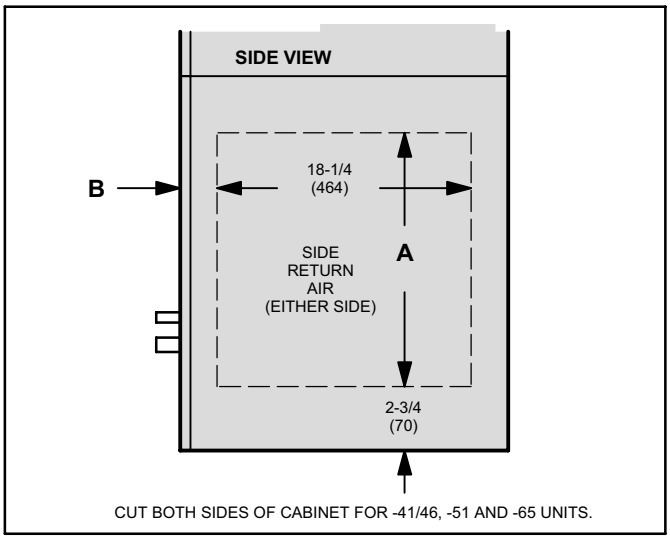


**Figure 1. CB30U Side Return Air Dimensions**

**Table 3. Side Return Air Dimensions**

| Model # | CB30U -21/26 | CB30U -31 | CB30U -41/46 | CB30U-51 CB30U-65 |
|---|---|---|---|---|
| | inch (mm) | inch (mm) | inch (mm) | inch (mm) |
| A | 14-1/4 (362) | 18-1/4 (464) | 18-1/4 (464) | 18-1/4 (464) |
| B | 1-1/8 (29) | 1-1/8 (29) | 2-1/8 (54) | 3-1/8 (79) |

## Brazing Connections

All CB30U coils are equipped with a factory-installed, internally mounted expansion valve. Use Lennox L15 (sweat) series line sets as shown in table 2 or use field-fabricated refrigerant lines. L10 (flare) line sets may be used by cutting off flare nut. Refer to the piping section of the Lennox Unit Information Service Manual for proper size, type, and application of field-fabricated lines.

**⚠WARNING**

**Danger of explosion!**

**Can cause equipment damage, injury, or death.**

**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).**

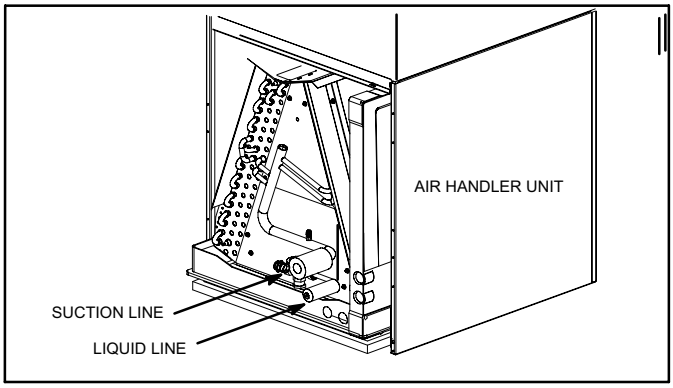


**Figure 2. Brazing Connections**

**⚠ 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.**

**Table 4. Refrigerant Line Sets**

| CB30MV UNIT | LIQUID LINE | VAPOR/ SUCTION LINE | L10 LINE SETS | L15 LINE SETS |
|---|---|---|---|---|
| -21/26 | 3/8 in (10 mm) | 5/8 in. (16 mm) | L10-26 20 ft. - 50 ft. (6 m - 15 m) | L15-26 20 ft. - 50 ft. (6 m - 15 m) |
| -31 -41/16 | 3/8 in (10 mm) | 3/4 in. (19 mm) | L10-41 20 ft. - 50 ft. (6 m - 15 m) | L15-41 20 ft. - 50 ft. (6 m - 15 m) |
| -51 | 3/8 in (10 mm) | 7/8 in. (22 mm) | L10-65 30 ft. - 50 ft. (9 m - 15 m) | L15-65 30 ft. - 50 ft. (9 m - 15 m) |
| -65 | 3/8 in (10 mm) | 1-1/8 in. (29 mm) | FIELD FABRICATED | FIELD FABRICATED |



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*NOTE - CB30MV series evaporators use nitrogen or dry air as a holding charge. If there is no pressure when the rubber plugs are removed, check the coil or line set for leaks before installing. After installation, pull a vacuum on the line set and coil before releasing the unit charge into the system.*

***NOTE: See outdoor unit instructions on how to flow nitrogen through line sets.***

Step 1. Remove access panel.

Step 2. Remove the refrigerant line caps from the refrigerant lines.

Step 3. Use a wet rag to protect TXV sensing bulb (or remove it) when brazing suction line connections.

Step 4. Place a wet rag against piping plate and around the suction line connection. The wet rag must be in place to guard against damage to the paint.

Step 5. With the wet rag in place, position field provided elbow fitting to air handler's suction line and line set. Start nitrogen flow before brazing.

Step 6. After the procedure is completed then remove the wet rag.

Step 7. Place wet rag against piping plate and around the liquid line connection. Position liquid line elbow to air handler's suction line and to line set. Start nitrogen flow and begin brazing both connections and after procedure is completed then remove both wet rags.

Step 8. Refer to instructions provided with outdoor unit for leak testing, evacuating and charging procedures.

Step 9. Install access panel.

## Installing the Condensate Drain

Connect the main condensate drain and route it downward to an open drain or sump. Do not connect the drain to a closed waste system. Refer to figure 3 for a typical condensate trap configuration. If the auxiliary drain is not connected, it must be plugged.

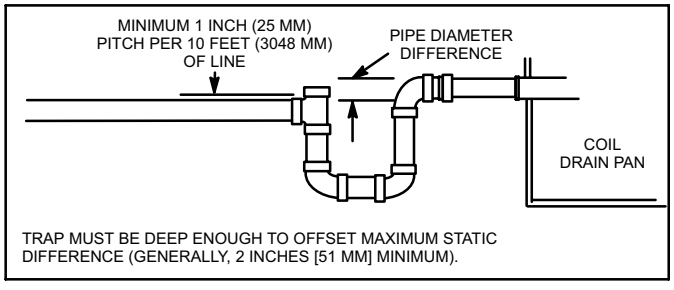


**Figure 3. Typical Condensate Drain**

The following practices are recommended to ensure condensate removal:

- The drain piping should not be smaller than the drain connections at drain pan.
- A trap must be installed in the main drain line.
- The trap must be deep enough to offset the difference in static pressure between drain pan and atmosphere. Generally, two inches is satisfactory for medium static applications.
- Horizontal runs must be sloped 1 inch per 10 feet of drain line to offset friction.
- An open vent in the drain line will sometimes be required due to line length, friction, and static pressure.
- Drains should be constructed in a manner to facilitate future cleaning and should not interfere with filter access as illustrated in figure 3.
- Auxiliary drain should run to an area where the homeowner will notice it draining. Refer to local codes.

## Inspecting and Replacing Filters

**⚠ IMPORTANT**

**Filter access panel must be in place during unit operation. Excessive warm air entering the unit may result in water blow-off problems.**

You can duct mount or install filters in the cabinet. The unit is not equipped with a filter from the factory. Note that the filter access door fits over the access panel. Air leaks will occur if the access panel is placed over the filter door.

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

Reusable filters can be washed with water and mild detergent. When dry, they should be sprayed with filter handicoater prior to reinstallation. Filter handicoater is RP Products coating #418 and is available as Lennox part number P-8-5069. Replace throw-away type filters when they are dirty; they cannot be cleaned.

The filter section built into the unit may be used with bottom return air applications.

**To replace filter:**

Step 1. Loosen the thumbscrews holding the filter panel in place.

Step 2. Slide the filter out of the guides on either side of cabinet.

Step 3. Insert new filter.

Step 4. Replace panel.

See table 5 for replacement filter sizes.

**Table 5. Filter Dimensions**

| UNIT MODEL NO. | BOTTOM RETURN FILTER SIZE Inches (mm) | SIDE RETURN FILTER SIZE Inches (mm) |
|---|---|---|
| CB30U-21/26 | 15 x 20 (381 x 508) | 16 x 20 (406 x 508) |
| CB30U-31 | 20 x 20 (508 x 508) | 20 x 20 (508 x 508) |
| CB30U-41/46 | 20 x 22 (508 x 559) | 20 x 20 (508 x 508) |
| CB30U-51,-65 | 20 x 24 (508 x 610) | 20 x 20 (508 x 508) |

## Sealing the Unit

Seal the unit so that warm air is not allowed 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.

Make sure the liquid line and suction line entry points are sealed with either the provided flexible elastomeric thermal insulation, or field provided material (e.g. *Armaflex*, *Permagum* or equivalent). Any of the previously mention materials may be used to seal around the main and auxiliary drains, and around open areas of electrical inlets.

## Adjusting Blower Speed

### MINIMUM BLOWER SPEEDS (WITH ELECTRIC HEATERS)

For the minimum allowable speed for the CB30U series units with electric heat, refer to the ECB29/ECB31 installation instructions.

### AIR VOLUME ADJUSTMENT

Select the Blower speed by changing the taps at the harness connector at the blower motor as illustrated in figure 4. For selecting the blower speed and see figure 9 on page 11 for the unit wiring diagram. Refer to the tables 6 through 10 for blower performance data.

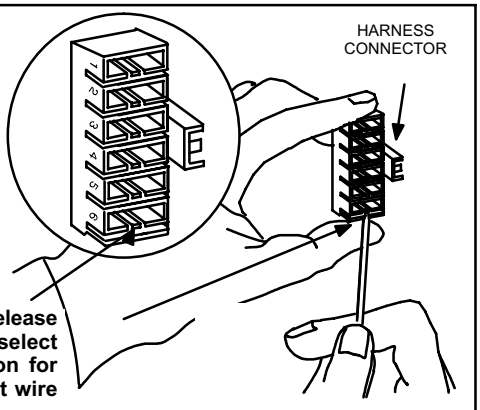


**Figure 4. Blower Speed Tap Selection**

**Table 6. CB30U-21/26 Air Handler Performance (208/230v)**

| External Static Pressure | | Air Volume and Motor Watts at Specific Blower Taps | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | High | | | Medium | | | Low | | |
| in. w.g. | Pa | cfm | L/s | Watts | cfm | L/s | Watts | cfm | L/s | Watts |
| .00 | 0 | 1035 | 490 | 390 | 850 | 400 | 305 | 670 | 315 | 230 |
| .05 | 10 | 1020 | 480 | 385 | 840 | 395 | 300 | 665 | 315 | 230 |
| .10 | 25 | 1005 | 475 | 380 | 830 | 395 | 295 | 660 | 310 | 225 |
| .15 | 35 | 985 | 465 | 375 | 820 | 385 | 290 | 650 | 305 | 225 |
| .20 | 50 | 965 | 455 | 370 | 805 | 380 | 285 | 640 | 300 | 220 |
| .25 | 60 | 940 | 445 | 365 | 790 | 370 | 280 | 625 | 295 | 220 |
| .30 | 75 | 920 | 435 | 360 | 770 | 365 | 275 | 610 | 290 | 215 |
| .40 | 100 | 865 | 410 | 345 | 725 | 340 | 265 | 575 | 270 | 210 |
| .50 | 125 | 805 | 380 | 330 | 670 | 315 | 250 | 535 | 250 | 200 |
| .60 | 150 | 735 | 345 | 320 | 610 | 285 | 240 | 485 | 230 | 190 |
| .70 | 175 | 655 | 310 | 305 | 535 | 255 | 225 | 430 | 200 | 180 |
| .75 | 185 | 615 | 290 | 295 | 500 | 235 | 215 | 395 | 190 | 175 |

*NOTE - All air data is measured external to the unit with air filter in place with bottom return air or side return air (with both sides open). Electric heaters have no appreciable air resistance.*

**Table 7. CB30U-31 Air Handler Performance (208/230v)**

| External Static Pressure | | Air Volume and Motor Watts at Specific Blower Taps | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | High | | | Medium | | | Low | | |
| in. w.g. | Pa | cfm | L/s | Watts | cfm | L/s | Watts | cfm | L/s | Watts |
| .00 | 0 | 1255 | 590 | 350 | 1190 | 560 | 315 | 1045 | 495 | 265 |
| .05 | 10 | 1245 | 590 | 350 | 1190 | 560 | 315 | 1050 | 495 | 265 |
| .10 | 25 | 1230 | 580 | 345 | 1175 | 555 | 310 | 1040 | 490 | 255 |
| .15 | 35 | 1205 | 570 | 340 | 1155 | 545 | 300 | 1025 | 485 | 250 |
| .20 | 50 | 1170 | 550 | 330 | 1120 | 530 | 290 | 1005 | 475 | 245 |
| .25 | 60 | 1125 | 530 | 320 | 1080 | 510 | 285 | 970 | 460 | 235 |
| .30 | 75 | 1065 | 505 | 315 | 1030 | 485 | 275 | 930 | 440 | 225 |
| .40 | 100 | 925 | 435 | 295 | 895 | 425 | 255 | 820 | 385 | 205 |
| .50 | 125 | 740 | 350 | 280 | 725 | 340 | 240 | 670 | 315 | 185 |
| .60 | 150 | 520 | 245 | 260 | 510 | 240 | 220 | 490 | 230 | 165 |
| .70 | 175 | 255 | 120 | 240 | 260 | 120 | 200 | 275 | 130 | 145 |
| .75 | 185 | 110 | 50 | 230 | 115 | 55 | 190 | 150 | 70 | 135 |

*NOTE - For side return air applications (with both sides open) add: .10 in. w.c. (25 Pa) static capacity to unit performance. Electric heaters have no appreciable air resistance. All air data is measured external to the unit with the air filter in place with bottom return air.*

**Table 8. CB30U-41/46 Air Handler Performance (208/230v)**

| External Static Pressure | | Air Volume and Motor Watts at Specific Blower Taps | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | High | | | Medium | | | Low | | |
| in. w.g. | Pa | cfm | L/s | Watts | cfm | L/s | Watts | cfm | L/s | Watts |
| .00 | 0 | 1610 | 760 | 510 | 1510 | 710 | 470 | 1360 | 645 | 430 |
| .05 | 10 | 1590 | 750 | 500 | 1490 | 705 | 460 | 1355 | 640 | 425 |
| .10 | 25 | 1560 | 735 | 490 | 1465 | 690 | 450 | 1345 | 635 | 415 |
| .15 | 35 | 1530 | 720 | 480 | 1440 | 680 | 435 | 1330 | 625 | 405 |
| .20 | 50 | 1490 | 705 | 470 | 1405 | 665 | 425 | 1305 | 615 | 395 |
| .25 | 60 | 1450 | 685 | 455 | 1370 | 645 | 410 | 1280 | 605 | 380 |
| .30 | 75 | 1405 | 665 | 445 | 1330 | 630 | 400 | 1245 | 585 | 370 |
| .40 | 100 | 1305 | 615 | 415 | 1235 | 585 | 370 | 1160 | 545 | 340 |
| .50 | 125 | 1185 | 560 | 390 | 1125 | 530 | 345 | 1050 | 495 | 310 |
| .60 | 150 | 1050 | 495 | 360 | 995 | 470 | 315 | 920 | 435 | 280 |
| .70 | 175 | 895 | 420 | 330 | 845 | 400 | 285 | 765 | 360 | 245 |
| .75 | 185 | 815 | 385 | 320 | 765 | 360 | 270 | 680 | 320 | 230 |

*NOTE - For side return air applications (with both sides open) add: .15 in. w.c. (35 Pa) static capacity to unit performance. Electric heaters have no appreciable air resistance. All air data is measured external to the unit with the air filter in place with bottom return air.*

**Table 9. CB30U-51 Air Handler Performance (208/230v)**

| External Static Pressure | | Air Volume and Motor Watts at Specific Blower Taps | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | High | | | Medium | | | Low | | |
| in. w.g. | Pa | cfm | L/s | Watts | cfm | L/s | Watts | cfm | L/s | Watts |
| .00 | 0 | 1805 | 855 | 600 | 1615 | 765 | 525 | 1355 | 640 | 445 |
| .05 | 10 | 1780 | 840 | 585 | 1605 | 755 | 515 | 1355 | 640 | 445 |
| .10 | 25 | 1745 | 825 | 570 | 1585 | 750 | 505 | 1355 | 640 | 440 |
| .15 | 35 | 1710 | 805 | 560 | 1560 | 735 | 490 | 1350 | 635 | 425 |
| .20 | 50 | 1670 | 790 | 545 | 1535 | 725 | 480 | 1335 | 630 | 415 |
| .25 | 60 | 1625 | 765 | 530 | 1500 | 710 | 465 | 1320 | 620 | 400 |
| .30 | 75 | 1575 | 745 | 515 | 1465 | 690 | 450 | 1295 | 610 | 390 |
| .40 | 100 | 1470 | 695 | 485 | 1375 | 650 | 420 | 1230 | 580 | 360 |
| .50 | 125 | 1350 | 635 | 460 | 1265 | 595 | 395 | 1145 | 540 | 335 |
| .60 | 150 | 1215 | 570 | 430 | 1140 | 535 | 365 | 1035 | 490 | 310 |
| .70 | 175 | 1060 | 500 | 400 | 990 | 470 | 335 | 905 | 425 | 285 |
| .75 | 185 | 980 | 460 | 385 | 910 | 430 | 320 | 830 | 390 | 270 |

*NOTE - For side return air applications (with both sides open) add: .15 in. w.c. (35 Pa) static capacity to unit performance. Electric heaters have no appreciable air resistance. All air data is measured external to the unit with the air filter in place with bottom return air.*

**Table 10. CB30U-65 Air Handler Performance (208/230v)**

| External Static Pressure | | Air Volume and Motor Watts at Specific Blower Taps | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | High | | | Medium | | | Low | | |
| in. w.g. | Pa | cfm | L/s | Watts | cfm | L/s | Watts | cfm | L/s | Watts |
| .00 | 0 | 2040 | 965 | 750 | 1900 | 895 | 665 | 1690 | 800 | 585 |
| .05 | 10 | 2005 | 945 | 735 | 1875 | 885 | 650 | 1680 | 790 | 570 |
| .10 | 25 | 1970 | 930 | 725 | 1845 | 870 | 635 | 1660 | 785 | 555 |
| .15 | 35 | 1935 | 910 | 710 | 1815 | 855 | 615 | 1640 | 775 | 545 |
| .20 | 50 | 1890 | 890 | 695 | 1780 | 840 | 600 | 1615 | 760 | 530 |
| .25 | 60 | 1845 | 870 | 680 | 1740 | 820 | 585 | 1585 | 745 | 515 |
| .30 | 75 | 1800 | 850 | 665 | 1700 | 800 | 570 | 1550 | 730 | 500 |
| .40 | 100 | 1690 | 800 | 635 | 1605 | 755 | 540 | 1470 | 695 | 470 |
| .50 | 125 | 1575 | 745 | 605 | 1495 | 705 | 510 | 1375 | 650 | 440 |
| .60 | 150 | 1445 | 680 | 575 | 1375 | 650 | 475 | 1265 | 600 | 410 |
| .70 | 175 | 1305 | 615 | 540 | 1240 | 585 | 445 | 1140 | 540 | 380 |
| .80 | 200 | 1150 | 545 | 510 | 1095 | 515 | 415 | 1000 | 470 | 350 |
| .85 | 210 | 1070 | 505 | 490 | 1015 | 480 | 400 | 920 | 435 | 330 |

*NOTE - For side return air applications (with both sides open) add: .15 in. w.c. (35 Pa) static capacity to unit performance. Electric heaters have no appreciable air resistance. All air data is measured external to the unit with the air filter in place with bottom return air.*

## Making Electrical Connections

**⚠ 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.**

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 the following wiring diagrams. See the unit nameplate for minimum circuit ampacity and maximum overcurrent protection size.

Select the proper supply circuit conductors according to 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 knockouts for conduit. Refer to figure 9 on page 11 for unit schematic wiring diagram and figures 5, 6, 7 and 8 for typical field wiring.

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

**⚠ WARNING**

**USE COPPER CONDUCTORS ONLY.**

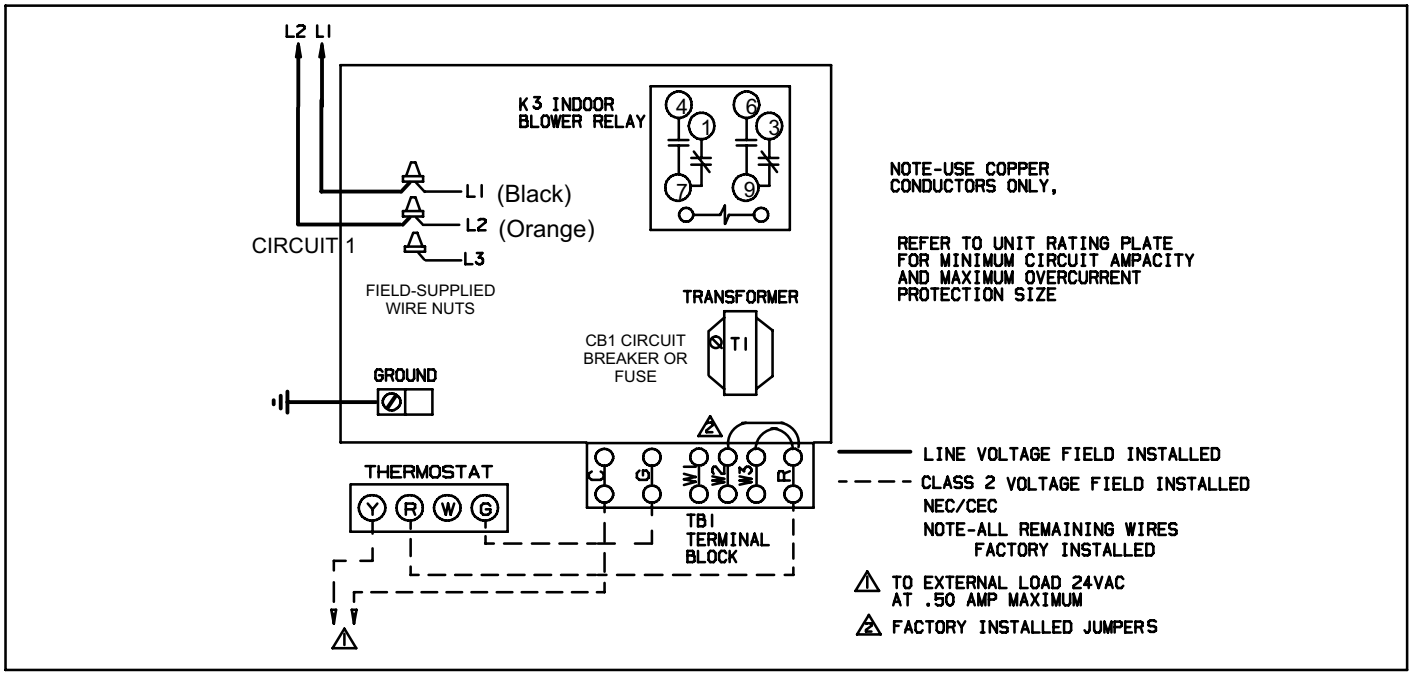


**Figure 5. Cooling Only**

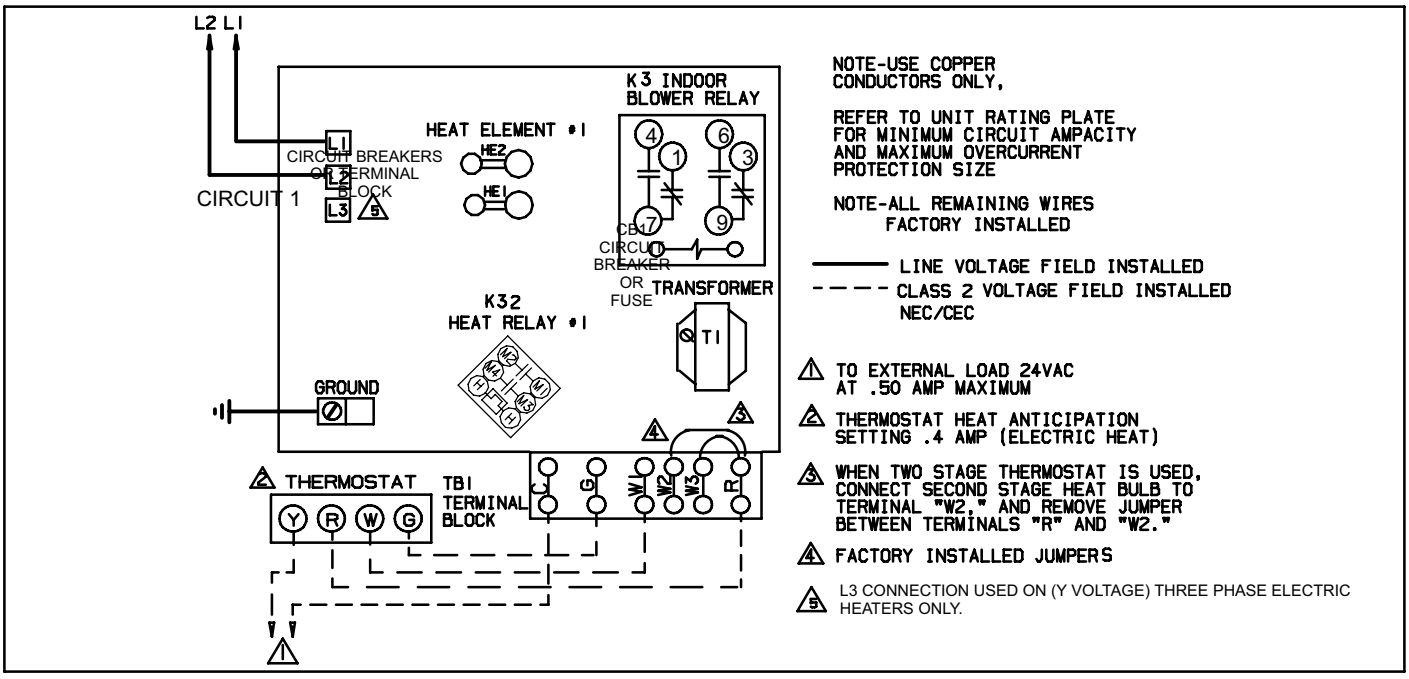


**Figure 6. Cooling Only and with Electric Heating Applications**

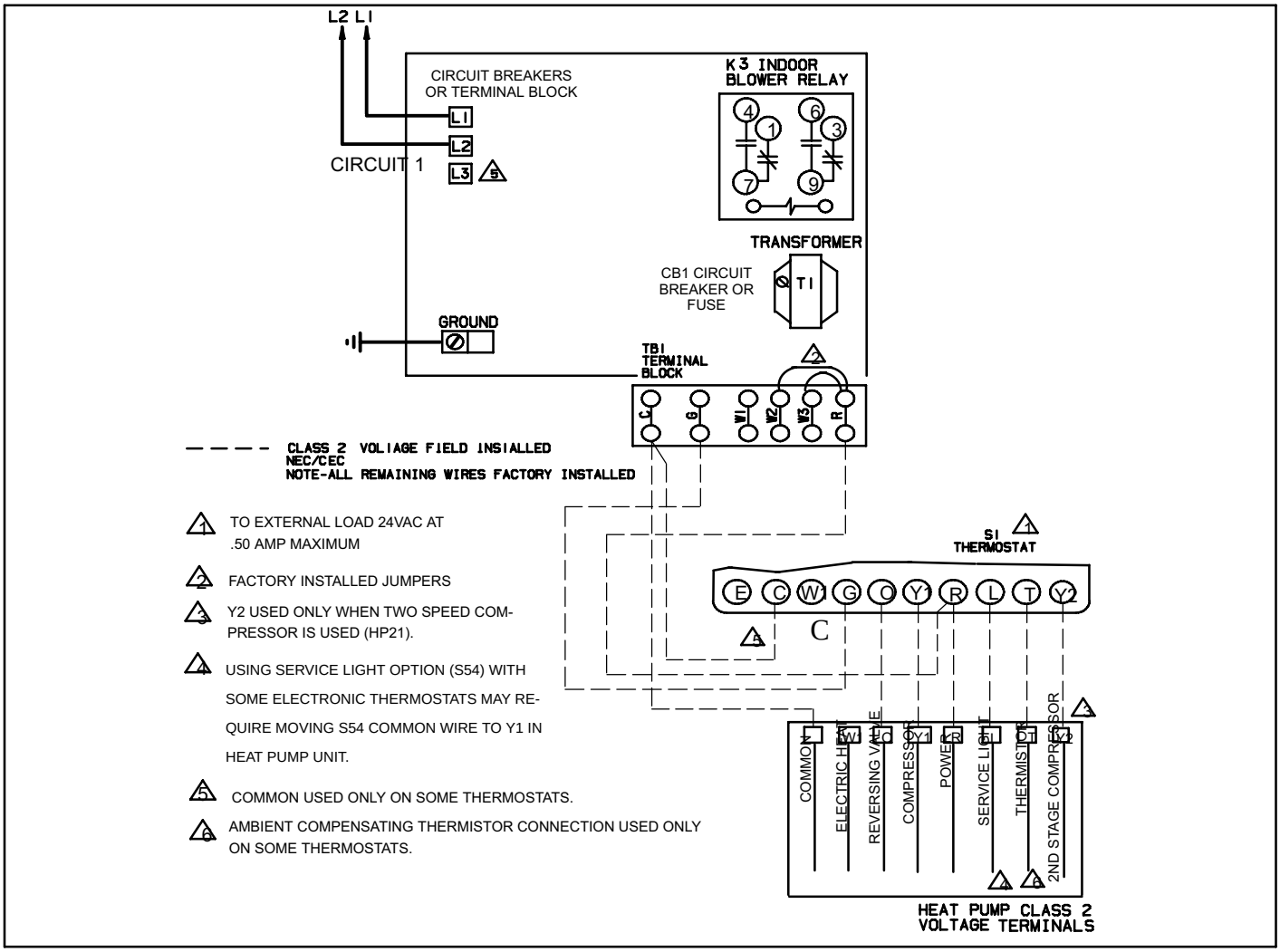


**Figure 7. Heat Pump Only**

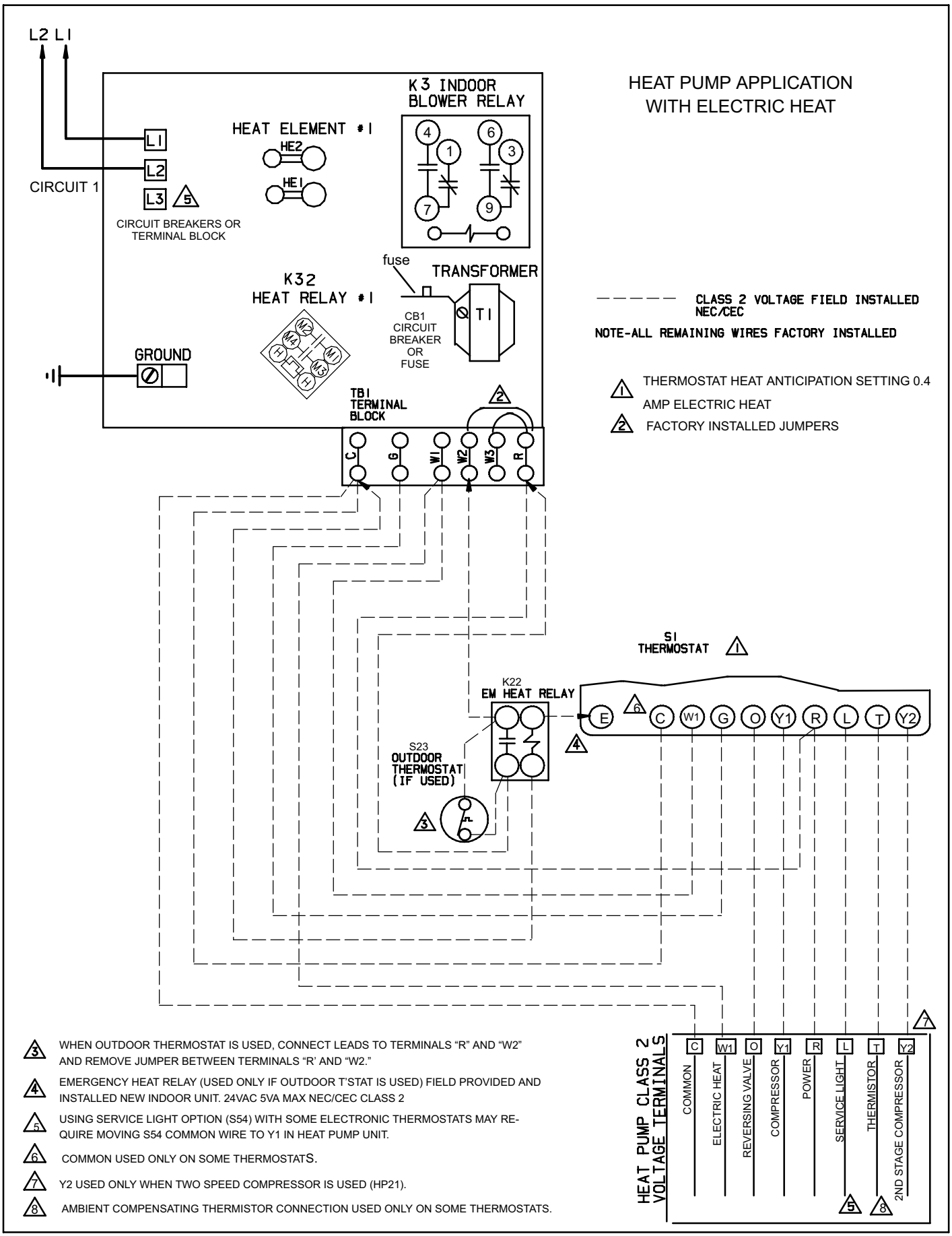


**Figure 8. Heat Pump Applications with Electric Heat**

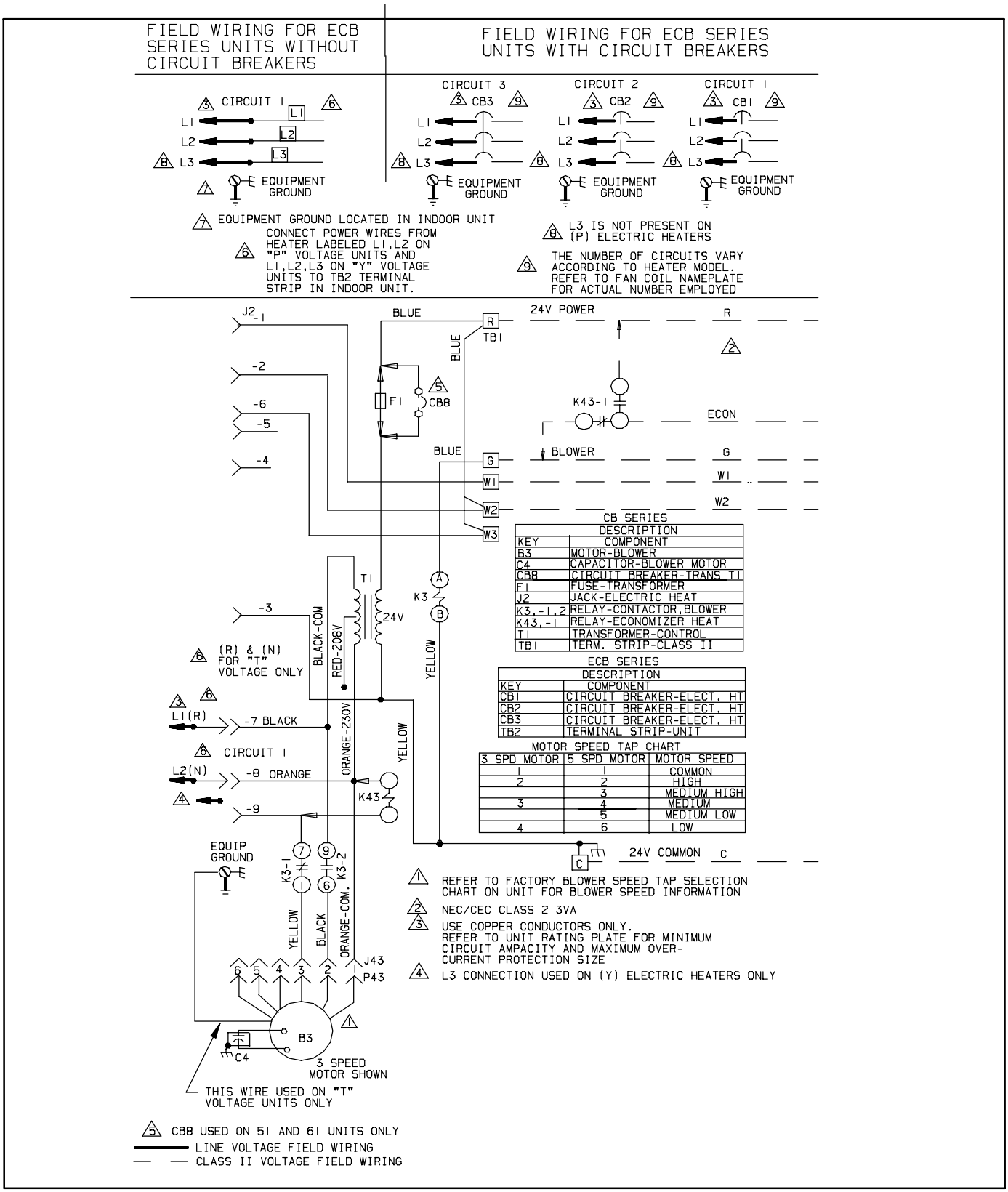


**Figure 9. CB30U Air Handler Typical Wiring Diagram**

## Repairing or Replacing 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.**

Matt 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.

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.

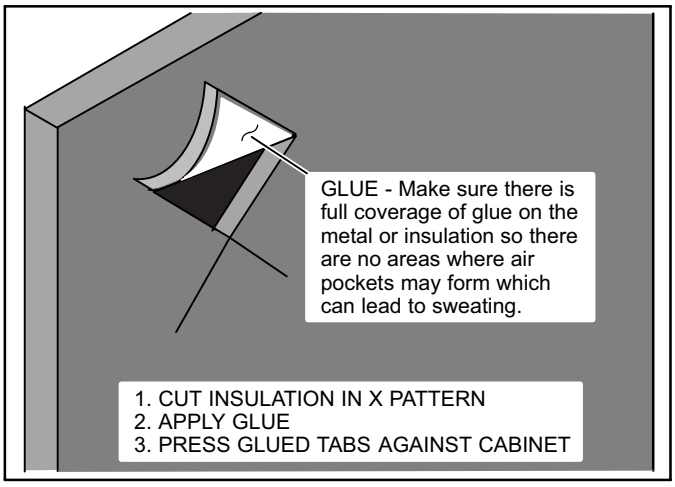


**Figure 1. Repairing Insulation**

**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 ½" 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.**