Small Rooftop Units
Select 6 to 27.5 Tons
Low Ambient Control Kit Accessory

Installation Instructions

Part No. CRLAMBKT002A00

IMPORTANT: Read these instructions completely before attempting to install this accessory.

CONTENTS

SAFETY CONSIDERATIONS

Installation of this accessory can be hazardous due to system pressures, electrical components, and equipment location (such as a roof or elevated structure). Only trained, qualified installers and service technicians should install, start-up, and service this equipment.

When installing this accessory, observe precautions in the literature, labels attached to the equipment, and any other safety precautions that apply:

- Follow all safety codes
- Wear safety glasses and work gloves
- Use care in handling and installing this accessory

It is important to recognize safety information. This is the safety-alert symbol: ⚠. When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury.

Understand the signal words DANGER, WARNING, CAUTION, and NOTE. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies hazards which **could** result in personal injury or death. CAUTION is used to identify unsafe practices, which **may** result in minor personal injury or product and property damage. NOTE is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

⚠ WARNING

ELECTRICAL OPERATION HAZARD

Failure to follow this warning could result in personal injury or death.

Disconnect power supply and install lockout tag before attempting to install accessory.

⚠ WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could cause personal injury or death.

Before performing service or maintenance operations on unit, turn off main power switch to unit and install lock(s) and lockout tag(s). Ensure electrical service to rooftop unit agrees with voltage and amperage listed on the unit rating plate. Unit may have more than one power switch.

BEFORE INSTALLATION

Inspect the contents of this accessory package before installing. File a claim with the shipping provider if contents are damaged or parts are missing. (See Table 1.)

GENERAL

The head pressure control kit regulates outdoor (condenser) fan speed during cooling mode operation. A temperature sensor mounted on a return bend of the outdoor (condenser) coil controls the speed of approved outdoor fan motors in order to maintain a constant head pressure in the outdoor coil. The control is connected to 2 outdoor fan motors. For corresponding cabinet and model number see Table 2. For the approved fan motors and Product Usage see Table 3. When properly installed, the control will maintain the appropriate head pressure at low ambient temperatures between 40°F (4.4°C) and 0°F (–17.8°C). The controller will not be activated until the outside air temperature is below 60°F (15.5°C). The unit without the low ambient kit is rated for 40°F (4.4°C) outside air.

The controller is designed to apply full voltage to the motor with probe temperatures above 100°F (37.8°C) or if the outside air is above 60°F (15.5°C). With probe temperatures between 100°F (37.8°C) and 70°F (21.1°C) and outdoor air below 60°F (15.5°C), the motor speed is proportional to the probe temperature. As the temperature being sensed decreases, the output voltage decreases. With probe temperature below 70°F (21.1°C), the motor will remain off. If the cut-out speed knob is not set to minimum, the

motor may cut out sooner and at a higher probe temperature than 70°F (21.1°C), limiting the motor's modulation range.

Once the probe temperature increases above 70°F (21.1°C), the motor will restart to the hard start knob setting. The hard start setting allows the motor to begin at a higher RPM upon restart than the RPM corresponding to the probe's temperature. This avoids low RPMs of the condenser motor.

The head pressure control kit in this application is only to be used with an approved condenser motor. The hard start knob setting and the cut-out speed knob are to be set to minimum for proper functionality. See Fig. 1 and Table 1 for controller kit details.

575-v Units Only

On 575-v units, the 575-v factory-installed outdoor (condenser) motor is replaced with a 460-v approved fan motor. This is powered through an Auto-transformer (buck boost) to convert 575-v to 460-v and uses the 460-v connection on the controller. Follow these instructions to installing the motors and head pressure controller. See the additional transformer kit instructions for transformer installation. Refer to Kit CRTRXKIT003A00 accessory for details on installation.

⚠ WARNING

CUT HAZARD

Failure to follow this caution may result in personal injury.

Sheet metal parts may have sharp edges or burrs. Use care and wear appropriate protective clothing, safety glasses and gloves when handling parts and servicing air conditioning equipment.

⚠ WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

Before installation or servicing system, always turn off main power to system and install lockout tag. Unit may have more than one disconnect switch. Turn off the accessory heater power switch, if applicable.

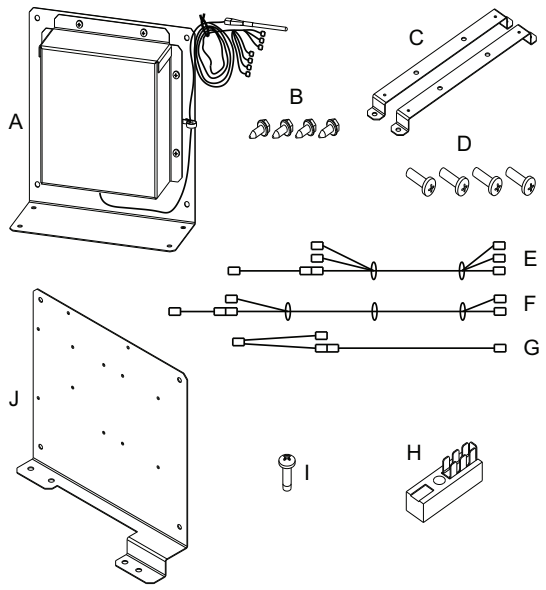


Fig. 1 — Controller Assembly Kit Details

Table 1 — Package Contents (CRLAMBKT002A00)

PART DESCRIPTION	PART QUANTITY	REFERENCE NUMBER
Controller Assembly	1	A
Mounting Screws	4	B
Brackets	2	C
Bracket Screws	4	D
High Voltage Harness	1	E
Low Voltage Harness	1	F
White Wire Harness	1	G
Terminal Block	1	H
Terminal Block Screws	1	I
Controller Bracket	1	J
Instructions	1	—
Insulation Tape	2 in.	—
Wire Tie	4	—

IMPORTANT: This accessory is designed for specific model small rooftop units. See Table 3 for valid model-size applications.
DO NOT ATEMPT TO INSTALL ON MODELS AND SIZES NOT INCLUDED IN THE PRODUCT USAGE TABLE.
The use of this kit is only intended for use with the condenser motor, capacitor, and winter start kit accessory in Table 3.

NOTE: There are a variety of models that can use this accessory kit. A table is provided to simplify the references throughout this book. Use steps below and see Table 2 for cabinet and model specification.

1. Identify the Cabinet "letter" reference assigned to the specific model and size of the unit this kit is being installed on.
2. Use this "Letter" throughout this book to determine applicable instructions, figures, and tables for your installation.

Table 2 — Cabinet Model Table

CABINET	TONNAGE	MODEL NUMBERS USED
A	6-10	48/50FC**08-12 48/50GC**07-09 50FCQ*08-09 50GCQ*07-08
		582K/559K*08-12 581K/551K*07-09 547K*08-09 549K*07-08
		RGV/RAV090-120 RGW/RAW072-102 RHV090-102 RHW072-090
B	10-15	48/50FC**16 48/50GC**14 50FCQ*14 50GCQ*12
		582K/559K*16 581K/551K*14 547K*14 549K*12
		RGV/RAV180 RGW/RAW150 RHV150 RHW120
C	15-27.5	48/50FC**20-30 48/50GC**17-28 50FCQ*17-28
		582K/559K*20-30 581K/551K*17-28 547K*17-28
		RGV/RAV210-336 RGW/RAW181-300 RHV181-300

Table 3 — Product Usage

CABINET MODEL	UNIT MODEL NUMBER	UNIT VOLTAGE	MOTOR P/N	CAPACITOR P/N	TRANSFORMER P/N	LOW AMBIENT KIT ACCESSORY	WINTER START KIT ACCESSORY
A	48/50FC**08-12 48/50GC**07-09 50FCQ*08-09 50GCQ*07-08 582K/559K*08-12 581K/551K*07-09 547K*08-09 549K*07-08 RGV/RAV090-120 RGW/RAW072-102 RHV090-102 RHW072-090	208/230-3-60	(2) HC40GE233	Keep factory-installed option	—	(1) CRLAMBKT002A00	(1) CRWINSTR001A00[a]
		460-3-60	(2) HC40GE463	Replace with HC93CA013	—		
		575-3-60	(2) HC40GE463	Replace with HC93CA013	CRTRXKIT003A00[b]		
B	48/50FC**16 48/50GC**14 50FCQ*14 50GCQ*12 582K/559K*16 581K/551K*14 547K*14 549K*12 RGV/RAV180 RGW/RAW150 RHV150 RHW120	208/230-3-60	(2) HC40GE239	Keep factory-installed option	—	(1) CTLAMBKT002A00	(1) CRWINSTR001A00[a]
		460-3-60	(2) HC40GE469	Replace with HC93CA013	—		
		575-3-60	(2) HC40GE469	Replace with HC93CA013	CRTRXKIT003A00[b]		
C	48/50FC**20-30 48/50GC**17-28 50FCQ*24-28 582K/559K*20-30 581K/551K*17-28 547K*24-28 RGV/RAV210-336 RGW/RAW181-300 RHV240-300	208/230-3-60	(2) HC40GE239	Keep factory-installed option	—	(1) CTLAMBKT002A00	(1) CRWINSTR001A00[a]
		460-3-60	(2) HC40GE469	Replace with HC93CA013	—		
		575-3-60	(2) HC40GE469	Replace with HC93CA013	CRTRXKIT003A00[b]		
	50FCQ*17 547K*17 RHV181	208/230-3-60	(1) HC40GE233	Keep factory-installed option	—	(1) CTLAMBKT002A00	(1) CRWINSTR001A00[a]
		460-3-60	(1) HC40GE463	Replace with HC91CL010	—		
		575-3-60	(1) HC40GE463	Replace with HC91CL010	CRTRXKIT003A00[b]		

NOTE(S):

a. Not required on SystemVu™ units.
b. CRTRXKIT003A00 can be purchased separately.

INSTALLATION — CABINET A (SELECT 6-10 TON)

Units covered:

- 48/50FC**08-12, 48/50GC**07-09, 50FCQ*08-09, 50GCQ*07-08
- 582K/559K*08-12, 581K/551K*07-09, 547K*08-09, 549K*07-08
- RGV/RAV090-120, RGW/RAW072-102, RHV090-102, and RHW072-090

For installation, follow the steps below.

1. Disconnect power to the unit. Lockout/tag-out unit disconnect switch.
2. Open and remove the access panel and cover to the main control box.
3. Use a voltmeter to check that no power is present at unit terminal block.
4. Disconnect condenser motor wires from control box connections. See Fig. 2 for connections.
   a. Remove the black wire from the Outdoor Fan Relay (OFR/OFR1) terminal 2 and remove the black wire from the Low Ambient Relay (LAR/OFR2) terminal 2.
   b. Remove brown and yellow motor wires from the condenser motor capacitor. Carefully remove harness ends from control box.
5. Remove the motor assembly from the top cover and install matching condenser motor as suggested in Table 3. Route new motor harness to control box following the same path as preceding motor. At this time, also replace the condenser capacitor in the control box if required by Table 3.
6. Connect the yellow and brown wires from the new motor(s) to the condenser capacitor. Connect the black wires to the same location removed in Step 4 and Fig. 2.
7. Install the controller assembly (refer to A in Fig. 1) in the location shown in Fig. 3. Use the included self tapping screws as needed. Refer to B in Fig. 1.

IMPORTANT: Do not drill new holes into the base pan of the unit. Only screw into the existing holes.

8. On 208/230-v units, remove the controller assembly cover and relocate the yellow wire on Line 1 of the controller. The assembly is shipped with the yellow wire connected to the 480-v Line 1 terminal and needs to be moved to the 240-v Line 1 terminal.

IMPORTANT: When installing on 230-v units, the YEL quick connect on the head pressure controller needs to be switched from 480-v Line 1 connection. See Fig. 4-6 for wiring schematics.

9. Install High Voltage (HV) wire harness. Refer to E in Fig. 1.
   a. Route HV harness through the hole marked "B" in Fig. 2, with the heat shrink yellow wire end going into the control box.
   b. Locate the black wire that runs from the compressor contactor line side to the OFR/OFR1 terminal 4.
   NOTE: Disconnect this wire at the compressor contactor side.
   c. Connect the black wire with a male quick connect terminal in the HV harness to this now loose black wire.
   d. Attach the yellow wire with heat shrink terminal to the capacitor (CAP1) as shown in Fig. 4.

NOTE: On 575-v units, locate the yellow wire that connects the compressor contactor to CAP1. Remove this wire or disconnect on both ends and tape off.

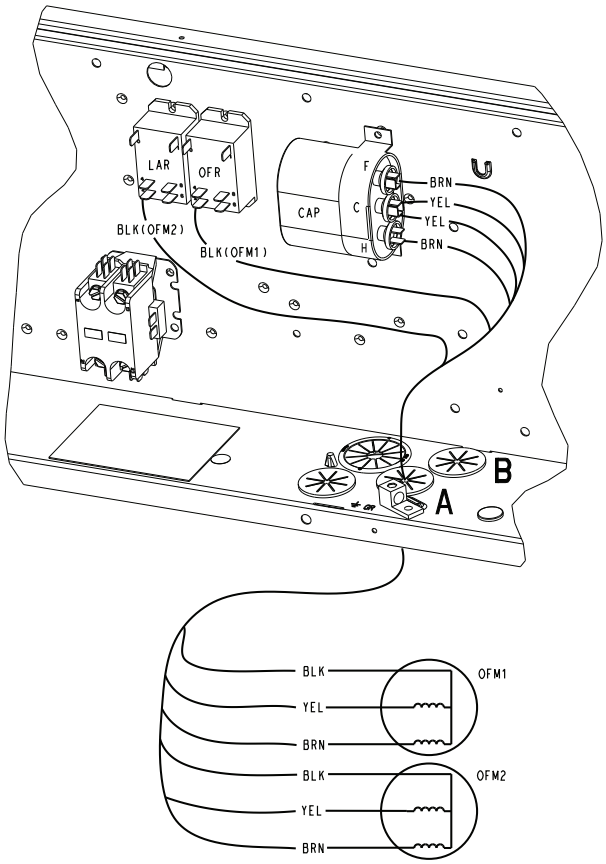


Fig. 2 — Cabinet A — Motor Wiring Inside Control Box

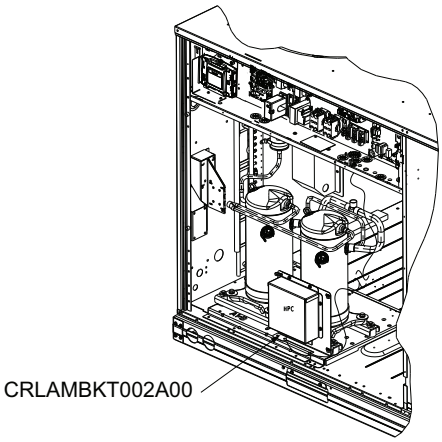


Fig. 3 — Cabinet A — Controller Installation Locations

   e. Attach the black wire with a female quick connect to the compressor contactor line side as shown in Fig. 4.
   f. Route the other end of this HV harness to the controller assembly mounted in Step 7 and mate the 2 black and yellow wires to the opposite gender black and yellow wires coming from the controller assembly.
10. Install Low Voltage (LV) wire harness. Refer to F in Fig. 1.
   a. Route LV harness through the second hole from the right, in the bottom of the control box with the female quick connect ends going into the control box.

b. On units with Unit Control Board (UCB), connect the red and brown female quick connects to the terminals on the UCB marked R and C respectively.

c. On units with SystemVu™ controls, disconnect and discard the small brown wire extension in the LV harness so that the red and brown wires now have the same size female quick connects. Connect these to the small terminal block (TB4) in the control box. Refer to unit wiring diagram to locate the TB4 if needed.

d. Route the other end of this LV harness to the controller assembly mounted in Step 7 and mate the red and brown wires with the red and brown wires coming from the controller assembly.

11. Install white wire harness. Refer to G in Fig. 1.

a. Route the white wire harness through the same hole as the LV harness in Step 10, with the "2-in-1" orange and white end in the control box.

b. On units with a UCB, locate the Low Ambient Relay (LAR) in the control box and remove the white wire connected to the terminal 1. Connect the "2-in-1" orange and white wire to the LAR terminal 1 and connect the loose white wire just disconnected to the single orange wire.

c. On SystemVu units, disconnect the "2-in-1" short piece of wire on this white wire harness and discard the "2-in-1" wires. Connect the white male quick connect end to the loose white female wire hanging above the SystemVu board top edge connectors.

d. Route the other end of the white wire harness to the controller assembly mounted in Step 7 and mate the white wire to the one coming from the controller assembly.

12. Ensure wiring is as shown in Fig. 4-6.
NOTE: The pink/black wire from the controller assembly is not used.

13. On 575-v units, refer to the transformer kit instructions for details on how to wire the transformer into the unit to match Fig. 6.

IMPORTANT: The transformer as wired in Fig. 6 has BLK to YEL=575-v and BLK to WHT=460-v.

⚠ CAUTION

Transformer kit (CRTRXKIT003A00) and wiring requires 460-v motors to be installed. Failure to replace with the proper voltage motors will result in electrical failure.

14. Install the controller's sensor on the outdoor condenser coil. (See Fig. 7 and 8.) When installing the sensor, use the included 2 in. insulation tape and wire tie to secure the sensor to the coil header.

15. For units with Unit Control Board (UCB), install the winter start accessory kit CRWINSTR001A00 per the kit instructions. SystemVu control units do not require the winter start kit.

16. Fabricate and install wind baffles. For Cabinet A, see "Fabricate Wind Baffles — Cabinet A (Select 6-10 Ton)" on page 21.

17. For units with SystemVu, configure unit to adjust the outdoor air lockout temperature. When the unit is powered up, go to ***Settings → Unit Configurations → Cooling → Low Ambient → Cir.A Lockout OAT***. The default value of the Circuit A Lockout Temperature is 40. Change this value to 0 so the unit can operate correctly with low ambient controls.

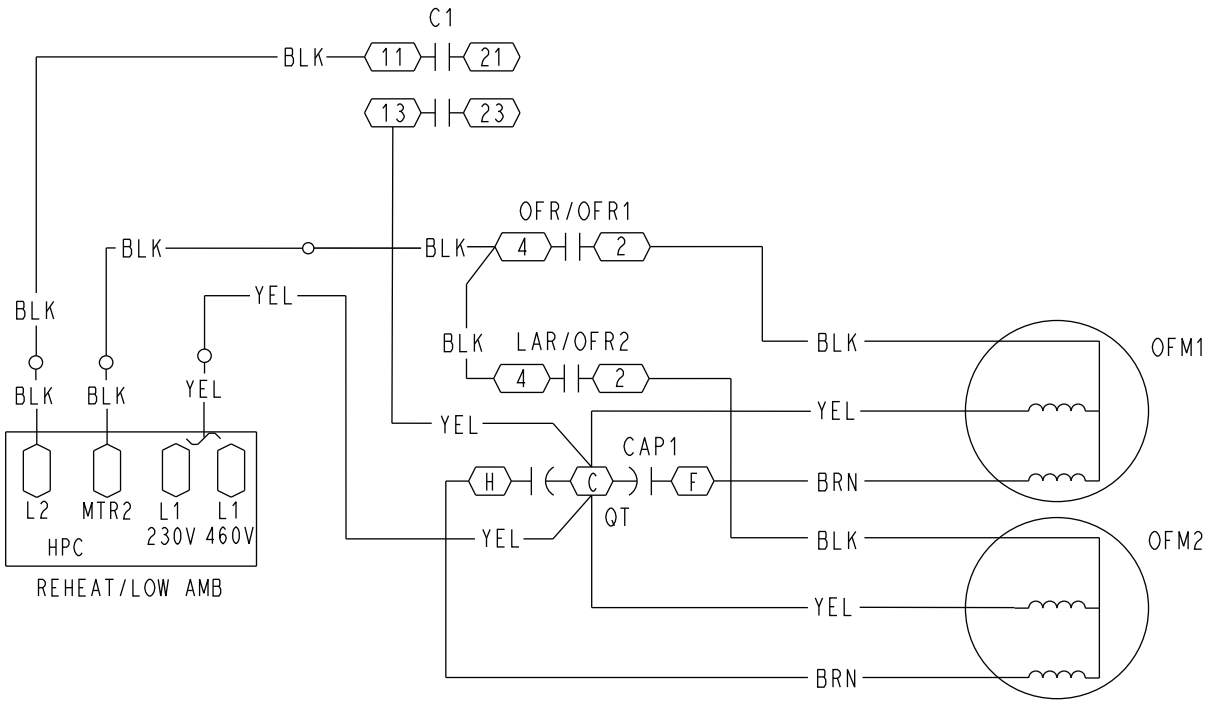


Fig. 4 — Cabinet A — High Voltage Wiring Diagram (208/230-v and 460-v)

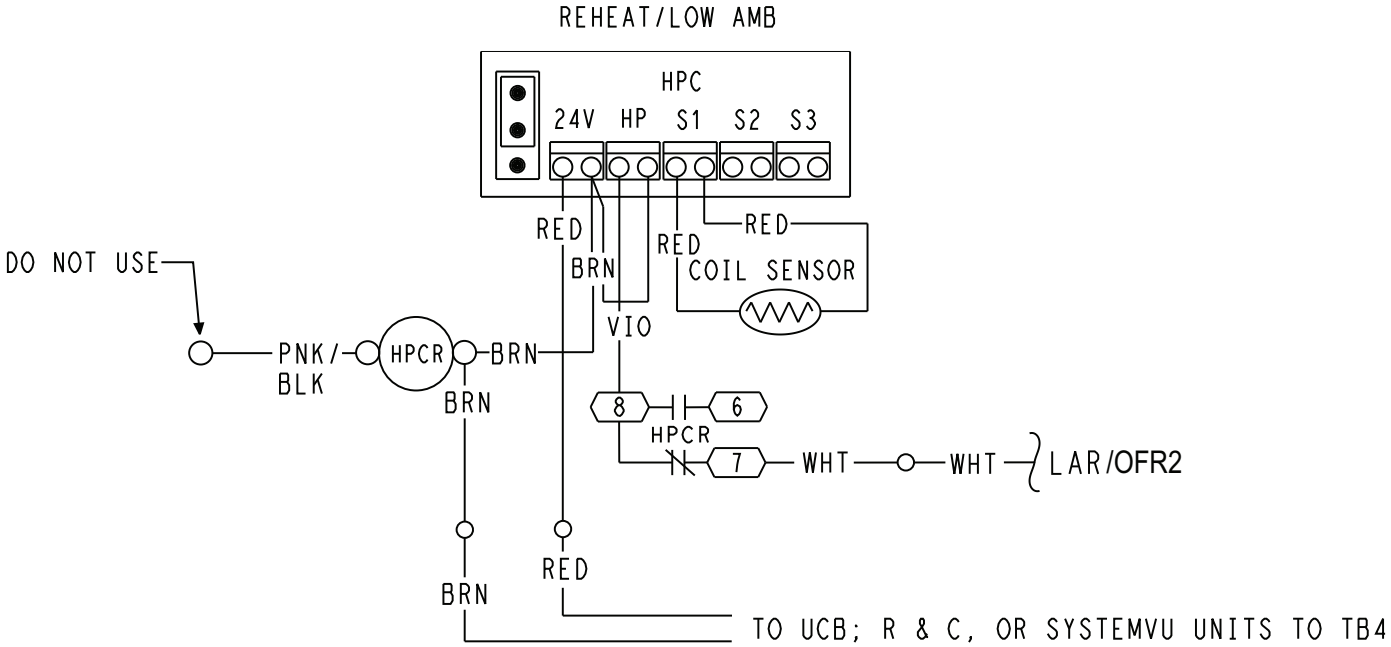


Fig. 5 — Cabinet A — Low Voltage Wiring

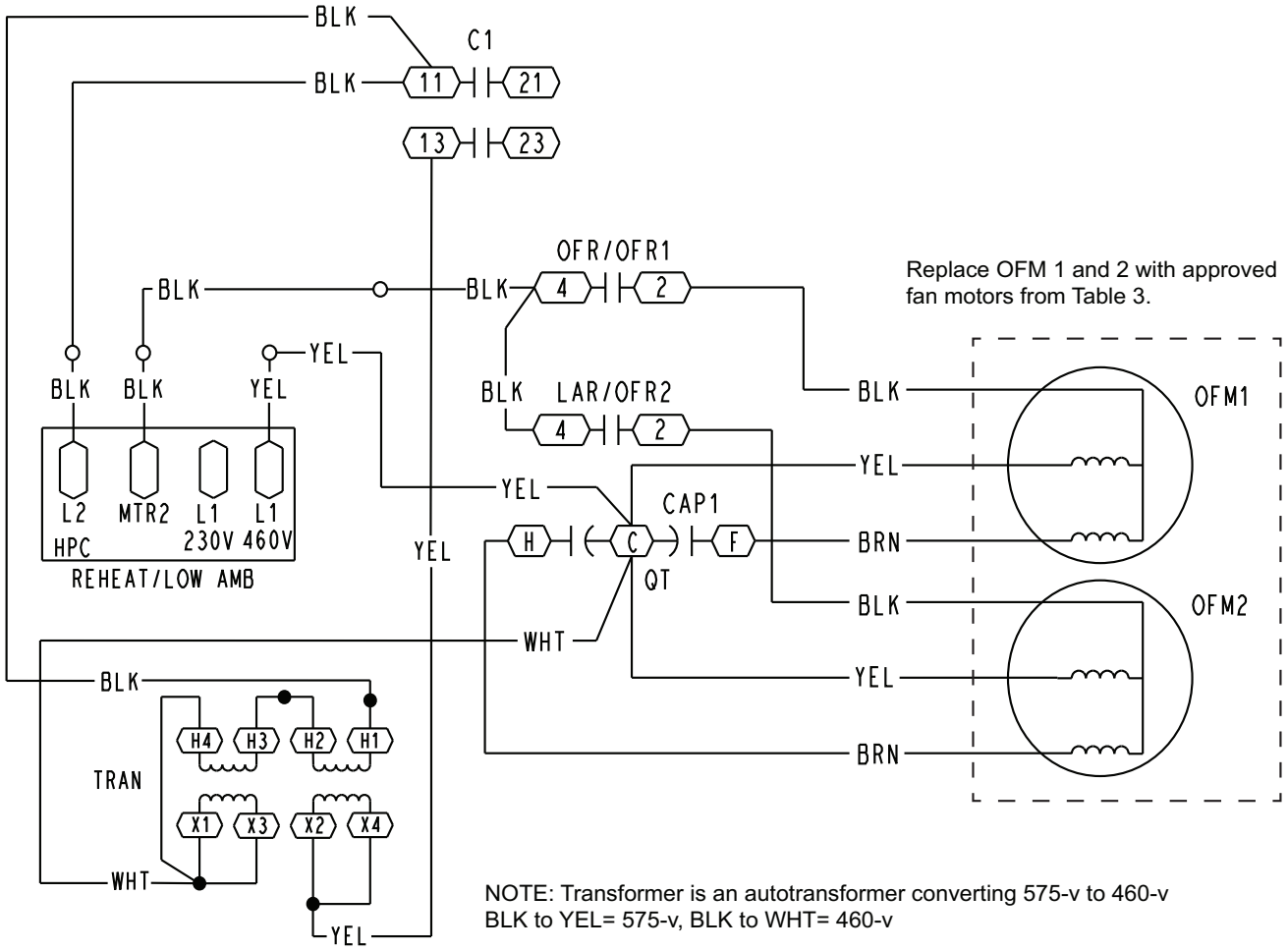
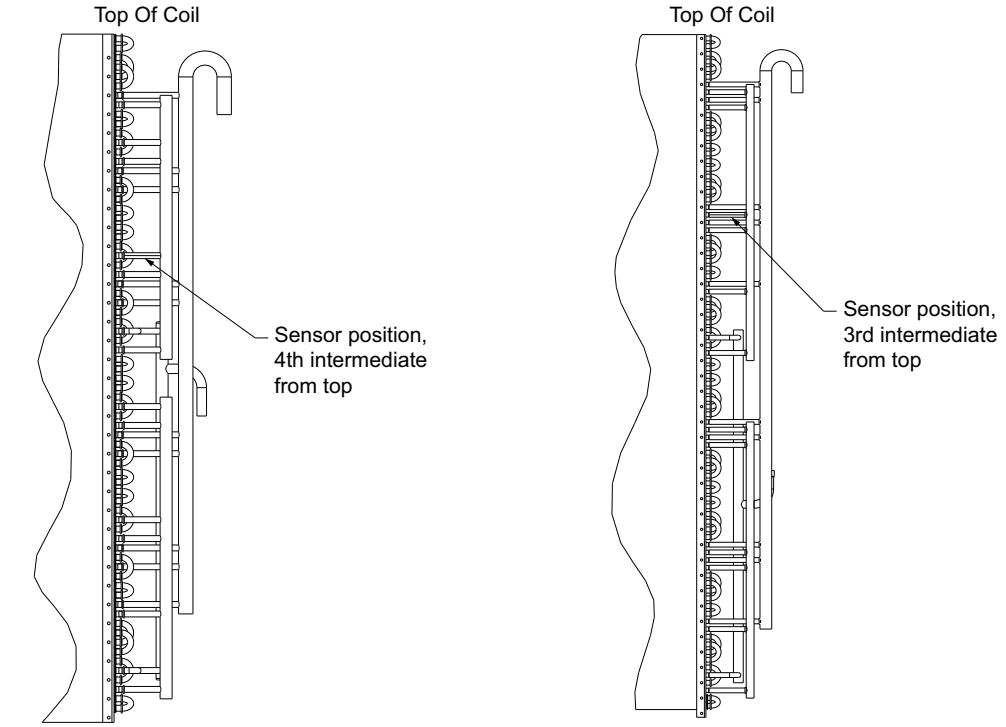


Fig. 6 — Cabinet A — High Voltage Wiring Diagram (575-v)

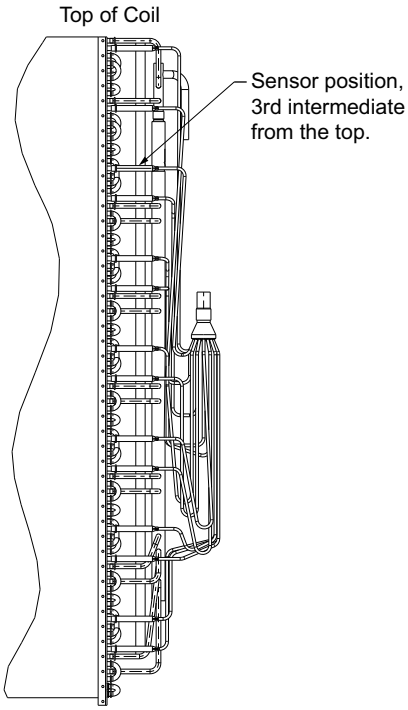


6 Ton, 48-50GC,
581K/551K,
RGW/RAW
7.5 Ton, 48-50FC,
582K/559K,
RGV/RAV

7.5 Ton, 48-50GC,
581K/551K,
RGW/RAW
8.5 Ton, 48-50FC,
582K/559K,
RGV/RAV

8.5 Ton, 48-50GC,
581K/551K,
RGW/RAW
10 Ton, 48-50FC,
582K/559K,
RGV/RAV

Fig. 7 — Cabinet A — Sensor Locations for AC Units



6 Ton, 50GCQ,
549K,
RHW
7.5 Ton, 50FCQ,
547K,
RHV

7.5 Ton, 50GCQ,
549K,
RHW
8.5 Ton, 50FCQ,
547K,
RHV

Fig. 8 — Cabinet A — Sensor Locations for Heat Pump Units

INSTALLATION — CABINET B (SELECT 10-15 TON)

Units covered:

- 48/50FC**16, 48/50GC**14, 50FCQ*14, 50GCQ*12
- 582K/559K*16, 581K/551K*14, 547K*14, 549K*12
- RGV/RAV180, RGW/RAW150, RHV150, RHW120

For installation, follow the steps below.

1. Disconnect power to the unit. Lockout/tag-out unit disconnect switch.
2. Open and remove the access panel and cover to the main control box.
3. Use a voltmeter to check that no power is present at unit terminal block.
4. Disconnect condenser motor wires from control box connections. See Fig. 9 for connections.
   a. Remove the 2 black wires from TB2 that go to OFM2 and OFM3.
   b. Remove OFM2 and OFM3 brown and yellow motor wires from the condenser motor capacitor (CAP1). Carefully remove harness ends from control box.
5. Remove the motor assembly from the top cover and install matching condenser motor as suggested in Table 3. Route new motor harness to control box following the same path as preceding motor. At this time, also replace the condenser capacitor in the control box if required by Table 3.
6. Connect the yellow and brown wires from the new motor(s) to the condenser capacitor. Connect the black wires to the same location removed in Step 4 and Fig. 9.
7. Install the controller assembly (refer to A in Fig. 1) in the location shown in Fig. 10 using the mounting brackets. Refer to C in Fig. 1 and D in Fig. 1 for screws. Use the included self tapping screws as needed. Refer to B in Fig. 1.

IMPORTANT: Do not screw into the base pan of the unit. Only screw into the side wall as shown in Fig. 10.

8. On 208/230-v units, remove the controller assembly cover and relocate the yellow wire on Line 1 of the controller. The assembly is shipped with the yellow wire connected to the 480-v Line 1 terminal and needs to be moved to the 240-v Line 1 terminal.

IMPORTANT: When installing on 230-v units, the YEL quick connect on the head pressure controller needs to be switched from 480-v Line 1 connection. See Fig. 10-12 for wiring schematics.

9. Install High Voltage (HV) wire harness. Refer to E in Fig. 1.
   a. Route HV harness through the hole marked “B” in Fig. 9, with the heat shrink yellow wire end going into the control box.
   b. Locate the black wire that runs from the OFR/OFR1 terminal 2 to TB2-1 (left side terminals). Disconnect at TB2-1 and connect to TB2-2 (right side terminals). See Fig. 11 and 13 as needed.
   c. In the HV harness, locate the black wire with the male quick connect terminal. This will need to connect to TB2-1. Disconnect the male to male jumper and discard to allow the female connector to plug into TB2-1.
   d. Attach the yellow wire with heat shrink terminal to the capacitor (CAP1) as shown in Fig. 11.
   NOTE: On 575-v units, locate the yellow wire that connects the CAP2 to CAP1. Remove this wire or disconnect on both ends and tape off.

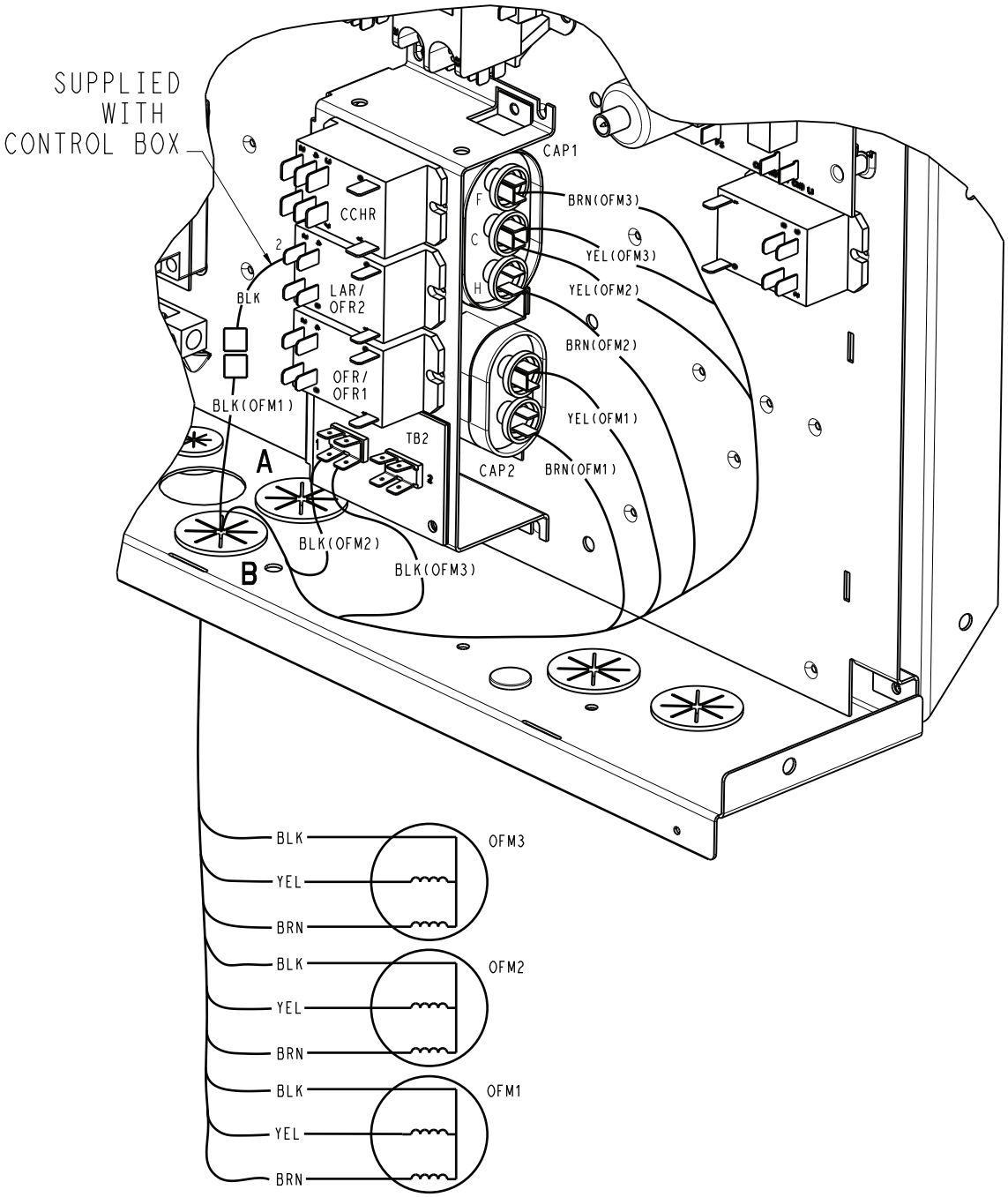


Fig. 9 — Cabinet B — Motor Wiring Inside Control Box

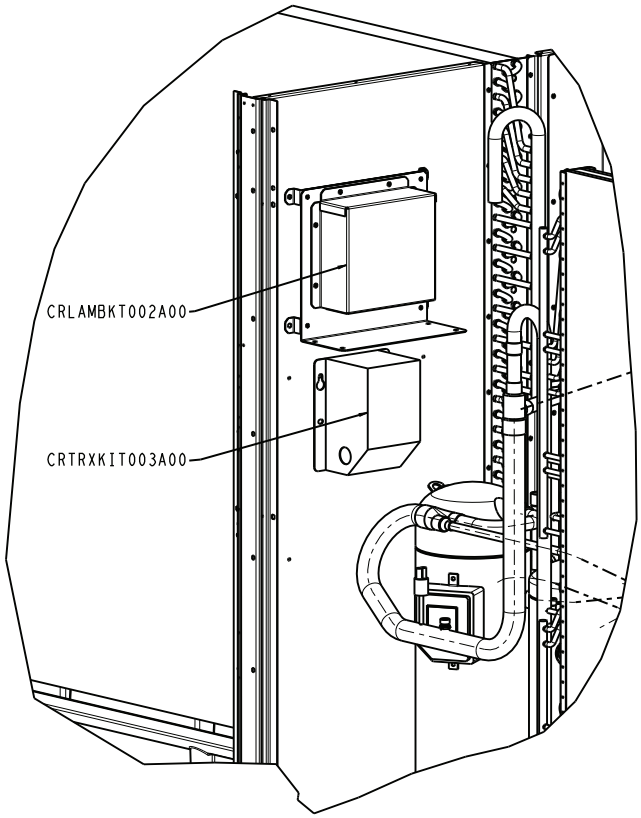


Fig. 10 — Cabinet B — Controller and Transformer Installation Locations

e. In the HV harness, attach the black wire with a female quick connect to TB2-2 (left side) with OFM2 and OFM3 black wires as shown in Fig. 11.

f. Route the other end of this HV harness to the controller assembly mounted in Step 7 and mate the 2 black and yellow wires to the opposite gender black and yellow wires coming from the controller assembly.

10. Install Low Voltage (LV) wire harness. Refer to F in Fig. 1.

    a. Route LV harness through the 2nd hole from the right, in the bottom of the control box with the female quick connect ends going into the control box.

    b. On units with Unit Control Board (UCB), connect the red and brown female quick connects to the terminals on the UCB marked R and C respectively.

    c. On units with SystemVu™ controls, disconnect and discard the small brown wire extension so that the red and brown wires now have the same size female quick connects. Connect these to the small terminal block (TB4) in the control box. Refer to unit wiring diagram to locate the TB4 if needed.

    d. Route the other end of this LV harness to the controller assembly mounted in Step 7 and mate the red and brown wires with the red and brown wires coming from the controller assembly.

11. Install white wire harness. Refer to G in Fig. 1.

    a. Route the white wire harness through the same hole as the LV harness in Step 10, with the "2-in-1" orange and white end in the control box.

    b. On units with a UCB, locate the Low Ambient Relay (LAR) in the control box and remove the white wire connected to the terminal 1. Connect the "2-in-1" orange and white wire to the LAR terminal 1 and connect the loose white wire just disconnected to the single orange wire.

    c. On SystemVu units, disconnect the "2-in-1" short piece of wire on this white wire harness and discard the "2-in-1" wires. Connect the white male quick connect end to the loose white female wire hanging above the SystemVu board top edge connectors.

    d. Route the other end of the white wire harness to the controller assembly mounted in Step 7 and mate the white wire to the one coming from the controller assembly.

12. Ensure wiring is as shown in Fig. 11-13.
    NOTE: The pink/black wire from the controller assembly is not used.

13. On 575-v units, refer to the transformer kit instructions for details on how to wire the transformer into the unit to match Fig. 13.

IMPORTANT: The transformer as wired in Fig. 13 has BLK to YEL=575-v and BLK to WHT=460-v.

⚠ CAUTION

Transformer kit (CRTRXKIT003A00) and wiring requires 460-v motors to be installed. Failure to replace with the proper voltage motors will result in electrical failure.

14. Install the controller's sensor on the outdoor condenser coil. (See Fig. 14.) When installing the sensor, use the included 2 in. insulation tape and wire tie to secure the sensor to the coil header.

15. For units with a Unit Control Board (UCB) install the winter start accessory kit CRWINSTR001A00 per the kit instructions. SystemVu control units do not require the winter start kit.

16. Fabricate and install wind baffles. For Cabinet B, see "Fabricate Wind Baffles — Cabinet B (Select 10-15 Ton)" on page 22.

17. For units with SystemVu, configure unit to adjust the outdoor air lockout temperature. When the unit is powered up, go to ***Settings → Unit Configurations → Cooling → Low Ambient → Cir.A Lockout OAT***. The default value of the Circuit A Lockout Temperature is 40. Change this value to 0 so the unit can operate correctly with low ambient controls.

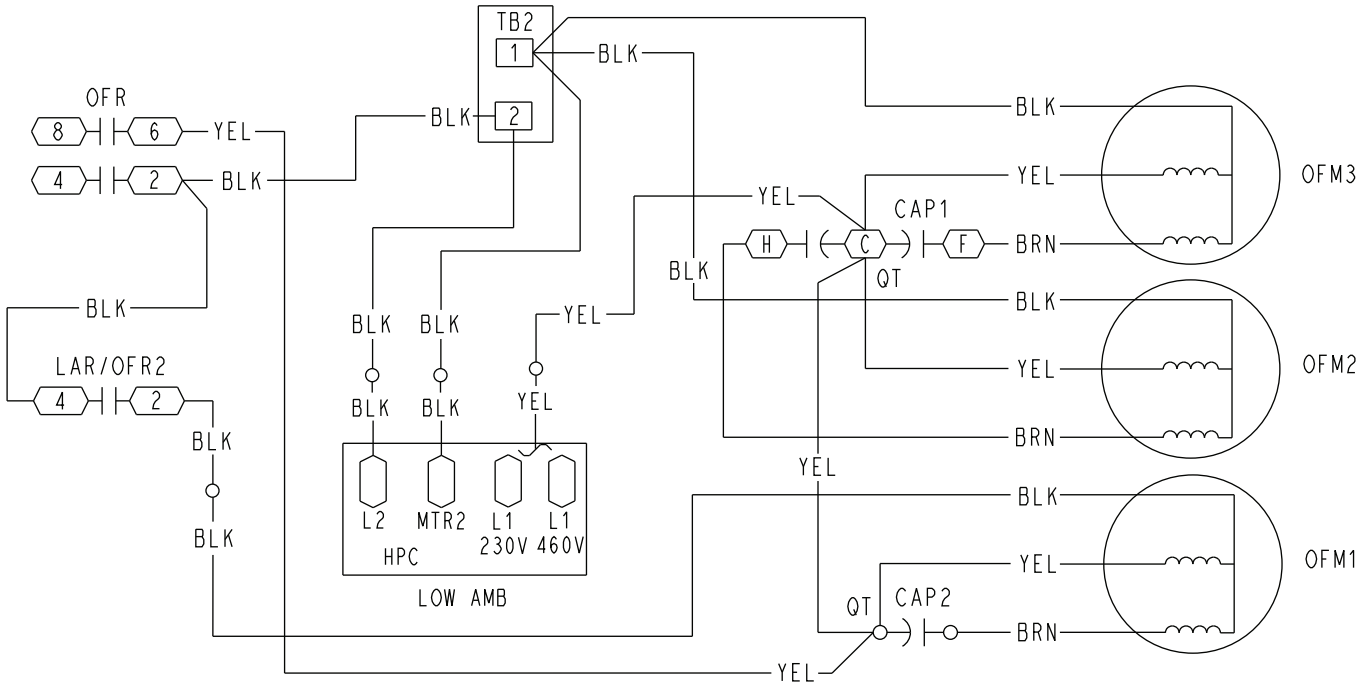


Fig. 11 — Cabinet B — High Voltage Wiring Diagram (208/230-v and 460-v)

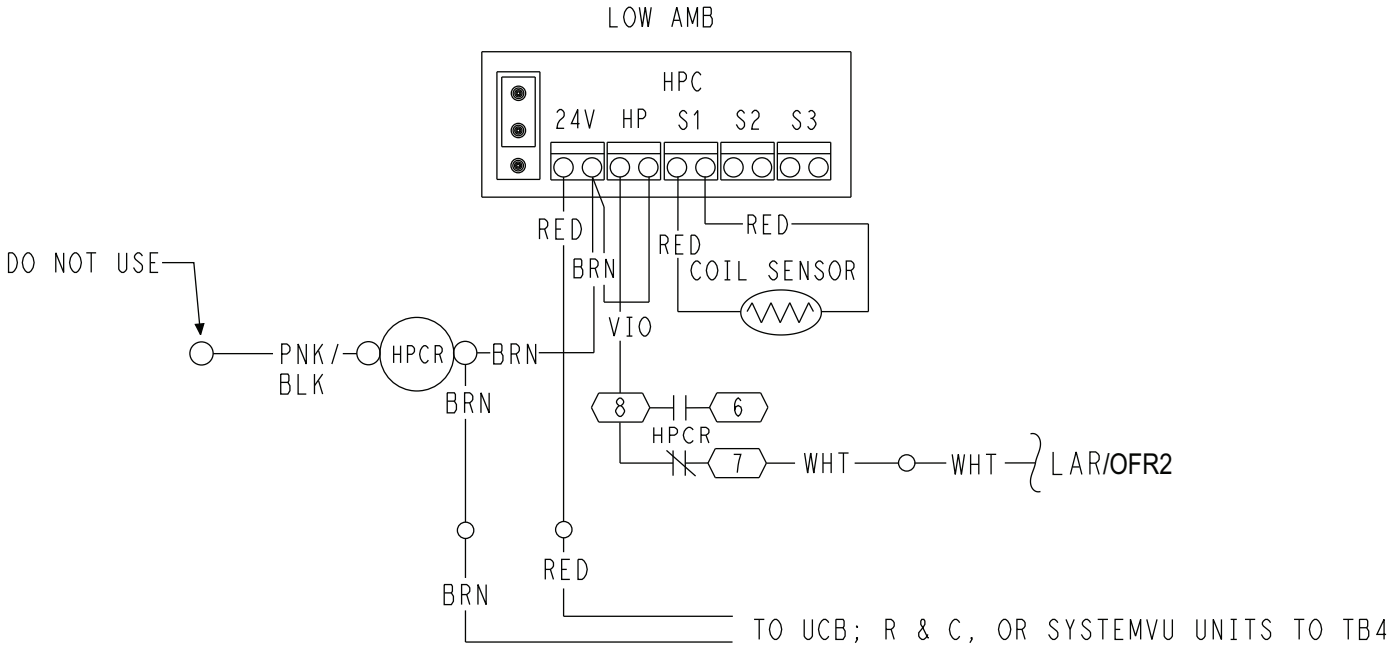


Fig. 12 — Cabinet B — Low Voltage Wiring

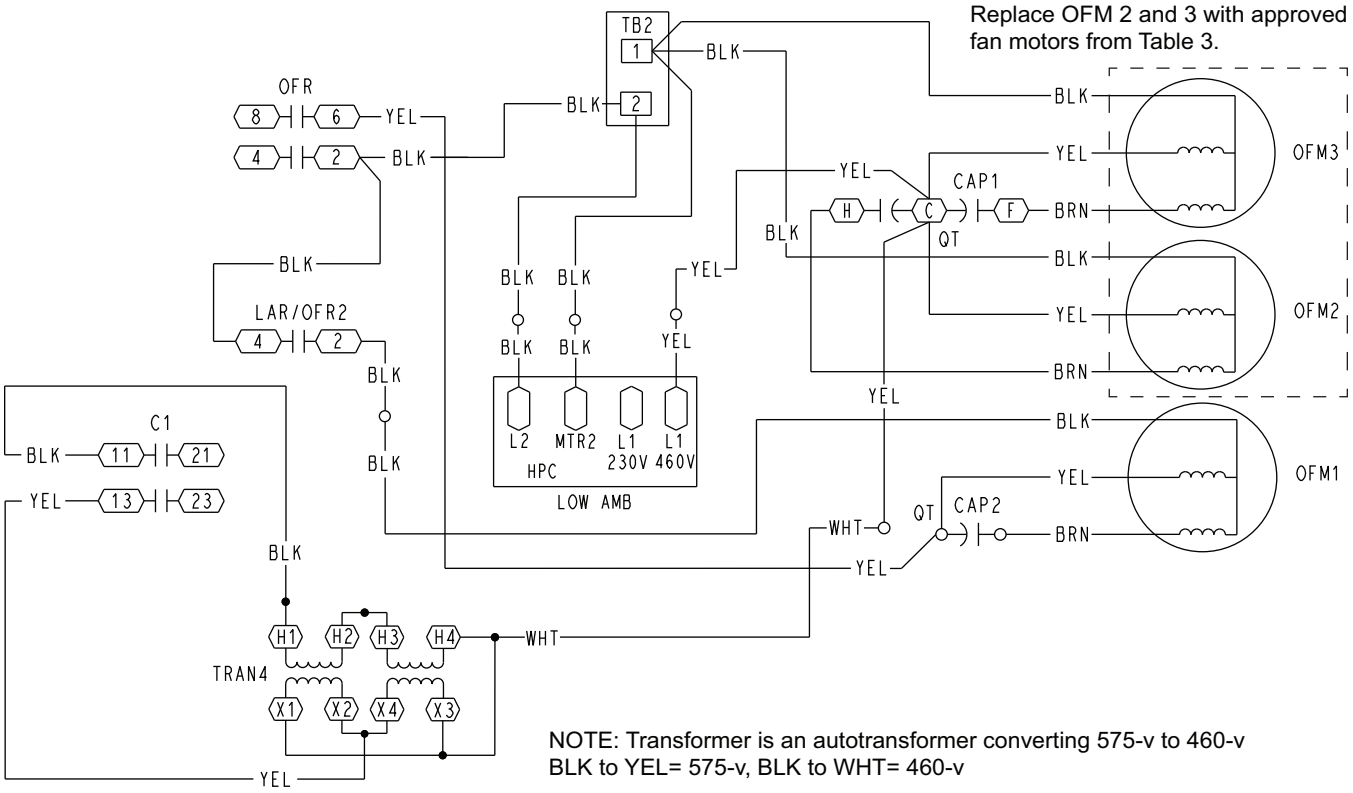


Fig. 13 — Cabinet B — High Voltage Wiring Diagram (575-v)

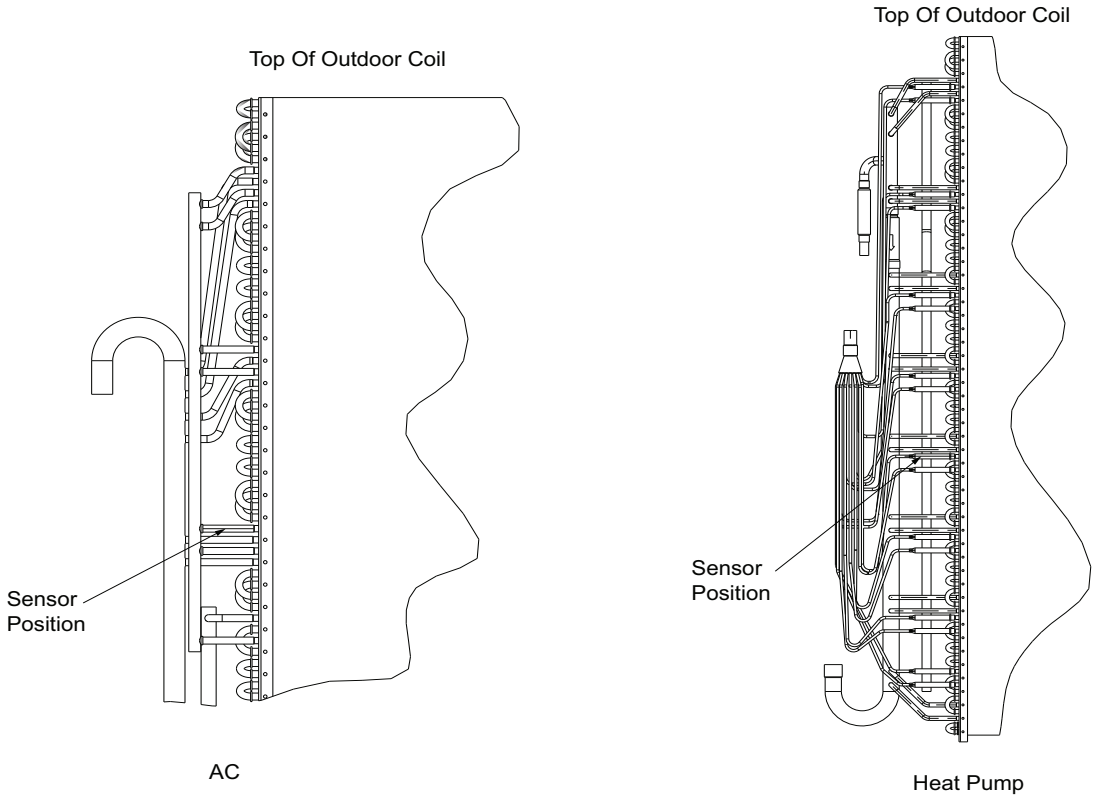


Fig. 14 — Cabinet B — Sensor Locations

INSTALLATION — CABINET C (SELECT 15-27.5 TON)

Units covered:

- 48/50FC**20-30, 48/50GC**17-28, 50FCQ*17-28
- 582K/559K*20-30, 581K/551K*17-28, 547K*17-28
- RGV/RAV210-336, RGW/RAW181-300, RHV181-300

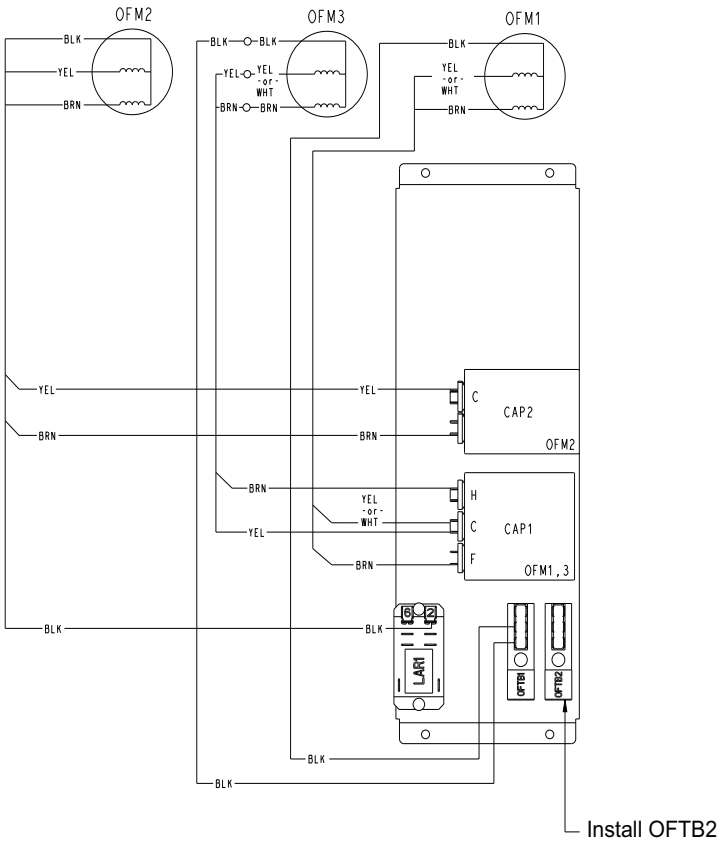
For installation, follow the steps below.

1. Disconnect power to the unit. Lockout/tag-out unit disconnect switch.
2. Open and remove the access panel and cover to the main control box.
3. Use a voltmeter to check that no power is present at unit terminal block.
4. Replace the standard unit motors with the approved low ambient motors. See Fig. 15 for connections and the unit wiring label diagram for motor locations.
   NOTE: Some motors will have extension harnesses which the motors connect to instead of directly to the capacitor plate.
   a. For heat pump 3 ODF (outdoor fan) units, replace the OFM2 motor that utilizes CAP2.
   b. For the other 3 and 4 ODF units, replace the OFM1 and OFM3 that utilize CAP1.
   c. For 6 ODF units, replace the OFM4 and OFM5 that utilize CAP1.
5. Replace the condenser capacitor if required by Table 3 and Step 4 above.
6. Install the new terminal block OFTB-2 on the capacitor plate right next to OFTB-1. Refer to H and I in Fig. 1
7. Install the controller assembly (refer to A in Fig. 1) in the location shown in Fig. 16. Use the included self tapping screws as needed. Refer to B in Fig. 1.

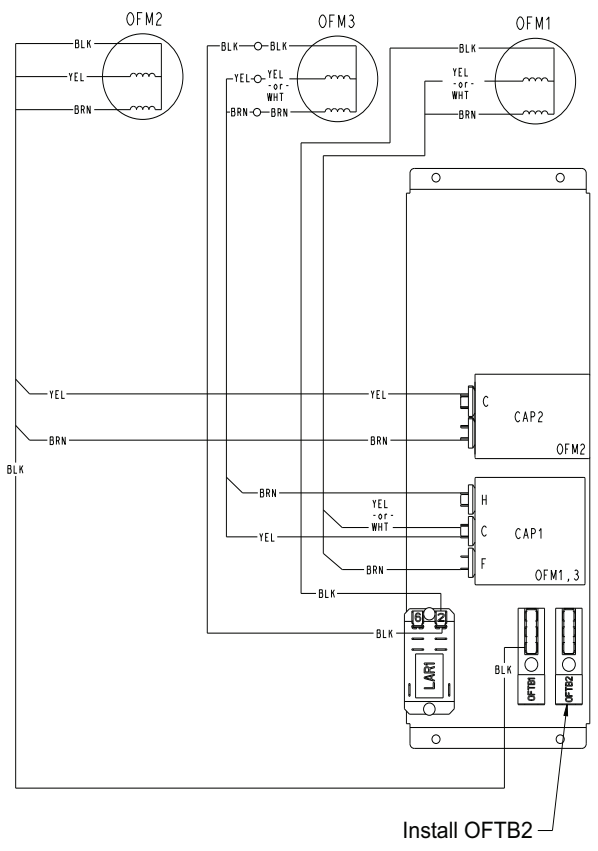
IMPORTANT: Do not screw into the base pan of the unit. Only screw into the fan deck.

8. On 208/230-v units, remove the controller assembly cover and relocate the yellow wire on Line 1 of the controller. The assembly is shipped with the yellow wire connected to the 480-v Line 1 terminal and needs to be moved to the 240-v Line 1 terminal.

IMPORTANT: When installing on 230-v units, the YEL quick connect on the head pressure controller needs to be switched from 480-v Line 1 connection. See Fig.17-20 for wiring schematics.



3 Outdoor Fans
(Without Heat Pump)



3 Outdoor Fans
(With Heat Pump)

Fig. 15 — Cabinet C — Motor Wiring At Capacitor Plate

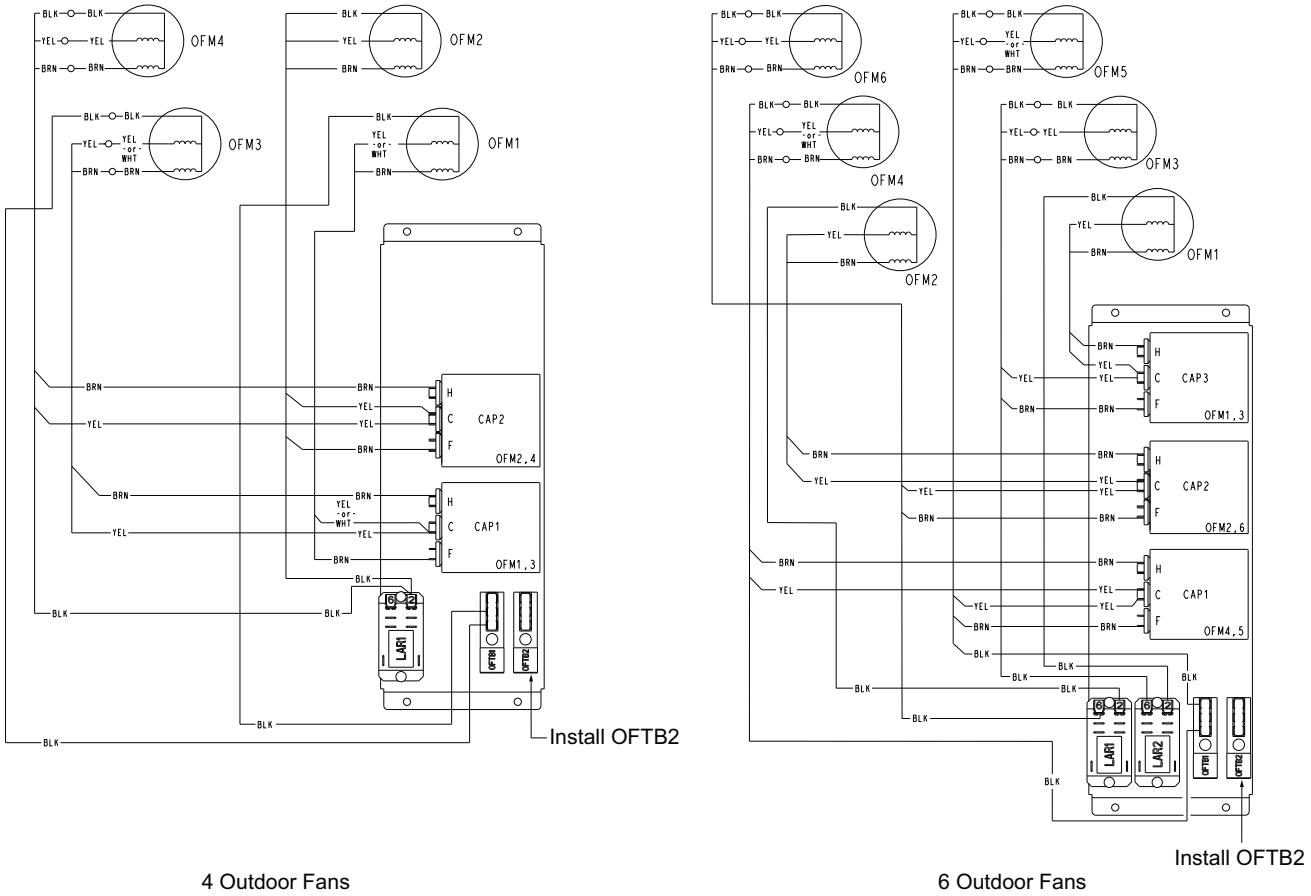


Fig. 15 — Cabinet C — Motor Wiring At Capacitor Plate (cont)

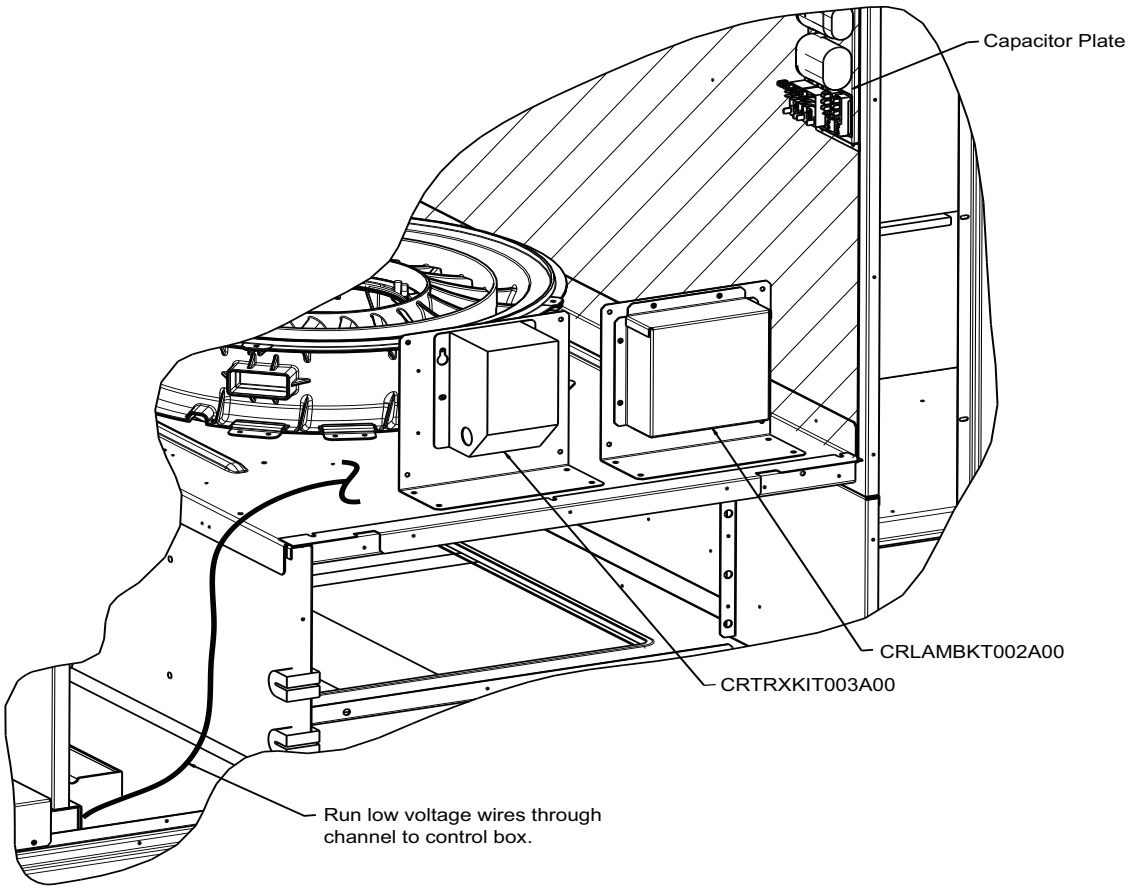


Fig. 16 — Cabinet C — Controller and Transformer Installation Locations

9. Install High Voltage (HV) wire harness. Refer to E in Fig. 1.
    a. Locate the black wire that runs between the OFC and OFTB-1. Disconnect it from OFTB-1 and connect it to OFTB-2.
    b. Locate the black wire that runs between LAR1 and OFTB-1. Disconnect it from OFTB-1 and connect it to OFTB-2.
    c. On 6 ODF units, locate the black wire that runs between LAR2 and OFTB-1. Disconnect it from OFTB-1 and connect it to OFTB-2.
    d. With the HC harness on the end with heat shrink yellow wire, Connect the black wire with female quick connect to OFTB-2.
    e. With the HC harness on the end with heat shrink yellow wire, disconnect the black male jumper wire and then connect the remaining female black wire to OFTB-1.
    f. Attach the yellow wire with heat shrink terminal to the capacitor (CAP1) on all units (except heat pump 3 ODF units) as shown in Fig. 15.
    NOTE: The heat pump 3 ODF units are capacitor CAP2.
    NOTE: On 575-v units, locate the yellow wire that connects the CAP2 to CAP1. On 6 ODF units, this wire runs between CAP3 and CAP1. Remove this wire or disconnect on both ends and tape off.
    g. Route the other end of this HV harness to the controller assembly mounted in Step 7 and mate the 2 black and yellow wires to the opposite gender black and yellow wires coming from the controller assembly.
10. Install Low Voltage (LV) wire harness. Refer to F in Fig. 1.
    a. Route LV harness through the bottom of the control box with the female quick connect ends going into the control box Refer to Fig.16.
    b. On units with Unit Control Board (UCB), connect the red and brown female quick connects to the terminals on the UCB marked R and C respectively.
    c. On units with SystemVu™ controls, disconnect and discard the small brown wire extension so that the red and brown wires now have the same size female quick connects. Connect these to the small terminal block (TB4) in the control box. Refer to unit wiring diagram to locate the TB4 if needed.
    d. Route the other end of this LV harness to the controller assembly mounted in Step 7 and mate the red and brown wires with the red and brown wires coming from the controller assembly.
11. Install white wire harness. Refer to G in Fig. 1.
    a. Route the white wire harness to the capacitor plate with the "2-in-1" orange and white end at the capacitor plate.
    b. On units with a UCB, locate the Low Ambient Relay (LAR) and remove the violet wire connected to the terminal 1. Connect the "2-in-1" orange and white wire to the LAR terminal 1 and connect the loose violet wire just disconnected to the single orange wire.
    c. On SystemVu locate the low ambient relay (LAR) and remove the orange wire connected to the terminal 1. Connect the "2 in 1" orange and white wire to the LAR terminal 1 and connect the loose orange wire just disconnected to the single orange wire.
    d. Route the other end of the white wire harness to the controller assembly mounted in Step 7 and mate the white wire to the one coming from the controller assembly.
12. Ensure wiring is as shown in Fig. 17-20.
    NOTE: The pink/black wire from the controller assembly is not used.
13. On 575-v units, refer to the transformer kit instructions for details on how to wire the transformer into the unit to match Fig. 21-23.

IMPORTANT: The transformer as wired in Fig. 21-23 has BLK to YEL=575-v and BLK to WHT=460-v.

⚠ CAUTION

Transformer kit (CRTRXKIT003A00) and wiring requires 460-v motors to be installed. Failure to replace with the proper voltage motors will result in electrical failure.

14. Install the controller's sensor on the outdoor condenser coil. (See Fig. 24-25.) When installing the sensor, use the included 2 in. insulation tape and wire tie to secure the sensor to the coil header.
15. For units with a Unit Control Board (UCB) install the winter start accessory kit CRWINSTR001A00 per the kit instructions. SystemVu control units do not require the winter start kit.
16. Fabricate and install wind baffles. For Cabinet C, see "Fabricate Wind Baffles — Cabinet C (Select 15-27.5 Ton)" on page 24.
17. For units with SystemVu, configure unit to adjust the outdoor air lockout temperature. When the unit is powered up, go to ***Settings → Unit Configurations → Cooling → Low Ambient → Cir.A Lockout OAT***. The default value of the Circuit A Lockout Temperature is 40. Change this value to 0 so the unit can operate correctly with low ambient controls.

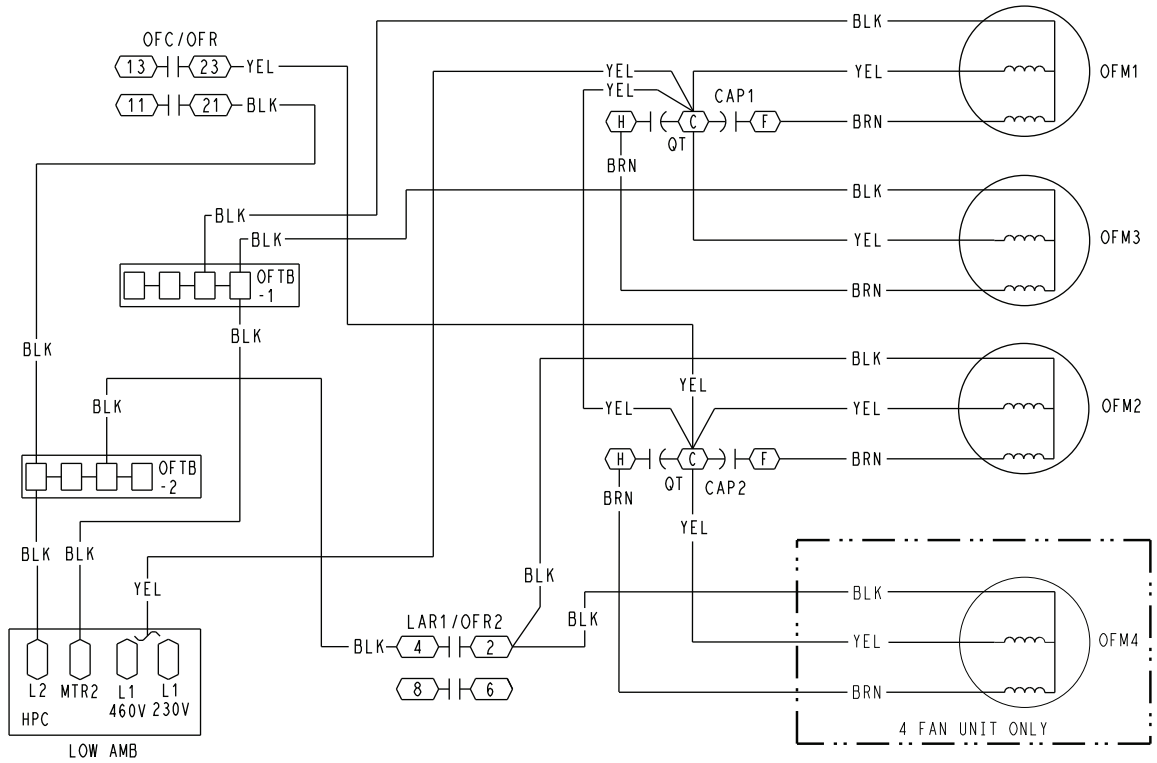


Fig. 17 — Cabinet C — High Voltage Wiring Diagram for Units with 3-4 ODFs (208/230-v and 460-v)

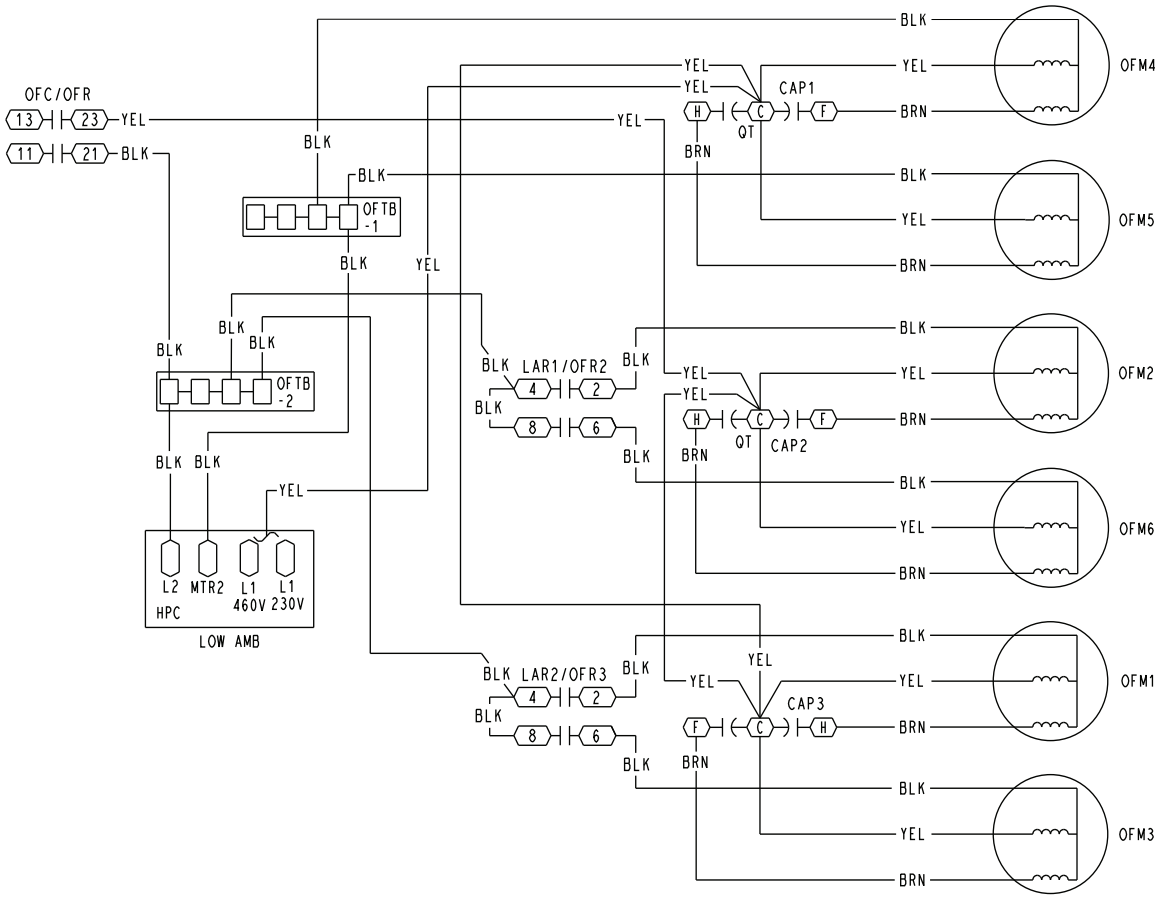


Fig. 18 — Cabinet C — High Voltage Wiring Diagram for Units with 6 ODFs (208/230-v and 460-v)

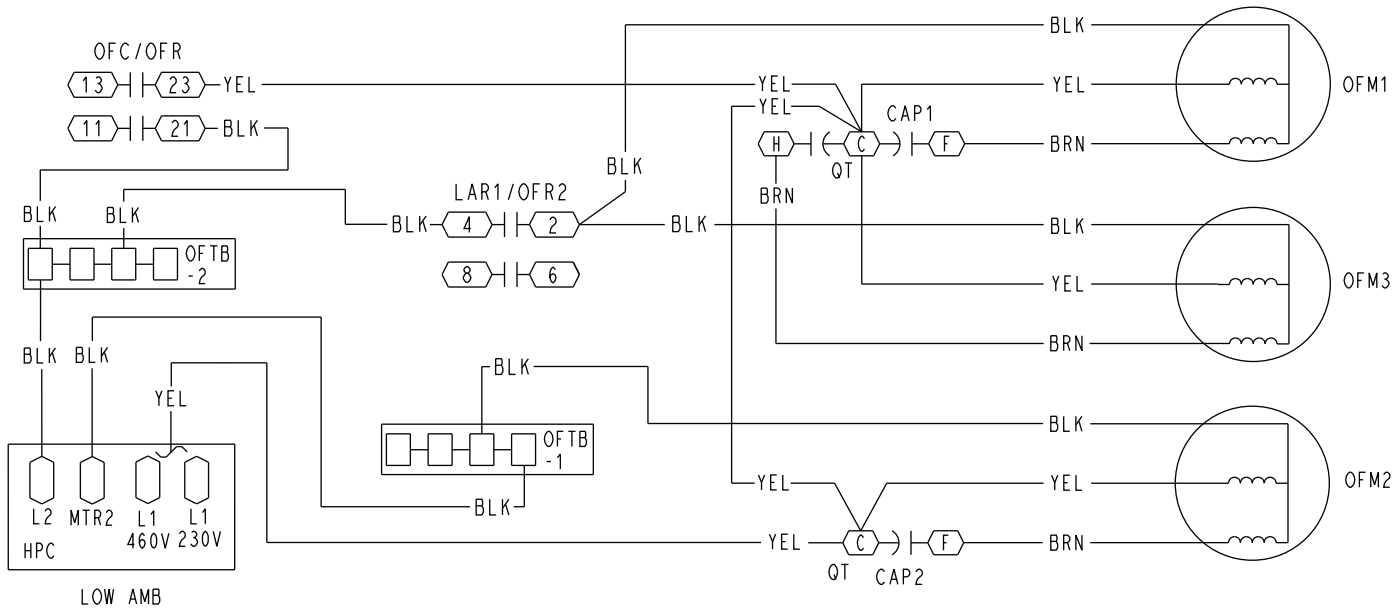


Fig. 19 — Cabinet C — Low Voltage Wiring for 50FCQ*17, 547K*17, and RHV181 Units Only (208/230-v and 460-v)

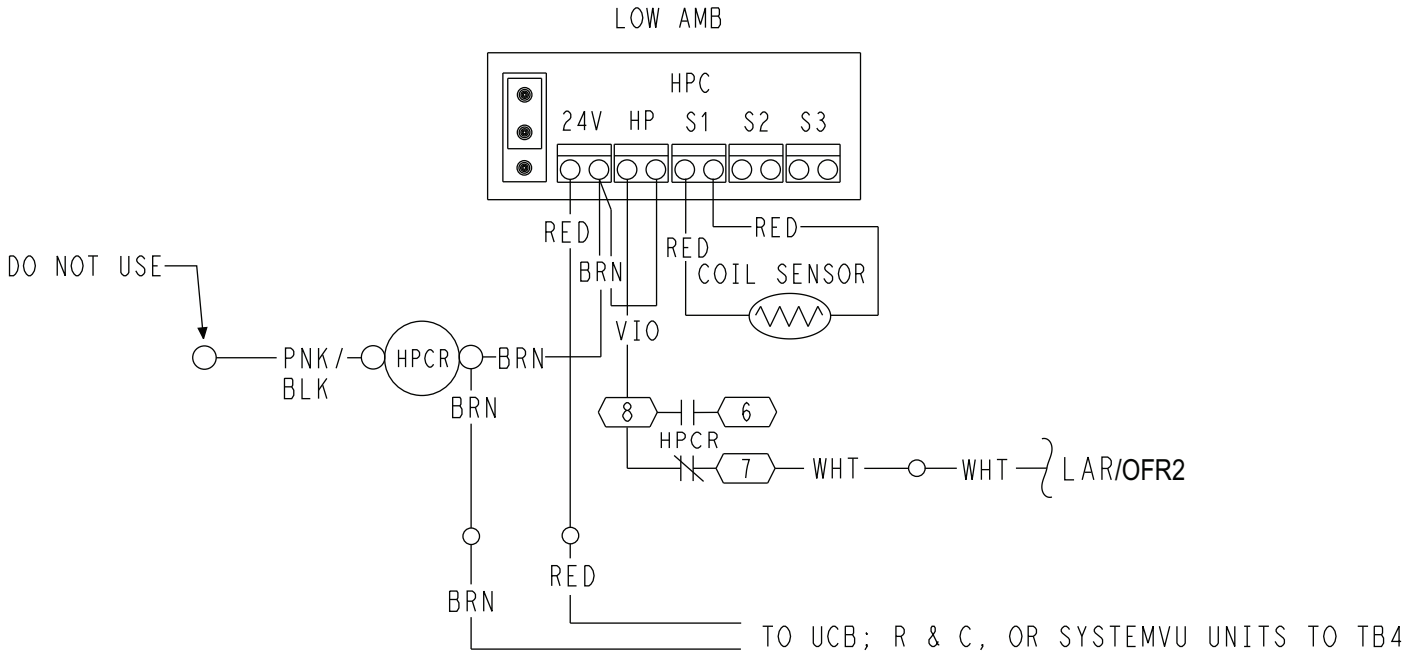


Fig. 20 — Cabinet C — Low Voltage Wiring

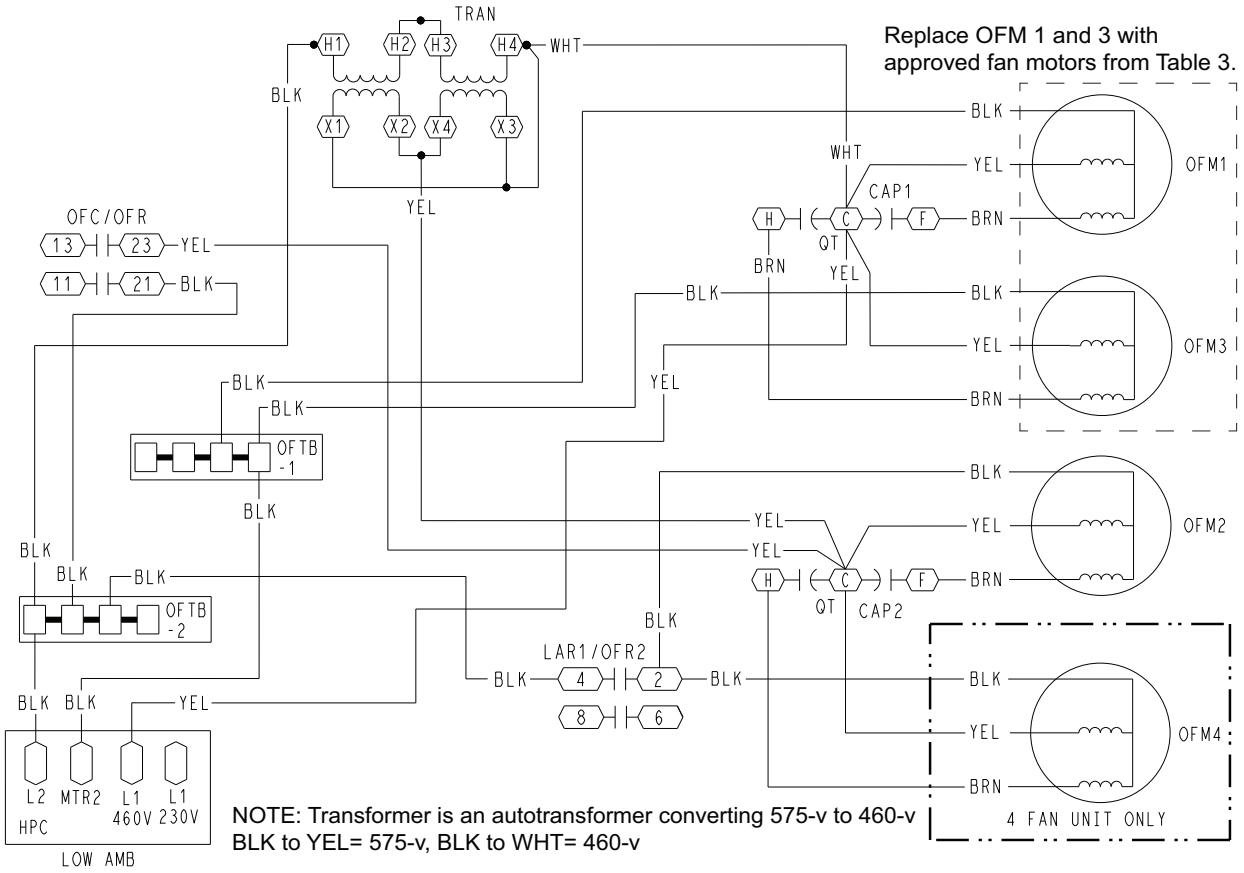


Fig. 21 — Cabinet C — High Voltage Wiring Diagram for Units with 3-4 ODFs (575-v)

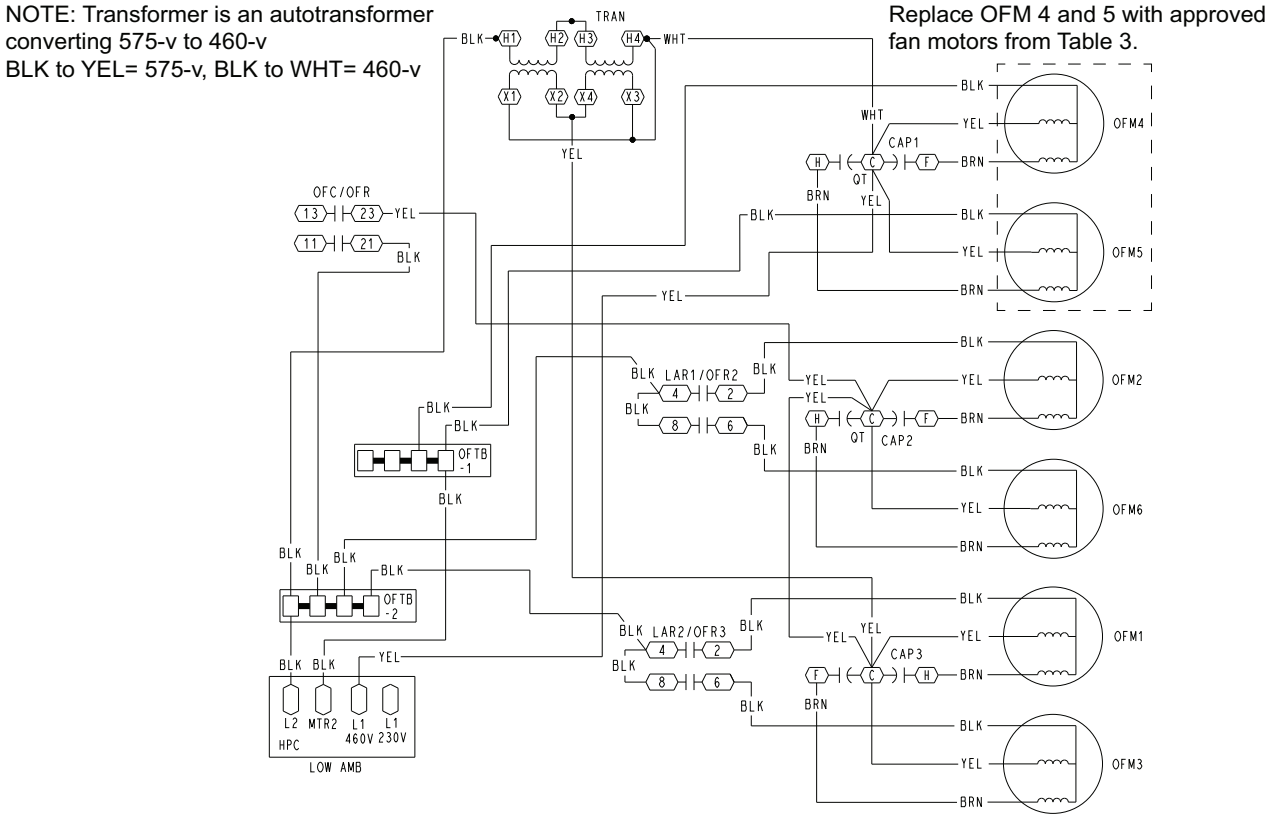


Fig. 22 — Cabinet C — High Voltage Wiring Diagram For Units with 6 ODFs (575-v)

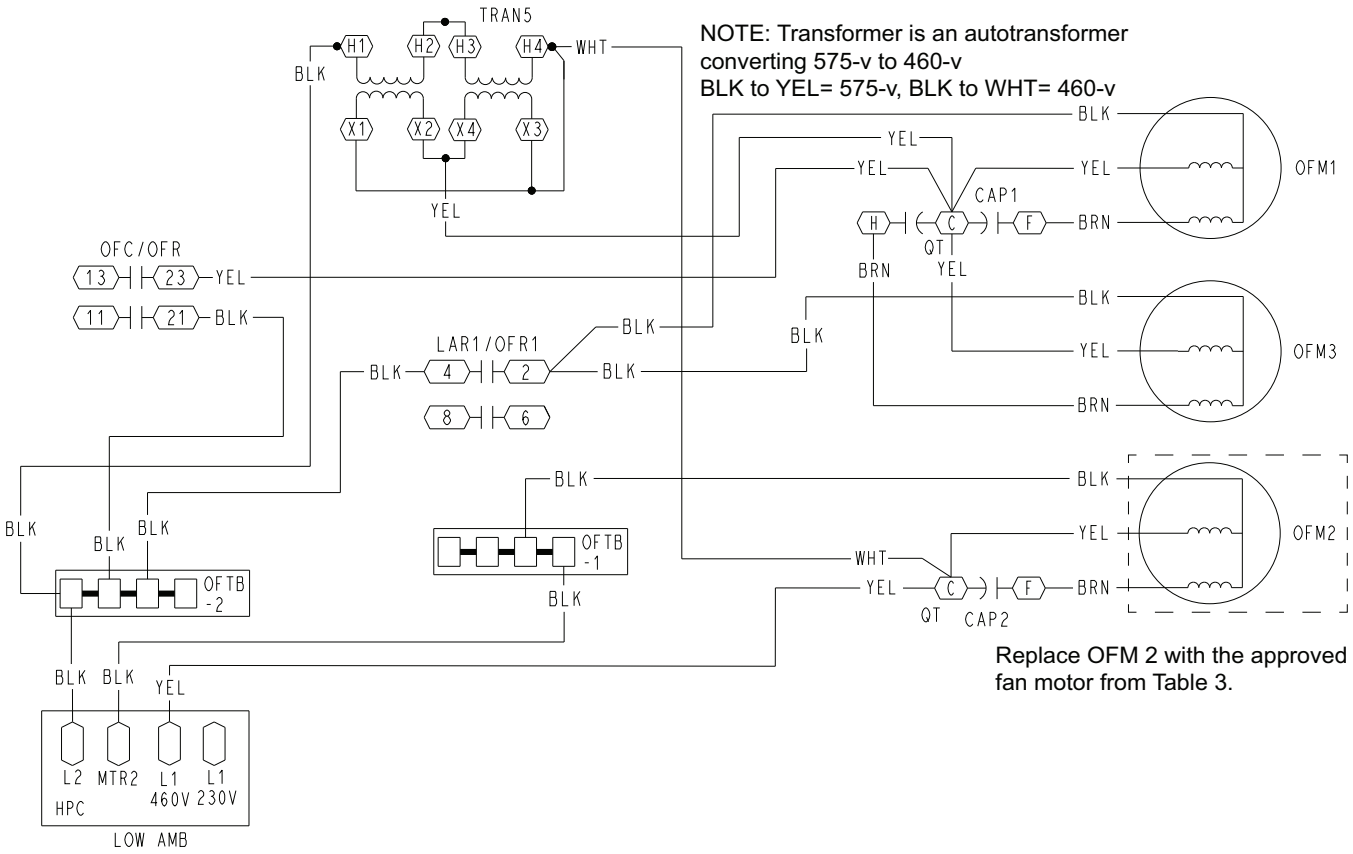


Fig. 23 — Cabinet C — High Voltage Wiring for 50FCQ*17, 547K*17, and RHV181 (575-v)

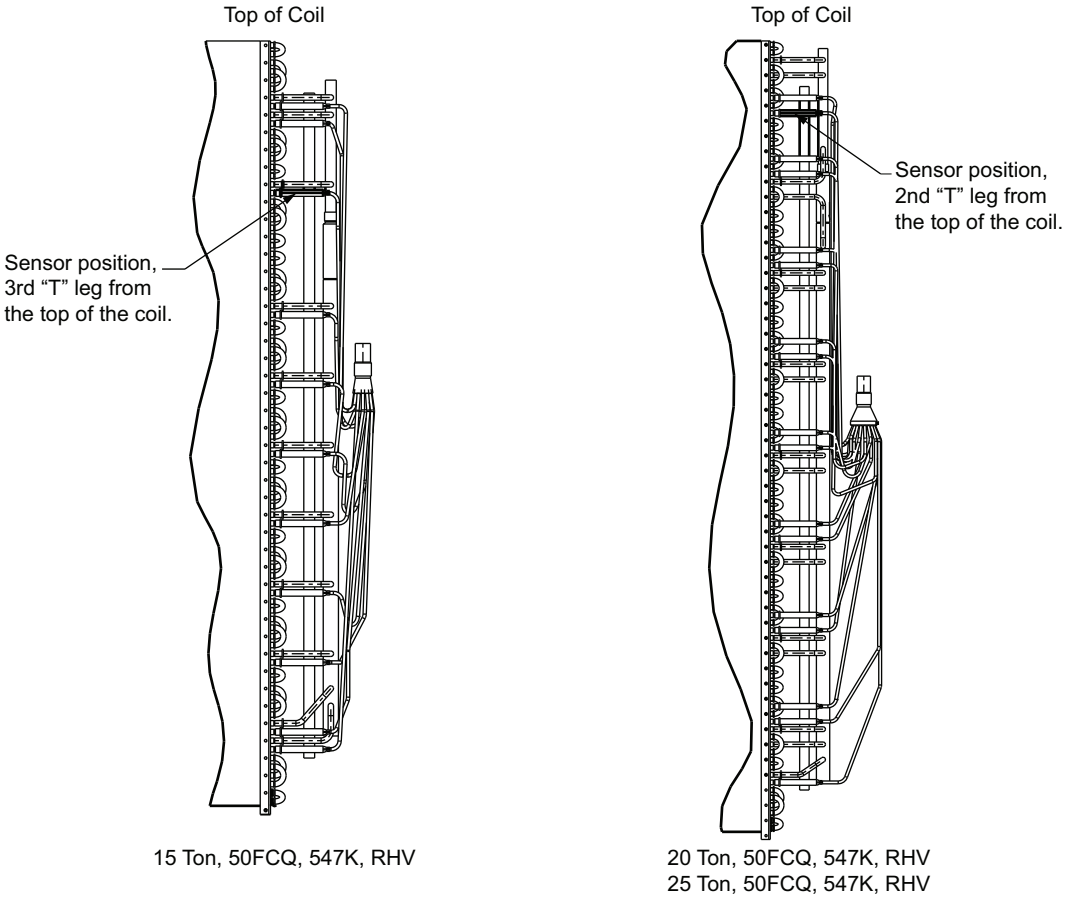
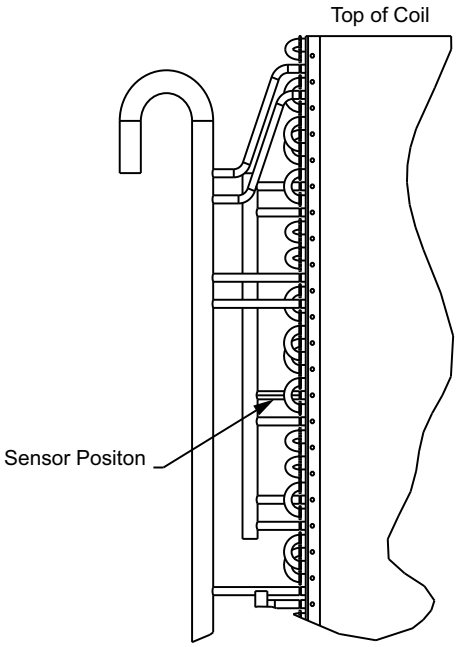
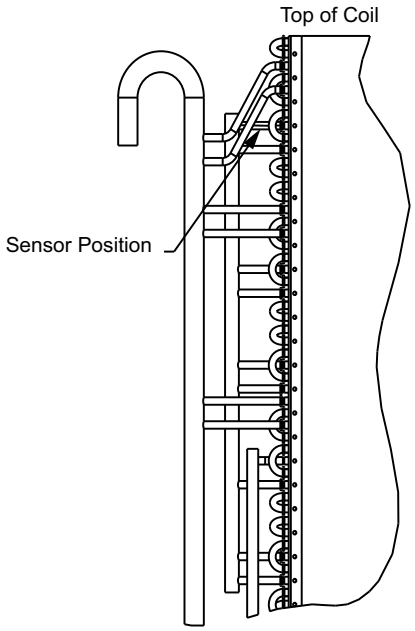


Fig. 24 — Cabinet C — Sensor Coil Locations for Heat Pump Coil



15 ton, 48-50GC, 581K/551K, RGW/RAW
17.5 ton, 48-50FC/GC,
582K/559K/581K/551L,
RGV/RAV/RGW/RAW
20 ton, 48-50FC, 582K/559K,
RGV/RAV



20 ton, 48-50GC, 581K/551K, RGW/RAW
25 ton, 48-50FC/GC,
582K/559K/581K/551L,
RGV/RAV/RGW/RAW
27.5 ton, 48-50FC, 582K/559K, RGV/RAV

Fig. 25 — Cabinet C — Sensor Coil Locations for AC Coil

FABRICATE WIND BAFFLES — CABINET A (SELECT 6-10 TON)

Units covered:

- 48/50FC**08-12, 48/50GC**07-09, 50FCQ*08-09, 50GCQ*07-08
- 582K/559K*08-12, 581K/551K*07-09, 547K*08-09, 549K*07-08
- RGV/RAV090-120, RGW/RAW072-102, RHV090-102, RHW072-090

Wind baffles are required to prevent wind cross-currents from causing abnormally low condensing temperatures. Fabricate sheet metal baffles using Fig. 26 and Table 4. Use 20 gauge sheet metal for the baffle material. See Table 4 for wind baffle dimensions according to unit type and size.

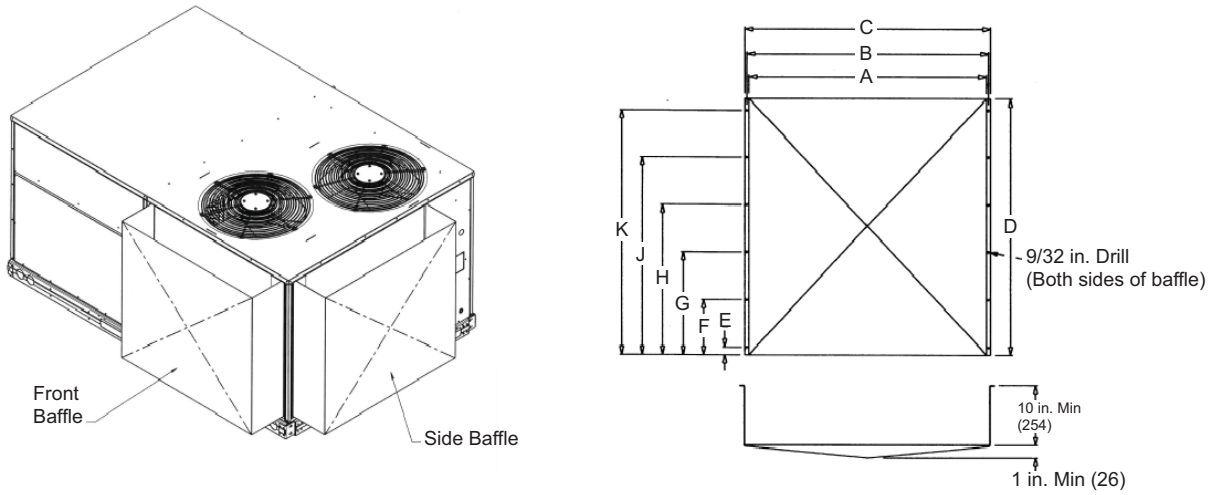


Fig. 26 — Cabinet A — Wind Baffle Fabrication

Table 4 — Cabinet A — Wind Baffle Dimensions

UNIT AND SIZE	FRONT BAFFLE — in. (mm)									
	A	B	C	D	E	F	G	H	J	K
48/50FC**08 582K/559K*08 RGV/RAV090	40-5/8 (1031.9)	41-1/8 (1044.6)	41-5/8 (1057.3)	35-3/8 (904.9)	1-1/4 (31.8)	9-1/4 (235.0)	17-1/4 (438.2)	25-1/4 (641.4)	33-1/4 (844.6)	—
48/50FC**09 582K/559K*09 RGV/RAV/RHV102	22-7/8 (581.0)	23-3/8 (593.7)	23-7/8 (606.4)	43-3/8 (1108.1)	1-1/4 (31.8)	9-1/4 (235.0)	17-1/4 (438.2)	25-1/4 (641.4)	33-1/4 (844.6)	41-1/4 (1047.8)
48/50FC**12 48/50GC**07-09 50FCQ*08-09 50GCQ*07-09 582K/559K*12 581K/551K*07-09 547K*08-09 549K*07-09 RGV/RAV120 RGW/RAW072-102 RHV090-102, 120 RHW072-090	40-5/8 (1031.9)	41-1/8 (1044.6)	41-5/8 (1057.3)	43-3/8 (1108.1)	1-1/4 (31.8)	9-1/4 (235.0)	17-1/4 (438.2)	25-1/4 (641.4)	33-1/4 (844.6)	41-1/4 (1047.8)
UNIT AND SIZE	**SIDE BAFFLE — in. (mm)**									
	A	B	C	D	E	F	G	H	J	K
48/50FC**08 48/50GC**07 50GCQ*07 582K/559K*08 581K/551K*07 549K*07 RGV/RAV090 RGW/RAW072 RHW072	40-7/8 (1038.2)	41-1/8 (1044.6)	41-7/8 (1063.6)	35-3/8 (904.9)	4-1/4 (108.0)	11-1/4 (285.8)	18-1/4 (463.6)	25-1/4 (641.4)	32-1/4 (819/4)	—
48/50FC**09-12 48/50GC**08-09 50FCQ*08-09 50GCQ*08-09 582K/559K*09-12 581K/551K*08-09 547K*08-09 549K*08-09 RGV/RAV102-120 RGW/RAW090-102 RHV090-102, 120 RHW090	40-7/8 (1038.2)	41-1/8 (1044.6)	41-7/8 (1063.6)	43-3/8 (1108.1)	4-1/4 (108.0)	11-1/4 (285.8)	18-1/4 (463.6)	25-1/4 (641.4	32-1/4 (819/4)	39-3/16 (995.4)

FABRICATE WIND BAFFLES — CABINET B (SELECT 10-15 TON)

Units covered:

- 48/50FC**16, 48/50GC**14, 50FCQ*14, 50GCQ*12
- 582K/559K*16, 581K/551K*14, 547K*14, 549K*12
- RGV/RAV180, RGW/RAW150, RHV150, RHW120)

Wind baffles are required to prevent wind cross-currents from causing abnormally low condensing temperatures. Fabricate sheet metal baffles using Fig. 27-28 and Table 5. Use 20 gauge sheet metal for the baffle material. See Table 5 for wind baffle dimensions according to unit type and size.

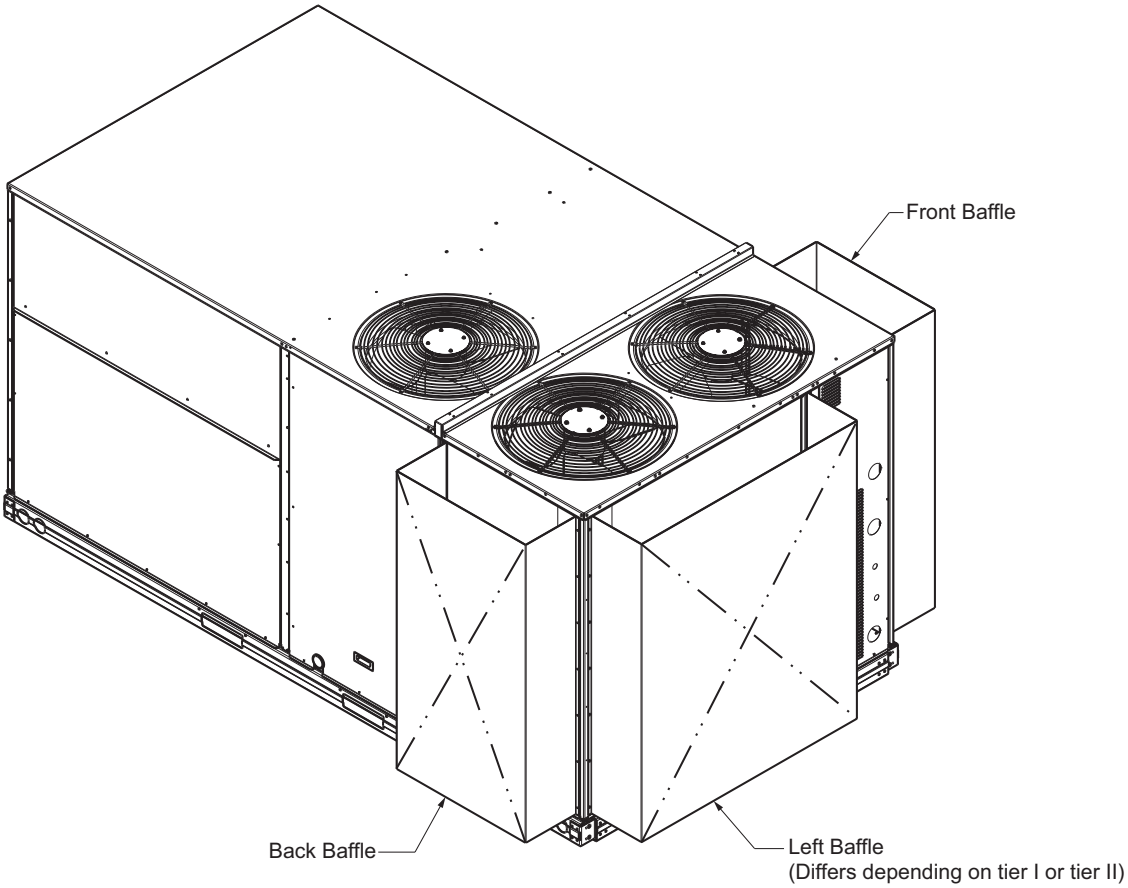


Fig. 27 — Cabinet B — Wind Baffles

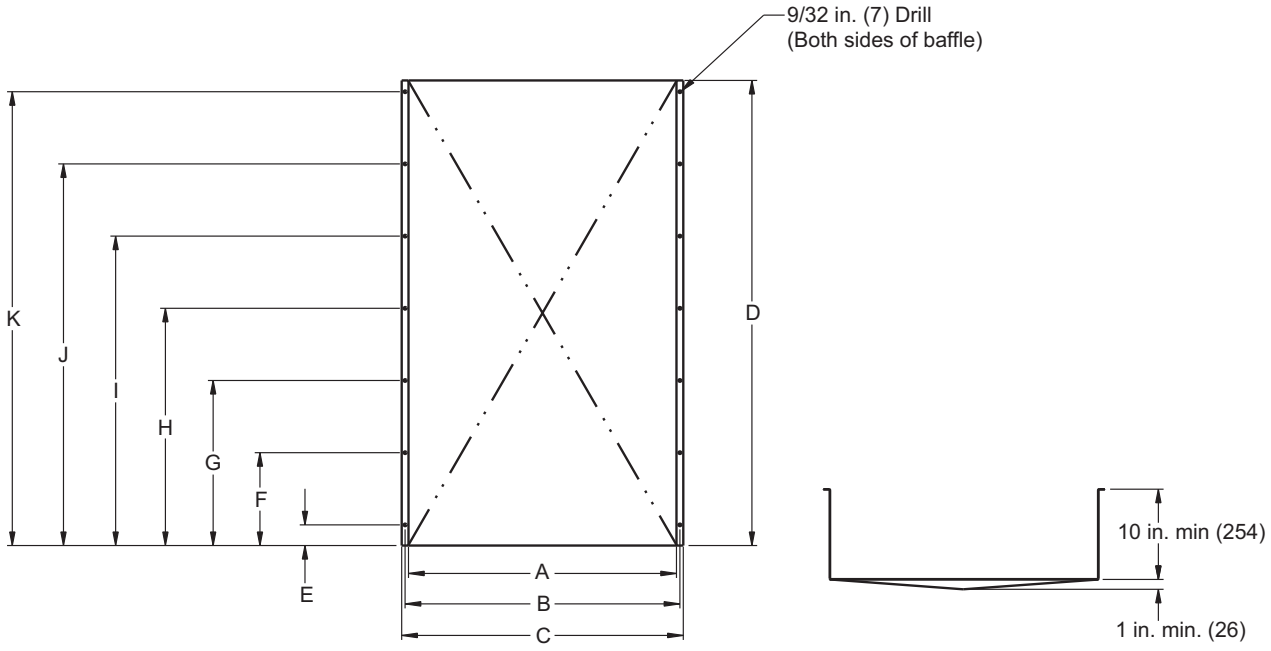


Fig. 28 — Cabinet B — Wind Baffles (Front/Top View)

Table 5 — Cabinet B — Wind Baffle Dimensions

FRONT BAFFLE — in. (mm)											
UNIT AND SIZE	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**
48/50FC16 582K/559K*16 RGV/RAV180**	22-1/2 (571.5)	23 (584.2)	23-1/2 (596.9)	51-1/2 (1308.1)	6-3/4 (171.5)	19-7/8 (504.8)	33 (838.2)	46 (1168.4)	—	—	—
48/50GC14 50FCQ*14 50GCQ*12 581K/551K*14 547K*14 549K*12 RGW/RAW150 RHV150 RHW120**	25-5/8 (650.88)	26-1/4 (666.75)	26-7/8 (682.63)	51-1/2 (1308.1)	1-1/4 (31.75)	9 -1/4 (234.95)	17-1/4 (438.15)	25-1/4 (641.35)	33-1/4 (844.55)	41-1/4 (1047.75)	41-1/4 (1047.7)
BACK BAFFLE — in. (mm)											
UNIT AND SIZE	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**
48/50FC16 582K/559K*16 RGV/RAV180**	26-1/8 (663.6)	26-5/8 (676.3)	27-1/8 (689.0)	51-1/2 (1308.1)	3/4 (19.1)	13-3/4 (349.3)	26-3/4 (679.5)	39-3/4 (1009.7)	50-3/4 (1289.1)	—	—
48/50GC14 50FCQ*14 50GCQ*12 581K/551K*14 547K*14 549K*12 RGW/RAW150 RHV150 RHW120**	23-1/2 (596.9)	24-1/8 (612.78)	24-3/4 (628.65)	51-1/2 (1308.1)	1-3/4 (44.45)	9-3/4 (247.65)	17-3/4 (450.85)	25-3/4 (654.05)	33-3/4 (857.25)	41-3/4 (1060.45)	49-3/4 (1263.65)
LEFT BAFFLE — in. (mm)											
UNIT AND SIZE	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**
48/50FC16 582K/559K*16 RGV/RAV180**	37-1/2 (952.5)	38 (965.2)	38-1/2 (977.9)	51-1/2 (1308.1)	2-3/4 (69.9)	14-3/4 (374.7)	27-3/4 (704.9)	38-3/4 (984.3)	50-3/4 (1289.1)	—	—
48/50GC14 50FCQ*14 50GCQ*12 581K/551K*14 547K*14 549K*12 RGW/RAW150 RHV150 RHW120**	42-3/4 (1085.85)	43-3/8 (1101.73)	44 (1117.6)	51-1/2 (1308.1)	1-3/4 (44.45)	9-3/4 (247.65)	17-3/4 (450.85)	25-3/4 (654.05)	33-3/4 (857.25)	41-3/4 (1060.45)	49-3/4 (1263.65)

FABRICATE WIND BAFFLES — CABINET C (SELECT 15-27.5 TON)

Units covered:

- 48/50FC**20-30, 48/50GC**17-28, 50FCQ*17-28
- 582K/559K*20-30, 581K/551K*17-28, 547K*17-28
- RGV/RAV210-336, RGW/RAW181-300, RHV181-300

Wind baffles are required to prevent wind cross-currents from causing abnormally low condensing temperatures. Fabricate sheet metal baffles as follows:

- For 48/50FC**20, 48/50GC**17, 50FCQ*17, 582K/559K*20, 581K/551K*17, 547K*17, RGV/RAV210, RGW/RAW181, and RHW181 units, use Fig. 29, Fig. 31-32, and Table 6.
- For 48/50FC**24, 48/50GC**20, 582K/559K*24, 581K/551K*20, RGV/RAV240, and RGW/RAW210 units, use Fig. 30, Fig. 32-33, and Table 6.
- For 48/50GC**24, 50FCQ*24-28, 581K/551K*24, 547K*24-28, RGW/RAW240, and RHW240-300 units, use Fig. 34, Fig. 39 and 42, and Table 6.
- For 48/50FC**28, 582K/559K*28, and RGV/RAV300 units, use Fig. 35, Fig. 38-39, and Table 6.
- For 48/50GC**28, 581K/551K*28, and RGW/RAW300 units, use Fig. 36, Fig. 39, 41, and 43, and Table 6.
- For 48/50FC**30, 582K/559K*30, and RGV/RAV336 units, use Fig. 37, Fig. 39-41, and Table 6.

Use 20 gauge sheet metal for the baffle material. See the appropriate table below for wind baffle dimensions according to unit type and size.

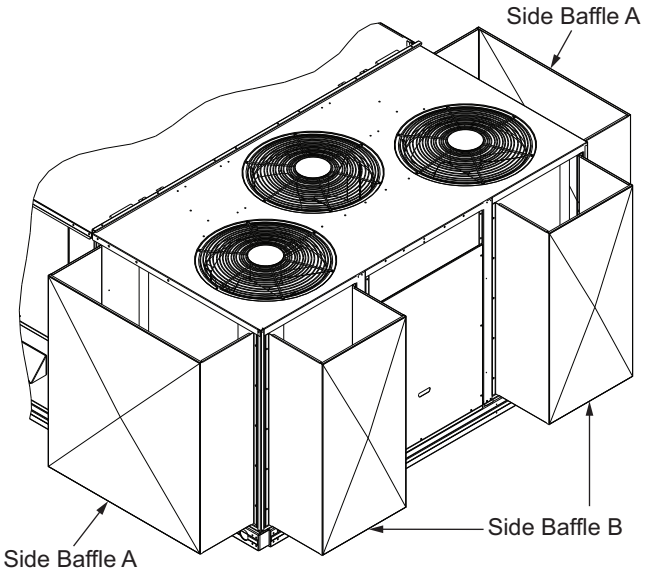


Fig. 29 — Cabinet C — Wind Baffle Locations for 48/50FC20, 48/50GC**17, 50FCQ*17, 582K/559K*20, 581K/551K*17, 547K*17, RGV/RAV210, RGW/RAW181, and RHW181 Units**

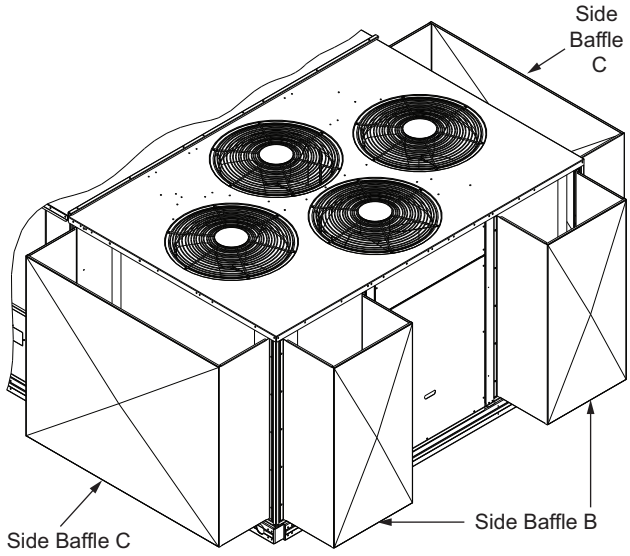


Fig. 30 — Cabinet C — Wind Baffle Locations for 48/50FC24, 48/50GC**20, 582K/559K*24, 581K/551K*20 RGV/RAV240, and RGW/RAW210 Units**

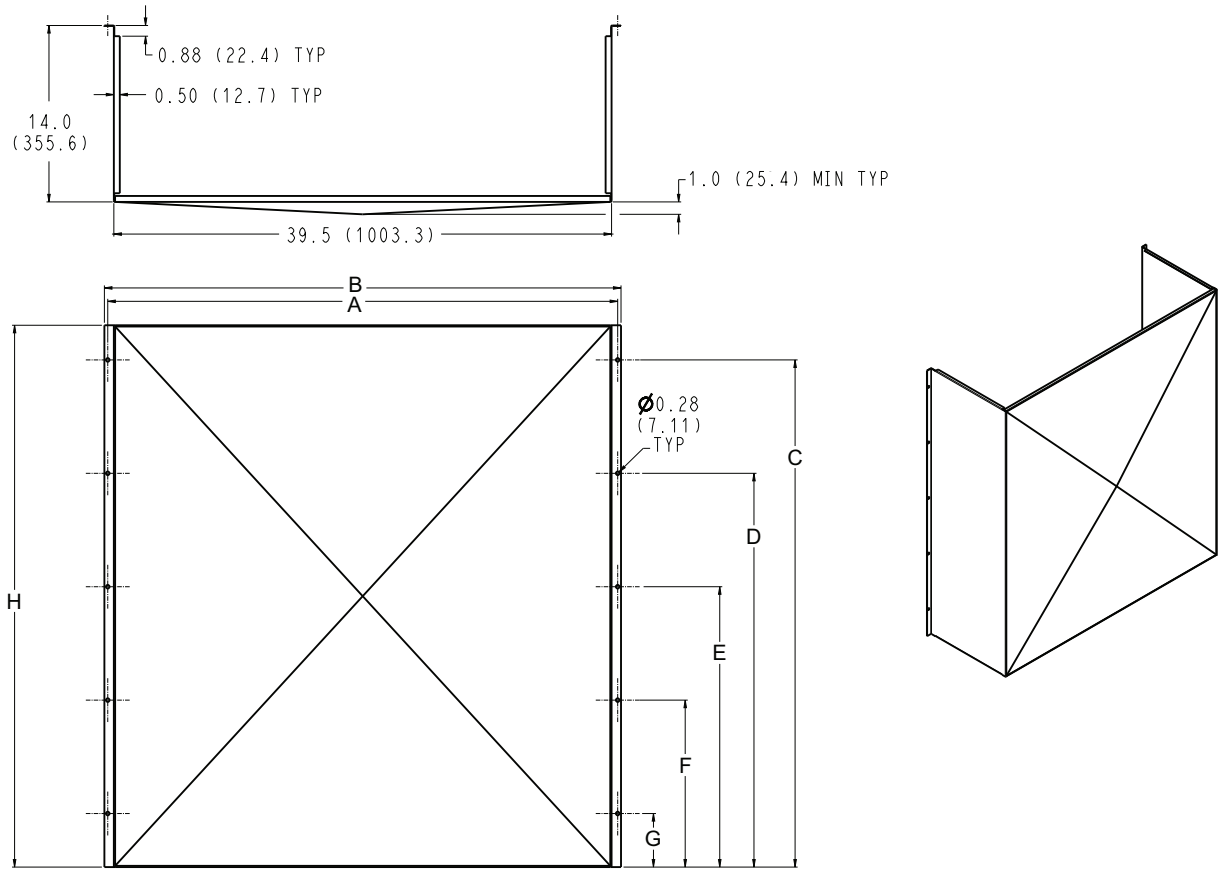


Fig. 31 — Cabinet C — Side Baffle A (Front/Top View)

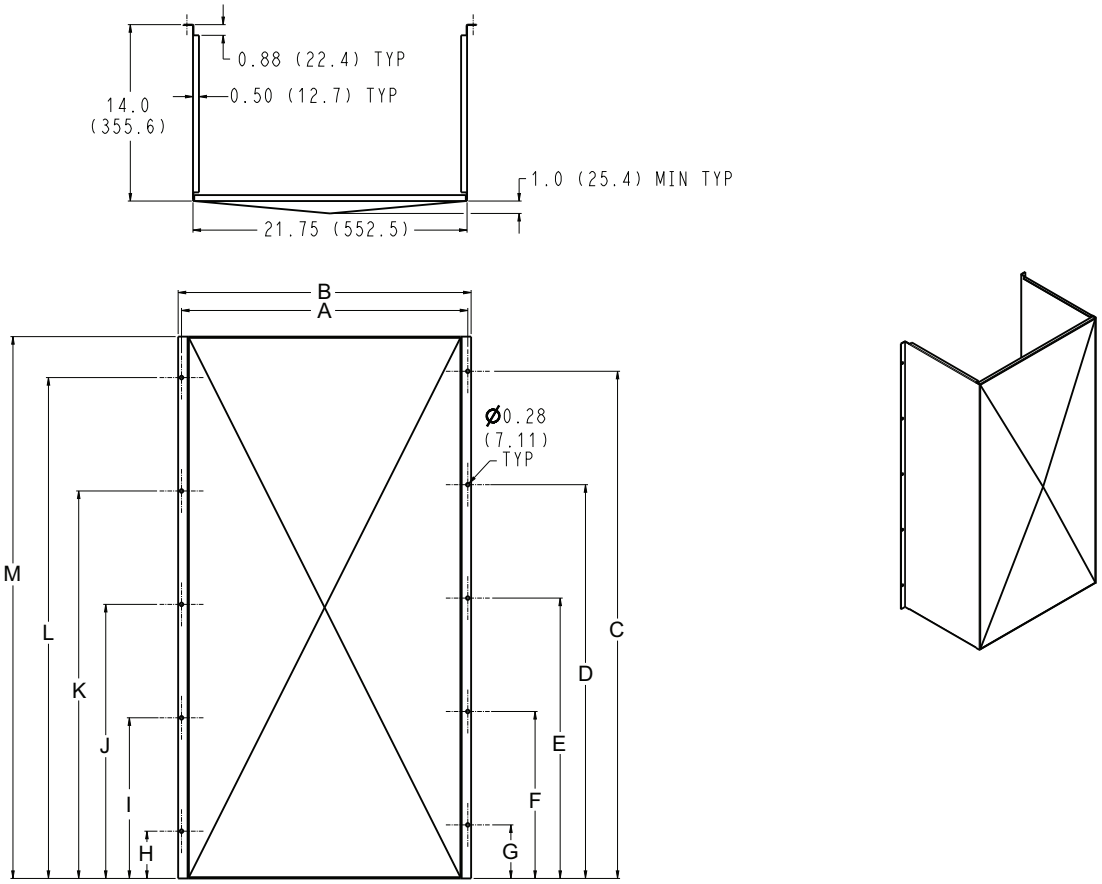


Fig. 32 — Cabinet C — Side Baffle B (Front/Top View)

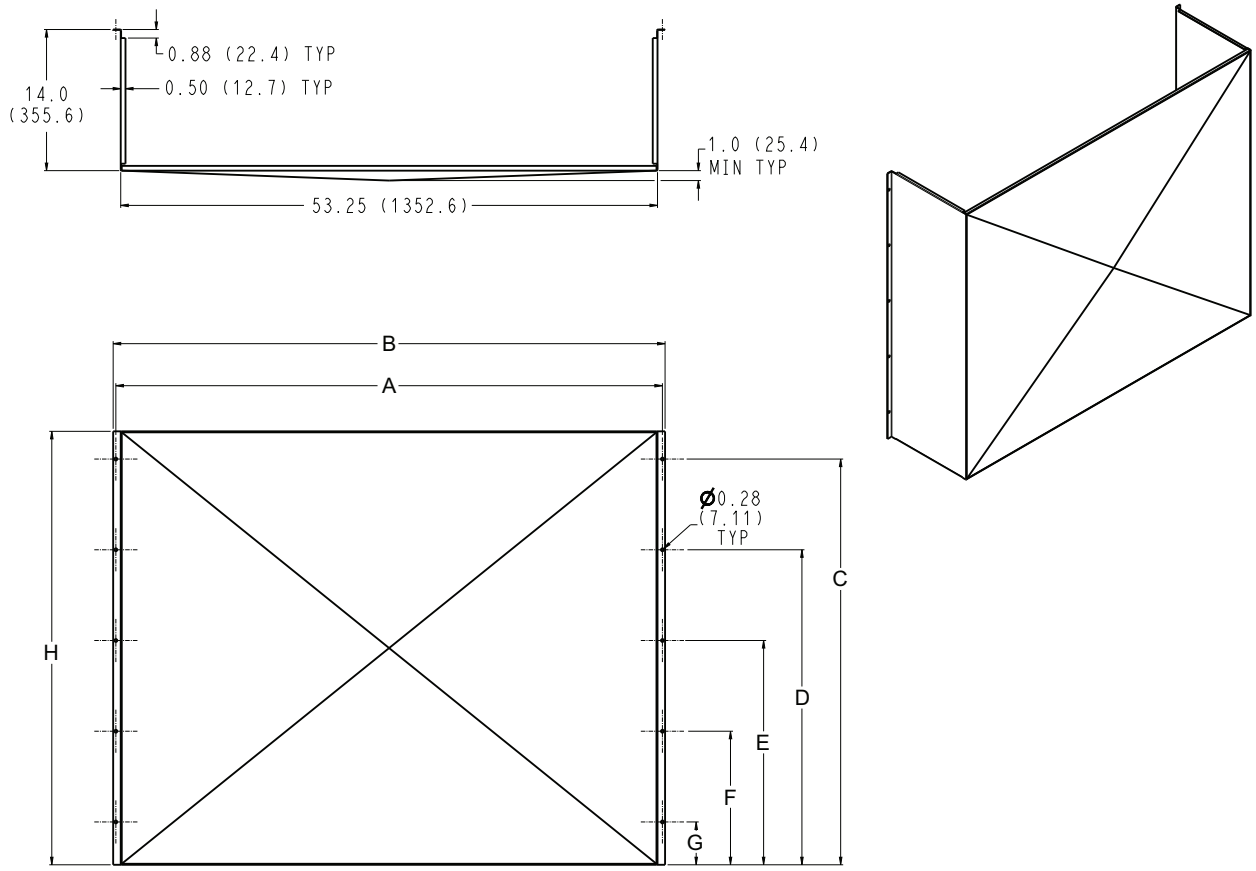


Fig. 33 — Cabinet C — Side Baffle C (Front/Top View)

Table 6 — Cabinet C — Wind Baffle Dimensions, Side Baffles A, B, and C

SIDE BAFFLE A — in. (mm)														
UNIT AND SIZE	**UNIT HEIGHT**	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**
48/50FC20 48/50GC**17 50FCQ*17 582K/559K*20 581K/551K*17 547K*17 RGV/RAV210 RGW/RAW181 RHV181**	49.375 (1253.0)	40.5 (1028.7)	41.0 (1041.4)	40.25 (1022.4)	31.25 (793.8)	22.25 (565.2)	13.25 (336.6)	4.25 (108.0)	43.0 (1092.2)	—	—	—	—	—
SIDE BAFFLE B — in. (mm)														
UNIT AND SIZE	**UNIT HEIGHT**	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**
48/50FC20-24 48/50GC**17-20 50FCQ*17 582K/559K*20-24 581K/551K*17-20 547K*17 RGV/RAV210-240 RGW/RAW181-210 RHV181**	49.375 (1253.0)	22.75 (577.9)	23.25 (590.6)	40.25 (1022.4)	31.25 (793.8)	22.25 (565.2)	13.25 (336.6)	4.25 (108.0)	3.75 (95.3)	12.75 (323.9)	21.75 (552.5)	30.75 (781.1)	39.75 (1009.7)	43.0 (1092.2)
SIDE BAFFLE C — in. (mm)														
UNIT AND SIZE	**UNIT HEIGHT**	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**
48/50FC24 48/50GC**20 582K/559K*24 581K/551K*20 RGV/RAV240 RGW/RAW210**	49.375 (1253.0)	54.25 (1378.0)	54.75 (1390.7)	40.25 (1022.4)	31.25 (793.8)	22.25 (565.2)	13.25 (336.6)	4.25 (108.0)	43.0 (1092.2)	—	—	—	—	—

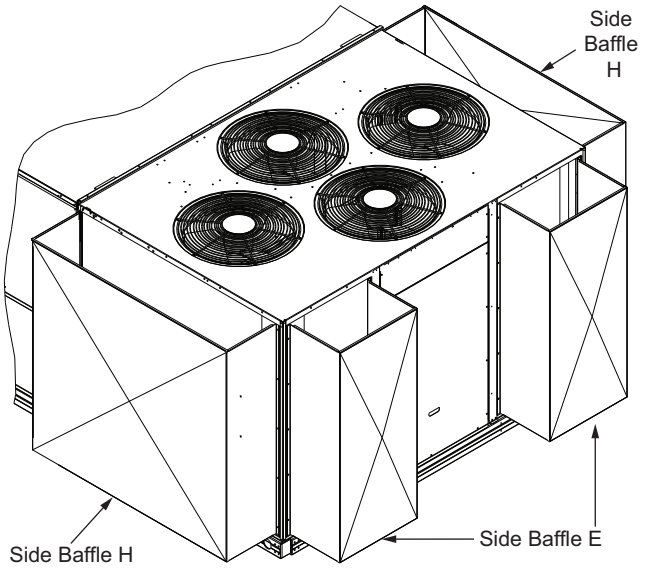


Fig. 34 — Cabinet C — Wind Baffle Locations for 48/50GC24, 50FCQ*24-28, 581K/551K*24, 547K*24-28, RGW/RAW240, and RHW240-300 Units**

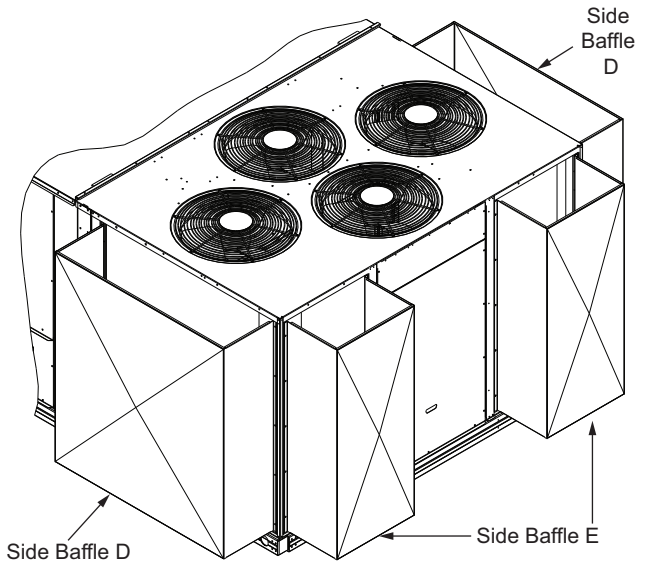


Fig. 35 — Cabinet C — Wind Baffle Locations for 48/50FC28, 582K/559K*28, and RGV/RAV300**

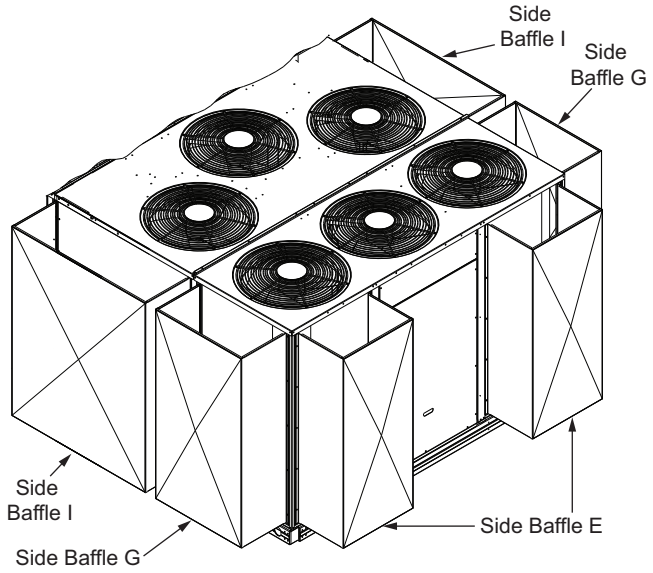


Fig. 36 — Cabinet C — Wind Baffle Locations for 48/50GC28, 581K/551K*28, and RGW/RAW300 Units**

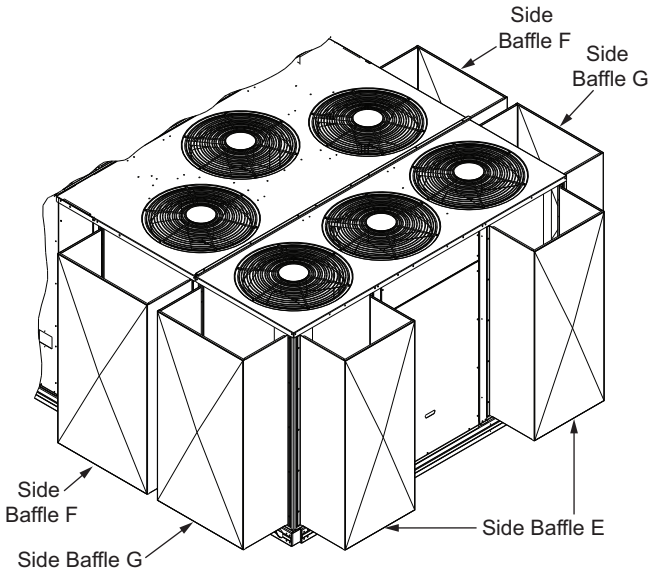


Fig. 37 — Cabinet C — Wind Baffle Locations for 48/50FC30, 582K/559K*30, and RGV/RAV336**

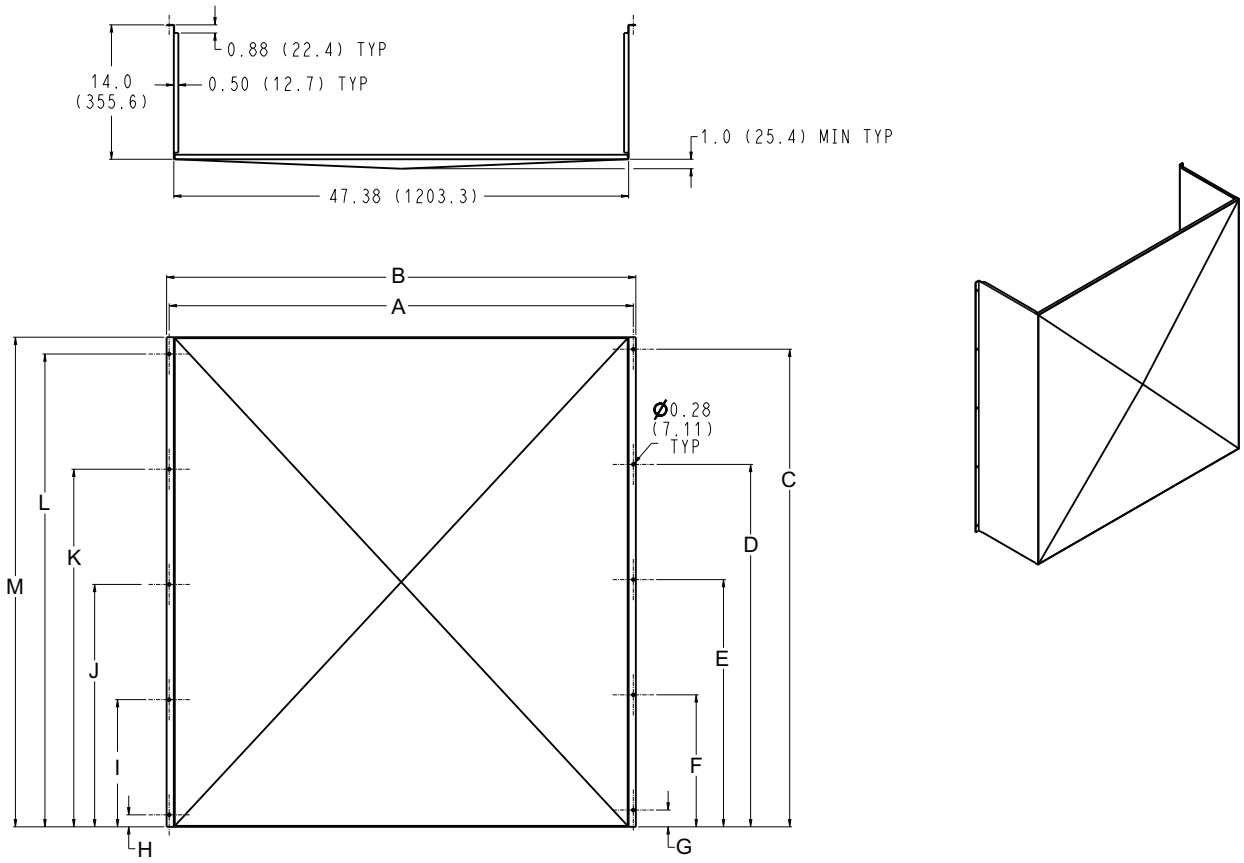


Fig. 38 — Cabinet C — Side Baffle D (Front/Top View)

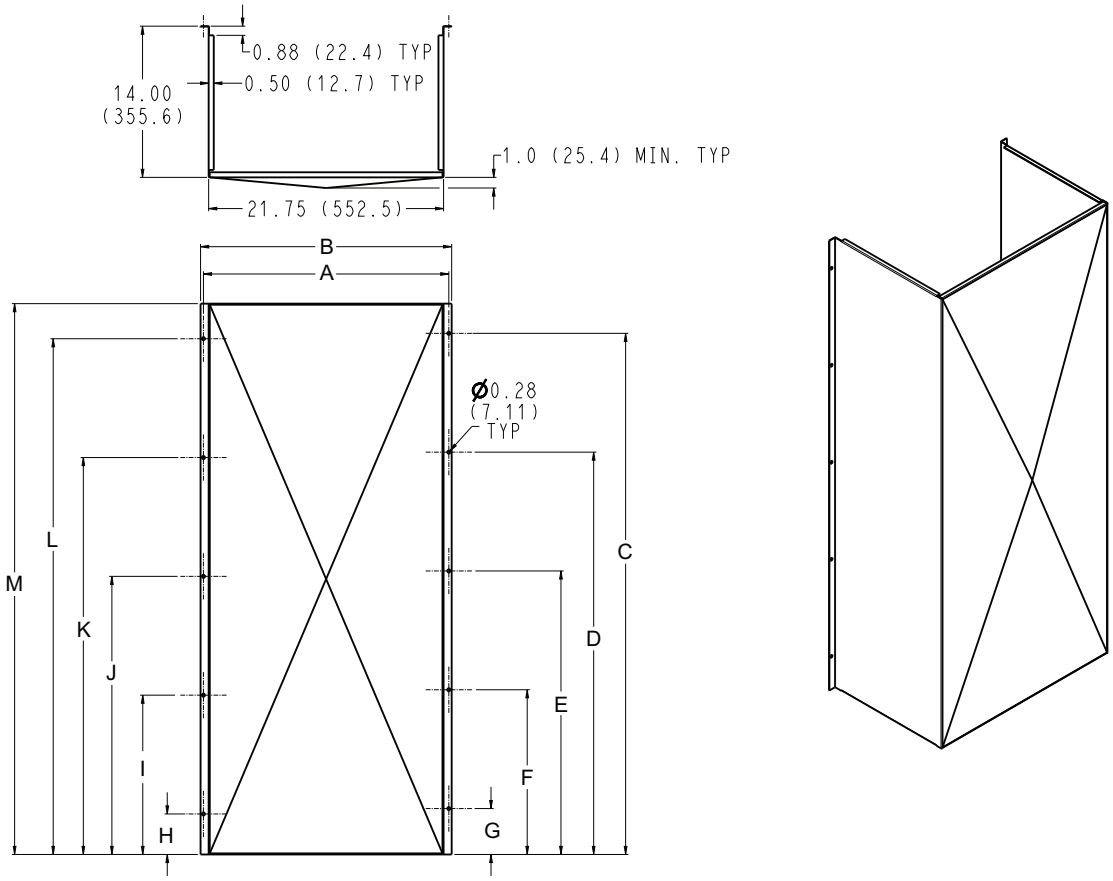


Fig. 39 — Cabinet C — Side Baffle E (Front/Top View)

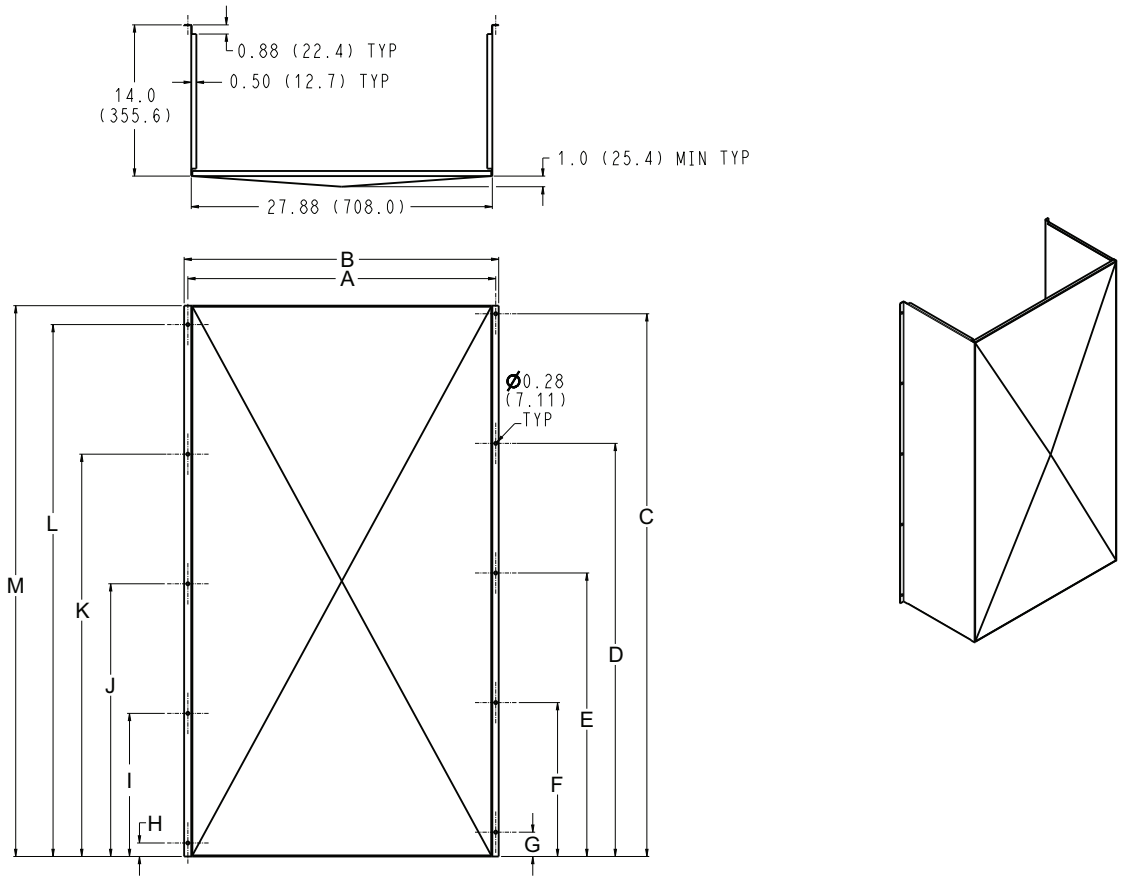


Fig. 40 — Cabinet C — Side Baffle F (Front/Top View)

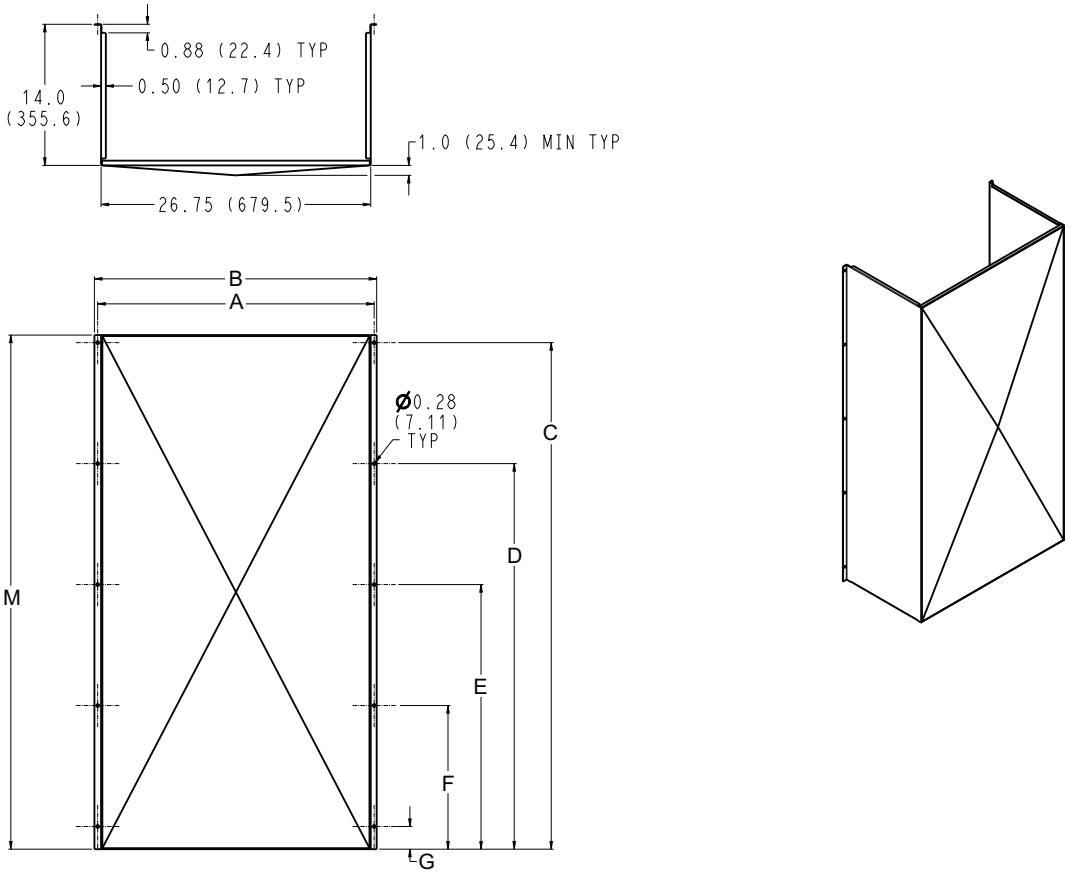


Fig. 41 — Cabinet C — Side Baffle G (Front/Top View)

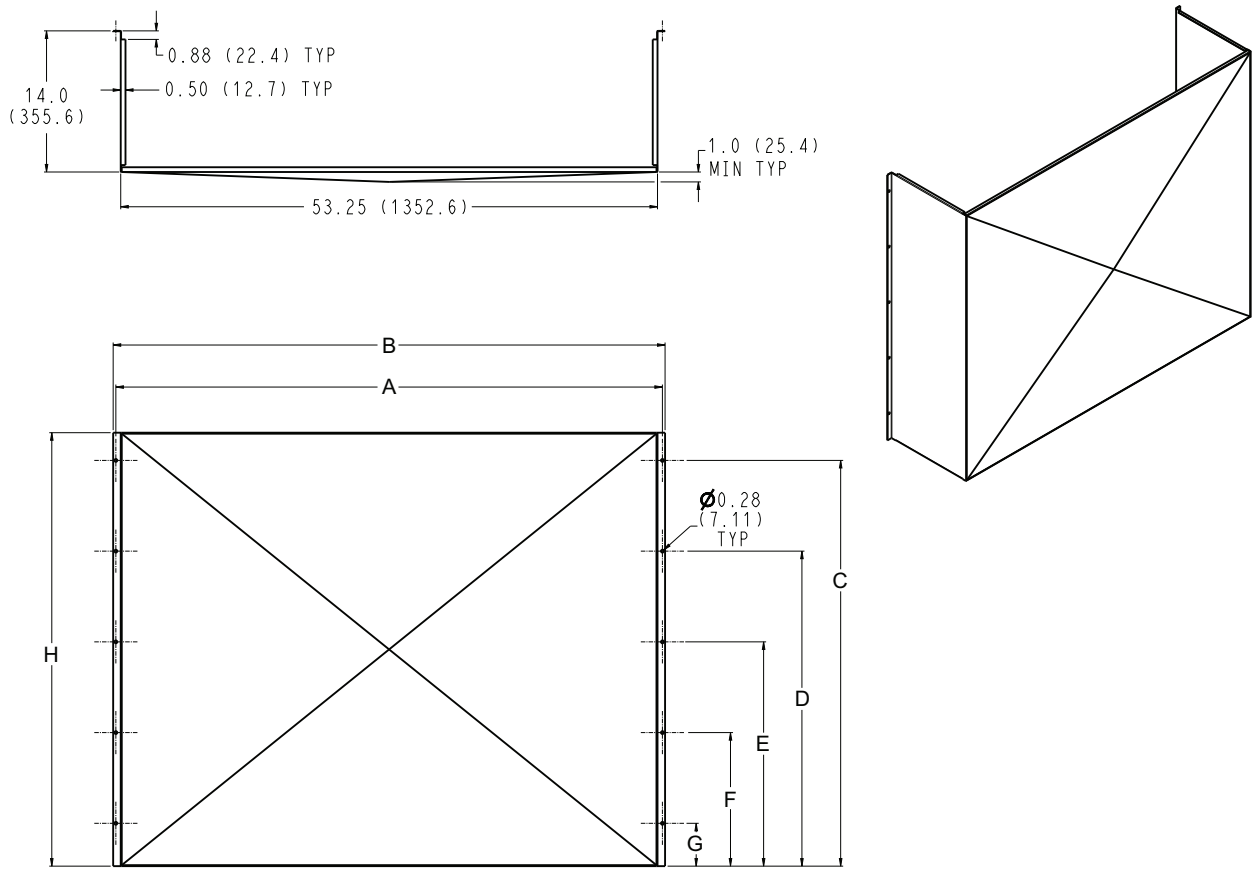


Fig. 42 — Cabinet C — Side Baffle H (Front/Top View)

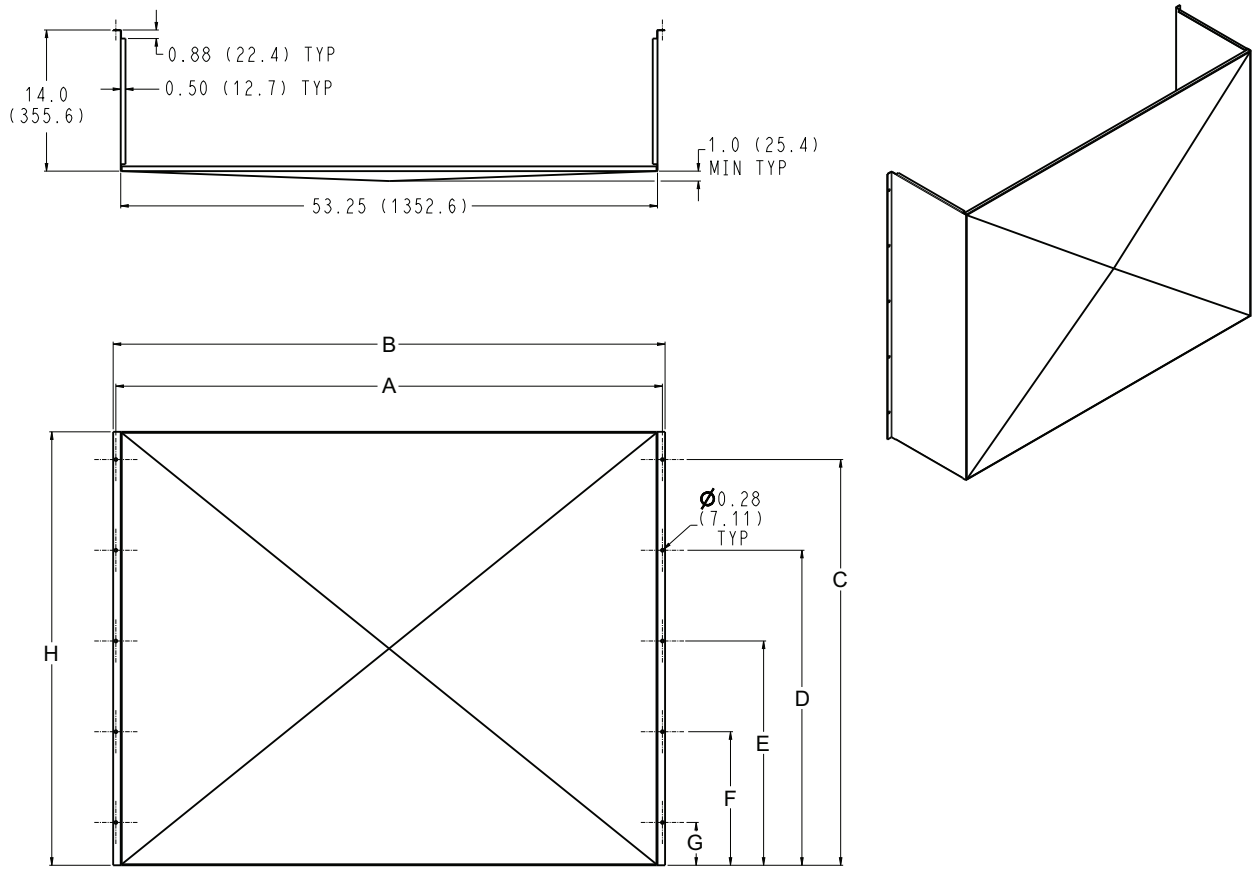


Fig. 43 — Cabinet C — Side Baffle I (Front/Top View)

Table 7 — Cabinet C — Wind Baffle Dimensions, Side Baffles D, E, F, and G

SIDE BAFFLE D — in. (mm)

UNIT AND SIZE	UNIT HEIGHT	A	B	C	D	E	F	G	H	I	J	K	L	M
48/50FC**28 582K/559K*28 RGV/RAV300	57.375 (1456)	48.38 (1228.9)	48.88 (1241.4)	49.75 (1263.7)	37.75 (958.9)	25.75 (654.1)	13.75 (349.3)	1.75 (44.5)	1.25 (31.8)	13.25 (336.6)	25.25 (641.4)	37.25 (946.2)	49.25 (1251.0)	51.0 (1295.4)

SIDE BAFFLE E — in. (mm)

UNIT AND SIZE	UNIT HEIGHT	A	B	C	D	E	F	G	H	I	J	K	L	M
48/50FC**28-30 48/50GC**24-28 50FCQ*24-28 582K/559K*28-30 581K/551K*24-28 547K*24-28 RGV/RAV300-336 RGW/RAW240-300 RHV240-300	57.375 (1456)	22.75 (577.9)	23.25 (590.6)	48.25 (1225.6)	37.25 (946.2)	26.25 (666.8)	15.25 (387.4)	4.25 (108.0)	3.75 (95.3)	14.75 (374.7)	25.75 (654.1)	36.75 (933.5)	47.75 (1212.9)	51.0 (1295.4)

SIDE BAFFLE F — in. (mm)

UNIT AND SIZE	UNIT HEIGHT	A	B	C	D	E	F	G	H	I	J	K	L	M
48/50FC**30 582K/559K*30 RGV/RAV336	57.375 (1456)	28.50 (723.9)	29.13 (739.8)	50.25 (1276.4)	38.25 (971.6)	26.25 (666.8)	14.25 (362.0)	2.25 (57.2)	1.25 (31.8)	13.25 (336.6)	25.25 (641.4)	37.25 (946.2)	49.25 (1251.0)	51.0 (1295.4)

SIDE BAFFLE G — in. (mm)

UNIT AND SIZE	UNIT HEIGHT	A	B	C	D	E	F	G	H	I	J	K	L	M
48/50FC**30 48/50GC**28 582K/559K*30 581K/551K*28 RGV/RAV336 RGW/RAW300	57.375 (1456)	27.50 (698.5)	28.00 (711.2)	50.25 (1276.4)	38.25 (971.6)	26.25 (666.8)	14.25 (362.0)	2.25 (57.2)	—	—	—	—	—	51.0 (1295.4)

SIDE BAFFLE H — in. (mm)

UNIT AND SIZE	UNIT HEIGHT	A	B	C	D	E	F	G	H	I	J	K	L	M
48/50GC**24 50FCQ*24-28 581K/551K*24 547K*24-28 RGW/RAW240 RHV240-300	57.375 (1456)	54.25 (1378.0)	54.75 (1390.7)	49.75 (1263.7)	37.75 (958.9)	25.75 (654.1)	13.75 (349.3)	1.75 (44.5)	51.0 (1295.4)	—	—	—	—	—

SIDE BAFFLE I — in. (mm)

UNIT AND SIZE	UNIT HEIGHT	A	B	C	D	E	F	G	H	I	J	K	L	M
48/50GC**28 581K/551K*28 RGW/RAW300	57.375 (1456)	39.50 (1003.3)	40.00 (1016.0)	50.25 (1276.4)	38.25 (971.6)	26.25 (666.8)	14.25 (362.0)	2.25 (57.2)	51.0 (1295.4)	—	—	—	—	—

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