REZNOR®

Revision: CAUA-COOLING-COIL (03-22) 166152-A

Supersedes: I-CAUA-CC (04-15) PN166152R5

CASED COOLING COIL INSTALLATION FOR GAS-FIRED INDOOR HEATER

MODEL CAUA

NOTE: Installation should be done by a qualified agency in accordance with these instructions and in compliance with all codes and requirements of authorities having jurisdiction.

GENERAL INFORMATION

- These instructions are for installing an optional cased cooling coil on a model CAUA heater (see **Figure 1**). The coil may be ordered as either model ACU (A, B, or C) or as a C option. Thermostatic expansion valves selected to match the coil are shipped loose for field-installation.
- Shipped with the heater is a package of parts required to install a heat section condensate drain. When the application includes a cooling coil, installation of the heat section condensate drain is required.
- Refer to the installation manual provided with the heater for important safety information and for instructions to install the heater. The heater should be in its final installation location without discharge ductwork before installing the cooling coil.
- Refer to **Table 1** to match model CAUA and ACU unit sizes with available cooling coils.

NOTE: All cooiling coils are for use with R-410A refrigerant.

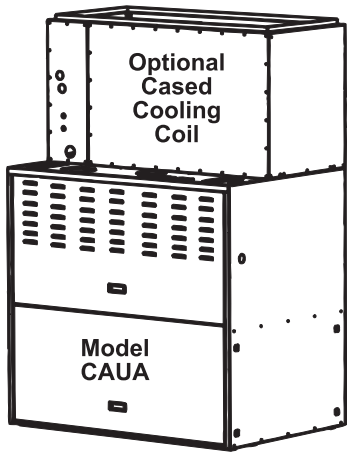

Figure 1. Model CAUA with Optional Cooling Coil

Table 1. Cooling Coils

Model CAUA Unit Size	Cased Cooling Coil Model	ACU Unit Size	Option	Description
150, 200	ACUA	060	C060	5-ton, single-circuit A or dual-circuit A (1/3–2/3) cased coil
		072	C072	6-ton, single-circuit A cased coil
		090	C090	7.5-ton, dual-circuit A (50/50 or 1/3–2/3) cased coil
250, 300	ACUB	090	C090	7.5-ton, dual-circuit A (50/50 or 1/3–2/3) cased coil
		120	C120	10-ton, dual-circuit A (50/50 or 1/3–2/3) cased coil
		150	C150	12-ton, dual-circuit A (50/50 or 1/3–2/3) cased coil
350, 400*	ACUC	120	C120	10-ton, dual-circuit A (50/50 or 1/3–2/3) cased coil
		150	C150	12-ton, dual-circuit A (50/50 or 1/3–2/3) cased coil
		180	C180	15-ton, dual-circuit A (50/50 or 1/3–2/3) cased coil

*The cased cooling coil for unit sizes 350 and 400 may include a factory-installed discharge plenum (option CD62). To install a cased cooling coil with a discharge plenum, refer to these instructions plus the instructions in the CAUA-DISCH-PLENUM manual available at **www.reznorhvac.com**.

Unpacking and Inspection

If, upon removing it from its crate, the unit has been found to have incurred any damage in shipment, document the damage with the transporting agency and contact an authorized Factory Distributor. If you are an authorized Distributor, follow the FOB freight policy procedures.

Pre-Installation Checklist

- ❑ Check the rating plate for the specifications and electrical characteristics to be sure that they are compatible with the installation.
- ❑ Read these instructions and become familiar with the installation requirements. If you do not have knowledge of local requirements, check with the local gas company or any other local agencies who might have requirements concerning this installation.
- ❑ Make preparations for necessary supplies, tools, and manpower. Installation should be done by an HVAC technician qualified in refrigerant system installation.
- ❑ Verify that the package of parts required to install the heat section condensate drain is either already installed or at the job site.
- ❑ Locate the thermostatic expansion valve(s) that are shipped loose. ACU unit size 060 has either one or two valves, unit size 072 has one valve, and unit sizes 090–180 have two valves.
- ❑ If a reducer is required to connect the thermostatic expansion valve to the distributor, the required reducers are shipped with the valves.
- ❑ Refer to **Table 2** to verify that the thermostatic expansion valve(s) are correct for the installation.

Table 2. Thermostatic Expansion Valve (TXV) Kit Components and Connection Sizes

Cased Cooling Coil		Kit PN	Component					Distributor Connection on Coil		Liquid Line Connection*				Suction Line Tubing	
				Reducer		TXV				Inlet**		Outlet			
Model	Unit Size		Evap Coil	Circuit											
				A	B	A	B	A	B	A	B	A	B	A	B
				PN***				Connection Size (Inches)							
ACUA	060	258856	257328	216428	—	234052	—	5/8	—	5/8	—	7/8	—	7/8	—
		258858	258846	—		220552	220553	5/8		1/2	5/8	5/8		7/8	
	072	258857	257329			220555	—	7/8	—	5/8	—	7/8	—	7/8	—
	090	258860	257538	216428		220554		5/8		5/8		7/8		7/8	
		258861	257330	—	216428	220553	234052					5/8	7/8		
ACUB	090	258860	257539	216428		220554		5/8		5/8		7/8		7/8	
		258861	257331	—	216428	220553	234052					5/8	7/8		
	120	258862	257540	216428		234052		5/8		5/8		7/8		7/8	
		258863	257332	—		220553	220555	5/8	7/8			5/8	7/8		
	150	258864	257541	—		220555		7/8		5/8		7/8		7/8	
		258865	257333	216428	—	220554	220557	5/8	7/8					1-3/8	7/8
ACUC	120	258862	257542	216428		234052		5/8		5/8		7/8		1-3/8	
		258863	257334	—	—	220553	220555	5/8	7/8			5/8	7/8	1-3/8	7/8
	150	258864	257543	—	—	220555		7/8	7/8	5/8		7/8		1-3/8	
		258866	257335	216428	216432	220554	220557	5/8	1-1/8					1-3/8	7/8
	180	258867	257544	216432		220557		1-1/8	1-1/8	5/8		7/8		1-3/8	
		258868	257336	216428	216432	234052	220557	5/8	1-1/8					1-3/8	7/8

*Circuit A is bottom connection. Circuit B is top connection.

**Liquid line tubing size.

***Refer to **Table 3** for specifications.

Table 3. Thermostatic Expansion Valve Kit Component Specifications						
Evaporator Coil					TXV	
PN	Row	FH	FL	FPI	PN	Manufacturer's Model No.
257328	2	20	28	10	220552	BBIZE-2
257329	2	20	28	12		
257330	3	24	28	10	220553	BBIZE-3
257331	2	24	42	12		
257332	3	20	42	10		
257333	3	24	42	12	220554	BBIZE-4
257334	2	30	41	12		
257335	3	27	41	10		
257336	3	30	41	10	220555	BBIZE-6
257538	3	24	28	10		
257539	2	24	42	12		
257540	3	20	42	10	220557	BBIZE-8
257541	3	24	42	12		
257542	2	30	41	12		
257543	3	27	41	10	234052	BBIZE-5
257544	3	30	41	10		
258846	2	20	28	10		

Dimensions

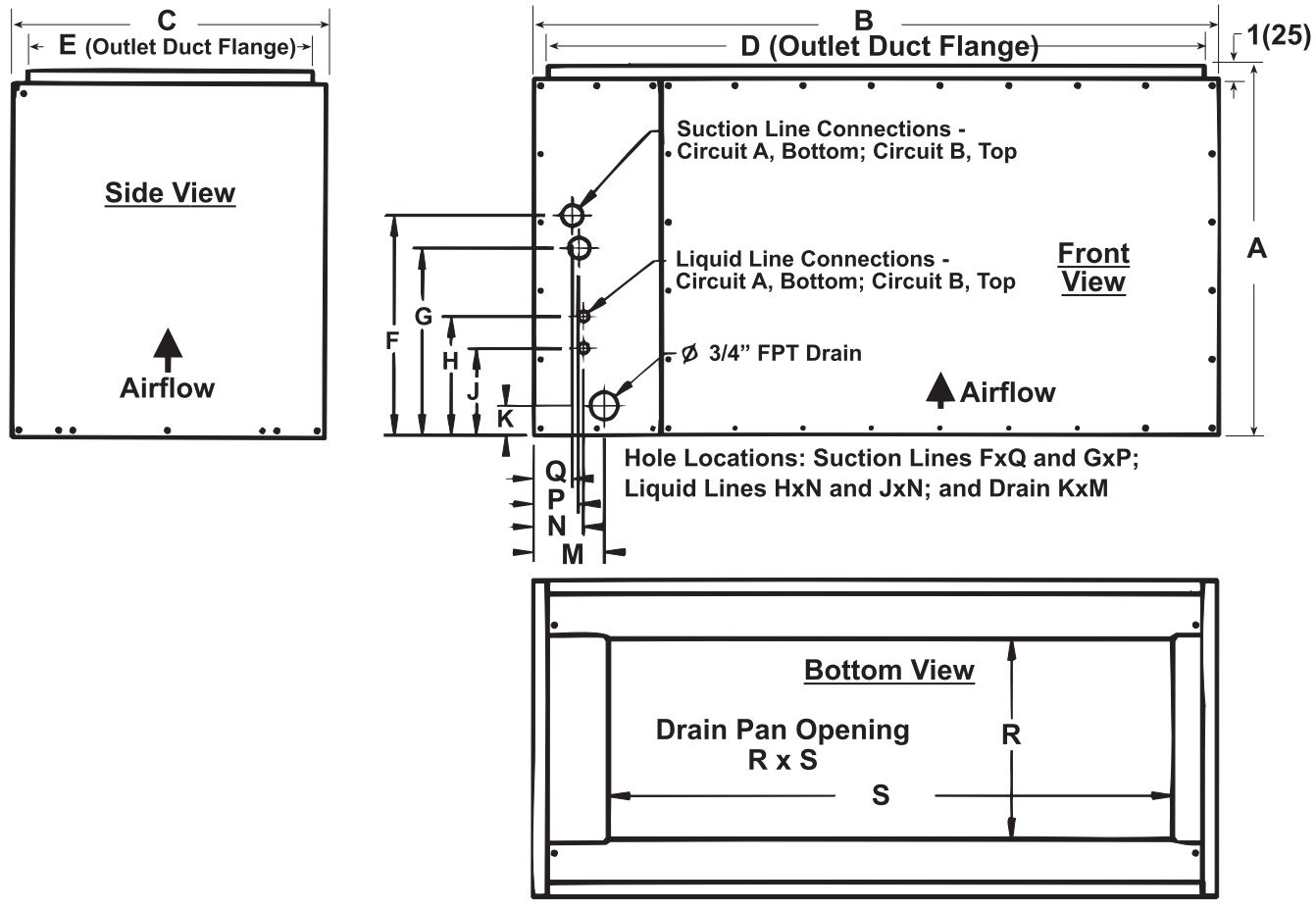

Figure 2. Cased Cooling Coil Dimensions (Refer to Table 4)

Dimensions—Continued

Table 4. Cased Cooling Coil Dimensions

Unit Size	Dimension (See Figure 2)															
	A	B	C	D	E	F	G	H	J	K	M	N	P	Q	U	V
	Inches (mm)															
150, 200	27 (686)	38 (965)	23 (584)	36 (914)	21 (533)	16-1/2 (419)	—	8-1/2 (217)	—	2-1/8 (54)	6 (152)	4 (102)	—	3-1/2 (89)	14-1/2 (368)	27 (686)
250, 300		50 (1270)		48 (1219)		16 (406)	13-5/8 (346)	8-5/8 (219)	6-1/4 (159)		5-1/8 (130)	3-5/8 (92)	3-1/4 (83)	2-3/4 (70)		41-1/4 (1048)
350, 400	32-5/8 (829)		36 (914)		34 (864)	20-1/2 (521)	17-1/4 (438)	9-1/4 (235)	7-3/4 (197)		4-1/4 (108)	5-3/4 (146)	4-1/4 (108)	3 (76)	27-1/2 (699)	39-7/8 (1013)

NOTE: Hole locations: suction lines = G × P for circuit A or F × Q for circuit B, liquid lines = J × N for circuit A or H × N for circuit A, drain = K × M.

Weights

Table 5. Cased Cooling Coil Weights

CAUA Unit Size	Cased Cooling Coil Model	Option	Pounds (kg)
150, 200	ACUA	C060	83 (38)
		C072	86 (39)
		C090	105 (48)
250, 300	ACUB	C090	110 (50)
		C120	122 (55)
		C150	140 (64)
350, 400	ACUC	C120	176 (80)
		C150	180 (82)
		C180	188 (85)

INSTALLATION

Install Cooling Coil on Top of Heater

NOTE: The heater must be level and should be in its final installed location before installing the cased cooling coil. The coil fits over the discharge opening on the top of the heater.

1. If specified, place field-supplied gasket material on top of heater where cabinet surfaces will have contact.
2. Coil fits with line connection holes in front or rear of cabinet. Locate openings and determine most efficient orientation, lift coil, and place it on top of heater. Because of cabinet design, there is no mechanical attachment required between heater and cased cooling coil.
3. Verify that heater and coil cabinet are level.

Thermostatic Expansion Valve (TXV) Kit Installation

⚠ CAUTION ⚠

The TXV must be for R-410A refrigerant and must be sized to match the circuit. Failure to correctly select and install the TXV(s) will prevent the system from operating properly and will void the manufacturer's warranty.

NOTE: For replacement parts information, including TXVs for R22 refrigerant, refer to the replacement parts manual available at www.reznorhvac.com.

Ensure that the shipped-loose TXV kit components are correct for the installation and for each circuit in accordance with **Table 2** and with the unit rating plate. Install the TXV kit as follows:

NOTE: Refer to the TXV manufacturer's instructions for installation information including bulb placement. When brazing, wet wrap the valve body but do not allow moisture to enter the tubing. Braze with the flame pointed away from the valve.

1. Position outlet of circuit A TXV toward distributor connection in bottom liquid line.
2. If reducer is required, install it on distributor connection and TXV outlet. If there is no reducer, connect TXV outlet to distributor connection.
3. Repeat steps 1 and 2 to install circuit B TXV in top liquid line.

NOTE: If there are two circuits, be sure to match the liquid line with the corresponding suction line.

4. After refrigerant lines are installed and before refrigerant charging, install TXV bulb:
   a. Extend bulb from TXV to suction line.
   b. Position bulb flat against surface of tubing and orient capillary tube as shown in **Figure 3**. Place bulb on straight horizontal section of suction line as close as possible to evaporator coil outlet. If bulb must be vertical, line must be descending.

NOTE: Never place the TXV bulb in a trap or downstream of a trap.

   c. Secure bulb tightly. Bulb must have 100% contact with tubing.
   d. Cover bulb with waterproof insulation.

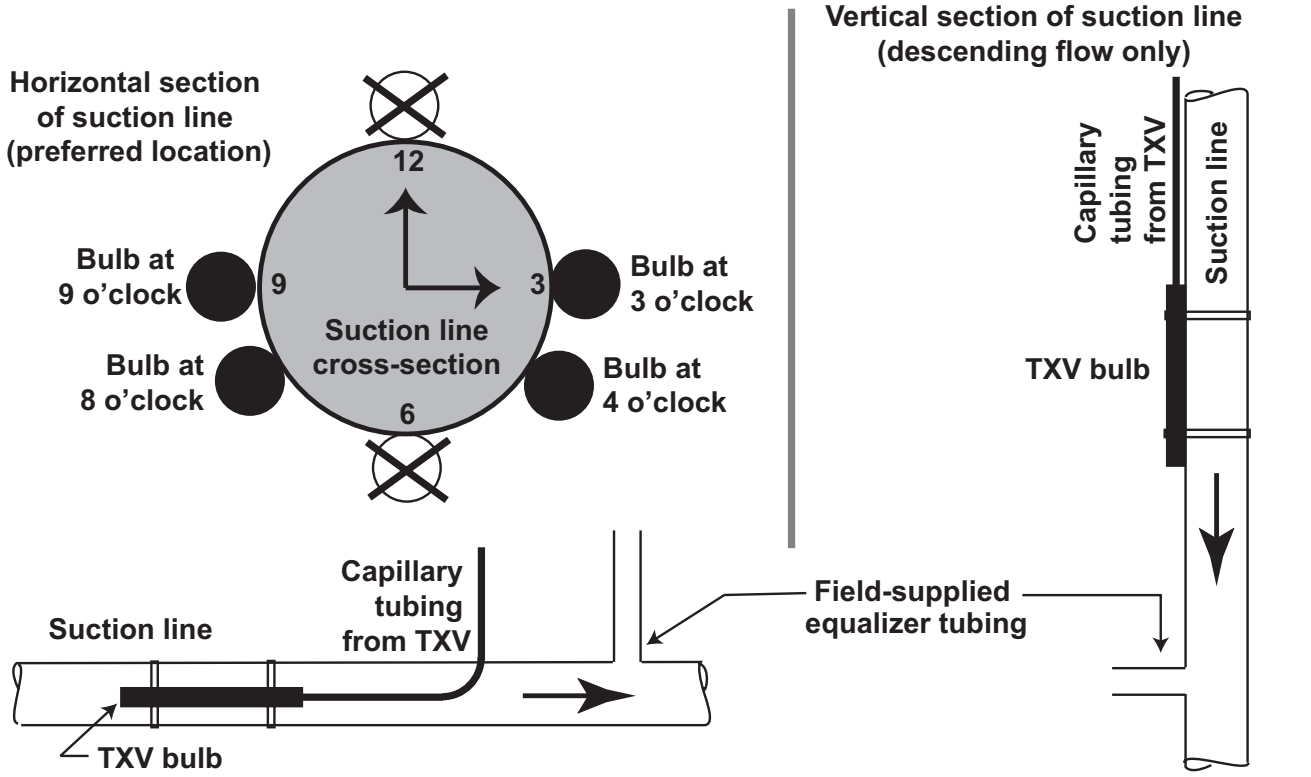

Figure 3. TXV Bulb Installation (Applies to Both Circuits)

5. At short distance downstream from bulb, connect one end of field-supplied equalizer tubing to suction line—preferably at location X (see **Figure 4**). If location X is not possible, location Y is acceptable as long as pressure is essentially same as at X. Connect other end of field-supplied equalizer tubing to 1/4-inch ODF fitting on TXV (see **Figure 4**).

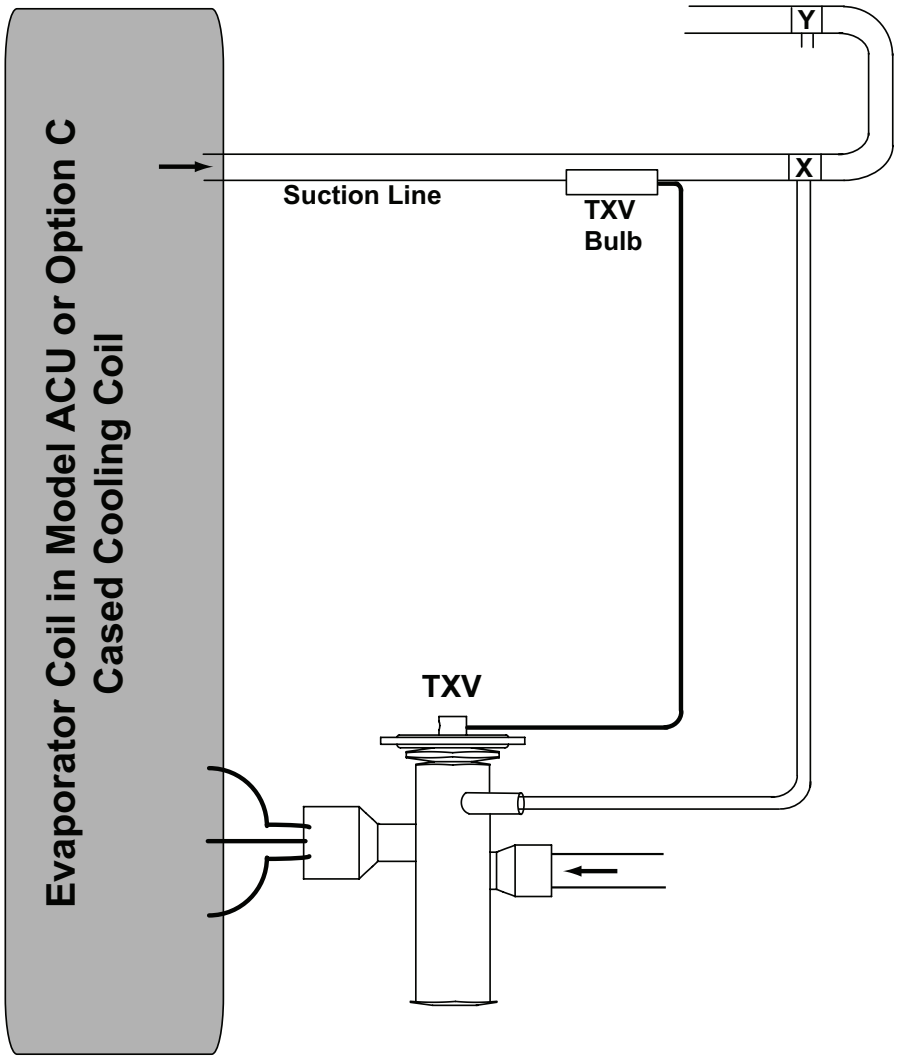

Figure 4. Equalizer Line Installation (Applies to Both Circuits)

Heat Section Condensate Drain Line Installation

When a cooling coil is installed on a model CAUA heater, a heat section condensate drain line must be installed. Refer to burner condensate drain kit installation instructions available at **www.reznorhvac.com** to install a condensate drain line in the heat section.

Cased Cooling Coil Drain Line Installation

⚠ CAUTION ⚠

- **An obstruction in the drain or a poorly-designed drain can cause the condensate pan to overflow. Overflow could result in damage to the unit and/or building.**

The cased coil has a 3/4-inch FPT drain connection (see location in **Figure 2**). Install the drain line as follows:

1. Pitch drain line at least 1/2 inch (13 mm) for every 10 feet (3 meters) of horizontal run.
2. Ensure that drain line does not interfere with access panels or doors.
3. Install drain trap in drain line. Determine drain trap dimensions as follows:
   a. Dimension A (see **Figure 5**, DETAIL A) = 3 inches (76 mm) minimum.
   b. Dimension B (see **Figure 5**, DETAIL A) = A + A/2.

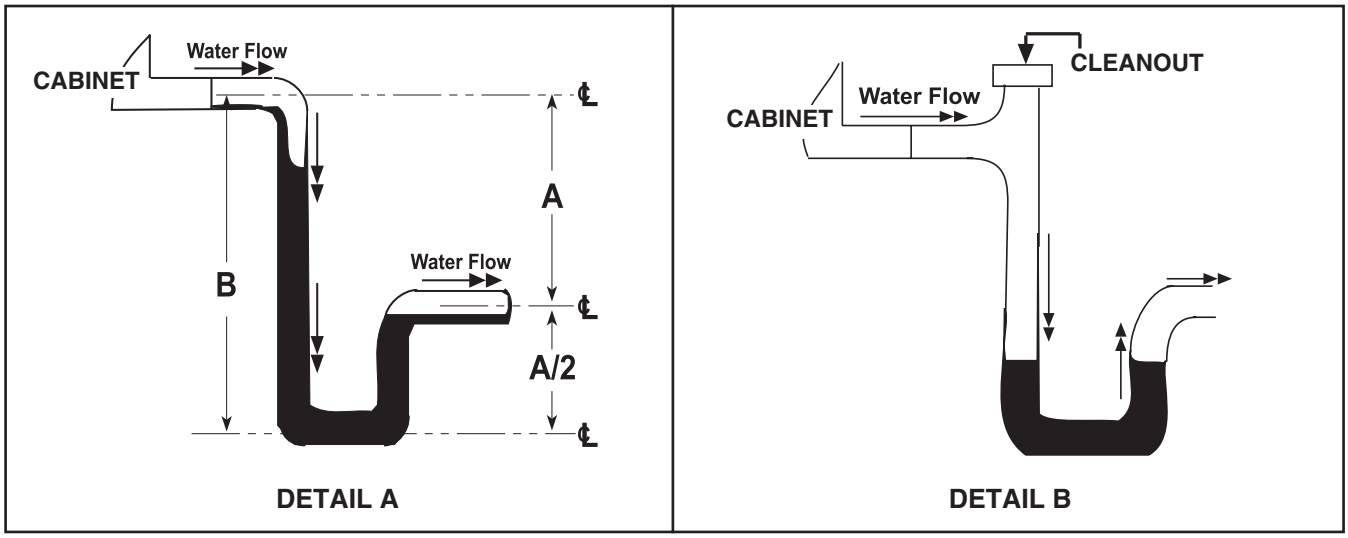

Figure 5. Condensate Drain Trap Dimensions

⚠ CAUTION ⚠

- **The design of the drain trap is important.**
- **Improper trap design accounts for some condensate drainage system failures, but incorrect use and maintenance of condensate drain traps can also cause problems. The combination of airborne particles and moisture in the air handler can result in algae formation in the drain pan and traps. The traps must be cleaned regularly to avoid blockage that can slow or stop water flow, resulting in backup into the system.**

NOTE: If dimension B (see Figure 5, DETAIL A) is not tall enough, the water seal will not hold and air will be drawn through the drain pipe into the unit. If the outlet leg of the trap is too tall, water will back up into the drain pan. As condensate forms during normal operation, the water level in the trap rises until there is a constant outflow.

4. Connect heat section condensate drain line tubing (refer to **Heat Section Condensate Drain Line Installation** section) into cooling coil condensate drain line and continue into sanitary drain system.
5. Ensure that cleanout (see **Figure 5**, DETAIL B) is closed to prevent air from entering drain line.

NOTES:

- **SEASONAL USAGE: At the beginning of the cooling season, inspect and clean the entire cooling coil cabinet including the condensate drain pan. Thoroughly clean dirt, algae, grease, and other contaminates. Inspect condensate drain pans, traps, and piping and fill traps with water to ensure proper operation. During a wintertime shutdown of the cooling system, it may be desirable to disconnect and remove all water from the traps and drains to prevent freeze damage. If local building codes permit, traps may be filled with an antifreeze solution or piping may be designed with freeze plugs or other freeze-protection methods such as a heat tape.**
- **YEAR-ROUND USAGE: Climates or applications with cooling requirements year-round require more frequent inspections of the cooling coil cabinet and condensate drains. Depending on climate, freeze-protection of traps may be required during non-cooling hours.**

Ductwork Installation

- This system requires both return air and discharge ductwork unless ordered with an option AVA2 inlet base and/or an option CD discharge plenum.
- Install discharge ductwork to the top of the cooling coil cabinet (refer to dimensions D × E in **Figure 2** for duct flange dimensions.
- It is recommended that an optional mixing box with filters, an optional filter cabinet, or field-supplied filters be installed in the inlet air duct.

Electrical Connections

The system is operated by 24V controls (see **Figure 6**). A separate 24V control transformer is required for the condensing equipment controls. Refer to the 24V electrical requirements of the condenser manufacturer.

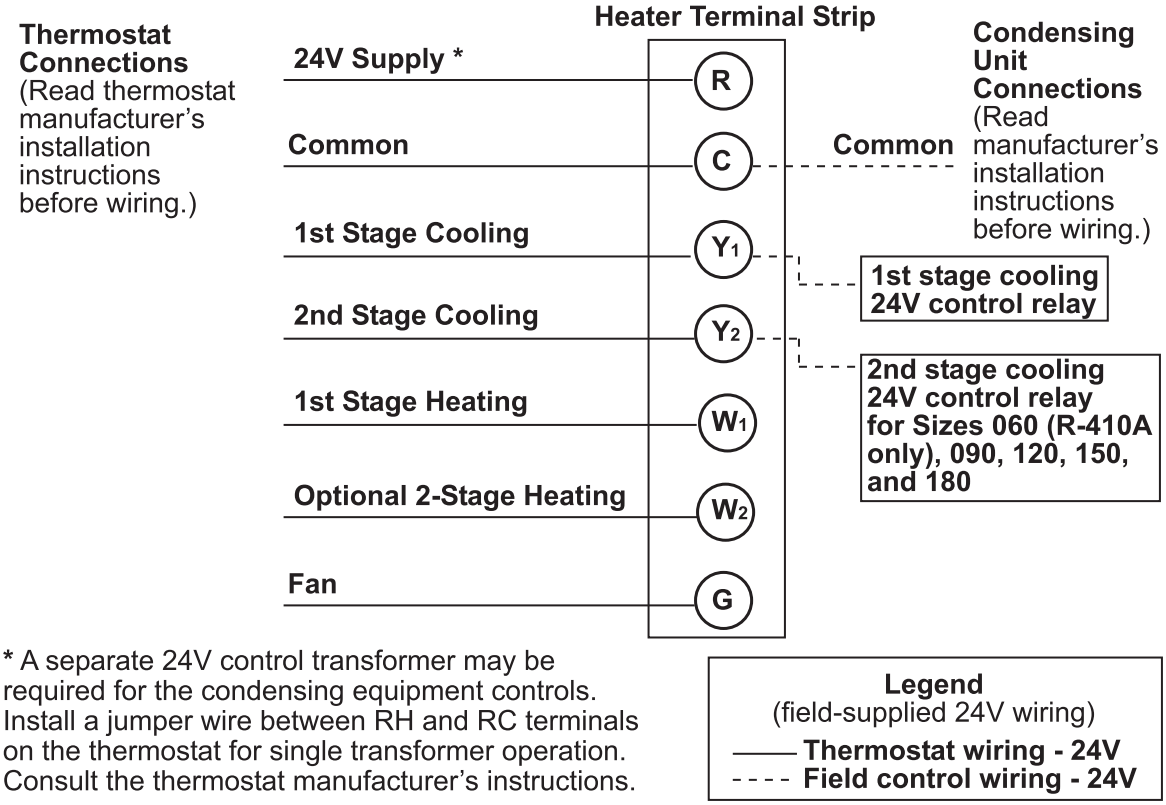

Figure 6. Typical Wiring Diagram for 24V Controls

NOTE: Refer to the installation manual provided with the heater for additional details on installing ductwork and to complete the installation of the heating/cooling unit. Follow the instructions and requirements of the model MASA or field-provided condensing unit to complete the cooling system.

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