

# Large Packaged Rooftop Units 12½ to 25 Tons Accessory Electric Heater Packages

Cancels: IIK 542F-150-4

IIK 542J-150-13  
1/15/99

## Installation Instructions

Part No. CRHEATER136A00 through CRHEATER143A00

### SAFETY CONSIDERATIONS

Installation and servicing of air-conditioning equipment can be hazardous due to system pressure and electrical components. Only trained and qualified service personnel should install, repair, or service air-conditioning equipment.

Untrained personnel can perform basic maintenance functions of cleaning coils and filters and replacing filters. All other operations should be performed by trained service personnel. When working on air-conditioning equipment, observe precautions in the literature, tags and labels attached to the unit, and other safety precautions that may apply.

Follow all safety codes. Wear safety glasses and work gloves. Use quenching cloth for unbrazing operations. Have fire extinguishers available for all brazing operations.

#### **⚠ WARNING**

Before performing service or maintenance operations on unit, turn off main power switch to unit. Electrical shock could cause personal injury.

### GENERAL

This installation instruction covers accessory electric heater package numbers CRHEATER136A00, CRHEATER137A00, CRHEATER138A00, CRHEATER139A00, CRHEATER140A00, CRHEATER141A00, CRHEATER142A00, and CRHEATER143A00. See Table 1 for kit contents. See Tables 2-4 for unit electrical data and kit usage.

NOTE: All units with electric heat require a field-supplied 90-degree elbow. The elbow must be installed in the supply ductwork below the unit discharge connection.

NOTE: Accessory heater package numbers CRHEATER142A00 and CRHEATER143A00 require an accessory electric heat box. Contact your distributor for more details.

**Table 1 — Package Contents**

QUANTITY	ITEM
1	Heater Module
1	Heater Track
2	7/8-in. Bushing
2	2-in. Bushing
7	No. 10 Screw
6	Plate Washer
6	Lock Nut
3	3/8-in. Ring Terminal*
2	Spacer

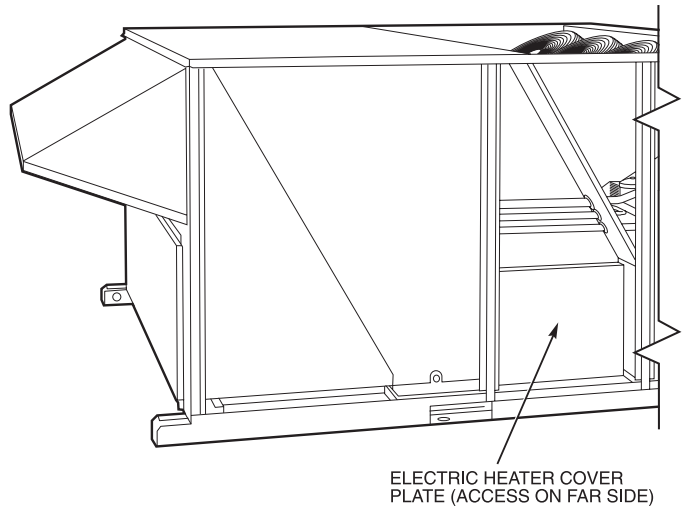
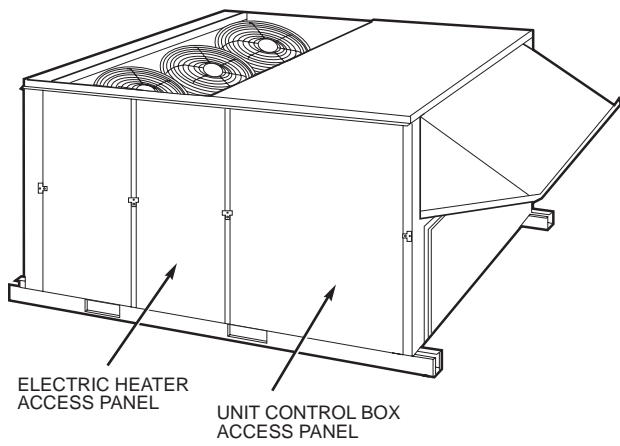
\*Ring terminals are included in package numbers CRHEATER137A00 and CRHEATER138A00 only and are only used on heat pump units.

### INSTALLATION

NOTE: A minimum ductwork clearance of 1 in. is required for the first 24 in. of ductwork on 15 to 25 ton units with electric heat.

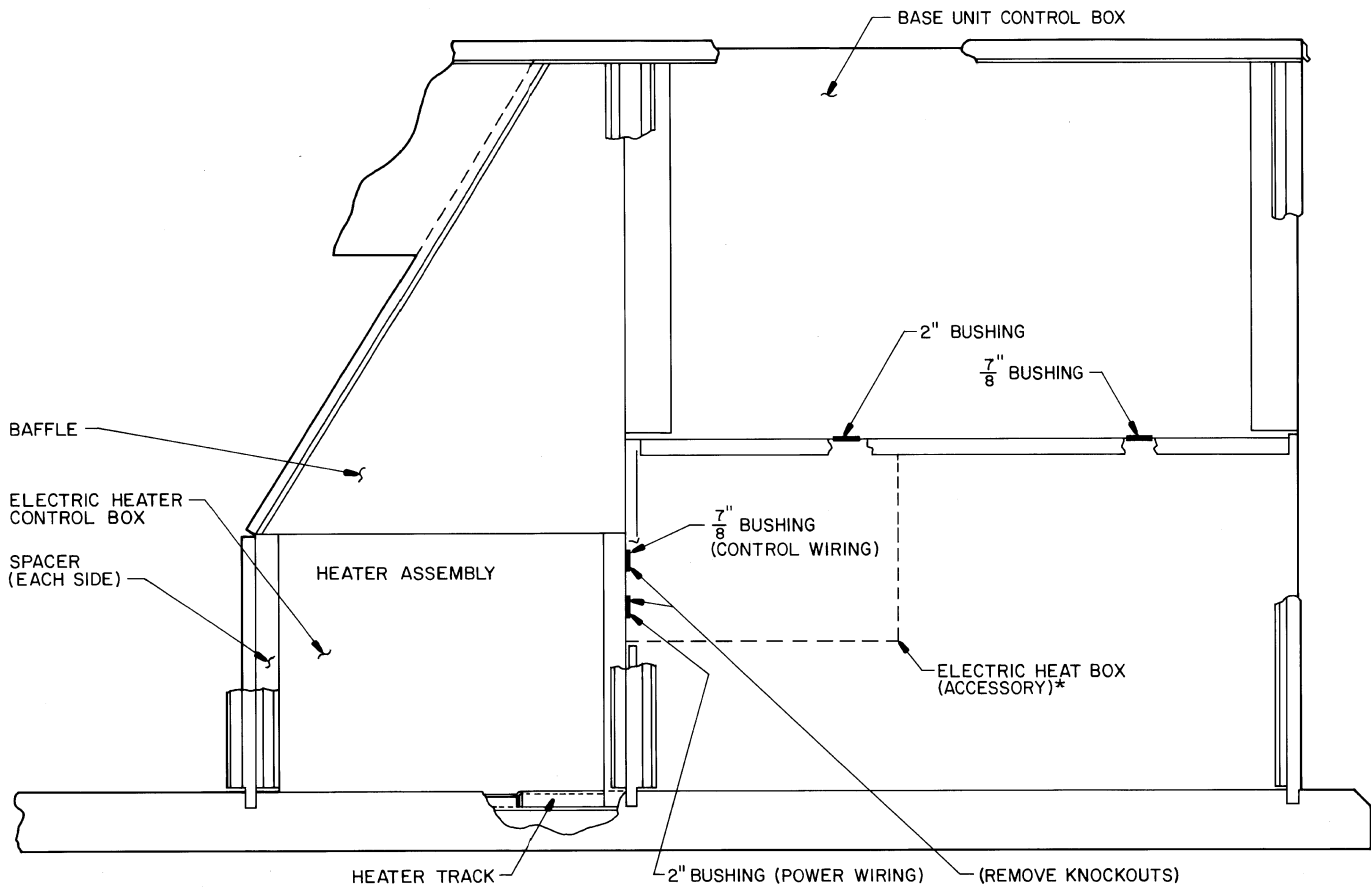
1. Turn off power to the unit.
2. Remove control box access panel and electric heater access panel. See Fig. 1.
3. Remove cover plates from both ends of electric heater compartment and save screws.
4. Install heater track from accessory package into heater compartment to facilitate installation of heater assembly. See Fig. 2. Locate track in compartment at side nearest indoor blower section. Secure track to basepans with field-supplied screws.
5. Install factory-supplied spacers at both sides of electric heater compartment. See Fig. 2 and 3.
6. Remove 2 knockouts (one 7/8 in. and one 2 in.) from the partition between electric heater compartment and control box section. Insert bushings provided into the holes. See Fig. 2.
7. Install electric heater assembly (Fig. 4) into heater compartment.
8. Feed electric heater control wires through 7/8-in. bushing and feed power wires through 2-in. bushing in partition and into the electric heat control box section.
9. Match the holes at the top of the heater assembly with the baffle at the end of the unit opposite the control section. See Fig. 5.
10. Reinstall cover plate over heater control section. To do so, line up cover plate, heater assembly, and baffle holes. Fasten heater assembly to unit with two no. 10 screws provided in accessory kit. Fasten bottom of cover plate to basepan with two no. 10 screws provided.
11. Fasten electric heat control box to baffle using remaining no. 10 screws provided in accessory kit. See Fig. 5.

Manufacturer reserves the right to discontinue, or change at any time, specifications or designs without notice and without incurring obligations.



NOTE: Typical unit shown with electric heater access panel removed.

**Fig. 1 — Typical Unit Physical Details (13 to 18 Ton Unit Shown)**



\*Kit numbers CRHEATER142A00 and CRHEATER143A00 only.

**Fig. 2 — Component Location — Electric Heat**

**Table 2 — Standard Efficiency Packaged Rooftop Units,  
Electrical Data and Electric Heater Package Usage**

UNIT 50TJ and 559F	NOMINAL VOLTAGE (3 Ph, 60 Hz)	ACCESSORY HEATER PART NO. CRHEATER	IFM	ACCESSORY ELECTRIC HEAT		POWER SUPPLY	
			Hp	FLA	kW	MCA	MOCP
15 Tons	208/240	141A00	3.7	72/ 82	26/34	103/116	150/150
		142A00		117/135	42/56	155/148	175/150
		143A00		156/180	56/75	169/193	175/200
	380	137A00	3	32	21.6	55	80
		138A00		54	37.2	76	80
	480	137A00	3.7	39	32	55	70
		138A00		66	55	72	80
		139A00		96	80	102	110
	18 Tons	208/240	141A00	5	72/ 82	26/34	110/122
142A00			117/135		42/56	166/155	175/175
143A00			156/180		56/75	176/200	200/225
480		137A00	39		32	59	60
		138A00	66		55	76	80
		139A00	96		80	106	110
20 Tons	208/240	141A00	7.5	72/ 82	26/34	121/134	150/150
		142A00		117/135	42/56	178/166	200/175
		143A00		156/180	56/75	187/211	200/225
	480	137A00		39	32	65	70
		138A00		66	55	82	90
		139A00		96	80	112	125
25 Tons	208/240	141A00	10	72/ 82	26/34	137/138	175/175
		142A00		117/135	42/56	181/170	200/175
		143A00		156/180	56/75	191/215	200/225
	380	137A00		32	21.6	80	100
		138A00		54	36	93	100
	480	137A00		39	32	70	90
		138A00		66	55	84	90
		139A00		96	80	114	125

LEGEND

- FLA** — Full Load Amps
- IFM** — Indoor-Fan Motor
- MCA** — Minimum Circuit Amps
- MOCP** — Maximum Overcurrent Protection

NOTE: Control circuit is 24 v.

**Table 3 — High Efficiency Packaged Rooftop Units  
Electrical Data and Electric Heater Package Usage**

UNIT 50HJ and 551A	ELECTRIC HEATER RATING VOLTAGE (3 Ph, 60 Hz)	ACCESSORY HEATER PACKAGE NO. CRHEATER	IFM	ACCESSORY ELECTRIC HEAT		POWER SUPPLY	
			Hp	FLA	kW	MCA	MOCP
13 Tons	208/240	140A00	3.7	39/ 45	14/19	88/ 88	100/100
		141A00		72/ 82	26/34	103/116	110/125
		142A00		117/135	42/56	159/148	175/175
	380	137A00	3	32	21.6	52	60
	480	136A00	3.7	18	15	39	45
		137A00		39	32	55	60
138A00		66		55	72	80	
15 Tons	208/240	141A00	5	72/ 82	26/34	111/122	125/125
		142A00		117/135	42/56	167/154	175/175
		143A00		156/180	56/75	177/199	200/200
	480	137A00		39	32	58	60
		138A00		66	55	76	80
		139A00		96	80	106	110
20 Tons	208/240	141A00	10	72/ 82	26/34	129/138	150/150
		142A00		117/135	42/56	185/170	200/175
		143A00		156/180	56/75	195/215	225/225
	380	137A00		32	21.6	71	90
		138A00		54	36	89	90
		139A00		39	32	66	70
	480	137A00		66	55	83	90
		138A00		96	80	113	125
		139A00					

LEGEND

- FLA — Full Load Amps  
 IFM — Indoor-Fan Motor  
 MCA — Minimum Circuit Amps  
 MOCP — Maximum Overcurrent Protection

NOTE: Control circuit is 24 v.

**Table 4 — Packaged Heat Pump Units  
Electrical Data and Electric Heater Package Usage**

UNIT 50HJQ and 542J	ELECTRIC HEATER RATING VOLTAGE (3 Ph, 60 Hz)	ACCESSORY HEATER PACKAGE NO. CRHEATER	IFM	ACCESSORY ELECTRIC HEAT		POWER SUPPLY	
			Hp	FLA	kW	MCA	MOCP
12.5 Tons	208/240	140A00	3.7	39/ 45	14/19	114/123	125/150
		141A00		72/ 82	26/34	155/168	175/175
		142A00		117/135	42/56	211/200	225/225
	480	136A00		18	15	54	60
		137A00		39	32	81	90
		138A00		66	55	98	110
15 Tons	208/240	141A00	5	72/ 82	26/34	174/187	175/200
		142A00		117/135	42/56	231/219	250/225
	480	137A00		39	32	91	100
		138A00		66	55	108	110

LEGEND

- FLA — Full Load Amps  
 IFM — Indoor-Fan Motor  
 MCA — Minimum Circuit Amps  
 MOCP — Maximum Overcurrent Protection

NOTE: Control circuit is 24 v.

**Units Not Requiring Accessory Electric Heat Box (Accessory Kit Numbers CRHEATER136A00, 137A00, 138A00, 139A00, 140A00, 141A00)**

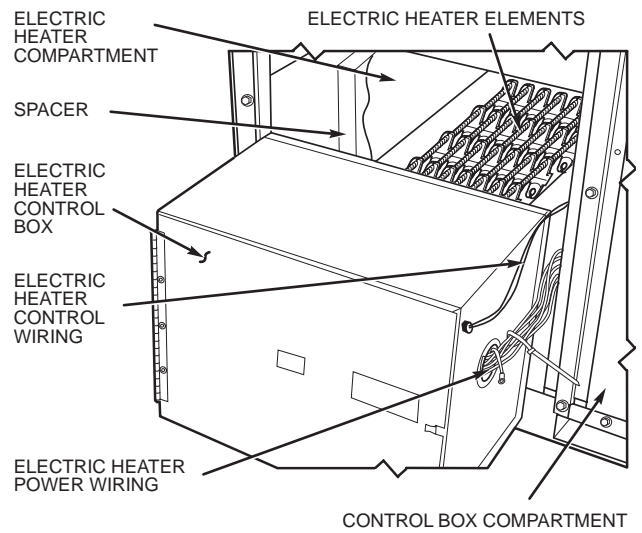
1. Remove the 2-in. knockout from the bottom of the unit control box, and install a 2-in. bushing (provided) in the hole.
2. On heat pump units using number CRHEATER137A00 or CRHEATER138A00 accessory kits, remove the factory-supplied power wire terminals, and crimp the 3/8-in. ring terminals (supplied in accessory kit) onto the ends of the power wires.
3. Route power wires from the electric heat control box through the bushing, and into the unit control box.
4. Attach power wiring to the terminal block (TB) as shown in Fig. 6.

**Units Requiring Accessory Electric Heat Box (Fig. 7) (Accessory Kits CRHEATER142A00 and CRHEATER143A00)**

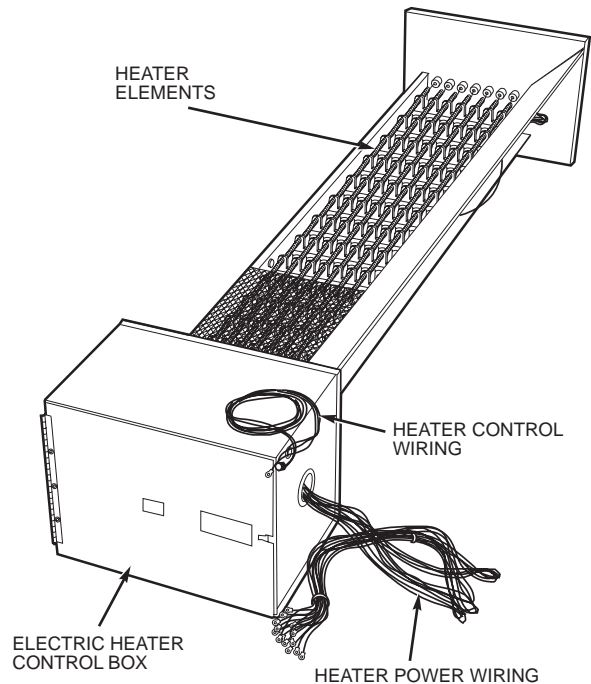
1. Remove field power supply wiring from terminal block in base unit control box, and remove the wiring from the box.
2. Remove the 2-in. knockout from the bottom of the unit control box, and install a 2-in. bushing (provided) in the hole.
3. Install accessory electric heat box (Fig. 7) under the unit control box (Fig. 8). The holes in the accessory electric heat box align with the knockouts in the partition and the bottom of the unit control box.
4. Install field power supply wiring in accessory electric heat box and connect it to TB (see Fig. 8 and label diagram on the unit).
5. Route 1/0 wire with pigtails from the accessory electric heat box into base unit control box.
6. Fasten the pigtails to TB1 in the unit control box as shown in Fig. 8.
7. Install electric heater power wiring from the electric heat control box to TB in accessory electric heat box as shown in Fig. 8. Fasten wires with plate washers and lock nuts provided. When running power wiring through unit corner post, install a field-supplied watertight connector.

**All Units**

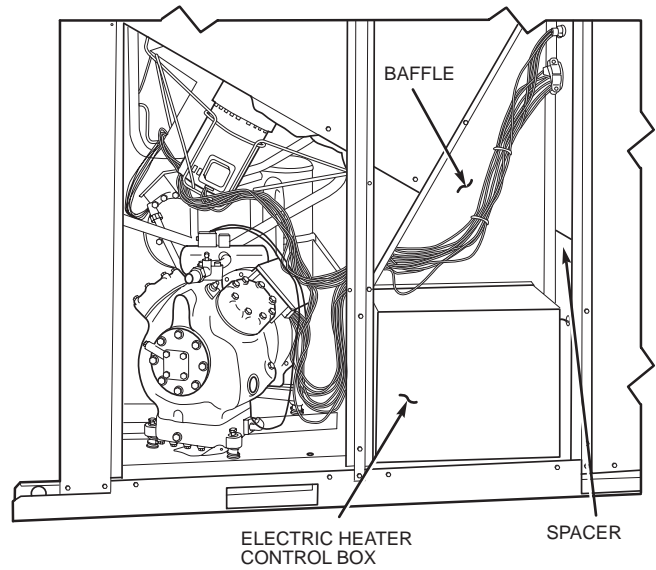
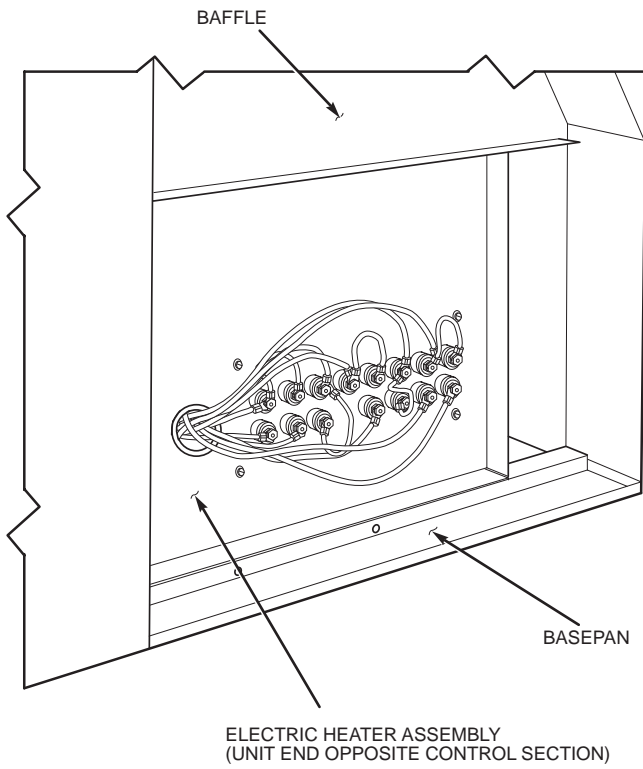
1. Remove knockout in base unit control box below the low-voltage barrier.
2. Install a 7/8-in. bushing (provided).
3. Feed control wiring from electric heater control box through hole and secure to TB2 or TB3 as shown in Fig. 6 and 8.
4. Mark the space on the unit nameplate labelled "Check Here" with appropriate unit minimum circuit amps and overcurrent protection device.
5. Set heat anticipator settings according to Table 5.
6. Replace all panels.
7. Turn on power to the unit.



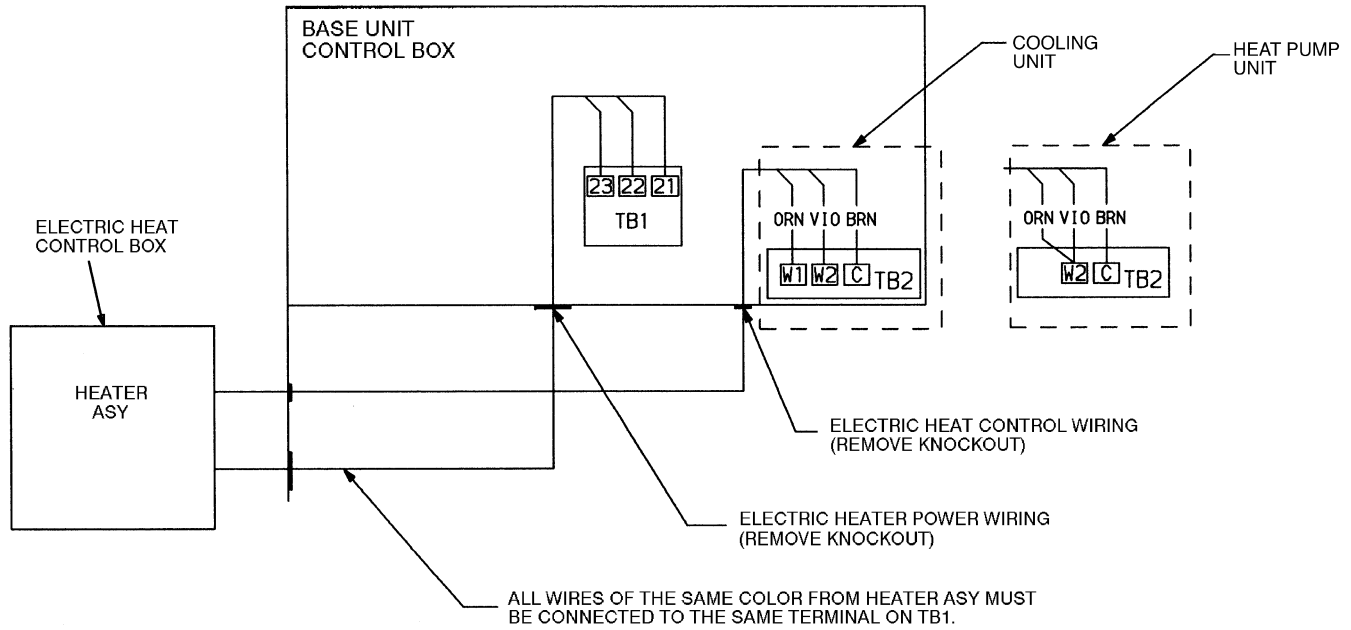
**Fig. 3 — Accessory Electric Heater Installation**



**Fig. 4 — Accessory Electric Heater Assembly**



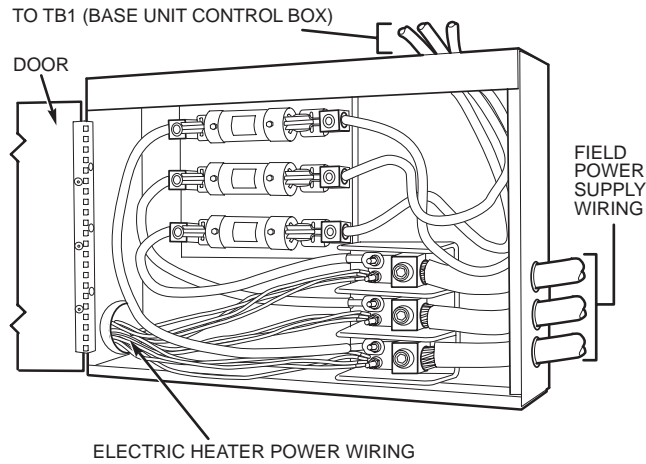
**Fig. 5 — Electric Heater Installation Details**



**LEGEND**

- ASY — Assembly
- TB — Terminal Block

**Fig. 6 — Accessory Electric Heat — Wiring Connection Diagram, Package Numbers CRHEATER136A00, 137A00, 138A00, 139A00, 140A00, 141A00**

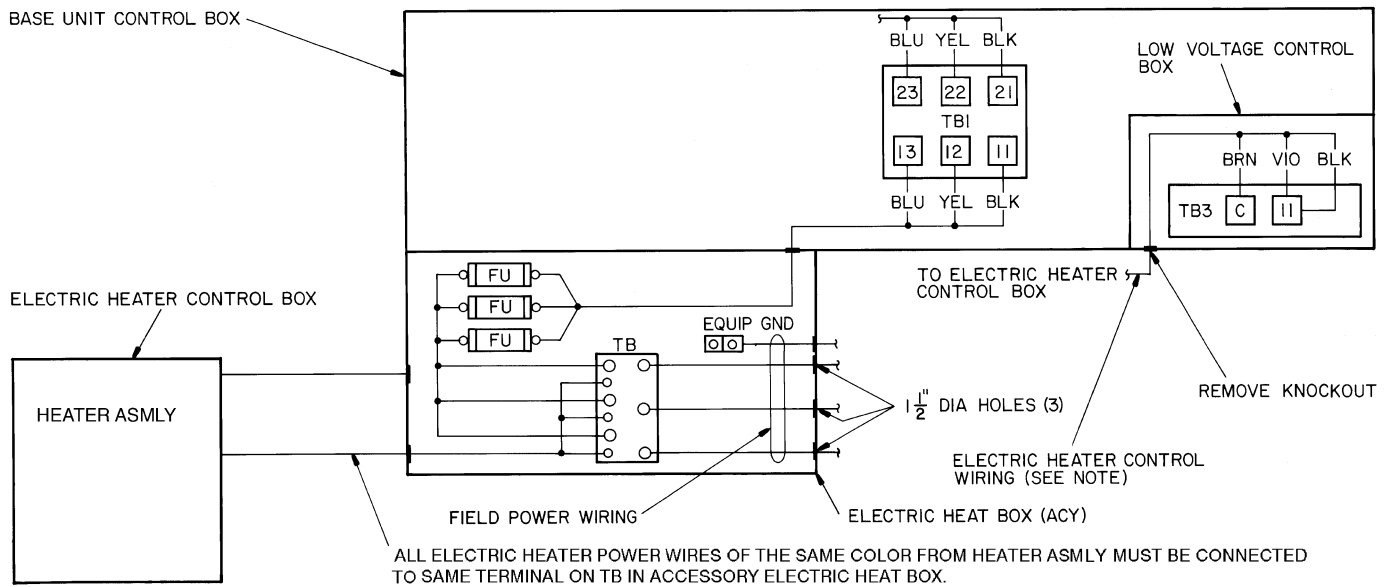


**LEGEND**

**TB** — Terminal Block

**NOTE:** This accessory is only required for accessory electric heater kit part numbers CRHEATER142A00 and CRHEATER143A00.

**Fig. 7 — Accessory Electric Heat Box**



ALL ELECTRIC HEATER POWER WIRES OF THE SAME COLOR FROM HEATER ASMLY MUST BE CONNECTED TO SAME TERMINAL ON TB IN ACCESSORY ELECTRIC HEAT BOX.

**NOTE:** Route heater control wiring outside of accessory electric heat box. Secure with field-supplied wire ties to base unit control box. Control wiring must clear hinged door on electric heat box.

**LEGEND**

<b>ACY</b> — Accessory	<b>FU</b> — Fuse
<b>ASMLY</b> — Assembly	<b>GND</b> — Ground
<b>EQUIP</b> — Equipment	<b>TB</b> — Terminal Block

**Fig. 8 — Electric Heater Wiring Connections Using Accessory Electric Heat Box (Accessory Electric Heat Kit Numbers CRHEATER142A00 and CRHEATER143A00)**

**Table 5 — Heat Anticipator Settings**

UNIT	VOLTAGE	HEATER kW*	STAGE 1	STAGE 2	
50TJ/559F 15 to 25 Tons	208/230	26/34	0.40	0.66	
		42/56	0.66	0.40	
		56/75		0.66	
	380	21.6†	0.40	0.40	
		36**		0.66	
		37.2††		0.66	
	460	32	0.40	0.40	
		55		0.66	
		80	0.66		
	50HJ/551A 13 Tons	208/230	14/19	0.40	—
			26/34		0.40
			42/56		
380		21.6	0.40	0.40	
460		15	0.40	—	
		32		0.40	
		55		0.66	
50HJ/551A 15 and 20 Tons		208/230	26/34	0.40	0.66
			42/56	0.66	0.40
	56/75		0.66		
	380	21.6	0.40	0.40	
		36		0.66	
	460	32	0.40	0.40	
		55		0.66	
		80	0.66		
	50HJQ/542J 12.5 and 15 Tons	208/230	14/19¶	1.0	0.26
26/34			1.0		0.52
42/56					0.78
460		15¶¶	1.0	0.26	
		32		1.0	0.52
		55			0.78

\*Heater capacity (kW) is based on heater voltage of 208 V, 240 v, 380 v, or 480 v. Heaters are rated at 240 v and 480 v. If distribution voltage to unit power varies from rated heater voltage, heater kW will vary accordingly.

†Only available on 50TJ/559F, 15 and 25 ton units.

\*\*Only available on 50TJ/559F, 25 ton units.

††Only available on 50TJ/559F, 15 ton units.

||Only available on 50HJ/551A, 20 ton units.

¶Only available on 50HJQ/542J, 12.5 ton units.