LENNOX Service Literature

UNIT INFORMATION

100112
July 20, 2025

CBK47UHET

CBK47UHET (R-454B) SERIES UNITS

⚠ 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 licensed professional HVAC installer or equivalent, service agency, or the gas supplier.

⚠ 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.

NOTICE

A thermostat is not included and must be ordered separately.

- A Lennox communicating thermostat must be used in communicating applications.
- In non-communicating applications, the Lennox ComfortSense® thermostat may be used, as well as other non-communicating thermostats.

In all cases, setup is critical to ensure proper system operation.

Field wiring for both communicating and non-communicating applications is illustrated in diagrams, which begin on page 33.

⚠ CAUTION

As with any mechanical equipment, contact with sharp sheet metal edges can result in personal injury. Take care while handling this equipment and wear gloves and protective clothing.

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General Information

This indoor unit **with all-aluminum coil** is designed for installation with optional field-installed electric heat and a matched outdoor unit that is charged with R-454B refrigerant. These units, designed for indoor installation in multiple positions, are completely assembled for upflow and horizontal right-hand discharge before being shipped from the factory.

All CBK47UHET air handlers are equipped with a factory-installed, internally mounted check / expansion valve, which is suitable for use in R-454B applications.

This air handler is compatible with non-communicating thermostats and non-communicating outdoor units. In addition, this unit has the enhanced capability of communicating with communicating thermostats and communicating outdoor units using the Lennox RSBus protocols.

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

IMPORTANT: Special procedures are required for cleaning the all-aluminum coil in this unit. See page 65 in this instruction for information.

⚠ WARNING

- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
- The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance, or an operating electric heater).
- Do not pierce or burn.
- Be aware that refrigerants may not contain an odor.

⚠ CAUTION

Servicing shall be performed only as recommended by the manufacturer.

⚠ WARNING

Ducts connected to an appliance shall not contain a potential ignition source

⚠ WARNING

Every working procedure that affects safety means shall only be carried out by competent persons. This appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure they do not play with the appliance.

⚠ IMPORTANT

Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out.

⚠ IMPORTANT

Verify cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects.

⚠ IMPORTANT

Pipe work, including piping material, pipe routing, and installation shall include protection from physical damage in operation and service, and be in compliance with national and local codes and standards, such as ASHRAE 15, ASHRAE 15.2, IAPMO Uniform Mechanical Code, ICC International Mechanical Code, or CSA B52. All field joints shall be accessible for inspection prior to being covered or enclosed.

⚠ CAUTION

Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used.

The following leak detection methods are deemed acceptable for all refrigerant systems.

Electronic leak detectors may be used to detect refrigerant leaks but, in the case of flammable refrigerants, the sensitivity may not be adequate, or may need recalibration. (Detection equipment shall be calibrated in a refrigerant-free area.) Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed, and the appropriate percentage of gas (25 % maximum) is confirmed. Leak detection fluids are also suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work. If a leak is suspected, all naked flames shall be removed/extinguished. If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak.

⚠ CAUTION

Some soaps used for leak detection are corrosive to certain metals. Carefully rinse piping thoroughly after leak test has been completed. Do not use matches, candles, flame or other sources of ignition to check for gas leaks.

⚠ CAUTION

Leak Detection System installed. Unit must be powered except for service.

⚠ WARNING

PARTIAL UNITS shall only be connected to an appliance suitable for the same refrigerant.

⚠ WARNING

Maximum Altitude of application is 3200m above sea level.

NOTE *– This unit is a PARTIAL UNIT AIR CONDITIONER, complying with PARTIAL UNIT requirements of this Standard, and must only be connected to other units that have been confirmed as complying to corresponding PARTIAL UNIT requirements of this Standard, UL 60335-2-40/CSA C22.2 No. 60335-2-40, or UL 1995/CSA C22.2 No 236.*

⚠ IMPORTANT

When breaking into the refrigerant circuit to make repairs – or for any other purpose – conventional procedures shall be used. However, for flammable refrigerants it is important that best practice be followed and, since flammability is a consideration, procedures such as safely remove refrigerant following local and national regulations, purging the circuit with inert gas, evacuating (optional for A2L), purging with inert gas (optional for A2L), or opening the circuit by cutting or brazing be adhered to. The refrigerant charge shall be recovered into the correct recovery cylinders if venting is not allowed by local and national codes. For appliances containing flammable refrigerants, the system shall be purged with oxygen-free nitrogen to render the appliance safe for flammable refrigerants.

This process might need to be repeated several times. Compressed air or oxygen shall not be used for purging refrigerant systems. For appliances containing flammable refrigerants, refrigerants purging shall be achieved by breaking the vacuum in the system with oxygen-free nitrogen and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum (optional for A2L). This process shall be repeated until no refrigerant is within the system (optional for A2L). When the final oxygen-free nitrogen charge is used, the system shall be vented down to atmospheric pressure to enable work to take place. Ensure that the outlet for the vacuum pump is not close to any potential ignition sources and that ventilation is available.

⚠ IMPORTANT

In addition to conventional charging procedures, the following requirements shall be followed.

- Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimize the amount of refrigerant contained in them.
- Cylinders shall be kept in an appropriate position according to the instructions.
- Ensure that the REFRIGERATING SYSTEM is earthed prior to charging the system with refrigerant.
- Label the system when charging is complete (if not already).
- Extreme care shall be taken not to overfill the REFRIGERATING SYSTEM.

Prior to recharging the system, it shall be pressure-tested with the appropriate purging gas. The system shall be leak tested on completion of charging, but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

⚠ IMPORTANT

When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.

When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge is available. All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant (i. e. special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure-relief valve and associated shut-off valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.

The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of all appropriate refrigerants including, when applicable, flammable refrigerants. In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition. Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release. Consult manufacturer if in doubt.

The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant waste transfer note arranged. Do not mix refrigerants in recovery units and especially not in cylinders.

If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The evacuation process shall be carried out prior to returning the compressor to the suppliers. Only electric heating to the compressor body shall be employed to accelerate this process. When oil is drained from a system, it shall be carried out safely.

⚠ IMPORTANT

After completion of field piping for split systems, the field pipework shall be pressure tested with an inert gas and then vacuum tested prior to refrigerant charging, according to the following requirements;

– Field-made refrigerant joints indoors shall be tightness tested. The test method shall have a sensitivity of .2 oz. per year of refrigerant or better, under pressure.

No leak shall be detected.

⚠ IMPORTANT

Prior to beginning work on systems containing FLAMMABLE REFRIGERANTS, safety checks are necessary to ensure that the risk of ignition is minimized.

⚠ IMPORTANT

Work shall be undertaken under a controlled procedure so as to minimize the risk of a flammable gas or vapor being present while the work is being performed.

⚠ IMPORTANT

All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out. Work in confined spaces shall be avoided.

⚠ IMPORTANT

The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially toxic or flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with all applicable refrigerants, i.e. non-sparking, adequately sealed or intrinsically safe.

⚠ IMPORTANT

If any hot work is to be conducted on the refrigerating equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO^2 fire extinguisher adjacent to the charging area.

⚠ IMPORTANT

No person carrying out work in relation to a REFRIGERATING SYSTEM which involves exposing any pipe work shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which refrigerant can possibly be released to the surrounding space. Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. “No Smoking” signs shall be displayed.

⚠ WARNING

Auxiliary devices which may be a potential ignition source shall not be installed in the duct work. Examples of such potential ignition sources are hot surfaces with a temperature exceeding 700°C and electric switching devices.

⚠ IMPORTANT

Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times the manufacturer’s maintenance and service guidelines shall be followed. If in doubt, consult the manufacturer’s technical department for assistance.

The following checks shall be applied to installations using FLAMMABLE REFRIGERANTS:

– the actual REFRIGERANT CHARGE is in accordance with the room size within which the refrigerant containing parts are installed;

– the ventilation machinery and outlets are operating adequately and are not obstructed;

– if an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant;

– marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected;

– refrigerating pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

⚠ IMPORTANT

Sealed electrical components shall be replaced.

⚠ IMPORTANT

Intrinsically safe components must be replaced.

⚠ WARNING

If this appliance is conditioning a space with an area smaller than TAmin or stored in a space with an area smaller than Amin as defined by this instruction, then that space must be without continuously operating open flames (e.g. an operating gas appliance) or other potential ignition sources (e.g. an operating electric heater or similar hot surface). A flame-producing device may be installed in the same space if the device is provided with an effective flame arrest system.

⚠ WARNING

For appliances using A2L refrigerants connected via an air duct system to one or more rooms, only auxiliary devices approved by the appliance manufacturer or declared suitable with the refrigerant shall be installed in connecting ductwork.

⚠ WARNING

For duct connected appliances, false ceilings or drop ceilings may be used as a return air plenum if a REFRIGERANT DETECTION SYSTEM is provided in the appliance and any external connections are also provided with a sensor immediately below the return air plenum duct joint.

⚠ CAUTION

Any service personnel installing, decommissioning, or performing maintenance on the unit must be properly trained with A2L refrigerants

⚠ IMPORTANT

RDS system requires 3 VA additional loading on low voltage transformer.

NOTE *– R-454B is an A2L refrigerant. The system installation must meet the following parameters based upon total refrigerant charge (line set included). TAmin (Total minimum conditioned area) is the minimum allowable conditioned area based upon the total system charge at sea level. Values must be multiplied by altitude adjustment factor at installed altitude.*

Qmin table refers to minimum airflow requirements during refrigerant leak mitigation by the refrigerant detection system, based upon total system charge.

See tables below.

TAmin Table

Charge (lb)	10.0	15.0	20.0	25.0	30.0
Charge (kg)	4.5	6.8	9.1	11.3	13.6
Minimum Conditioned Area (ft2)	149.9	224.9	299.9	374.8	449.8
Minimum Conditioned Area (m2)	13.9	20.9	27.9	34.8	41.8

NOTE *– Multiply values in TAmin table by the Altitude Adjustment Factors to correct TAmin based on installed altitude.*

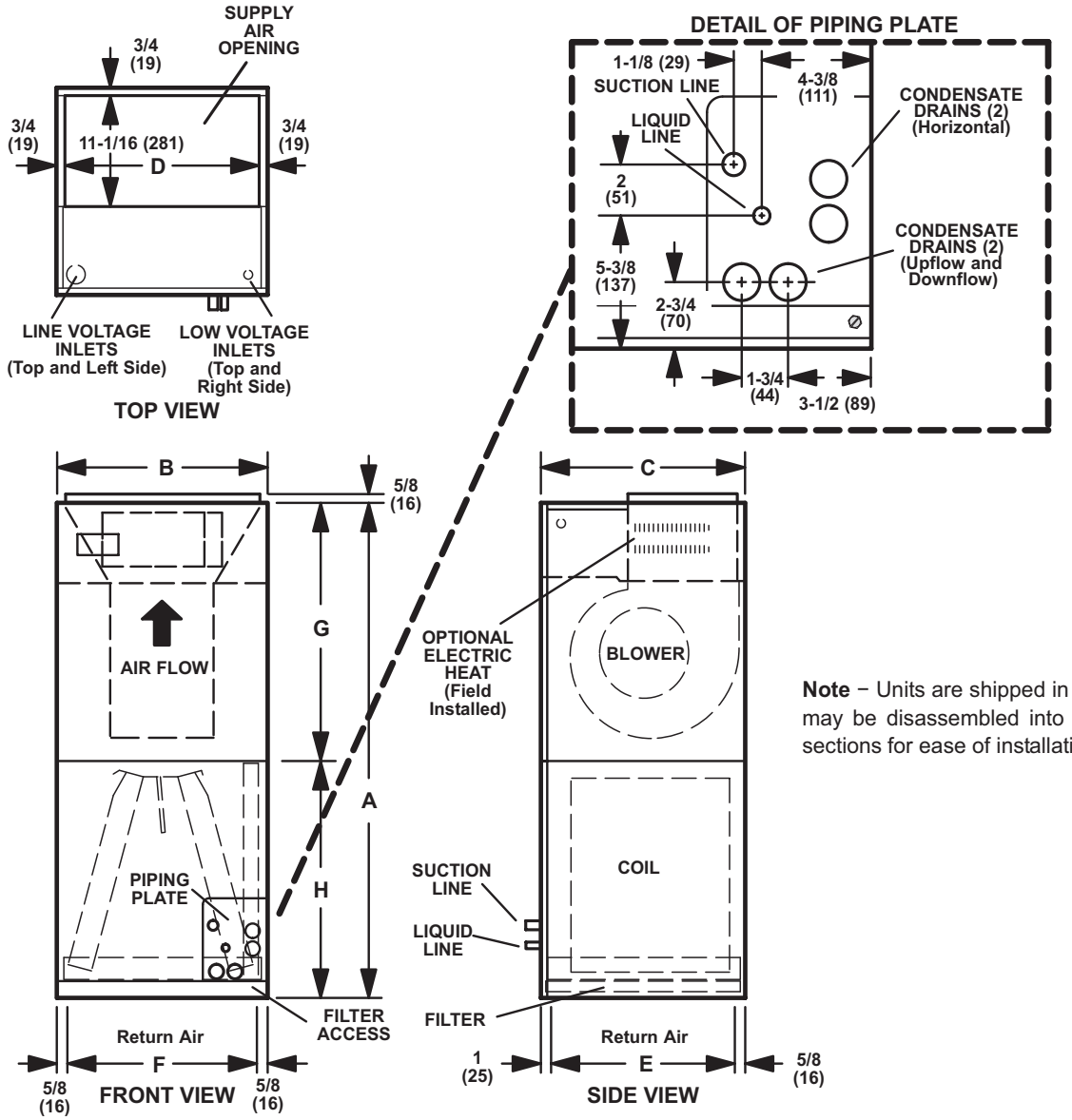
Altitude Adjustment Factor

Altitude (m)	0	200	400	600	800	1000	1200	1400	1600
Altitude (ft)	0	660	1310	1970	2620	3280	3940	4590	5250
Adj. Factor	1	1	1	1	1.02	1.05	1.04	1.1	1.12
Altitude (m)	1600	1800	2000	2200	2400	2600	2800	3000	3200
Altitude (ft)	5250	5910	6560	7220	7870	8530	9190	9840	10500
Adj. Factor	1.12	1.15	1.18	1.21	1.25	1.28	1.32	1.36	1.4

Qmin Table

Refrigerant Charge lb (kg)	CFM Required	Refrigerant Charge lb (kg)	CFM Required
5 (2.3)	135	18 (8.1)	487
6 (2.7)	162	19 (8.6)	514
7 (3.2)	189	20 (9.1)	541
8 (3.6)	216	21 (9.5)	568
9 (4.1)	244	22 (10)	595
10 (4.5)	271	23 (10.4)	622
11 (5)	298	24 (10.9)	649
12 (5.4)	325	25 (11.3)	676
13 (5.9)	352	26 (11.7)	704
14 (6.4)	379	27 (12.2)	731
15 (6.8)	406	28 (12.7)	758
16 (7.3)	433	29 (13.2)	785
17 (7.7)	460	30 (13.6)	812

Unit Dimensions – Upflow

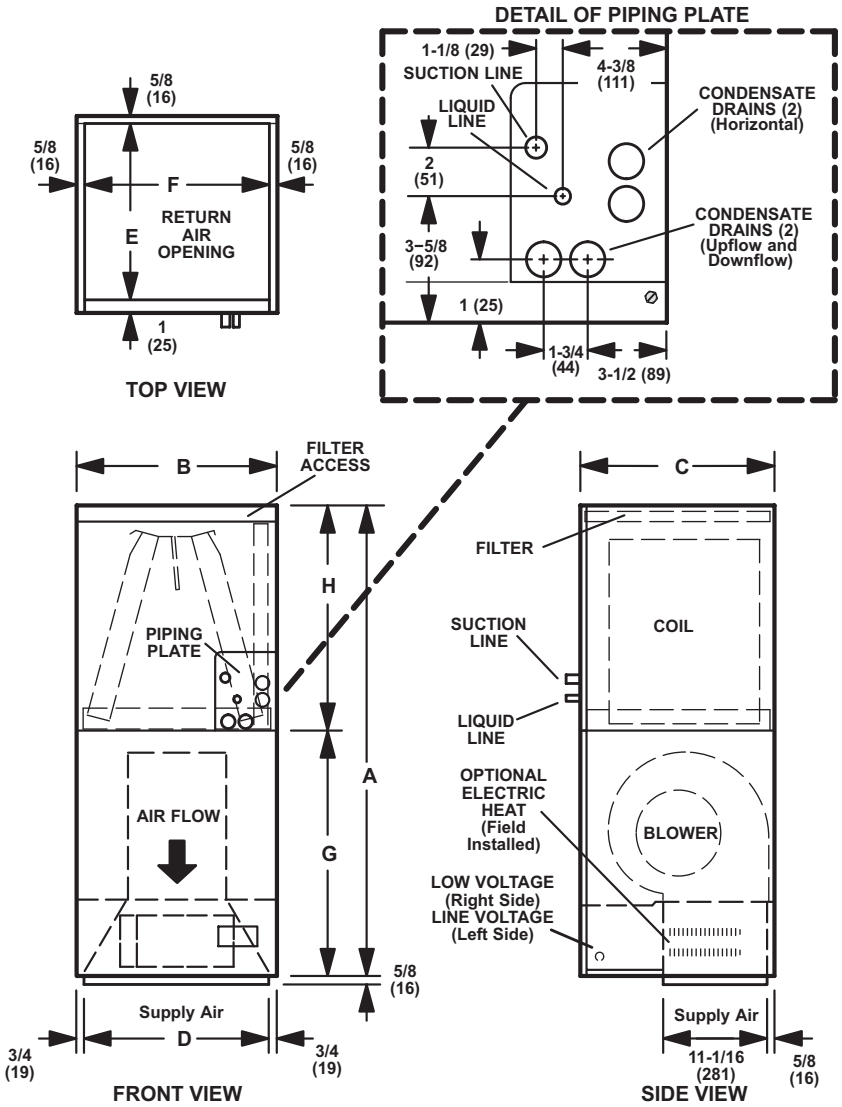


Note − Units are shipped in one piece but may be disassembled into two separate sections for ease of installation.

Dimensions	018, 024		030, 036		042, 048		060	
	in.	mm	in.	mm	in.	mm	in.	mm
A	49-1/4	1251	51	1295	58-1/2	1486	62-1/2	1588
B	21-1/4	540	21-1/4	540	21-1/4	540	21-1/4	540
C	20-5/8	524	22-5/8	575	24-5/8	625	24-5/8	625
D	19-3/4	502	19-3/4	502	19-3/4	502	19-3/4	502
E	19	483	21	533	23	584	23	584
F	20	508	20	508	20	508	20	508
G	24-5/8	625	26-3/8	670	27-7/8	708	27-7/8	708
H	24-5/8	625	24-5/8	625	30-5/8	778	34-5/8	879

Unit Dimensions – Downflow

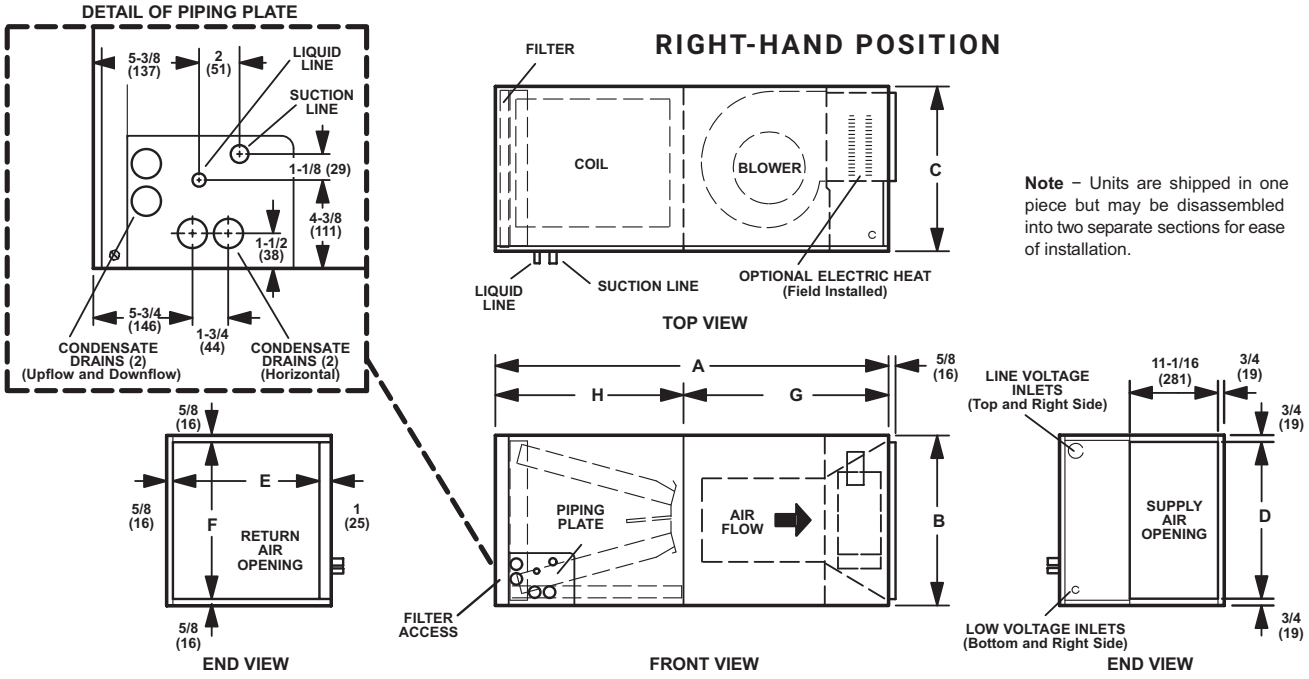
NOTE - Optional Downflow Conversion Kit Required



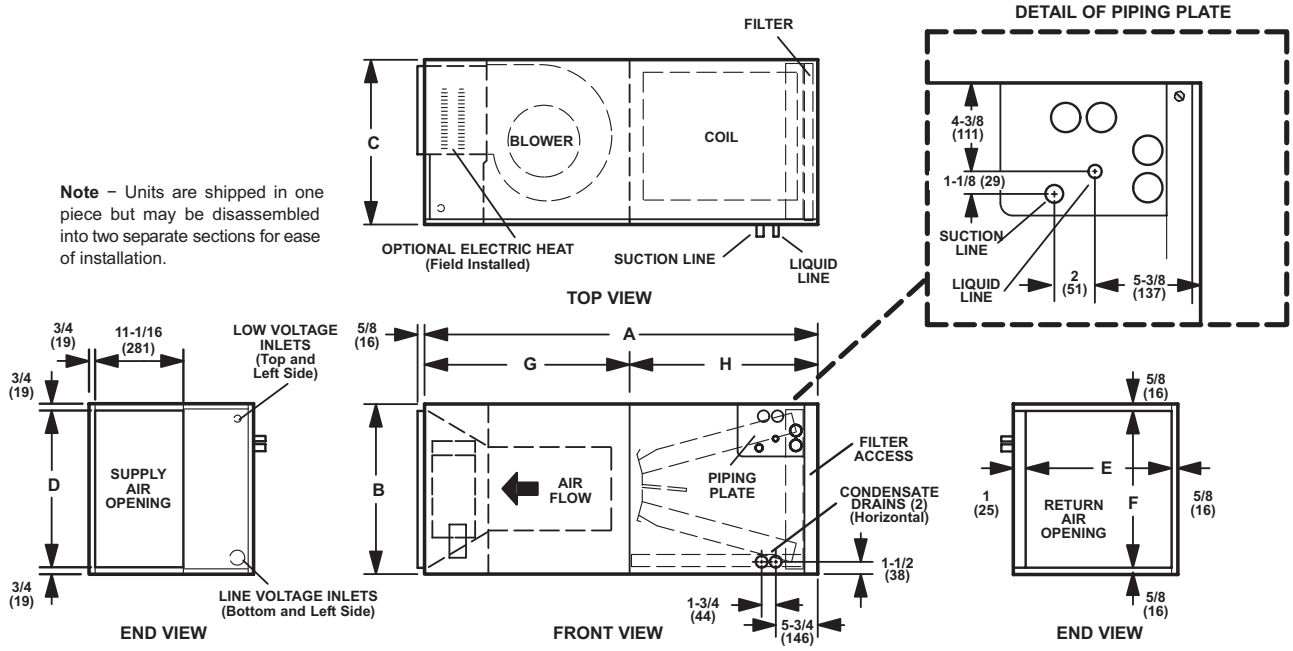
Note − Units are shipped in one piece but may be disassembled into two separate sections for ease of installation.

Dimensions	018, 024		030, 036		042, 048		060	
	in.	mm	in.	mm	in.	mm	in.	mm
A	49-1/4	1251	51	1295	58-1/2	1486	62-1/2	1588
B	21-1/4	540	21-1/4	540	21-1/4	540	21-1/4	540
C	20-5/8	524	22-5/8	575	24-5/8	625	24-5/8	625
D	19-3/4	502	19-3/4	502	19-3/4	502	19-3/4	502
E	19	483	21	533	23	584	23	584
F	20	508	20	508	20	508	20	508
G	24-5/8	625	26-3/8	670	27-7/8	708	27-7/8	708
H	24-5/8	625	24-5/8	625	30-5/8	778	34-5/8	879

Unit Dimensions – Horizontal



DIMENSIONS - UNIT — HORIZONTAL LEFT-HAND POSITION



Dimensions	018, 024		030, 036		042, 048		060	
	in.	mm	in.	mm	in.	mm	in.	mm
A	49-1/4	1251	51	1295	58-1/2	1486	62-1/2	1588
B	21-1/4	540	21-1/4	540	21-1/4	540	21-1/4	540
C	20-5/8	524	22-5/8	575	24-5/8	625	24-5/8	625
D	19-3/4	502	19-3/4	502	19-3/4	502	19-3/4	502
E	19	483	21	533	23	584	23	584
F	20	508	20	508	20	508	20	508
G	24-5/8	625	26-3/8	670	27-7/8	708	27-7/8	708
H	24-5/8	625	24-5/8	625	30-5/8	778	34-5/8	879

Specifications

Size		018	024	030	036
Nominal Tonnage		1.5	2	2.5	3
Refrigerant Type		R-454B	R-454B	R-454B	R-454B
Factory Installed Expansion Valve (TXV)		**26Z70**	**26Z70**	**26Z70**	**26Z70**
Connections	Liquid line (OD) sweat - in.	3/8	3/8	3/8	3/8
	Suction line (OD) sweat - in.	3/4	3/4	3/4	3/4
	Condensate drain (FPT) - in.	(2) 3/4	(2) 3/4	(2) 3/4	(2) 3/4
Indoor Coil	Net face area - ft.^{2}	4.44	4.44	5.0	5.0
	Tube diameter - in.	3/8	3/8	3/8	3/8
	Rows	3	3	3	3
	Fins - in.	14	14	14	14
Blower	HP	1/2	1/2	1/2	1/2
	Wheel nominal diameter x width - in.	10 x 8	10 x 8	11 x 8	11 x 8
	Air volume range - cfm	262 - 959	365 - 1095	365 - 1278	606 - 1498
[1] **Filters**	Size - in.	20 x 20 x 1	20 x 20 x 1	20 x 20 x 1	20 x 20 x 1
Shipping Data - lbs.		137	137	150	150
ELECTRICAL DATA					
Line voltage data (Volts-Phase-Hz)		208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60
[2] Maximum overcurrent protection (MOCP) amps (unit)		15	15	15	15
Minimum circuit ampacity (MCA) - 208/230V (unit)		5.1	5.1	5.1	5.1
Blower Motor Full Load Amps - 208/230V		4.1	4.1	4.1	4.1

SPECIFICATIONS				
Size	**042**	**048**	**060**
Nominal Tonnage	3.5	4	5
Refrigerant Type	R-454B	R-454B	R-454B
Factory Installed Expansion Valve (TXV)	**26Z71**	**26Z71**	**26Z72**
Connections Liquid line (OD) sweat - in.	3/8	3/8	3/8
Suction line (OD) sweat - in.	7/8	7/8	7/8
Condensate drain (FPT) - in.	(2) 3/4	(2) 3/4	(2) 3/4
Indoor Coil Net face area - ft.^{2}	7.22	7.22	8.33
Tube diameter - in.	3/8	3/8	3/8
Rows	3	3	3
Fins - in.	14	14	14
Blower HP	1	1	1
Wheel nominal diameter x width - in.	12 x 9	12 x 9	12 x 9
Air volume range - cfm	815 - 1723	867 - 1903	946 - 2268
[1] **Filters** Size - in.	20 x 24 x 1	20 x 24 x 1	20 x 24 x 1
Shipping Data - lbs.	186	186	199
ELECTRICAL DATA			
Line voltage data (Volts-Phase-Hz)	208/230-1-60	208/230-1-60	208/230-1-60
[2] Maximum overcurrent protection (MOCP) amps (unit)	15	15	15
Minimum circuit ampacity (MCA) - 208/230V (unit)	10	10	10
Blower Motor Full Load Amps - 208/230V	7.6	7.6	7.6

[1] Disposable filter.

[2] HACR type circuit breaker or fuse.

[3] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

INSTALLATION CLEARANCES WITH ELECTRIC HEAT

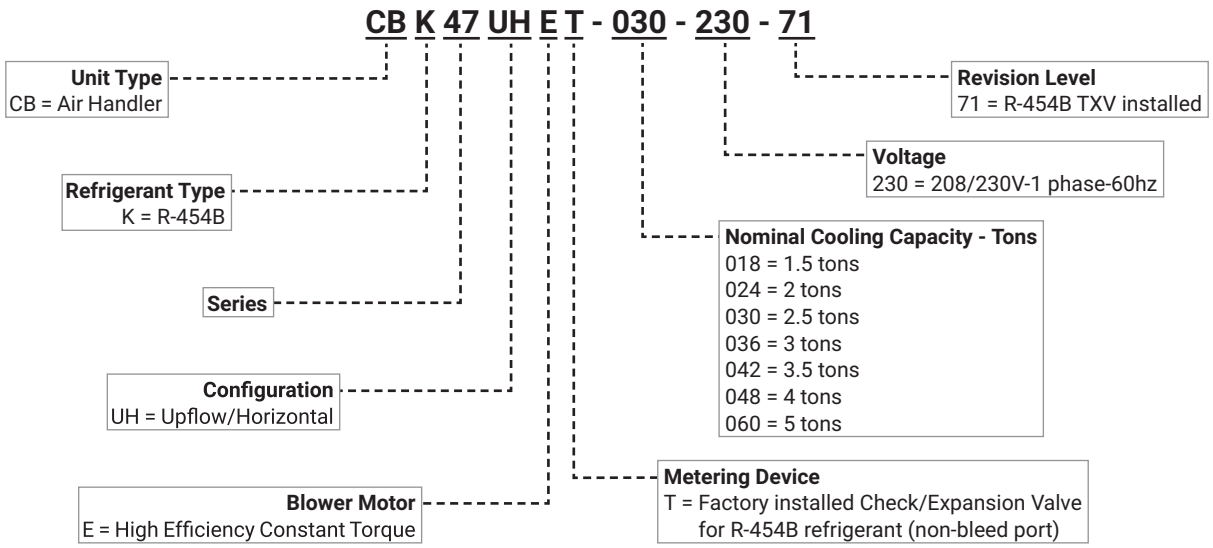
4 to 20kW Electric Heat		25kW Electric Heat	
Cabinet	0 inch (0 mm)	Cabinet	0 inch (0 mm)
To Plenum	0 inch (0 mm)	To Plenum	1 inch (25 mm)
To Outlet Duct	0 inch (0 mm)	To Outlet Duct within 3 feet (914 mm)	1 inch (25 mm)
Floor	0 inch (0 mm)	Floor	See Note #1
Service / Maintenance	See Note #2	Service / Maintenance	See Note #2

[1] Units installed on combustible floors in the downflow position with electric heat DO require a downflow combustible flooring base.

[2] Front service access - 24 inches (610 mm) minimum.

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

Model Number Identification



Blower Data

CBK47UHET-018 BLOWER PERFORMANCE

External Static Pressure in. w.g.	Air Volume and Motor Watts									
	Tap 1		Tap 2		Tap 3		Tap 4		Tap 5	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.10	589	55	713	80	805	101	805	101	963	155
0.20	520	61	666	88	760	109	760	109	928	163
0.30	452	67	601	96	710	118	710	118	889	173
0.40	407	73	548	101	647	126	647	126	851	181
0.50	344	81	502	107	598	132	598	132	803	190
0.60	293	84	456	114	561	138	561	138	748	199
0.70	- - -	- - -	418	122	522	143	522	143	714	207
0.80	- - -	- - -	362	128	479	150	479	150	676	213
0.90	- - -	- - -	315	132	435	162	435	162	640	220
1.00	- - -	- - -	- - -	- - -	389	167	389	167	602	228
1.10	- - -	- - -	- - -	- - -	341	173	341	173	576	234
1.20	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	540	243

NOTE - All air data measured external to unit with dry coil and 1 inch non-pleated air filter in place.
Electric heaters have no appreciable air resistance.

CBK47UHET-024 BLOWER PERFORMANCE

External Static Pressure in. w.g.	Air Volume and Motor Watts									
	Tap 1		Tap 2		Tap 3		Tap 4		Tap 5	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.10	665	68	804	101	933	143	933	143	1056	197
0.20	613	74	762	106	889	151	889	151	1019	206
0.30	556	81	718	114	856	158	856	158	988	214
0.40	481	87	667	122	822	165	822	165	953	222
0.50	425	93	614	129	772	175	772	175	922	229
0.60	368	97	527	138	733	182	733	182	895	238
0.70	336	101	487	143	683	193	683	193	846	249
0.80	293	105	455	148	597	202	597	202	799	258
0.90	239	108	414	153	555	208	555	208	725	268
1.00	- - -	- - -	367	158	519	212	519	212	656	276
1.10	- - -	- - -	312	162	485	215	485	215	592	267
1.20	- - -	- - -	291	163	468	219	468	219	486	240

NOTE - All air data measured external to unit with dry coil and 1 inch non-pleated air filter in place.
Electric heaters have no appreciable air resistance.

CBK47UHET-030 BLOWER PERFORMANCE

External Static Pressure in. w.g.	Air Volume and Motor Watts									
	Tap 1		Tap 2		Tap 3		Tap 4		Tap 5	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.10	775	77	1074	152	1158	182	1158	182	1256	215
0.20	727	84	1023	163	1115	193	1115	193	1215	226
0.30	669	91	990	170	1081	200	1081	200	1169	237
0.40	590	100	948	180	1040	211	1040	211	1135	246
0.50	522	106	913	186	1007	219	1007	219	1100	255
0.60	463	114	870	196	967	227	967	227	1065	263
0.70	417	121	812	206	930	236	930	236	1031	272
0.80	375	127	735	219	871	250	871	250	993	281
0.90	339	130	676	231	791	264	791	264	965	290

NOTE - All air data measured external to unit with dry coil and 1 inch non-pleated air filter in place.
Electric heaters have no appreciable air resistance.

BLOWER DATA

CBK47UHET-036 BLOWER PERFORMANCE

External Static Pressure in. w.g.	Air Volume and Motor Watts									
	Tap 1		Tap 2		Tap 3		Tap 4		Tap 5	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.10	973	115	1239	210	1301	243	1301	243	1447	320
0.20	925	123	1194	221	1264	253	1264	253	1411	331
0.30	876	131	1156	230	1229	263	1229	263	1379	341
0.40	841	138	1118	240	1189	275	1189	275	1336	354
0.50	762	150	1082	248	1158	284	1158	284	1306	364
0.60	694	161	1049	257	1127	293	1127	293	1274	375
0.70	644	168	1001	270	1094	303	1094	303	1241	386
0.80	583	178	978	279	1032	321	1032	321	1215	394
0.90	552	184	868	299	958	339	958	339	1169	412
1.00	497	193	828	307	913	350	913	350	1112	430
1.10	455	201	783	318	877	357	877	357	1059	445
1.20	418	207	745	327	838	367	838	367	1011	458

NOTE - All air data measured external to unit with dry coil and 1 inch non-pleated air filter in place.
Electric heaters have no appreciable air resistance.

CBK47UHET-042 BLOWER PERFORMANCE

External Static Pressure in. w.g.	Air Volume and Motor Watts									
	Tap 1		Tap 2		Tap 3		Tap 4		Tap 5	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.10	1185	150	1330	202	1534	279	1471	282	1697	405
0.20	1131	161	1278	214	1487	293	1437	292	1659	419
0.30	1077	171	1236	224	1447	304	1395	305	1620	434
0.40	1029	181	1191	235	1406	317	1353	315	1590	445
0.50	989	188	1152	244	1367	327	1310	331	1552	459
0.60	922	201	1107	255	1319	342	1277	341	1521	471
0.70	872	210	1061	265	1286	352	1240	352	1483	487
0.80	833	217	1013	276	1248	363	1200	365	1453	497
0.90	774	225	970	285	1199	377	1162	376	1415	511
1.00	742	233	937	293	1160	388	1085	393	1384	525
1.10	651	250	893	302	1121	398	1072	400	1302	544
1.20	606	259	816	315	1077	410	1038	410	1277	553

NOTE - All air data measured external to unit with dry coil and 1 inch non-pleated air filter in place.
Electric heaters have no appreciable air resistance.

CBK47UHET-048 BLOWER PERFORMANCE

External Static Pressure in. w.g.	Air Volume and Motor Watts									
	Tap 1		Tap 2		Tap 3		Tap 4		Tap 5	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.10	1202	172	1569	355	1755	470	1753	472	1967	637
0.20	1147	192	1526	376	1713	486	1728	495	1942	647
0.30	1121	191	1498	372	1701	497	1675	497	1916	657
0.40	1066	201	1452	383	1675	529	1669	511	1879	681
0.50	1031	220	1430	411	1636	524	1639	536	1845	704
0.60	936	227	1400	404	1602	547	1594	548	1811	713
0.70	865	237	1358	421	1582	562	1584	541	1777	730
0.80	827	251	1328	441	1551	566	1545	569	1767	731
0.90	777	253	1292	442	1524	572	1513	581	1732	758
1.00	718	278	1258	453	1487	580	1482	588	1703	777
1.10	692	272	1152	498	1451	613	1452	599	1681	788
1.20	666	293	1115	507	1429	624	1412	627	1639	783

NOTE - All air data measured external to unit with dry coil and 1 inch non-pleated air filter in place.
Electric heaters have no appreciable air resistance.

BLOWER DATA

CBK47UHET-060 BLOWER PERFORMANCE

External Static Pressure in. w.g.	Air Volume and Motor Watts									
	Tap 1		Tap 2		Tap 3		Tap 4		Tap 5	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.10	1354	222	1768	454	1954	616	1870	550	2148	808
0.20	1307	240	1742	478	1929	627	1845	556	2124	846
0.30	1267	246	1706	479	1898	643	1817	581	2097	843
0.40	1222	263	1677	492	1861	675	1781	609	2058	859
0.50	1177	273	1644	511	1837	693	1759	616	2034	888
0.60	1150	289	1608	526	1814	703	1719	635	2019	894
0.70	1044	308	1577	555	1786	687	1671	661	1975	912
0.80	994	311	1537	577	1773	710	1645	680	1938	930
0.90	938	317	1516	561	1712	736	1639	666	1927	938
1.00	877	330	1475	590	1696	753	1613	687	1892	943
1.10	846	346	1418	619	1677	755	1567	713	1836	945
1.20	816	345	1392	626	1648	765	1526	719	1795	940

NOTE - All air data measured external to unit with dry coil and 1 inch non-pleated air filter in place.
Electric heaters have no appreciable air resistance.

Air Flow – Cooling Blower Speed

The cooling blower speed is factory configured to provide correct air flow for an outdoor unit that matches the cooling capacity rating of the air handler.

If the outdoor unit is smaller than the maximum cooling capacity rating for the air handler, the cooling blower speed may need to be changed. Refer to blower performance tables on pages 10 and 11.

⚠ WARNING

Electric shock hazard! - Disconnect all power supplies before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

ADJUSTING BLOWER SPEED

Motor Speed Taps

***NOTE** – Motor is programmed for a 45-second OFF delay on all speed taps except TAP #4 (electric heat 120-second OFF delay).*

These settings are for nominal tonnage match-ups with the units. When matched with other sizes, it is recommended that the CFM be adjusted to approximately 400 CFM per ton.

Tap	Operation	Remarks
1	Continuous fan	Continuous fan speed is energized (24 volt input to G).
2	Lower tonnage speed	Air flow set at 1/2 ton lower than nominal capacity (e.g. if 3-ton air handler is used with 2.5-ton outdoor unit).
3	A/C or heat pump - no electric heat	Air flow set at 400 SCFM per ton at minimum static allowed.
4*	A/C or Heat pump with electric heat	Air flow set at 400 SCFM per ton at .5 static. Energized when electric heat element has a call for heat.
5	High static applications	Air flow set at 400 cfm per ton at .8 static.
* Tap 4 is minimum setting for electric heat		

TABLE 1

REPLACEMENT CIRCUIT BREAKERS

Voltage	Description	Catalog No.	Voltage	Description	Catalog No.
208/240V - 1 Phase	25 amp, 2 pole	**41K13**	208/240V - 3 Phase	30 amp, 3 pole	**64W47**
	30 amp, 2 pole	**17K70**		35 amp, 3 pole	**41K14**
	35 amp, 2 pole	**72K07**		40 amp, 3 pole	**41K16**
	40 amp, 2 pole	**49K14**		45 amp, 3 pole	**18M86**
	45 amp, 2 pole	**17K71**		50 amp, 3 pole	**41K15**
	50 amp, 2 pole	**41K12**		60 amp, 3 pole	**41K17**
	60 amp, 2 pole	**17K72**			

ECB47 Electric Heat

ELECTRIC HEAT DATA — CBK47UHET-018 | SINGLE PHASE

	Electic Heat Model Number	No. of Stages	Input			[2] Blower Motor Full Load Amps	[3] Minimum Circuit Ampacity	[5] Maximum Overcurrent Protection
			Volts	kW	[1] Btuh			
4 kW 4 lbs.	ECB47-4 (**27A30**) Terminal Block ECB47-4CB (**27A29**) 30A Circuit breaker	1	208	3.0	10,250	4.1	23	[4] **25**
			220	3.4	11,450	4.1	26	30
			230	3.7	12,550	4.1	26	30
			240	4.0	13,650	4.1	26	30
5 kW 4 lbs.	ECB47-5 (**27A31**) Terminal Block ECB47-5CB (**27A24**) 35A Circuit breaker	1	208	3.8	12,800	4.1	28	[4] **30**
			220	4.2	14,300	4.1	31	35
			230	4.6	15,700	4.1	31	35
			240	5.0	17,100	4.1	31	35
6 kW 4 lbs.	ECB47-6 (**27A26**) Terminal Block ECB47-6CB (**27A25**) 40A Circuit breaker	1	208	4.5	15,400	4.1	32	[4] **35**
			220	5.0	17,100	4.1	36	40
			230	5.5	18,800	4.1	36	40
			240	6.0	20,500	4.1	36	40
8 kW 5 lbs.	ECB47-8 (**27A21**) Terminal Block ECB47-8CB (**27A32**) 50A Circuit breaker	1	208	6.0	20,500	4.1	41	[4] **45**
			220	6.7	22,900	4.1	47	50
			230	7.3	25,100	4.1	47	50
			240	8.0	27,300	4.1	47	50
9 kW 5 lbs.	ECB47-9 (**27A22**) Terminal Block ECB47-9CB (**27A27**) 60A Circuit breaker	2	208	6.8	23,100	4.1	46	[4] **50**
			220	7.6	25,800	4.1	52	60
			230	8.3	28,200	4.1	52	60
			240	9.0	30,700	4.1	52	60

NOTE - Circuit 1 Minimum Circuit Ampacity includes the Blower Motor Full Load Amps.

[1] Electric heater capacity only - does not include additional blower motor heat capacity.

[2] Amps shown are for blower motor only.

[3] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

[4] Bold text indicates that the circuit breaker on “CB” circuit breaker models must be replaced with size noted. See Table on Page 13.

[5] HACR type circuit breaker or fuse.

ELECTRIC HEAT DATA — CBK47UHET-024 | SINGLE PHASE

	Electic Heat Model Number	No. of Stages	Input			[2] Blower Motor Full Load Amps	[3] Minimum Circuit Ampacity	[5] Maximum Overcurrent Protection
			Volts	kW	[1] Btuh			
4 kW 4 lbs.	ECB47-4 (**27A30**) Terminal Block ECB47-4CB (**27A29**) 30A Circuit breaker	1	208	3.0	10,250	4.1	23	[4] **25**
			220	3.4	11,450	4.1	26	30
			230	3.7	12,550	4.1	26	30
			240	4.0	13,650	4.1	26	30
5 kW 4 lbs.	ECB47-5 (**27A31**) Terminal Block ECB47-5CB (**27A24**) 35A Circuit breaker	1	208	3.8	12,800	4.1	28	[4] **30**
			220	4.2	14,300	4.1	31	35
			230	4.6	15,700	4.1	31	35
			240	5.0	17,100	4.1	31	35
6 kW 4 lbs.	ECB47-6 (**27A26**) Terminal Block ECB47-6CB (**27A25**) 40A Circuit breaker	1	208	4.5	15,400	4.1	32	[4] **35**
			220	5.0	17,100	4.1	36	40
			230	5.5	18,800	4.1	36	40
			240	6.0	20,500	4.1	36	40
8 kW 5 lbs.	ECB47-8 (**27A21**) Terminal Block ECB47-8CB (**27A32**) 50A Circuit breaker	1	208	6.0	20,500	4.1	41	[4] **45**
			220	6.7	22,900	4.1	47	50
			230	7.3	25,100	4.1	47	50
			240	8.0	27,300	4.1	47	50
9 kW 5 lbs.	ECB47-9 (**27A22**) Terminal Block ECB47-9CB (**27A27**) 60A Circuit breaker	2	208	6.8	23,100	4.1	46	[4] **50**
			220	7.6	25,800	4.1	52	60
			230	8.3	28,200	4.1	52	60
			240	9.0	30,700	4.1	52	60

NOTE - Circuit 1 Minimum Circuit Ampacity includes the Blower Motor Full Load Amps.

[1] Electric heater capacity only - does not include additional blower motor heat capacity.

[2] Amps shown are for blower motor only.

[3] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

[4] Bold text indicates that the circuit breaker on “CB” circuit breaker models must be replaced with size noted. See Table on Page 13.

[5] HACR type circuit breaker or fuse.

ELECTRIC HEAT DATA — CBK47UHET-030 | SINGLE PHASE

Electic Heat Model Number	No. of Stages	Input			[2] Blower Motor Full Load Amps	[3] Minimum Circuit Ampacity		[5] Maximum Overcurrent Protection		Single Point Power Source	
		Volts	kW	[1] Btuh		Ckt 1	Ckt 2	Ckt 1	Ckt 2	[3] Minimum Circuit Ampacity	[5] Maximum Overcurrent Protection
4 kW 4 lbs. ECB47-4 (**27A30**) Terminal Block ECB47-4CB (**27A29**) 30A Circuit breaker	1	208	3.0	10,250	4.1	23	- - -	[4] **25**	- - -	- - -	- - -
		220	3.4	11,450	4.1	26	- - -	30	- - -	- - -	- - -
		230	3.7	12,550	4.1	26	- - -	30	- - -	- - -	- - -
		240	4.0	13,650	4.1	26	- - -	30	- - -	- - -	- - -
5 kW 4 lbs. ECB47-5 (**27A31**) Terminal Block ECB47-5CB (**27A24**) 35A Circuit breaker	1	208	3.8	12,800	4.1	28	- - -	[4] **30**	- - -	- - -	- - -
		220	4.2	14,300	4.1	31	- - -	35	- - -	- - -	- - -
		230	4.6	15,700	4.1	31	- - -	35	- - -	- - -	- - -
		240	5.0	17,100	4.1	31	- - -	35	- - -	- - -	- - -
6 kW 4 lbs. ECB47-6 (**27A26**) Terminal Block ECB47-6CB (**27A25**) 40A Circuit breaker	1	208	4.5	15,400	4.1	32	- - -	[4] **35**	- - -	- - -	- - -
		220	5.0	17,100	4.1	36	- - -	40	- - -	- - -	- - -
		230	5.5	18,800	4.1	36	- - -	40	- - -	- - -	- - -
		240	6.0	20,500	4.1	36	- - -	40	- - -	- - -	- - -
8 kW 5 lbs. ECB47-8 (**27A21**) Terminal Block ECB47-8CB (**27A32**) 50A Circuit breaker	1	208	6.0	20,500	4.1	41	- - -	[4] **45**	- - -	- - -	- - -
		220	6.7	22,900	4.1	47	- - -	50	- - -	- - -	- - -
		230	7.3	25,100	4.1	47	- - -	50	- - -	- - -	- - -
		240	8.0	27,300	4.1	47	- - -	50	- - -	- - -	- - -
9 kW 5 lbs. ECB47-9 (**27A22**) Terminal Block ECB47-9CB (**27A27**) 60A Circuit breaker	2	208	6.8	23,100	4.1	46	- - -	[4] **50**	- - -	- - -	- - -
		220	7.6	25,800	4.1	52	- - -	60	- - -	- - -	- - -
		230	8.3	28,200	4.1	52	- - -	60	- - -	- - -	- - -
		240	9.0	30,700	4.1	52	- - -	60	- - -	- - -	- - -
12.5 kW 10 lbs. ECB47-12.5CB (**27A28**) (1) 30A Circuit breaker & (1) 45A Circuit breaker	2	208	9.4	32,000	4.1	24	38	[4] **25**	[4] **40**	62	70
		220	10.5	35,800	4.1	27	43	30	45	70	70
		230	11.5	39,200	4.1	27	43	30	45	70	70
		240	12.5	42,600	4.1	27	43	30	45	70	70
15 kW 12 lbs. ECB47-15CB (**27A23**) (1) 35A Circuit breaker & (1) 60A Circuit Breaker	2	208	11.3	38,400	4.1	28	45	[4] **30**	[4] **45**	73	80
		220	12.6	43,000	4.1	31	52	35	60	83	90
		230	13.8	47,000	4.1	31	52	35	60	83	90
		240	15.0	51,200	4.1	31	52	35	60	83	90
THREE PHASE											
8 kW 5 lbs. ECB47-8 (**27A44**) Terminal Block	1	208	6.0	20,500	4.1	26	- - -	30	- - -	- - -	- - -
		220	6.7	22,900	4.1	29	- - -	30	- - -	- - -	- - -
		230	7.3	25,100	4.1	29	- - -	30	- - -	- - -	- - -
		240	8.0	27,300	4.1	29	- - -	30	- - -	- - -	- - -
10 kW 6 lbs. ECB47-10 (**27A35**) Terminal Block	1	208	7.5	25,600	4.1	31	- - -	35	- - -	- - -	- - -
		220	8.4	28,700	4.1	35	- - -	35	- - -	- - -	- - -
		230	9.2	31,400	4.1	35	- - -	35	- - -	- - -	- - -
		240	10.0	34,100	4.1	35	- - -	35	- - -	- - -	- - -
15 kW 12 lbs. ECB47-15CB (**27A36**) (1) 50A Circuit breaker	1	208	11.3	38,400	4.1	44	- - -	45	- - -	- - -	- - -
		220	12.6	43,000	4.1	50	- - -	50	- - -	- - -	- - -
		230	13.5	47,000	4.1	50	- - -	50	- - -	- - -	- - -
		240	15.0	51,200	4.1	50	- - -	50	- - -	- - -	- - -

NOTE - Circuit 1 Minimum Circuit Ampacity includes the Blower Motor Full Load Amps.

[1] Electric heater capacity only - does not include additional blower motor heat capacity.

[2] Amps shown are for blower motor only.

[3] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

[4] Bold text indicates that the circuit breaker on “CB” circuit breaker models must be replaced with size noted. See Table on Page 13.

[5] HACR type circuit breaker or fuse.

ELECTRIC HEAT DATA — CBK47UHET-036 | SINGLE PHASE

Electic Heat Model Number	No. of Stages	Input			[2] Blower Motor Full Load Amps	[3] Minimum Circuit Ampacity		[5] Maximum Overcurrent Protection		Single Point Power Source	
		Volts	kW	[1] Btuh		Ckt 1	Ckt 2	Ckt 1	Ckt 2	[3] Minimum Circuit Ampacity	[5] Maximum Overcurrent Protection
4 kW 4 lbs. ECB47-4 (**27A30**) Terminal Block ECB47-4CB (**27A29**) 30A Circuit breaker	1	208	3.0	10,250	4.1	23	- - -	[4] **25**	- - -	- - -	- - -
		220	3.4	11,450	4.1	26	- - -	30	- - -	- - -	- - -
		230	3.7	12,550	4.1	26	- - -	30	- - -	- - -	- - -
		240	4.0	13,650	4.1	26	- - -	30	- - -	- - -	- - -
5 kW 4 lbs. ECB47-5 (**27A31**) Terminal Block ECB47-5CB (**27A24**) 35A Circuit breaker	1	208	3.8	12,800	4.1	28	- - -	[4] **30**	- - -	- - -	- - -
		220	4.2	14,300	4.1	31	- - -	35	- - -	- - -	- - -
		230	4.6	15,700	4.1	31	- - -	35	- - -	- - -	- - -
		240	5.0	17,100	4.1	31	- - -	35	- - -	- - -	- - -
6 kW 4 lbs. ECB47-6 (**27A26**) Terminal Block ECB47-6CB (**27A25**) 40A Circuit breaker	1	208	4.5	15,400	4.1	32	- - -	[4] **35**	- - -	- - -	- - -
		220	5.0	17,100	4.1	36	- - -	40	- - -	- - -	- - -
		230	5.5	18,800	4.1	36	- - -	40	- - -	- - -	- - -
		240	6.0	20,500	4.1	36	- - -	40	- - -	- - -	- - -
8 kW 5 lbs. ECB47-8 (**27A21**) Terminal Block ECB47-8CB (**27A32**) 50A Circuit breaker	1	208	6.0	20,500	4.1	41	- - -	[4] **45**	- - -	- - -	- - -
		220	6.7	22,900	4.1	47	- - -	50	- - -	- - -	- - -
		230	7.3	25,100	4.1	47	- - -	50	- - -	- - -	- - -
		240	8.0	27,300	4.1	47	- - -	50	- - -	- - -	- - -
9 kW 5 lbs. ECB47-9 (**27A22**) Terminal Block ECB47-9CB (**27A27**) 60A Circuit breaker	2	208	6.8	23,100	4.1	46	- - -	[4] **50**	- - -	- - -	- - -
		220	7.6	25,800	4.1	52	- - -	60	- - -	- - -	- - -
		230	8.3	28,200	4.1	52	- - -	60	- - -	- - -	- - -
		240	9.0	30,700	4.1	52	- - -	60	- - -	- - -	- - -
12.5 kW 10 lbs. ECB47-12.5CB (**27A28**) (1) 30A Circuit breaker and (1) 45A Circuit breaker	2	208	9.4	32,000	4.1	24	38	[4] **25**	[4] **40**	62	70
		220	10.5	35,800	4.1	27	43	30	45	70	70
		230	11.5	39,200	4.1	27	43	30	45	70	70
		240	12.5	42,600	4.1	27	43	30	45	70	70
15 kW 12 lbs. ECB47-15CB (**27A23**) (1) 35A Circuit breaker and (1) 60A Circuit Breaker	2	208	11.3	38,400	4.1	28	45	[4] **30**	[4] **45**	73	80
		220	12.6	43,000	4.1	31	52	35	60	83	90
		230	13.8	47,000	4.1	31	52	35	60	83	90
		240	15.0	51,200	4.1	31	52	35	60	83	90
20 kW 19 lbs. ECB47-20CB (**27A33**) (1) 60A Circuit breaker and (1) 60A Circuit Breaker	2	208	15.0	51,200	4.1	46	50	[4] **50**	[4] **50**	96	100
		220	16.8	57,300	4.1	52	57	60	60	109	125
		230	18.4	62,700	4.1	52	57	60	60	109	125
		240	20.0	68,200	4.1	52	57	60	60	109	125

NOTE - Circuit 1 Minimum Circuit Ampacity includes the Blower Motor Full Load Amps.

[1] Electric heater capacity only - does not include additional blower motor heat capacity.

[2] Amps shown are for blower motor only.

[3] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

[4] Bold text indicates that the circuit breaker on “CB” circuit breaker models must be replaced with size noted. See Table on Page 13.

[5] HACR type circuit breaker or fuse.

ELECTRIC HEAT DATA — CBK47UHET-036 | THREE PHASE

Electric Heat Model Number		No. of Stages	Input			[2] Blower Motor Full Load Amps	[3] Minimum Circuit Ampacity		[5] Maximum Overcurrent Protection		Single Point Power Source	
			Volts	kW	[1] Btuh		Ckt 1	Ckt 2	Ckt 1	Ckt 2	[3] Minimum Circuit Ampacity	[5] Maximum Overcurrent Protection
8 kW 5 lbs.	ECB47-8 (**27A44**) Terminal Block	1	208	6.0	20,500	4.1	26	- - -	30	- - -	- - -	- - -
			220	6.7	22,900	4.1	27	- - -	30	- - -	- - -	- - -
			230	7.3	25,100	4.1	28	- - -	30	- - -	- - -	- - -
			240	8.0	27,300	4.1	29	- - -	30	- - -	- - -	- - -
10 kW 6 lbs.	ECB47-10 (**27A35**) Terminal Block	1	208	7.5	25,600	4.1	31	- - -	35	- - -	- - -	- - -
			220	8.4	28,700	4.1	33	- - -	35	- - -	- - -	- - -
			230	9.2	31,400	4.1	34	- - -	35	- - -	- - -	- - -
			240	10.0	34,100	4.1	35	- - -	35	- - -	- - -	- - -
	ECB47-10 (**27A38**) (3) 20A Fuses	1	440	8.4	28,700	2.1	16	- - -	20	- - -	- - -	- - -
			460	9.2	31,400	2.1	17	- - -	20	- - -	- - -	- - -
			480	10.0	34,100	2.1	18	- - -	20	- - -	- - -	- - -
15 kW 12 lbs.	ECB47-15CB (**27A36**) (1) 50A Circuit breaker	1	208	11.3	38,400	4.1	44	- - -	[4] **45**	- - -	- - -	- - -
			220	12.6	43,000	4.1	46	- - -	50	- - -	- - -	- - -
			230	13.5	47,000	4.1	48	- - -	50	- - -	- - -	- - -
			240	15.0	51,200	4.1	50	- - -	50	- - -	- - -	- - -
	ECB47-15 (**27A39**) (3) 25A Fuses	1	440	12.6	43,000	2.1	23	- - -	25	- - -	- - -	- - -
			460	13.5	47,000	2.1	24	- - -	25	- - -	- - -	- - -
			480	15.0	51,200	2.1	25	- - -	25	- - -	- - -	- - -
20 kW 19 lbs.	ECB47-20CB (**27A37**) (2) 35A Circuit breaker	2	208	15.0	51,200	4.1	31	26	35	[4] **30**	57	60
			220	16.8	57,300	4.1	33	28	35	[4] **30**	60	60
			230	18.4	62,700	4.1	34	29	35	[4] **30**	63	70
			240	20.0	68,200	4.1	35	30	35	[4] **30**	65	70

NOTE - Circuit 1 Minimum Circuit Ampacity includes the Blower Motor Full Load Amps.

[1] Electric heater capacity only - does not include additional blower motor heat capacity.

[2] Amps shown are for blower motor only.

[3] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

[4] Bold text indicates that the circuit breaker on “CB” circuit breaker models must be replaced with size noted. See Table on Page 13.

[5] HACR type circuit breaker or fuse.

ELECTRIC HEAT DATA — CBK47UHET-042 | SINGLE PHASE

Electic Heat Model Number	No. of Stages	Input			[2] Blower Motor Full Load Amps	[3] Minimum Circuit Ampacity			[5] Maximum Overcurrent Protection			Single Point Power Source	
		Volts	kW	[1] Btuh		Ckt 1	Ckt 2	Ckt 3	Ckt 1	Ckt 2	Ckt 3	[3] Minimum Circuit Ampacity	[5] Maximum Overcurrent Protection
4 kW 4 lbs. ECB47-4 (**27A30**) Terminal Block ECB47-4CB (**27A29**) 30A Circuit breaker	1	208	3.0	10,250	7.6	28	- - -	- - -	30	- - -	- - -	- - -	- - -
		220	3.4	11,450	7.6	30	- - -	- - -	30	- - -	- - -	- - -	- - -
		230	3.7	12,550	7.6	30	- - -	- - -	30	- - -	- - -	- - -	- - -
		240	4.0	13,650	7.6	30	- - -	- - -	30	- - -	- - -	- - -	- - -
5 kW 4 lbs. ECB47-5 (**27A31**) Terminal Block ECB47-5CB (**27A24**) 35A Circuit breaker	1	208	3.8	12,800	7.6	32	- - -	- - -	35	- - -	- - -	- - -	- - -
		220	4.2	14,300	7.6	36	- - -	- - -	[4] **40**	- - -	- - -	- - -	- - -
		230	4.6	15,700	7.6	36	- - -	- - -	[4] **40**	- - -	- - -	- - -	- - -
		240	5.0	17,100	7.6	36	- - -	- - -	[4] **40**	- - -	- - -	- - -	- - -
6 kW 4 lbs. ECB47-6 (**27A26**) Terminal Block ECB47-6CB (**27A25**) 40A Circuit breaker	1	208	4.5	15,400	7.6	37	- - -	- - -	40	- - -	- - -	- - -	- - -
		220	5.0	17,100	7.6	41	- - -	- - -	[4] **45**	- - -	- - -	- - -	- - -
		230	5.5	18,800	7.6	41	- - -	- - -	[4] **45**	- - -	- - -	- - -	- - -
		240	6.0	20,500	7.6	41	- - -	- - -	[4] **45**	- - -	- - -	- - -	- - -
8 kW 5 lbs. ECB47-8 (**27A21**) Terminal Block ECB47-8CB (**27A32**) 50A Circuit breaker	1	208	6.0	20,500	7.6	46	- - -	- - -	50	- - -	- - -	- - -	- - -
		220	6.7	22,900	7.6	51	- - -	- - -	[4] **60**	- - -	- - -	- - -	- - -
		230	7.3	25,100	7.6	51	- - -	- - -	[4] **60**	- - -	- - -	- - -	- - -
		240	8.0	27,300	7.6	51	- - -	- - -	[4] **60**	- - -	- - -	- - -	- - -
9 kW 5 lbs. ECB47-9 (**27A22**) Terminal Block ECB47-9CB (**27A27**) 60A Circuit breaker	2	208	6.8	23,100	7.6	50	- - -	- - -	[4] **50**	- - -	- - -	- - -	- - -
		220	7.6	25,800	7.6	56	- - -	- - -	60	- - -	- - -	- - -	- - -
		230	8.3	28,200	7.6	56	- - -	- - -	60	- - -	- - -	- - -	- - -
		240	9.0	30,700	7.6	56	- - -	- - -	60	- - -	- - -	- - -	- - -
12.5 kW 10 lbs. ECB47-12.5CB (**27A28**) (1) 30A Circuit breaker and (1) 45A Circuit breaker	2	208	9.4	32,000	7.6	28	38	- - -	30	[4] **40**	- - -	66	80
		220	10.5	35,800	7.6	31	43	- - -	[4] **35**	45	- - -	75	80
		230	11.5	39,200	7.6	31	43	- - -	[4] **35**	45	- - -	75	80
		240	12.5	42,600	7.6	31	43	- - -	[4] **35**	45	- - -	75	80
15 kW 12 lbs. ECB47-15CB (**27A23**) (1) 35A Circuit breaker and (1) 60A Circuit breaker	2	208	11.3	38,400	7.6	32	45	- - -	35	[4] **45**	- - -	77	80
		220	12.6	43,000	7.6	36	52	- - -	[4] **40**	60	- - -	88	90
		230	13.5	47,000	7.6	36	52	- - -	[4] **40**	60	- - -	88	90
		240	15.0	51,200	7.6	36	52	- - -	[4] **40**	60	- - -	88	90
20 kW 19 lbs. ECB47-20CB (**27A33**) (1) 60A Circuit breaker and (1) 60A Circuit breaker	2	208	15.0	51,200	7.6	50	50	- - -	[4] **50**	[4] **50**	- - -	100	125
		220	16.8	57,300	7.6	56	57	- - -	60	60	- - -	114	125
		230	18.4	62,700	7.6	56	57	- - -	60	60	- - -	114	125
		240	20.0	68,200	7.6	56	57	- - -	60	60	- - -	114	125
25 kW 19 lbs. ECB47-25CB (**27A34**) (1) 60A Circuit breaker and (2) 45A Circuit breakers	3	208	18.8	64,100	7.6	47	38	38	[4] **50**	[4] **40**	[4] **40**	123	125
		220	21.0	71,700	7.6	53	43	43	60	45	45	140	150
		230	23.0	78,300	7.6	53	43	43	60	45	45	140	150
		240	25.0	85,300	7.6	53	43	43	60	45	45	140	150

[1] Electric heater capacity only - does not include additional blower motor heat capacity.
[2] Amps shown are for blower motor only.
[3] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.
[4] Bold text indicates that the circuit breaker on "CB" circuit breaker models must be replaced with size noted. See Table on Page 13.
[5] HACR type circuit breaker or fuse.

ELECTRIC HEAT DATA — CBK47UHET-042 | THREE PHASE

Electic Heat Model Number		No. of Stages	Input			[2] Blower Motor Full Load Amps	[3] Minimum Circuit Ampacity		[5] Maximum Overcurrent Protection		Single Point Power Source	
			Volts	kW	[1] Btuh		Ckt 1	Ckt 2	Ckt 1	Ckt 2	[3] Minimum Circuit Ampacity	[5] Maximum Overcurrent Protection
8 kW 5 lbs.	ECB47-8 (**27A44**) Terminal block	1	208	6.0	20,500	7.6	30	- - -	30	- - -	- - -	- - -
			220	6.7	22,900	7.6	33	- - -	35	- - -	- - -	- - -
			230	7.3	25,100	7.6	33	- - -	35	- - -	- - -	- - -
			240	8.0	27,300	7.6	33	- - -	35	- - -	- - -	- - -
10 kW 6 lbs.	ECB47-10 (**27A35**) Terminal Block	1	208	7.5	25,600	7.6	36	- - -	40	- - -	- - -	- - -
			220	8.4	28,700	7.6	40	- - -	40	- - -	- - -	- - -
			230	9.2	31,400	7.6	40	- - -	40	- - -	- - -	- - -
			240	10.0	34,100	7.6	40	- - -	40	- - -	- - -	- - -
15 kW 12 lbs.	ECB47-15CB (**27A36**) 50A Circuit breaker	1	208	11.3	38,400	7.6	49	- - -	50	- - -	- - -	- - -
			220	12.6	43,000	7.6	55	- - -	[4] **60**	- - -	- - -	- - -
			230	13.5	47,000	7.6	55	- - -	[4] **60**	- - -	- - -	- - -
			240	15.0	51,200	7.6	55	- - -	[4] **60**	- - -	- - -	- - -
20 kW 19 lbs.	ECB47-20CB (**27A37**) (2) 35A Circuit breaker	2	208	15.0	51,200	7.6	36	26	[4] **40**	[4] **30**	62	70
			220	16.8	57,300	7.6	40	30	[4] **40**	[4] **30**	70	70
			230	18.4	62,700	7.6	40	30	[4] **40**	[4] **30**	70	70
			240	20.0	68,200	7.6	40	30	[4] **40**	[4] **30**	70	70
25 kW 19 lbs.	ECB47-25CB (**27A45**) (2) 45A Circuit breaker	2	208	18.8	64,100	7.6	42	33	[4] **50**	[4] **35**	62	70
			220	21.0	71,700	7.6	47	38	[4] **50**	[4] **40**	85	90
			230	23.0	78,300	7.6	47	38	[4] **50**	[4] **40**	85	90
			240	25.0	85,300	7.6	47	38	[4] **50**	[4] **40**	85	90

NOTE - Circuit 1 Minimum Circuit Ampacity includes the Blower Motor Full Load Amps.

[1] Electric heater capacity only - does not include additional blower motor heat capacity.

[2] Amps shown are for blower motor only.

[3] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

[4] Bold text indicates that the circuit breaker on “CB” circuit breaker models must be replaced with size noted. See Table on Page 13.

[5] HACR type circuit breaker or fuse.

ELECTRIC HEAT DATA — CBK47UHET-048 | SINGLE PHASE

Electic Heat Model Number	No. of Stages	Input			[2] Blower Motor Full Load Amps	[3] Minimum Circuit Ampacity			[5] Maximum Overcurrent Protection			Single Point Power Source	
		Volts	kW	[1] Btuh		Ckt 1	Ckt 2	Ckt 3	Ckt 1	Ckt 2	Ckt 3	[3] Minimum Circuit Ampacity	[5] Maximum Overcurrent Protection
4 kW 4 lbs. ECB47-4 (**27A30**) Terminal Block ECB47-4CB (**27A29**) 30A Circuit breaker	1	208	3.0	10,250	7.6	28	- - -	- - -	30	- - -	- - -	- - -	- - -
		220	3.4	11,450	7.6	30	- - -	- - -	30	- - -	- - -	- - -	- - -
		230	3.7	12,550	7.6	30	- - -	- - -	30	- - -	- - -	- - -	- - -
		240	4.0	13,650	7.6	30	- - -	- - -	30	- - -	- - -	- - -	- - -
5 kW 4 lbs. ECB47-5 (**27A31**) Terminal Block ECB47-5CB (**27A24**) 35A Circuit breaker	1	208	3.8	12,800	7.6	32	- - -	- - -	35	- - -	- - -	- - -	- - -
		220	4.2	14,300	7.6	36	- - -	- - -	[4] **40**	- - -	- - -	- - -	- - -
		230	4.6	15,700	7.6	36	- - -	- - -	[4] **40**	- - -	- - -	- - -	- - -
		240	5.0	17,100	7.6	36	- - -	- - -	[4] **40**	- - -	- - -	- - -	- - -
6 kW 4 lbs. ECB47-6 (**27A26**) Terminal Block ECB47-6CB (**27A25**) 40A Circuit breaker	1	208	4.5	15,400	7.6	37	- - -	- - -	40	- - -	- - -	- - -	- - -
		220	5.0	17,100	7.6	41	- - -	- - -	[4] **45**	- - -	- - -	- - -	- - -
		230	5.5	18,800	7.6	41	- - -	- - -	[4] **45**	- - -	- - -	- - -	- - -
		240	6.0	20,500	7.6	41	- - -	- - -	[4] **45**	- - -	- - -	- - -	- - -
8 kW 5 lbs. ECB47-8 (**27A21**) Terminal Block ECB47-8CB (**27A32**) 50A Circuit breaker	1	208	6.0	20,500	7.6	46	- - -	- - -	50	- - -	- - -	- - -	- - -
		220	6.7	22,900	7.6	51	- - -	- - -	[4] **60**	- - -	- - -	- - -	- - -
		230	7.3	25,100	7.6	51	- - -	- - -	[4] **60**	- - -	- - -	- - -	- - -
		240	8.0	27,300	7.6	51	- - -	- - -	[4] **60**	- - -	- - -	- - -	- - -
9 kW 5 lbs. ECB47-9 (**27A22**) Terminal Block ECB47-9CB (**27A27**) 60A Circuit breaker	2	208	6.8	23,100	7.6	50	- - -	- - -	[4] **50**	- - -	- - -	- - -	- - -
		220	7.6	25,800	7.6	56	- - -	- - -	60	- - -	- - -	- - -	- - -
		230	8.3	28,200	7.6	56	- - -	- - -	60	- - -	- - -	- - -	- - -
		240	9.0	30,700	7.6	56	- - -	- - -	60	- - -	- - -	- - -	- - -
12.5 kW 10 lbs. ECB47-12.5CB (**27A28**) (1) 30A Circuit breaker & (1) 45A Circuit breaker	2	208	9.4	32,000	7.6	28	38	- - -	30	[4] **40**	- - -	66	70
		220	10.5	35,800	7.6	31	43	- - -	[4] **35**	45	- - -	75	80
		230	11.5	39,200	7.6	31	43	- - -	[4] **35**	45	- - -	75	80
		240	12.5	42,600	7.6	31	43	- - -	[4] **35**	45	- - -	75	80
15 kW 12 lbs. ECB47-15CB (**27A23**) (1) 35A Circuit breaker & (1) 60A Circuit breaker	2	208	11.3	38,400	7.6	32	45	- - -	35	[4] **45**	- - -	77	80
		220	12.6	43,000	7.6	36	52	- - -	[4] **40**	60	- - -	88	90
		230	13.5	47,000	7.6	36	52	- - -	[4] **40**	60	- - -	88	90
		240	15.0	51,200	7.6	36	52	- - -	[4] **40**	60	- - -	88	90
20 kW 19 lbs. ECB47-20CB (**27A33**) (1) 60A Circuit breaker & (1) 60A Circuit breaker	2	208	15.0	51,200	7.6	50	50	- - -	[4] **50**	[4] **50**	- - -	100	125
		220	16.8	57,300	7.6	56	57	- - -	60	60	- - -	114	125
		230	18.4	62,700	7.6	56	57	- - -	60	60	- - -	114	125
		240	20.0	68,200	7.6	56	57	- - -	60	60	- - -	114	125
25 kW 19 lbs. ECB47-25CB (**27A34**) (1) 60A Circuit breaker & (2) 45A Circuit breakers	3	208	18.8	64,100	7.6	47	38	38	[4] **50**	[4] **40**	[4] **40**	123	125
		220	21.0	71,700	7.6	53	43	43	60	45	45	140	150
		230	23.0	78,300	7.6	53	43	43	60	45	45	140	150
		240	25.0	85,300	7.6	53	43	43	60	45	45	140	150

NOTE - Circuit 1 Minimum Circuit Ampacity includes the Blower Motor Full Load Amps.

[1] Electric heater capacity only - does not include additional blower motor heat capacity.

[2] Amps shown are for blower motor only.

[3] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

[4] Bold text indicates that the circuit breaker on “CB” circuit breaker models must be replaced with size noted. See Table on Page 13.

[5] HACR type circuit breaker or fuse.

ELECTRIC HEAT DATA — CBK47UHET-048 | THREE PHASE

	Electric Heat Model Number	No. of Stages	Input			[2] Blower Motor Full Load Amps	[3] Minimum Circuit Ampacity		[5] Maximum Overcurrent Protection		Single Point Power Source	
			Volts	kW	[1] Btuh		Ckt 1	Ckt 2	Ckt 1	Ckt 2	[3] Minimum Circuit Ampacity	[5] Maximum Overcurrent Protection
8 kW 5 lbs.	ECB47-8 (**27A44**) Terminal block	1	208	6.0	20,500	7.6	30	- - -	30	- - -	- - -	- - -
			220	6.7	22,900	7.6	32	- - -	35	- - -	- - -	- - -
			230	7.3	25,100	7.6	33	- - -	35	- - -	- - -	- - -
			240	8.0	27,300	7.6	34	- - -	35	- - -	- - -	- - -
10 kW 6 lbs.	ECB47-10 (**27A35**) Terminal Block	1	208	7.5	25,600	7.6	36	- - -	40	- - -	- - -	- - -
			220	8.4	28,700	7.6	37	- - -	40	- - -	- - -	- - -
			230	9.2	31,400	7.6	38	- - -	40	- - -	- - -	- - -
			240	10.0	34,100	7.6	40	- - -	40	- - -	- - -	- - -
	ECB47-10 (**27A38**) (3) 20A Fuses	1	440	8.4	28,700	3.5	18	- - -	20	- - -	- - -	- - -
			460	9.2	31,400	3.5	19	- - -	20	- - -	- - -	- - -
			480	10.0	34,100	3.5	19	- - -	20	- - -	- - -	- - -
15 kW 12 lbs.	ECB47-15CB (**27A36**) 50A Circuit breaker	1	208	11.3	38,400	7.6	49	- - -	50	- - -	- - -	- - -
			220	12.6	43,000	7.6	51	- - -	[4] **60**	- - -	- - -	- - -
			230	13.5	47,000	7.6	53	- - -	[4] **60**	- - -	- - -	- - -
			240	15.0	51,200	7.6	55	- - -	[4] **60**	- - -	- - -	- - -
	ECB47-15 (**27A39**) (3) 25A Fuses	1	440	12.6	43,000	3.5	25	- - -	25	- - -	- - -	- - -
			460	13.5	47,000	3.5	26	- - -	30	- - -	- - -	- - -
			480	15.0	51,200	3.5	27	- - -	30	- - -	- - -	- - -
20 kW 19 lbs.	ECB47-20CB (**27A37**) (2) 35A Circuit breaker	2	208	15.0	51,200	7.6	36	26	[4] **40**	[4] **30**	62	70
			220	16.8	57,300	7.6	37	28	[4] **40**	[4] **30**	65	70
			230	18.4	62,700	7.6	38	29	[4] **40**	[4] **30**	67	70
			240	20.0	68,200	7.6	40	30	[4] **40**	[4] **30**	70	70
	ECB47-20 (**27A40**) (3) 35A Fuses	1	440	16.8	57,300	3.5	32	- - -	35	- - -	- - -	- - -
			460	18.4	62,700	3.5	33	- - -	35	- - -	- - -	- - -
			480	20.0	68,200	3.5	34	- - -	35	- - -	- - -	- - -
	[6] ECB47-20 (**27A43**) (3) 25A Fuses	1	550	16.8	57,300	3.5	26	- - -	30	- - -	- - -	- - -
			575	18.4	62,700	3.5	27	- - -	30	- - -	- - -	- - -
			600	20.0	68,200	3.5	28	- - -	30	- - -	- - -	- - -
25 kW 19 lbs.	ECB47-25CB (**27A45**) (2) 45A Circuit breaker	2	208	18.8	64,100	7.6	42	33	45	[4] **35**	75	80
			220	21.0	71,700	7.6	44	34	45	[4] **35**	78	80
			230	23.0	78,300	7.6	46	36	[4] **50**	[4] **40**	82	90
			240	25.0	85,300	7.6	47	38	[4] **50**	[4] **40**	85	90
	ECB47-25 (**27A42**) (3) 40A Fuses	1	440	21.0	71,700	3.5	39	- - -	40	- - -	- - -	- - -
			460	23.0	78,300	3.5	40	- - -	40	- - -	- - -	- - -
			480	25.0	85,300	3.5	42	- - -	45	- - -	- - -	- - -
	[6] ECB47-25 (**27A41**) (3) 35A Fuses	1	550	21.0	71,700	3.5	32	- - -	35	- - -	- - -	- - -
			575	23.0	78,300	3.5	33	- - -	35	- - -	- - -	- - -
			600	25.0	85,300	3.5	34	- - -	35	- - -	- - -	- - -

NOTE - Circuit 1 Minimum Circuit Ampacity includes the Blower Motor Full Load Amps.

[1] Electric heater capacity only - does not include additional blower motor heat capacity.

[2] Amps shown are for blower motor only.

[3] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

[4] Bold text indicates that the circuit breaker on “CB” circuit breaker models must be replaced with size noted. See Table on Page 13.

[5] HACR type circuit breaker or fuse.

[6] Blower motor is rated at 460V.

ELECTRIC HEAT DATA — CBK47UHET-060 | SINGLE PHASE

Electic Heat Model Number	No. of Stages	Input			[2] Blower Motor Full Load Amps	[3] Minimum Circuit Ampacity			[5] Maximum Overcurrent Protection			Single Point Power Source	
		Volts	kW	[1] Btuh		Ckt 1	Ckt 2	Ckt 3	Ckt 1	Ckt 2	Ckt 3	[3] Minimum Circuit Ampacity	[5] Maximum Overcurrent Protection
4 kW 4 lbs. ECB47-4 (**27A30**) Terminal Block ECB47-4CB (**27A29**) 30A Circuit breaker	1	208	3.0	10,250	7.6	28	- - -	- - -	30	- - -	- - -	- - -	- - -
		220	3.4	11,450	7.6	30	- - -	- - -	30	- - -	- - -	- - -	- - -
		230	3.7	12,550	7.6	30	- - -	- - -	30	- - -	- - -	- - -	- - -
		240	4.0	13,650	7.6	30	- - -	- - -	30	- - -	- - -	- - -	- - -
5 kW 4 lbs. ECB47-5 (**27A31**) Terminal Block ECB47-5CB (**27A24**) 35A Circuit breaker	1	208	3.8	12,800	7.6	32	- - -	- - -	35	- - -	- - -	- - -	- - -
		220	4.2	14,300	7.6	36	- - -	- - -	[4] **40**	- - -	- - -	- - -	- - -
		230	4.6	15,700	7.6	36	- - -	- - -	[4] **40**	- - -	- - -	- - -	- - -
		240	5.0	17,100	7.6	36	- - -	- - -	[4] **40**	- - -	- - -	- - -	- - -
6 kW 4 lbs. ECB47-6 (**27A26**) Terminal Block ECB47-6CB (**27A25**) 40A Circuit breaker	1	208	4.5	15,400	7.6	37	- - -	- - -	40	- - -	- - -	- - -	- - -
		220	5.0	17,100	7.6	41	- - -	- - -	[4] **45**	- - -	- - -	- - -	- - -
		230	5.5	18,800	7.6	41	- - -	- - -	[4] **45**	- - -	- - -	- - -	- - -
		240	6.0	20,500	7.6	41	- - -	- - -	[4] **45**	- - -	- - -	- - -	- - -
8 kW 5 lbs. ECB47-8 (**27A21**) Terminal Block ECB47-8CB (**27A32**) 50A Circuit breaker	1	208	6.0	20,500	7.6	46	- - -	- - -	50	- - -	- - -	- - -	- - -
		220	6.7	22,900	7.6	51	- - -	- - -	[4] **60**	- - -	- - -	- - -	- - -
		230	7.3	25,100	7.6	51	- - -	- - -	[4] **60**	- - -	- - -	- - -	- - -
		240	8.0	27,300	7.6	51	- - -	- - -	[4] **60**	- - -	- - -	- - -	- - -
9 kW 5 lbs. ECB47-9 (**27A22**) Terminal Block ECB47-9CB (**27A27**) 60A Circuit breaker	2	208	6.8	23,100	7.6	50	- - -	- - -	[4] **50**	- - -	- - -	- - -	- - -
		220	7.6	25,800	7.6	56	- - -	- - -	60	- - -	- - -	- - -	- - -
		230	8.3	28,200	7.6	56	- - -	- - -	60	- - -	- - -	- - -	- - -
		240	9.0	30,700	7.6	56	- - -	- - -	60	- - -	- - -	- - -	- - -
12.5 kW 10 lbs. ECB47-12.5CB (**27A28**) (1) 30A Circuit breaker & (1) 45A Circuit breaker	2	208	9.4	32,000	7.6	28	38	- - -	30	[4] **40**	- - -	66	70
		220	10.5	35,800	7.6	31	43	- - -	[4] **35**	45	- - -	75	80
		230	11.5	39,200	7.6	31	43	- - -	[4] **35**	45	- - -	75	80
		240	12.5	42,600	7.6	31	43	- - -	[4] **35**	45	- - -	75	80
15 kW 12 lbs. ECB47-15CB (**27A23**) (1) 35A Circuit breaker & (1) 60A Circuit breaker	2	208	11.3	38,400	7.6	32	45	- - -	35	[4] **45**	- - -	77	80
		220	12.6	43,000	7.6	36	52	- - -	[4] **40**	60	- - -	88	90
		230	13.5	47,000	7.6	36	52	- - -	[4] **40**	60	- - -	88	90
		240	15.0	51,200	7.6	36	52	- - -	[4] **40**	60	- - -	88	90
20 kW 19 lbs. ECB47-20CB (**27A33**) (1) 60A Circuit breaker & (1) 60A Circuit breaker	2	208	15.0	51,200	7.6	50	50	- - -	[4] **50**	[4] **50**	- - -	100	125
		220	16.8	57,300	7.6	56	57	- - -	60	60	- - -	114	125
		230	18.4	62,700	7.6	56	57	- - -	60	60	- - -	114	125
		240	20.0	68,200	7.6	56	57	- - -	60	60	- - -	114	125
25 kW 19 lbs. ECB47-25CB (**27A34**) (1) 60A Circuit breaker & (2) 45A Circuit breakers	3	208	18.8	64,100	7.6	47	38	38	[4] **50**	[4] **40**	[4] **40**	123	125
		220	21.0	71,700	7.6	53	43	43	60	45	45	140	150
		230	23.0	78,300	7.6	53	43	43	60	45	45	140	150
		240	25.0	85,300	7.6	53	43	43	60	45	45	140	150

NOTE - Circuit 1 Minimum Circuit Ampacity includes the Blower Motor Full Load Amps.

[1] Electric heater capacity only - does not include additional blower motor heat capacity.

[2] Amps shown are for blower motor only.

[3] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

[4] Bold text indicates that the circuit breaker on “CB” circuit breaker models must be replaced with size noted. See Table on Page 13.

[5] HACR type circuit breaker or fuse.

ELECTRIC HEAT DATA — CBK47UHET-060 | THREE PHASE

	Electric Heat Model Number	No. of Stages	Input			[2] Blower Motor Full Load Amps	[3] Minimum Circuit Ampacity		[5] Maximum Overcurrent Protection		Single Point Power Source	
			Volts	kW	[1] Btuh		Ckt 1	Ckt 2	Ckt 1	Ckt 2	[3] Minimum Circuit Ampacity	[5] Maximum Overcurrent Protection
8 kW 5 lbs.	ECB47-8 (**27A44**) Terminal block	1	208	6.0	20,500	7.6	30	- - -	30	- - -	- - -	- - -
			220	6.7	22,900	7.6	32	- - -	35	- - -	- - -	- - -
			230	7.3	25,100	7.6	33	- - -	35	- - -	- - -	- - -
			240	8.0	27,300	7.6	34	- - -	35	- - -	- - -	- - -
10 kW 6 lbs.	ECB47-10 (**27A35**) Terminal Block	1	208	7.5	25,600	7.6	36	- - -	40	- - -	- - -	- - -
			220	8.4	28,700	7.6	37	- - -	40	- - -	- - -	- - -
			230	9.2	31,400	7.6	38	- - -	40	- - -	- - -	- - -
			240	10.0	34,100	7.6	40	- - -	40	- - -	- - -	- - -
	ECB47-10 (**27A38**) (3) 20A Fuses	1	440	8.4	28,700	3.5	18	- - -	20	- - -	- - -	- - -
			460	9.2	31,400	3.5	19	- - -	20	- - -	- - -	- - -
			480	10.0	34,100	3.5	19	- - -	20	- - -	- - -	- - -
15 kW 12 lbs.	ECB47-15CB (**27A36**) 50A Circuit breaker	1	208	11.3	38,400	7.6	49	- - -	50	- - -	- - -	- - -
			220	12.6	43,000	7.6	51	- - -	[4] **60**	- - -	- - -	- - -
			230	13.5	47,000	7.6	53	- - -	[4] **60**	- - -	- - -	- - -
			240	15.0	51,200	7.6	55	- - -	[4] **60**	- - -	- - -	- - -
	ECB47-15 (**27A39**) (3) 25A Fuses	1	440	12.6	43,000	3.5	25	- - -	25	- - -	- - -	- - -
			460	13.5	47,000	3.5	26	- - -	30	- - -	- - -	- - -
			480	15.0	51,200	3.5	27	- - -	30	- - -	- - -	- - -
20 kW 19 lbs.	ECB47-20CB (**27A37**) (2) 35A Circuit breaker	2	208	15.0	51,200	7.6	36	26	[4] **40**	[4] **30**	62	70
			220	16.8	57,300	7.6	37	28	[4] **40**	[4] **30**	65	70
			230	18.4	62,700	7.6	38	29	[4] **40**	[4] **30**	67	70
			240	20.0	68,200	7.6	40	30	[4] **40**	[4] **30**	70	70
	ECB47-20 (**27A40**) (3) 35A Fuses	1	440	16.8	57,300	3.5	32	- - -	35	- - -	- - -	- - -
			460	18.4	62,700	3.5	33	- - -	35	- - -	- - -	- - -
			480	20.0	68,200	3.5	34	- - -	35	- - -	- - -	- - -
	[6] ECB47-20 (**27A43**) (3) 25A Fuses	1	550	16.8	57,300	3.5	26	- - -	30	- - -	- - -	- - -
			575	18.4	62,700	3.5	27	- - -	30	- - -	- - -	- - -
			600	20.0	68,200	3.5	28	- - -	30	- - -	- - -	- - -
25 kW 19 lbs.	ECB47-25CB (**27A45**) (2) 45A Circuit breaker	2	208	18.8	64,100	7.6	42	33	45	[4] **35**	75	80
			220	21.0	71,700	7.6	44	34	45	[4] **35**	78	80
			230	23.0	78,300	7.6	46	36	[4] **50**	[4] **40**	82	90
			240	25.0	85,300	7.6	47	38	[4] **50**	[4] **40**	85	90
	ECB47-25 (**27A42**) (3) 40A Fuses	1	440	21.0	71,700	3.5	39	- - -	40	- - -	- - -	- - -
			460	23.0	78,300	3.5	40	- - -	40	- - -	- - -	- - -
			480	25.0	85,300	3.5	42	- - -	45	- - -	- - -	- - -
	[6] ECB47-25 (**27A41**) (3) 35A Fuses	1	550	21.0	71,700	3.5	32	- - -	35	- - -	- - -	- - -
			575	23.0	78,300	3.5	33	- - -	35	- - -	- - -	- - -
			600	25.0	85,300	3.5	34	- - -	35	- - -	- - -	- - -

NOTE - Circuit 1 Minimum Circuit Ampacity includes the Blower Motor Full Load Amps.

[1] Electric heater capacity only - does not include additional blower motor heat capacity.

[2] Amps shown are for blower motor only.

[3] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

[4] Bold text indicates that the circuit breaker on “CB” circuit breaker models must be replaced with size noted. See Table on Page 11.

[5] HACR type circuit breaker or fuse.

[6] Blower motor is rated at 460V.

Installation Clearances

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

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

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

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

⚠ WARNING

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

⚠ WARNING

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

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

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

Requirements

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

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

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

Installation Requirements

CBK47UHET units are factory-configured for upflow and horizontal right-hand discharge installation. For downflow or horizontal left-hand discharge, certain field modifications are required.

DISASSEMBLE AND REASSEMBLE AIR HANDLER UNIT

This unit consists of two sections which are shipped assembled from the factory. If necessary, the unit may be disassembled to facilitate setting the unit. Follow the steps below:

To disassemble:

1 - Remove access panels.

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

3 - Remove one screw from the left and right posts inside the unit. Remove one screw from each side on the back of the unit. Unit sections will now separate.

To reassemble:

1 - Align cabinet sections together.

2 - Reinstall screws.

3 - Replace blower and coil assemblies.

4 - Replace access panel.

UPFLOW APPLICATION

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

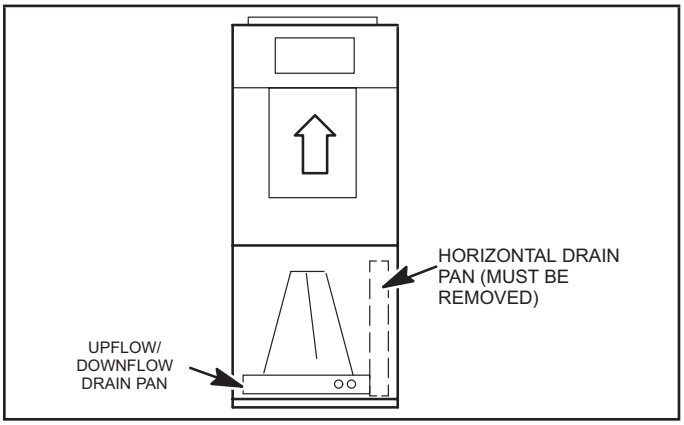


FIGURE 1. Upflow Configuration

1 - The horizontal drain pan must be removed when the coil blower is installed in the upflow position. Removing horizontal drain pain will allow proper airflow and increase efficiency.

2 - After removing horizontal drain pan, place the unit in desired location. Set unit so that it is level. Connect return and supply air plenums as required using sheet metal screws as illustrated in Figure 1.

3 - Install units that have no return air plenum on a stand that is at least 14" from the floor to allow for proper air return. Lennox offers an optional upflow unit stand as listed in Table 2.

TABLE 2. Optional Unit Side Stand (Upflow Only)

Models	Kit Numbers
-018, -024	45K31
-030, -036, -048, -060	45K32

HORIZONTAL RIGHT-HAND DISCHARGE APPLICATION

***NOTE** - When air handler is located above a finished space, the secondary drain pan must have a larger footprint than the air handler. In addition, a 3/4" (19.1MM) overflow drain line must be:*

- *Connected to secondary drain pan*

or

- *Connected to the overflow drain outlet of the air handler drain pan.*

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

***NOTE** - For horizontal applications, a secondary drain pan is recommended. Refer to local codes.*

4 - No further adjustment is necessary. Set unit so that it is sloped 1/4 inch (6.35mm) towards the drain pan end of the unit.

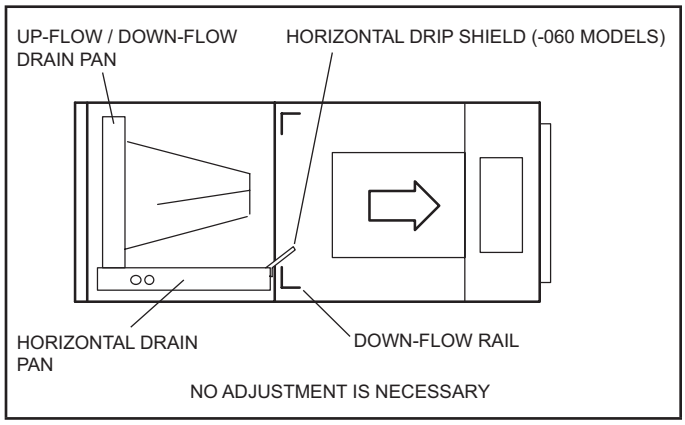


FIGURE 2. Right-Hand Discharge Configuration

5 - If the unit is suspended, the entire length of the cabinet must be supported. If you use a chain or strap, use a piece of angle iron or sheet metal attached to the unit (either above or below) to support the length of the cabinet. Use securing screws no longer than 1/2 inch (12.7mm) to avoid damaging the coil or filter as illustrated in Figure 3. Use sheet metal screws to connect the return and supply air plenums as required.

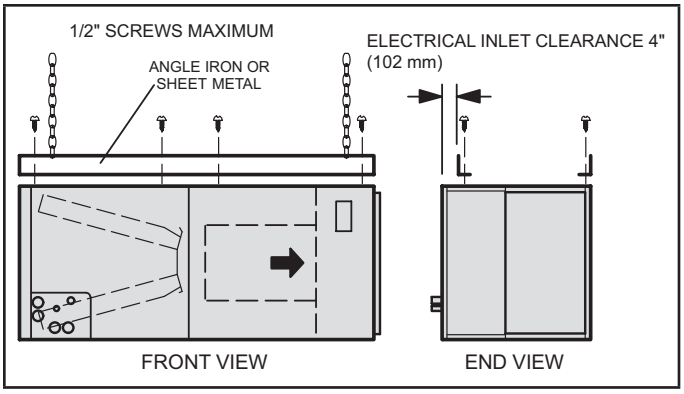


FIGURE 3. Suspending Horizontal Unit

HORIZONTAL RIGHT-HAND DISCHARGE APPLICATION IN HIGH HUMIDITY AREAS

For horizontal applications in high humidity areas remove the downflow rail closest to the drain pan.

To remove rail:

1 - Remove the screws from the rail at the back of unit and at the cabinet support rail.

2 - Remove the downflow rail then replace screws.

3 - Seal around the exiting drain pipe, liquid line, and suction line to prevent humid air from infiltrating into the unit.

***NOTE –** For horizontal applications, a secondary drain pan is recommended. Refer to local codes.*

***NOTE –** When air handler is located above a finished space, the secondary drain pan must have a larger footprint than the air handler. In addition, a 3/4" (19.1MM) overflow drain line must be:*

- *Connected to secondary drain pan*

or

- *Connected to the overflow drain outlet of the air handler drain pan.*

***NOTE - (-060 Model Only)** Before operating the unit, remove access panels and the horizontal drip shield and the corrugated padding between the blower and coil assembly. Discard the corrugated padding and the downflow drip shields.*

***NOTE - (-060 Model Only)** Install the horizontal shield on the front edge of the horizontal drain pan as illustrated in figure 2.*

⚠ IMPORTANT

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

HORIZONTAL LEFT-HAND DISCHARGE APPLICATION

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

NOTE – *For horizontal applications, a secondary drain pan is recommended. Refer to local codes.*

NOTE - (-060 Model Only) *Before operating the unit, remove access panels and the horizontal drip shield and the corrugated padding between the blower and coil assembly. Discard the corrugated padding and the downflow drip shields. (The shields are used for downflow applications only.)*

⚠ IMPORTANT

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

1 - Pull the coil assembly from unit. Pull off the horizontal drain pan.

2 - Remove the drain plugs from back drain holes on horizontal drain pan and reinstall them on front holes.

3 - Rotate drain pan 180º front-to-back and install it on the opposite side of the coil.

4 - Remove screws from top cap. Remove horizontal drip shield screw located in the center of the back coil end seal as illustrated in figure 5.

5 - Rotate horizontal drip shield 180º front-to-back.

6 - Remove plastic plug from left hole on coil front end seal and reinstall plug in back hole. Reinstall horizontal drip shield screw in front coil end seal. Drip shield should drain downward into horizontal drain pan inside coil.

7 - Rotate top cap 180º front-to-back and align with unused screw holes. Holes must align with front and back coil end plates. The top cap has a 45º bend on one side and a 90º bend on the other. The 90º bend must be on the same side as the horizontal drain pan as illustrated in Figure 5.

NOTE – *Be very careful when reinstalling the screws into the coil end plate engaging holes. Misaligned screws may damage the coil.*

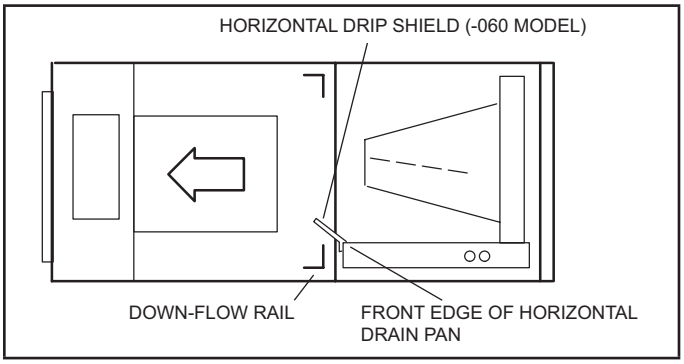


FIGURE 4. Left-Hand Discharge Configuration

8 - From the upflow position, flip cabinet 90º to the left and set into place. Replace blower assembly. Secure coil in place by bending down the tab on the cabinet support rail as illustrated in figures 4 and 5.

9 - Install the horizontal shield (-060 model) on the front edge of the horizontal drain pan as illustrated in figures 4 and 5.

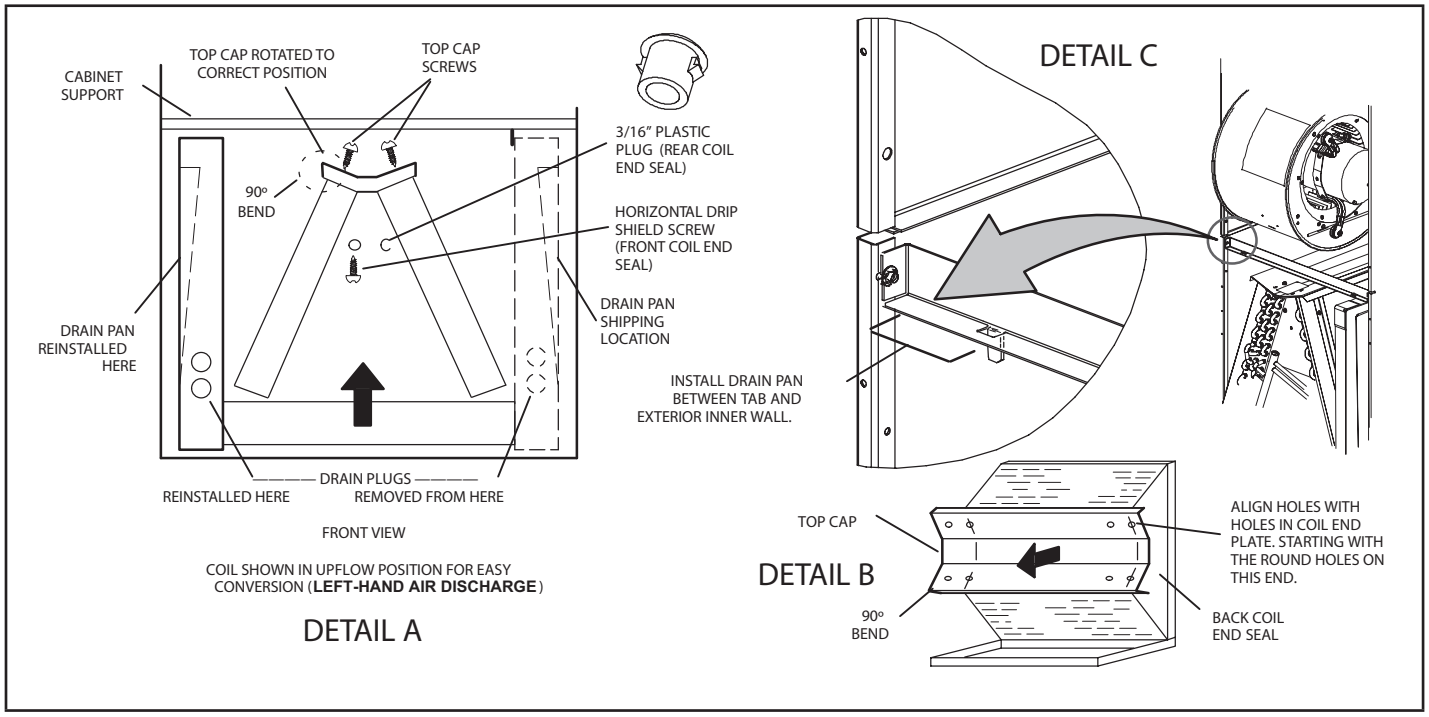


FIGURE 5. Field Modification for Left-Hand Discharge

NOTE – *For horizontal applications in high humidity areas, remove the downflow rail closest to the drain pan. To remove rail, remove screw from rail at back of unit and at cabinet support rail. Remove downflow rail then replace screws. Also, seal around the exiting drain pipe, liquid and suction lines to prevent infiltration of humid air.*

10 - Knock out drain seal plate from access door. Secure plate to cabinet front flange with screw provided.

11 - Flip access door and replace it on the unit.

12 - Set unit so that it is sloped 1/4" toward the drain pan end of the unit. Connect return and supply air plenums as required using sheet metal screws.

13 - If suspending the unit, it must be supported along the entire length of the cabinet. If using chain or strap, use a piece of angle iron or sheet metal attached to the unit (either above or below) so that the full length of the cabinet is supported. Use securing screws no longer than 1/2" to avoid damage to coil or filter, as illustrated in figure 3. Connect return and supply air plenums as required using sheet metal screws.

DOWNFLOW APPLICATION

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

⚠ IMPORTANT

If electric heat section with circuit breakers (ECB45) is installed in a CBK47UHET unit in a downflow application, the circuit breakers must be rotated 180° to the UP position. See ECB45 installation instructions for more details.

Table 3 outlines the sizes of the various drip shields.

NOTE - (-060 Model Only) *Remove access panels and horizontal drip shield from the corrugated padding between the blower and coil assembly.*

1 - Remove the coil assembly from the unit.

2 - For best efficiency and air flow, remove the horizontal drain pan from the units in downflow positions as illustrated in figure 6.

3 - Rotate cabinet 180º from the upright position. See figure 6. You may need to first remove the blower assembly to lighten the cabinet for lifting.

4 - Foam tape that is provided creates a seal between the drip shield and the coil so that water does not leak into the air stream. The foam tape pieces are precut. Apply the tape to the drip shields as illustrated in figure 7 and specified as follows:

- Apply two pieces of foam tape provided down both ends of each shield. The tape should measure 4-3/4" X 2" (120 X 25 mm). Ensure that the tape covers both sides of the shield equally.
- Apply the longer piece of 1 inch wide foam tape between the end pieces of tape.

5 - From the underside of the coil, install the downflow drip shield firmly in place as illustrated in figure 8.

TABLE 3. Downflow Drip Shields (Tape Required)

Units	Length	Width
-018/024	Not Required	Not Required
-030	15-7/8"	4-11/16"
-036, -042	17-7/8"	4-11/16"
-048, -060	19-7/8"	4-11/16"

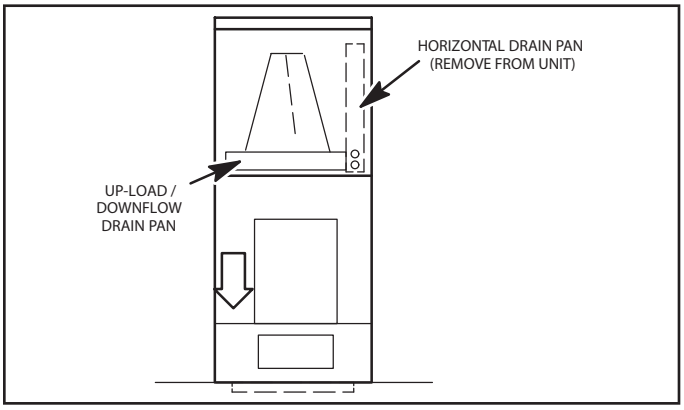


FIGURE 6. Downflow Discharge Position

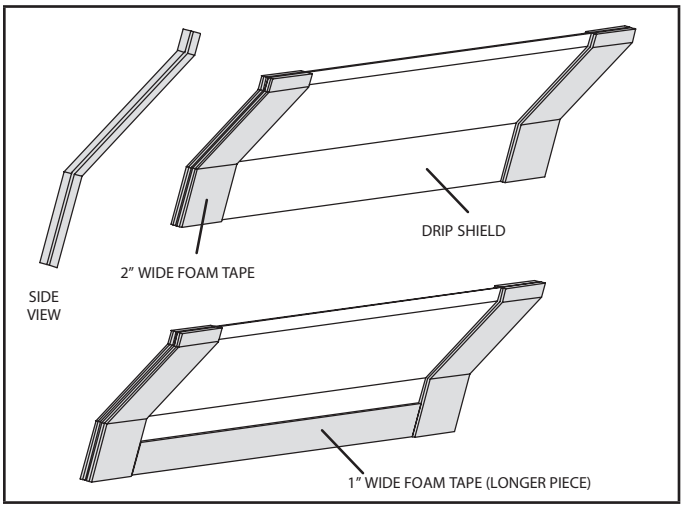


FIGURE 7. Applying Foam Tape to Drip Shield

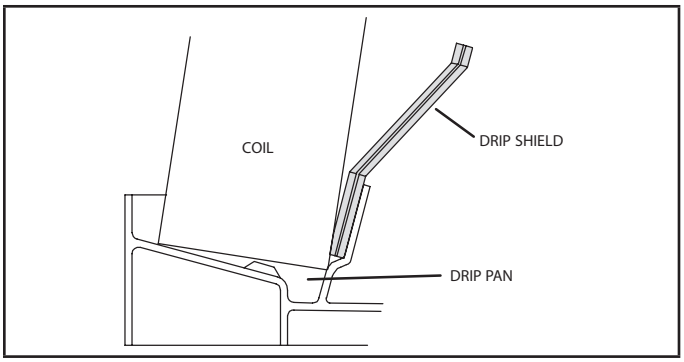


FIGURE 8. Downflow Drip Shields

6 - Replace the coil assembly and blower if you have removed it. Replace the coil access panel.

7 - Set the unit so that it is level. Using sheet metal screws, connect the return and supply air plenums as required.

***NOTE** - For downflow application, metal or Class I supply and return air plenums must be used.*

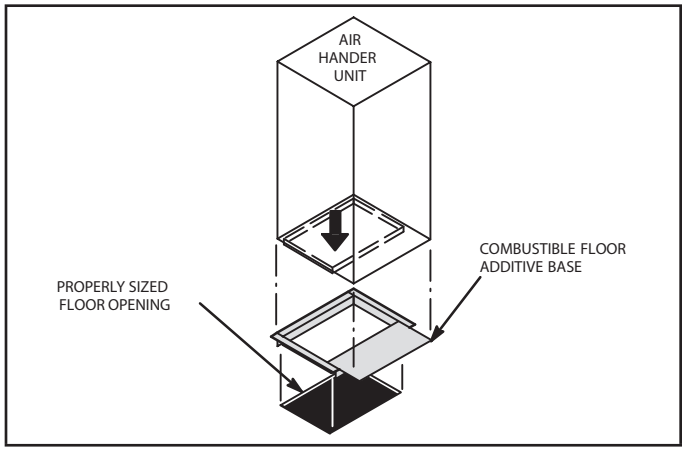


FIGURE 9. Downflow Combustible Flooring Base

8 - For downflow installation on combustible flooring, an additive base must be used as illustrated in figure 9. See CBK47UHET Engineering Handbook for downflow combustible flooring base kits available for this air handler.

9 - Cut an opening appropriately sized for combustible base. Base dimensions are illustrated in figure 10. After opening has been cut, set the additive base into opening. Connect outlet air plenum to the additive base. Set the unit on the additive base so flanges of the unit drop into the base opening and seal against the insulation strips. The unit is now locked in place. Install return air plenum and secure with sheet metal screws.

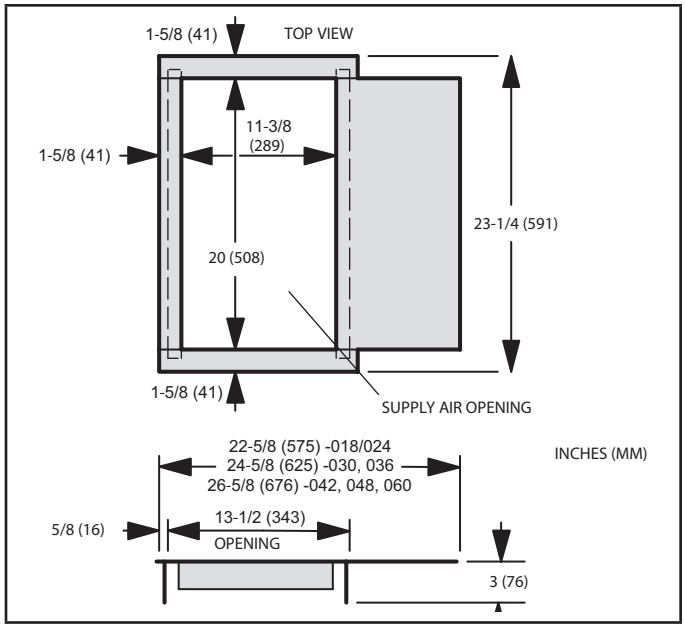


FIGURE 10. Downflow Combustible Base Dimensions

Brazing Connections

⚠ WARNING

Polyol ester (POE) oils used with R-454B refrigerant absorb moisture very quickly. It is very important that the refrigerant system be kept closed as much as possible. DO NOT remove line set caps or service valve stub caps until you are ready to make connections.

⚠ WARNING

Danger of fire. Bleeding the refrigerant charge from only the high side may result in pressurization of the low side shell and suction tubing. Application of a brazing torch to a pressurized system may result in ignition of the refrigerant and oil mixture. Check the high and low pressures before applying heat.

⚠ IMPORTANT

To prevent the build-up of high levels of nitrogen when purging, it must be 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 the system.

⚠ WARNING

Danger of explosion!

Can cause equipment damage, injury, or death.

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

⚠ CAUTION

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

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

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

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

⚠ WARNING

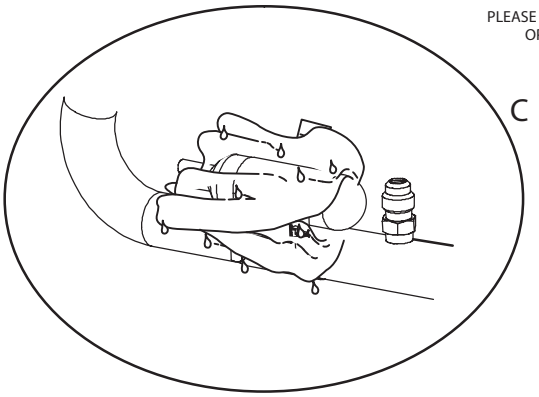
When using a high pressure gas such as nitrogen to pressurize a refrigeration or air conditioning system, use a regulator that can control the pressure down to 1 or 2 psig (6.9 to 13.8 kPa).

TABLE 4. CBK47UHET Refrigerant Connections and Line Set Requirements

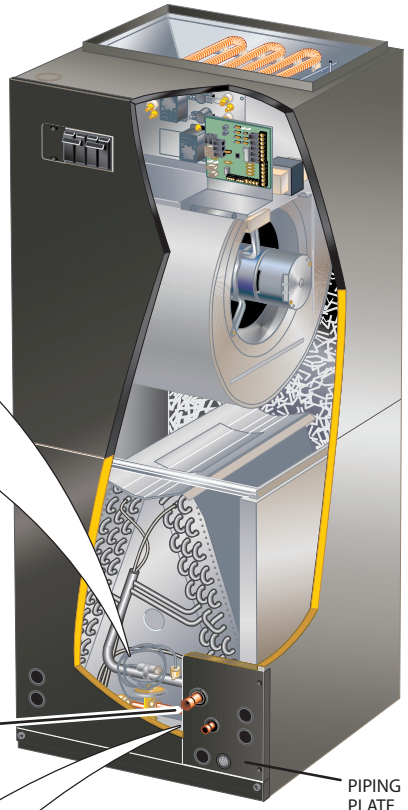
Model	Liquid Line	Vapor Line	L15 Line Sets
-018/ 024	3/8" (10mm)	3/4" (19mm)	L15 line set sizes are dependant on unit match-up. See Product Specifications (EHB) for outdoor unit to determine correct line set sizes
-030 -036	3/8" (10mm)	3/4" (19mm)	
-042 -048	3/8" (10mm)	7/8" (22mm)	
-060	3/8" (10mm)	7/8" (22mm)	Field fabricated
NOTE - Some applications may require a field-provided 7/8" to 1-1/8" adapter.			

***NOTE** - When installing refrigerant lines longer than 50 feet, see the Lennox Refrigerant Piping Design and Fabrication Guidelines, CORP. 9351-L9, or contact Lennox Technical Support Product Applications for assistance.*

PLEASE READ IMPORTANT ISSUES CONCERNING BRAZING OPERATIONS ON PAGE 10 BEFORE PROCEEDING.

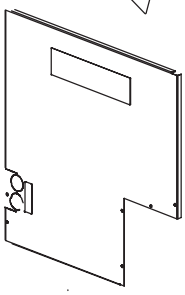


C USE A WET RAG TO PROTECT CTXV SENSING BULB WHEN BRAZING SUCTION LINE CONNECTIONS.



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

NOTE - Use silver alloy brazing rods with five or six percent minimum silver alloy for copper-to-copper brazing, 45 percent alloy for copper-to-brass and copper-to-steel brazing.



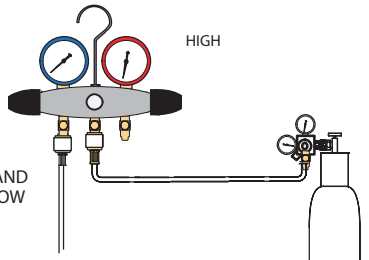
A REMOVE ACCESS PANEL

B REMOVE RUBBER PLUG FROM BOTH LIQUID AND SUCTION LINES

NOTE — CBK47UHE SERIES UNITS USE NITROGEN OR DRY AIR AS A HOLDING CHARGE. IF THERE IS NO PRESSURE WHEN THE RUBBER PLUGS ARE REMOVED, CHECK THE COIL FOR LEAKS BEFORE INSTALLING.

PIPING PLATE

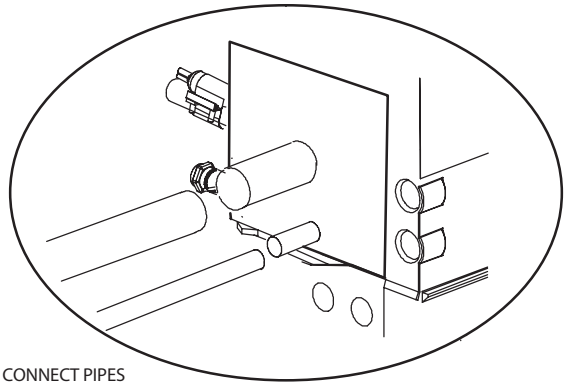
D EITHER REMOVE OR PUSH PIPE WRAPPING BACK THROUGH HOLE IN PIPING PLATE BEFORE LINE SET CONNECTION AND BRAZING.



F CONNECT GAUGES AND START NITROGEN FLOW

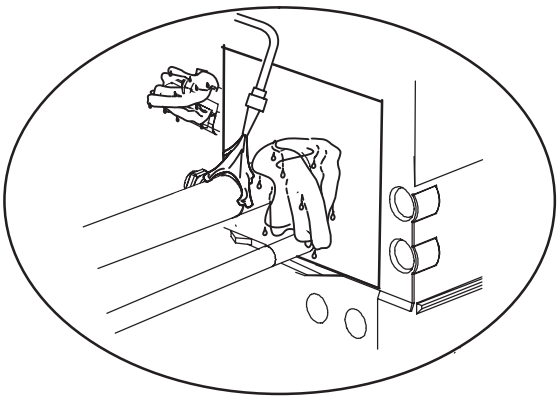
FLOW REGULATED NITROGEN (AT 1 TO 2 PSIG) THROUGH THE REFRIGERATION GAUGE SET INTO THE VALVE STEM POR T CONNECTION ON THE OUTDOOR UNIT LIQUID LINE SER VICE VALVE AND OUT OF THE VALVE STEM PORT CONNECTION ON THE SUCTION SERVICE VALVE.

NITROGEN



E CONNECT PIPES

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



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

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

I REPEAT PREVIOUS PROCEDURE FOR LIQUID LINE.

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

REFRIGERANT SYSTEM INSTALLATIONS SHALL BE INSTALLED AND TESTED PER ASHRAE STANDARD 15.2, SECTION 10.0 (LATEST EDITION).

FIGURE 11. Brazing Connections

Installing the Condensate Drain

⚠ IMPORTANT

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

MAIN DRAIN

Connect the main drain and route downward to drain line or sump. Do not connect drain to a closed waste system. See Figure 13 for typical drain trap configuration.

OVERFLOW DRAIN

It is recommended that the overflow drain is connected to an overflow drain line for all units. If overflow drain is not connected, it must be plugged with provided cap.

For downflow orientation, the overflow drain **MUST** be connected and routed to a overflow drain line. See Figure 12 for main and overflow drain locations based on coil orientation.

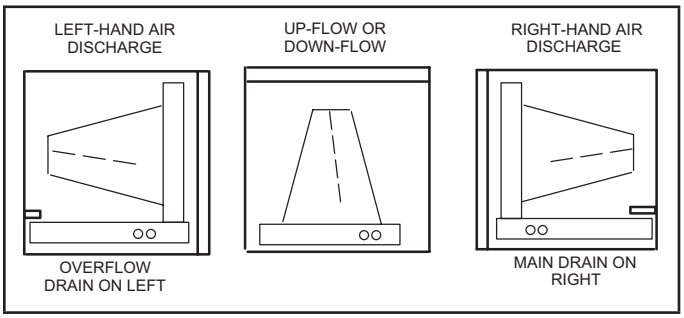


FIGURE 12. Main and Overflow Drain Locations Based on Coil Orientation

BEST PRACTICES

The following best practices are recommended for the condensate removal process:

- Main and overflow drain lines should **NOT** be smaller than both drain connections at drain pan.
- Overflow drain line should run to an area where homeowner will notice drainage.
- It is recommended that the overflow drain line be vented and a trap installed. Refer to local codes.
- Condensate drain lines must be configured or provided with a cleanout to permit the clearing of blockages and for maintenance without requiring the drain line to be cut.

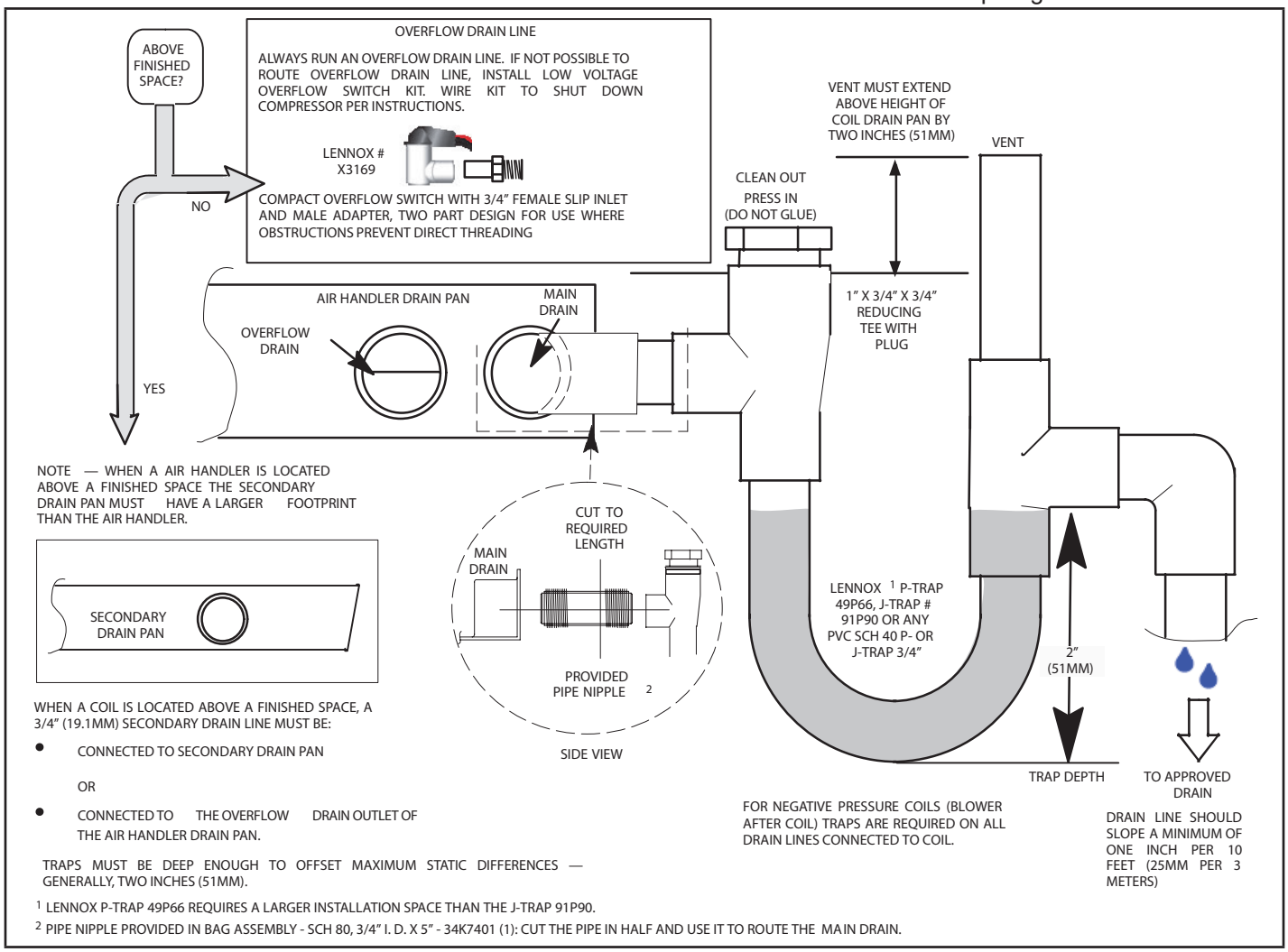


FIGURE 13. Typical Main and Overflow Drain Installations

Inspecting and Replacing Filters

⚠ IMPORTANT

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

Filters may be duct-mounted or installed in the cabinet. A filter is installed at the factory. Note that filter access door fits over access panel. Air will leak if the access panel is placed over the filter door.

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

To replace filter:

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

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

3 - Insert new filter.

4 - Replace panel.

See table 5 for replacement filter sizes.

TABLE 5. Filter Dimensions

CBK47UHET	Filter Size – In. (mm)
-018/024, -030, -036	20 x 20 x 1 (508 x 508 x 25)
-042, -048, -060	20 x 24 x 1 (508 x 610 x 25)

Sealing the Unit

⚠ WARNING

There must be an airtight seal between the bottom of the air handler and the return air plenum. Use fiberglass sealing strips, caulking, or equivalent sealing method between the plenum and the air handler cabinet to ensure a tight seal. Return air must not be drawn from a room where this air handler or any gas-fueled appliance (i.e., water heater), or carbon monoxide-producing device (i.e., wood fireplace) is installed.

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 mentioned materials may be used to seal around the main and auxiliary drains, and around open areas of electrical inlets.

Field Control Wiring

⚠ 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.

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

⚠ WARNING

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

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

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

⚠ CAUTION

USE COPPER CONDUCTORS ONLY.

WIRING CONNECTIONS

1 - Install line voltage power supply to unit from a properly installed circuit breaker.

2 - Ground unit at unit disconnect switch or to an earth ground.

NOTE – *Connect conduit to the unit using a proper conduit fitting. Units are approved for use only with copper conductors. A complete unit wiring diagram is located on the back side of the unit's access panel.*

3 - Install low voltage wiring from outdoor unit to indoor unit and from thermostat to indoor unit.

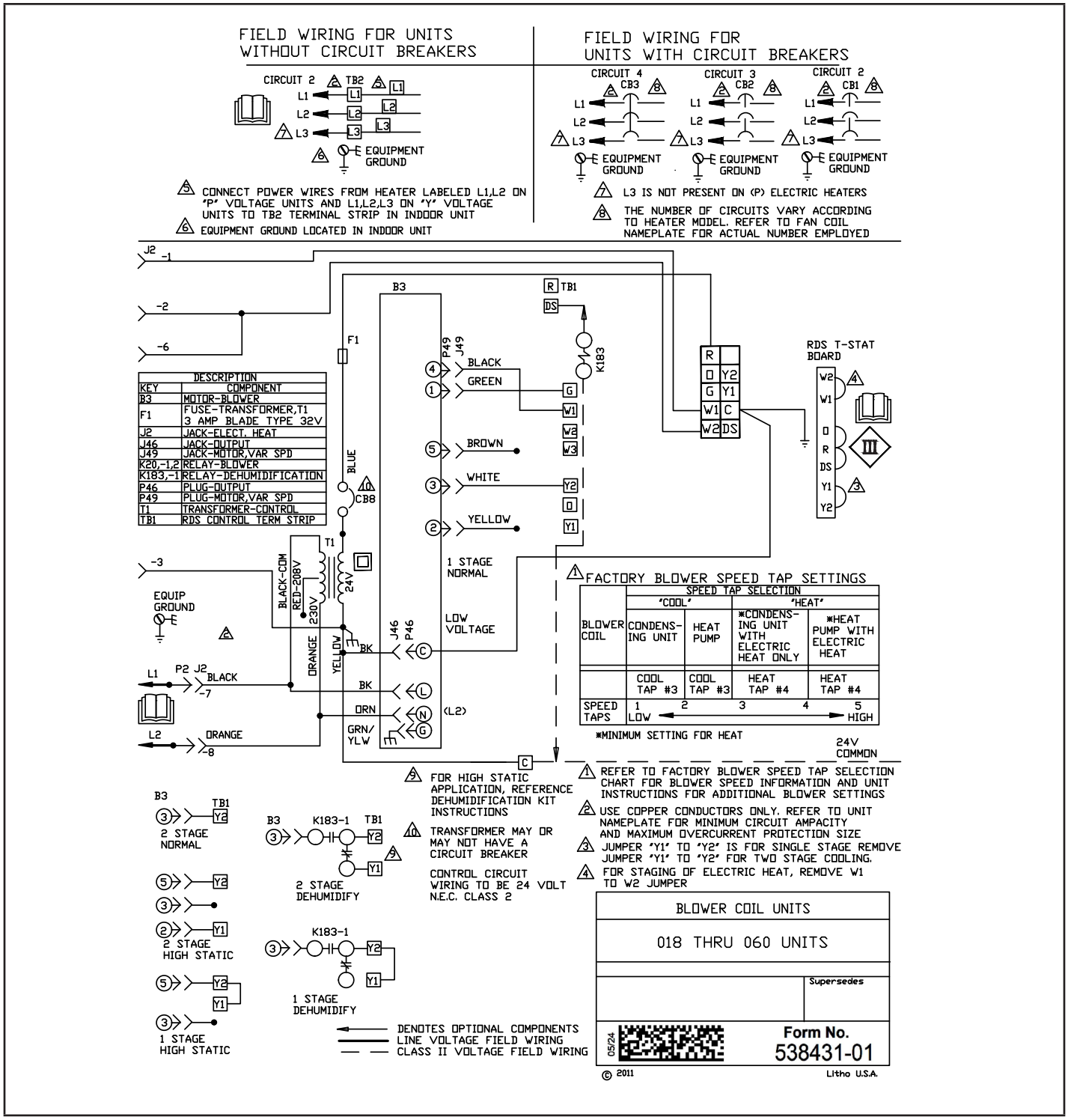


FIGURE 14. CBK47UHET Air Handler Unit Typical Wiring Diagram

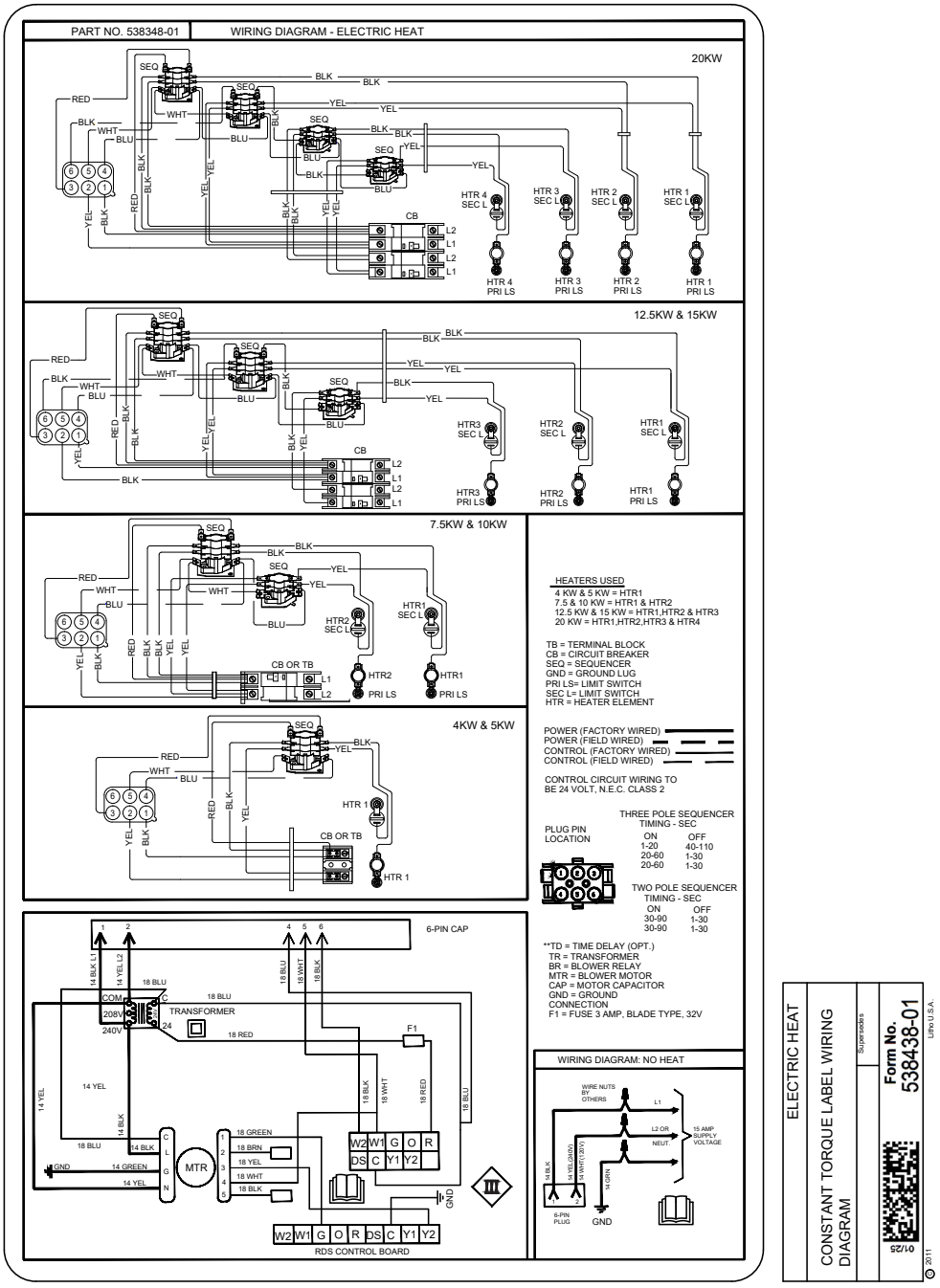


FIGURE 15. CBK47UHET Air Handler – Constant Torque

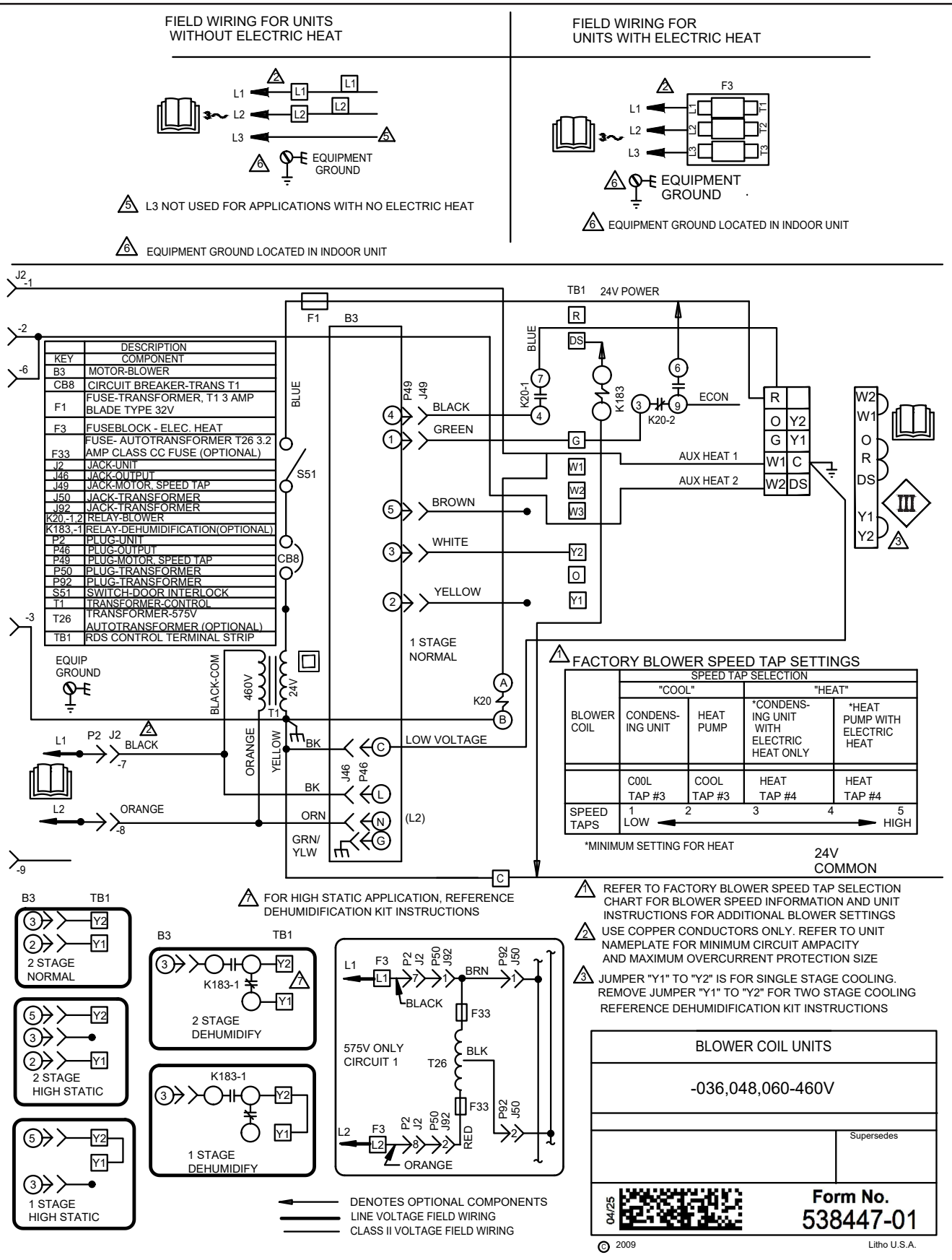


FIGURE 16. Field Wiring – -036, 048, 060-460V

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.

Matte- 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.

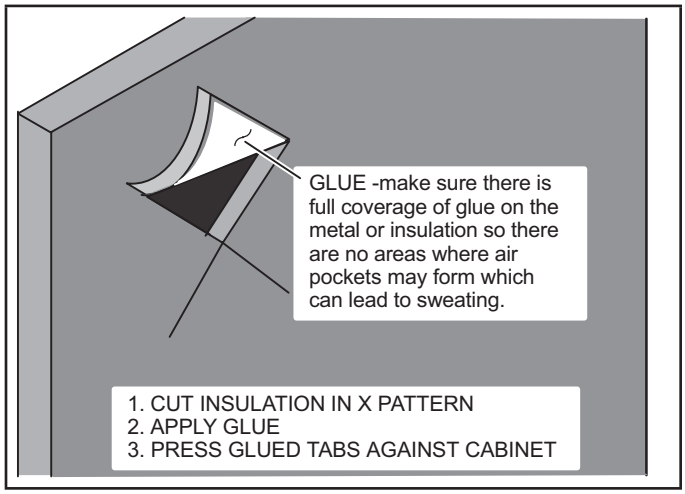


FIGURE 17. Repairing Insulation

⚠ 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 1/2" of the insulation. If the foil-faced insulation comes in contact with electrical voltage, the foil could provide a path for current to pass through to the outer metal cabinet. While the current produced may not be enough to trip existing electrical safety devices (e.g., fuses or circuit breakers), the current can be enough to cause an electrical shock hazard that could cause personal injury or death.

Homeowner Maintenance

⚠ IMPORTANT

Do not operate system without a filter. A filter is required to protect the coil, blower, and internal parts from excessive dirt and dust. The filter is placed in the return duct by the installer.

- Inspect air filters at least once a month and replace or clean as required. Dirty filters are the most common cause of inadequate heating or cooling performance.
- Replace disposable filters. Cleanable filters can be cleaned by soaking in mild detergent and rinsing with cold water.
- Install new/clean filters with the arrows on the side pointing in the direction of airflow. Do not replace a cleanable (high velocity) filter with a disposable (low velocity) filter unless return air system is properly sized for it.
- If water should start coming from the secondary drain line, a problem exists which should be investigated and corrected. Contact a qualified service technician.

Professional Maintenance

NOTICE !

Failure to follow instructions will cause damage to the unit.

This unit is equipped with an aluminum coil. Aluminum coils may be damaged by exposure to solutions with a pH below 5 or above 9. The aluminum coil should be cleaned using potable water at a moderate pressure (less than 50psi). If the coil cannot be cleaned using water alone, Lennox recommends use of a coil cleaner with a pH in the range of 5 to 9. The coil must be rinsed thoroughly after cleaning.

In coastal areas, the coil should be cleaned with potable water several times per year to avoid corrosive buildup (salt).

Check-out Procedures

⚠ IMPORTANT

During installation, service or maintenance, make sure that copper tubing does not rub against metal edges or other copper tubing. Care should also be taken to ensure that tubing does not become kinked. Use wire ties to secure tubing to prevent movement.

Do not secure electrical wires to tubing that carries hot refrigerant gas. Heat from the tubing may melt the wiring insulation, causing a short circuit.

NOTE – *Refer to outdoor unit installation instructions for system start-up instructions and refrigerant charging instructions.*

PRE-START-UP CHECKS

- Is the air handler properly and securely installed?
- If horizontally configured, is the unit sloped up to 1/4 inch toward drain lines?
- Will the unit be accessible for servicing?
- Has an auxiliary pan been provided under the unit with separate drain for units installed above a finished ceiling or in any installation where condensate overflow could cause damage?
- Have ALL unused drain pan ports been properly plugged?
- Has the condensate line been properly sized, run, trapped, pitched, and tested?
- Is the duct system correctly sized, run, sealed, and insulated?
- Have all cabinet openings and wiring been sealed?
- Is the indoor coil factory-installed TXV properly sized for the outdoor unit being used?
- Have all unused parts and packaging been disposed of?
- Is the filter clean, in place, and of adequate size?
- Is the wiring neat, correct, and in accordance with the wiring diagram?
- Is the unit properly grounded and protected (fused)?
- Is the thermostat correctly wired and in a good location?
- Are all access panels in place and secure?

CHECK BLOWER OPERATION

- Set thermostat to FAN ON.
- The indoor blower should come on.

CHECK COOLING OPERATION

- Set thermostat to force a call for cooling (approximately 5ºF lower than the indoor ambient temperature).
- The outdoor unit should come on immediately and the indoor blower should start between 30 - 60 seconds later.
- Check the air flow from a register to confirm that the system is moving cooled air.
- Set the thermostat 5ºF higher than the indoor temperature. The indoor blower and outdoor unit should cycle off.

CHECK ELECTRIC HEAT (IF USED)

- Set thermostat to call for auxiliary heat (approximately 5°F above ambient temperature). The indoor blower and auxiliary heat should come on together. Allow a minimum of 3 minutes for all sequencers to cycle on.
- Set the thermostat so that it does not call for heat. Allow up to 5 minutes for all sequencers to cycle off.

Use of Air Handler During Construction

Lennox does not recommend the use of its air handler unit during any phase of construction. Very low return air temperatures, harmful vapors and operation of the unit with clogged or misplaced filters will damage the unit.

Air handler units may be used for heating (heat pumps) or cooling of buildings under construction, if the following conditions are met:

- A room thermostat must control the air handler. The use of fixed jumpers is not allowed.
- Air filter must be installed in the system and must be maintained during construction.
- Air filter must be replaced upon construction completion.
- The air handler evaporator coil, supply fan assembly and duct system must be thoroughly cleaned following final construction clean-up.
- All air handler operating conditions must be verified according to these installation instructions.
- Ensure that sensor opening is clear and free of debris.

FIGURE 18. Example of Clear, Unobstructed Sensor Inlet

Sensor Maintenance

It is recommended to check the state of the sensor every 6 months, at the beginning of each cooling and heating season.

- Ensure that the sensor opening is clear and free of debris.
- Check that the sensor cable is in good condition.
- DO NOT use abrasive cleaning solutions or detergents to clean sensor opening.
- DO NOT use flammable compressed air solutions to clean the sensor opening.
- DO NOT vacuum sensor inlet opening, as this could cause damage to the sensor internal components.
- Replace sensor if the opening is not clean or free of debris.
- When cleaning the evaporator coil, remove sensor from the coil. Follow recommended coil cleaning guidelines as described in installation instructions.

Modes of Operation

The modes of operation for the RDS Non-Communicating Blower Control Board are Initializing, Normal, Leak Detected, and Fault.

Initializing

The RDS Non-Communicating Blower Control Board is establishing connection with the refrigerant detection sensor and is completing an initial five (5) minute purge sequence.

Normal

The HVAC system is functioning normally. The RDS Non-Communicating Blower Control Board has not detected a refrigerant leak.

Leak Detected

When the RDS Non-Communicating Blower Control Board detects a refrigerant leak:

1 - The RDS Non-Communicating Blower Control Board shuts off the (R) input (24VAC power) to the thermostat, which de-energizes the outdoor unit compressor and heat sources, such as gas and/or electric strip heat. No heating or cooling demands will be met.

2 - The RDS Non-Communicating Blower Control Board activates the blower (high speed). The blower purges refrigerant from the cabinet, plenum, and ductwork.

3 - After the RDS Non-Communicating Blower Control Board determines the refrigerant levels are below the safety threshold, the blower will continue to function for an additional seven (7) minutes.

4 - After the blower sequence is complete, the HVAC system resumes normal operation.

***NOTE** – The HVAC system may not maintain a cooling or heating setpoint if a significant leak exists. Any refrigerant leaks that remain unaddressed for an extended time may cause the HVAC system to shut down on a low refrigerant pressure limit condition.*

Fault

When a fault is detected within the RDS Non-Communicating Blower Control Board, the indoor unit blower engages and remains engaged at a constant output until the fault is cleared.

Diagnostic Codes

The RDS Non-Communicating Blower Control Board is equipped with a multicolor LED within its enclosure. The LED signals the state of the RDS Non-Communicating Blower Control Board.

See Table 17 to review the diagnostic codes.

TABLE 6. LED Diagnostic Codes

State	LED Diagnostic Code	Action
Initializing	Flashing green[1]	Not Applicable
Monitoring	Solid green with blue flash[2]	Not Applicable
Mitigating (Leak Detected)	Flashing blue	Check coil tubes for leak. Repair the issue and restart the equipment.
Fault/Service	Solid blue, interrupted by issue flash code	Refer to Table 7 for troubleshooting steps.

1. A rapid flash indicates the RDSC is in the process of sensor enumeration
2. A blue flash indicates the mitigation process has previously occurred.

Red LED Diagnostic Codes

Red diagnostic codes indicate a specific RDS Non-Communicating Blower Control Board issue. Yellow diagnostic codes indicate the sensor's position (if applicable).

TABLE 7. Red LED Diagnostic Codes

Red Flash	Applies to Individual Sensor(s)	Issue	Action
1	Yes	Sensor indicates fault	Replace the sensor (Cat. # 26Z69)
2	No	Float switch Active	Check if drain line float switch is installed. If no float switch is installed, check jumper on control board.
3	Yes	Incompatible sensor type	Replace with a compatible sensor (Cat. # 26Z69)
4	Yes	Sensor communications issue	Check sensor connection. Ensure connection is clean and tight.
5	No	R-input not available	Check for 24VAC power connection to the R terminal inputs on the RDSC. R-inputs must be energized for the RDSC to function.

Test Button Functionality

The RDS Non-Communicating Blower Control Board is equipped with a Test/Reset button. The Test button can be used to complete several functions, depending on the mode of operation of the RDS Non-Communicating Blower Control Board.

Table 19 lists the functions of the Test button during each mode of operation.

TABLE 8. Test Button Function

Mode of Operation	Press the Test Button to...
Normal	Trigger a leak detection response. Verify all equipment is wired correctly into the RDSC (after installation).
Leak Detected	Reset the RDSC to a normal mode of operation after a previous leak has been detected and purged from the HVAC system.
Fault	Reset the RDSC after troubleshooting and resolving a fault condition. If the fault is not resolved, the RDSC will enter the Fault mode again.

Test Button - Additional Functions

Table 20 lists the additional functions of the Test Button while the RDS Non-Communicating Blower Control Board is functioning within the states of Initializing, Monitoring, Leak Detection, Servicing and Fault. Refer to “Table 17. LED Diagnostic Codes” on page 67.

TABLE 9. Additional Button Functions

State	Press	Action
Initializing	Short	Skips remaining pre-purge after sensors are recognized by the RDSC
Initializing	Long	Reset control
Monitoring	Short	Clear purge-counter if prior mitigation has occurred; Test mitigation
Monitoring	Long	Reset control
Mitigating	Short	If testing mitigation, end test
Servicing	Short	Reevaluate fault condition - if cleared return to monitoring, otherwise update indicator
Servicing	Long	Reset control
Fault	Short	Reevaluate fault condition - if cleared return to monitoring, otherwise update indicator
Fault	Long	Reset control

Thermostat Compatibility

Thermostats that preserve memory settings are compatible with the RDS Non-Communicating Blower Control Board. Examples include:

- Battery-powered thermostats
- Analog thermostats
- Smart thermostats
- Late-model programmable thermostats
- *Early-generation digital and programmable thermostats may not retain the operation mode and temperature setpoints after a power outage.*

The following scenarios are likely to occur when home occupants are not available to adjust the thermostat setpoints as the system is recovering from leak detection and resuming normal operation:

- Heating could be lost during a cold night
- Cooling could be lost during a hot day
- The thermostat could reset to an incorrect temperature setpoint

Compatibility Verification

Complete the following process to determine whether the thermostat is compatible with the RDS Non-Communicating Blower Control Board.

1 - Change the thermostat’s current setpoint and operating mode.

2 - Power cycle the breaker to the furnace.

NOTE *– Wait five (5) minutes before supplying power to the furnace breaker.*

3 - Note whether the thermostat maintained its setpoints and operating mode.

a. If the thermostat maintained the settings, the thermostat is compatible with the RDS Non-Communicating Blower Control Board.

b. If the thermostat did not maintain its setpoint and/or operating mode, the thermostat is not compatible with the RDS Non-Communicating Blower Control Board. Recommend replacing with a compatible thermostat.

Additional Applications

In zoned applications, all dampers will remain open when the RDS Non-Communicating Blower Control Board is in Fault or Leak Detected mode. Normal heating and cooling demands are permissible, but the blower will remain engaged until the fault condition is addressed.

Zone HVAC System

If the RDS Non-Communicating Blower Control Board is installed in a zone HVAC system, the RDS Non-Communicating Blower Control Board will open all zone dampers if a leak is detected.

NOTE *– Proper wiring of the zone panel to the RDS Non-Communicating Blower Control Board is required for all zone dampers to open.*

After the purge sequence is complete, the zone system will resume normal operation.

External Alarm

(*For applications with external alarms wired directly to the RDS Non-Communicating Blower Control Board.*)

The RDS Non-Communicating Blower Control Board triggers the external alarm system when it enters Leak Detected mode. For alarm notifications, the RDS Non-Communicating Blower Control Board provides a dry relay contact that is rated 3A at 30 VAC/DC.

Start Up Test Procedure

The RDS Non-Communicating Blower Control Board is equipped with a Test/Reset button, see “Test Button Functionality” on page 67 After the RDS Non-Communicating Blower Control Board has been mounted and wired, restore power to the HVAC system. The system will then run through a purge sequence for five (5) minutes. After the purge sequence is complete, proceed to testing cooling demand and heating demand.

Cooling Demand

1 - Prompt a cooling demand at the thermostat.

2 - Press the Test button on the RDS Non-Communicating Blower Control Board.

The system then executes a leak detection response.

3 - Observe the following sequence:

a. The LED indicator flashes the sequence for leak detection (flashing blue).

b. The blower powers up.

c. The outdoor compressor powers down.

4 - Press the Test button to terminate the simulated Leak Detected mode upon test completion.

Heating Demand

1 - Prompt a heating demand at the thermostat.

2 - Press the Test button on the RDS Non-Communicating Blower Control Board.

The system then executes a leak detection response.

3 - Observe the following sequence:

a. The LED indicator flashes the sequence for leak detection (flashing blue).

b. The blower powers up.

c. The gas burners power down.

d. The outdoor compressor powers down.

4 - Press the Test button to terminate the simulated Leak Detected mode upon test completion.

The installation of the RDS Non-Communicating Blower Control Board is complete after both sequences are successfully completed.

Diagnostic Codes and Troubleshooting

TABLE 10. LED Diagnostic Codes

State	LED Diagnostic Code	Action Required
Initializing	Flashing green	None
Monitoring	Solid green. If a prior mitigation occurred, a blue flash interrupts the solid green LED.	None
Mitigating (Leak Detected)	Flashing blue	Check coil tubes for leak. Repair the issue and restart the equipment.
Fault/Service	Solid blue, interrupted by issue diagnostic code	Refer to Table 8 for troubleshooting steps.

TABLE 11. Red LED Diagnostic Codes / Troubleshooting

Red Flash	Applies to Individual Sensor(s)	Issue	Action Required
1	Yes	Sensor indicates fault	Replace the sensor
2	No	Float switch Active	Check if drain line float switch is installed. If no float switch is installed, check jumper on control board.
3	Yes	Incompatible sensor type	Replace the sensor
4	Yes	Sensor communications issue	Check sensor connection. Ensure connection is clean and tight.
5	No	R-input not available	Check sensor connections. Ensure connection is clean and tight.

Decommissioning

Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail. It is recommended good practice that all refrigerants are recovered safely.

Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of recovered refrigerant. It is essential that electrical power is available before starting decommissioning.

a) Become familiar with the equipment and its operation.

b) Isolate system electrically.

c) Before attempting the procedure, ensure that:

- mechanical handling equipment is available, if required, for handling refrigerant cylinders;
- all personal protective equipment is available and being used correctly;
- the recovery process is supervised at all times by a competent person;
- recovery equipment and cylinders conform to the appropriate standards.

d) Pump down refrigerant system, if possible.

e) If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.

f) Make sure that cylinder is situated on the scales before recovery takes place.

g) Start the recovery machine and operate in accordance with instructions.

h) Do not overfill cylinders (no more than 80% volume liquid charge).

i) Do not exceed the maximum working pressure of the cylinder, even temporarily.

j) When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.

k) Recovered refrigerant shall not be charged into another REFRIGERATING SYSTEM unless it has been cleaned and checked.

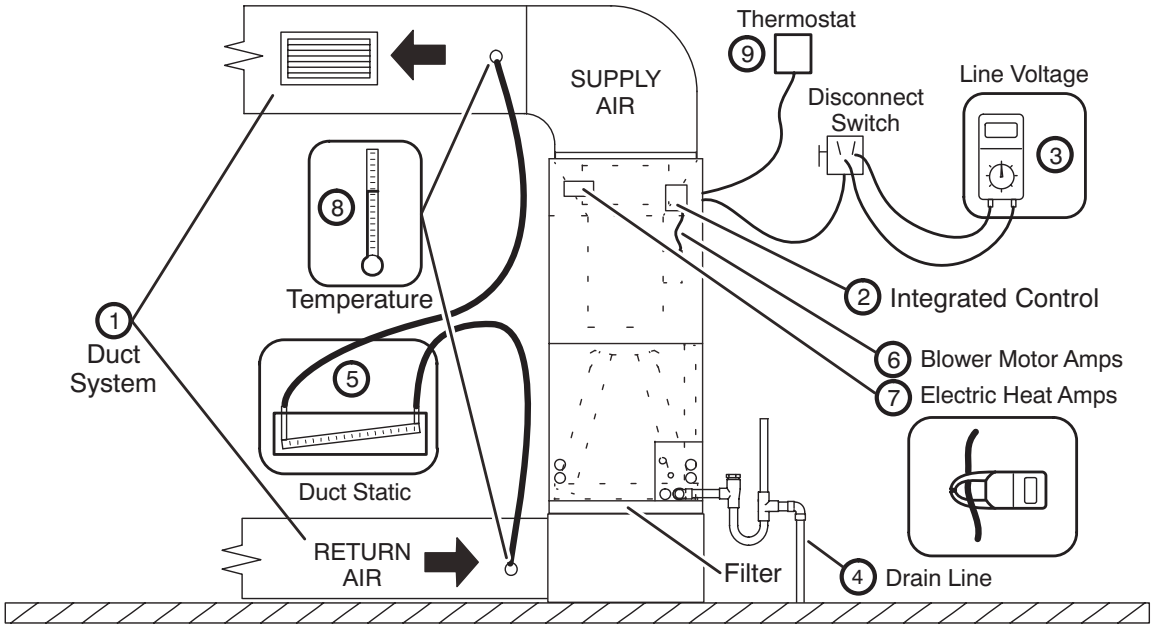
⚠ IMPORTANT

Equipment shall be labelled stating that it has been decommissioned and emptied of refrigerant. The label shall be signed and dated. Ensure that there are labels on the equipment that state the flammability of the refrigerant used.

Installing Contractor's Name_____ Installing Date_____

Installing Contractor's Phone_____ Air Handler Model #_____

Job Address_____



① DUCT SYSTEM

SUPPLY AIR DUCT

☐ Sealed

☐ Insulated (if necessary)

☐ Registers Open and Unobstructed

RETURN AIR DUCT

☐ Sealed

☐ Filter Installed and Clean

☐ Registers Open and Unobstructed

② INTEGRATED CONTROL

☐ Jumpers Configured Correctly (if applicable)

☐ Appropriate Links in Place (if applicable)

③ VOLTAGE CHECK

☐ Supply Voltage _____

☐ Low Voltage _____

☐ Electrial Connections Tight

④ DRAIN LINE

☐ Leak Free

⑤ TOTAL EXTERNAL STATIC (dry coil)

	dry coil	wet coil
Supply External Static	_____	_____
Return External Static	_____	_____
Total External Static =	_____	_____

⑥ ELECTRIC HEAT AMPS_____

⑦ INDOOR BLOWER AMPS_____

INDOOR BLOWER CFM_____

⑧ TEMPERATURE DROP (Cooling Mode)

Return Duct Temperature _____

Supply Duct Temperature – _____

Temperature Drop = _____

⑧ TEMPERATURE RISE (Heating Mode)

Return Duct Temperature _____

Supply Duct Temperature – _____

Temperature Rise = _____

⑨ THERMOSTAT

☐ Adjusted and Programmed

☐ Operation Explained to Owner

☐ Explained Operation of System to Homeowner

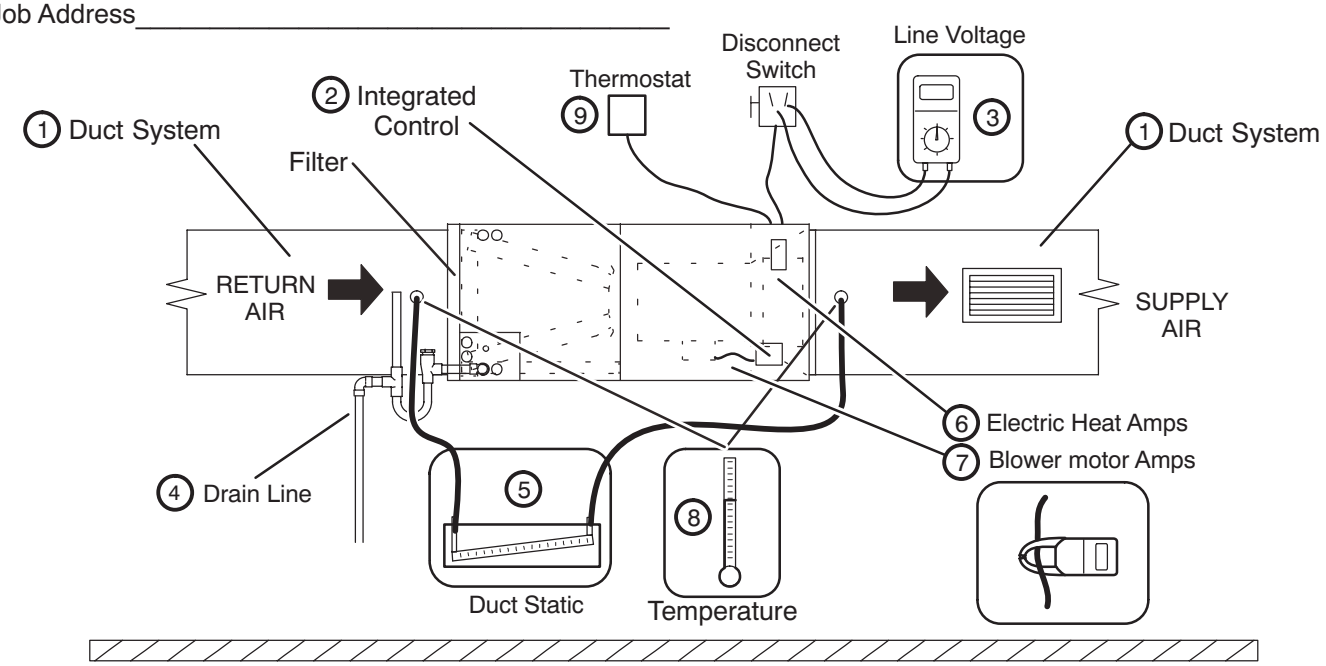
Technician's Name:_____Date Start–Up & Performance Check Completed_____

FIGURE 19. Start-up and Performance Checklist (Upflow Configuration)

Installing Contractor's Name_____ Installing Date_____

Installing Contractor's Phone_____ Air Handler Model #_____

Job Address_____



1 DUCT SYSTEM

SUPPLY AIR DUCT

☐ Sealed

☐ Insulated (if necessary)

☐ Registers Open and Unobstructed

RETURN AIR DUCT

☐ Sealed

☐ Filter Installed and Clean

☐ Registers Open and Unobstructed

2 INTEGRATED CONTROL

☐ Jumpers Configured Correctly (if applicable)

☐ Appropriate Links in Place (if applicable)

3 VOLTAGE CHECK

☐ Supply Voltage _____

☐ Low Voltage _____

☐ Electrial Connections Tight

4 DRAIN LINE

☐ Leak Free

5 TOTAL EXTERNAL STATIC (dry coil)

	dry coil	wet coil
Supply External Static	_____	_____
Return External Static	_____	_____
Total External Static =	_____	_____

6 ELECTRIC HEAT AMPS_____

7 INDOOR BLOWER AMPS_____

INDOOR BLOWER CFM_____

8 TEMPERATURE DROP (Cooling Mode)

Return Duct Temperature _____

Supply Duct Temperature – _____

Temperature Drop = _____

8 TEMPERATURE RISE (Heating Mode)

Return Duct Temperature _____

Supply Duct Temperature – _____

Temperature Rise = _____

9 THERMOSTAT

☐ Adjusted and Programmed

☐ Operation Explained to Owner

☐ Explained Operation of System to Homeowner

Technician's Name:_____Date Start–Up & Performance Check Completed_____

FIGURE 20. Start-Up and Performance Checklist (Horizontal Configuration)