UNIT INFORMATION

100155
02/2025

LHX
2 / 3 / 4 / 5 ton

Service Literature

LHX024-060 with R454B

The LHX commercial heat pump is available in 2, 3, 4, and 5 ton capacities. The LHX024-060 refrigerant systems utilize one compressor, one reversing valve and other parts common to a heat pump. Optional auxiliary electric heat is field installed in LHX units. Electric heat operates in single stage. 5kW through 22.5kW heat sections are available for the LHX heat pump.

Information contained in this manual is intended for use by qualified service technicians only. All specifications are subject to change. Procedures outlined in this manual are presented as a recommendation only and do not supersede or replace local or state codes.

If the unit must be lifted for service, rig unit by attaching four cables to the holes located in the unit base rail (two holes at each corner). Refer to the installation instructions for the proper rigging technique.

False ceilings or drop ceiling may be used as a return air plenum only if the unit being installed has a Refrigerant Detection System

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

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. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

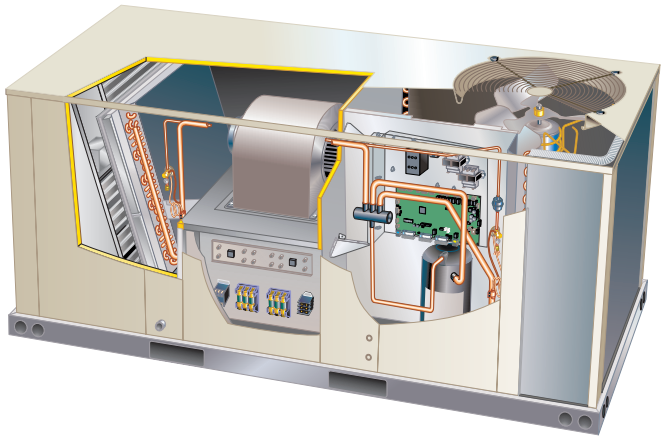
⚠ WARNING

To prevent serious injury or death:

1- Lock-out/tag-out before performing maintenance.

2- If system power is required (e.g., smoke detector maintenance), disable power to blower, remove fan belt where applicable, and ensure all controllers and thermostats are set to the "OFF" position before performing maintenance.

3- Always keep hands, hair, clothing, jewelry, tools, etc., away from moving parts.



⚠ WARNING

Electric shock hazard. Can cause injury or death. Before attempting to perform any service or maintenance, turn the electrical power to unit OFF at disconnect switch(es). Unit may have multiple power supplies.

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⚠ 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.

⚠ 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.

⚠ WARNING

Only manufacturer approved auxiliary devices are permitted to be installed in this unit.

⚠ 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

•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

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.

⚠ CAUTION

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

⚠ CAUTION

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

⚠ CAUTION

Servicing shall be performed only as recommended by the manufacturer.

⚠ WARNING

•This appliance must be installed in accordance with local and national wiring regulations.

•If the appliance is not fitted with an option for full disconnection from power, a means of disconnection must be incorporated in the fixed wiring in accordance with national and local wiring regulations.

⚠ WARNING

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

⚠ CAUTION

The 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

⚠ CAUTION

Children should be supervised not to play with the appliance.

⚠ 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.

⚠ IMPORTANT

Refrigerant sensors for refrigerant detection systems shall only be replaced with sensors specified by the appliance manufacture.

⚠ CAUTION

This unit is equipped with electrically powered safety measures. To be effective, the unit must be electrically powered at all times after installation, other than when servicing.

A2L Refrigerant Considerations

Ensure that the work area 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. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects, taking into account the effects of aging or continual vibration from sources such as compressors or fans.

Under no circumstances shall potential sources of ignition be used when searching for or detecting refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used. 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 re-calibration. (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.

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 practices be followed since flammability is a consideration. The following procedure shall be adhered to:

-Safely remove refrigerant following local and national regulations.

-Evacuate the circuit.

-Purge the circuit with inert gas.

-Evacuate.

-Purge the circuit with inert gas.

-Open the circuit

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. 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. This process 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.

OPTIONS / ACCESSORIES

Item		Order Number	Size 024	036	048	060
COOLING SYSTEM						
Condensate Drain Trap	PVC	**22H54**	X	X	X	X
	Copper	**76W27**	X	X	X	X
Drain Pan Overflow Switch		**21Z07**	X	X	X	X
BLOWER - SUPPLY AIR						
Motors	Direct Drive (PSC) - 0.25 HP (208/230V-1ph)	Factory	O			
	Direct Drive (PSC) - 0.50 HP (All Voltages)	Factory		O	O	
	Direct Drive (ECM) - 1 HP (All Voltages)	Factory		O	O	O
	Single-Speed Belt Drive - 2 HP (208/230V, 460V, 575V-3ph)	Factory				O
Drive Kit	Kit A07 - 1212-1548 rpm	Factory				O
CABINET						
Combination Coil/Hail Guards		**13R98**	OX	OX		
		13T03			OX	OX
Hinged Access Panels			O	O	O	O
CONTROLS						
BACnet® Module		**38B35**	X	X	X	X
Dirty Filter Switch		**53W66**	X	X	X	X
Smoke Detector - Supply or Return (Power board and one sensor)		**21Z11**	X	X	X	X
Smoke Detector - Supply and Return (Power board and two sensors)		**21Z12**	X	X	X	X

NOTE - The order and model numbers that appear here are for ordering field installed accessories only.

OX - Field Installed or Configure to Order (factory installed)

O - Configure to Order (Factory Installed)

X - Field Installed

OPTIONS / ACCESSORIES

Item		Order Number	Size 024	036	048	060
ECONOMIZER						
High Performance Economizer With Combination Outdoor Air Hood (Sensible Control) (Approved for California Title 24 Building Standards / AMCA Class 1A Certified)						
Includes Barometric Relief Dampers and Combination Hood		**20H48**	OX	OX	OX	OX
Economizer Accessories						
Horizontal Economizer Conversion Kit		**17W45**	X	X	X	X
Economizer Controls						
Single Enthalpy Control		**21Z09**	OX	OX	OX	OX
Differential Enthalpy Control (order 2) (Not for Title 24)		**21Z09**	X	X	X	X
POWER EXHAUST FAN						
Standard Static	208/230V-1 or 3ph	**21Z13**	X	X	X	X
NOTE - Field installed Power Exhaust Fan requires "Barometric Relief Dampers for Power Exhaust Kit" for field installation. See below.	460V-3ph	**21Z14**		X	X	X
	575V-3ph	**21Z15**		X	X	X
BAROMETRIC RELIEF						
[1] Barometric Relief Dampers for Power Exhaust Kit		**21Z21**	X	X	X	X
[2] Horizontal Barometric Relief Dampers With Exhaust Hood		**19F01**	X	X	X	X
OUTDOOR AIR						
Outdoor Air Dampers - Includes Outdoor Air Hood						
Motorized		**15D17**	X	X	X	X
Manual		**15D18**	X	X	X	X

[1] Required when Economizer is factory installed with field installed Power Exhaust Fan option.
[2] Required when Economizer is configured for horizontal airflow.

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OPTIONS / ACCESSORIES

Item		Order Number	Size 024	036	048	060
ELECTRICAL						
Disconnect	See Electrical/Electric Heat Tables for selection		OX	OX	OX	OX
Voltage 60 Hz	208/230V - 1 phase		O	O	O	O
	208/230V - 3 phase			O	O	O
	460V - 3 phase			O	O	O
	575V - 3 phase			O	O	O
GFI Service Outlets	15 amp non-powered, field-wired (208/230V, 460V only)	**74M70**	OX	OX	OX	OX
	[3] 20 amp non-powered, field-wired (208/230V, 460V, 575V)	**67E01**	X	X	X	X
	[1] 20 amp non-powered, field-wired (575V)	Factory	O	O	O	O
Weatherproof Cover for GFI		**10C89**	X	X	X	X
ELECTRIC HEAT						
5 kW	208/240V- 1ph	**31B27**	X			
7.5 kW	208/240V-1ph	**24U10**	X	X	X	X
	208/240V-3ph	**24U11**		X	X	X
	460V-3ph	**24U12**		X	X	X
	575V-3ph	**24U13**		X	X	X
10 kW	208/240V-1ph	**24U14**	X			
15 kW	208/230V-1ph	**24U15**		X	X	X
	208/240V-3ph	**24U16**		X	X	X
	460V-3ph	**24U17**		X	X	X
	575V-3ph	**24U18**		X	X	X
22.5 kW	208/240V-1ph	**24U19**				X
	208/240V-3ph	**24U20**				X
	460V-3ph	**24U21**				X
	575V-3ph	**24U22**				X

[1] Canada requires a minimum 20 amp circuit. Select 20 amp, non-powered, field wired GFI.

NOTE - The order and model numbers that appear here are for ordering field installed accessories only.

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O - Configure to Order (Factory Installed)

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OPTIONS / ACCESSORIES

Item		Order Number	Size 024	036	048	060
INDOOR AIR QUALITY						
Air Filters						
Healthy Climate® High Efficiency Air Filters Order 4 per unit	MERV 8 (16 x 20 x 2)	**54W20**	X	X		
	MERV 13 (16 x 20 x 2)	**52W37**	X	X		
	MERV 16 (16 x 20 x 2)	**22H13**	X	X		
	MERV 8 (20 x 20 x 2)	**54W21**			X	X
	MERV 13 (20 x 20 x 2)	**52W39**			X	X
	MERV 16 (20 x 20 x 2)	**21U40**			X	X
Replaceable Media Filter With Metal Mesh Frame (includes non-pleated filter media) (Order 4 per unit)	(20 x 20 x 2)	**44N60**			X	X
Indoor Air Quality (CO_2) Sensors						
Sensor - Wall-mount, off-white plastic cover with LCD display		**77N39**	X	X	X	X
Sensor - Wall-mount, off-white plastic cover, no display		**23V86**	X	X	X	X
Sensor - Black plastic case, LCD display, rated for plenum mounting		**87N52**	X	X	X	X
Sensor - Black plastic case, no display, rated for plenum mounting		**23V87**	X	X	X	X
CO_2 Sensor Duct Mounting Kit - for downflow applications		**23Y47**	X	X	X	X
Aspiration Box - for duct mounting non-plenum rated CO_2 sensor (**77N39**)		**90N43**	X	X	X	X
Needlepoint Bipolar Ionization (NPBI)						
Needlepoint Bipolar Ionization Kit		**22U14**	X	X	X	X
UVC Germicidal Lamps						
[1] Healthy Climate® UVC Light Kit (110/230V-1ph)		**21A92**	X	X	X	X
Step-Down Transformers	460V primary, 230V secondary	**10H20**	X	X	X	X
	575V primary, 230V secondary	**10H21**	X	X	X	X
ROOF CURBS						
Hybrid Roof Curbs, Downflow						
8 in. height		**11F50**	X	X	X	X
14 in. height		**11F51**	X	X	X	X
18 in. height		**11F52**	X	X	X	X
24 in. height		**11F53**	X	X	X	X
Adjustable Pitch Curb, Downflow						
14 in. height		**43W27**	X	X	X	X
CEILING DIFFUSERS						
Step-Down - Order one	RTD9-65S	**13K60**	X	X	X	
	RTD11-95S	**13K61**				X
Flush - Order one	FD9-65S	**13K55**	X	X	X	
	FD11-95S	**13K56**				X
Transitions (Supply and Return) - Order one	T1TRAN10AN1	**17W53**	X	X	X	
	T1TRAN20N-1	**17W54**				X

[1] Lamps operate on 110-230V single-phase power supply. Step-down transformer may be ordered separately for 460V and 575V units. Alternately, 110V power supply may be used to directly power the UVC ballast(s).

NOTE - The order and model numbers that appear here are for ordering field installed accessories only.

OX - Field Installed or Configure to Order (factory installed)

O - Configure to Order (Factory Installed)

X - Field Installed

SPECIFICATIONS - DIRECT DRIVE BLOWER — 2 TON | 3 TON

Model		LHX024S5D	LHX036S5D	LHX036S5E
Nominal Tonnage		2	3	3
Efficiency Type		Standard	Standard	Standard
Blower Type		Multi-Tap Direct Drive	Multi-Tap Direct Drive	Variable-Speed Direct Drive
Cooling Performance	Gross Cooling Capacity (Btuh)	24,600	36,300	36,300
	[1] Net Cooling Capacity (Btuh)	22,600	34,600	34,600
	[1] AHRI Rated Air Flow (cfm)	900	1200	1200
	[1] SEER2 (Btuh/Watt)	13.4	13.4	13.4
	[1] EER2 (Btuh/Watt)	10.6	10.6	10.6
	Total Unit Power (kW)	2.1	3.3	3.3
Heating Performance	[1] Total High Heating Capacity (Btuh)	23,000	35,000	35,000
	[1] AHRI Rated Air Flow (cfm)	900	1200	1200
	[1] HSPF2 (Region IV)	6.7	6.7	6.7
	[1] HSPF2 (Region V)	5.70	5.90	5.90
	[1] COP	3.50	3.64	3.64
	Total Unit Power (kW)	2.2	2.9	2.9
	[1] Total Low Heating Capacity (Btuh)	13,000	20,400	20,400
	[1] COP	2.28	2.32	2.32
	Total Unit Power (kW)	1.8	2.7	2.7
Sound Rating Number	dBA	75	75	75
Refrigerant Charge	Refrigerant Type	R-454B	R-454B	R-454B
		12 lbs. 8 oz.	12 lbs. 0 oz.	12 lbs. 0 oz.
Electric Heat Available		See page 20		
Compressor Type (Number)		Scroll (1)	Scroll (1)	Scroll (1)
Outdoor Coil	Net face area - ft.^{2}	14.5	14.5	14.5
	Rows	2	2	2
	Fins - in.	23 (20)	23 (20)	23 (20)
Outdoor Coil Fan	Motor HP (number and type)	1/4 (1 PSC)	1/4 (1 PSC)	1/4 (1 PSC)
	Rpm	825	825	825
	Watts	325	325	325
	Diameter (Number) - in.	(1) 24	(1) 24	(1) 24
	Blades	3	3	3
	Total air volume - cfm	3300	3300	3300
Indoor Coil	Net face area - ft.^{2}	7.8	7.8	7.8
	Rows	3	3	3
	Fins - in.	14	14	14
	Condensate drain size (NPT) - in.	(1) 1	(1) 1	(1) 1
	Expansion device type	Balanced Port Thermostatic Expansion Valve		
Indoor Blower	Blower Type	PSC	PSC	ECM
	Nominal Motor HP	0.25	0.5	1
	Wheel (Number) diameter x width - in.	(1) 10 x 10	(1) 10 x 10	(1) 11 x 10
Filters	Type	Disposable		
	Number and size - in.	(4) 16 x 20 x 2		
Line voltage data (Volts-Phase-Hz)		208/230V-1-60	208/230V-1-60 208/230-3-60 460-3-60 575-3-60	

NOTE - Net capacity includes evaporator blower motor heat deduction. Gross capacity does not include evaporator blower motor heat deduction.

[1] AHRI Certified to AHRI Standard 210/240:

Cooling Ratings - 95°F outdoor air temperature and 80°F db/67°F wb entering indoor coil air.

High Temperature Heating Ratings - 47°F db/43°F wb outdoor air temperature and 70°F entering indoor coil air.

Low Temperature Heating Ratings - 17°F db/15°F wb outdoor air temperature and 70°F entering indoor coil air.

SPECIFICATIONS - DIRECT DRIVE BLOWER — 4 TON | 5 TON

Model		LHX048S5D	LHX048S5E	LHX060S5E
Nominal Tonnage		4	4	5
Efficiency Type		Standard	Standard	Standard
Blower Type		Multi-Tap Direct Drive	Variable-Speed Direct Drive	Variable-Speed Direct Drive
Cooling Performance	Gross Cooling Capacity (Btuh)	48,700	48,700	60,600
	[1] Net Cooling Capacity (Btuh)	46,000	46,000	57,000
	[1] AHRI Rated Air Flow (cfm)	1620	1620	1800
	[1] SEER2 (Btuh/Watt)	13.4	13.4	13.4
	[1] EER2 (Btuh/Watt)	10.6	10.6	10.6
	Total Unit Power (kW)	4.4	4.4	5.4
Heating Performance	[1] Total High Heating Capacity (Btuh)	47,500	47,500	58,000
	[1] AHRI Rated Air Flow (cfm)	1620	1620	1800
	[1] HSPF2 (Region IV)	6.7	6.7	6.7
	[1] HSPF2 (Region V)	6.2	6.20	6.36
	[1] COP	3.72	3.72	3.7
	Total Unit Power (kW)	3.9	3.9	4.5
	[1] Total Low Heating Capacity (Btuh)	27,400	27,400	33,000
	[1] COP	2.4	2.4	2.4
	Total Unit Power (kW)	3.7	3.7	4.2
Sound Rating Number	dBA	75	75	80
Refrigerant Charge	Refrigerant Type	R-454B	R-454B	R-454B
		16 lbs. 12 oz.	16 lbs. 12 oz.	15 lbs. 10 oz.
Electric Heat Available		See page 20		
Compressor Type (Number)		Scroll (1)	Scroll (1)	Scroll (1)
Outdoor Coil	Net face area - ft.^{2}	17.8	17.8	17.8
	Rows	3	3	3
	Fins - in.	20	20	20
Outdoor Coil Fan	Motor HP (number and type)	1/3 (1 PSC)	1/3 (1 PSC)	1/3 (1 PSC)
	Rpm	1075	1075	1075
	Watts	325	325	325
	Diameter (Number) - in.	(1) 24	(1) 24	(1) 24
	Blades	3	3	3
	Total air volume - cfm	3900	3900	3900
Indoor Coil	Net face area - ft.^{2}	9.7	9.7	9.7
	Rows	4	4	4
	Fins - in.	14	14	14
	Condensate drain size (NPT) - in.	(1) 1	(1) 1	(1) 1
	Expansion device type	Balanced Port Thermostatic Expansion Valve		
	Blower Type	PSC	ECM	ECM
Indoor Blower	Nominal Motor HP	0.5	1	1
	Wheel (Number) diameter x width - in.	(1) 10 x 10	(1) 11 x 10	(1) 11 x 10
Filters	Type	Disposable		
	Number and size - in.	(4) 16 x 20 x 2		
Line voltage data (Volts-Phase-Hz)		208/230V-1-60 208/230-3-60 460-3-60 575-3-60		

NOTE - Net capacity includes evaporator blower motor heat deduction. Gross capacity does not include evaporator blower motor heat deduction.

[1] AHRI Certified to AHRI Standard 210/240:

Cooling Ratings - 95°F outdoor air temperature and 80°F db/67°F wb entering indoor coil air.

High Temperature Heating Ratings - 47°F db/43°F wb outdoor air temperature and 70°F entering indoor coil air.

Low Temperature Heating Ratings - 17°F db/15°F wb outdoor air temperature and 70°F entering indoor coil air.

SPECIFICATIONS - BELT DRIVE BLOWER — 5 TON

Model		**LHX060S5B**
Nominal Tonnage		5
Efficiency Type		Standard
Blower Type		Single Speed Belt Drive
Cooling Performance	Gross Cooling Capacity (Btuh)	60,600
	[1] Net Cooling Capacity (Btuh)	57,000
	[1] AHRI Rated Air Flow (cfm)	1800
	[1] SEER2 (Btuh/Watt)	13.4
	[1] EER2 (Btuh/Watt)	10.6
	Total Unit Power (kW)	5.4
Heating Performance	[1] Total High Heating Capacity (Btuh)	58,000
	[1] AHRI Rated Air Flow (cfm)	1800
	[1] HSPF2 (Region IV)	6.7
	[1] COP	3.7
	Total Unit Power (kW)	4.5
	[1] Total Low Heating Capacity (Btuh)	33,000
	[1] COP	2.4
	Total Unit Power (kW)	4.2
Sound Rating Number	dBA	80
Refrigerant Charge	Refrigerant Type	R-454B
		15 lbs. 0 oz.
Electric Heat Available		See page 20
Compressor Type (Number)		Scroll (1)
Outdoor Coil	Net face area - sq. ft.	17.8
	Rows	3
	Fins - in.	20
Outdoor Coil Fan	Motor HP (number and type)	1/3 (1 PSC)
	Rpm	1075
	Watts	375
	Diameter (Number) - in.	(1) 24
	Blades	4
	Total air volume - cfm	3900
Indoor Coil	Net face area - sq. ft.	9.7
	Rows	4
	Fins - in.	14
	Condensate drain size (NPT) - in.	(1) 1
	Expansion device type	Balanced Port Thermostatic Expansion Valve
[3] **Indoor Blower & Drive Selection**	Nominal Motor HP	2
	Maximum Usable Motor HP (US)	2.3
	Available Drive Kits	A07 1212 - 1548 rpm
	Wheel (Number) diameter x width - in.	(1) 10 x 10
Filters	Type	Disposable
	Number and size - in.	(4) 20 x 20 x 2
Line voltage data (Volts-Phase-Hz)		208/230-3-60 460-3-60 575-3-60

NOTE - Net capacity includes evaporator blower motor heat deduction. Gross capacity does not include evaporator blower motor heat deduction.

[1] AHRI Certified to AHRI Standard 210/240:
Cooling Ratings - 95°F outdoor air temperature and 80°F db/67°F wb entering indoor coil air.
High Temperature Heating Ratings - 47°F db/43°F wb outdoor air temperature and 70°F entering indoor coil air.
Low Temperature Heating Ratings - 17°F db/15°F wb outdoor air temperature and 70°F entering indoor coil air.

[2] Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor HP required. Maximum usable HP of motors furnished are shown. In Canada, nominal motor HP is also maximum usable motor HP. If motors of comparable HP are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

BLOWER DATA — DIRECT DRIVE - 2 TON [PSC]

BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY WITH DRY INDOOR COIL AND AIR FILTERS IN PLACE.

FOR ALL UNITS ADD:

1 - Any factory installed options air resistance (economizer, wet coil, etc.) See page 18.

2 - Any field installed accessories air resistance (electric heat, duct resistance, diffuser, etc.) See page 18.

External Static Pressure (in. w.g.)	Air Volume (cfm) at Various Blower Speeds					
	208 VOLTS			230 VOLTS		
	High	Medium	Low	High	Medium	Low
DOWNFLOW						**LHX024S5D**
0.0	1199	928	838	1379	1085	877
0.1	1229	926	813	1409	1086	872
0.2	1206	928	782	1367	1094	850
0.3	1183	881	742	1350	1047	820
0.4	1159	843	686	1321	1009	783
0.5	1136	812	643	1282	981	762
0.6	1103	766	569	1242	921	705
0.7	1046	728	496	1195	888	625
0.8	953	648	432	1134	792	583
0.9	909	584	335	1037	738	492
1.0	783	465	247	926	592	411
HORIZONTAL						**LHX024S5D**
0.0	1152	909	801	1325	1063	838
0.1	1152	893	770	1321	1048	826
0.2	1136	866	734	1288	1021	798
0.3	1104	826	697	1260	982	771
0.4	1072	787	643	1222	942	734
0.5	1041	747	589	1175	903	698
0.6	1009	707	534	1137	850	662
0.7	946	654	467	1081	797	588
0.8	861	588	396	1024	718	535
0.9	798	508	319	911	642	468
1.0	715	443	237	846	564	394

LHX036S5D | LHX048S5D
BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY WITH DRY INDOOR COIL AND AIR FILTERS IN PLACE.

FOR ALL UNITS ADD:
FOR ALL UNITS ADD:
1 - Any factory installed options air resistance (heat section, economizer, etc.).
2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.).

See page 18 for wet coil and options/accessory air resistance data. See page 18 for minimum air volume with electric heat.

External Static Pressure (in. w.g.)	Air Volume (cfm) at Various Blower Speeds								
	208 VOLTS			230 VOLTS			460/575 VOLTS		
	High	Medium	Low	High	Medium	Low	High	Medium	Low
DOWNFLOW									**LHX036S5D**
0.0	1938	1552	1119	2167	1772	1317	2136	1716	1212
0.1	1992	1586	1128	2167	1780	1315	2104	1728	1208
0.2	1915	1592	1137	2100	1792	1307	2052	1684	1197
0.3	1865	1536	1083	2043	1735	1266	1994	1647	1172
0.4	1813	1495	1033	1986	1678	1204	1918	1597	1134
0.5	1762	1444	976	1909	1621	1164	1861	1534	1096
0.6	1694	1391	899	1814	1535	1082	1765	1485	1059
0.7	1609	1331	817	1718	1478	1000	1689	1410	996
0.8	1471	1220	730	1603	1364	918	1613	1335	920
0.9	1368	1066	522	1488	1250	755	1498	1235	848
1.0	1108	869	402	1259	1021	640	1345	1036	763
HORIZONTAL									**LHX036S5D**
0.0	1862	1520	1070	2082	1736	1259	2085	1745	1247
0.1	1867	1530	1069	2031	1717	1246	2070	1744	1257
0.2	1804	1485	1067	1978	1672	1227	2016	1690	1225
0.3	1741	1440	1018	1907	1627	1190	1944	1643	1192
0.4	1677	1396	968	1837	1567	1128	1890	1596	1160
0.5	1614	1329	894	1749	1492	1066	1800	1533	1111
0.6	1550	1284	844	1660	1417	1016	1727	1455	1062
0.7	1455	1195	769	1554	1327	941	1655	1377	996
0.8	1329	1106	670	1448	1237	842	1511	1283	865
0.9	1202	927	496	1307	1087	718	1403	1190	784
1.0	1012	828	385	1150	973	613	1222	1002	670

BLOWER DATA — DIRECT DRIVE - 3 TON [ECM]

BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY WITH DRY INDOOR COIL AND AIR FILTERS IN PLACE.

FOR ALL UNITS ADD:
1 - Any factory installed options air resistance (heat section, economizer, etc.).
2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.).

See page 18 for wet coil and options/accessory air resistance data. See page 18 for minimum air volume with electric heat.

DOWNFLOW

External Static Press. in. w.g.	Percentage of Total Motor Torque																										
	20%			30%			40%			50%			60%			70%			80%			90%			100%		
	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM
0	1101	120	494	1328	196	578	1555	272	662	1728	374	731	1901	475	800	2023	580	852	2145	684	903	2292	854	970	2348	942	998
0.1	1002	99	541	1241	180	620	1479	260	698	1662	366	763	1845	471	827	1976	579	876	2106	687	924	2268	865	987	2334	958	1013
0.2	918	88	589	1167	173	663	1416	257	736	1608	366	796	1800	475	856	1938	586	902	2076	697	947	2249	880	1006	2324	978	1031
0.3	848	86	638	1106	174	706	1364	261	774	1564	373	830	1763	485	886	1907	599	929	2051	712	972	2234	899	1028	2316	1000	1052
0.4	790	92	688	1056	183	751	1321	273	814	1527	387	866	1733	501	918	1882	617	958	2031	732	998	2221	921	1051	2307	1024	1074
0.5	742	105	738	1015	197	796	1287	289	854	1498	405	902	1709	520	950	1862	637	988	2014	754	1025	2208	944	1076	2296	1048	1099
0.6	703	124	788	981	217	841	1258	310	894	1473	427	939	1688	543	984	1843	660	1019	1998	777	1053	2194	968	1101	2281	1071	1124
0.7	670	146	838	952	240	887	1233	334	935	1451	451	976	1669	568	1017	1826	685	1050	1982	801	1082	2177	991	1128	2260	1092	1151
0.8	642	172	888	927	266	932	1211	360	975	1431	477	1013	1650	593	1051	1807	709	1081	1963	825	1111	2155	1012	1155	2233	1109	1178
0.9	618	200	937	904	294	976	1190	387	1015	1410	502	1050	1629	617	1084	1785	732	1112	1940	846	1140	2127	1029	1182	- - -	- - -	- - -
1.0	595	229	985	882	321	1020	1168	413	1054	1387	526	1086	1605	639	1117	1758	752	1143	1911	864	1169	2090	1042	1209	- - -	- - -	- - -
1.1	- - -	- - -	- - -	- - -	- - -	- - -	1144	437	1092	1360	548	1120	1576	659	1148	1725	769	1173	1874	878	1197	2043	1049	1236	- - -	- - -	- - -
1.2	- - -	- - -	- - -	- - -	- - -	- - -	1115	458	1129	1328	566	1154	1540	674	1179	1685	780	1202	1829	886	1225	1985	1049	1262	- - -	- - -	- - -
1.3	- - -	- - -	- - -	- - -	- - -	- - -	1080	475	1163	1288	579	1186	1496	683	1208	1634	785	1230	1772	887	1251	1913	1042	1288	- - -	- - -	- - -
1.4	- - -	- - -	- - -	- - -	- - -	- - -	1037	487	1196	1239	587	1216	1441	686	1236	1572	783	1256	1703	880	1275	1826	1024	1312	- - -	- - -	- - -

HORIZONTAL

External Static Press. in. w.g.	Percentage of Total Motor Torque																										
	20%			30%			40%			50%			60%			70%			80%			90%			100%		
	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM
0	1077	113	502	1282	175	585	1486	237	668	1670	363	746	1854	489	823	1993	623	884	2131	757	944	2216	882	995	2268	926	1009
0.1	1016	109	546	1227	172	624	1437	234	701	1626	361	775	1814	488	848	1956	623	906	2098	757	964	2194	887	1011	2242	928	1026
0.2	962	111	591	1177	174	663	1392	236	735	1585	364	805	1777	492	874	1923	627	930	2069	762	985	2175	895	1029	2218	935	1044
0.3	913	118	636	1133	181	703	1352	244	770	1548	372	836	1744	500	902	1893	636	955	2042	772	1007	2157	907	1048	2196	945	1063
0.4	868	130	682	1092	193	744	1315	256	806	1515	384	868	1714	512	930	1866	648	980	2018	784	1030	2139	922	1069	- - -	- - -	- - -
0.5	827	146	728	1054	209	785	1281	271	842	1484	399	901	1687	526	959	1841	663	1007	1995	799	1054	2121	938	1090	- - -	- - -	- - -
0.6	789	165	775	1019	227	827	1249	288	879	1455	416	934	1660	543	988	1816	679	1034	1972	815	1079	2102	955	1113	- - -	- - -	- - -
0.7	752	185	821	986	247	869	1219	308	916	1427	435	967	1634	562	1018	1792	698	1061	1949	833	1104	2081	972	1136	- - -	- - -	- - -
0.8	718	208	867	954	268	910	1189	328	953	1399	455	1000	1608	581	1047	1767	716	1088	1925	851	1129	2058	989	1160	- - -	- - -	- - -
0.9	684	231	913	922	290	951	1160	349	989	1371	475	1033	1581	600	1077	1741	734	1116	1900	868	1154	2031	1004	1185	- - -	- - -	- - -
1.0	- - -	- - -	- - -	- - -	- - -	- - -	1129	369	1025	1341	494	1066	1553	618	1106	1713	751	1143	1872	884	1179	2001	1017	1209	- - -	- - -	- - -
1.1	- - -	- - -	- - -	- - -	- - -	- - -	1097	388	1060	1310	511	1098	1522	634	1135	1682	766	1170	1841	898	1204	1966	1028	1233	- - -	- - -	- - -
1.2	- - -	- - -	- - -	- - -	- - -	- - -	1063	405	1095	1276	527	1129	1488	648	1163	1647	779	1196	1806	909	1228	1925	1034	1257	- - -	- - -	- - -
1.3	- - -	- - -	- - -	- - -	- - -	- - -	1026	420	1128	1239	540	1159	1451	659	1190	1609	788	1221	1767	917	1252	1879	1036	1281	- - -	- - -	- - -
1.4	- - -	- - -	- - -	- - -	- - -	- - -	985	431	1160	1197	548	1188	1409	665	1216	1566	793	1245	1723	920	1274	1825	1033	1304	- - -	- - -	- - -

BLOWER DATA

DIRECT DRIVE - 4 TON | 5 TON [ECM]

BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY WITH DRY INDOOR COIL AND AIR FILTERS IN PLACE.

FOR ALL UNITS ADD:
1 - Any factory installed options air resistance (heat section, economizer, etc.).
2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.).

See page 18 for wet coil and options/accessory air resistance data. See page 18 for minimum air volume with electric heat.

DOWNFLOW

External Static Press. in. w.g.	Percentage of Total Motor Torque																										
	20%			30%			40%			50%			60%			70%			80%			90%			100%		
	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM
0	1067	112	488	1325	196	573	1583	279	657	1759	381	726	1934	482	794	2046	579	845	2157	676	896	2285	816	956	2358	925	989
0.1	984	97	537	1249	184	616	1513	270	695	1697	376	760	1881	481	825	2002	584	873	2123	686	921	2273	838	978	2352	947	1008
0.2	912	91	587	1183	180	661	1453	268	735	1644	377	796	1835	486	856	1964	593	902	2093	700	947	2264	863	1001	2349	973	1030
0.3	851	92	636	1126	183	706	1400	273	775	1597	385	832	1794	497	889	1931	607	932	2067	717	974	2256	891	1026	2348	1001	1053
0.4	797	100	687	1075	192	751	1353	283	815	1555	397	869	1757	511	922	1901	625	962	2044	738	1002	2248	919	1051	2347	1031	1077
0.5	752	114	737	1032	206	796	1312	298	855	1518	413	905	1724	528	955	1873	644	993	2021	760	1030	2239	948	1078	2345	1061	1102
0.6	712	132	787	994	224	842	1275	316	896	1484	432	942	1692	548	988	1845	666	1024	1998	783	1059	2228	977	1104	- - -	- - -	- - -
0.7	678	155	836	960	246	886	1242	336	936	1452	452	979	1662	568	1021	1818	687	1055	1974	806	1088	2214	1004	1131	- - -	- - -	- - -
0.8	648	180	885	929	269	931	1210	358	976	1421	474	1016	1632	589	1055	1790	709	1086	1948	828	1117	2195	1028	1158	- - -	- - -	- - -
0.9	621	207	933	900	294	974	1179	381	1015	1390	495	1051	1600	609	1087	1760	728	1117	1919	847	1146	2170	1049	1185	- - -	- - -	- - -
1.0	596	235	981	872	319	1017	1148	403	1053	1357	516	1086	1566	628	1119	1725	746	1147	1884	864	1174	2139	1066	1212	- - -	- - -	- - -
1.1	- - -	- - -	- - -	- - -	- - -	- - -	1115	424	1090	1322	534	1120	1528	643	1150	1686	760	1176	1844	876	1201	2100	1078	1238	- - -	- - -	- - -
1.2	- - -	- - -	- - -	- - -	- - -	- - -	1080	443	1126	1283	549	1153	1485	655	1180	1641	770	1204	1797	884	1228	2052	1083	1264	- - -	- - -	- - -
1.3	- - -	- - -	- - -	- - -	- - -	- - -	1040	458	1161	1238	561	1185	1436	663	1209	1589	775	1231	1742	886	1253	1993	1081	1288	- - -	- - -	- - -
1.4	- - -	- - -	- - -	- - -	- - -	- - -	996	469	1194	1189	567	1215	1381	665	1236	1530	773	1257	1678	881	1277	1923	1071	1311	- - -	- - -	- - -
1.5	- - -	- - -	- - -	- - -	- - -	- - -	946	475	1225	1132	568	1244	1317	661	1262	1460	765	1281	1603	868	1299	1841	1051	1333	- - -	- - -	- - -
1.6	- - -	- - -	- - -	- - -	- - -	- - -	889	476	1254	1066	563	1270	1243	649	1285	1380	748	1303	1517	846	1320	1745	1022	1354	- - -	- - -	- - -

Pa

4

BLOWER DATA

DIRECT DRIVE - 4 TON | 5 TON [ECM]

BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY WITH DRY INDOOR COIL AND AIR FILTERS IN PLACE.

FOR ALL UNITS ADD:
1 - Any factory installed options air resistance (heat section, economizer, etc.).
2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.).

See page 18 for wet coil and options/accessory air resistance data. See page 18 for minimum air volume with electric heat.

HORIZONTAL

External Static Press. in. w.g.	Percentage of Total Motor Torque																										
	20%			30%			40%			50%			60%			70%			80%			90%			100%		
	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM	Cfm	Watts	RPM
0	1088	114	495	1295	176	577	1501	238	659	1686	365	736	1871	491	813	2010	625	874	2148	758	935	2226	879	987	2283	925	1000
0.1	1026	109	539	1238	172	616	1449	234	692	1639	361	765	1829	488	838	1972	622	896	2114	756	954	2204	883	1002	2255	926	1017
0.2	969	110	584	1186	173	655	1403	235	726	1597	363	795	1791	490	864	1937	625	920	2083	760	975	2185	890	1020	2231	932	1034
0.3	918	117	630	1140	180	696	1361	242	762	1559	370	827	1756	497	892	1906	633	945	2055	768	997	2167	902	1038	2209	941	1053
0.4	872	128	676	1098	191	737	1323	253	798	1524	381	859	1725	508	920	1878	644	970	2030	779	1020	2149	916	1059	- - -	- - -	- - -
0.5	830	143	723	1059	205	779	1288	267	834	1493	395	892	1697	522	949	1852	658	997	2006	793	1044	2132	931	1080	- - -	- - -	- - -
0.6	791	162	770	1024	223	821	1256	284	871	1463	411	925	1670	538	978	1827	674	1023	1983	810	1068	2113	949	1103	- - -	- - -	- - -
0.7	755	183	817	990	243	863	1225	303	908	1434	430	958	1643	556	1008	1802	692	1051	1960	827	1093	2093	966	1126	- - -	- - -	- - -
0.8	720	205	863	958	265	904	1195	324	945	1406	450	992	1617	575	1038	1777	710	1079	1937	845	1119	2071	983	1150	- - -	- - -	- - -
0.9	686	229	909	926	287	946	1165	345	982	1378	470	1025	1590	594	1068	1751	728	1106	1911	862	1144	2046	999	1174	- - -	- - -	- - -
1.0	- - -	- - -	- - -	- - -	- - -	- - -	1135	365	1018	1349	489	1058	1562	612	1097	1723	745	1133	1884	878	1169	2017	1013	1198	- - -	- - -	- - -
1.1	- - -	- - -	- - -	- - -	- - -	- - -	1103	385	1054	1317	507	1090	1531	629	1126	1693	761	1160	1854	893	1194	1983	1024	1223	- - -	- - -	- - -
1.2	- - -	- - -	- - -	- - -	- - -	- - -	1069	403	1089	1284	524	1122	1498	644	1155	1659	775	1187	1820	905	1219	1944	1032	1247	- - -	- - -	- - -
1.3	- - -	- - -	- - -	- - -	- - -	- - -	1032	418	1123	1247	537	1153	1461	655	1183	1621	784	1213	1781	913	1243	1899	1036	1271	- - -	- - -	- - -
1.4	- - -	- - -	- - -	- - -	- - -	- - -	992	430	1155	1206	547	1182	1419	663	1209	1578	791	1238	1737	918	1266	1847	1035	1295	- - -	- - -	- - -
1.5	- - -	- - -	- - -	- - -	- - -	- - -	947	437	1187	1160	552	1211	1373	666	1235	1531	792	1262	1688	917	1288	- - -	- - -	- - -	- - -	- - -	- - -
1.6	- - -	- - -	- - -	- - -	- - -	- - -	897	440	1217	1109	552	1238	1320	664	1259	1476	788	1284	1631	911	1309	- - -	- - -	- - -	- - -	- - -	- - -

BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY WITH DRY INDOOR COIL AND AIR FILTERS IN PLACE.

FOR ALL UNITS ADD:
1 - Any factory installed options air resistance (economizer, wet coil, etc.).
2 - Any field installed accessories air resistance (electric heat, duct resistance, diffuser, etc.).
See page 18 for wet coil and options/accessory air resistance data. See page 18 for minimum air volume with electric heat.

DOWNFLOW **LHX060S5B**

Air Volume cfm	External Static - in. w.g.															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1500	615	0.29	671	0.33	726	0.36	782	0.41	850	0.41	917	0.42	970	0.44	1009	0.47
1600	665	0.30	716	0.34	768	0.38	819	0.44	879	0.44	937	0.46	985	0.49	1022	0.52
1700	723	0.31	768	0.35	814	0.39	860	0.47	910	0.47	959	0.50	1001	0.54	1037	0.58
1800	779	0.32	818	0.37	857	0.41	897	0.50	939	0.50	980	0.55	1018	0.59	1054	0.64
1900	826	0.36	859	0.41	894	0.45	928	0.56	964	0.56	1000	0.61	1036	0.66	1072	0.70
2000	857	0.42	889	0.47	920	0.52	952	0.62	986	0.62	1020	0.68	1055	0.73	1091	0.77
2100	878	0.49	909	0.54	940	0.59	973	0.70	1006	0.70	1041	0.75	1076	0.80	1112	0.85
2200	897	0.55	929	0.61	961	0.66	994	0.78	1028	0.78	1063	0.83	1099	0.89	1134	0.93
2300	918	0.62	950	0.68	983	0.74	1017	0.86	1052	0.86	1087	0.92	1122	0.97	1157	1.02
2400	941	0.70	974	0.77	1008	0.83	1042	0.96	1077	0.96	1111	1.01	1146	1.06	1181	1.11

Air Volume cfm	External Static - in. w.g.															
	0.90		1.00		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1500	1045	0.52	1085	0.56	1125	0.60	1165	0.63	1208	0.66	1248	0.69	1281	0.73	1311	0.77
1600	1059	0.57	1098	0.61	1138	0.65	1177	0.68	1218	0.71	1257	0.75	1290	0.79	1319	0.83
1700	1074	0.62	1113	0.66	1152	0.70	1190	0.74	1231	0.77	1268	0.80	1299	0.84	1328	0.89
1800	1091	0.68	1129	0.72	1167	0.76	1205	0.80	1244	0.83	1280	0.87	1310	0.91	1338	0.95
1900	1109	0.75	1146	0.79	1183	0.82	1221	0.86	1260	0.90	1294	0.94	1323	0.98	1349	1.02
2000	1128	0.82	1164	0.86	1201	0.89	1239	0.93	1276	0.97	1310	1.01	1336	1.06	1362	1.10
2100	1148	0.89	1185	0.93	1221	0.97	1258	1.01	1294	1.05	1325	1.09	1351	1.14	1376	1.19
2200	1170	0.97	1206	1.01	1242	1.05	1277	1.09	1311	1.14	1341	1.18	1365	1.23	1390	1.28
2300	1193	1.06	1228	1.09	1262	1.14	1295	1.19	1327	1.24	1355	1.29	1380	1.33	1406	1.37
2400	1216	1.15	1250	1.19	1282	1.24	1313	1.30	1343	1.36	1371	1.40	1396	1.44	1423	1.48

BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY WITH DRY INDOOR COIL AND AIR FILTERS IN PLACE.

FOR ALL UNITS ADD:
1 - Any factory installed options air resistance (economizer, wet coil, etc.).
2 - Any field installed accessories air resistance (electric heat, duct resistance, diffuser, etc.).
See page 18 for wet coil and options/accessory air resistance data. See page 18 for minimum air volume with electric heat.

HORIZONTAL **LHX060S5B**

Air Volume cfm	External Static - in. w.g.															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1500	656	0.26	706	0.30	760	0.33	814	0.36	874	0.39	931	0.41	979	0.45	1019	0.48
1600	712	0.29	758	0.32	807	0.36	855	0.39	906	0.43	955	0.46	997	0.50	1035	0.54
1700	766	0.32	808	0.36	850	0.40	892	0.44	936	0.47	978	0.51	1016	0.56	1052	0.60
1800	814	0.36	851	0.40	888	0.44	925	0.49	963	0.53	1000	0.57	1035	0.62	1071	0.66
1900	853	0.41	886	0.46	919	0.50	952	0.55	986	0.60	1021	0.64	1056	0.69	1091	0.73
2000	883	0.48	913	0.53	944	0.57	976	0.62	1009	0.67	1043	0.71	1078	0.76	1112	0.80
2100	906	0.56	936	0.60	967	0.65	999	0.70	1033	0.75	1067	0.79	1101	0.84	1135	0.88
2200	930	0.64	960	0.68	991	0.73	1024	0.78	1058	0.83	1092	0.88	1126	0.92	1160	0.96
2300	954	0.72	985	0.77	1017	0.82	1051	0.87	1085	0.92	1119	0.96	1152	1.00	1186	1.04
2400	981	0.81	1013	0.86	1046	0.91	1079	0.96	1113	1.00	1180	1.05	1180	1.09	1213	1.13

Air Volume cfm	External Static - in. w.g.															
	0.90		1.00		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1500	1056	0.53	1094	0.57	1133	0.60	1172	0.63	1212	0.67	250	0.70	1288	0.74	1324	0.77
1600	1071	0.58	1109	0.62	1147	0.66	1186	0.69	1225	0.72	1263	0.76	1299	0.80	1334	0.83
1700	1088	0.64	1126	0.68	1164	0.72	1202	0.75	1240	0.78	1276	0.82	1311	0.86	1345	0.90
1800	1107	0.70	1143	0.74	1181	0.78	1219	0.81	1256	0.85	1290	0.89	1324	0.93	1357	0.97
1900	1126	0.77	1163	0.81	1200	0.85	1237	0.88	1273	0.92	1306	0.96	1339	1.00	1371	1.04
2000	1148	0.84	1183	0.88	1220	0.92	1257	0.96	1291	1.00	1323	1.04	1354	1.08	1385	1.12
2100	1170	0.92	1206	0.96	1242	1.00	1277	1.04	1310	1.08	1340	1.13	1370	1.17	1401	1.21
2200	1195	1.00	1230	1.04	1265	1.08	1299	1.13	1330	1.18	1359	1.23	1388	1.27	1418	1.31
2300	1220	1.08	1254	1.13	1288	1.17	1320	1.23	1350	1.28	1378	1.34	1406	1.38	1435	1.42
2400	1245	1.18	1278	1.22	1311	1.28	1341	1.33	1370	1.40	1397	1.45	1425	1.50	1454	1.54

BLOWER DATA

BELT DRIVE KIT SPECIFICATIONS

Size	Motor HP		Speeds	Drive Kits and RPM Range
	Nominal	Maximum		A07
060	2	2.3	1	1212-1548

NOTE - Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor HP required. Maximum usable HP of motors furnished are shown. In Canada, nominal motor HP is also maximum usable motor HP. If motors of comparable HP are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

OPTIONS / ACCESSORIES AIR RESISTANCE - in. w.g.

Air Volume cfm	Wet Indoor Coil		Economizer	Electric Heat	Filters		
	024, 036, 048	060			MERV 8	MERV 13	MERV 16
800	0.01	0.01	0.04	0.01	0.04	0.05	0.04
1000	0.02	0.01	0.04	0.03	0.04	0.07	0.05
1200	0.02	0.01	0.04	0.06	0.04	0.07	0.05
1400	0.03	0.02	0.04	0.09	0.04	0.07	0.06
1600	0.04	0.03	0.04	0.12	0.04	0.07	0.08
1800	0.05	0.04	0.05	0.15	0.05	0.07	0.09
2000	0.06	0.05	0.05	0.18	0.05	0.08	0.10
2200	0.08	0.06	0.05	0.20	0.05	0.08	0.11
2400	0.09	0.07	0.05	0.22	0.05	0.08	0.12

MINIMUM AIR VOLUME REQUIRED FOR ELECTRIC HEAT

Size	kW Size	Minimum CFM		
		Direct Drive	Belt Drive Downflow	Belt Drive Horizontal
All Models	5	600	N/A	N/A
	7.5	600	1,050	1200
	10	600	N/A	N/A
	15	1100	1250	1350
	22.5	1600	1750	1800

BLOWER DATA

CEILING DIFFUSERS AIR RESISTANCE (in. w.g.)

Air Volume cfm	RTD9-65S Step–Down Diffuser			FD9-65S Flush Diffuser	RTD11-95S Step-Down Diffuser			FD11-95S Flush Diffuser
	2 Ends Open	1 Side & 2 Ends Open	All Ends & Sides Open		2 Ends Open	1 Side & 2 Ends Open	All Ends & Sides Open	
800	0.15	0.13	0.11	0.11	- - -	- - -	- - -	- - -
1000	0.19	0.16	0.14	0.14	- - -	- - -	- - -	- - -
1200	0.25	0.20	0.17	0.17	- - -	- - -	- - -	- - -
1400	0.33	0.26	0.20	0.20	- - -	- - -	- - -	- - -
1600	0.43	0.32	0.20	0.24	- - -	- - -	- - -	- - -
1800	0.56	0.40	0.30	0.30	0.13	0.11	0.09	0.09
2000	0.73	0.50	0.36	0.36	0.15	0.13	0.11	0.10
2200	0.95	0.63	0.44	0.44	0.18	0.15	0.12	0.12
2400	- - -	- - - -	- - -	- - -	0.21	0.18	0.15	0.14

CEILING DIFFUSER AIR THROW DATA

Air Volume - cfm	1 Effective Throw - ft.	
Size	RTD9-65S	FD9-65S
800	10 - 17	14 - 18
1000	10 - 17	15 - 20
1200	11 - 18	16 - 22
1400	12 - 19	17 - 24
1600	12 - 20	18 - 25
1800	13 - 21	20 - 28
2000	14 - 23	21 - 29
2200	16 - 25	22 - 30

[1] Effective throw based on terminal velocities of 75 ft. per minute.

POWER EXHAUST FAN PERFORMANCE

Return Air System Static Pressure - in. w.g.	Air Volume Exhausted cfm
0.00	2000
0.05	1990
0.10	1924
0.15	1810
0.20	1664
0.25	1507
0.30	1350
0.35	1210

ELECTRICAL/ELECTRIC HEAT DATA — DIRECT DRIVE - 2 TON [PSC]

Model			**LHX024S5D**	
[1] **Voltage - 60Hz**			**208/230V - 1 Ph**	
Compressor (Non-Inverter)	Rated Load Amps		10.3	
	Locked Rotor Amps		60.2	
Outdoor Fan Motors (1)	Full Load Amps (1 Non-ECM)		1.7	
Service Outlet 115V GFI (amps)			15	
Indoor Blower Motor	HP		0.25	
	Type		Direct	
	Full Load Amps		1.7	
[2] Maximum Overcurrent Protection (MOCP)	Unit Only		25	
	with (1) 0.33 HP Power Exhaust		25	
[3] Minimum Circuit Ampacity (MCA)	Unit Only		17	
	with (1) 0.33 HP Power Exhaust		19	

ELECTRIC HEAT DATA

Electric Heat Voltage			**208V**	**240V**
[2] Maximum Overcurrent Protection (MOCP)	Unit + Electric Heat	**5 kW**	40	45
		7.5 kW	60	60
		10 kW	70	70
[3] Minimum Circuit Ampacity (MCA)	Unit + Electric Heat	**5 kW**	39	43
		7.5 kW	51	56
		10 kW	62	69
[2] Maximum Overcurrent Protection (MOCP)	Unit + Electric Heat + Power Exhaust	**5 kW**	45	45
		7.5 kW	60	60
		10 kW	70	80
[3] Minimum Circuit Ampacity (MCA)	Unit + Electric Heat + Power Exhaust	**5 kW**	42	45
		7.5 kW	53	58
		10 kW	64	71

ELECTRICAL ACCESSORIES

Disconnect	**0-10 kW**	**20W21**	**20W21**

Disconnects - 20W21 - 80A

NOTE - All units have a minimum Short Circuit Current Rating (SCCR) of 5000 amps.

[1] Extremes of operating range are plus and minus 10% of line voltage.

[2] HACR type breaker or fuse.

[3] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

ELECTRICAL/ELECTRIC HEAT — DIRECT DRIVE - 3 TON [PSC]

Model			LHX036S5D			
[1] Voltage - 60Hz			208/230V - 1 Ph	208/230V - 3 Ph	460V - 3 Ph	575V - 3 Ph
Compressor (Non-Inverter)	Rated Load Amps		14.4	9	4.1	3.3
	Locked Rotor Amps		86	70	39	29
Outdoor Fan Motors (1)	Full Load Amps (1 Non-ECM)		1.7	1.7	1.1	0.7
Power Exhaust (1) 0.33 HP	Full Load Amps (total)		2.4	2.4	1.3	1
Service Outlet 115V GFI (amps)			15	15	15	20
Indoor Blower Motor	HP		0.5	0.5	0.5	0.5
	Type		Direct	Direct	Direct	Direct
	Full Load Amps		3.1	3.1	1.5	1.5
[2] Maximum Overcurrent Protection (MOCP)	Unit Only		35	25	15	15
	with (1) 0.33 HP Power Exhaust		35	25	15	15
[3] Minimum Circuit Ampacity (MCA)	Unit Only		23	17	8	7
	with (1) 0.33 HP Power Exhaust		26	19	10	8

ELECTRIC HEAT DATA

Electric Heat Voltage			208V	240V	208V	240V	480V	600V
[2] Maximum Overcurrent Protection (MOCP)	Unit + Electric Heat	**7.5 kW**	60	70	40	40	20	20
		15 kW	100	110	60	70	35	25
[3] Minimum Circuit Ampacity (MCA)	Unit + Electric Heat	**7.5 kW**	57	62	36	39	20	16
		15 kW	91	101	56	62	31	25
[2] Maximum Overcurrent Protection (MOCP)	Unit + Electric Heat + Power Exhaust	**7.5 kW**	60	70	40	45	25	20
		15 kW	100	110	60	70	35	30
[3] Minimum Circuit Ampacity (MCA)	Unit + Electric Heat + Power Exhaust	**7.5 kW**	60	65	38	42	21	17
		15 kW	93	104	58	64	32	26

ELECTRICAL ACCESSORIES

Disconnect		**0-7.5 kW**	**20W21**		**20W21**		**20W21**	**20W21**
		15 kW	**20W22**		**20W21**		**20W21**	**20W21**

Disconnects - 20W21 - 80A
20W22 - 150A

NOTE - All units have a minimum Short Circuit Current Rating (SCCR) of 5000 amps.

[1] Extremes of operating range are plus and minus 10% of line voltage.

[2] HACR type breaker or fuse.

[3] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

ELECTRICAL/ELECTRIC HEAT DATA — DIRECT DRIVE - 4 TON [PSC]

Model			LHX048S5D			
[1] Voltage - 60Hz			208/230V - 1 Ph	208/230V - 3 Ph	460V - 3 Ph	575V - 3 Ph
Compressor (Non-Inverter)	Rated Load Amps		19.4	12	6.3	4.4
	Locked Rotor Amps		102	123	60	41
Outdoor Fan Motors (1)	Full Load Amps (1 Non-ECM)		1.7	1.7	1.1	0.7
Power Exhaust (1) 0.33 HP	Full Load Amps (total)		2.4	2.4	1.3	1
Service Outlet 115V GFI (amps)			15	15	15	20
Indoor Blower Motor	HP		0.5	0.5	0.5	0.5
	Type		Direct	Direct	Direct	Direct
	Full Load Amps		3.1	3.1	1.5	1.5
[2] Maximum Overcurrent Protection (MOCP)	Unit Only		45	30	15	15
	with (1) 0.33 HP Power Exhaust		50	30	15	15
[3] Minimum Circuit Ampacity (MCA)	Unit Only		30	21	11	8
	with (1) 0.33 HP Power Exhaust		33	23	12	9

ELECTRIC HEAT DATA

Electric Heat Voltage			208V	240V	208V	240V	480V	600V
[2] Maximum Overcurrent Protection (MOCP)	Unit + Electric Heat	**7.5 kW**	70	80	45	50	25	20
		15 kW	100	110	60	70	35	30
[3] Minimum Circuit Ampacity (MCA)	Unit + Electric Heat	**7.5 kW**	64	69	41	44	22	18
		15 kW	98	108	60	66	34	27
[2] Maximum Overcurrent Protection (MOCP)	Unit + Electric Heat + Power Exhaust	**7.5 kW**	70	80	50	50	25	20
		15 kW	100	125	70	70	35	30
[3] Minimum Circuit Ampacity (MCA)	Unit + Electric Heat + Power Exhaust	**7.5 kW**	67	72	43	46	24	19
		15 kW	100	111	62	69	35	28

ELECTRICAL ACCESSORIES

Disconnect		**0-7.5 kW**	**22A23**		**22A23**		**22A23**	**22A23**
		15 kW	**22A24**		**22A23**		**22A23**	**22A23**

Disconnects - 22A23 - 80A
22A24 - 150A

NOTE - All units have a minimum Short Circuit Current Rating (SCCR) of 5000 amps.

[1] Extremes of operating range are plus and minus 10% of line voltage.

[2] HACR type breaker or fuse.

[3] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

ELECTRICAL/ELECTRIC HEAT DATA — DIRECT DRIVE - 3 TON [ECM]

Model			**LHX036S5E**			
[1] Voltage - 60Hz			**208/230V - 1 Ph**	**208/230V - 3 Ph**	**460V - 3 Ph**	**575V - 3 Ph**
Compressor 1 (Non-Inverter)	Rated Load Amps		14.4	9	4.1	3.3
	Locked Rotor Amps		86	70	39	29
Outdoor Fan Motor	Full Load Amps (1 Non-ECM)		1.7	1.7	1.1	0.7
Power Exhaust (1) 0.33 HP	Full Load Amps		2.4	2.4	1.3	1
Service Outlet 115V GFI (amps)			15	15	15	20
Indoor Blower Motor	HP		1	1	1	1
	Type		Direct	Direct	Direct	Direct
	Full Load Amps		7.4	7.4	3.7	3
[2] Maximum Overcurrent Protection (MOCP)	Unit Only		40	25	15	15
	with (1) 0.33 HP Power Exhaust		40	30	15	15
[3] Minimum Circuit Ampacity (MCA)	Unit Only		28	21	10	8
	with (1) 0.33 HP Power Exhaust		30	23	12	9

ELECTRIC HEAT DATA

Electric Heat Voltage			**208V**	**240V**	**208V**	**240V**	**480V**	**600V**
[2] Maximum Overcurrent Protection (MOCP)	Unit + Electric Heat	**7.5 kW**	70	70	40	45	25	20
		15 kW	100	110	60	70	35	30
[3] Minimum Circuit Ampacity (MCA)	Unit + Electric Heat	**7.5 kW**	61	67	40	43	22	17
		15 kW	95	106	60	66	33	26
[2] Maximum Overcurrent Protection (MOCP)	Unit + Electric Heat + Power Exhaust	**7.5 kW**	70	70	45	50	25	20
		15 kW	100	110	70	70	35	30
[3] Minimum Circuit Ampacity (MCA)	Unit + Electric Heat + Power Exhaust	**7.5 kW**	64	69	43	46	23	18
		15 kW	98	108	62	68	34	27

ELECTRICAL ACCESSORIES

Disconnect	**0-7.5 kW**	**20W21**	**20W21**	**20W21**	**20W21**	**20W21**	**20W21**
	15 kW	**20W22**	**20W22**	**20W21**	**20W21**	**20W21**	**20W21**

Disconnects - 20W21 - 80A
20W22 - 150A

NOTE - All units have a minimum Short Circuit Current Rating (SCCR) of 5000 amps.

[1] Extremes of operating range are plus and minus 10% of line voltage.

[2] HACR type breaker or fuse.

[3] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

ELECTRICAL/ELECTRIC HEAT DATA — DIRECT DRIVE - 4 TON [ECM]

Model			LHX048S5E			
[1] Voltage - 60Hz			208/230V - 1 Ph	208/230V - 3 Ph	460V - 3 Ph	575V - 3 Ph
Compressor 1 (Non-Inverter)	Rated Load Amps		19.4	12	6.3	4.4
	Locked Rotor Amps		102	123	60	41
Outdoor Fan Motor	Full Load Amps (1 Non-ECM)		1.7	1.7	1.1	0.7
Power Exhaust (1) 0.33 HP	Full Load Amps		2.4	2.4	1.3	1
Service Outlet 115V GFI (amps)			15	15	15	20
Indoor Blower Motor	HP		1	1	1	1
	Type		Direct	Direct	Direct	Direct
	Full Load Amps		7.4	7.4	3.7	3
[2] Maximum Overcurrent Protection (MOCP)	Unit Only		50	35	15	15
	with (1) 0.33 HP Power Exhaust		50	35	20	15
[3] Minimum Circuit Ampacity (MCA)	Unit Only		35	25	13	10
	with (1) 0.33 HP Power Exhaust		37	28	15	11

ELECTRIC HEAT DATA

Electric Heat Voltage			208V	240V	208V	240V	480V	600V
[2] Maximum Overcurrent Protection (MOCP)	Unit + Electric Heat	**7.5 kW**	80	80	50	50	25	20
		15 kW	110	125	70	70	40	30
[3] Minimum Circuit Ampacity (MCA)	Unit + Electric Heat	**7.5 kW**	68	74	45	48	25	19
		15 kW	102	113	64	70	36	28
[2] Maximum Overcurrent Protection (MOCP)	Unit + Electric Heat + Power Exhaust	**7.5 kW**	80	80	50	50	30	20
		15 kW	110	125	70	80	40	30
[3] Minimum Circuit Ampacity (MCA)	Unit + Electric Heat + Power Exhaust	**7.5 kW**	71	76	47	50	26	20
		15 kW	105	115	67	73	37	29

ELECTRICAL ACCESSORIES

Disconnect	**0-7.5 kW**	**22A23**	**22A23**	**22A23**	**22A23**	**22A23**	**22A23**
	15 kW	**22A24**	**22A24**	**22A23**	**22A23**	**22A23**	**22A23**

Disconnects - 22A23 - 80A
22A24 - 150A

NOTE - All units have a minimum Short Circuit Current Rating (SCCR) of 5000 amps.

[1] Extremes of operating range are plus and minus 10% of line voltage.

[2] HACR type breaker or fuse.

[3] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

ELECTRICAL/ELECTRIC HEAT DATA — DIRECT DRIVE - 5 TON [ECM]

Model			LHX060S5E			
[1] Voltage - 60Hz			208/230V - 1 Ph	208/230V - 3 Ph	460V - 3 Ph	575V - 3 Ph
Compressor 1 (Non-Inverter)	Rated Load Amps		23.7	16	7.1	6.4
	Locked Rotor Amps		157	156.4	69	47.8
Outdoor Fan Motor	Full Load Amps (1 Non-ECM)		2.4	2.4	1.3	1
Power Exhaust (1) 0.33 HP	Full Load Amps		2.4	2.4	1.3	1
Service Outlet 115V GFI (amps)			15	15	15	20
Indoor Blower Motor	HP		1	1	1	1
	Type		Direct	Direct	Direct	Direct
	Full Load Amps		7.4	7.4	3.7	3
[2] Maximum Overcurrent Protection (MOCP)	Unit Only		60	45	20	15
	with (1) 0.33 HP Power Exhaust		60	45	20	15
[3] Minimum Circuit Ampacity (MCA)	Unit Only		40	30	14	12
	with (1) 0.33 HP Power Exhaust		42	33	16	13

ELECTRIC HEAT DATA

Electric Heat Voltage			208V	240V	208V	240V	480V	600V
[2] Maximum Overcurrent Protection (MOCP)	Unit + Electric Heat	**7.5 kW**	90	90	60	60	30	25
		15 kW	110	125	70	80	40	35
		22.5 kW	150	175	90	100	50	40
[3] Minimum Circuit Ampacity (MCA)	Unit + Electric Heat	**7.5 kW**	74	79	50	53	26	22
		15 kW	108	118	69	75	37	31
		22.5 kW	141	157	89	98	48	40
[2] Maximum Overcurrent Protection (MOCP)	Unit + Electric Heat + Power Exhaust	**7.5 kW**	90	90	60	60	30	25
		15 kW	110	125	80	80	40	35
		22.5 kW	150	175	100	100	50	45
[3] Minimum Circuit Ampacity (MCA)	Unit + Electric Heat + Power Exhaust	**7.5 kW**	76	81	52	55	27	23
		15 kW	110	120	72	78	38	32
		22.5 kW	144	160	91	100	50	41

ELECTRICAL ACCESSORIES

Disconnect		**0 kW**	**22A23**	**22A23**	**22A23**	**22A23**	**22A23**	**22A23**
		7.5 kW	**22A23**	**[4] 22A23 [5] 22A24**	**22A23**	**22A23**	**22A23**	**22A23**
		15 kW	**22A24**	**22A24**	**22A23**	**22A23**	**22A23**	**22A23**
		22.5 kW	**22A24**	**22A24**	**22A24**	**22A24**	**22A23**	**22A23**

Disconnects - 22A23 - 80A
22A24 - 150A

NOTE - All units have a minimum Short Circuit Current Rating (SCCR) of 5000 amps.

[1] Extremes of operating range are plus and minus 10% of line voltage.

[2] HACR type breaker or fuse.

[3] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

[4] Without Power Exhaust.

[5] With Power Exhaust.

ELECTRICAL/ELECTRIC HEAT DATA — BELT DRIVE - 5 TON

Model			LHX060S5B		
[1] Voltage - 60Hz			208/230V - 3 Ph	460V - 3 Ph	575V - 3 Ph
Compressor (Non-Inverter)	Rated Load Amps		16	7.1	6.4
	Locked Rotor Amps		156.4	69	47.8
Outdoor Fan Motors (1)	Full Load Amps (1 Non-ECM)		2.4	1.3	1
Power Exhaust (1) 0.33 HP	Full Load Amps (total)		2.4	1.3	1
Service Outlet 115V GFI (amps)			15	15	20
Indoor Blower Motor	HP		2	2	2
	Type		Belt	Belt	Belt
	Full Load Amps		7.5	3.4	2.7
[2] Maximum Overcurrent Protection (MOCP)	Unit Only		45	20	15
	with (1) 0.33 HP Power Exhaust		45	20	15
[3] Minimum Circuit Ampacity (MCA)	Unit Only		30	14	12
	with (1) 0.33 HP Power Exhaust		33	15	13

ELECTRIC HEAT DATA

Electric Heat Voltage			208V	240V	480V	600V
[2] Maximum Overcurrent Protection (MOCP)	Unit + Electric Heat	**7.5 kW**	60	60	25	25
		15 kW	70	80	40	30
		22.5 kW	90	100	50	40
[3] Minimum Circuit Ampacity (MCA)	Unit + Electric Heat	**7.5 kW**	50	53	25	21
		15 kW	69	76	37	30
		22.5 kW	89	98	48	39
[2] Maximum Overcurrent Protection (MOCP)	Unit + Electric Heat + Power Exhaust	**7.5 kW**	60	60	30	25
		15 kW	80	80	40	35
		22.5 kW	100	100	50	40
[3] Minimum Circuit Ampacity (MCA)	Unit + Electric Heat + Power Exhaust	**7.5 kW**	52	55	27	22
		15 kW	72	78	38	31
		22.5 kW	91	100	49	40

ELECTRICAL ACCESSORIES

Disconnect		**0-7.5 kW**	**22A23**	**22A23**	**22A23**	**22A23**
		15 kW	**22A23**	**22A23**	**22A23**	**22A23**
		22.5 kW	**22A24**	**22A24**	**22A23**	**22A23**

Disconnects - 22A23 - 80A
22A24 - 150A

NOTE - All units have a minimum Short Circuit Current Rating (SCCR) of 5000 amps.

[1] Extremes of operating range are plus and minus 10% of line voltage.

[2] HACR type breaker or fuse.

[3] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

ELECTRIC HEAT CAPACITIES

Input Voltage	5 kW			7.5 kW			10 kW		
	No of Stages	kW input	Btuh Output	No of Stages	kW input	Btuh Output	No of Stages	kW input	Btuh Output
208	1	3.8	12,800	1	5.6	19,200	1	7.5	25,600
220	1	4.2	14,300	1	6.3	21,500	1	8.4	28,700
230	1	4.6	15,700	1	6.9	23,500	1	9.2	31,400
240	1	5.0	17,100	1	7.5	25,600	1	10.0	34,200
440	- - -	- - -	- - -	1	6.3	21,500	- - -	- - -	- - -
460	- - -	- - -	- - -	1	6.9	23,500	- - -	- - -	- - -
480	- - -	- - -	- - -	1	7.5	25,600	- - -	- - -	- - -
550	- - -	- - -	- - -	1	6.3	21,500	- - -	- - -	- - -
575	- - -	- - -	- - -	1	6.9	23,500	- - -	- - -	- - -
600	- - -	- - -	- - -	1	7.5	25,600	- - -	- - -	- - -

Input Voltage	15 kW			22.5 kW		
	No of Stages	kW input	Btuh Output	No of Stages	kW input	Btuh Output
208	1	11.2	38,400	1	16.9	57,700
220	1	12.6	43,000	1	18.9	64,500
230	1	13.8	47,000	1	20.7	70,700
240	1	15.0	51,200	1	22.5	76,800
440	1	12.6	43,000	1	18.9	64,500
460	1	13.8	47,000	1	20.7	70,700
480	1	15.0	51,200	1	22.5	76,800
550	1	12.6	43,000	1	18.9	64,500
575	1	13.8	47,000	1	20.7	70,700
600	1	15.0	51,200	1	22.5	76,800

FIELD WIRING NOTES

- For use with copper wiring only
- Field wiring not furnished
- All wiring must conform to NEC or CEC and local electrical codes
- For specific wiring information, please refer to the installation instructions

Minimum R454B Space and CFM Requirements

Minimum Airflow[1]		
Unit	Q_{min}(CFM)	Q_{min}(m^3h)
LHX024	371	629
LHX036	344	584
LHX048	444	753
LHX060	414	703

[1] ***NOTE -*** *The minimum airflow is the lowest CFM allowed during venting operation (leak mitigation).*

Refrigerant Charge R-454B		
Unit	M_c(lbs)	M_c(kg)
LHX024	14.00	6.35
LHX036	13.00	5.90
LHX048	16.75	7.60
LHX060	15.65	7.10

Minimum Room Area of Conditioned Space[2]		
Unit	TA_{min}(ft^2)	TA_{min}(m^2)
LHX024	206.0	19.1
LHX036	191.0	17.7
LHX048	246.0	22.8
LHX060	230.0	21.3

[2] *NOTE - The minimum room area of conditioned space is the smallest area the unit can service.*

Altitude Adjustment Factor[3]									
Halt	0	200	400	600	800	1000	1200	1400	1600
AF	1	1	1	1	1.02	1.05	1.07	1.1	1.12
Halt	1600	1800	2000	2200	2400	2600	2800	3000	3200
AF	1.12	1.15	1.18	1.21	1.25	1.28	1.32	1.36	1.40

[3] ***NOTE -*** *Use the Altitude Adjustment Factor to adjust the values in the tables above to different altitudes. Find the relevant altitude above sea level in the two "Halt" rows and then multiply the value needed from the tables above by the altitude factor number. Example: For the minimum airflow in CFM for an LHX024 at 1000 ft. above see level, multiply 371 by 1.05 to get 389.55 CFM as the new* Q_{min}.

Parts Arrangement

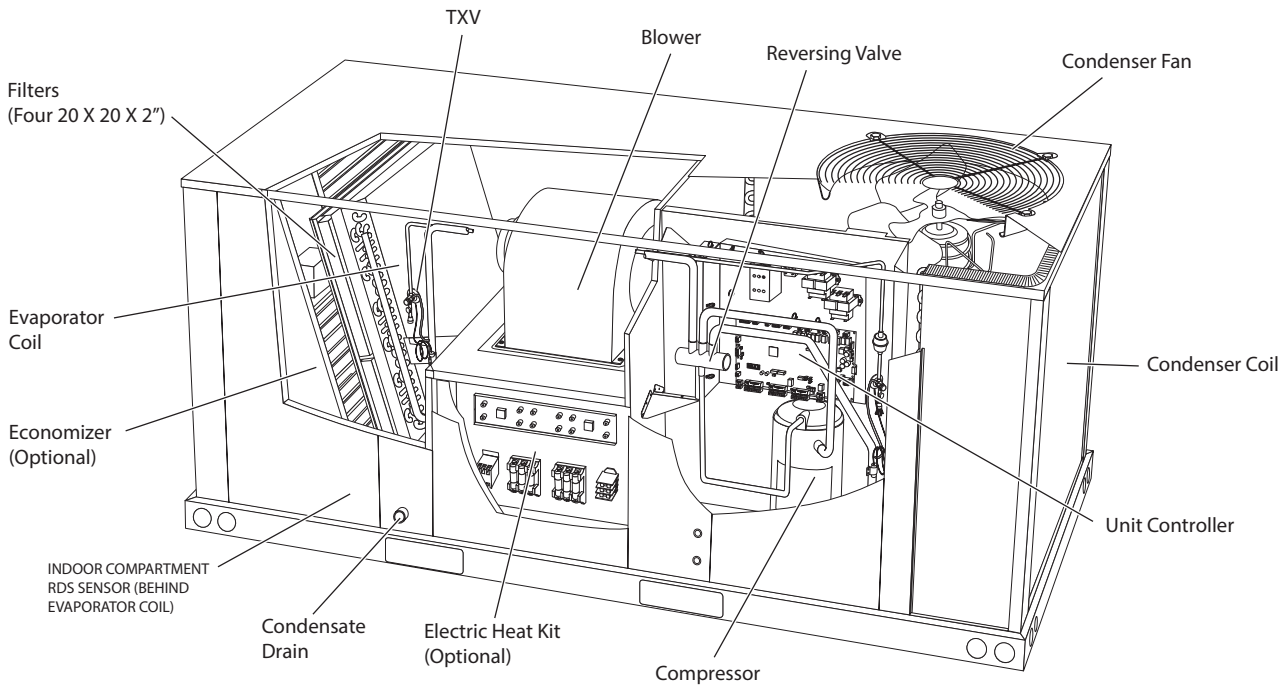


FIGURE 1

Control Box Arrangement

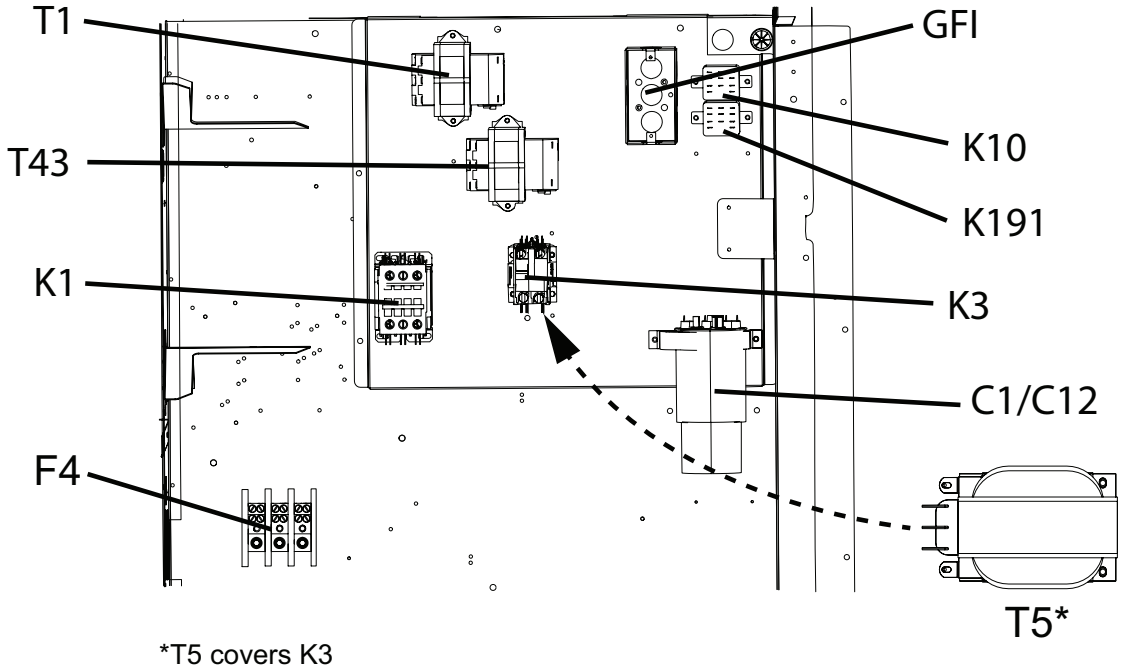


FIGURE 2

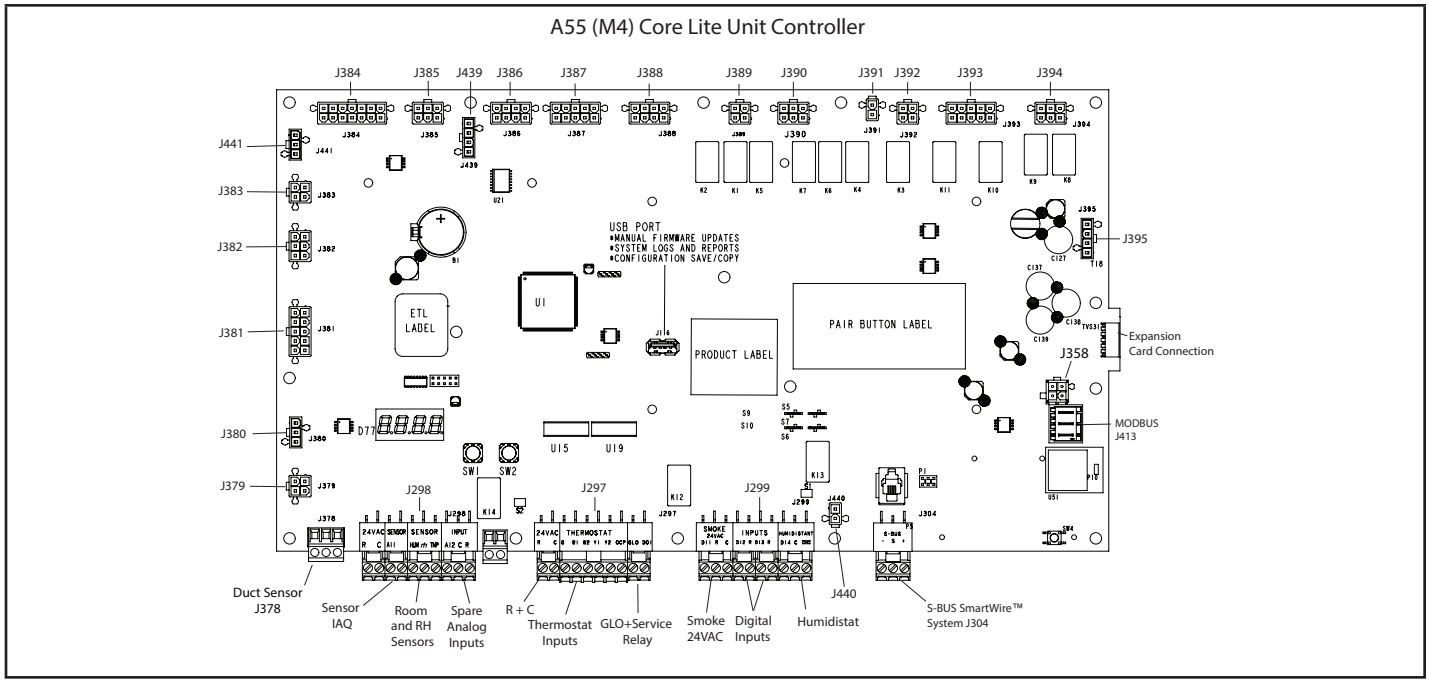


FIGURE 3

I-UNIT COMPONENTS

The LHX unit parts arrangement are shown in FIGURE 1. All L1, L2 and L3 wiring is color coded; L1 is red, L2 is yellow and L3 is blue. See wiring diagrams in the back of this manual for complete call out of components.

A-Control Box Components

LHX control box components are shown in FIGURE 2. The control box is located in the upper portion of the compressor compartment.

1-Transformers T1 & T43

All LHX units use a single line voltage to 24VAC transformer mounted on the hinged control panel. Transformer supplies power to control circuits in the unit. The transformer is rated at 70VA and is protected by a 3.5 amp circuit (CB8). The 208/230 voltage transformers use two primary voltage taps as shown in FIGURE 4, while the 460 (G) voltage transformer use a single primary voltage tap. T43 is used for units with hot gas reheat for additional 24VAC.

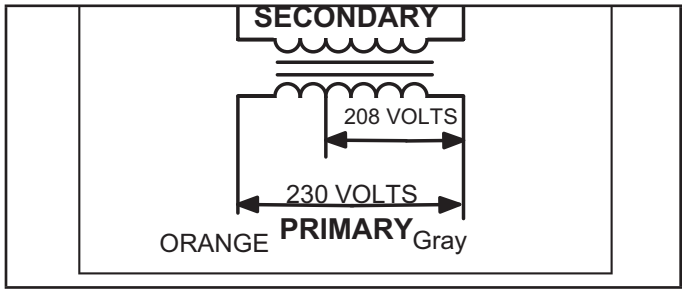


FIGURE 4

2-Transformer T5 (G and J voltage)

All units use transformer T5 mounted in the back panel in the compressor section. T5 is a line voltage to 230V transformer to power the indoor blower motor.. It is connected to line voltage and is powered at all times.

3-Outdoor Fan Capacitor C1 (Y, G, J & M)

Fan capacitors C1 (standard efficiency units only) is used to assist in the start up of condenser fan motor B4. Capacitor ratings will be on outdoor fan motor nameplate.

4-Dual Capacitor C12 & Run Capacitor C5

Single Phase Units Only Dual capacitor C12 is used on standard efficiency units and used for both the outdoor fan and compressor. The fan side and the compressor side have different MFD ratings. See side of capacitor for ratings. Run capacitor C5 is used for compressor start-up on single phase high efficiency units.

5-Compressor Contactor K1

K1 is a 24V line voltage contactor used to energize the compressor and in some cases (P and Y voltage on standard efficiency units) condenser fan in response to thermostat demand. Single phase units use single-pole double break contactors and three phase units use three-pole double break contactors.

6-Unit Controller A55 (FIGURE 3)

The Unit Controller provides all unit control functions, unit status information, unit diagnostics, programmable parameters, and USB verification and profile sharing. The unit controller can only be interfaced with via the CORE Service mobile app. Refer to the Unit controller instructions provided for additional details on pairing and app functions.

7-Low Ambient Kit Relay K58 Standard Efficiency Units (option used with S11 low ambient switch)

Low ambient relay K58 is a N.C. DPDT relay with a 24V coil wired in parallel with reversing valve L1. When L1 is energized in the cooling cycle, K58 is also energized opening K58-1. Therefore, K58-1 is always closed during heating demand bypassing S11. This allows the fan to operate during the heating demand and cycle during the cooling demand.

8-Blower Contactor K3

Blower contactor K3 is used in all standard efficiency units and belt drive high efficiency units. K3 has a 24V coil used to energize the indoor blower motor in response to blower demand. In single phase units K3 is a single-pole contactor and in three phase units K3 is a two-pole contactor.9-Transformer T4 - All J Volt Direct Drive Units and G & J Volt High Efficiency Units

Standard Efficiency Direct Drive Unit - All J (575) voltage units use transformer T4 mounted in the control box. T4 is line voltage to 460V to power the indoor blower.

High Efficiency G, J volt Units - All (G) 460 and (J) 575 voltage units use transformer T4 mounted in the control box. T4 is line voltage to 230V to power the indoor blower and outdoor fan motors on direct drive units and the outdoor fan motor only on belt drive units. T4 transformer is energized at all times.

9-Outdoor Fan Relay K10

Outdoor fan relay K10 is a DPDT relay with a 24VAC coil. K10 energizes condenser fan B4. K10 is used on all units.

Series 100135

After 34 minutes of heating mode operation, if the difference between the ambient temperature (RT13) and the coil temperature (RT21) is higher than the maximum difference allowed by the control, the defrost control will initiate defrost.

The defrost control will also initiate defrost after 6 hours of heating mode operation when coil temperatures remain below 35ºF (2ºC). The defrost cycle ends when the coil temperature is higher than the termination temperature (50ºF default) or after 14 minutes of operation. If the defrost is terminated by the 14-minute timer, another defrost cycle will be initiated after 34 minutes of run time.

Note - *The defrost termination temperature can be adjusted to 50, 70, 90 or 100ºF. The jumper termination pin is factory- set at 50ºF (10ºC). If the temperature jumper is not installed, the default termination temperature is 90ºF (32ºC).*

Ambient and Coil Temperature Sensors (RT13, RT21) Both sensors provide input to the defrost control which cycles defrost. The ambient sensor is located on the inside of the corner mullion on the back of the outdoor coil section. The coil sensor is located on a return bend on the front of the outdoor coil.

Defrost Control

The defrost control ensures that the heat pump outdoor coil does not ice excessively during the heating mode. The defrost control uses input from the coil and ambient sensor to demand defrost cycles from the M4 board. If system fails to do calibration or obtain readings for demand defrost, it will run timed defrost at customer setting. If electric heat is installed, it is energized during defrost cycle.

High Pressure Switch

The high pressure switch (S4) is an auto reset SPST N.C. switch which opens on a pressure rise. The switch is located in the compressor discharge line and is wired to “HI PS” on the CMC1 board. When discharge pressure rises to 640 ± 10 psig (4413 ± 69 kPa) (indicating a problem in the system) the switch opens and the CMC1 board de-energizes the compressor (the economizer can continue to operate). S4 will close when pressure drops back to 475 psig (3275 kPA).

B-Cooling Components

If Interlink compressor replacement is necessary, call 1-800-453-6669.

⚠ IMPORTANT

Some scroll compressors have an internal vacuum protector that will unload scrolls when suction pressure goes below 20 psig. A hissing sound will be heard when the compressor is running unloaded. Protector will reset when low pressure in system rises above 40 psig. DO NOT REPLACE COMPRESSOR.

LHX units use one cooling circuit consisting of a compressor, all-aluminum condenser coil and evaporator coil. Units are equipped with one draw-through type condenser fan. All units are equipped with indoor blowers which draw air across the indoor coil during unit operation. LHX units have three condensate drain locations: front, back and bottom of unit. See unit installation instructions for more detail.

Cooling may be supplemented by a factory or field-installed economizer. The indoor coil is slab type. The indoor coil uses a thermostatic check/expansion valve as the primary expansion device. In all units the compressor is protected by a freezestat (S49) (on the indoor coil) and a high pressure switch (S4). A low ambient switch (S11) is available as an option for additional compressor protection.

1-Compressor B1

All LHX024-060 units use scroll compressor. See “SPECIFICATIONS” and “ELECTRICAL DATA” (table of contents) or compressor nameplate for compressor specifications.

⚠ WARNING

Electrical shock hazard. Compressor must be grounded. Do not operate without protective cover over terminals. Disconnect power before removing protective cover. Discharge capacitors before servicing unit. Failure to follow these precautions could cause electrical shock resulting in injury or death.

The compressor is energized by a corresponding compressor contactor.

***NOTE**-Refer to the wiring diagram section for specific unit operation.*

2-High Pressure Switch S4

The high pressure switch is an auto reset SPST N.C. switch which opens on a pressure rise. The switch is located in the compressor discharge line and is wired to "HI PS" on the CMC1 board.

When discharge pressure rises to 640 ± 10 psig (4413 ± 69 kPa) (indicating a problem in the system) the switch opens and the CMC1 board de-energizes the compressor (the economizer can continue to operate). S4 will close when pressure drops back to 475 psig (3275 kPA).

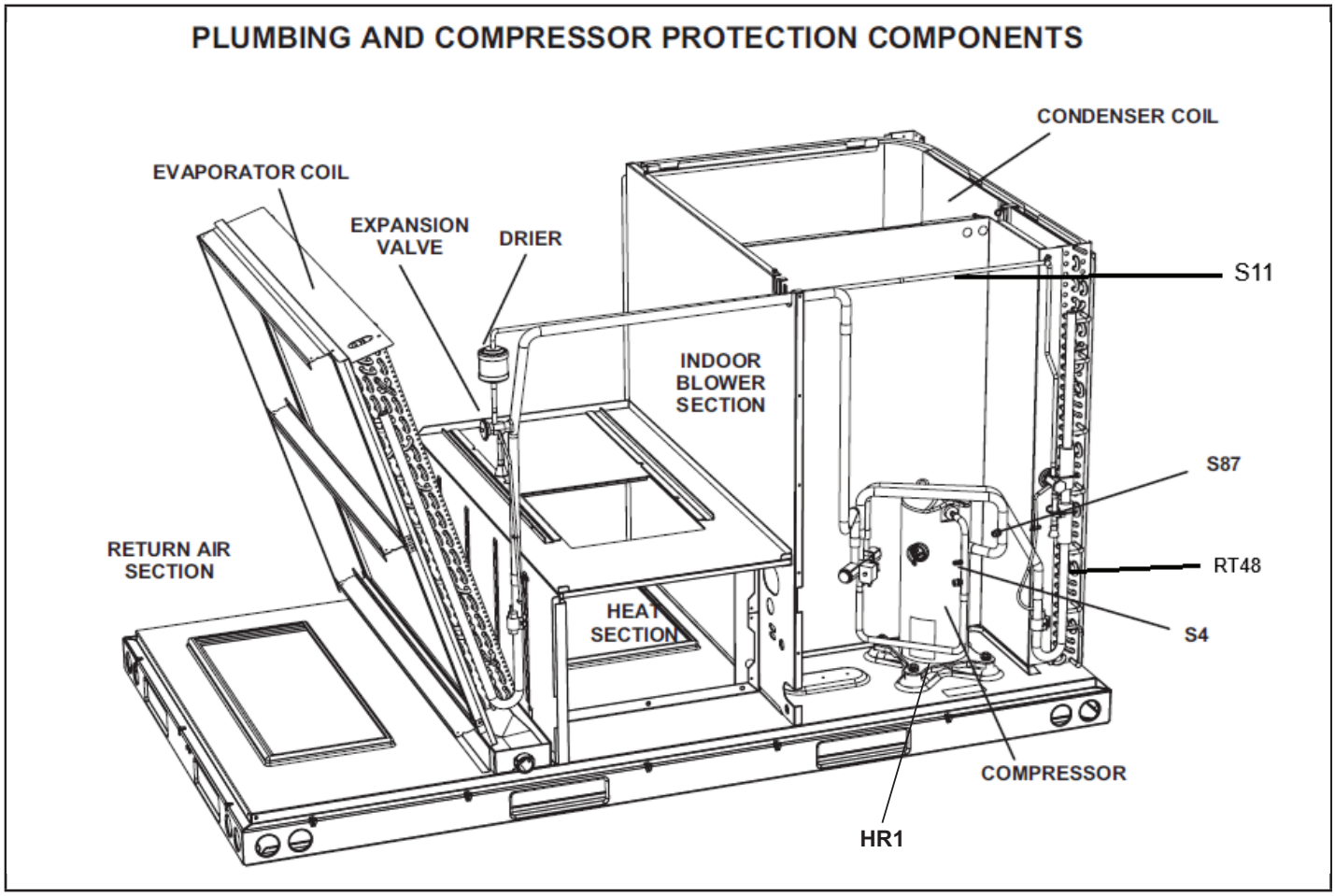


FIGURE 5

3-Low Ambient Switch S11

The low ambient switch is an auto-reset SPST N.O. pressure switch which allows for mechanical cooling operation at low outdoor temperatures. In all models a switch is located in the liquid line prior to the indoor coil section.

When liquid pressure rises to 450 ± 10 psig (3102 ± 69 kPa), the switch closes and the condenser fan is energized. When discharge pressure in drops to 240 ± 10 psig (1655 ± 69 kPa), the switch opens and the condenser fan in that refrigerant circuit is de-energized. This intermittent fan operation results in higher evaporating temperature allowing the system to operate without icing the indoor coil and losing capacity.

4-Reversing Valve L1

A refrigerant reversing valve with a 24 volt solenoid coil is used to reverse refrigerant flow during unit operation in all LHX units. The reversing valve is connected in the vapor line of the refrigerant circuit. The reversing valve coil is energized during cooling demand and during defrost.

Reversing valve L1 is controlled by the CMC1 board and transfer relay K8 in response to cooling demand or by defrost.

5-Condenser Fan Motor B4

K10 energizes B4. All motors are ball bearing type single-phase motors. The fans may be removed for servicing and cleaning by removing the fan grilles.

7-Filter Drier (all units)

LHX units have a filter drier located in the liquid line of the refrigerant circuit at the exit of the condenser coil. The drier removes contaminants and moisture from the system. Replacement must be suitable for R-410A refrigerant.

8-Crankcase Heater HR1

All units have a crankcase heater. HR1 prevents migration of liquid refrigeration into the compressor and ensures proper compressor lubrication.

9-Crankcase Heater Relay K191

Relay K191 keeps the crankcase heater de-energized during and immediately following compressor shut down. They ensure the crankcase heater is off while compressor is energized.

10-Temperature Sensors

Units are equipped with two factory-installed thermistors (RT46 and RT48) located on different points on the refrigerant circuit.

The thermistors provide the Unit Controller with constant temperature readings of two specific locations on the refrigeration circuit. These temperatures are used as feedback in certain modes of unit operation. In addition, the Unit Controller uses these temperatures to initiate alarms such as loss of condenser or evaporator airflow and loss of charge.

Each thermistor must be specifically placed for proper unit operation and to initiate valid alarms. See TABLE 1 for proper locations.

TABLE 1
THERMISTOR LOCATION

Unit	Sensor Yellow	Figure
024, 036, 048, 060 Indoor Coil	RT46	FIGURE 6
024, 036 Outdoor Coil	RT48	FIGURE 7
048, 060 Outdoor Coil	RT48	FIGURE 8

LHX024, 036, 048, 060
EVAPORATOR COIL
RT46

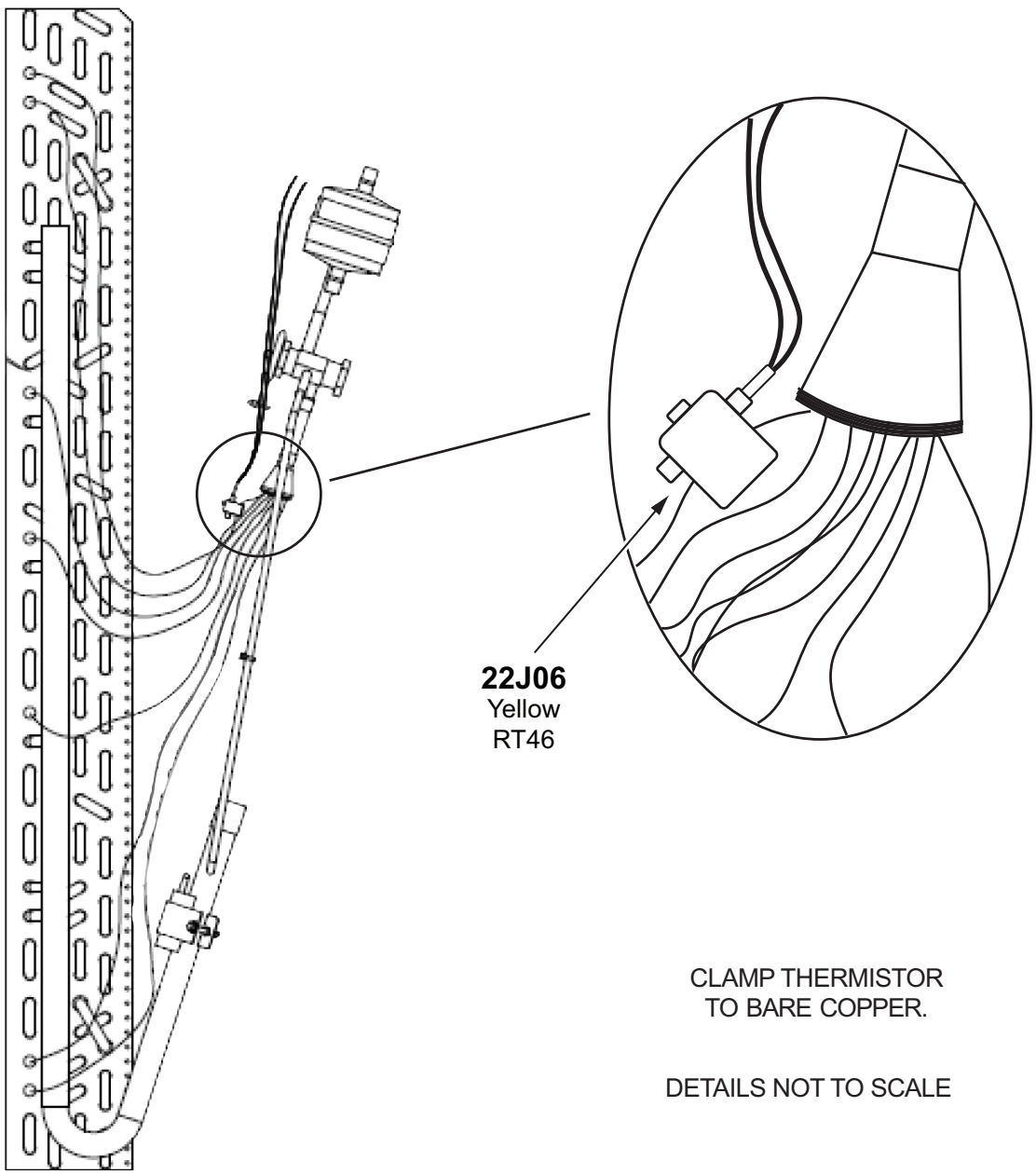


FIGURE 6

LHX024, 036
CONDENSER COIL
RT48

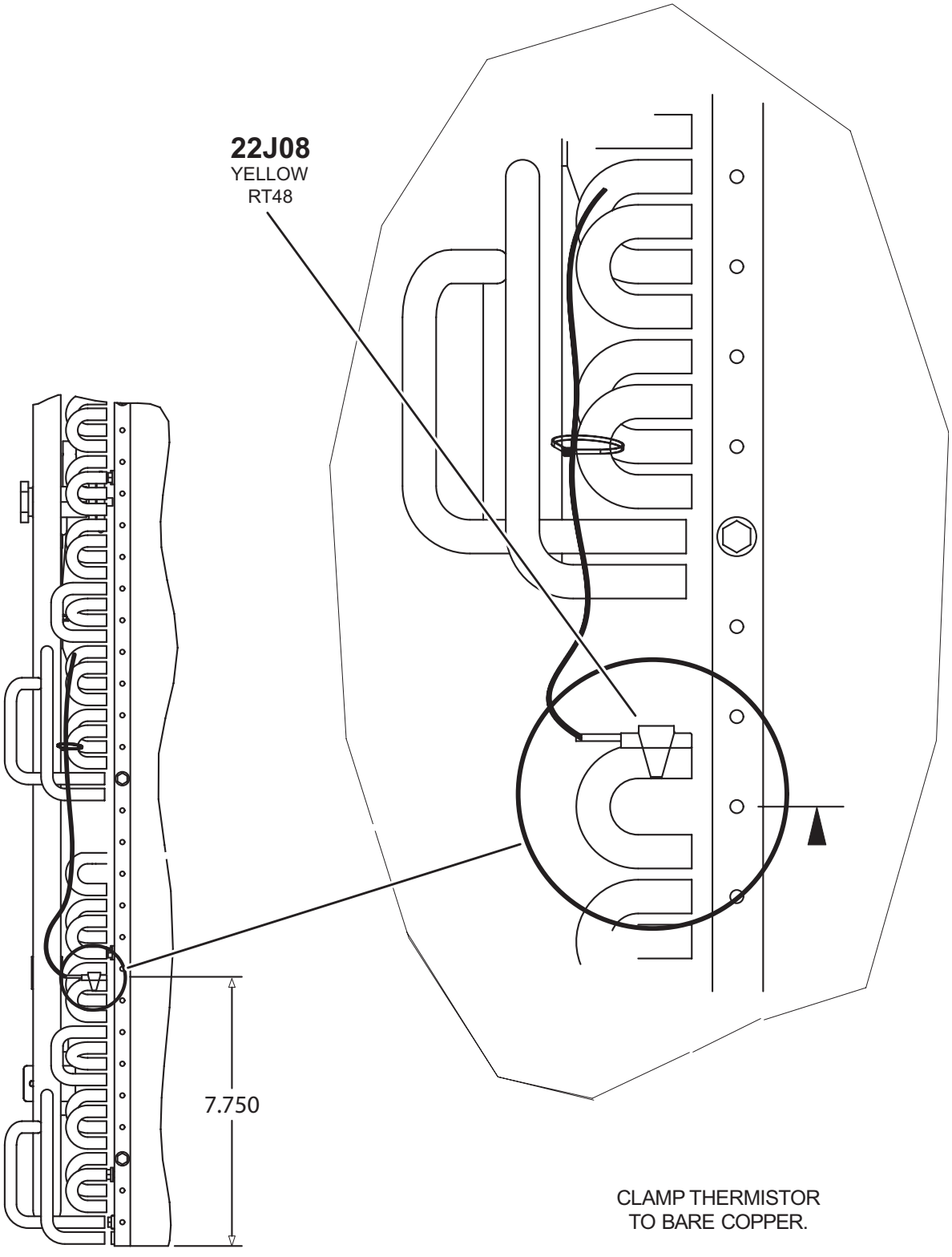


FIGURE 7

LHX048, 060
CONDENSER COIL
RT48

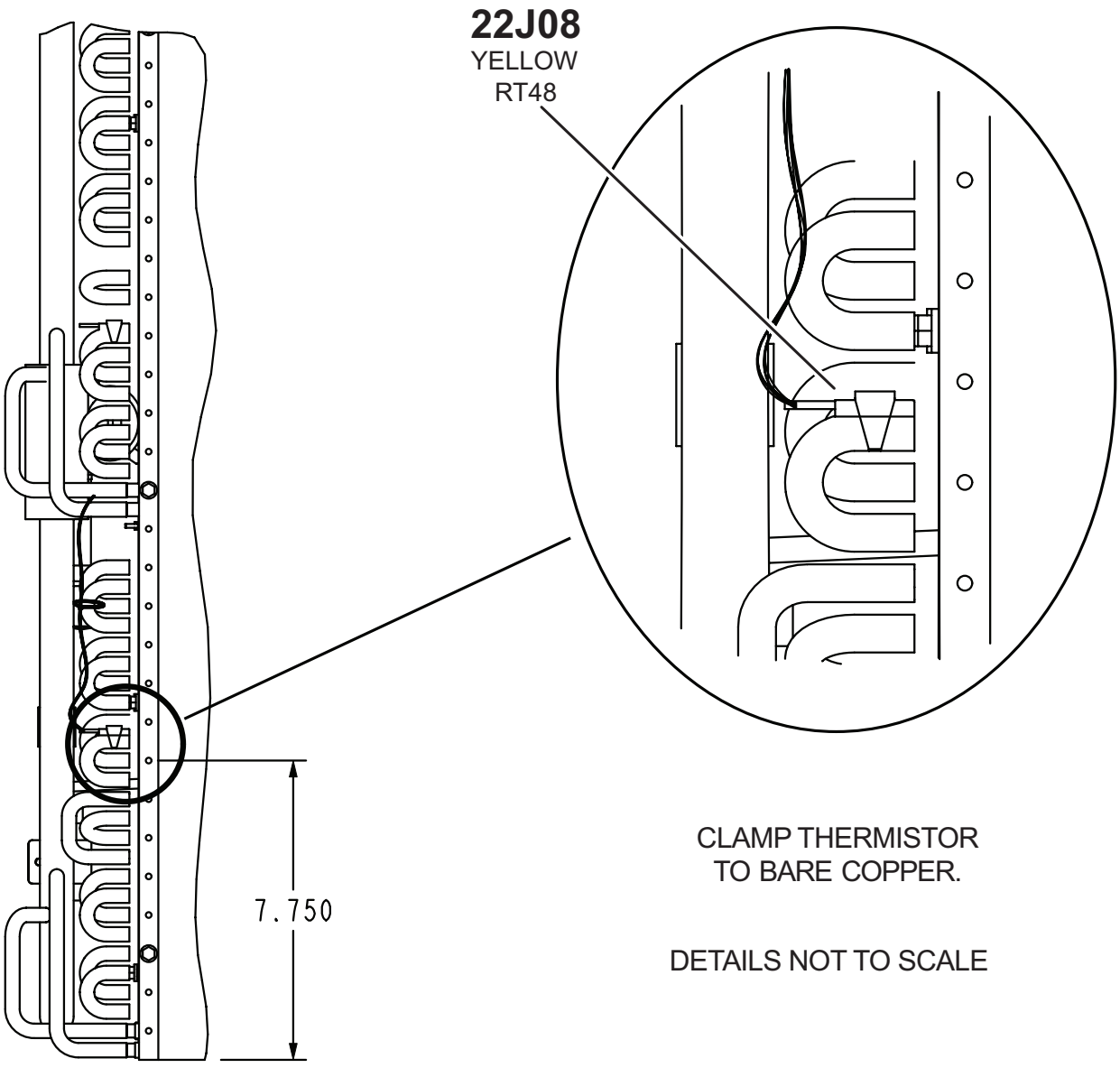


FIGURE 8

12-RDS Sensors

Units are equipped with factory-installed RDS Sensors located on different points on the unit. The RDS sensors provide the Unit Controller with continuous readings for leaked refrigerant concentration levels and sensor health status (Good or Fault). These readings are used to modify unit operation to disperse the leaked refrigerant and to remove possible ignition sources. In addition, the Unit Controller uses these readings to initiate alarms to alert the operator of a refrigerant leak or faulty sensor(s).

Each sensor must be specifically placed for proper unit operation and to initiate valid alarms. To identify sensor locations see TABLE 2. See TABLE 3 for sensor alarms.

TABLE 2

RDS Sensor Figures

Model	Qty.	Type	Figure
LHX024-060	1 sensor	INDOOR SENSOR	FIGURE 9

TABLE 3

Alarm	Alarm description	RDS Sensor Location
257	Refrigerant leak sensor fault in the Indoor section (sensor #1)	Indoor compartment
258	Refrigerant leak sensor fault in the control panel/compressor section (sensor #2)	"Control/Compressor or Compressor compartment"

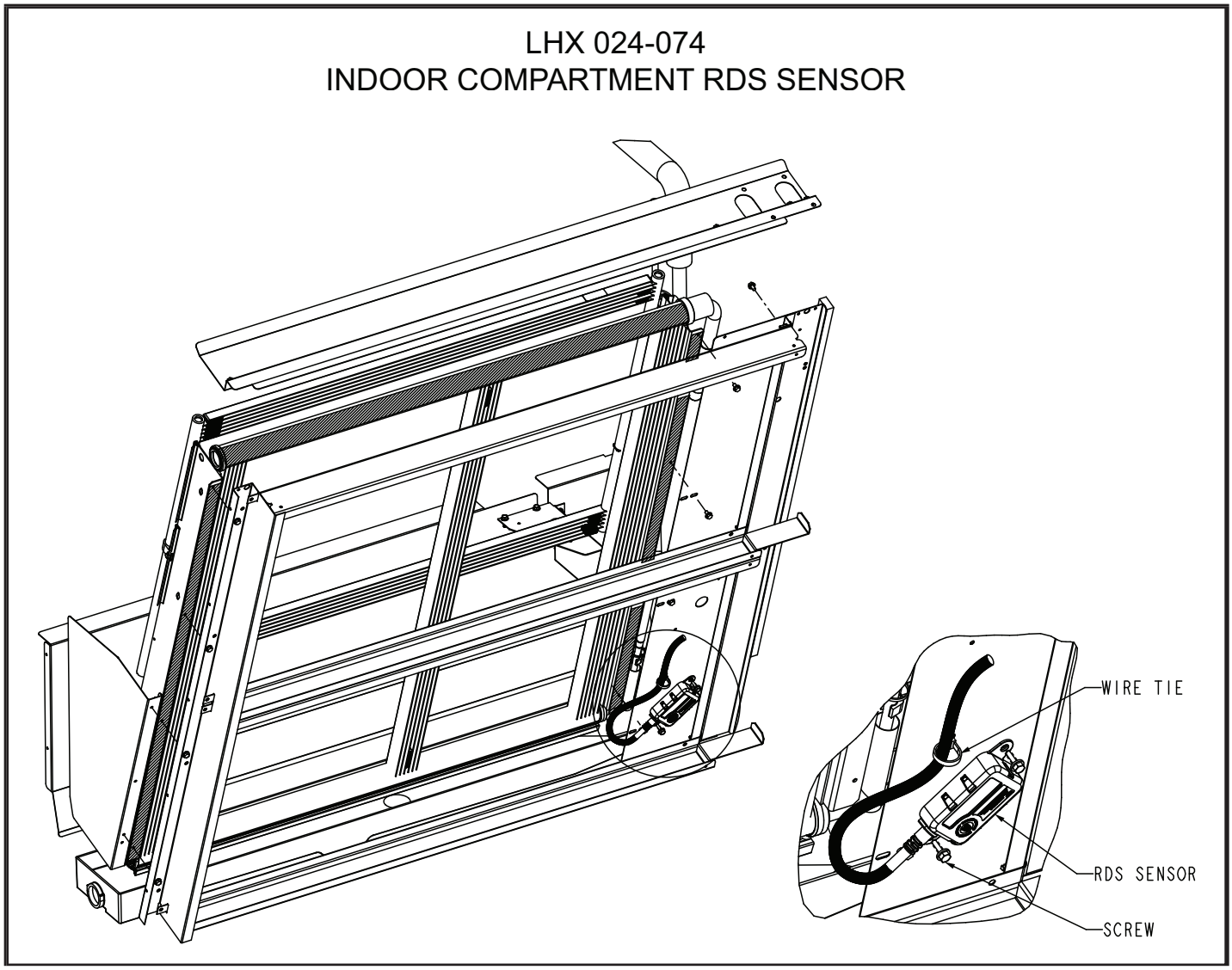


FIGURE 9

C-Blower Compartment

Units are equipped with either direct drive or belt drive blowers. See units 'Specifications' and or unit nameplate for blower type. The blower compartment in all units is located between the evaporator coil and the compressor compartment.

1-Blower Wheels

See unit "Specifications" for blower wheel dimensions per model.

2-Indoor Blower Motor Capacitor C4

All single phase standard efficiency unit blower motors are PSC and requires a run capacitor. Ratings may vary from each motor. See motor nameplate for capacitor ratings.

3-Indoor Blower Motor B3

All high efficiency units use direct drive ECM or two speed belt drive motor. All standard efficiency direct drive units use single single phase PSC motors. Belt drive units use single or three phase motors (same as supply voltage). CFM adjustments on belt drive units are made by adjusting the motor pulley (sheave). CFM adjustments on direct drive units are made by changing speed taps. Belt drive motors are equipped with sealed ball bearings. Direct drive motors are equipped with sleeve bearings. Units may be equipped with motors manufactured by various manufacturers, therefore electrical FLA and LRA specifications will vary. See unit rating plate for information specific to your unit.

OPERATION / ADJUSTMENT

⚠ IMPORTANT

Three phase scroll compressors must be phased sequentially for correct compressor and blower rotation. Follow "COOLING START-UP" section of installation instructions to ensure proper compressor and blower operation.

A-Blower Operation

Initiate blower demand at thermostat according to instructions provided with thermostat. Unit will cycle on thermostat demand. The following steps apply to applications using a typical electro-mechanical thermostat.

Blower operation is manually set at the thermostat subbase fan switch. With fan switch in ON position, blowers will operate continuously.

1 - With fan switch in AUTO position, the blowers will cycle with demand. Blowers and entire unit will be off when system switch is in OFF position.

B-Determining Unit CFM - Direct Drive Blowers

1 - The following measurements must be made with air filters in place and no cooling demand.

2 - With all access panels in place, measure static pressure external to unit (from supply to return). Add any additional air resistance for options and accessories shown in air resistance table.

3 - Use FIGURE 10 to determine the factory set blower speed.

BLOWER SPEED FACTORY SETTINGS

036 Units		024 & 048 Units	
☐	1 Com	☐	1 Com
☐	2 Hi	☐	2 Hi
☐	3 Med	☐	3 **Med***
☐	4 **Low***	☐	4 Low

*Factory Setting

FIGURE 10

4 - Use the blower tables (see table of contents), measured static pressure and the factory-set blower speed to determine CFM. If CFM is lower than the design specified CFM, move the lead from speed tap 3 or 4 to speed tap 2. FIGURE 10.

Note - *Speed tap 3 can be used on 036 units if speed tap 2 delivers more CFM than required by design specification. For 460/575V units, remove the isolation lead from speed tap 2 before moving the wire to speed tap 2. Tape the exposed end of the isolation lead and secure away from other components. See FIGURE 11.*

C-Determining Unit CFM - Belt Drive Blowers

IMPORTANT - LHX072 blower (G thermostat) ***CFM MUST BE ADJUSTED IN HIGH SPEED.*** Disconnect factory-installed J350 low speed connector from P350. Connectors are located near the bottom of the control box. Connect J351 high speed connector to P350. Once blower CFM is set, J350 can be reconnected to operate the blower on low during ventilation only demands. See TABLE 4.

TABLE 4

TWO-SPEED BLOWER OPERATION

LHX072 UNITS

Thermostat	Blower Speed
G	Low
W1	High
W2	High
Y1	Low
Y2	High

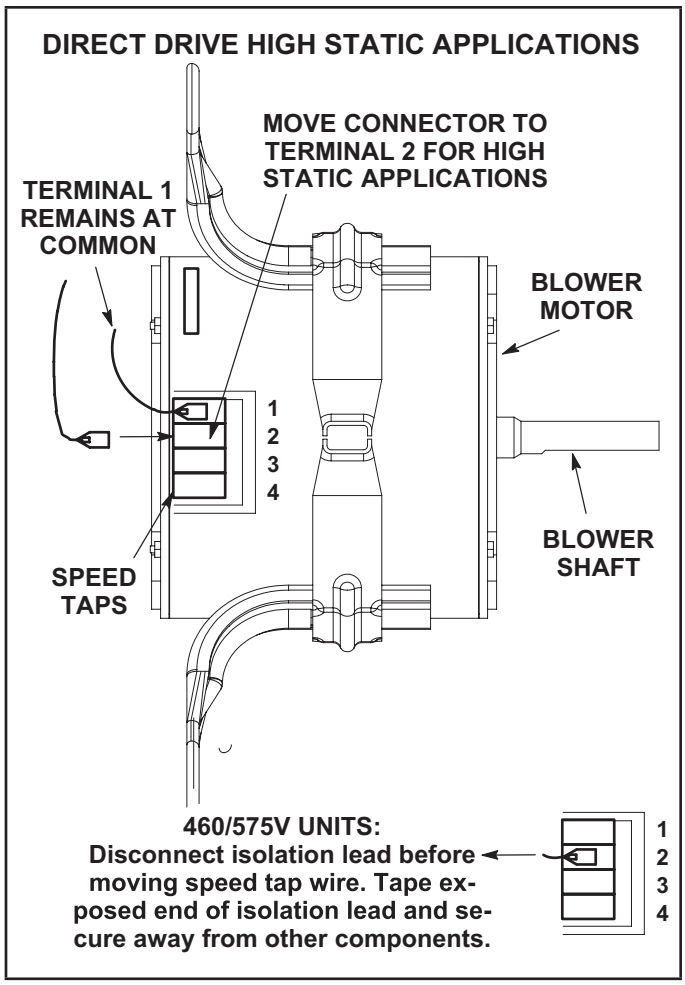


FIGURE 11

*Factory-installed jack/plug connection.

1 - The following measurements must be made with air filters in place and no cooling demand.

2 - With all access panels in place, measure static pressure external to unit (from supply to return).

3 - Measure the indoor blower wheel RPM.

4 - Referring to the blower tables use static pressure and RPM readings to determine unit CFM. Use air resistance table on when installing units with any of the options or accessories listed.

5 - The blower RPM can be adjusted at the motor pulley. Loosen Allen screw and turn adjustable pulley clockwise to increase CFM. Turn counterclockwise to decrease CFM. See FIGURE 15. Do not exceed minimum and maximum number of pulley turns as shown in TABLE 5.

6 - ***LHX072 Unit Only*** - If low speed during ventilation is desired, replace J351 connector with J350.

TABLE 5

MINIMUM AND MAXIMUM PULLEY ADJUSTMENT

Belt	Min Turns Open	Max Turns Open
A-Section	No Minimum	5

B-Determining Unit CFM - Direct Drive Blowers

High Efficiency Unis

1 - The following measurements must be made with air filters in place.

2 - With all access panels in place, measure static pressure external to unit (from supply to return). Add any additional air resistance for options and accessories shown in accessory air resistance tables. Blower performance data is based on static pressure readings taken in locations shown in FIGURE 16.

Note - *Static pressure readings can vary if not taken where* shown.

3 - Use FIGURE 12 to determine the factory-set blower speed.

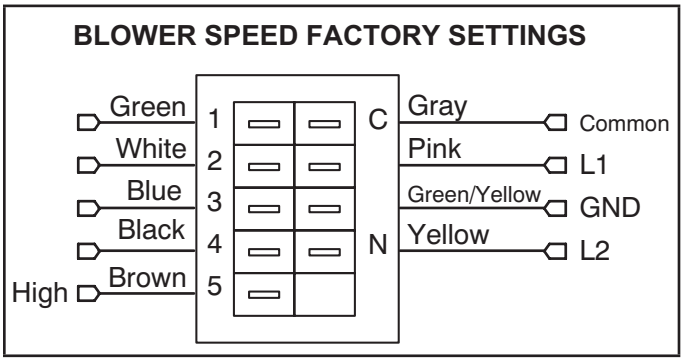


FIGURE 12

4 - Use direct drive blower tables, the measured static pressure and the factory-set blower speed to determine CFM. If CFM is lower or higher than the design specified CFM, move the leads as shown in FIGURE 12.

D-Blower Belt Adjustment

Maximum life and wear can be obtained from belts only if proper pulley alignment and belt tension are maintained. Tension new belts after a 24-48 hour period of operation. This will allow belt to stretch and seat grooves. Make sure blower and motor pulley are aligned as shown in FIGURE 13.

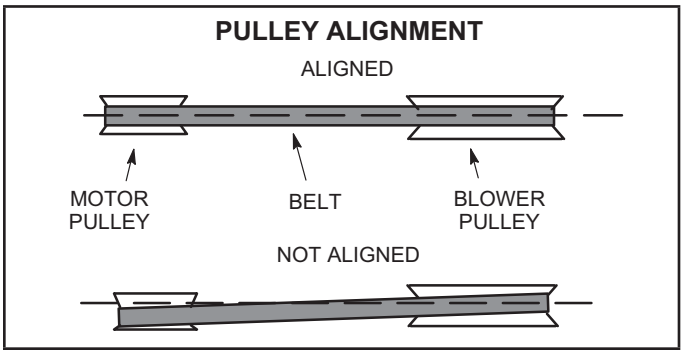


FIGURE 13

1 - Loosen four bolts securing motor base to mounting frame. See FIGURE 15.

2 - *To increase belt tension -*

Slide blower motor downward to tighten the belt. This increases the distance between the blower motor and the blower housing.

3 - To loosen belt tension -

Slide blower motor upward to loosen the belt. This decreases the distance between the blower motor and the blower housing.

4 - Tighten four bolts securing motor base to the mounting frame.

E-Check Belt Tension

Overtensioning belts shortens belt and bearing life. Check belt tension as follows:

1 - Measure span length X. See FIGURE 14.

2 - Apply perpendicular force to center of span (X) with enough pressure to deflect belt 1/64" for every inch of span length or 1.5mm per 100mm of span length.

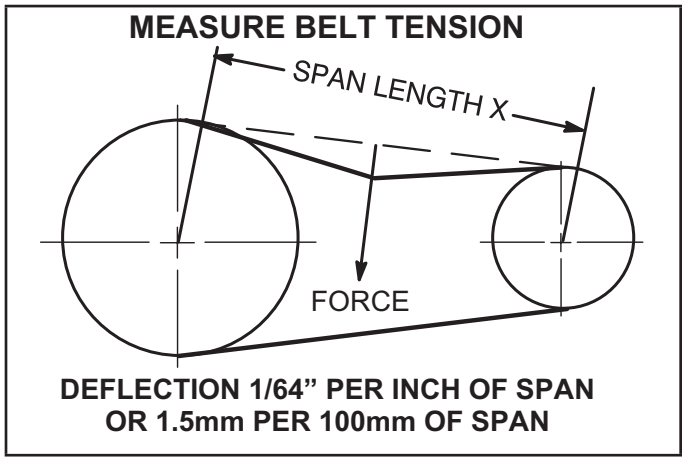


FIGURE 14

Example: Deflection distance of a 40" span would be 40/64" or 5/8".

Example: Deflection distance of a 400mm span would be 6mm.

3 - Measure belt deflection force. For a used belt, the deflection force should be 5 lbs. (35kPa). A new belt deflection force should be 7 lbs. (48kPa).

A force below these values indicates an undertensioned belt. A force above these values indicates an overtensioned belt.

F-Field-Furnished Blower Drives

See blower data tables for field-furnished blower drives to determine BHP and RPM required. See drive kit table on to determine the drive kit number.

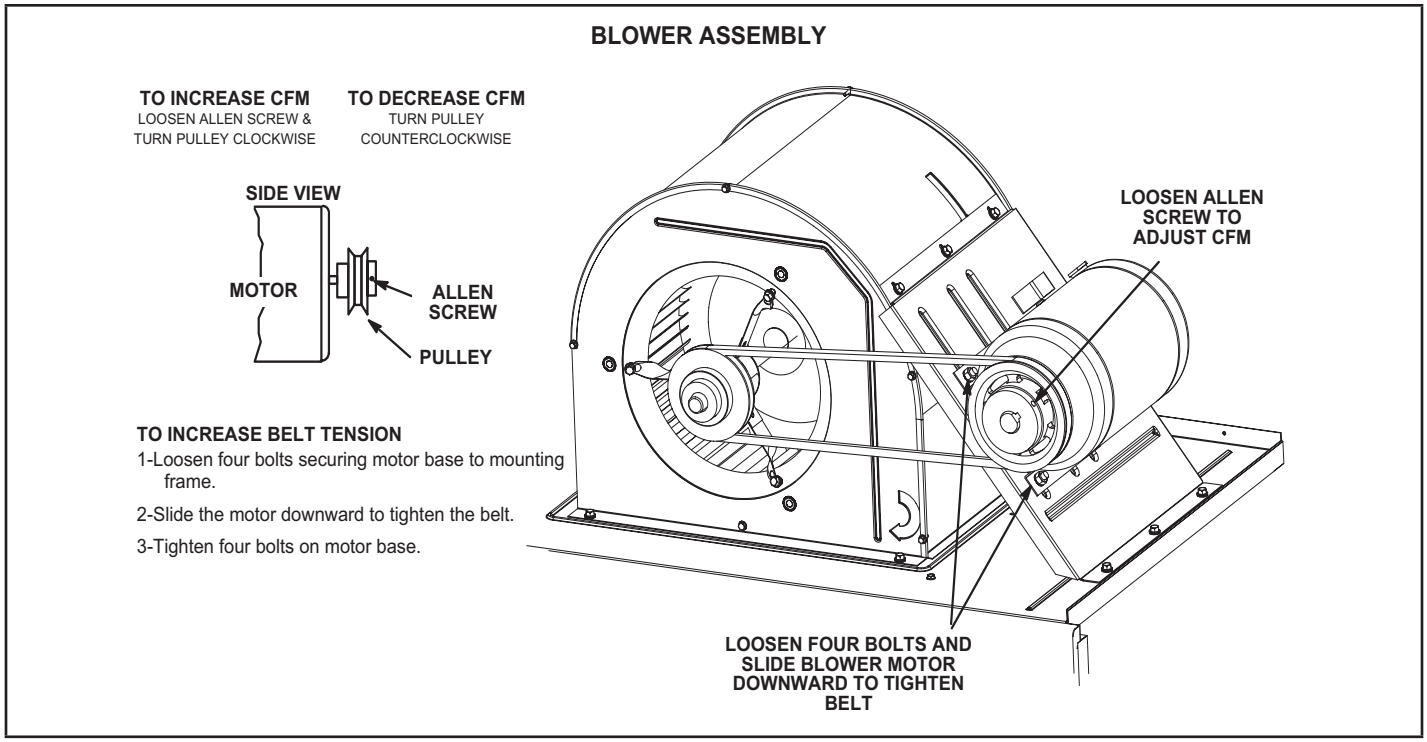


FIGURE 15

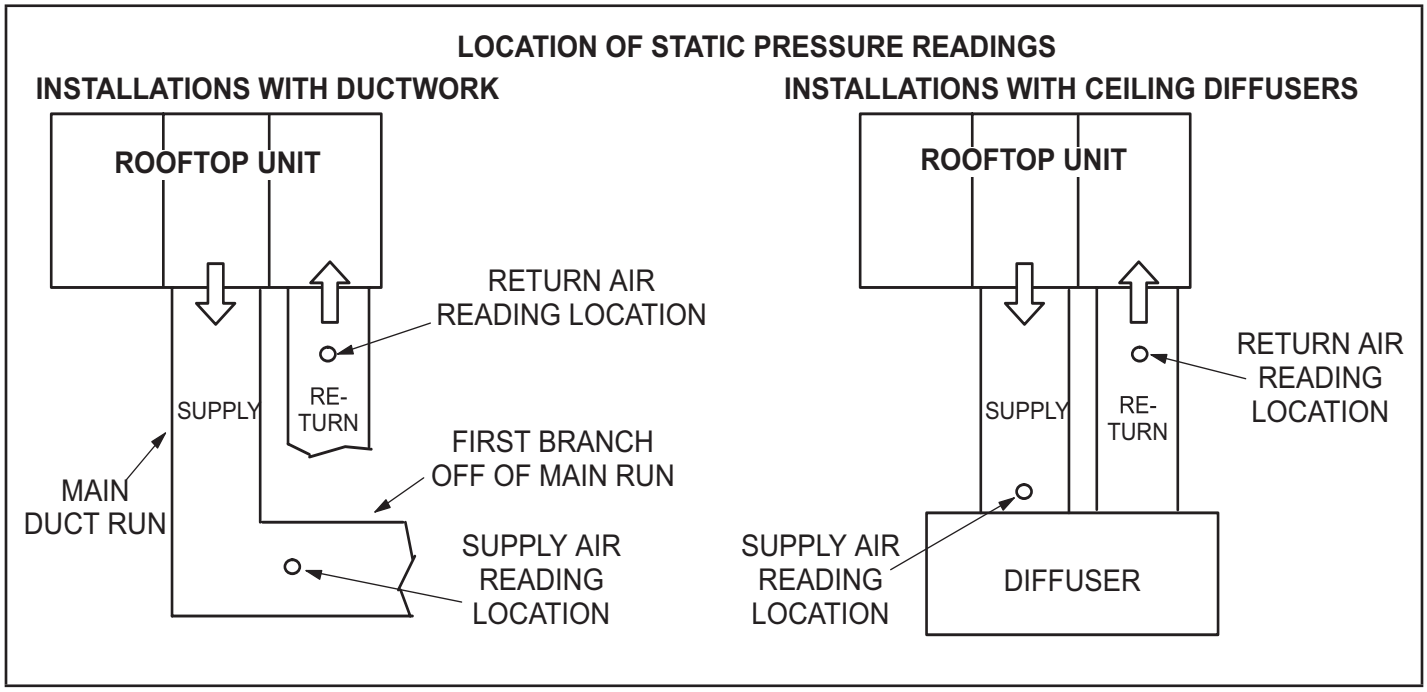


FIGURE 16

D-ELECTRIC HEAT COMPONENTS

Electric heat match-ups are found in the ELECTRICAL DATA tables. See table of contents.

All electric heat sections consist of electric heating elements exposed directly to the air stream. See FIGURE 17. See FIGURE 18 for vestibule parts arrangement.

1-Contactors K15, K16

All contactors are double break and either single, double or three pole (see diagram) and equipped with a 24VAC coil. The coils in the K15 and K16 contactors are energized by the indoor thermostat. In all units K15 energizes the heating elements, while in the 22.5 kW units, K15 and K16 energize the heating elements simultaneously.

2-High Temperature Limits S15 (Primary)

S15 is a SPST N.C. auto-reset thermostat located on the back panel of the electric heat section above the heating elements. S15 is the high temperature limit for the electric heat section. When S15 opens, indicating a problem in the system, contactor K15 is de-energized (including K16 in 22.5 kW units). When K15 is de-energized, all stages of heat are de-energized. See TABLE 6 for S15 set points. Set points are factory set and not adjustable.

TABLE 6

Unit kW (Voltage)	S15 Opens ° F	S15 Closes ° F
7.5 (Y, G, J, P)	160	120
10 (P)	170	130
15 (Y)	170	130
15 (G, J, P)	160	120
22.5 (Y, G, J)	160	120
22.5 (P)	150	110
30 (Y, G, J)	150	110

3-High Temperature Limit S20 and S157 (Secondary)

S20 and S157 are SPST N.C. manual-0reset thermostat s. S20 and S157 are wired in series with the heating elements. See T1EH wiring diagrams. When either limit opens K15 and K16 are de-energized. When the contactors are de-energized, all stages of heat are de-energized. The thermostat is factory set to open at 220F ± 6ºF (104ºC ± 3.3ºC) on a temperature rise and can be manually reset when temperature falls below 160ºF (71º.0C). See FIGURE 18 for location.

4-Terminal Strip TB2

Terminal strip TB2 is used for single point power installations only. TB2 distributes power to TB3. Units with multipoint power connections will not use TB2.

5-Terminal Strip TB3

P and Y voltage units are equipped with terminal strip TB3. Electric heat line voltage connections are made to TB3, which distributes power to the electric heat components and is located on the vestibule. See FIGURE 18.

6-Heating Elements HE1 through HE6

Heating elements are composed of helix wound bare nichrome wire exposed directly to the air stream. Three elements are connected in a three-phase arrangement. The elements in 208/230V units are connected in a “Delta” arrangement. Elements in 460 and 575V units are connected in “Wye” arrangement. Each stage is energized independently by the corresponding contactors located on the electric heat vestibule panel. Once energized, heat transfer is instantaneous. High temperature protection is provided by primary and redundant high temperature limits and overcurrent protection is provided by fuses.

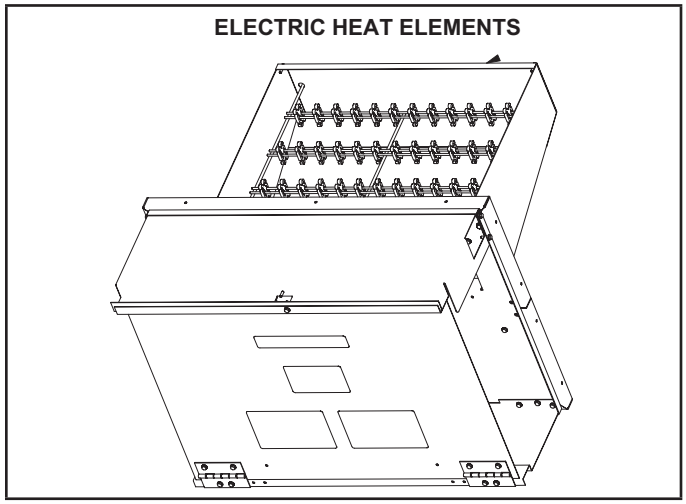


FIGURE 17

7-Fuse F3 and F42

Fuse F3 and F42 are housed in a fuse block which holds two or three fuses. Each F3 fuse is connected in series with each leg of electric heat. FIGURE 18 and TABLE 7 show the fuses used with each electric heat section.

8-Unit Fuse Block & Fuse F4

Three line voltage fuses F4 provide short circuit and ground fault protection to all cooling components in the LHX units with electric heat. The fuses are rated in accordance with the amperage of the cooling components. The F 4 fuse block is located inside a sheet metal enclosure.

9-Electric Heat Relay K9

K9 is a N.O. SPDT pilot relay intended to electrically isolate the unit’s 24V circuit from the electric heat 24V circuit. K9 is energized by the indoor thermostat. K9-1 closes, energizing contactor K15.

TABLE 7

Unit	Voltage-Phase	FUSE		Qty	Qty
		F3	F42	each	total
T1EH0075	208/230V-1P	40 A-250V	-----	2	2
	208/230V-3P	25 A-250V	-----	3	3
	460V-3P	15 A-600V	-----	3	3
	575V-3P	15 A-600V	-----	3	3
T1EH0010	208/230V-1P	30 A-250V	30A-250V	2	2
T1EH0015	208/230V-1P	40 A-250V	40A-250V	2	4
	208/230V-3P	50 A-250V	-----	3	3
	460V	25 A-600V	-----	3	3
	575V	20 A-600V	-----	3	3
T1EH00225	208/230V-1P	40 A-250V	40A-250V	3	6
	208/230V-3P	45 A-250V	45A-250V	3	6
	460V-3P	35 A-600V	-----	3	3
	575V-3P	30 A-600V	-----	3	3
T1EH0300	208/230V-3P	60 A-250V	60A-250V	3	6
	460V-3P	50 A-600V	-----	3	3
	575V-3P	40 A-600V	-----	3	3

ELECTRIC HEAT VESTIBULE PARTS ARRANGEMENT

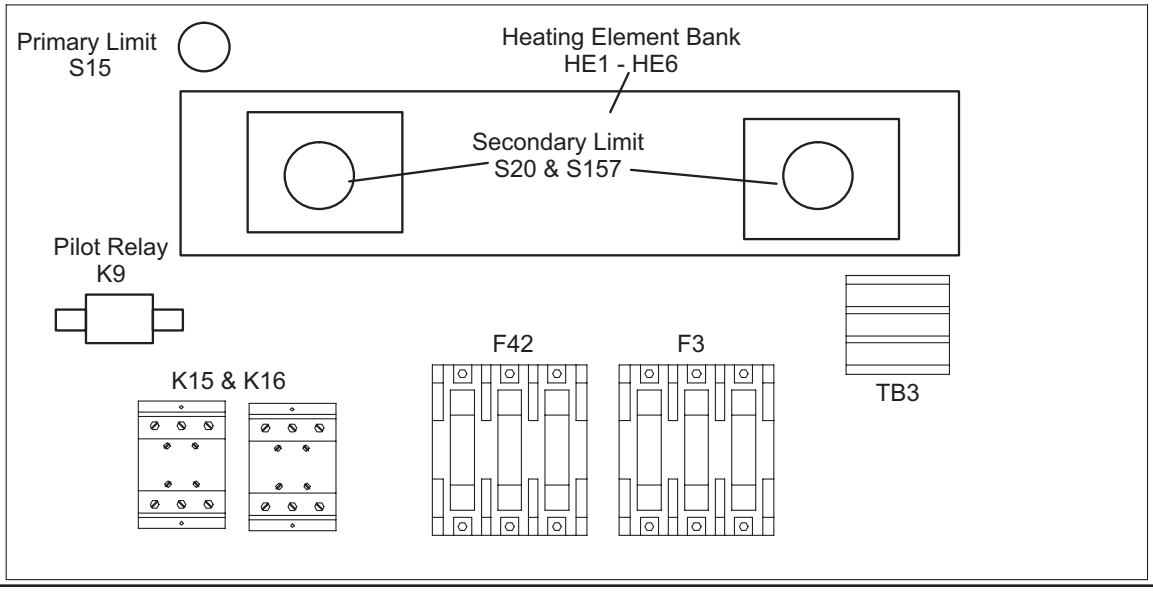


FIGURE 18

II-PLACEMENT AND INSTALLATION

Make sure the unit is installed in accordance with the installation instructions and all applicable codes. See accessories section for conditions requiring use of the optional roof mounting frame (T1CURB).

III-START UP - OPERATION

Refer to startup directions and refer closely to the unit wiring diagram when servicing. See unit nameplate for minimum circuit ampacity and maximum fuse size.

A-Preliminary and Seasonal Checks

1 - Make sure the unit is installed in accordance with the installation instructions and applicable codes.

2 - Inspect all electrical wiring, both field and factory installed for loose connections. Tighten as required. Refer to unit diagram located on inside of unit control box cover.

3 - Check to ensure that refrigerant lines are in good condition and do not rub against the cabinet or other refrigerant lines.

4 - Check voltage at the disconnect switch. Voltage must be within the range listed on the nameplate. If not, consult the power company and have the voltage corrected before starting the unit.

5 - Recheck voltage and amp draw with unit running. If voltage is not within range listed on unit nameplate, stop unit and consult power company. Refer to unit nameplate for maximum rated load amps.

6 - Inspect and adjust blower belt (see section on Blower Compartment - Blower Belt Adjustment).

B-Heating Start Up

1 - Set thermostat or temperature control device to initiate a first-stage heating demand.

A first-stage heating demand (W1) will energize compressor 1 and the outdoor fan.

Note - *L1 reversing valve is de-energized in the heating mode.*

Units With Optional Electric Heat -

An increased heating demand (W2) will energize electric heat. Electric heat is also energized during the defrost cycle to maintain discharge air temperature.

C-Cooling Start Up

⚠ IMPORTANT

If unit is equipped with a crankcase heater. Make sure heater is energized 24 hours before unit start-up to prevent compressor damage as a result of slugging.

1 - Initiate first and second stage cooling demands according to instructions provided with thermostat. See TABLE 8 for operation.

TABLE 8

COOLING OPERATION

T'Stat Demand	Energized	
024-060 No Economizer or Outdoor Air Unsuitable		
Y1	Compressor	Condeser Fan
Y2	Compressor	Condenser Fan
024-060 Unit Equipped With An Economizer		
Y1	Economizer	na
Y2	Economizer + Compressor	Condenser Fan

Note - *The reversing valve is energized at the same time as the compressor.*

2 - Units contain one refrigerant circuit or stage.

3 - Unit is charged with R-454B refrigerant. See unit rating plate for correct amount of charge.

4 - Refer to Refrigerant Charge and Check section for proper method to check refrigerant charge.

Three Phase Scroll Compressor Voltage Phasing

Three phase scroll compressors must be phased sequentially to ensure correct compressor and blower rotation and operation. Compressor and blower are wired in phase at the factory. Power wires are color-coded as follows: line 1-red, line 2-yellow, line 3-blue.

1 - Observe suction and discharge pressures and blower rotation on unit start-up.

2 - Suction pressure must drop, discharge pressure must rise and blower rotation must match rotation marking.

If pressure differential is not observed or blower rotation is not correct:

3 - Disconnect all remote electrical power supplies.

4 - Reverse any two field-installed wires connected to the line side of K1 contactor. ***Do not reverse wires at blower contactor.***

Make sure the connections are tight.

Discharge and suction pressures should operate at their normal start-up ranges.

IV- SYSTEMS SERVICE CHECKS

A-Refrigerant Charge and Check

⚠ IMPORTANT

Units equipped with a Hot Gas Reheat system MUST be charged in standard cooling mode.

WARNING-*Do not exceed nameplate charge under any condition.*

This unit is factory charged and should require no further adjustment. If the system requires additional refrigerant, reclaim the charge, evacuate the system, and add required nameplate charge.

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, the following procedure shall be adhered to:

- Safely remove refrigerant following local and national regulations,
- Evacuate the circuit,
- Purge the circuit with inert gas,
- Evacuate,
- Purge with inert gas,
- Open the circuit

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. Refrigerant 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. This process shall be repeated until no refrigerant is within the system. 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.

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 unit 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 unit.

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.

- 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 includ-ing, when applicable, flammable refrigerants. In ad-dition, 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 manu-facturer 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.

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.

NOTE - *System charging is not recommended below 60F (15C). In temperatures below 60F (15C), the charge must be weighed into the system.*

IMPORTANT - Charge unit in normal cooling mode.

If weighing facilities are not available, or to check the charge, use the following procedure:

1 - Make sure outdoor coil is clean. Attach gauge manifolds and operate unit at full CFM in cooling mode with economizer disabled until system stabilizes (approximately five

- 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.

2 - Add or remove charge in increments. Allow the system to stabilize each time refrigerant is added or removed.

3 - Continue the process until measured liquid temperature agrees with the target liquid temperature. Do not go below the target liquid temperature when adjusting charge. Note that suction pressure can change as charge is adjusted.

4 - Compare the normal operating pressures to the pressures obtained from the gauges. Check unit components if there are significant differences.

5 - Measure the outdoor ambient temperature and the suction pressure. Refer to the charging curve to determine a target liquid temperature.

Note - *Pressures are listed for sea level applications.*

6 - Use the same thermometer to accurately measure the liquid temperature (in the outdoor section). If measured liquid temperature is higher than the target liquid temperature, add refrigerant to the system.

- If measured liquid temperature is lower than the target liquid temperature, recover some refrigerant from the system.
- 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.

7 - Add or remove charge in increments. Allow the system to stabilize each time refrigerant is added or removed.

Continue the process until measured liquid temperature agrees with the target liquid temperature. Do not go below the target liquid temperature when adjusting charge. Note that suction pressure can change as charge is adjusted.

TABLE 9 581329-01 024 NORMAL OPERATING PRESSURES		
Outdoor Coil Entering Air Temp	**Discharge ± 10 psig**	**Suction ± 5 psig**
65°F	222	140
75°F	259	68
85°F	301	140
95°F	349	141
100°F	402	143
115°F	464	145

TABLE 10 581330-01 036 NORMAL OPERATING PRESSURES		
Outdoor Coil Entering Air Temp	**Discharge ± 10 psig**	**Suction ± 5 psig**
65°F	242	137
75°F	281	138
85°F	325	140
95°F	374	141
100°F	428	143
115°F	489	145

TABLE 11 581331-01 048 NORMAL OPERATING PRESSURES		
Outdoor Coil Entering Air Temp	**Discharge ± 10 psig**	**Suction ± 5 psig**
65°F	232	133
75°F	269	135
85°F	310	136
95°F	354	138
100°F	404	140
115°F	457	142

TABLE 12 581332-01 060 NORMAL OPERATING PRESSURES		
Outdoor Coil Entering Air Temp	**Discharge ± 10 psig**	**Suction ± 5 psig**
65°F	247	132
75°F	284	133
85°F	324	134
95°F	371	135
100°F	422	137
115°F	476	139

TABLE 13 APPROACH TEMPERATURES	
Unit	**Liquid Temperature (At Condenser Outlet) Minus Ambient Temperature**
024	5°F +/- 1 (2.8°C +/- 0.5)
036	9°F +/- 1 (5.0°C +/- 0.5)
048	6°F +/- 1 (3.3°C +/- 0.5)
060	8°F +/- 1 (4.4°C +/- 0.5)

Refrigerant Charge R-454B		
Unit	M_c(lbs)	M_c(kg)
LHX024	12.5	5.67
LHX036	12	5.44
LHX048	16.75	7.60
LHX060	15.63	7.09

C-Compressor Controls

See unit wiring diagram to determine which controls are used on each unit. Optional controls are identified on wiring diagrams by arrows at junction points.

1 - High Pressure Switch (S4)

The compressor circuit is protected by a high pressure switch which opens at 640 psig ± 10 psig (4413 kPa ± 70 kPa) and automatically resets at 475 psig ± 20 psig (3275kPa ± 138 kPa).

2 - Low Pressure Switch (S87)

The compressor circuit is protected by a loss of charge switch. Switch opens at 25 psig ± 5 psig (172 ± 34 kPa) and automatically resets at 40 psig ± 5 psig (246 kPa ± 34 kPa).

3 - Diagnostics Sensors (RT46, RT48)

Two thermistors are located on specific points in the refrigeration circuit. The thermistors provide constant temperature feedback to the Unit Controller to protect the compressor. Thermistors take the place of the freezestat and low ambient pressure switch.

4 - Defrost Controls (RT48, RT17)

Both sensors provide input to the defrost control which cycles defrost. The ambient sensor is located on the inside of the corner mullion on the back of the outdoor coil section. The coil sensor is located on a return bend on the front of the outdoor coil.

5 - Compressor Crankcase Heater (HR1)

Crankcase heater must be energized at all times to prevent compressor damage due to refrigerant migration. Energize crankcase heater 24 hours before unit start-up by setting thermostat so that there is no cooling demand (to prevent compressor from cycling) and apply power to unit.

V-MAINTENANCE

The unit should be inspected once a year by a qualified service technician.

⚠ WARNING

Electric shock hazard. Can cause injury or death. Before attempting to perform any service or maintenance, turn the electrical power to unit OFF at disconnect switch(es). Unit may have multiple power supplies.

⚠ IMPORTANT

Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.

⚠ WARNING

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

Prior to beginning work on systems containing refrigerant to ensure the risk of ignition is minimized:

- All 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.
- 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.
- If any hot work is to be conducted on the refrigerating equipment or any associated parts, the appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO2 fire extinguisher adjacent to the charging area.
- 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.
- 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. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

- Where electrical components are being changed, service technicians 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 flameable refrigerants as applicable:

1 - The actual refrigerant charge is in accordance with the room size within which the refrigerant containing parts are installed.

2 - The ventilation machinery and outlets are operating adequately and are not obstructed.

3 - If an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant.

4 - Markings on the equipment should be visible and legible. Markings and signs that are illegible shall be corrected.

5 - Refrigerating pipes 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.

- For systems containing refigerant all repair and maintenance to electrical components shall include initial safety checks and component inspection procedures such as that capacitors are discharged in a safe manner to avoid possibility of sparking, that no live electrical components and wiring are exposed while charging, recovering, or purging the system, and that there is continuity of earth bonding. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used that is reported to the owner of the equipment, so all parties are advised.

  NOTE - *Sealed electrical components shall be replaced, not repaired.*

  NOTE - *Intrinsically safe components must be replaced, not repaired.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. 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 re-calibration. (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.*

- 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, since flammability is a consideration. The following procedure shall be adhered to:

  a. Safely remove refrigerant following local and national regulations,

  b. Evacuate the circuit,

  c. Purge the circuit with inert gas,

  d. Evacuate,

  e. Purge with inert gas,

  f. Open the circuit.

- 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. Refrigerant 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. This process shall be repeated until no refrigerant is within the system. 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.

A-Lubrication

All motors are lubricated at the factory. No further lubrication is required.

B-Filters

Units are equipped with temporary filters which need to be replaced before the building is occupied. See TABLE 14 for correct filter size. Refer to local codes or appropriate jurisdictio for approved filters.

Approved filters should be checked monthly and replaced when necessary. Take note of air flow direction marking on filter frame when reinstalling filters. See FIGURE 19.

⚠ WARNING

Units are shipped from the factory with temporary filters. Replace filters before building is occupied. Damage to unit could result if filters are not replaced with approved filters. Refer to appropriate codes.

TABLE 14

Unit	Filter Size - inches (mm)	Quantity
024, 036	16 X 20 X 2 (406 X 508 X 51)	4
048, 060	20 X 20 X 2 (508 X 508 X 51)	4

NOTE - *Filters must be U.L.C. certified or equivalent for use in Canada.*

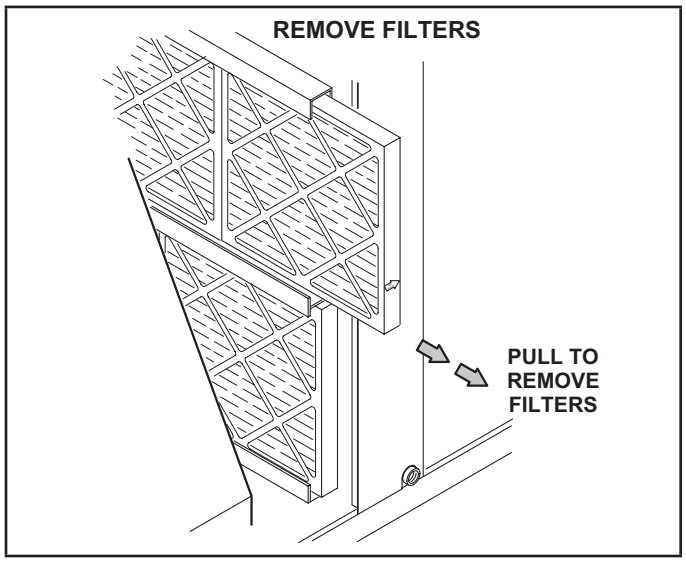


FIGURE 19

C-Supply Air Blower Wheel

Annually inspect supply air blower wheel for accumulated dirt or dust. Turn off power before attempting to remove access panel or to clean blower wheel.

D-Evaporator Coil

Inspect and clean coil at beginning of each cooling and heating season. Clean using mild detergent or commercial coil cleanser. Flush coil and condensate drain with water taking care not to get insulation, filters and return air ducts wet.

E-Outdoor Coil

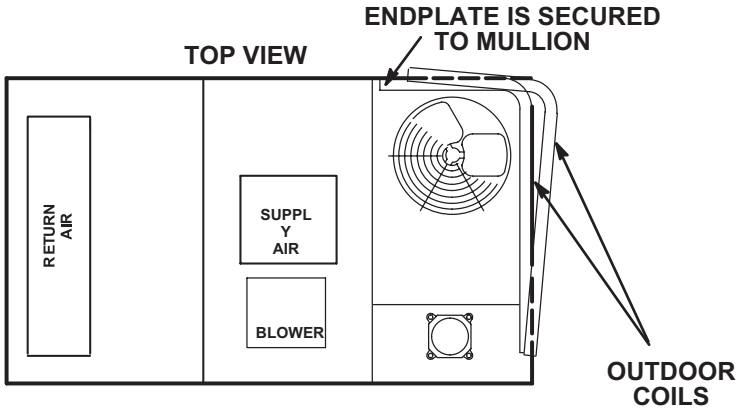
Clean outdoor coil annually with detergent or commercial coil cleaner and inspect monthly during the cooling season. Outdoor coils are made of single and two formed slabs. On units with two slabs, dirt and debris may become trapped between the slabs. To clean between slabs, carefully separate coil slabs and wash them thoroughly. See FIGURE 20. Flush coils with water following cleaning.

Note - Remove all screws and gaskets prior to cleaning procedure and replace upon completion.

F-Filter Drier

The unit is equipped with a biflow filter drier. if replacement is necessary, order another of like design.

CLEAN OUTDOOR COIL



1- Remove screws securing coil end plate to mullion.

2- Remove clips connecting coils slabs and separate slabs 3-4" (76-102mm).

3- Clean coils with detergent or commercial coil cleaner.

4- Rinse thoroughly with water and reassemble.

FIGURE 20

VI-ACCESSORIES

The accessories section describes the application of most of the optional accessories which can be factory or field installed to the LHX units.

A-C1CURB

When installing the LHX units on a combustible surface for downflow discharge applications, the C1CURB 8 inch, 14-inch, 18 inch or 24-inch height roof mounting frame is used. The roof mounting frames are recommended in all other applications but not required. If the units are not mounted on a flat (roof) surface, they MUST be supported under all edges and under the middle of the unit to prevent sagging. The units MUST be mounted level within 1/16" per linear foot or 5mm per meter in any direction.

The assembled mounting frame is shown in FIGURE 21. Refer to the roof mounting frame installation instructions for details of proper assembly and mounting. The roof mounting frame MUST be squared to the roof and level before mounting. Plenum system MUST be installed before the unit is set on the mounting frame. Typical roof curbing and flashing is shown in FIGURE 22. Refer to the roof mounting frame installation instructions for proper plenum constru ction and attachment.

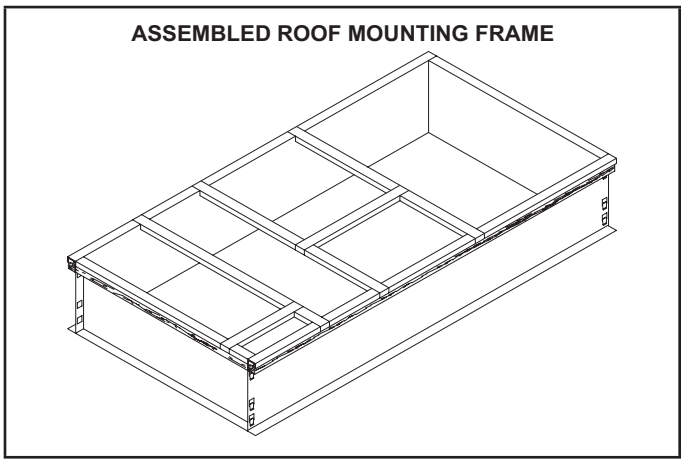


FIGURE 21

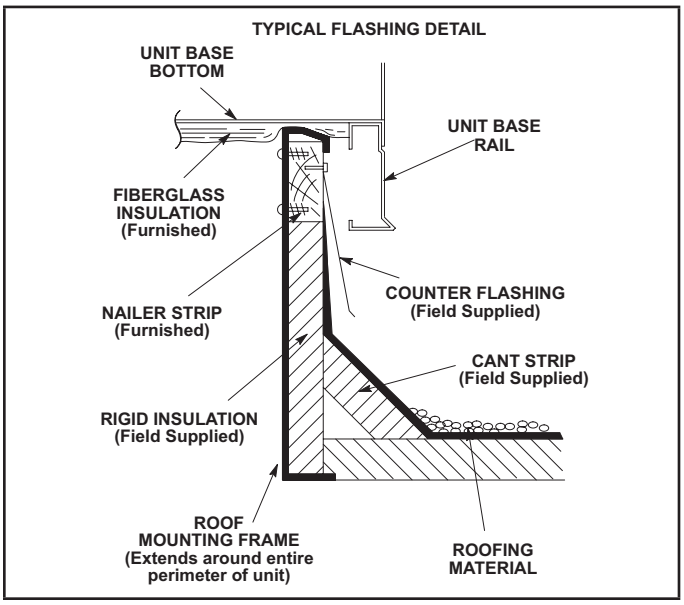


FIGURE 22

B-Transitions

Optional supply/return transitions are available for use with the LHX 2, 3, 4 and 5 ton units (refer to EHB for appropriate transition model). Transition must be installed in the C1/T1CURB mounting frame before mounting the unit to the frame. Refer to the manufacturer's instructions included with the transition for detailed installation procedures.

C-Outdoor Air Dampers

See Optional Accessories at the front of this manual (Table of Contents) for sizes per LHX units. Outdoor air dampers may be manually or motor (M) operated to allow up to 25 percent outside air into the system at all times. See FIGURE 20. The washable filters supplied with the outdoor air dampers can be cleaned with water and a mild detergent. It should be sprayed with Filter Handicoater when dry prior to reinstallation. Filter Handicoater is R.P. Products coating no. 418 and is available as Part No. P-8-5069.

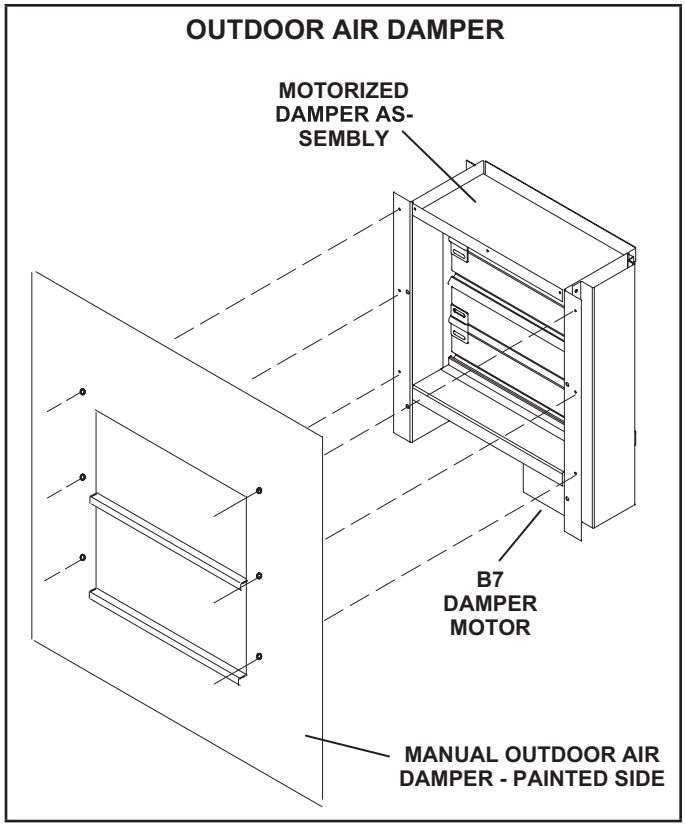


FIGURE 23

D-Supply and Return Diffusers (all units)

Optional flush mount diffuser/return FD9-65 and extended mount diffuser/return RTD9-65 available for use with all LHX units. Refer to manufacturer's instructions included with transition for detailed installation procedures.

E-Economizer (Field- or Factory-Installed Option)

The economizer uses outdoor air for free cooling when temperature is suitable. See FIGURE 25.

When outdoor air is suitable, the Unit Controller will modulate the economizer dampers to maintain 55°F discharge air (RT6). Refer to unit controller manual for menu paths to adjust economizer setpoints.

Sensors

Units are equipped with the following factory-installed, CEC Title 24 approved sensors:

RT17 - Outside Air Temperature

RT16 - Return Air Temperature

RT6 - Discharge Air Temperature

See FIGURE 26 for sensor location.

Optional field-provided sensors may be used instead of unit sensors to determine whether outdoor air is suitable for free cooling. Refer to TABLE 15. TEMP OFFSET is the default mode.

NOTE - *Network OAS signal and California Title 24 Compliance options use either TEMPERATURE OFFSET or TEMPERATURE SETPT mode.*

Minimum Position

The Unit Controller will move the dampers to minimum position during the following:

Ventilation mode (G demand only)

Outdoor air is NOT suitable for free cooling

The damper position will vary linearly with blower speed based on the damper position settings for high and low CFM. Damper calibration must be initiated in the mobile service app to set high and low damper positions.

GED (Gravity Exhaust / Barometric Relief Dampers) (Field-Installed Option)

The GED is located in the economizer except in downflow applications or when a PEF (power exhaust fan) is NOT installed. In horizontal airflow applications or when a PEF is installed, the GED is located in the exhaust air hood.

Horizontal Air Discharge Economizers

The economizer is located in the unit in the same position as downflow applications but note the position of the return air duct. The duct attaches to a duct transition and duct inlet on the end of the unit. An optional GED is located in the duct transition. See FIGURE 24.

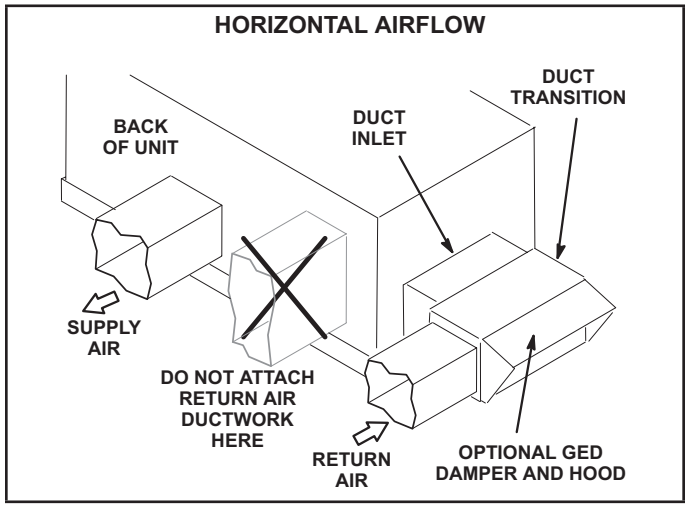


FIGURE 24

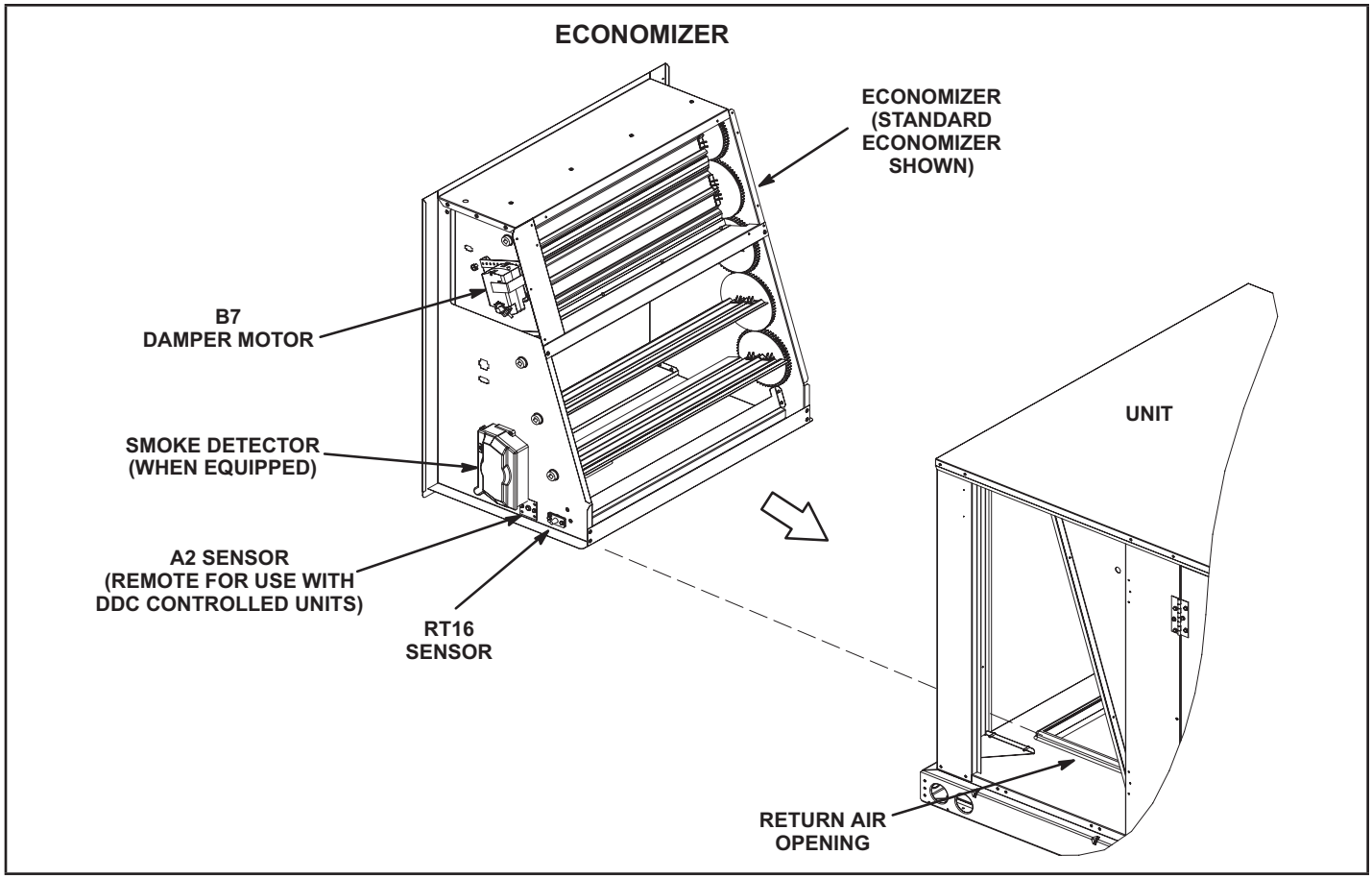


FIGURE 25

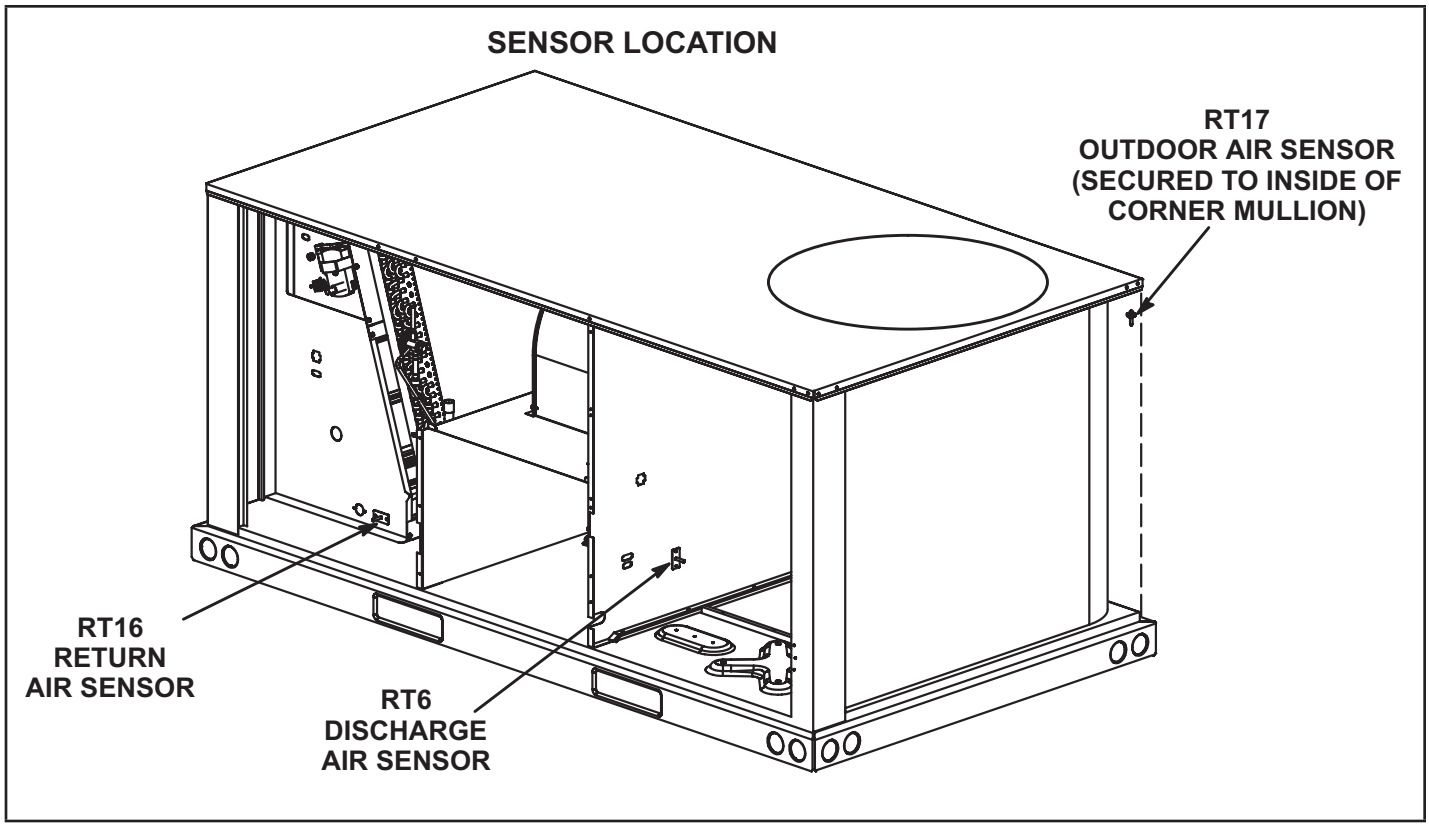


FIGURE 26

TABLE 15

ECONOMIZER MODES AND SETPOINT

Free| Cooling Mode	Free Cooling Setpoint	Field-Provide Sensors	**Dampers will modulate to 55°F discharge air (RT6) when outdoor air is suitable:**	Permitted Inputs
TEMP	OFFSET	None Needed	Outdoor air temperature (RT17) is less than return air temperature (RT16) by at least the OFFSET value.	0-40°F
TEMP	OAT STPT	None Needed	Outdoor air temperature (RT17) is less than the OAT STPT value.	41-75°F
Remote	Remote	Energy Management System**	Either of the TEMP modes can be used when a network OAS signal is provided by an energy management or building control system, via BACnet. The network can command OAS, NOT OAS, or AUTO. AUTO returns to local control of OAS, which is the selected TEMP mode.	NA
ENTH	DIFF OFFSET	(Two) C7400	Outdoor air enthalpy* (A7) is less than return air enthalpy (A62) by at least the OFFSET value.	0mA-4mA
ENTH	ODE STPT	C7400	Outdoor air enthalpy (A7) is less than free cooling setpoint.	12-19mA
GLOBAL	GLOBAL	24VAC Input Signal	Global input is energized by (P297-9). This setting is also used for outdoor air damper applications. Global input also brings on the blower. (This mode is NOT used when OAS signal is provided via network connection. GLO is only used when a 24VAC signal is used to energize the P297-9 GLO input.)	NA

Outdoor Air Damper and Economizer Operation

Modulating Outdoor Air Damper:

Damper minimum positions #1 and 2 are adjusted during unit setup to provide minimum fresh air requirements at the indicated supply fan speeds per ASHRAE 62.1.

-Supply fan is off and the outdoor air damper is closed

-Supply fan is on low speed and the outdoor air damper is at minimum position 1

-Supply fan is on high speed and the outdoor air damper is at minimum position 2

[1]Outdoor Air is Suitable

Note: *When outdoor air is not suitable during the occupied time period, damper modulates to minimum position. When outdoor air is not suitable during the unoccupied time period, damper modulates closed.*

1-Economizer With Outdoor Air Suitable

Low Cooling Demand -

Compressor Off
Blower Low
Dampers Modulate

High Cooling Demand -

Compressor Low
Blower High
Dampers Full Open

Note - *Compressor is energized after damper has been at full open for three minutes.*

Note - *Free cooling is locked out when a dehumidification demand is received. The unit operates in dehumidification mode as if the outdoor air is not suitable.*

2-No Economizer or Outdoor Air Not Suitable

Low Demand -

Compressor Low
Blower Low
Damper Minimum Position

High Cooling Demand -

Compressor High
Blower High
Damper Minimum Position

F-Power Exhaust Relay K65 (power exhaust units)

Power exhaust relay K65 is a DPDT relay with a 24VAC coil. K65 is used in all LHX units equipped with the optional power exhaust dampers. K65 is energized by the Unit Controller after the economizer dampers reach 50% open (adjustable). When K65 closes, exhaust fan B10 is energized.

G-Power Exhaust Fans

C1PWRE10A's are available for all units, and provide exhaust air pressure relief and also run when return air dampers are closed and supply air blowers are operating. See installation instructions for more details.

H-Dirty Filter Switch S27

The dirty filter switch senses static pressure increase indicating a dirty filter condition. The switch is N.O. and closes at 1" W.C. (248.6 Pa) The switch is mounted in the filter section on the left unit mullion.

I-Indoor Air Quality (CO2) Sensor A63

The indoor air quality sensor monitors CO2 levels and reports the levels to the Unit Controller. The Unit Controller adjusts the economizer dampers according to the CO2 levels. The sensor is mounted next to the indoor thermostat or in the return air duct. Refer to the indoor air quality sensor installation instructions for proper adjustment.

J-Overflow Switches (S149 - Optional)

The N.C. overflow switch or switches are connected to the M4 unit controller (A55) in series (when applicable) through a dedicated input at J387-5. When the switch opens, the unit controller de-energizes the compressor. After a five-minute time-out, the unit controller verifies the overflow switch position and restarts the compressor(s) as long as a cooling demand is present (if the switch has closed).

VII-Decomissioning

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 befor the task is commenced.

Steps to ensure this are:

- Become familiar with the equipment and its operation,
- Isolate the system electrically,
- Ensure that before attempting the procedure that mechanical handling equipment is available, if required, for handling refrigerant cylinders, and that all personal protective equipment is available and being used correctly while the recovery process is supervised at all times by a competent person and that the recovery equipment and cylinders conform to the appropriate standards.

Additionally, pump down refrigerant system, if possible, and if a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system. Make sure that cylinders are situated on the scales before recovery takes place. Start the recovery machine and operate in accordance with instructions. Do not overfill cylinders (no more than 80 % volume liquid charge). Do not exceed the maximum working pressure of the cylinder, even temporarily. 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. Recovered refrigerant shall not be charged into another refrigerating system unless it has been cleaned and checked.

Equipment shall be labeled stating that it has been decommissioned and emptied of refrigerant. The label shall be dated and signed. For appliances containing flammable refrigerants, ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.

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.

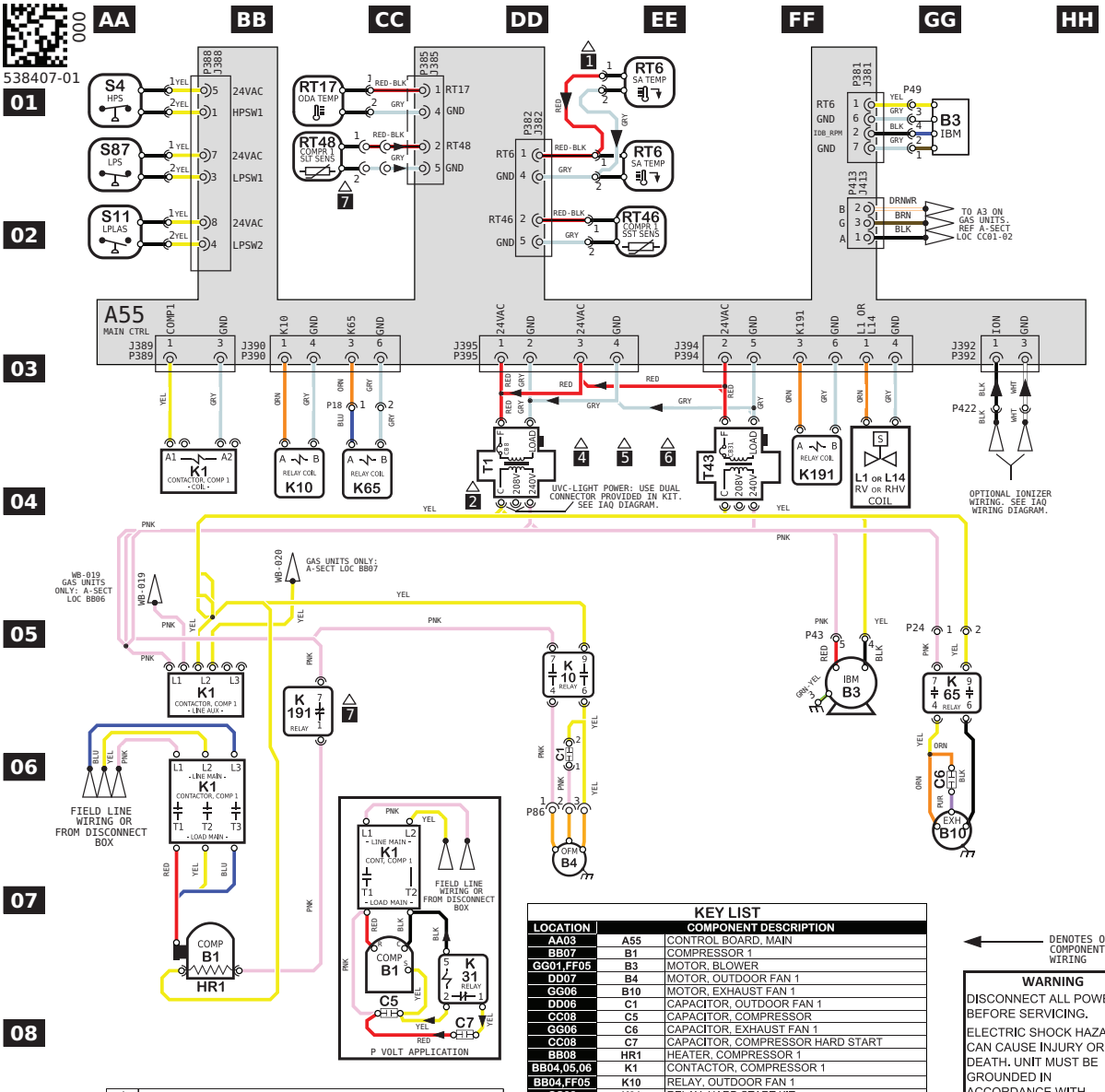
Electronic leak detectors may be used to detect refrigerant leaks but, in the case of flammable refrigerants, the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.) Ensure that the detector is not a potential source of ignition 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.

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, since flammability is a consideration. The following procedure shall be adhered to:

- Safely remove refrigerant following local and national regulations,
- Evacuate the circuit,
- Purge the circuit with inert gas,
- Evacuate,
- Purge with inert gas,
- Open the circuit.

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. Refrigerant 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. This process shall be repeated until no refrigerant is within the system. 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.

LHX036-060 P & Y VOLTAGE COOLING DIAGRAM
ECM BLOWER



KEY LIST		
LOCATION	COMPONENT	DESCRIPTION
AA03	A55	CONTROL BOARD, MAIN
BB07	B1	COMPRESSOR 1
GG01,FF05	B3	MOTOR, BLOWER
DD07	B4	MOTOR, OUTDOOR FAN 1
GG06	B10	MOTOR, EXHAUST FAN 1
DD06	C1	CAPACITOR, OUTDOOR FAN 1
CC08	C5	CAPACITOR, COMPRESSOR
GG06	C6	CAPACITOR, EXHAUST FAN 1
CC08	C7	CAPACITOR, COMPRESSOR HARD START
BB08	HR1	HEATER, COMPRESSOR 1
BB04,05,06	K1	CONTACTOR, COMPRESSOR 1
BB04,FF05	K10	RELAY, OUTDOOR FAN 1
CC08	K31	RELAY, HARD START KIT
CC04,GG05	K65	RELAY, EXHAUST FAN 1
BB06,FF04	K191	RELAY, CRANKCASE HEATER 1
GG04	L14	VALVE, SOLENOID, REHEAT COIL 1
EE01	RT6	SENSOR, A55 DISCHARGE (IMC)
CC01	RT17	SENSOR, OUTSIDE AIR TEMP
EE02	RT46	SENSOR, SAT. SUCT TEMP., COMP 1
AA01	S4	LIMIT, HI PRESS. SWITCH, COMP 1
AA02	S11	SWITCH, LOW PRESS., LOW AMBIENT
AA01	S87	SWITCH, LOW PRESS., COMP 1
DD04	T1	TRANSFORMER, CONTROL
EE04	T43	TRANSFORMER, REHEAT

DENOTES OPTIONAL COMPONENTS AND WIRING

WARNING

DISCONNECT ALL POWER BEFORE SERVICING.

ELECTRIC SHOCK HAZARD, CAN CAUSE INJURY OR DEATH. UNIT MUST BE GROUNDED IN ACCORDANCE WITH NATIONAL AND LOCAL CODES.

FOR USE WITH COPPER CONDUCTORS ONLY. REFER TO UNIT RATING PLATE FOR MINIMUM CIRCUIT AMPACITY AND MAXIMUM OVERCURRENT PROTECTION SIZE.

IF ANY WIRE IN THIS APPLIANCE IS REPLACED, IT MUST BE REPLACED WITH WIRE OF LIKE SIZE, RATING AND INSULATION THICKNESS.

NOTES	
1	RT6 REMOTE MOUNT WIRING
2	MOVE WIRES FROM 240 TO 208 TAP ON TRANSFORMER FOR 208 VOLT APPLICATIONS
3	P-VOLT UNITS - CONNECT T43-C TO K1-L2
4	W/O HUMIDITROL, W/O PHASE DETECTION - T1 CONNECTED TO J/P395-1,2,3,4
5	PHASE DETECTION - T1 CONNECTED TO J/P395-1,2. T43 CONNECTED J/P395-3,4
6	HUMIDITROL - T1 CONNECTED TO J/P395-1,2. T43 CONNECTED TO J/P395-3,4 & J/P394-2,5. L14 CONNECTED TO J/P394-1,4

Model: LCX, LGX, LHX 024S - 060S P AND Y VOLT COOLING - ECM BLOWER

Voltage: 208-240V/1~/60Hz(P), 208-240V/3~/60Hz(Y)

Supersedes: N/A Form No: 538407-01 Rev: 000

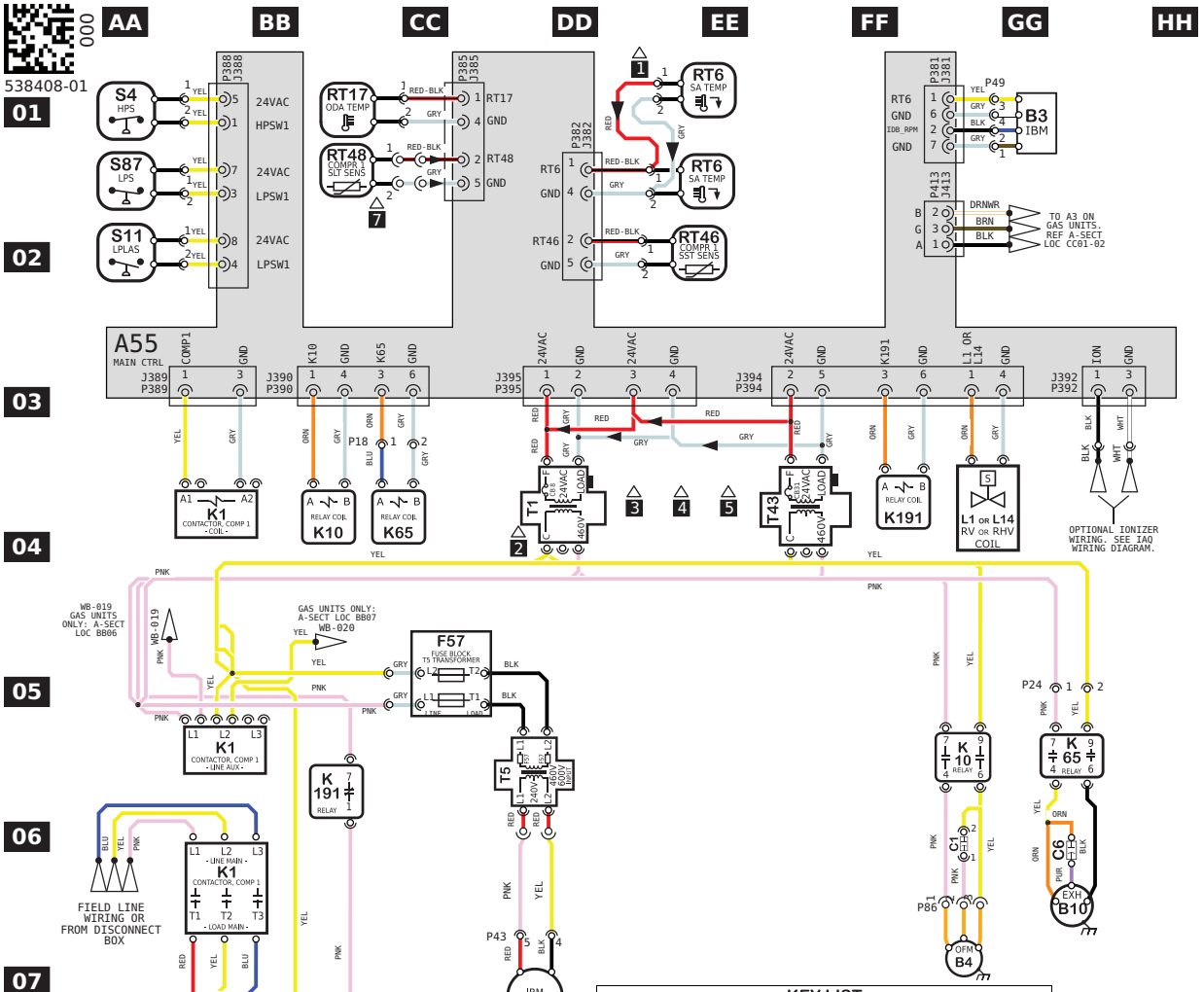
HEATING	COOLING	COOLING	ACCS	ACCS
SECTION A	SECTION B	SECTION B3	SECTION C	SECTION D

WIRING DIAGRAM FLOW

8.5 x 10 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
---	CN-012554F	01/22/2024	RXJ	MCF	ORIGINATED AT PD&R CARROLLTON, TX

LHX036-060 G & J VOLT COOLING DIAGRAM
ECM BLOWER



KEY LIST		
LOCATION	COMPONENT DESCRIPTION	
AA03	A55	CONTROL BOARD, MAIN
BB08	B1	COMPRESSOR 1
GG01,DD07	B3	MOTOR, BLOWER
GG07	B4	MOTOR, OUTDOOR FAN 1
GG06	B10	MOTOR, EXHAUST FAN 1
GG06	C1	CAPACITOR, OUTDOOR FAN 1
GG06	C6	CAPACITOR, EXHAUST FAN 1
CC05	F57	FUSE BLOCK, T5 TRANSFORMER PRIMARY
BB08	HR1	HEATER, COMPRESSOR 1
BB04,05,06	K1	CONTACTOR, COMPRESSOR 1
BB04,FF05	K10	RELAY, OUTDOOR FAN 1
CC04,GG05	K65	RELAY, EXHAUST FAN 1
BB06,FF04	K191	RELAY, CRANKCASE HEATER 1
GG04	L14	VALVE, SOLENOID, REHEAT COIL 1
EE01	RT6	SENSOR, A55 DISCHARGE (IMC)
CC01	RT17	SENSOR, OUTSIDE AIR TEMP
EE02	RT46	SENSOR, SAT. SUCT TEMP., COMP 1
AA01	S4	LIMIT, HI PRESS. SWITCH, COMP 1
AA02	S11	SWITCH, LOW PRESS., LOW AMBIENT
AA01	S87	SWITCH, LOW PRESS., COMP 1
DD04	T1	TRANSFORMER, CONTROL
DD06	T5	TRANSFORMER, OUTDOOR FAN MOTOR
EE04	T43	TRANSFORMER, REHEAT

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4	PHASE DETECTION - T1 CONNECTED TO J/P395-1,2. T43 CONNECTED J/P395-3,4
5	HUMIDITROL - T1 CONNECTED TO J/P395-1,2. T43 CONNECTED TO J/P395-3,4 & J/P394-2,5. L14 CONNECTED TO J/P394-1,4

Model: LCX, LGX, LHX 024S - 060S G AND J VOLT COOLING - ECM BLOWER

Voltage: 460V/3~/60Hz (G), 575V/3~/60Hz (J)

Supersedes: N/A Form No: 538408-01 Rev: 000

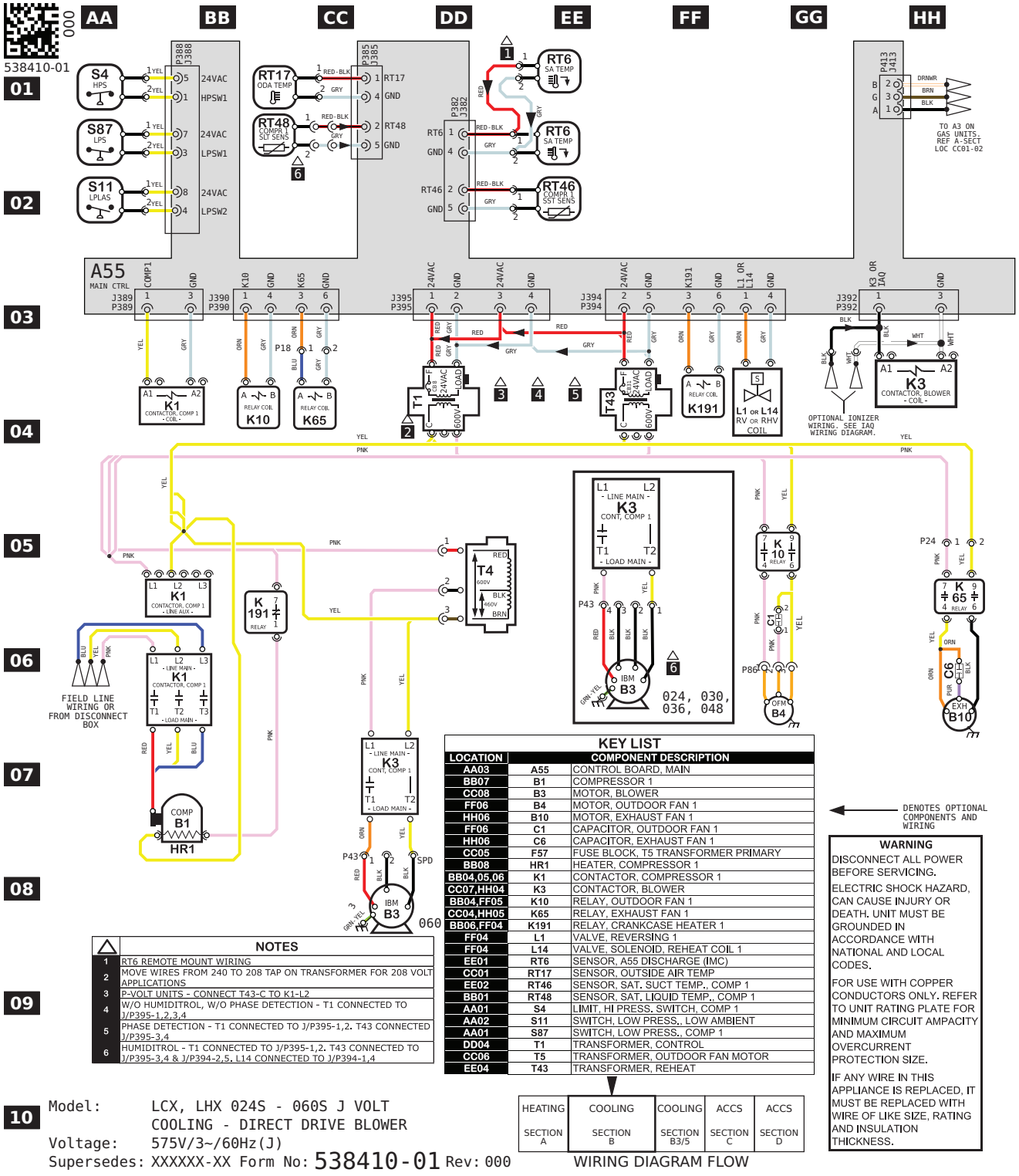
HEATING	COOLING	COOLING	ACCS	ACCS
SECTION A	SECTION B	SECTION B3	SECTION C	SECTION D

WIRING DIAGRAM FLOW

8.5 X 10 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
---	CN-012554F	01/22/2024	RXJ	MCF	ORIGINATED AT PD&R CARROLLTON, TX

LHX024-036 J VOLT COOLING DIAGRAM
PSC BLOWER



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HH06	B10	MOTOR, EXHAUST FAN 1
FF06	C1	CAPACITOR, OUTDOOR FAN 1
HH06	C6	CAPACITOR, EXHAUST FAN 1
CC05	F57	FUSE BLOCK, T5 TRANSFORMER PRIMARY
BB08	HR1	HEATER, COMPRESSOR 1
BB04,05,06	K1	CONTACTOR, COMPRESSOR 1
CC07,HH04	K3	CONTACTOR, BLOWER
BB04,FF05	K10	RELAY, OUTDOOR FAN 1
CC04,HH05	K65	RELAY, EXHAUST FAN 1
BB06,FF04	K191	RELAY, CRANKCASE HEATER 1
FF04	L1	VALVE, REVERSING 1
FF04	L14	VALVE, SOLENOID, REHEAT COIL 1
EE01	RT6	SENSOR, A55 DISCHARGE (IMC)
CC01	RT17	SENSOR, OUTSIDE AIR TEMP
EE02	RT46	SENSOR, SAT. SUCT TEMP., COMP 1
BB01	RT48	SENSOR, SAT. LIQUID TEMP., COMP 1
AA01	S4	LIMIT, HI PRESS. SWITCH, COMP 1
AA02	S11	SWITCH, LOW PRESS., LOW AMBIENT
AA01	S87	SWITCH, LOW PRESS., COMP 1
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6	HUMIDITROL - T1 CONNECTED TO J/P395-1,2. T43 CONNECTED TO J/P395-3,4 & J/P394-2,5. L14 CONNECTED TO J/P394-1,4

WARNING

DISCONNECT ALL POWER BEFORE SERVICING.

ELECTRIC SHOCK HAZARD, CAN CAUSE INJURY OR DEATH. UNIT MUST BE GROUNDED IN ACCORDANCE WITH NATIONAL AND LOCAL CODES.

FOR USE WITH COPPER CONDUCTORS ONLY. REFER TO UNIT RATING PLATE FOR MINIMUM CIRCUIT AMPACITY AND MAXIMUM OVERCURRENT PROTECTION SIZE.

IF ANY WIRE IN THIS APPLIANCE IS REPLACED, IT MUST BE REPLACED WITH WIRE OF LIKE SIZE, RATING AND INSULATION THICKNESS.

HEATING	COOLING	COOLING	ACCS	ACCS
SECTION A	SECTION B	SECTION B3/5	SECTION C	SECTION D

WIRING DIAGRAM FLOW

Model: LCX, LHX 024S - 060S J VOLT COOLING - DIRECT DRIVE BLOWER

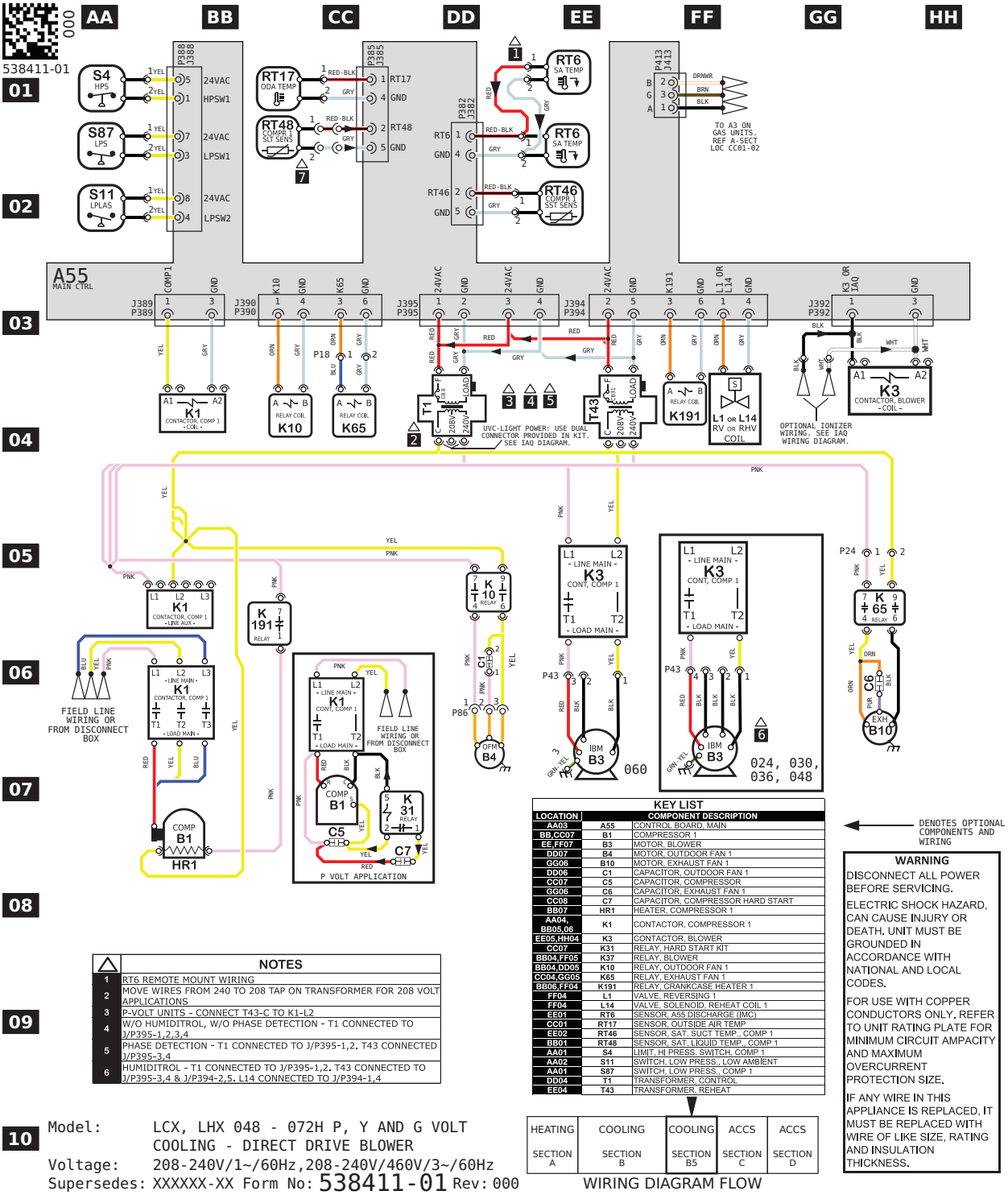
Voltage: 575V/3~/60Hz(J)

Supersedes: XXXXXX-XX Form No: 538410-01 Rev: 000

8.5 X 10 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
---	CN-012554F	01/22/2024	RXJ	MCF	ORIGINATED AT PD&R CARROLLTON, TX

LHX048 P, Y, & G VOLT COOLING DIAGRAM
PSC BLOWER



KEY LIST		
LOCATION	COMPONENT	DESCRIPTION
AA03	A55	CONTROL BOARD, MAIN
BB,CC07	B1	COMPRESSOR 1
EE,FF07	B3	MOTOR, BLOWER
DD07	B4	MOTOR, OUTDOOR FAN 1
GG06	B10	MOTOR, EXHAUST FAN 1
DD06	C1	CAPACITOR, OUTDOOR FAN 1
CC07	C5	CAPACITOR, COMPRESSOR
GG06	C6	CAPACITOR, EXHAUST FAN 1
CC08	C7	CAPACITOR, COMPRESSOR HARD START
BB07	HR1	HEATER, COMPRESSOR 1
AA04, BB05,06	K1	CONTACTOR, COMPRESSOR 1
EE05,HH04	K3	CONTACTOR, BLOWER
CC07	K31	RELAY, HARD START KIT
BB04,FF05	K37	RELAY, BLOWER
BB04,DD05	K10	RELAY, OUTDOOR FAN 1
CC04,GG05	K65	RELAY, EXHAUST FAN 1
BB06,FF04	K191	RELAY, CRANKCASE HEATER 1
FF04	L1	VALVE, REVERSING 1
FF04	L14	VALVE, SOLENOID, REHEAT COIL 1
EE01	RT6	SENSOR, A55 DISCHARGE (IMC)
CC01	RT17	SENSOR, OUTSIDE AIR TEMP
EE02	RT46	SENSOR, SAT. SUCT TEMP., COMP 1
BB01	RT48	SENSOR, SAT., LIQUID TEMP., COMP 1
AA01	S4	LIMIT, HI PRESS. SWITCH, COMP 1
AA02	S11	SWITCH, LOW PRESS., LOW AMBIENT
AA01	S87	SWITCH, LOW PRESS., COMP 1
DD04	T1	TRANSFORMER, CONTROL
EE04	T43	TRANSFORMER, REHEAT

DENOTES OPTIONAL COMPONENTS AND WIRING

NOTES	
1	RT6 REMOTE MOUNT WIRING
2	MOVE WIRES FROM 240 TO 208 TAP ON TRANSFORMER FOR 208 VOLT APPLICATIONS
3	P-VOLT UNITS - CONNECT T43-C TO K1-L2
4	W/O HUMIDITROL, W/O PHASE DETECTION - T1 CONNECTED TO J/P395-1,2,3,4
5	PHASE DETECTION - T1 CONNECTED TO J/P395-1,2. T43 CONNECTED TO J/P395-3,4
6	HUMIDITROL - T1 CONNECTED TO J/P395-1,2. T43 CONNECTED TO J/P395-3,4 & J/P394-2,5. L14 CONNECTED TO J/P394-1,4

WARNING

DISCONNECT ALL POWER BEFORE SERVICING.

ELECTRIC SHOCK HAZARD, CAN CAUSE INJURY OR DEATH. UNIT MUST BE GROUNDED IN ACCORDANCE WITH NATIONAL AND LOCAL CODES.

FOR USE WITH COPPER CONDUCTORS ONLY. REFER TO UNIT RATING PLATE FOR MINIMUM CIRCUIT AMPACITY AND MAXIMUM OVERCURRENT PROTECTION SIZE.

IF ANY WIRE IN THIS APPLIANCE IS REPLACED, IT MUST BE REPLACED WITH WIRE OF LIKE SIZE, RATING AND INSULATION THICKNESS.

Model: LCX, LHX 048 - 072H P, Y AND G VOLT COOLING - DIRECT DRIVE BLOWER

Voltage: 208-240V/1~/60Hz,208-240V/460V/3~/60Hz

Supersedes: XXXXXX-XX Form No: 538411-01 Rev: 000

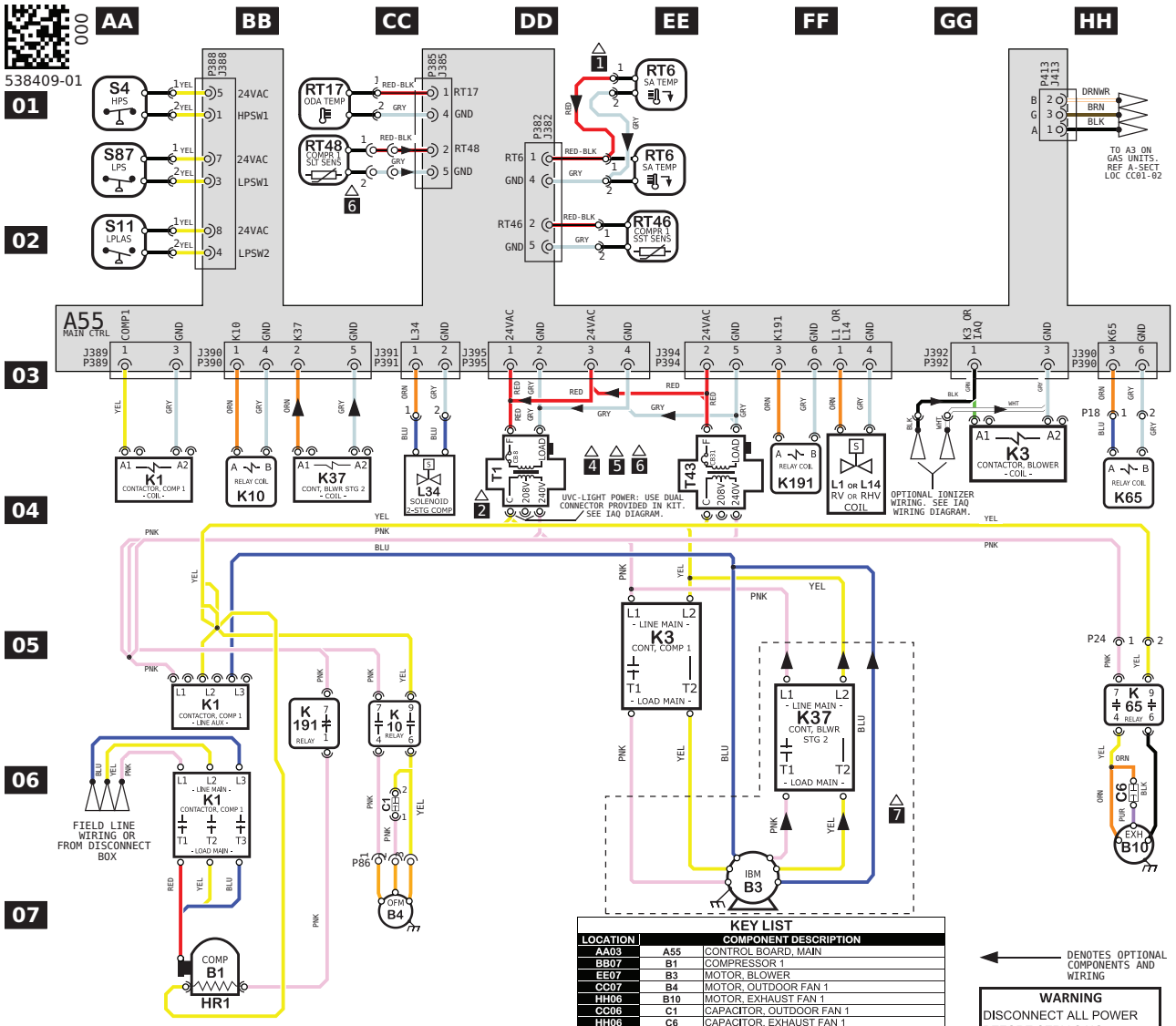
HEATING	COOLING	COOLING	ACCS	ACCS
SECTION A	SECTION B	SECTION B5	SECTION C	SECTION D

WIRING DIAGRAM FLOW

8.5 X 10 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
000	CN-012554F	01/22/2024	RXJ	MCF	ORIGINATED AT PD&R CARROLLTON, TX

LHX060 Y, G, & J VOLT COOLING DIAGRAM
BELT DRIVE BLOWER



NOTES	
1	RT6 REMOTE MOUNT WIRING
2	MOVE WIRES FROM 240 TO 208 TAP ON TRANSFORMER FOR 208 VOLT APPLICATIONS
3	P-VOLT UNITS - CONNECT T43-C TO K1-L2
4	W/O HUMIDITROL, W/O PHASE DETECTION - T1 CONNECTED TO J/P395-1,2,3,4
5	PHASE DETECTION - T1 CONNECTED TO J/P395-1,2. T43 CONNECTED J/P395-3,4
6	HUMIDITROL - T1 CONNECTED TO J/P395-1,2. T43 CONNECTED TO J/P395-3,4 & J/P394-2,5. L14 CONNECTED TO J/P394-1,4

KEY LIST		
LOCATION	COMPONENT DESCRIPTION	
AA03	A55	CONTROL BOARD, MAIN
BB07	B1	COMPRESSOR 1
EE07	B3	MOTOR, BLOWER
CC07	B4	MOTOR, OUTDOOR FAN 1
HH06	B10	MOTOR, EXHAUST FAN 1
CC06	C1	CAPACITOR, OUTDOOR FAN 1
HH06	C6	CAPACITOR, EXHAUST FAN 1
BB08	HR1	HEATER, COMPRESSOR 1
AA04, BB05,06	K1	CONTACTOR, COMPRESSOR 1
EE05,GG04	K3	CONTACTOR, BLOWER
BB04,FF06	K37	RELAY, BLOWER
BB04,CC05	K10	RELAY, OUTDOOR FAN 1
HH04,05	K65	RELAY, EXHAUST FAN 1
BB06,FF04	K191	RELAY, CRANKCASE HEATER 1
FF04	L1	VALVE, REVERSING 1
FF04	L14	VALVE, SOLENOID, REHEAT COIL 1
CC04	L34	SOLENOID, 2 STG, COMPRESSOR 1
EE01	RT6	SENSOR, A55 DISCHARGE (IMC)
CC01	RT17	SENSOR, OUTSIDE AIR TEMP
EE02	RT46	SENSOR, SAT. SUCT TEMP., COMP 1
BB01	RT48	SENSOR, SAT. LIQUID TEMP., COMP 1
AA01	S4	LIMIT, HI PRESS. SWITCH, COMP 1
AA02	S11	SWITCH, LOW PRESS., LOW AMBIENT
AA01	S87	SWITCH, LOW PRESS., COMP 1
DD04	T1	TRANSFORMER, CONTROL
EE04	T43	TRANSFORMER, REHEAT

DENOTES OPTIONAL COMPONENTS AND WIRING

WARNING

DISCONNECT ALL POWER BEFORE SERVICING.

ELECTRIC SHOCK HAZARD, CAN CAUSE INJURY OR DEATH. UNIT MUST BE GROUNDED IN ACCORDANCE WITH NATIONAL AND LOCAL CODES.

FOR USE WITH COPPER CONDUCTORS ONLY. REFER TO UNIT RATING PLATE FOR MINIMUM CIRCUIT AMPACITY AND MAXIMUM OVERCURRENT PROTECTION SIZE.

IF ANY WIRE IN THIS APPLIANCE IS REPLACED, IT MUST BE REPLACED WITH WIRE OF LIKE SIZE, RATING AND INSULATION THICKNESS.

HEATING	COOLING	COOLING	ACCS	ACCS
SECTION A	SECTION B	SECTION B3/5	SECTION C	SECTION D

WIRING DIAGRAM FLOW

Model: LCX, LHX 048 - 072H Y, G AND J VOLT COOLING - BELT DRIVE BLOWER

Voltage: 208-240V,460V,575V - 3~/60Hz

Supersedes: XXXXXX-XX Form No: 538409-01 Rev: 000

8.5 X 10 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
---	CN-012554F	01/22/2024	RXJ	MCF	ORIGINATED AT PD&R CARROLLTON, TX

LHX024-060 P, Y, G, & J Voltage Sequence of Operation

Power:

1 - Line voltage energizes transformer T1. T1 provides 24VAC power to the A55 Unit Controller. A55 provides 24VAC to the unit cooling, heating and blower controls.

2 - Line voltage provides voltage to compressor crankcase heater relay K191-1 N.C. contacts, compressor contactor K1, blower motor B3, and outdoor fan motor B4 (on G volt units line voltage is supplied to two fuses F27, transformer T4, blower motor B3, and outdoor fan motor B4).

Blower Operation:

3 - The A55 Unit Controller receives a demand from thermostat terminal G. A55 energizes blower motor B3 via programmed motor settings. Motor settings are field-adjustable. Units equipped with PSC or Belt-Drive motors are energized via the K3 Blower contactor.

First Stage Cooling

4 - A55 Unit Controller receives Y1 and G cooling demand.

5 - After A55 proves n.c. low pressure switch S87, n.o. low ambient switch S11, n.c. SST, and n.c. high pressure switch S4, reversing valve (L1), compressor contactor K1 and blower B3 are energized.

6 - N.O contacts K1-1 close, energizing the compressor B1.

7 - SLT proves below 62°F. A55 energizes outdoor fan motor B4 to modulate. If above 65°F, outdoor fan motor B4 will be set to low speed.

Second Stage Cooling

8 - A55 receives a Y2 and G cooling demand and energizes blower B3 on high speed.

9 - A55 energizes compressor solenoid L34, switching compressor to high speed.

Economizer Operation:

10 - The economizer control module receives a demand and energizes exhaust fan relay K65 with 24VAC at 50% outside air damper open (adjustable).

11 - N.O. K65-1 and N.O. K65-2 both close, energizing exhaust fan motor B10.

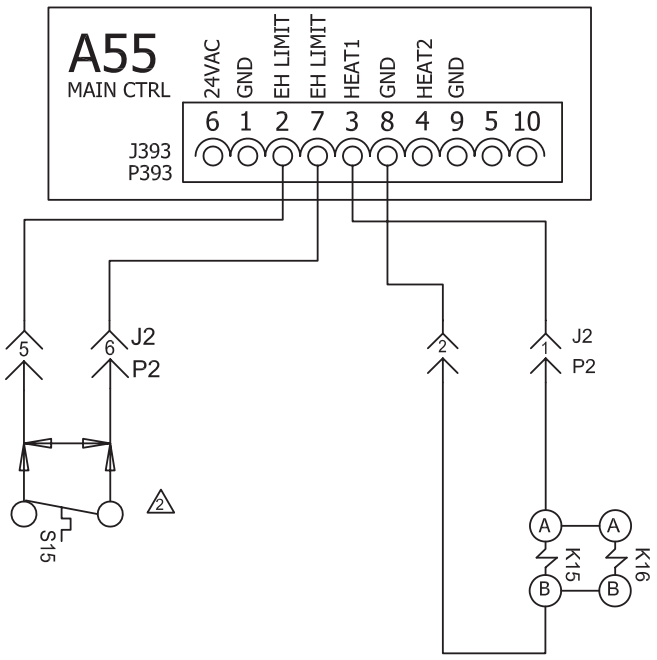
LCX-072 Two-Stage Units

12 - First-stage cooling demand Y1 and G is energized by the thermostat. G energizes blower.

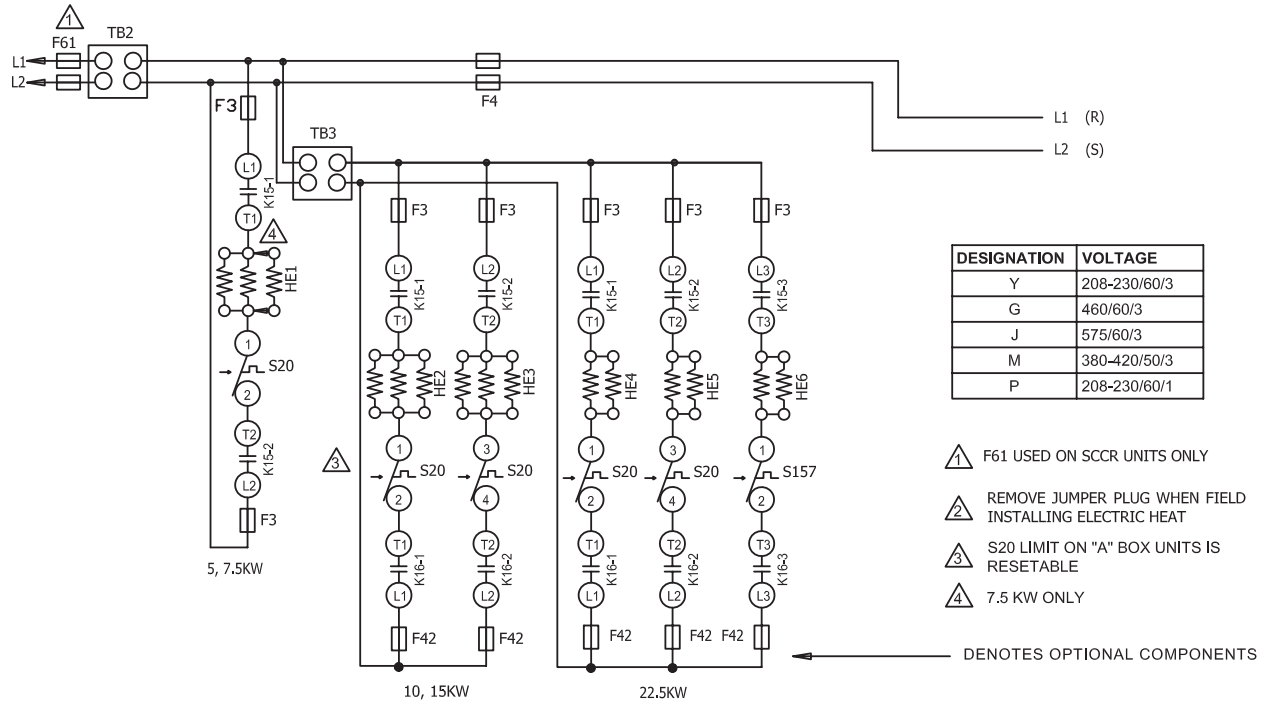
13 - Following from step 7 K1 energizes compressor, condenser fan and blower B1 on low speed.

14 - Second-stage cooling demand Y2 energizes compressor B1, condenser fan and blower B1 on high speed.

ELECTRIC HEAT E1EH - 5, 7.5, 10, 15, 22.5, P VOLT UNIT DIAGRAM



DESCRIPTION	
KEY	DESCRIPTION
A55	PANEL, MAIN
F3	FUSE, ELECTRIC HEAT
F4	FUSE, UNIT
F61	FUSE, UNIT - SCCR
HE -1	ELEMENT, ELECTRIC HEAT 1
HE -2	ELEMENT, ELECTRIC HEAT 2
HE -3	ELEMENT, ELECTRIC HEAT 3
HE -4	ELEMENT, ELECTRIC HEAT 4
HE -5	ELEMENT, ELECTRIC HEAT 5
HE -6	ELEMENT, ELECTRIC HEAT 6
J2	JACK, ELECTRIC HEAT
J265C	JACK, CONTACTOR RELAY
J266A	JACK, HEATING CONTROL STG 1
J271A,B	JACK, HEATING SENSORS STG 1
K15,-1	CONTACTOR, ELECTRIC HEAT 1
K16,-1	CONTACTOR, ELECTRIC HEAT 2
P2	PLUG, ELECTRIC HEAT
P7	PLUG, ELECTRIC HEAT SUB-BASE KIT
P265	PLUG, CONTACTOR RELAY
P266	PLUG, HEATING CONTROL
P271	PLUG, HEATING SENSORS STG 1
S15	SWITCH, LIMIT PRIMARY ELECTRIC HEAT
S20	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 1
S157	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 2
TB2	TERMINAL STRIP, UNIT



DESIGNATION	VOLTAGE
Y	208-230/60/3
G	460/60/3
J	575/60/3
M	380-420/50/3
P	208-230/60/1

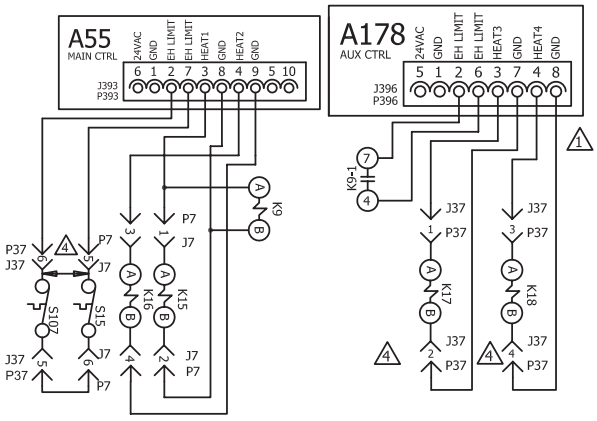
1. F61 USED ON SCCR UNITS ONLY
2. REMOVE JUMPER PLUG WHEN FIELD INSTALLING ELECTRIC HEAT
3. S20 LIMIT ON "A" BOX UNITS IS RESETABLE
4. 7.5 KW ONLY

DENOTES OPTIONAL COMPONENTS

	KW	HE1	HE2	HE3	HE4	HE5	HE6
024 - 030	5.0	5.0					
	10.0		5.0	5.0			
036 - 048	7.5	7.5					
	15		7.5	7.5			
060	22.5				7.5	7.5	7.5

2023/10	WIRING DIAGRAM 538246-02	10/23
HEATING		
ELECTRIC HEAT E1EH - 5, 7.5, 10, 15, 22.5 - P		
SECTION A		REV 0
Supersedes 538246-01	New Form No. 538246-02	

EHA 15/120 - G & J VOLTAGE



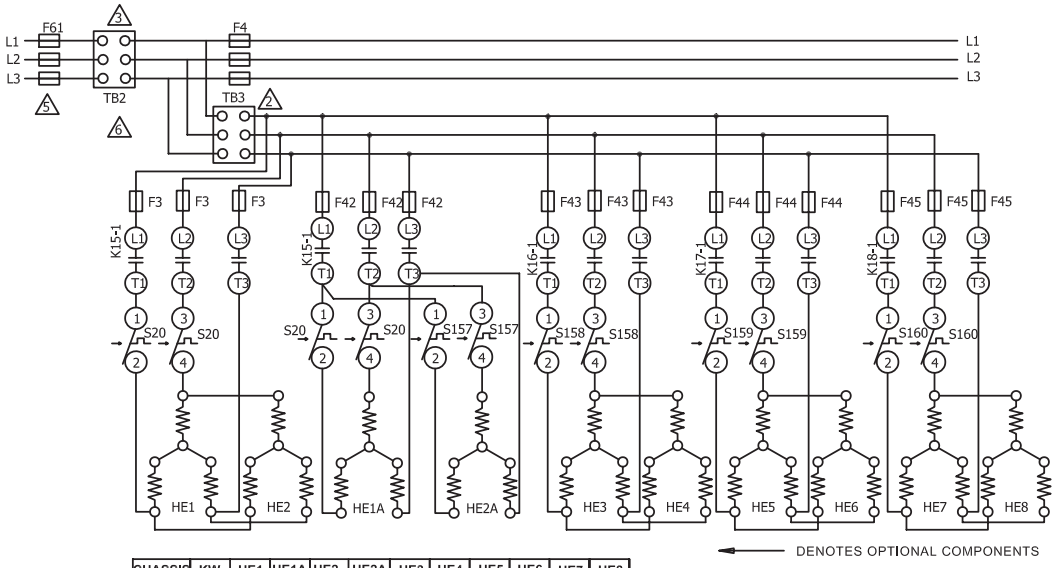
KEY	DESCRIPTION
A55	CONTROL, BOARD LENNOX
A178	BOARD,COMPRESSORS 3 & 4
F3	FUSE, ELECTRIC HEAT
F4	FUSE, UNIT
F42	FUSE, ELECTRIC HEAT 1 A, 2A
F43	FUSE, ELECTRIC HEAT 3, 4
F44	FUSE, ELECTRIC HEAT 5, 6
F45	FUSE, ELECTRIC HEAT 7, 8
HE1	ELEMENT, ELECTRIC HEAT 1
HE3	ELEMENT, ELECTRIC HEAT 3
HE4	ELEMENT, ELECTRIC HEAT 4
HE5	ELEMENT, ELECTRIC HEAT 5
HE7	ELEMENT, ELECTRIC HEAT 7
HE8	ELEMENT, ELECTRIC HEAT 8
K9,-1	RELAY, HEAT
K15,-1	CONTACTOR, ELECTRIC HEAT 1,2
K16,-1	CONTACTOR, ELECTRIC HEAT 1A,2A
K17,-1	CONTACTOR, ELECTRIC HEAT 3,4
K18,-1	CONTACTOR, ELECTRIC HEAT 5,6

S15	SWITCH, LIMIT PRIMARY ELECTRIC HEAT
S20	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 1,2
S107	SWITCH, PRIMARY ELECTRIC HEAT
S157	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 1A
S158	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 2A
S159	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 3,4
S160	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 5,6
TB2	TERMINAL STRIP, UNIT
TB3	TERMINAL STRIP, ELECTRIC HEAT

J/P	DESCRIPTION
7	ELECTRIC HEAT CONTROL
37	ELECTRIC HEAT CONTROL

DESIGNATION	VOLTAGE
G	460/60/3
J	575/3

1. NOT USED ON 15 AND 30KW UNITS
2. TB3 IS USED IN SOME UNITS
3. TB2, S48 OR CB10 MAY BE USED
4. REMOVE JUMPER PLUG WHEN FIELD INSTALLING ELECTRIC HEAT
5. F61 USED ON UNITS WITH SCCR OPTION
6. TB2 IS USED IN SOME SCCR OPTION UNITS ONLY



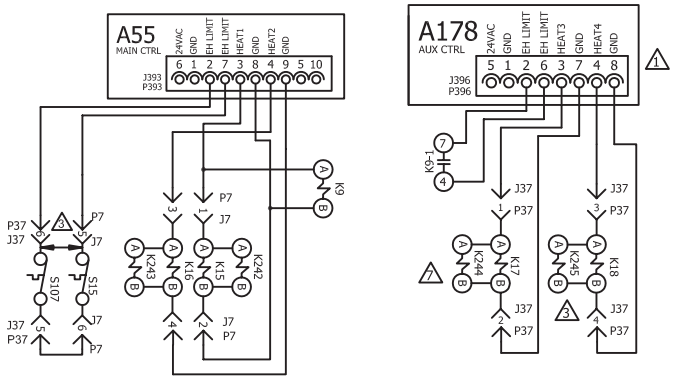
CHASSIS	KW	HE1	HE1A	HE2	HE2A	HE3	HE4	HE5	HE6	HE7	HE8
C	15		7.5		7.5						
D	20		10		10						
CD	30		15		15						
D	40	10				10		10		10	
CD	45	15				7.5		15		7.5	
CD	60	15				15		15		15	
D	80	20			20			20	20		
CD	90	15				15	15	15		15	15
D	120	15		15		15	15	15	15	15	15

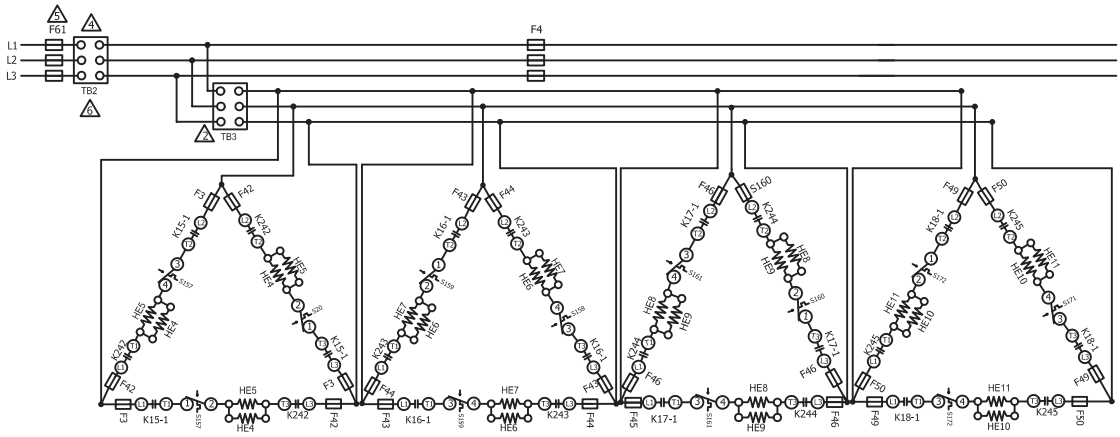
2025/01	WIRING DIAGRAM 538126-03	01/25
HEATING		
ELECTRIC HEAT LCT/LHT/LCX/LHX/SCH E1EH,EHA-15, 20, 30, 40, 45,60, 80, 90, 120 - G, J		
SECTION A		REV.0
Supersedes 538126-02	New Form No. 538126-03	

EHA 15/120 - Y VOLTAGE

J/P	JACK/PLUG
7	ELECTRIC HEAT CONTROL
37	ELECTRIC HEAT CONTROL

KEY	DESCRIPTION
A55	CONTROL, BOARD LENNOX
A178	BOARD, COMP 3 & 4, C3 2nd STAGE HEAT
F3	FUSE, ELECTRIC HEAT
F4	FUSE, UNIT
F42	FUSE, ELECTRIC HEAT 1 A, 2A
F43	FUSE, ELECTRIC HEAT 3
F44	FUSE, ELECTRIC HEAT 4
F45	FUSE, ELECTRIC HEAT 5
F46	FUSE, ELECTRIC HEAT 6
F49	FUSE, ELECTRIC HEAT 7
F50	FUSE, ELECTRIC HEAT 8
F61	FUSE, UNIT - SCCR
HE1	ELEMENT, ELECTRIC HEAT 1
HE2	ELEMENT, ELECTRIC HEAT 2
HE3	ELEMENT, ELECTRIC HEAT 3
HE4	ELEMENT, ELECTRIC HEAT 4
HE5	ELEMENT, ELECTRIC HEAT 5
HE6	ELEMENT, ELECTRIC HEAT 6
HE7	ELEMENT, ELECTRIC HEAT 7
HE8	ELEMENT, ELECTRIC HEAT 8
HE9	ELEMENT, ELECTRIC HEAT 9
HE10	ELEMENT, ELECTRIC HEAT 10
HE11	ELEMENT, ELECTRIC HEAT 11
HE12	ELEMENT, ELECTRIC HEAT 12
HE13	ELEMENT, ELECTRIC HEAT 13
HE14	ELEMENT, ELECTRIC HEAT 14
K9,-1	RELAY, HEAT
K15,-1	CONTACTOR, ELECTRIC HEAT 1,2
K16,-1	CONTACTOR, ELECTRIC HEAT 1A,2A
K17,-1	CONTACTOR, ELECTRIC HEAT 3,4
K18,-1	CONTACTOR, ELECTRIC HEAT 5,6
K242	CONTACTOR, ELECTRIC HEAT 1
K243	CONTACTOR, ELECTRIC HEAT 2
K244	CONTACTOR, ELECTRIC HEAT 3
K245	CONTACTOR, ELECTRIC HEAT 4
S15	SWITCH, LIMIT PRIMARY ELECTRIC HEAT
S20	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 1,2
S107	SWITCH, PRIMARY ELECTRIC HEAT
S157	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 2
S158	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 3
S159	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 4
S160	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 5
S161	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 6
S171	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 7
S172	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 8
TB2	TERMINAL STRIP, UNIT
TB3	TERMINAL STRIP, ELECTRIC HEAT





DESIGNATION	VOLTAGE
Y	208-230/60/3

C UNITS 156 TO 300
D UNITS 240 TO 360

1. NOT USED ON 15 AND 30KW UNITS
2. TB3 IS USED IN SOME UNITS
3. REMOVE PLUG WHEN FIELD INSTALLING ELECTRIC HEAT
4. TB2, CB10 OR S48 MAY BE USED ON NON SCCR UNITS
5. F61 USED ON SCCR OPTION UNITS ONLY
6. TB2 IS USED IN SOME SCCR OPTION UNITS ONLY
7. ONLY USED ON 120 kW D-BOX UNITS

DENOTES OPTIONAL COMPONENTS

CHASSIS	KW	HE1	HE2	HE3	HE4	HE5	HE6	HE7	HE8	HE9	HE10	HE11	HE12	HE13	HE14
C	15	7.5	7.5												
C,D	30				15	15									
C,D	45	15											7.5	15	7.5
C,D	60	15											15	15	15
C,D	90	15		15			15	15			15	15			
D	120				15	15	15	15	15	15	15	15			

2024/03	WIRING DIAGRAM 538127-02	03/24
HEATING		
ELECTRIC HEAT E1EH, EHA - 15, 30, 45, 60, 90, 120 - Y		
SECTION A		REV 0
Supersedes 538127-01	New Form No. 538127-02	

Heat Sequence of Operation

Blower Operation:

1- The A55 Unit Controller receives a demand from thermostat terminal G. A55 energizes blower motor B3 via programmed motor settings. Motor settings are field-adjustable.

First Stage Heat:

2- A55 Unit Controller receives W1 and G heating demand.

3- After A55 proves n.c. low pressure switch S87, n.c. high pressure switch S4,compressor contactor K1, Blower, and Fan is energized.

NOTE - *For 024 units in Mechanical Heating, the unit will automatically stage up for outdoor temperatures below 40°F for increased performance and efficiency. No external intervention is required, operation is automatic. At temperatures above 40°F, compressor will stage down to maintain operation efficiency.*

Sequence of Operation -E1EH 5, 7.5, 15, 22.5 - G, J Voltage

Heating Elements:

1- Terminal Strip TB2 is energized when the unit disconnect closes. TB2 supplies line voltage to electric heat elements HE1 and HE2. Elements are protected by fuse F3.

Second Stage Heat:

2- A55 Unit Controller receives W2 heating demand.

3- 24VAC is routed to the A55 Unit Controller (A55 routes power to the A38 if equipped) After A55 proves N.C. primary limit S15 the electric heat contactor K15 is energized. A55 energizes the blower and economizer.

4- *5kW, 7.5kW, 10kW, 15kW u*nits - N.O. contacts K15-1 close energizing HE1.-

22.5kW units N.O. contacts K15-1 open energizing HE1and HE2.

End of Second Stage Heat:

5- Heating demand is satisfied. Terminal W2 in the thermostat is de-energized.

6- Electric heat contactor K15 is de-energized.

7- *5kW, 7.5kW, 10kW, 15kW units* - N.O. contacts K15-1 open de-energizing HE1..

22.5kW units N.O. contacts K15-1 open de-energizing HE1and HE2.

Sequence of Operation -E1EH 5, 7.5, 15, 22.5 - P, Y Voltage

Heating Elements:

1- Terminal Strip TB2 is energized when the unit disconnect closes. TB2 supplies line voltage to electric heat elementsHE1 and HE2. Elements are protected by fuse F3 and or F42.

Second Stage Heat:

2- A55 Unit Controller receives W2 heating demand.

3- 24VAC is routed to the A55 Unit Controller (A55 routes power to the A38 if equipped) After A55 proves N.C. primary limit S15 the electric heat contactor K15 is energized. A55 energizes the blower and economizer.

4- *5Kw, 7.5kW, 10kW, 15kW units* - N.O. contacts K15-1 close energizing HE1.-

22.5kW units N.O. contacts K15-1 open energizing HE2and HE3.

End of Second Stage Heat:

5- Heating demand is satisfied. Terminal W2 in the thermostat is de-energized.

6- Electric heat contactor K15 is de-energized.

7- *5kW, 7.5kW, 10kW, 15kW units* - N.O. contacts K15-1 open de-energizing HE1.

*22.5kW unit*s N.O. contacts K15-1 open de-energizing HE2and HE3.

Optional factory-installed SCR (A38) All Voltages Control A38 will provide small amounts of power to the electric heat elements to efficiently maintain warm duct air temperatures when there is no heating demand. The SCR maintains duct air temperature based on input from a field-provided and installed thermostat (A104) and duct sensor (RT20). SCR is located in the compressor section on the left wall. Use only with a thermostat or specified DDC control system.

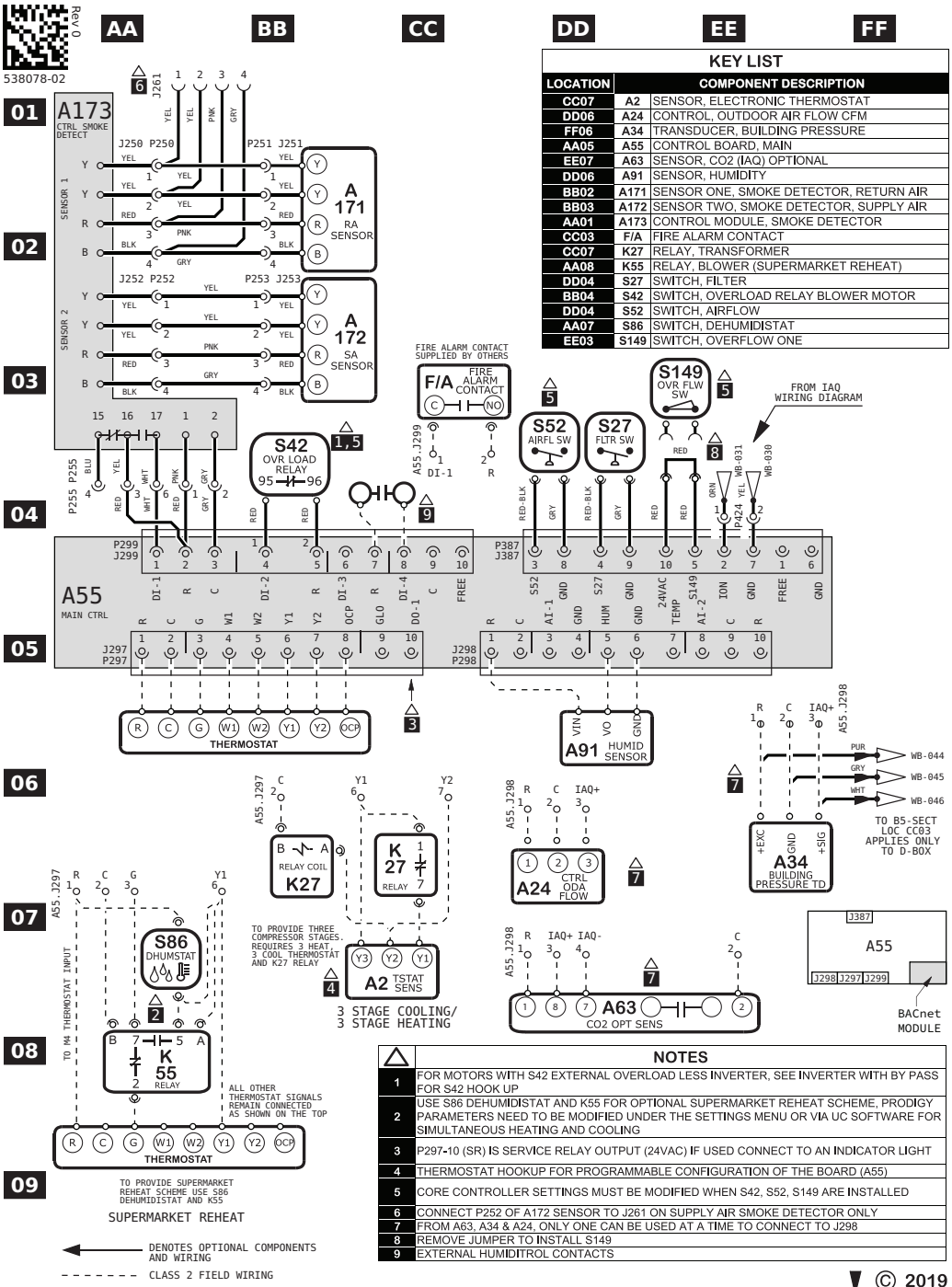
Use the instructions provided with the thermostat to set DIP switches as follows: S1 On, S2 Off, S3 Off. Use the instructions provided with the duct sensor to install sensor away from electric element radiant heat and in a location where discharge air is a mixed average temperature. Once power is supplied to unit, zero SCR as follows:

1- Adjust thermostat (A104) to minimum position.

2- Use a small screwdriver to slowly turn the ZERO potentiometer on the SCR until the LED turns solid red.

3- Very slowly adjust the potentiometer the opposite direction until the LED turns off.

THERMOSTAT UNIT DIAGRAM



KEY LIST		
LOCATION	**COMPONENT DESCRIPTION**	
CC07	A2	SENSOR, ELECTRONIC THERMOSTAT
DD06	A24	CONTROL, OUTDOOR AIR FLOW CFM
FF06	A34	TRANSDUCER, BUILDING PRESSURE
AA05	A55	CONTROL BOARD, MAIN
EE07	A63	SENSOR, CO2 (IAQ) OPTIONAL
DD06	A91	SENSOR, HUMIDITY
BB02	A171	SENSOR ONE, SMOKE DETECTOR, RETURN AIR
BB03	A172	SENSOR TWO, SMOKE DETECTOR, SUPPLY AIR
AA01	A173	CONTROL MODULE, SMOKE DETECTOR
CC03	F/A	FIRE ALARM CONTACT
CC07	K27	RELAY, TRANSFORMER
AA08	K55	RELAY, BLOWER (SUPERMARKET REHEAT)
DD04	S27	SWITCH, FILTER
BB04	S42	SWITCH, OVERLOAD RELAY BLOWER MOTOR
DD04	S52	SWITCH, AIRFLOW
AA07	S86	SWITCH, DEHUMIDISTAT
EE03	S149	SWITCH, OVERFLOW ONE

△	NOTES
1	FOR MOTORS WITH S42 EXTERNAL OVERLOAD LESS INVERTER, SEE INVERTER WITH BY PASS FOR S42 HOOK UP
2	USE S86 DEHUMIDISTAT AND K55 FOR OPTIONAL SUPERMARKET REHEAT SCHEME, PRODIGY PARAMETERS NEED TO BE MODIFIED UNDER THE SETTINGS MENU OR VIA UC SOFTWARE FOR SIMULTANEOUS HEATING AND COOLING
3	P297-10 (SR) IS SERVICE RELAY OUTPUT (24VAC) IF USED CONNECT TO AN INDICATOR LIGHT
4	THERMOSTAT HOOKUP FOR PROGRAMMABLE CONFIGURATION OF THE BOARD (A55)
5	CORE CONTROLLER SETTINGS MUST BE MODIFIED WHEN S42, S52, S149 ARE INSTALLED
6	CONNECT P252 OF A172 SENSOR TO J261 ON SUPPLY AIR SMOKE DETECTOR ONLY
7	FROM A63, A34 & A24, ONLY ONE CAN BE USED AT A TIME TO CONNECT TO J298
8	REMOVE JUMPER TO INSTALL S149
9	EXTERNAL HUMIDITROL CONTACTS

10 Model: LC, LG, LH, LD Series RTU
Thermostat
Voltage: All Voltages
Supersedes: 538078-01 Form No: 538078-02 Rev: 0

HEATING	COOLING	COOLING	ACCS	ACCS
SECTION A	SECTION B	SECTION B3/5	SECTION C	SECTION D

WIRING DIAGRAM FLOW

7x10 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
---	CN-012295C	04-03-2024	MXR6	MXT5	ORIGINATED AT PD&R CARROLLTON, TX

ECONOMIZER

Rev:2

538072-01

AA BB CC DD

01

02

03

04

05

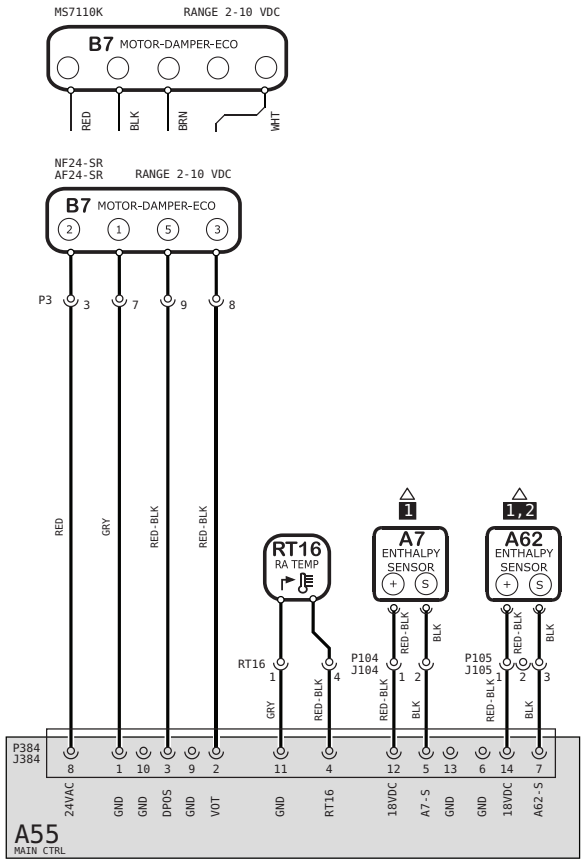
06

07

08

09

10



△	NOTES
1	A7 AND A62 NOT USED FOR SENSIBLE TEMPERATURE CONTROL
2	FOR UNIT DIFFERENTIAL ENTHALPY CONTROL, ADD A62 RETURN AIR ENTHALPY SENSOR

KEY LIST

LOCATION		COMPONENT DESCRIPTION
CC05	A7	SENSOR, SOLID STATE ENTHALPY
AA06	A55	CONTROL BOARD, MAIN
DD05	A62	SENSOR, ENTHALPY INDOOR
BB02	B7	MOTOR, DAMPER ECONOMIZER
CC05	RT16	SENSOR, RETURN AIR TEMP

HTG SEC A	CLG SEC B	CLG SEC B3	ACCS SEC C	ACCS SEC D

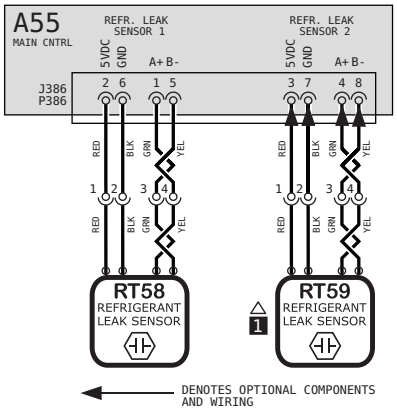
WIRING DIAGRAM FLOW

Model: LC,LG,LH,LD,SC,SG Series
Economizer & Motorized OAD
Voltage: All Voltages
Supersedes: N/A Form No: 538072-01 Rev: 2

5x10 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
---	CN-008594	10/15/2020	RV	MXR6	ORIGINATED AT PD&R CARROLLTON, TX
001	CN-010356B	03/24/2022	MXR6	JAL21	UPDATED APPLICABLE MODEL NUMBERS.
002	CN-012457P	03/06/2024	AXL	AAH	A) ADDED SC, SG TO MODELS

RDS SENSOR



KEY LIST	
COMPONENT	**DESCRIPTION**
A55	CONTROL BOARD, MAIN
RT58	SENSOR 1, REFR. LEAK DETECTION
RT59	SENSOR 2, REFR. LEAK DETECTION

△	NOTES
1	REFRIGERANT LEAK SENSOR 2 (RT59), MAY NOT BE PRESENT IN ALL UNITS.

WARNING

DISCONNECT ALL POWER BEFORE SERVICING.

ELECTRIC SHOCK HAZARD. CAN CAUSE INJURY OR DEATH. UNIT MUST BE GROUNDED IN ACCORDANCE WITH NATIONAL AND LOCAL CODES.

FOR USE WITH COPPER CONDUCTORS ONLY. REFER TO UNIT RATING PLATE FOR MINIMUM CIRCUIT AMPACITY AND MAXIMUM OVERCURRENT PROTECTION SIZE.

IF ANY WIRE IN THIS APPLIANCE IS REPLACED, IT MUST BE REPLACED WITH WIRE OF LIKE SIZE, RATING AND INSULATION THICKNESS.

MODEL: Units w/CORE Contr. Refr. Leak Detection
VOLT: All
SUPSDS: N/A NO: 538440-01 Rev 0

3 x 7 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
---	CN-012295C	04-03-2024	MXR6	MXT5	ORIGINATED AT PD&R CARROLLTON, TX