

INSTALLATION INSTRUCTIONS

AIR HANDLERS

FEATURING INDUSTRY STANDARD R-454B REFRIGERANT:

(-)H1P Standard Efficiency with Aluminum Coil

(-)H2T High Efficiency with Aluminum Coil (2-Stage Non-Communicating)

(-)H1A Standard Efficiency with Aluminum Coil (Straight Cool Only)



RECOGNIZE THIS SYMBOL AS AN INDICATION OF IMPORTANT SAFETY INFORMATION!

WARNING

These instructions are intended as an aid to qualified licensed service personnel for proper installation, adjustment and operation of this unit. Read these instructions thoroughly before attempting installation or operation. Failure to follow these instructions may result in improper installation, adjustment, service or maintenance possibly resulting in fire, electrical shock, property damage, personal injury or death.



ISO 9001:2015

DO NOT DESTROY THIS MANUAL

PLEASE READ CAREFULLY AND KEEP IN A SAFE PLACE FOR FUTURE REFERENCE BY A SERVICEMAN

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WARNING (SEE SECTION 3.13: ELECTRICAL WIRING)

Disconnect all power to unit before installing or servicing. More than one disconnect switch may be required to de-energize the equipment. Hazardous voltage can cause severe personal injury or death.

WARNING (SEE SECTION 3.6: BLOWER ASSEMBLY REMOVAL & REPLACEMENT)

If removal of the blower assembly is required, all disconnect switches supplying power to the equipment must be de-energized and locked (if not in sight of unit) so the field power wires can be safely removed from the blower assembly. Failure to do so can cause electrical shock resulting in personal injury or death.

WARNING

Because of possible damage to equipment or personal injury, installation, service, and maintenance should be performed by a trained, qualified service personnel. Consumer service is recommended only for filter cleaning/replacement. Never operate the unit with the access panels removed.

CAUTION

The fixed wiring insulation must be protected, for example, by insulating sleeving having an appropriate temperature rating. Any means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.

CAUTION

Single-pole contactors are used on all standard single-phase units through 5 tons. Caution must be exercised when servicing as only one leg of the power supply is broken by the contactor.

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.

1.0 SAFETY INFORMATION

WARNING

Duct leaks can create an unbalanced system and draw pollutants such as dirt, dust, fumes and odors into the home causing property damage. Fumes and odors from toxic, volatile or flammable chemicals, as well as automobile exhaust and carbon monoxide (CO), can be drawn into the living space through leaking ducts and unbalanced duct systems causing personal injury or death (see Figure 1).

- If air-moving equipment or ductwork is located in garages or off-garage storage areas - all joints, seams, and openings in the equipment and duct must be sealed to limit the migration of toxic fumes and odors including carbon monoxide from migrating into the living space.
- If air-moving equipment or ductwork is located in spaces containing fuel burning appliances such as water heaters or boilers - all joints, seams, and openings in the equipment and duct must also be sealed to prevent depressurization of the space and possible migration of combustion byproducts including carbon monoxide into the living space.

WARNING

These instructions are intended as an aid to qualified, licensed service personnel for proper installation, adjustment and operation of this unit. Read these instructions thoroughly before attempting installation or operation. Failure to follow these instructions may result in improper installation, adjustment, service or maintenance possibly resulting in fire, electrical shock, property damage, personal injury or death.

WARNING (SEE SECTION 3.2.2: VERTICAL DOWNFLOW)

The RXHB-17, RXHB-21 or RXHB-24 combustible floor base is required when some units with electric heat are applied downflow on combustible flooring. Failure to use the base can cause a fire resulting in property damage, personal injury or death. See **CLEARANCES** for units requiring a combustible floor base. See the accessory section in this manual for combustible floor base RXHB.

WARNING (SEE SECTION 1.13.2: GROUNDING)

The unit must be permanently grounded. Failure to do so can result in electrical shock causing personal injury or death.

WARNING (SEE SECTION 7.0: MAINTENANCE)

Units with circuit breaker(s) meet requirements as a service disconnect switch, however, if access is required to the line side (covered) of the circuit breaker, this side of the breaker(s) will be energized with the breaker(s) de-energized. Contact with the line side can cause electrical shock resulting in personal injury or death.

WARNING (SEE SECTION 3.6: DUCTWORK)

Do not, under any circumstances, connect return ductwork to any other heat producing device such as fireplace insert, stove, etc. Unauthorized use of such devices may result in fire, carbon monoxide poisoning, explosion, personal injury or property damage.

CAUTION

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.

The fixed wiring insulation must be protected, for example, by insulating sleeving having an appropriate temperature rating. Any means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.

Continued on next page >

WARNING

PROPOSITION 65: This appliance contains fiberglass insulation. Respirable particles of fiberglass are known to the State of California to cause cancer.

All manufacturer products meet current Federal OSHA Guidelines for safety. California Proposition 65 warnings are required for certain products, which are not covered by the OSHA standards.

California's Proposition 65 requires warnings for products sold in California that contain or produce any of over 600 listed chemicals known to the State of California to cause cancer or birth defects such as fiberglass insulation, lead in brass, and combustion products from natural gas.

All new equipment shipped for sale in California will have labels stating that the product contains and/or produces Proposition 65 chemicals. Although we have not changed our processes, having the same label on all our products facilitates manufacturing and shipping. We cannot always know when, or if products will be sold in the California market.

You may receive inquiries from customers about chemicals found in, or produced by, some of our heating and air-conditioning equipment, or found in natural gas used with some of our products. Listed below are those chemicals and substances commonly associated with similar equipment in our industry and other manufacturers.

- Glass Wool (Fiberglass) Insulation
- Carbon Monoxide (CO).
- Formaldehyde
- Benzene

More details are available at the websites for OSHA (Occupational Safety and Health Administration), at www.osha.gov and the State of California's OEHHA (Office of Environmental Health Hazard Assessment), at www.oehha.org. Consumer education is important since the chemicals and substances on the list are found in our daily lives. Most consumers are aware that products present safety and health risks, when improperly used, handled and maintained.

CAUTION

The indoor coil must be equipped with an electronically powered leak detection system. To be effective, the unit must be electrically powered at all times after installation, other than when servicing.

WARNING (SEE SECTION 3.7: AIR FILTER)

Do not operate the system without filters. A portion of the dust entrained in the air may temporarily lodge in the duct runs and at the supply registers. Any circulated dust particles could be heated and charred by contact with the heating elements. This residue could soil ceilings, walls, drapes, carpets and other articles in the house.

Soot damage may occur even with filters in place when certain types of candles, oil lamps or standing pilots are burned.

WARNING

The first 36 inches of supply air plenum and ductwork must be constructed of sheet metal as required by NFPA 90B. The supply air plenum or duct must have a solid sheet metal bottom directly under the unit with no openings, registers or flexible air ducts located in it. If flexible supply air ducts are used they may be located only in the vertical walls of a rectangular plenum, a minimum of 6 inches from the solid bottom. Metal plenum or duct may be connected to the combustible floor base; if not, it must be connected to the unit supply duct flanges such that combustible floor or other combustible material is not exposed to the supply air opening from the downflow unit. Exposing combustible (non-metal) material to the supply opening of a downflow unit can cause a fire resulting in property damage, personal injury or death.

Exceptions to downflow warnings:

- Installations on concrete floor slab with supply air plenum and ductwork completely encased in not less than 2 inches of concrete (See NFPA 90B).

CAUTION (SEE SECTION 3.2: VERTICAL DOWNFLOW & HORIZONTAL RIGHT DISCHARGE)

Unit must be reconfigured for vertical down or horizontal right supply air discharge applications. The coil must be repositioned so the vertical drainpan is on the bottom for vertical down discharge applications or the horizontal drip pan is below coil for horizontal right discharge applications. Failure to reconfigure the unit for these applications can result in property damage and poor system performance.

CAUTION (SEE SECTION 3.3: AUXILIARY OVERFLOW PAN)

In compliance with recognized codes, an auxiliary drain pan must be installed under all equipment containing evaporator coils that are located in any area of a structure where damage to the building or building contents may occur as a result of an overflow of the coil drain pan or a stoppage in the primary condensate drain piping. See Section 6.3 of this manual for auxiliary horizontal overflow pan accessory information (model RXBM).

NOTICE

When used in cooling applications, excessive sweating may occur when unit is installed in an unconditioned space. This can result in property damage.

NOTICE

Improper installation, or installation not made in accordance with the Underwriters Laboratory (UL) certification or these instructions, can result in unsatisfactory operation and/or dangerous conditions and are not covered by the unit warranty.

CAUTION

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

▲ NOTICE

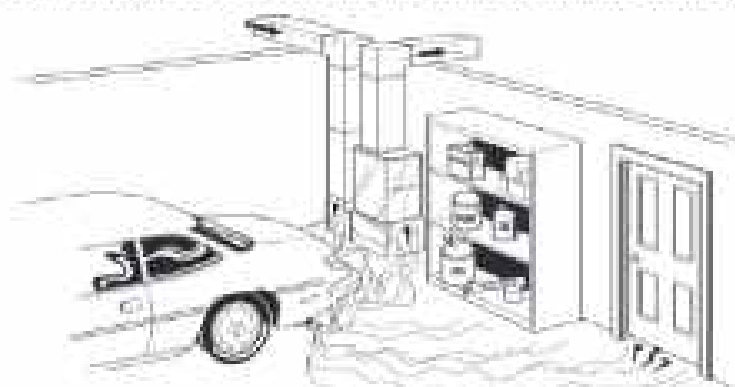
Use of this air-handler during construction is not recommended. If operation during construction is absolutely required, the following temporary installation requirements must be followed:

Installation must comply with all installation instructions in this manual including the following items:

- Properly sized power supply and circuit breaker/fuse
- Air-handler operating under thermostatic control;
- Return air duct sealed to the air-handler;
- Air filters must be in place;
- Correct air-flow setting for application
- Removing the coil and storing it in a clean safe place is highly recommended until construction is completed and the outdoor unit is installed.
- Clean air-handler, duct work, and components including coil upon completion of the construction process and verify proper air-handler operating conditions according as stated in this instruction manual.
- NOTE: Electric strip heater elements tend to emit a burning odor for a few days if dust has accumulated during construction. Heater elements are easily damaged. Take great care when cleaning them. Low pressure compressed air is recommended for cleaning elements.

FIGURE 1

MIGRATION OF DANGEROUS SUBSTANCES, FUMES, AND ODORS INTO LIVING SPACES



Adapted from: Hazardous Gas (Hydrogen) and Space with permission of Air Conditioning Contractors of America (ACCA).

▲ WARNING



Carbon Monoxide (CO) Poisoning Can Cause Severe Injury or Death.

Carbon Monoxide from the exhaust of motor vehicles and other fuel burning devices can be drawn into the living space by the operation of the central heating and air conditioning system.

Exhaust from motor vehicles, generators, garden tractors, mowers, portable heaters, charcoal and gas grills, gasoline powered tools, and outdoor camping equipment contains carbon monoxide, a poisonous gas that can kill you. You cannot see it, smell it, or taste it.

- Do NOT operate an automobile or any engine in a garage for more than the few seconds it takes to enter or exit the garage.
- Do NOT operate any fuel-burning device in an enclosed or partly enclosed space, or near building windows, doors or air intakes.

The U.S. Consumer Product Safety Commission (CPSC) and Health Canada recommend the installation of UL or CSA certified Carbon Monoxide Alarms in every home.

▲ WARNING

Duct leaks can create an unbalanced system and draw pollutants such as dirt, dust, fumes and odors into the home causing property damage. Fumes and odors from toxic, volatile or flammable chemicals, as well as automobile exhaust and carbon monoxide (CO), can be drawn into the living space through leaking ducts and unbalanced duct systems causing personal injury or death (see Figure 1).

- If air-moving equipment or ductwork is located in garages or off-garage storage areas - all joints, seams, and openings in the equipment and duct must be sealed to limit the migration of toxic fumes and odors including carbon monoxide from migrating into the living space.
- If air-moving equipment or ductwork is located in spaces containing fuel burning appliances such as water heaters or boilers - all joints, seams, and openings in the equipment and duct must also be sealed to prevent depressurization of the space and possible migration of combustion byproducts including carbon monoxide into the living space.

▲ NOTICE

Improper installation, or installation not made in accordance with the Underwriters Laboratory (UL) certification or these instructions, can result in unsatisfactory operation and/or dangerous conditions and are not covered by the unit warranty.

▲ NOTICE

Intended for indoor use only (excluding laundry rooms).

MARKINGS REFERENCE

	[Symbol ISO 7200-1000 (2004-01)]	Service indicator; read technical manual
	A2L Symbol	Warning: low burning velocity material
	[Symbol ISO 7380-1701 (2004-07)]	Pressure
	[Symbol IEC 60417-6040 (2010-08)]	Ultraviolet radiation, instructional safeguard
	[Symbol ISO 7200-1041 (2004-01)]	Operator's manual; operating instructions
	[UN GHS (Globally Harmonized System of Classification and Labeling of Chemicals)]	Refrigerant Safety Group A2L, warning: flammable materials

2.0 GENERAL INFORMATION

2.1 IMPORTANT INFORMATION ABOUT EFFICIENCY & INDOOR AIR QUALITY

Central cooling and heating equipment is only as efficient as the duct system that carries the cooled or heated air. To maintain efficiency, comfort and good indoor air quality, it is important to have the proper balance between the air being supplied to each room and the air returning to the cooling and heating equipment.

Proper balance and sealing of the duct system improves the efficiency of the heating and air conditioning system and improves the indoor air quality of the home by reducing the amount of airborne pollutants that enter homes from spaces where the ductwork and/or equipment is located. The manufacturer and the U.S. Environmental Protection Agency's Energy Star Program recommend that central duct systems be checked by a qualified contractor for proper balance and sealing.

2.2 CHECKING PRODUCT RECEIVED

Immediately upon receipt, all cartons and contents should be inspected for transit damage. Units with damaged cartons should be opened immediately. If damage is found, it should be noted on the delivery documents and a damage claim filed with the delivering carrier.

After unit has been delivered to the job site, remove the unit from the carton taking care not to damage the unit. Check the unit rating plate for unit model number, unit size, coil model, voltage, phase, etc. to assure the unit matches the job specifications.

2.3 MODEL NUMBER NOMENCLATURE

FIGURE 2

MODEL NUMBER NOMENCLATURE

(-) H 1 P Y 24 17 S T A N N J ***

OPTION CODE (SEE ADS-3803)
BLANK = NONE
L = LESS SENSOR

VOLTAGE
A = 115/160
D = 480/360
J = 208/240/1/50
T = 220/240/1/50

COIL SERIES
A = A-COIL
N = N-COIL

CONTROLS
C = COMMUNICATING
N = NON-COMMUNICATING

MAJOR SERIES
A = FIRST

METERING DEVICE
T = TEV

EFFICIENCY
S = STANDARD
M = MEDIUM
H = HIGH

WIDTH
17 = 17.5" (600-1200 CFM)
21 = 21" (800-1600 CFM)
24 = 24.5" (1400-1800 CFM)

NOMINAL CAPACITY
18 = 18,000 BTU/H 42 = 42,000 BTU/H
24 = 24,000 BTU/H 48 = 48,000 BTU/H
30 = 30,000 BTU/H 60 = 60,000 BTU/H
36 = 36,000 BTU/H 66 = 66,000 BTU/H

REFRIGERANT
Y = R-454B

MOTOR TYPE
P = PSC
T = CONSTANT TORQUE
A = STRAIGHT COOL

STAGE OF AIR FLOW
1 = SINGLE
2 = TWO-STAGE

PRODUCT CATEGORY
H = AIR HANDLER

BRAND

2.4 AVAILABLE MODELS

AVAILABLE 115V MODELS

(-)H1PY1817STANNA	(-)H2TY2417STANNA	(-)H1AY2417STANNA
(-)H1PY3617STANNA	(-)H2TY3617STANNA	(-)H1AY3617STANNA
(-)H1PY3017STANNA	(-)H2TY3621STANNA	(-)H1AY3621STANNA
(-)H1PY3617STANNA	(-)H2TY3621MTANNA	(-)H1AY4821STANNA
(-)H1PY3621STANNA	(-)H2TY3621MTANNA	(-)H1AY8021STANNA
(-)H1PY4221STANNA	(-)H2TY4821STANNA	(-)H1AY8024STANNA
(-)H1PY4821STANNA	(-)H2TY4821STANNA	
	(-)H2TY4824STANNA	
	(-)H2TY4824MTANNA	
	(-)H2TY8021STANNA	
	(-)H2TY8024STANNA	

AVAILABLE 480V MODELS

(-)H1PY3617STANND	(-)H2TY3617STANND
(-)H1PY3621STANND	(-)H2TY3621STANND
(-)H1PY4221STANND	(-)H2TY3621MTANND
(-)H1PY4821STANND	(-)H2TY3621MTANND
	(-)H2TY4821STANND
	(-)H2TY4824STANND
	(-)H2TY4824MTANND
	(-)H2TY8021STANND
	(-)H2TY8024STANND

AVAILABLE 208/240V MODELS

(-)H1PY1817STANNJ	(-)H2TY2417STANNJ	(-)H1AY2417STANNJ
(-)H1PY3617STANNJ	(-)H2TY3617STANNJ	(-)H1AY3617STANNJ
(-)H1PY3017STANNJ	(-)H2TY3621STANNJ	(-)H1AY3621STANNJ
(-)H1PY3617STANNJ	(-)H2TY3621MTANNJ	(-)H1AY4821STANNJ
(-)H1PY3621STANNJ	(-)H2TY3621MTANNJ	(-)H1AY8021STANNJ
(-)H1PY4221STANNJ	(-)H2TY4821STANNJ	(-)H1AY8024STANNJ
(-)H1PY4821STANNJ	(-)H2TY4821STANNJ	
(-)H1PY4824STANNJ	(-)H2TY4824STANNJ	
(-)H1PY8024STANNJ	(-)H2TY4824MTANNJ	
	(-)H2TY8021STANNJ	
	(-)H2TY8024STANNJ	

Notes:

- J Voltage (208/240V) single phase air handler is designed to be used with single or three phase 208/240V power. When connecting 3-phase power to the air handler terminal block, bring only two leads to the terminal block. Cap, insulate and fully secure the third lead.
- The air handlers are shipped from the factory with the proper indoor coil installed, and cannot be ordered without a coil.
- These air handlers do not have an internal filter rack. An external filter rack or other means of filtration of return air is required.
- Electric resistance heaters are field installed items. (See Section 6.1)
- Suitable for use in Manufactured (Mobile) Homes.
- The (-)H1A air handler includes models with constant torque motors, except for (-)H1AY4821ST models, as they are equipped with a PSC motor.

2.5 Dimensions & Weight

2.5.1 DIMENSIONS & WEIGHTS: (-)H1P MODELS

FIGURE 3A
DIMENSIONS AND WEIGHTS

ELECTRICAL CONNECTIONS MAY EXIT TOP OR EITHER SIDE

HIGH VOLTAGE CONNECTION TIE,
1/32-1 1/32 DIA. KNOCK OUTS.

LOW VOLTAGE CONNECTION
3/8 AND 1/8 KNOCK OUT
(OUTSIDE OF CABINET)

SUPPLY AIR

NOTE: 24" CLEARANCE REQUIRED
IN FRONT OF UNIT FOR FILTER
AND COIL MAINTENANCE.

FLANGES ARE PROVIDED FOR
FIELD INSTALLATION
(SEE DUCT FLANGES,
SECTION 3.5, FOR
INSTRUCTIONS)

Return Air Opening Dimensions

Model Cabinet Size	Return Air Opening Width (Inches)	Return Air Opening Depth/Length (Inches)
17	15 1/4	18 1/4
21	19 1/4	18 1/4
24	22 1/4	18 1/4

AUXILIARY DRAIN CONNECTION
3/4 FEMALE PIPE THREAD (NPT)
HORIZONTAL APPLICATION ONLY

PRIMARY DRAIN CONNECTION
3/4 FEMALE PIPE THREAD (NPT)

AUXILIARY DRAIN CONNECTION
3/4 FEMALE PIPE THREAD (NPT)
UPFLOW/DOWNFLOW APPLICATION
ONLY

LIQUID LINE CONNECTION
COPPER (SWEAT)

VAPOR LINE CONNECTION
COPPER (SWEAT)

UPFLOW UNIT SHOWN;
UNIT MAY BE INSTALLED UPFLOW, DOWNFLOW,
HORIZONTAL RIGHT, OR LEFT AIR SUPPLY.

DIMENSIONAL DATA

MODEL SIZE (-H1P)	REFRIGERANT CONNECTIONS		UNIT HEIGHT IN. (mm)	UNIT WIDTH W IN. (mm)	SUPPLY DUCT A IN. (mm)	UNIT WEIGHT / SHIPPING WEIGHT (LBS.) (kg)
	SWEAT (IN.) (MM) ID					UNIT WITH COIL (MAX. KW.)
	LIQUID	VAPOR				
1817S/2417S	5/8" [9.53]	3/4" [19.05]	42 1/2" [1080]	17 1/2" [444.5]	18" [457.2]	81/95 [37/43]
3017S/3617S	5/8" [9.53]	3/4" [19.05]	42 1/2" [1080]	17 1/2" [444.5]	18" [457.2]	90/104 [41/47]
3621S	5/8" [9.53]	3/4" [19.05]	42 1/2" [1080]	21" [533.4]	19 1/2" [495.3]	109/124 [49/56]
4221S/4821S	5/8" [9.53]	3/4" [19.05]	50 1/2" [1283]	21" [533.4]	19 1/2" [495.3]	130/148 [59/66]
4824S	5/8" [9.53]	3/4" [19.05]	50 1/2" [1283]	24 1/2" [622.3]	23" [584.2]	143/161 [65/73]
6024S	5/8" [9.53]	3/4" [19.05]	55 1/2" [1410]	24 1/2" [622.3]	23" [584.2]	164/181 [75/82]

2.5.2 DIMENSIONS & WEIGHTS: (-)H2T MODELS

FIGURE 3B
DIMENSIONS AND WEIGHTS

HIGH VOLTAGE CONNECTION 7/8,"
1-3/32," 1-3/32" DIA. KNOCK OUTS.
ELECTRICAL CONNECTIONS MAY
EXIT TOP OR EITHER SIDE

LOW VOLTAGE CONNECTION
5/8" AND 7/8" KNOCK OUT
(OUTSIDE OF CABINET)

SUPPLY AIR ↑

NOTE: 24" CLEARANCE REQUIRED
IN FRONT OF UNIT FOR FILTER
AND COIL MAINTENANCE.

FLANGES ARE PROVIDED
FOR FIELD INSTALLATION

(SEE DUCT FLANGE SECTION A3
FOR INSTRUCTIONS)

Return Air Opening Dimensions

Model Cabinet Size	Return Air Opening Width (Inches)	Return Air Opening Depth/Length (Inches)
17	15 1/4"	19 1/4"
21	19 1/4"	19 1/4"
34	22 1/4"	19 1/4"

AUXILIARY DRAIN CONNECTION
3/4" FEMALE PIPE THREAD (NPT)
HORIZONTAL APPLICATION ONLY

PRIMARY DRAIN CONNECTION
3/4" FEMALE PIPE THREAD (NPT)

AUXILIARY DRAIN CONNECTION
3/4" FEMALE PIPE THREAD (NPT)
DOWN/DOWNFLOW APPLICATION
ONLY

LIQUID LINE CONNECTION
COPPER (SWEAT)

VAPOR LINE CONNECTION
COPPER (SWEAT)

UPFLOW UNIT SHOWN;
UNIT MAY BE INSTALLED UPFLOW, DOWNFLOW, HORIZONTAL RIGHT, OR LEFT AIR SUPPLY.

DIMENSIONAL DATA

MODEL SIZE	REFRIGERANT CONNECTIONS		UNIT HEIGHT IN. [mm]	UNIT WIDTH "W" IN. [mm]	SUPPLY DUCT "A" IN. [mm]	UNIT WEIGHT / SHIPPING WEIGHT (LBS.) [kg]
	SWEAT (IN.) [mm] ID					UNIT WITH COIL (MAX. kW)
	LIQUID	VAPOR				
2417S	3/8" [9.53]	3/4" [19.05]	42 1/2" [1080]	17 1/2" [445]	18" [458]	92/106 [42/48]
3617S	3/8" [9.53]	3/4" [19.05]	42 1/2" [1080]	17 1/2" [445]	18" [458]	95/110 [44/50]
3621M	3/8" [9.53]	7/8" [22.23]	50 1/2" [1282]	21" [533]	19 1/2" [495]	126/142 [57/64]
3621M*	3/8" [9.53]	7/8" [22.23]	57" [1448]	21" [533]	19 1/2" [495]	137/148 [62/68]
4821S	3/8" [9.53]	7/8" [22.23]	50 1/2" [1282]	21" [533]	19 1/2" [495]	126/144 [56/65]
4821S*	3/8" [9.53]	7/8" [22.23]	57" [1448]	21" [533]	19 1/2" [495]	138/151 [63/68]
4824S	3/8" [9.53]	7/8" [22.23]	55 1/2" [1410]	24 1/2" [622]	23" [585]	126/146 [56/66]
4824M	3/8" [9.53]	7/8" [22.23]	55 1/2" [1410]	24 1/2" [622]	23" [585]	159/176 [72/80]
6021S	3/8" [9.53]	7/8" [22.23]	57" [1448]	21" [533]	19 1/2" [495]	139/151 [63/68]
6024S	3/8" [9.53]	7/8" [22.23]	55 1/2" [1410]	24 1/2" [622]	23" [585]	159/176 [72/80]

* = UNITS WITH "A" COIL

2.5.3 DIMENSIONS & WEIGHTS: (-)H1A MODELS

FIGURE 3C

DIMENSIONS AND WEIGHTS

HIGH VOLTAGE CONNECTION TW, 1.5/32, 1.31/32 DIA. KNOCK OUTS.
ELECTRICAL CONNECTIONS MAY EXT TOP OR EITHER SIDE

LOW VOLTAGE CONNECTION
3/8 AND 7/8 KNOCK OUT
(OUTSIDE OF CABINET)

Return Air Opening Dimensions

Model Cabinet Size	Return Air Opening Width (Inches)	Return Air Opening Depth/Length (Inches)
17	15 1/2	19 1/2
21	18 1/2	19 1/2
24	21 1/2	19 1/2

AUXILIARY DRAIN CONNECTION
3/4 FEMALE PIPE THREAD (NPT)
HORIZONTAL APPLICATION ONLY

PRIMARY DRAIN CONNECTION
3/4 FEMALE PIPE THREAD (NPT)

AUXILIARY DRAIN CONNECTION
3/4 FEMALE PIPE THREAD (NPT)
UPFLOW/DOWNFLOW APPLICATION
ONLY

LIQUID LINE CONNECTION
COPPER (SWEAT)

VAPOR LINE CONNECTION
COPPER (SWEAT)

SUPPLY AIR ↑

NOTE: 24" CLEARANCE REQUIRED
IN FRONT OF UNIT FOR FILTER
AND COIL MAINTENANCE.

FLANGES ARE PROVIDED
FOR FIELD INSTALLATION

(SEE DUCT FLANGES, SECTION A.6,
FOR INSTRUCTIONS)

UPFLOW UNIT SHOWN;
UNIT MAY BE INSTALLED UPFLOW, DOWNFLOW, HORIZONTAL RIGHT, OR LEFT AIR SUPPLY.

DIMENSIONAL DATA

MODEL SIZE	REFRIGERANT CONNECTIONS		UNIT HEIGHT IN. (mm)	UNIT WIDTH "W" IN. (mm)	SUPPLY DUCT "A" IN. (mm)	UNIT WEIGHT / SHIPPING WEIGHT (LBS.) (kg)
	SWEAT (IN.) (mm) ID					UNIT WITH COIL (MAX. kW)
I-HRAY	LIQUID	VAPOR				
24178	3/8" [9.53]	3/4" [19.05]	42 1/2" [1083]	17 1/2" [445]	16" [409]	92/106 [42/48]
36178	3/8" [9.53]	3/4" [19.05]	42 1/2" [1083]	17 1/2" [445]	16" [409]	96/110 [44/50]
36218	3/8" [9.53]	7/8" [22.23]	42 1/2" [1083]	21" [533]	19 1/2" [495]	111/126 [50/57]
48218	3/8" [9.53]	7/8" [22.23]	50 1/2" [1282]	21" [533]	19 1/2" [495]	129/144 [58/65]
60218*	3/8" [9.53]	7/8" [22.23]	57" [1448]	21" [533]	19 1/2" [495]	139/151 [63/68]
60248	3/8" [9.53]	7/8" [22.23]	55 1/2" [1410]	24 1/2" [622]	23" [585]	161/178 [73/81]

* = UNITS WITH "W" COIL.

2.6 IMPORTANCE OF PROPER INDOOR/OUTDOOR MATCH-UPS

To assure many years of reliable operation and optimum customer comfort and to assure the outdoor unit warranty remains valid, an air-handler model should be selected that is properly matched to the outdoor unit. This is especially critical for heat pump systems to assure proper refrigerant charge balance between the cooling and heating modes. The recommended approach is to select an air-handler model that has an AHRI match with the outdoor unit. Refer to the AHRI directory at www.ahridirectory.org to confirm the air-handler and outdoor unit are a certified combination in the AHRI Directory.

2.7 IMPORTANCE OF QUALITY INSTALLATION

A quality installation is critical to assure safety, reliability, comfort, and customer satisfaction. Strict adherence to applicable codes, the information in this installation manual, the outdoor unit installation manual, and the thermostat installation manual are key to a quality installation. Read the entire instruction manuals before starting the installation.

IMPORTANT: This product has been designed and manufactured to meet certified AHRI capacity and efficiency ratings with the appropriate outdoor units. However, proper refrigerant charge, proper air-flow, and refrigerant line sizing are critical to achieve optimum capacity and efficiency and to assure reliable operation. Installation of this product should follow the manufacturer's refrigerant charging and air-flow instructions located in the outdoor unit installation instructions and the charging chart label affixed to the outdoor unit. Failure to confirm proper charge and air-flow may reduce energy efficiency and shorten equipment life.

The equipment has been evaluated in accordance with the Code of Federal Regulations, Title 24, Chapter XX, Part 3280. Install the unit in accordance with applicable national, state, and local codes. Latest editions are available from: National Fire Protection Association, Inc., Batterymarch Park, Quincy, MA 02269. These publications are:

- ANSI/NFPA No. 70-(Latest Edition) National Electrical Code.
- NFPA 90A Installation of Air Conditioning and Ventilating Systems.
- NFPA 90B Installation of Warm Air Heating and Air-Conditioning Systems.

Install the unit in such a way as to allow necessary access to the coil/filter rack and blower/control compartment.

3.0 INSTALLATION

3.1 TOOLS & REFRIGERANT

3.1.1 TOOLS REQUIRED FOR INSTALLING AND SERVICING R-454B MODELS

Manifold Sets

- Up to 800 PSIG High-Side
- Up to 250 PSIG Low-Side
- 550 PSIG Low-Side Retard

Manifold Hoses

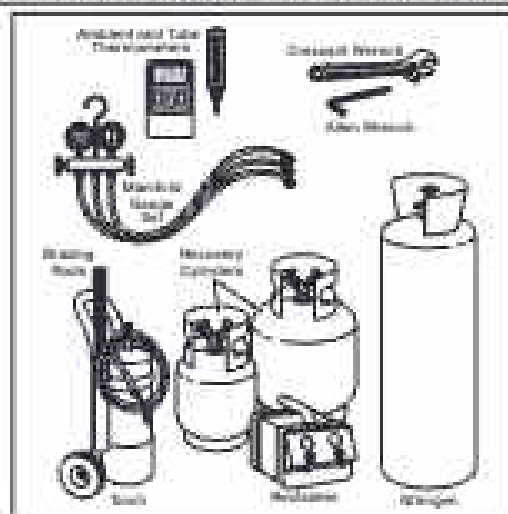
- Service Pressure Rating of 800 PSIG

Recovery Cylinders:

- 400 PSIG Pressure Rating
- Dept. of Transportation 4BA400 or 4BW400

NOTICE

R-454B is classified as safety group A2L per ASHRAE Standard 34. Verify that service equipment and instruments are certified for use with group A2L refrigerants, and in particular with R-454B.



3.1.2 SPECIFICATIONS OF R-454B

Application: R-454B is not a drop-in replacement for R-410A. Equipment design must accommodate the safety group A2L of R-454B. It cannot be retrofitted into R-410A systems.

Physical Properties: R-454B has an atmospheric bubble point of -59.6 °F [-50.9 °C] and an atmospheric dew point of -58.0 °F [-50.0 °C]. Its bubble point saturation pressure at 77 °F [25 °C] is 213 psig [1489 kPa] and dew point saturation pressure at 77 °F [25 °C] is 205 psig [1415 kPa].

Composition: R-454B is classified as safety group A2L per ASHRAE Standard 34. Verify that service equipment and instruments are certified for use with group A2L refrigerants, and in particular with R-454B is a non-azeotropic mixture of 68.9% by weight difluoromethane (HFC-32) and 31.1% by weight 2,3,3,3-tetrafluoro-1-propene (HFO-1234yf).

Pressure: The pressure of R-454B is classified as safety group A2L per ASHRAE Standard 34. Verify that service equipment and instruments are certified for use with group A2L refrigerants, and in particular with R-454B is similar to that of R-410A. Recovery and recycle equipment, pumps, hoses, and the like must have design pressure ratings appropriate for R-454B. Manifold sets need to range up to 800 psig high-side and 250 psig low-side with a 550 psig low-side retard. Hoses need to have a service pressure rating of 800 psig. Recovery cylinders need to have a 400 psig service pressure rating. DOT 4BA400 or DOT 4BW400.

Flammability: R-454B is classified as safety group A2L, where the 2L flammability class indicates lower flammability. R-454B and air should never be mixed in tanks or supply lines or be allowed to accumulate in storage tanks. Leak checking should never be done with a mixture of R-454B and air.

3.1.3 QUICK-REFERENCE GUIDE FOR R-454B

- Refrigerant R-454B operates at pressures similar to R-410A. However, it is classified in safety group A2L. Ensure that servicing equipment is compatible with R-454B.
- Refrigerant cylinders are no longer color-coded. R-454B cylinders are light green gray in color with a red band on the shoulder or top of the cylinder to indicate flammability.
- R-454B is only compatible with POE oils.
- Vacuum pumps will not remove moisture from POE oil used in R-454B systems.
- R-454B systems should be charged with liquid refrigerant in liquid phase. R-454B cylinders should be inverted to ensure liquid charging of the equipment.
- Do not install a suction line filter drier in the liquid line.
- A factory-approved outdoor liquid line filter drier is shipped with every unit and must be installed in the liquid line at the time of installation. If only the air-handler is being replaced on an existing system, the existing filter drier must be replaced at the time of installation with a field supplied filter drier. **IMPORTANT:** A bi-flow filter drier must be used for heat pump applications. Filter driers must be rated for minimum working pressure of 600 psig. The filter drier will only have adequate moisture-holding capacity if the system is properly evacuated.
- Desiccant (drying agent) must be compatible for POE oils and R-454B refrigerant.
- R-454B cylinders containing less than 50 lbs of refrigerant require a CGA 184 fitting. R-454B cylinders containing more than 50 lbs of refrigerant require a CGA 870 fitting.

3.2 APPLICATIONS AND ORIENTATION

3.2.1 VERTICAL UPFLOW & HORIZONTAL LEFT DISCHARGE

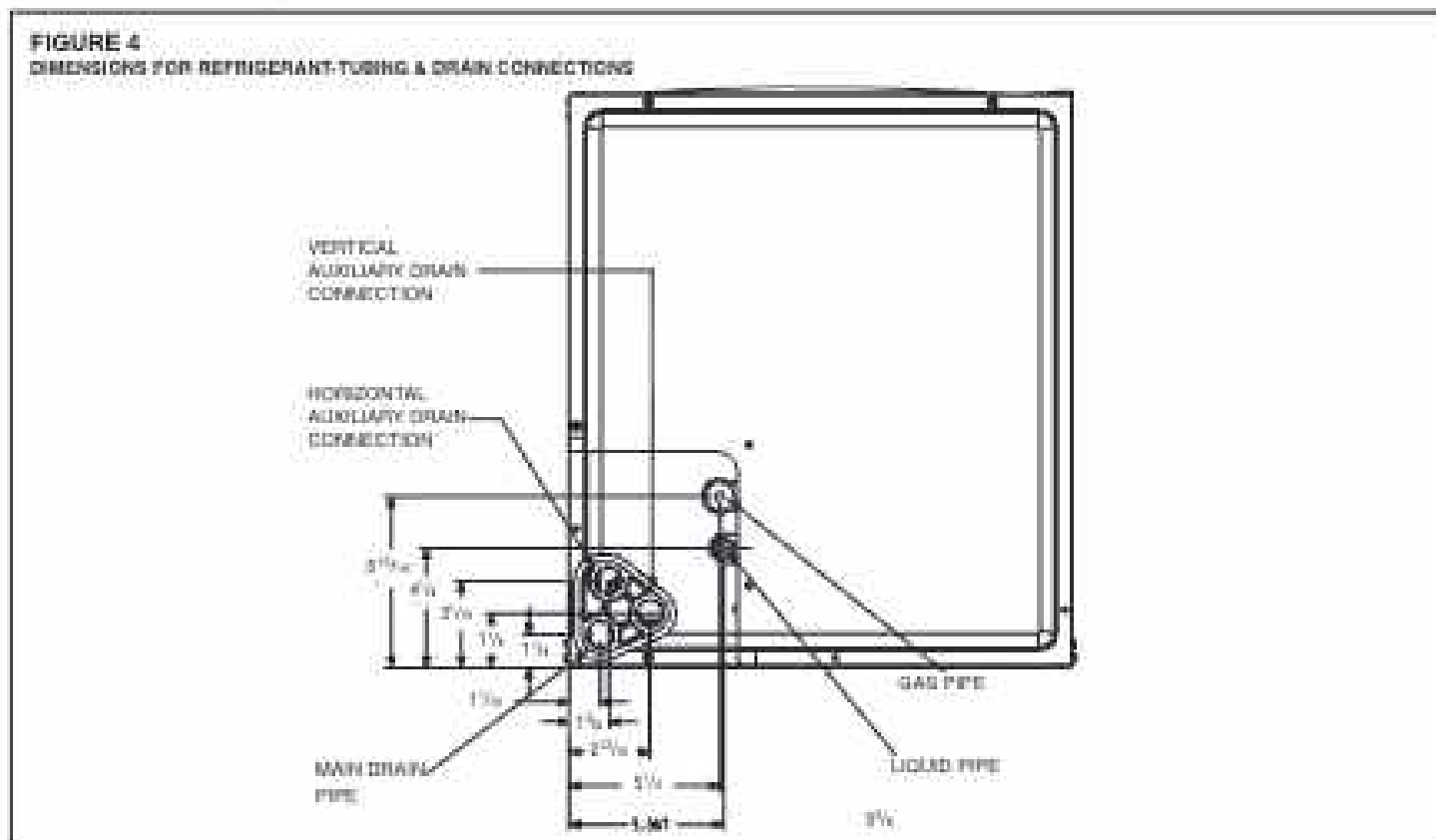
- Vertical Upflow & Horizontal Left Discharge is the factory configuration for all models (see Figure 4).
- The return air plenum must be large enough to supply unit and strong enough to support unit weight.
- If return air is to be ducted through the floor, install duct flush with floor. Use fireproof resilient gasket 1/8 to 1/4 in. thick between duct, unit and floor. Set unit on floor over opening.

IMPORTANT: Do not cut the side out of air-handler cabinet for a side return duct as this will result in the return air bypassing the coil. Instead, install air-handler on top of a field supplied sheet metal or wooden box and run the side return duct into the side of the box.

3.2.2 VERTICAL DOWNFLOW & HORIZONTAL RIGHT DISCHARGE

The unit as shipped from the factory is not configured for vertical down or horizontal right discharge applications and must be converted in the field to work in those applications. To make this conversion, remove the coil door and slide the indoor coil out of the cabinet.

When converting the air-handler for vertical down and horizontal right discharge applications, an additional set of 2 coil support rails must be installed before the coil can be reinstalled. These additional rails are supplied with the air-handler and are packaged with the duct flanges. Six screws are also provided for mounting the rails and can be found in the installation hardware bag. Clearance holes must be drilled in the sides of the cabinet for the mounting screws using the provided dimples as guides. Note that the shorter coil support rail with no notch must be mounted on the left-hand side to provide clearance for the drainpan condensate connection boss.



The vertical down/horizontal right coil support rails were not installed at the factory so the insulation under them would not be compressed which could result in exterior cabinet sweating in humid environments due to that location being in the cold downstream side of the indoor coil in vertical up and horizontal left discharge applications. The coil support rails installed at the factory should be left in place to help retain the cabinet insulation. They will be located on the warmer return side of the air-handler for down and horizontal right discharge applications and will therefore not pose a risk for cabinet sweating.

Once the additional coils support rails are installed, slide the coil back into the cabinet 180° from its original position, ensuring the retaining channel is fully engaged with the coil rail. (See Figure 6, Detail A.) Leave the coil door off until after the refrigerant tubing is brazed to the refrigerant stubs to allow TXV to be wrapped with a wet rag or heat sink compound during the brazing process. If the air-handler is not already in position, it can now be positioned so the blower discharge is either down or to the right depending on the application.

DRIP LOOP NOTE: When installing the unit in down or horizontal right discharge applications, make sure the wires going to the blower motor form a proper drip loop to force any condensate that might form on the wires to drip off the lowest point of the wiring instead of entering the motor or motor control. This may require cutting the wire-tie and installing a new wire-tie to form a new drip loop.

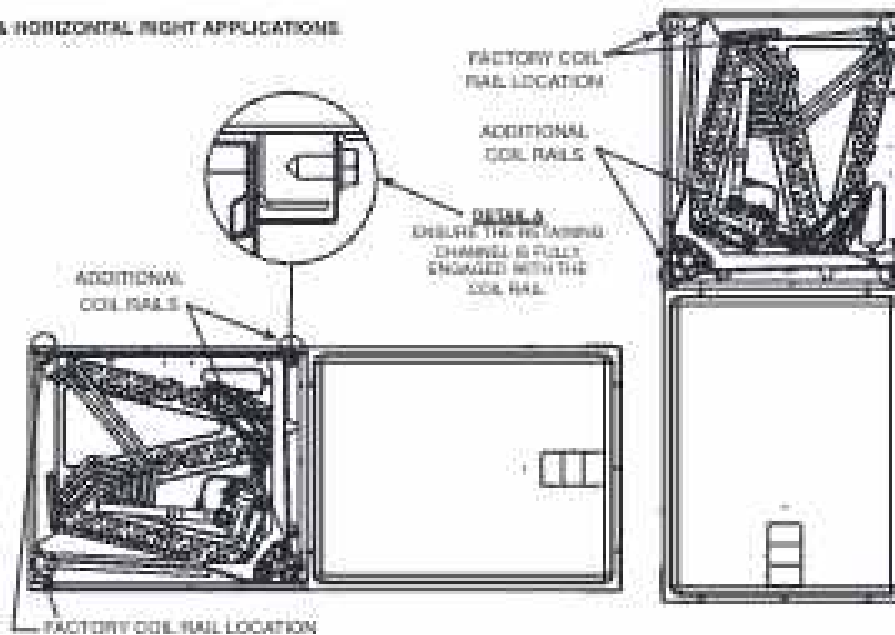
IMPORTANT: To comply with certification agencies and the National Electric Code for down discharge applications, the circuit breaker(s) on field-installed electric heater kits must be re-installed per procedure below so that the breaker switch on position and marking is up and the off position and marking is down.

1. To turn breaker(s): Rotate one breaker pair (circuit) at a time starting with the one on the right. Loosen both lugs on the load side of the breaker. Wires are bundles with wire ties, one bundle going to the right lug and one bundle going to the left lug.

FIGURE 5
ROTATING CIRCUIT BREAKER



FIGURE 6
VERTICAL DOWNFLOW & HORIZONTAL RIGHT APPLICATIONS



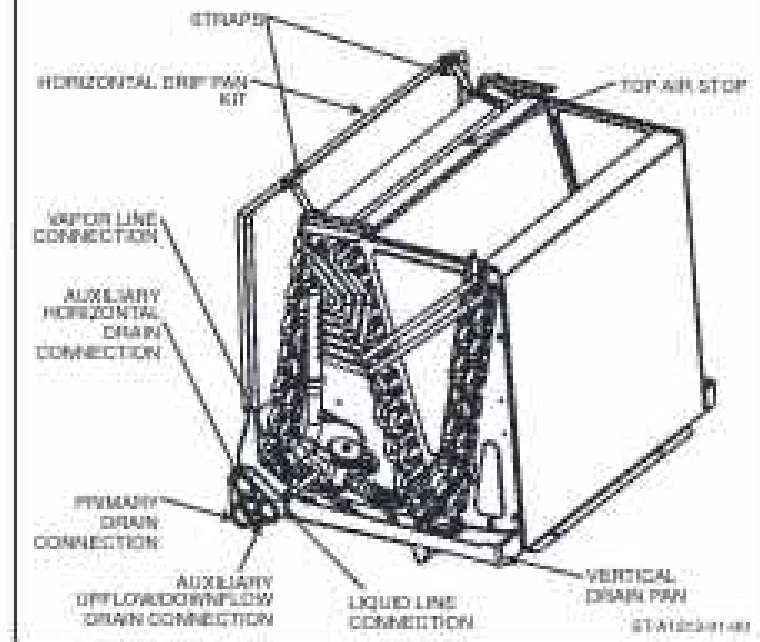
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2. Using a screwdriver or pencil, lift white plastic tab with hole away from breaker until breaker releases from mounting opening (see Figure 5).
3. With breaker held in hand, rotate breaker so that on position is up and the off position is down with unit in the vertical mounting position. Insert right wire bundle into top right breaker lug, ensuring all strands of all wires are inserted fully into lug, and no wire insulation is caught in lug.
4. Tighten lug as tight as possible while holding circuit breaker. Check wires and make sure each wire is secure and none are loose. Repeat for left wire bundle in left top circuit breaker lug.

IMPORTANT: Failure to securely hold the breaker will result in the plastic mounting boss on the breaker to be broken off when the lug is tightened.

1. Replace breaker by inserting breaker mounting tab opposite white pull tab in opening, hook mounting tab over edge in opening.
2. With screwdriver or pencil, pull white tab with hole away from breaker while setting that side of breaker into opening. When breaker is in place, release tab, locking circuit breaker into location in opening.
3. Repeat above operation for remaining breaker(s) (if more than one is provided).

FIGURE 7
INDOOR COIL AND DRAIN PAN DETAILS



▲ CAUTION

Auxiliary horizontal overflow pan kits RXBM- (or equivalent) are required when the unit is configured for the horizontal position over a finished ceiling and/or living space. (See Sections 3.3 and 6.3.) Failure to install overflow pan can result in property damage.

4. If one is used, replace the single point wiring jumper bar on line side of breaker and tighten securely.
5. Double check wires and lugs to make sure all are secure and tight. Check to make sure unit wiring to circuit breaker load lugs match that shown on the unit wiring diagram.

IMPORTANT: Units cannot be installed horizontally laying on or suspended from the back of the unit.

▲ WARNING

The RXHB-17, RXHB-21 or RXHB-24 combustible floor base is required when some units with electric heat are applied downflow on combustible flooring. Failure to use the base can cause a fire resulting in property damage, personal injury or death. See **CLEARANCES** (Section 3.4) for units requiring a combustible floor base. See the accessory section in this manual for combustible floor base RXHB.

3.2.3 INSTALLATION IN AN UNCONDITIONED SPACE

The exterior cabinet of an air handler has a greater risk of sweating when installed in an unconditioned space than when it is installed in the conditioned space. This is primarily due to the temperature of the conditioned air moving through the air handler and the air circulating around the unit where it is installed. For this reason, the following is recommended for all air handler applications, but special attention should be paid to those installed in unconditioned spaces:

- Duct sizing and air-flow are critical and must be based on the equipment selected.
- Supply and return duct attachment: If other than the factory flanges are used, the attachment of ducting must be insulated and tight to prevent sweating.
- No perimeter supply flanges are provided. If a full perimeter supply duct is used, it is the responsibility of the installer to provide duct flanges as needed, to secure and seal the supply duct to prevent air leakage and the sweating that will result.

- Apply caulking around all cabinet penetrations such as power wires, control wires, refrigerant tubing and condensate line where they enter the cabinet. Seal the power wires on the inside where they exit conduit opening. Sealing is required to prevent air leakage into the unit which can result in condensate forming inside the unit, control box, and on electrical controls. Take care not to damage, remove or compress insulation when applying the caulk.
- In some cases, the entire air handler can be wrapped with insulation. This can be done as long as the unit is completely enclosed in insulation, sealed and service access is provided to prevent accumulation of moisture inside the insulation wrap.
- An auxiliary overflow pan is recommended to protect the structure from excessive cabinet sweating or a restricted coil drain line. (See Section 3.3)
- If an electric heater kit is installed, be sure the breaker or disconnect cover is sealed tightly to the door panel.

3.2.4 INSTALLATION IN AN UNVENTILATED AREAS

If the installation room areas are not compliant with the outdoor room area values. Appliance shall not be installed in an area where there are potential ignition sources or a continuous open flame unless there is a flame arrest installed on flame-producing appliance.

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 (1292°F) and electric switching devices.

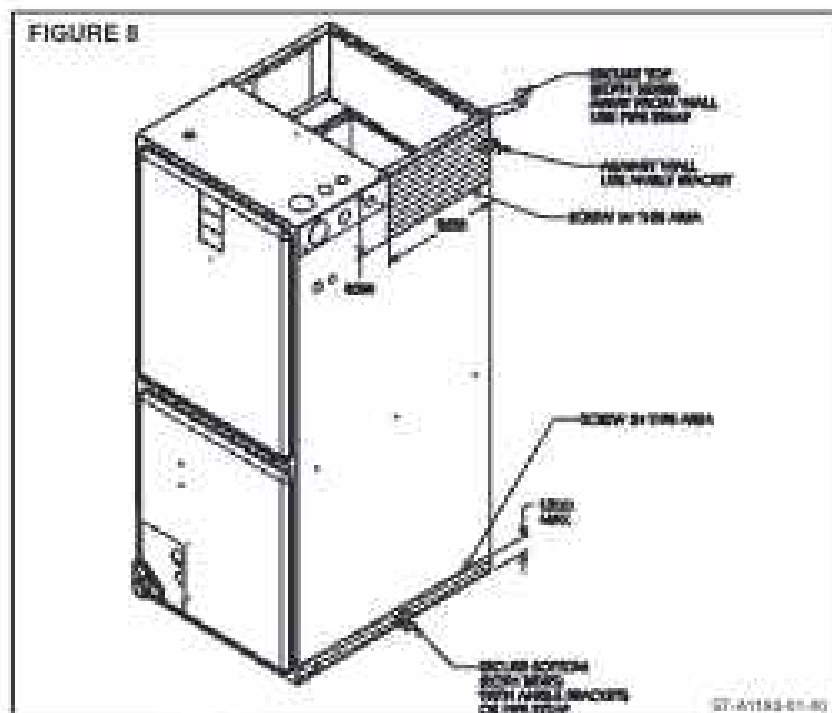
Only auxiliary devices that are approved by the manufacturer or declared suitable with the refrigerant can be installed in the connecting ductwork.

For appliances using A2L refrigerants, connected via an air duct system to one or more rooms, the supply and return air shall be directly ducted to the space. Open areas such as false ceilings shall not be used as a return air duct.

Note: Unventilated is defined by applications without an air circulation fan, or applications that do not employ a refrigerant detection system (RDS). For ventilation and room area table refer to RDS determination table in section 3.8.8 Refrigeration Detection System (RDS) Installation Instructions.

3.2.5 INSTALLATION IN MOBILE/MANUFACTURED HOMES

1. Air handler must be secured to the structure using L brackets or pipe strap.
2. Allow a minimum of 24 inches (610 mm) front clearance required to access doors.
3. Recommended method for securing air handler:
 - A. If air handler is against the wall, secure top of air handler to wall stud using two 16ga thick angle brackets one on each side. Attach brackets with No. 10 self-tapping $\frac{3}{4}$ " long screws to air handler and use $\frac{5}{16}$ " lag screws $1\frac{1}{2}$ " long to wall stud. Secure bottom of unit with two 16ga L brackets with No. 10 self-tapping $\frac{3}{4}$ " long screws to air handler and use $\frac{5}{16}$ " lag screws $1\frac{1}{2}$ " long to floor.
 - B. If air handler is away from wall attach pipe strap to top of air handler using No. 10 $\frac{1}{2}$ " long self-tapping screws on both sides. Angle strap down and away from back of air handler, remove all slack, and fasten to wall stud of structure using $\frac{5}{16}$ " lag screws $1\frac{1}{2}$ " long. Secure bottom of unit with two 16ga L brackets with No. 10 self-tapping screws to air handler and use $\frac{5}{16}$ " lag screws $1\frac{1}{2}$ " long to floor.



3.2.6 INSTALLATION IN CORROSIVE ENVIRONMENTS

The metal parts of this unit may be subject to rust or deterioration if exposed to a corrosive environment which can shorten its life. In addition to exposure to the exterior of the cabinet, chemical contaminants inside the building that can be drawn into the unit from the return air grille and attack structural metal parts, electrical components and the indoor coil, causing premature failure of the unit. If the unit is to be installed in an area where contaminants are likely to be a problem, special attention should be given to isolate the unit and return grille from contaminants.

3.2.7 SUPPORTING AIR-HANDLER IN HORIZONTAL APPLICATIONS

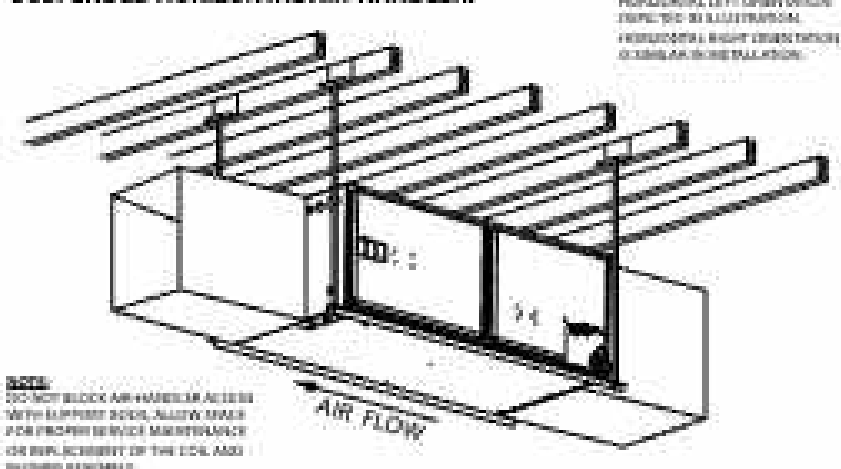
The air-handler must be adequately supported underneath if it is installed in the horizontal position to prevent it from sagging in the middle which can cause issues removing and re-installing the access panels. Position the unit on adequate supports or on support angles or channels (See Figure 9) before connecting ductwork to the unit. If an auxiliary overflow pan is required (See Section 3.3), the overflow pan will need to be adequately supported with the air-handler being supported underneath within the auxiliary overflow pan by angles and/or channels.

3.3 AUXILIARY OVERFLOW PAN

In compliance with recognized codes, an auxiliary overflow pan must be installed under all equipment containing evaporator coils that are located in any area of a structure where damage to the building or building contents may occur as a result of an overflow of the coil drain pan or a stoppage in the primary condensate drain piping. See Section 6.3 of this manual for information regarding the recommended auxiliary horizontal overflow pan (model RXBM) for this air-handler.

FIGURE 9

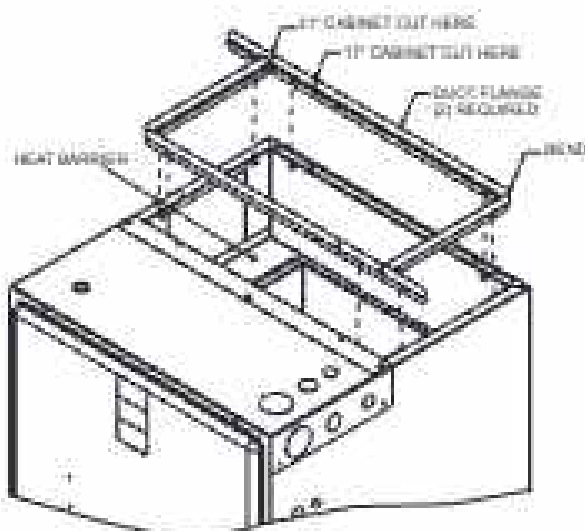
SUSPENDED HORIZONTAL AIR-HANDLER.



SUPPORTING HORIZONTAL AIR-HANDLERS IN AUXILIARY OVERFLOW PANS OR AIR-HANDLERS THAT ARE NOT SUSPENDED.



FIGURE 10
DUCT FLANGE INSTALLATION



3.4 CLEARANCES

- All units are designed for 0 inches clearance to combustible material on all cabinet surfaces except for downflow application with higher kW electric heat as noted below.
- Some units require a combustible floor base depending on the heating kW if installed in the downflow configuration on a combustible surface. The following table should be used to determine these requirements.

Model Cabinet Size	17	21	24
Maximum Model Designation kW	15	18	20

- Units with electric heating kW equal to or less than the values listed in the table do not require a combustible floor base. See Section 6.5 for Combustible Floor Base RXHB-XX.
- Units with electric heat require a one inch clearance to combustible material for the first three feet of supply plenum and ductwork.
- Vertical downflow applications require clearance on at least one side of the unit for electrical connections. Refrigerant and condensate drain connections are made on the front of the unit.
- All units require 24 inches minimum access to the front of the unit for service.
- These units may be installed in either ventilated or nonventilated spaces.

3.5 DUCT FLANGES

Duct flanges (4 pieces) are shipped with the unit and are to be field installed on the top of the air-handler using the following procedure and referring to Figure 10.

1. Loosen the screws attaching the heat barrier to the cabinet.
2. Form a 90° bend with the short leg length at approximately 9.9 from the end where the slot is cut in the flange to facilitate bending. The duct flanges are shipped sized for the 24.5 wide cabinet. For the 17.5 and 21 wide cabinets, cut the long leg as shown in Figure 10 to match the cabinet width.
3. Slide the duct flanges onto the screws loosened in step one above. Tighten the screws to secure the flanges.

3.6 DUCTWORK

Field ductwork must comply with the National Fire Protection Association NFPA 90A, NFPA 90B and any applicable local ordinance.

WARNING

Do not, under any circumstances, connect return ductwork to any other heat producing device such as fireplace insert, stove, etc. Unauthorized use of such devices may result in fire, carbon monoxide poisoning, explosion, personal injury or property damage.

Sheet metal ductwork run in unconditioned spaces must be insulated and covered with a vapor barrier. Fibrous ductwork may be used if constructed and installed in accordance with SMACNA Construction Standard on Fibrous Glass Ducts. Ductwork must comply with National Fire Protection Association as tested by U/L Standard 181 for Class I Air Ducts. Check local codes for requirements on ductwork and insulation.

- Duct system must be designed within the range of external static pressure the unit is designed to operate against. It is important that the system air-flow be adequate. Make sure supply and return ductwork, grills, filters, accessories, etc. are accounted for in total resistance. Refer to the air-flow performance tables in this manual to determine the available external static pressure for the particular air-handler model being installed.
- Design the duct system in accordance with ACCA Manual D Design for Residential Winter and Summer Air Conditioning and Equipment Selection. Latest editions are available from: ACCA Air Conditioning Contractors of America, 1513 16th Street, N.W., Washington, D.C. 20036. If duct system incorporates **flexible air duct**, be sure **pressure drop** information (straight length plus all turns) shown in ACCA Manual D is accounted for in system.
- Supply plenum is attached to the duct flanges supplied with the unit. See Section 3.5.
- **IMPORTANT:** If an elbow is included in the plenum close to the unit, it must not be smaller than the dimensions of the supply duct flange on the unit.
- **IMPORTANT:** The front flange on the return duct if connected to the blower casing must not be screwed into the area where the power wiring is located. Drills or sharp screw points can damage insulation on wires located inside unit.
- Secure the supply and return ductwork to the unit flanges, using proper fasteners for the type of duct used and tape or caulk the duct-to-unit joint as required to prevent air leaks.

3.7 RETURN AIR FILTER

An internal filter rack is not provided with this air-handler. Therefore, an external means of filtering the return air is required. External filters should be sized for a maximum of 300 feet/min air velocity or the maximum velocity recommended by the type of filter installed. One or more return air filter grilles, a filter rack attached to unit return air intake, or a filter rack installed between a sealed return air platform and the return duct are all acceptable means of filtration. All return ducts must be filtered, either at each return grille or at a common filter near the unit.

Important: Do not install a return air filter grille and a filter rack at the unit and do not install a filter in the supply duct system.

Filter type, sizing, and placement are critical to heating and cooling system performance. Reduced air-flow can shorten the life of system components such as the compressor, indoor coil, heater elements, over temperature limits, and relays. As filters near the end of their useful life, the pressure drop through them increases. Therefore, it is important to factor the end of life (dirty) pressure drop of filters into the external static pressure of the duct system when selecting blower speeds and designing ductwork to assure the system is operating at the design CFM and system reliability is not compromised. Always verify that the system's air-flow is within specifications by performing a temperature rise (heating mode) and/or temperature drop (cooling mode) with all filters in place.

Important: High efficiency pleated filters and electronic air cleaners typically have significantly higher pressure drop than standard efficiency fiberglass filters, especially when they get dirty. Do not use high efficiency filters or electronic air cleaners unless adequate filter area is provided to lower the filter pressure drop to an acceptable level.

CAUTION

R-454B is classified as safety group A2L per ASHRAE Standard 34. Verify that service equipment and instruments are approved for use with group A2L refrigerants, and in particular with R-454B. Failure to exercise care may result in equipment damage or personal injury.

WARNING

Do not operate the system without filters. A portion of the dust entrained in the air may temporarily lodge in the duct runs and at the supply registers. Any circulated dust particles could be heated and charred by contact with the heating elements. This residue could soil ceilings, walls, drapes, carpets and other articles in the house.

Soot damage may occur even with filters in place when certain types of candles, oil lamps or standing pilots are burned.

3.8 REFRIGERANT LINE CONNECTIONS & CHARGING

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.

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

- The minimum test pressure for the low side of the system shall be the low side design pressure and the minimum test pressure for the high side of the system shall be the high side design pressure, unless the high side of the system, cannot be isolated from the low side of the system in which case the entire system shall be pressure tested to the low side design pressure.
- Field-made refrigerant joints indoors shall be tightness tested. The test method shall have a sensitivity of 5 grams per year of refrigerant or better under a pressure of at least 0.25 times the maximum allowable pressure.
- No leak shall be detected; where addition of charge is required to complete installation, refer to the Outdoor I/O System start-up and refrigerant charging details for instructions on how to determine the additional REFRIGERANT CHARGE and how to complete the REFRIGERANT CHARGE on the label provided by the manufacturer. Interconnecting refrigerant piping length and diameter shall be taken into consideration as listed in the Line Set Selection.

3.8.1 PREPARATION

The coil is shipped with a low pressure (5-10 psig) charge of dry nitrogen which will be released when the rubber plugs are removed. Leave the rubber plugs in the refrigerant connection stubs on the air-handler until the refrigerant lines are ready to be brazed to the refrigerant connection stubs to prevent contaminants from entering the coil. Clean the ends of the tubing and coil connection stubs (inside and outside) with an alcohol wipe before inserting the line set tubes into the coil connection stubs to assure a quality leak-free braze joint.

Refer to the outdoor unit installation instructions for details on refrigerant line sizing and installation. Be sure to follow long line length guidelines if they apply.

Route the refrigerant tubing in a manner that does not block service access to the front of the air-handler.

3.8.2 LIQUID LINE FILTER DRIER

A new liquid filter drier must be installed every time any part of the system has been open to the atmosphere, even if it's for a short period of time. The filter drier should be installed close to the air-handler for a system started up in the cooling mode and near the outdoor unit for a heat pump system started up in the heating mode. This allows the filter drier to catch any contaminants in the liquid line before they can enter the indoor or outdoor TXV inlet screen.

3.8.3 BRAZING

Air inside the tubing and coil should be displaced with dry nitrogen prior to the brazing process to prevent the formation of harmful copper oxide inside the tubing. It is very important not to pressurize the system with nitrogen while brazing or pin-hole leaks will form in the braze joint. This is accomplished by removing the gauge port valve core on one of the outdoor unit service valves to allow the pressure to be relieved as the heated nitrogen expands. Fill the system with dry nitrogen through the other service valve gauge port and then turn the nitrogen flow off just before brazing is begun.

Protect the TXV, copper to aluminum suction header joint, and outdoor unit service valves from overheating using a wet rag or heat sink compound. Leave the wet rag or heat sink material in place until the joint and surrounding tubing cools down to a safe temperature. Double tip torches can help minimize brazing time and heat conduction to the heat sensitive components if the flame is turned down and held on the joint just long enough to make the braze joint. With both single and double tip torches, turning the flame up too much and keeping the flame on the joint too long will damage the heat sensitive components even when a wet rag or heat sink compound is used.

Use a steel metal shield to protect the cabinet's paint from the torch flames during the brazing process. The vapor line insulation should be pushed back on the line about 12 inches from the joint and retained to prevent it from igniting or melting during the brazing process.

After the refrigerant brazed connections are made at the air-handler and the tubing has cooled down sufficiently, replace the coil section access panel if it has been removed and seal the air gap around the connection stubs with the foam rubber gasket included in the air-handler parts bag. Peel the self-adhesive backing off of the foam gasket and position it around the stubs with the adhesive side toward the cabinet, then press it firmly against the cabinet. The gasket is split to allow it to go over the stubs after the refrigerant tubes are brazed to the stubs. (See Figure 12 in Section 3.10)

After the foam gasket has been installed, the vapor line insulation should be pulled back in place so it contacts the air-handler cabinet to prevent condensate from forming on the cold tube and dripping off. A loosely fitting zip-tie placed around the insulation 1/3 from the end can be used to hold it in place so it doesn't move away from the cabinet. For air-handlers with TXV's, a section of the insulation will need to be cut out to make room for the externally mounted TXV bulb. (See Section 3.10) Once the bulb is mounted, insulate the bulb with the foam insulation included in the air-handler parts bag, making sure none of the vapor line is uninsulated.

3.8.4 LEAK TESTING

After all braze joints are completed, replace the valve core removed when purging with nitrogen and then leak test the system by pressurizing to 150 psig with dry nitrogen and allow the system to sit for 60 minutes (longer if possible) to assure the pressure does not drop.

3.8.5 EVACUATION

If no leaks are detected, evacuate the system down to 500 microns or below before charging the system or opening the service valves on the outdoor unit which will release the charge stored in the outdoor unit into the line set and air-handler coil. Failure to reach 500 microns of vacuum is a sign of a leak or excessive moisture inside the system.

3.8.6 REFRIGERANT CHARGING

Once the evacuation process is completed, break the vacuum with the refrigerant from a refrigerant cylinder or with refrigerant stored in the outdoor unit by opening the outdoor unit service valves. The charging process cannot be completed until the remaining steps in the installation process are completed and the indoor air-flow is adjusted to the proper level. See Section 4.7 for further details.

3.8.7 REFRIGERANT DETECTION SYSTEM (RDS)

The RDS is used to mitigate any leaked refrigerant that may occur in the indoor portion of the system.

Tripped RDS Sequence of Operations:

- Step 1: RDS detects a leak at or over the sensor setpoint.
- Step 2: Relay in RDS shuts ODU down and energizes the indoor blower.
- Step 3: Leaked refrigerant gets dispersed during the blower on cycle.
- Step 4: Once the concentration of the leaked refrigerant is below the RDS setpoint, the blower continues to run for 5 minutes.
- Step 5: If the concentration stays below the RDS setpoint for 5 minutes, the system returns to normal operation.

Note: There is no lockout timer, and the system can continue to go through these steps.

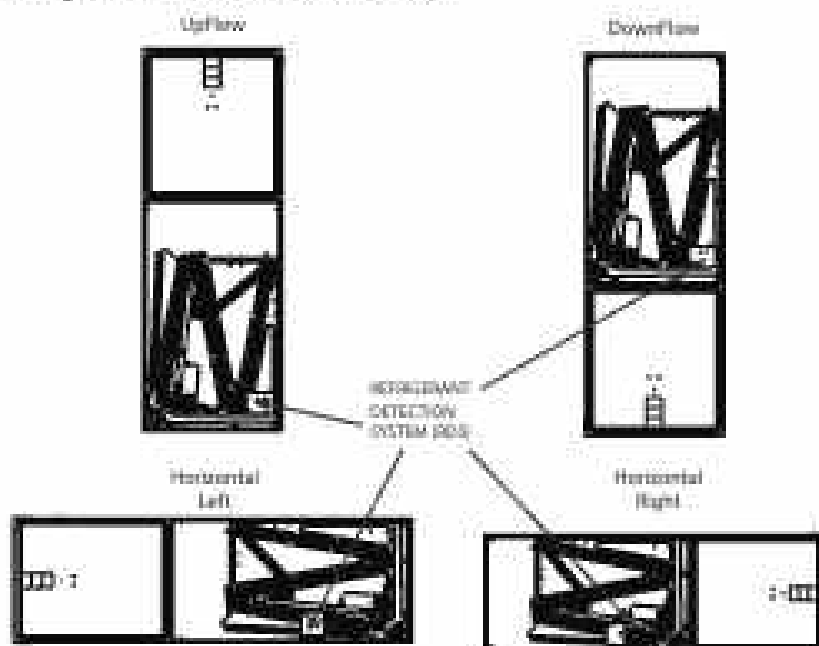
Life expectancy of the RDS is 15 years and should be replaced at the end of life.

Contact Rheem Parts Department for RDS replacement.

3.8.8 REFRIGERANT DETECTION SYSTEM (RDS) INSTALLATION INSTRUCTIONS

Important Note: The installation process for the RDS varies depending on the flow configuration of the unit. It is crucial to adhere to the following instructions. The RDS is initially configured for upflow installation during manufacturing and can be adjusted for downflow, horizontal right flow, and horizontal left flow configurations.

The RDS must be installed at the location respective to the flow configuration that the unit is installed. Installation locations are defined for each flow configuration in the below illustration.



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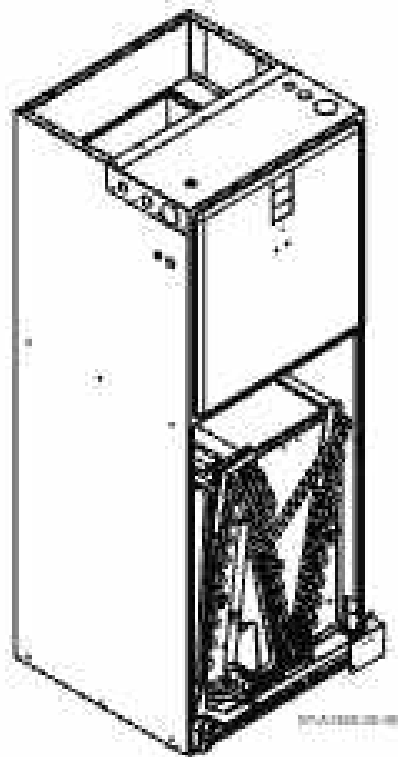
PART LIST:

Item Description	Part Number	Quantity
Primary Bracket	AE-100507-01	1
Flange	AE-100508-01	2
Screw	83-32153-06	5
Cup Point Screw	83-34368-01	3
Standoff (14 and 17 upflow only)	AE-110038-01	1

See outdoor installation manual Section 5 for conditioned room area calculations and indoor airflow verifications for units without refrigerant leak detection sensors.

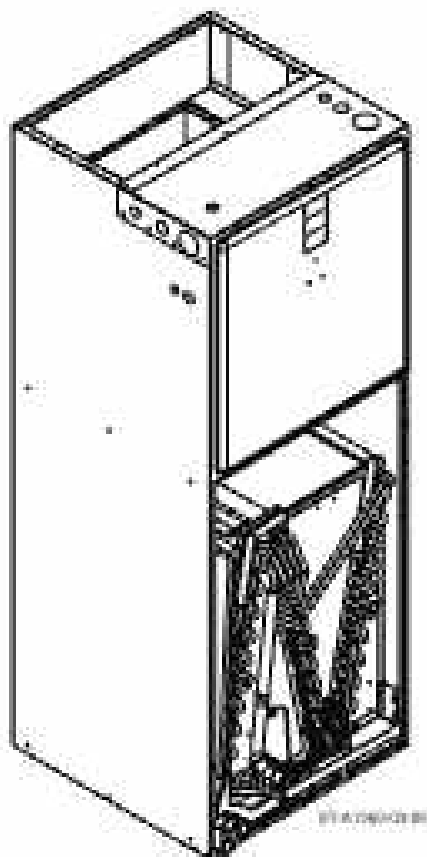
Step 1: Primary Bracket Removal

Unscrew and remove the primary bracket from the flange. This screw (Part Number: 63-22153-05) will be used in Step 3. Ensure the RDS wiring harness is not under tension throughout this process.

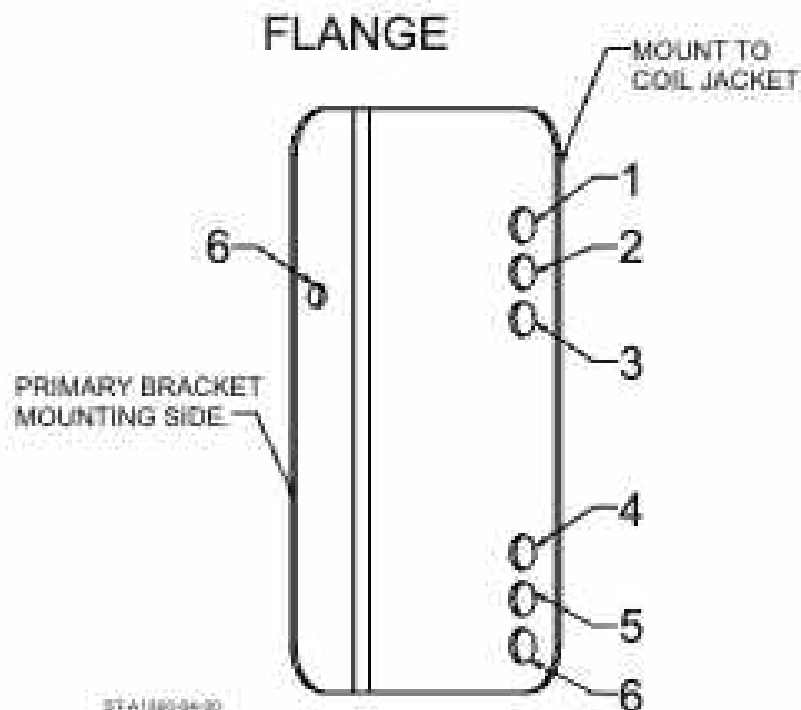


Step 2: Flange Removal and Relocation

A. Remove the two screws holding the flange in place to the cabinet.



B. Position the flange according to the unit's flow configuration. Fasten the flange to the cabinet using the two screws removed in the previous step. Refer to the below illustrations for the correct hole placement. Note: An additional flange is installed in manufacturing for the horizontal left flow configuration.

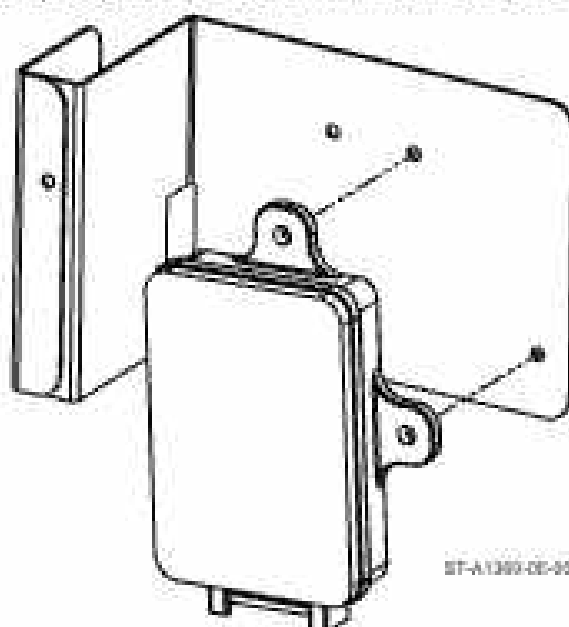


- For vertical flow configurations, secure the flange using holes 1 and 5 for all unit models.
- For horizontal flow configurations, always use hole 1 and either hole 4 or 5, depending on the air-handler cabinet.

Step 3: RDS Orientation and Relocation

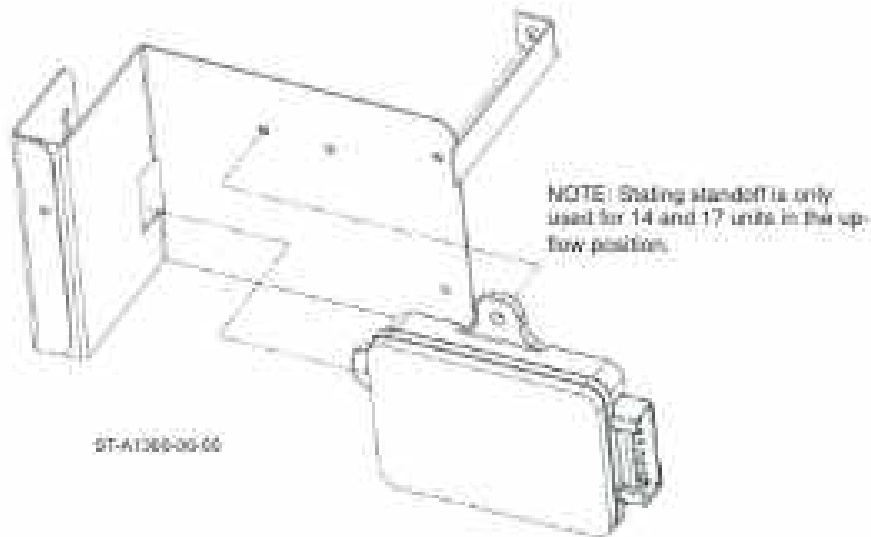
A. Horizontal Flow Configurations

- Remove the RDS from the upflow or downflow mounting orientation on the primary bracket by removing the single snub-nosed screw and sliding the RDS out of the slot.
- Secure the RDS to the primary bracket using the snub-nose screw provided in the parts bag and the screw removed in the previous step, following the hole positions shown in the illustration.
- Fasten the primary bracket to the flange using the screw removed in Step 1, as shown in the below illustration. Ensure the wiring harness has a drip loop toward the horizontal flow drain pan.



B. Vertical Flow Configurations

- i. Mount the RDS to the primary bracket with one tab fixed in the slot and the other at the hole as shown in the below illustration. Use the provided snub-nose screw.



- ii. Fasten the primary bracket to the flange as described in Step 3. A.JII. Ensure the wiring harness has a drip loop toward the vertical flow drain pan.

RDS DETERMINATION TABLE

Total System Charge (oz)	Minimum Indoor Airflow (CFM)	Without Refrigerant Leak Detection Sensor Area of Smallest Conditioned Room Or Space Where Indoor Unit is Installed (sqft)			With Refrigerant Leak Detection Sensor Minimum Required Total Conditioned Room Area = Sum of all conditioned spaces/rooms (sqft)
		Distance From Floor to Bottom Edge of Coils: Inlet or Outlet (Not Covering or Bottom Edge of Indoor Unit)			Any configuration
		42 FT	6 FT	48 FT	
50	100	308	113	75	34
100	200	781	285	190	187
150	300	1736	338	225	291
200	400	3105	451	301	375
250	500	4894	564	376	480
300	600	7032	677	451	582
350	700	9572	790	526	696
400	800	12502	904	601	750
450	900	15823	1017	676	843
500	1000	19504	1130	751	927
550	1100	not permitted - sensor required			1031
600	1200				1125

Note: If the total charge quantity falls between two rows, use the minimum room area and airflow in the row corresponding to the higher total system charge.

3.9 TXV SENSING BULB ATTACHMENT

IMPORTANT: DO NOT perform any brazing with the TXV bulb attached to the vapor line. After brazing operations have been completed and the tubing has cooled to the touch, clamp the TXV bulb securely on the vapor line at the 10 to 2 o'clock position (see Figures 11 and 12) with the strap provided in the parts bag. Insulate the TXV sensing bulb and suction line with the provided pressure sensitive insulation (size 4 x 7) and secure with provided wire ties.

FIGURE 11
BULB LOCATION

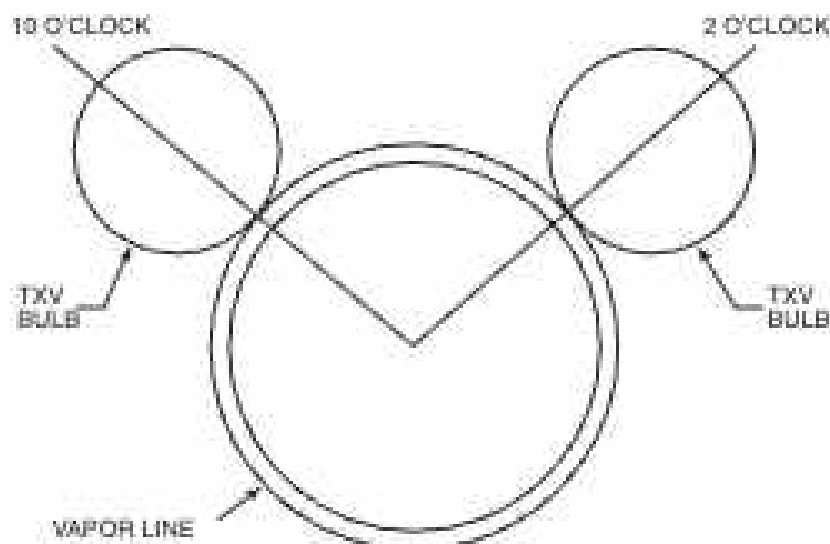
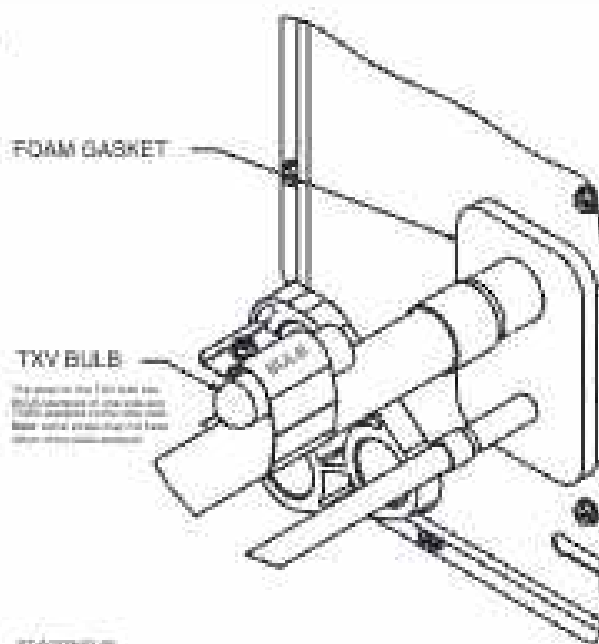


FIGURE 12
TXV BULB & FOAM GASKET LOCATION



IMPORTANT: TXV sensing bulb should be located on a horizontal section of suction line, just outside of coil box. The copper sensing bulb must never be placed on any aluminum tube as this will result in galvanic corrosion and eventual failure of the aluminum tube.

3.10 CONDENSATE DRAIN

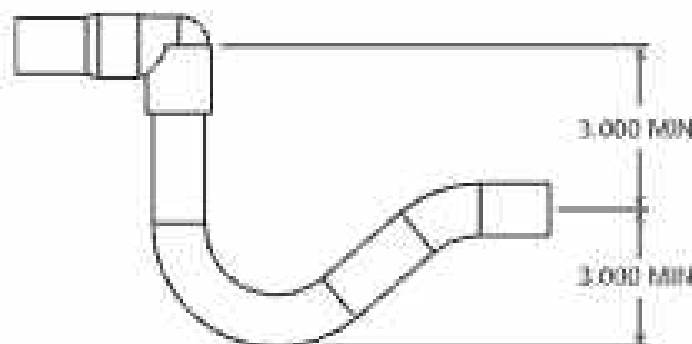
Consult local codes or ordinances for specific requirements.

IMPORTANT: When making drain fitting connections to the drain pan, use a thin layer of Teflon paste, silicone or Teflon tape and install hand tight.

IMPORTANT: When making drain fitting connections to drain pan, do not overtighten. Overtightening fittings can split pipe connections on the drain pan.

- Install drain lines so they do not block service access to front of the unit. Minimum clearance of 24 inches is required for filter, coil or blower removal and service access.

FIGURE 13
CONDENSATE DRAIN TRAP



ST-A1244-01-05

- Although the condensate drain pan is designed to be self draining, it is recommended that the air-handler cabinet be pitched slightly downward toward the primary drain connection to assure the condensate drains completely from the drain pan. The downward pitch should be approximately 1/8 per foot and in both axes.
- Do not reduce drain line size less than connection size provided on condensate drain pan.
 - All drain lines must be pitched downward away from the unit a minimum of 1/8 per foot of line to ensure proper drainage.
 - Do not connect condensate drain line to a closed or open sewer pipe. Run condensate to an open drain or outdoors.
 - The drain line should be insulated where necessary to prevent sweating and damage due to condensate forming on the outside surface of the line.
 - Make provisions for disconnecting and cleaning of the primary drain line should it become necessary. Install a 3 in. trap in the primary drain line as close to the unit as possible. Make sure that the top of the trap is below connection to the drain pan to allow complete drainage of pan (See Figure 13).
 - The auxiliary drain line should be run to a place where it will be noticeable if it becomes operational. The building occupant should be warned that a problem exists if water should begin running from the auxiliary drain line. An auxiliary drain shut-off switch can be installed in lieu of an auxiliary drain line. The shut-off switch should be wired into the control circuit so the outdoor unit shuts down should the switch detect water.
 - Plug the unused drain connection with the plugs provided in the parts bag, using a thin layer of teflon paste, silicone or teflon tape to form a water tight seal.
 - Test the condensate drain pan and drain line after installation is complete. Pour water into drain pan, enough to fill drain trap and line. Check to make sure drain pan is draining completely, no leaks are found in drain line fittings, and water is draining from the open end of the primary drain line.

3.11 THERMOSTAT

See instructions for the condensing unit or heat pump for recommended room thermostats.

- On units with one electric heat sequencer (TD₁) (see wiring diagram for electric heater), heat anticipator setting should be .16.
- On units with two electric heat sequencers (TD₁ & TD₂) (see wiring diagram for electric heater), heat anticipator setting should be .32 if both are connected to same stage on thermostat. Setting should be .16 if (TD₁ & TD₂) are connected to separate stages.

NOTE: Some thermostats contain a fixed, non-adjustable heat anticipator. Adjustment is not permitted.

- The thermostat should be mounted 4 to 5 feet above the floor on an inside-wall of the living room or a hallway that has good air circulation from the other rooms being controlled by the thermostat. It is essential that there be free air circulation at the location of the same average temperature as other rooms being controlled. Movement of air should not be obstructed by furniture, doors, draperies, etc. The thermostat should not be mounted where it will be affected by drafts, hot or cold water pipes or air ducts in walls, radiant heat from fireplace, lamps, the sun, T.V. or an outside wall. See instruction sheet packaged with thermostat for mounting and installation instructions.

3.12 ELECTRICAL WIRING

Field wiring must comply with the National Electric Code (N.E.C. in Canada) and any applicable local ordinance.

3.12.1 CONFIGURING UNIT FOR 208 VOLT POWER

The control transformer in 208/240V air-handlers must be configured in the field to operate on a 208 volt electrical supply to assure adequate control voltage (24+ volts) with the reduced supply voltage. The units are shipped from the factory for 220-240 volt applications. For 208 volt applications, disconnect electrical power to the unit and remove the blower access panel and then the control box cover located on the blower housing. Then remove the insulated cap from the 208 volt transformer terminal and move the BLACK wires that are connected to the 240 volt transformer terminal to the 208

volt transformer terminal. Plug the insulated cap onto the transformer 240V terminal. The indoor blower motor in 208/240V versions of the (-)H1PW(-)H1AY4821ST air-handlers must also be configured for 208 volt applications to assure full air-flow delivery at the reduced voltage. This step is not required on (-)H2T(-)H1A (constant torque) air-handlers since they have constant torque ECM motors. To configure the PSC motor in (-)H1PW(-)H1AY4821ST air-handlers for 208 volt applications, unplug the PURPLE motor lead connected to the insulated terminal on the end of the ORANGE wire coming from the transformer. Pull the cap out of the insulated terminal on end of the YELLOW motor lead and plug the cap into the terminal on the end of the PURPLE motor lead to eliminate the possibility of an electrical short. Plug the YELLOW motor lead into the terminal on the end of the ORANGE wire from the transformer. Secure the indoor blower motor wiring with zip ties to assure they can't come in contact with the blower wheel. Replace the control box cover and blower access panel.

3.12.2 GROUNDING

- This product must be sufficiently grounded in accordance with National Electrical Code (N.E.C. in Canada) and any applicable local ordinance.

WARNING

The unit must be permanently grounded. Failure to do so can result in electrical shock causing personal injury or death.

- Grounding may be accomplished by grounding metal conduit when installed in accordance with electrical codes to the unit cabinet.
- Grounding may also be accomplished by attaching ground wire(s) to ground lug(s) provided in the unit wiring compartment.
- Ground lug(s) are located close to wire entrance on left side of unit (upflow). Lug(s) may be moved to marked locations near wire entrance on right side of unit (upflow), if alternate location is more convenient.
- Use of multiple supply circuits require grounding of each circuit to lug(s) provided in unit.

3.12.3 POWER WIRING

It is important that proper electrical power is available for connection to the unit model being installed. See the unit name-plate, wiring diagram and electrical data in the installation instructions.

- If required, install a branch circuit disconnect of adequate size, located within sight of, and readily accessible to the unit.

IMPORTANT: Units with electric heater kits installed may be equipped with one, two, or three 30/60 amp circuit breakers. These breaker(s) protect the internal wiring in the event of a short circuit and serve as a disconnect. Circuit breakers installed within the unit do not provide over-current protection of the supply wiring and therefore may be sized larger than the branch circuit protection.

- Supply circuit power wiring must be 75°C minimum copper conductors only. See Electrical Data in Sections 3.12.5 and 3.12.6 for ampacity, wire size and circuit protector requirement. Supply circuit protective devices may be either fuses or HACR type circuit breakers.
- Field power wiring may be connected to either the right, left side or top. Three $7/8$, $1\frac{1}{32}$, $1\frac{1}{16}$ dia. concentric knockouts are provided for connection of power wiring to unit.
- Field power wiring is to be connected to the power terminal block in unit control compartment.
- For units equipped with an electric heater kit, field power wiring is to be connected to the heater kit breaker, terminal block, or pullout disconnect terminals and the power wiring pigtail from the heater kit is to be connected to the unit power terminal block in the unit control compartment. Refer to installation instructions provided with the heater kit for additional details.

3.12.4 COPPER WIRE SIZE - AWG. (3% VOLTAGE DROP)

A M P E R S	C O N D U C T O R S	200 (80)	12	10	8	6	6	6	6	4	4	3	3	2	2	1	0	00
		150 (48)	12	10	10	10	8	8	6	6	4	4	3	3	2	1	0	00
		100 (32)	14	12	10	10	8	8	6	6	4	4	3	3	2	1	0	00
		50 (16)	14	12	10	10	8	8	6	6	4	4	3	3	2	1	0	00
			15	20	25	30	35	40	45	50	60	70	80	90	100	110	125	150
SUPPLY CIRCUIT AMPACITY																		
NOTE: WIRE BASED ON COPPER CONDUCTORS 75° MINIMUM RATING FOR MORE THAN 3 CONDUCTORS IN A RACEWAY OR CABLE SEE N.E.C. FOR DERATING THE AMPACITY OF EACH CONDUCTOR																		

3.12.5 ELECTRICAL DATA - BLOWER MOTOR ONLY

3.12.5.1 ELECTRICAL DATA – BLOWER MOTOR ONLY – WITHOUT ELECTRIC HEAT: (-)H1PY

MODEL (HP)	VOLTAGE	PHASE*	HRT2	HP	RPM	SPEEDS	CIRCUIT AMPL.	MINIMUM CIRCUIT CAPACITY	MAXIMUM CIRCUIT PROTECTOR
34175	115	1	40	1/5	1575	2	2.3	3.0	15
34175				1/5	1575	2	3.3	5.5	15
35175				3/8	1575	2	4.7	6.5	15
35175				1/2	1575	2	6.1	8.5	15
40215				1/2	1575	2	7.9	10.5	15
40215				3/4	1575	2	8.4	11.0	15
45175	208/240	1 & 3	40	1/2	1575	2	1.7	3.0	15
45175				1/2	1575	2	1.7	3.0	15
45175				3/4	1575	2	2.5	4.0	15
45175-06015				1/2	1575	2	2.5	4.0	15
40215				1/2	1575	2	5.2	7.0	15
40215-06015				3/4	1575	2	5.2	7.0	15
40215-06015	440	3	40	3/4	1575	2	5.2	7.0	15
40215				1/2	1575	2	1.7	3.0	15
40215				1/2	1575	2	1.9	3.0	15
40215				3/4	1575	2	2.3	3.0	15

*Blower motors are all single phase motors.

3.12.5.2 ELECTRICAL DATA – BLOWER MOTOR ONLY – WITHOUT ELECTRIC HEAT: (-)H2T

MODEL (-H2T)	VOLTAGE	PHASE	HRT2	HP (W)	RPM	SPEEDS	MOTOR AMPL.	MINIMUM CIRCUIT CAPACITY	MAXIMUM OVERCURRENT PROTECTION
34175	115	1	40	1/2 (340)	350-1100	4	2.3	3.0	15
35175-06015-06015M				1/2 (375)	350-1100	4	3.4	5.5	15
35215				1/2 (340)	350-1100	4	3.4	5.5	15
40215				3/4 (340)	350-1100	4	3.4	5.5	15
40215-06015				3/4 (340)	350-1100	4	6.3	6.0	15
40215M				3/4 (340)	350-1100	4	6.4	6.0	15
40215-06015				3/4 (320)	350-1100	4	6.4	10.0	15
MODEL (-H2T)	VOLTAGE	PHASE	HRT2	HP (W)	RPM	SPEEDS	MOTOR AMPL.	MINIMUM CIRCUIT CAPACITY	MAXIMUM OVERCURRENT PROTECTION
34175	208/240	1 & 3	40	1/2 (340)	350-1100	4	1.4	3.0	15
35175-06015-06015M				1/2 (375)	350-1100	4	2.4	3.0	15
35215				1/2 (340)	350-1100	4	2.3	5.0	15
40215*				3/4 (340)	350-1100	4	3.3	6.0	15
40215				3/4 (340)	350-1100	4	3.7	5.0	15
40215				3/4 (320)	350-1100	4	3.2	4.0	15
40215M				3/4 (340)	350-1100	4	3.3	4.0	15
40215*				3/4 (340)	350-1100	4	3.4	7.0	15
40215				3/4 (320)	350-1100	4	4.7	5.0	15
MODEL (-H2T)	VOLTAGE	PHASE	HRT2	HP (W)	RPM	SPEEDS	MOTOR AMPL.	MINIMUM CIRCUIT CAPACITY	MAXIMUM OVERCURRENT PROTECTION
34175	440	3	40	1/2 (375)	350-1100	4	1.3	3.0	15
35215				1/2 (340)	350-1100	4	1.3	3.0	15
35215*				1/2 (375)	350-1100	4	1.3	3.0	15
35215M				1/2 (320)	350-1100	4	1.3	5.0	15
40215-06015				3/4 (340)	350-1100	4	1.3	6.0	15
40215-06015M				3/4 (340)	350-1100	4	3.4	5.0	15
40215*				3/4 (340)	350-1100	4	1.8	5.0	15
40215				3/4 (340)	350-1100	4	3.7	5.0	15

*Units with "A" Coil

3.12.5.3 ELECTRICAL DATA - BLOWER MOTOR ONLY - WITHOUT ELECTRIC HEAT: (-)H1A

MODEL L9H1A	VOLTAGE	PHASE	HEAT2	HP (W)	HPM	SPEED	MOTOR AMPS	MINIMUM CIRCUIT CAPACITY	MAXIMUM OVERCURRENT PROTECTION
24V72	115	1	60	1/2 (348)	220-1100	4	2.7	4.0	15
24V72				1/2 (372)	220-1100	4	2.4	5.0	15
24V72				1/2 (348)	220-1100	6	2.3	5.0	15
48V72				1/4 (228)	600	2	2.4	15.0	15
48V1272222				1/4 (228)	220-1100	4	2.0	10.0	15
MODEL L9H1A	VOLTAGE	PHASE	HEAT2	HP (W)	HPM	SPEED	MOTOR AMPS	MINIMUM CIRCUIT CAPACITY	MAXIMUM OVERCURRENT PROTECTION
24V72	208/200	1 & 3	60	1/2 (348)	220-1100	4	1.8	3.0	15
24V72				1/2 (372)	220-1100	4	1.5	3.0	15
24V72				1/2 (348)	220-1100	6	1.3	3.0	15
48V72				1/4 (228)	600	2	2.2	7.0	15
48V1272				1/4 (228)	220-1100	4	2.4	7.0	15
48V72				1/4 (228)	220-1100	4	1.7	6.0	15

*Units with "A" Co2

3.12.6 ELECTRICAL DATA – WITH ELECTRIC HEAT

3.12.6.1 ELECTRICAL DATA – WITH ELECTRIC HEAT: (-)H1PY

Installation of the UL Listed original equipment manufacturer provided heater kits listed in the following table is recommended for all auxiliary heating requirements.

AIR HANDLER MODEL (-)H1PY	HEATER MODEL NO.	HEATER KW (208/240V)	PH/Hz	NO. ELEMENTS - KW PER	TYPE SUPPLY CIRCUIT SINGLE CIRCUIT MULTIPLE CIRCUIT	HEATER AMPS	MOTOR AMPS	MINIMUM CIRCUIT AMPACITY	Maximum Overcurrent Protection
18175, 24175 (208/240V)	RXBH-1724103J-B	2.25/3.0	180	1-3.0	SINGLE	10.8/12.5	1.7	18/18	20/20
	RXBH-1724103J-B	2.25/3.0	180	1-3.0	SINGLE	10.8/12.5	1.7	18/18	20/20
	RXBH-1724105J-B	3.0/4.8	180	1-4.8	SINGLE	17.3/20.0	1.7	24/28	25/30
	RXBH-1724107J-B	5.4/7.2	180	2-3.6	SINGLE	26.0/30.0	1.7	38/40	35/40
	RXBH-1724110J-B	7.2/9.6	180	2-4.8	SINGLE	34.6/40.0	1.7	46/53	50/60
	RXBH-1724A13J-B	9.4/12.6	180	3-4.17	SINGLE	45.1/52.1	1.7	58/68	60/70
	RXBH-1724A13J-B	3.3/4.2	180	1-4.17	MULTIPLE CKT 1	15.9/17.4	1.7	21/24	25/28
		8.3/9.3	180	2-4.17	MULTIPLE CKT 2	30.1/34.7	0	38/44	40/45
	RXBH-1724A07C-B	5.4/7.2	340	3-2.4	SINGLE	15.9/17.3	1.7	21/24	25/28
	RXBH-1724A18C-B	7.2/9.6	340	3-3.2	SINGLE	20.0/23.1	1.7	28/31	30/35
	RXBH-1724A13C-B	9.4/12.6	340	3-4.17	SINGLE	26.1/30.1	1.7	38/40	35/40
30175/36175 (208/240V)	RXBH-17163J-B	2.25/3.0	180	1-3.0	SINGLE	10.8/12.5	2.5	17/18	20/20
30175, 36175, 36215 (208/240V)	RXBH-1724103J-B	2.25/3.0	180	1-3.0	SINGLE	10.8/12.5	2.5	17/18	20/20
	RXBH-1724105J-B	3.0/4.8	180	1-4.8	SINGLE	17.3/20.0	2.5	26/28	25/30
	RXBH-1724107J-B	5.4/7.2	180	2-3.6	SINGLE	26.0/30.0	2.5	38/41	40/45
	RXBH-1724110J-B	7.2/9.6	180	2-4.8	SINGLE	34.6/40.0	2.5	47/54	50/60
	RXBH-1724A13J-B	9.4/12.6	180	3-4.17	SINGLE	45.1/52.1	2.5	58/68	60/70
	RXBH-1724A13J-B	3.3/4.2	180	1-4.17	MULTIPLE CKT 1	15.9/17.4	2.5	22/25	25/28
		8.3/9.3	180	2-4.17	MULTIPLE CKT 2	30.1/34.7	0	38/44	40/45
	RXBH-1724A15J-B	10.8/14.4	180	3-4.8	SINGLE	51.8/60.0	2.5	68/75	70/80
	RXBH-1724A15J-B	3.0/4.8	180	1-4.8	MULTIPLE CKT 1	17.3/20.0	2.5	26/28	25/30
		7.2/9.6	180	2-4.8	MULTIPLE CKT 2	34.6/40.0	0	46/50	45/50
	RXBH-1724A16J-B	12.8/17.0	180	3-5.88	SINGLE	61.8/73.8	2.5	81/92	90/100
	RXBH-1724A16J-B	4.3/5.7	180	1-5.88	MULTIPLE CKT 1	20.0/23.6	2.5	28/33	30/35
		8.5/11.3	180	2-5.88	MULTIPLE CKT 2	41.1/47.2	0	52/58	60/60
	RXBH-1724A07C-B	5.4/7.2	340	3-2.4	SINGLE	15.9/17.3	2.5	22/25	25/28
	RXBH-1734A18C-B	7.2/9.6	340	3-3.2	SINGLE	20.0/23.1	2.5	28/32	30/35
	RXBH-1724A13C-B	9.4/12.6	340	3-4.17	SINGLE	26.1/30.1	2.5	38/41	40/45
	RXBH-1734A18C-B	10.8/14.4	340	3-4.8	SINGLE	30.0/34.6	2.5	41/47	45/50
	RXBH-1724A18C-B	12.8/17.0	340	3-5.88	SINGLE	56.5/61.0	2.5	48/55	50/60

? Heater Kit Connection Type: A=Breaker B=Terminal Block C=Pullout Disconnect

3.12.6.1 ELECTRICAL DATA – WITH ELECTRIC HEAT: (-)H1PY - continued

AIR HANDLER MODEL (-H1PY)	HEATER MODEL NO.	HEATER KW (208/240V)	PHASE	NO. ELEMENTS - KW PER	TYPE SUPPLY CIRCUIT SINGLE CIRCUIT MULTIPLE CIRCUIT	HEATER AMPS	MOTOR AMPS	MINIMUM CIRCUIT CAPACITY	MAXIMUM OVERCURRENT PROTECTION
40210 40215 40245 (208/240V)	R02BH-1724Y10J-B	3.6/4.8	1Ø	1-4.8	SINGLE	17.3/20.0	0.2	20/32	30/35
	R02BH-1724Y17J-B	5.4/7.2	1Ø	2-3.6	SINGLE	25.0/30.0	0.2	30/44	40/45
	R02BH-1724Y10J-B	7.2/9.6	1Ø	2-4.8	SINGLE	34.6/40.0	0.2	50/57	50/60
	R02BH-1724A15J-B	10.8/14.4	1Ø	3-4.8	SINGLE	51.9/60.0	0.2	72/82	80/90
	R02BH-1724A15J-B	3.6/4.8	1Ø	1-4.8	MULTIPLE CKT 1	17.3/20.0	0.2	20/32	30/35
		7.2/9.6	1Ø	2-4.8	MULTIPLE CKT 2	34.6/40.0	0.0	44/50	45/52
	R02BH-1724A18J-B	10.8/17	1Ø	3-5.04	SINGLE	51.9/70.8	0.2	64/80	80/100
	R02BH-1724A18J-B	4.3/5.7	1Ø	1-5.04	MULTIPLE CKT 1	20.5/23.8	0.2	33/38	35/40
		8.5/11.3	1Ø	1-5.04	MULTIPLE CKT 2	41.0/47.2	0.0	52/58	60/60
	R02BH-24A20J-B	14.4/19.2	1Ø	4-4.8	SINGLE	60.2/80	0.2	80/107	100/110
	R02BH-24A20J-B	7.2/9.6	1Ø	2-4.8	MULTIPLE CKT 1	34.6/40.0	0.2	50/57	50/60
		7.2/9.6	1Ø	2-4.8	MULTIPLE CKT 2	34.6/40.0	0.0	44/50	45/50
	R02BH-24A25J-B	18.0/24.0	1Ø	6-4.0	SINGLE	88.4/99.3	0.2	110/132	125/150
	R02BH-24A25J-B (4-ton only)	6.0/8.0	1Ø	2-4.0	MULTIPLE CKT 1	28.8/33.3	0.2	43/49	45/50
		6.0/8.0	1Ø	2-4.0	MULTIPLE CKT 2	28.8/33.3	0.0	35/42	40/45
		6.0/8.0	1Ø	2-4.0	MULTIPLE CKT 3	28.8/33.3	0.0	35/42	40/45
	R02BH-1724A07S-B	5.4/7.2	3Ø	3-3.4	SINGLE	19.0/17.3	0.2	26/29	30/30
	R02BH-1724A10C-B	7.2/9.6	3Ø	3-3.2	SINGLE	20.0/23.1	0.2	32/36	35/40
	R02BH-1724A15C-B	10.8/14.4	3Ø	3-4.8	SINGLE	33.0/34.8	0.2	44/50	45/50
	R02BH-1724A18C-B	12.6/17.0	3Ø	3-5.08	SINGLE	35.6/41.0	0.2	51/58	60/60
	R02BH-24A20C-B	14.4/19.2	3Ø	6-3.2	SINGLE	40.0/46.2	0.2	57/65	60/70
	R02BH-24A20C-B	7.2/9.6	3Ø	3-3.2	MULTIPLE CKT 1	20.0/23.1	0.2	32/36	35/40
		7.2/9.6	3Ø	3-3.2	MULTIPLE CKT 2	20.0/23.1	0.0	26/29	25/30
	R02BH-24A25C-B	18.0/24.0	3Ø	6-4.0	SINGLE	53.0/57.8	0.2	69/79	70/80
	R02BH-24A25C-B (4-ton only)	6.0/12.0	3Ø	3-4.0	MULTIPLE CKT 1	25.0/26.8	0.2	38/43	40/45
		6.0/12.0	3Ø	3-4.0	MULTIPLE CKT 2	25.0/26.8	0.0	32/37	35/40

* Header KX Connection Type: A = Breaker, B = Terminal Block, C = Pullout Disconnect

3.12.6.1 ELECTRICAL DATA – WITH ELECTRIC HEAT: (-)H1PY - continued

AIR HANDLER MODEL (-)H1PY	HEATER MODEL NO.	HEATER KW (208/240V)	PHASE	NO. ELEMENTS - KW PER	TYPE SUPPLY CIRCUIT SINGLE CIRCUIT MULTIPLE CIRCUIT	HEATER AMPS	MOTOR AMPS	MINIMUM CIRCUIT AMPLACITY	MAXIMUM OVERCURRENT PROTECTION
8024S (208/240V)	R02H-1724TSC-D	5.994.8	1PH	1-4.8	SINGLE	17.208.2	3.3	2500	3000
	R02H-1724TST-D	5.677.2	1PH	2-3.8	SINGLE	20.028.2	3.2	2500	4000
	R02H-1724TSC-B	7.228.8	1PH	2-4.8	SINGLE	20.048.2	3.2	5000	5000
	R02H-1724TSC-B	50.814.4	1PH	3-4.8	SINGLE	31.008.2	3.2	7500	8000
	R02H-1724TSC-D	5.994.8	1PH	1-4.8	MULTIPLE CRT 1	17.208.2	3.3	2500	3000
		7.228.8	1PH	2-4.8	MULTIPLE CRT 2	20.048.2	0	4000	4000
	R02H-1724TSC-B	52.817.2	1PH	30/38	SINGLE	41.078.2	3.2	8000	8000
	R02H-1724TSC-B	4.385.7	1PH	1-5/8	MULTIPLE CRT 1	20.028.2	3.2	2500	2500
		6.011.3	1PH	20/38	MULTIPLE CRT 2	41.040.2	0	5000	6000
	R02H-24A2SC-B	18.415.2	1PH	4-4.8	SINGLE	80.208	3.2	8000	10000
	R02H-24A2SC-B	7.228.8	1PH	2-4.8	MULTIPLE CRT 1	20.048.2	3.2	5000	5000
		7.228.8	1PH	2-4.8	MULTIPLE CRT 2	20.048.2	0	4000	4000
	R02H-24A2SC-B	18.004.8	1PH	6-4.8	SINGLE	80.008.2	3.2	10000	12500
	R02H-24A2SC-B	6.000.0	1PH	2-4.8	MULTIPLE CRT 1	20.000.2	3.2	4000	4000
		6.000.0	1PH	2-4.8	MULTIPLE CRT 2	20.000.2	0	3000	4000
		6.000.0	1PH	2-4.8	MULTIPLE CRT 3	20.000.2	0	3000	4000
	R02H-24A2SC-B	21.608.8	1PH	6-4.8	SINGLE	100.008	3.2	13000	15000
	R02H-24A2SC-B	7.228.8	1PH	2-4.8	MULTIPLE CRT 1	20.048.2	3.2	5000	5000
		7.228.8	1PH	2-4.8	MULTIPLE CRT 2	20.048.2	0	4000	4000
		7.228.8	1PH	2-4.8	MULTIPLE CRT 3	20.048.2	0	4000	4000
36/175/3024S (480V)	R02H-17A2SD	7.2	3PH	3-2.4	SINGLE	6.7	1.7	13	15
	R02H-17A1SD	9.9	3PH	3-2.2	SINGLE	11.6	1.7	17	20
	R02H-17A1SD	14.4	3PH	3-4.8	SINGLE	17.3	1.7	24	28
	R02H-17A1SD	17	3PH	3-5.84	SINGLE	23.4	1.7	28	38
40/116 (480V)	R02H-24A2SD	7.2	3PH	3-2.4	SINGLE	6.7	1.9	14	15
	R02H-24A1SD	9.9	3PH	3-2.2	SINGLE	11.6	1.9	17	20
	R02H-24A1SD	14.4	3PH	3-4.8	SINGLE	17.3	1.9	24	28
	R02H-24A1SD	17	3PH	3-5.84	SINGLE	23.4	1.9	28	38
	R02H-24A2SD	19.2	3PH	6-2.2	SINGLE	23.2	1.9	32	38
	R02H-24A2SD	24	3PH	6-3.2	SINGLE	28.8	2.2	38	48
40/116 (480V)	R02H-24A2SD	7.2	3PH	3-2.4	SINGLE	6.7	2.2	14	15
	R02H-24A1SD	9.9	3PH	3-2.2	SINGLE	11.6	2.2	16	20
	R02H-24A1SD	14.4	3PH	3-4.8	SINGLE	17.3	2.2	20	28
	R02H-24A1SD	17	3PH	6-2.84	SINGLE	23.4	2.2	28	38
	R02H-24A2SD	19.2	3PH	6-2.2	SINGLE	23.2	2.2	32	38
	R02H-24A2SD	24	3PH	6-3.2	SINGLE	28.8	2.2	38	48

? Heater Kit Connection Type: A=Breaker B=Terminal Block C=Pullout Disconnect

② D Voltage = 480 Volts

*Values only. No single-point kit available.

NOTES:

- Electric heater BTUH = (heater watts + motor watts) x 3.412 (see air-flow table for motor watts.)
- Supply circuit protective devices may be fuses or HACR type circuit breakers.
- Motor load is included in single circuit or circuit 1 of multiple circuits.
- Heater loads are balanced on 3-phase models with 3 or 6 heating elements only.
- Electric heater kits are not permitted for use with 115 volt air-handlers (A voltage).
- 2 Voltage (208/240V) single phase air-handlers are designed to be used with single or three phase 208/240V electric heaters. To connect 3 phase power to the air handler terminal block, bring only two leads to terminal block, cap, insulate, and fully secure the third lead.
- Do not install 480V electric heaters in 208/240V air-handlers.
- Do not install 208/240V electric heaters in 480V air-handlers.
- If the heater kit is listed under both single and multiple circuits, the heater kit is shipped from factory as multiple circuits. For single phase applications, Jumper bar kit R02U-A21 and R02U-A31 can be used to convert multiple circuits to a single supply circuit. See Section 8.2 for details.

3.12.6.2 ELECTRICAL DATA – WITH ELECTRIC HEAT: (-)H2T

Installation of the UL Listed original equipment manufacturer provided heater kits listed in the following table is recommended for all auxiliary heating requirements.

AIR HANDLER MODEL (-)H2TY	HEATER MODEL NUMBER	HEATER KW (208/240V)	PH/HZ	NO. ELEMENTS - KW PER	TYPE SUPPLY CIRCUIT SINGLE CIRCUIT MULTIPLE CIRCUIT	HEATER AMP ¹	MOTOR AMP ¹	MINIMUM CIRCUIT AMPACITY	MAXIMUM OVERCURRENT PROTECTION
3417STAMNJ	RxBH-173493J-B	2,253.0	160	1-3.0	SINGLE	10.8/12.5	1.8	15/18	20/20
	RxBH-173493J-B	2,253.0	160	1-3.0	SINGLE	10.8/12.5	1.8	15/18	20/20
	RxBH-173495J-B	3,64.8	160	1-4.8	SINGLE	17.3/20.0	1.8	24/28	30/30
	RxBH-173497J-B	5,47.2	160	2-3.6	SINGLE	28.3/30.0	1.8	35/40	40/40
	RxBH-173498J-B	7,29.6	160	2-4.8	SINGLE	34.8/40.0	1.8	45/53	50/50
	RxBH-1734A13J-B	9,412.5	160	3-4.17	SINGLE	45.1/52.1	1.8	59/68	60/70
	RxBH-1734A13J-B	3,144.2	160	1-4.17	MULTIPLE Ckt 1	15.9/17.4	1.8	21/24	30/30
		6,388.3	160	2-4.17	MULTIPLE Ckt 2	30.1/34.7	0.0	38/44	40/50
	RxBH-1734A07C-B	5,47.2	360	3-2.4	SINGLE	15.9/17.3	1.8	21/24	30/30
	RxBH-1734A10C-B	7,29.6	360	3-3.2	SINGLE	20.9/23.1	1.8	28/32	30/40
3617STAMNJ	RxBH-17793J-B	2,253.0	160	1-3.0	SINGLE	10.8/12.5	2.4	17/19	20/20
	RxBH-173493J-B	2,253.0	160	1-3.0	SINGLE	10.8/12.5	2.4	17/19	20/20
	RxBH-173495J-B	3,64.8	160	1-4.8	SINGLE	17.3/20.0	2.4	25/28	30/30
	RxBH-173497J-B	5,47.2	160	2-3.6	SINGLE	28.3/30.0	2.4	35/41	40/50
	RxBH-173498J-B	7,29.6	160	2-4.8	SINGLE	34.8/40.0	2.4	47/53	50/60
	RxBH-1734A13J-B	9,412.5	160	3-4.17	SINGLE	45.1/52.1	2.4	60/69	60/70
	RxBH-1734A13J-B	3,144.2	160	1-4.17	MULTIPLE Ckt 1	15.9/17.4	2.4	22/25	30/30
		6,388.3	160	2-4.17	MULTIPLE Ckt 2	30.1/34.7	0.0	38/44	40/50
	RxBH-1734A15J-B	10,814.4	160	3-4.18	SINGLE	51.9/60.0	2.4	68/78	70/80
	RxBH-1734A15J-B	3,64.8	160	1-4.18	MULTIPLE Ckt 1	17.3/20.0	2.4	25/28	30/30
		7,29.6	160	2-4.18	MULTIPLE Ckt 2	34.8/40.0	0.0	44/50	50/50
	RxBH-1734A16J-B	12,817.0	160	4-4.26	SINGLE	61.6/70.8	2.4	80/92	80/100
	RxBH-1734A16J-B	4,385.7	160	1-5.68	MULTIPLE Ckt 1	20.5/23.8	2.4	29/33	30/40
		8,511.3	160	2-5.68	MULTIPLE Ckt 2	41.1/47.2	0.0	52/59	60/60
	RxBH-1734A07C-B	5,47.2	360	3-2.4	SINGLE	15.9/17.3	2.4	22/25	30/30
	RxBH-1734A10C-B	7,29.6	360	3-3.2	SINGLE	20.9/23.1	2.4	28/32	30/40
	RxBH-17793J-B	2,253.0	160	1-3.0	SINGLE	10.8/12.5	2.3	17/19	20/20
	RxBH-173493J-B	2,253.0	160	1-3.0	SINGLE	10.8/12.5	2.3	17/19	20/20
	RxBH-173495J-B	3,64.8	160	1-4.8	SINGLE	17.3/20.0	2.3	25/28	30/30
	RxBH-173497J-B	5,47.2	160	2-3.6	SINGLE	28.3/30.0	2.3	35/41	40/50
	RxBH-173498J-B	7,29.6	160	2-4.8	SINGLE	34.8/40.0	2.3	47/53	50/60
	RxBH-1734A13J-B	9,412.5	160	3-4.17	SINGLE	45.1/52.1	2.3	60/68	60/70
3621STAMNJ	RxBH-1734A13J-B	3,144.2	160	1-4.17	MULTIPLE Ckt 1	15.9/17.4	2.3	22/25	30/30
		6,388.3	160	2-4.17	MULTIPLE Ckt 2	30.1/34.7	0.0	38/44	40/50
	RxBH-1734A15J-B	10,814.4	160	3-4.18	SINGLE	51.9/60.0	2.3	68/78	70/80
	RxBH-1734A15J-B	3,64.8	160	1-4.18	MULTIPLE Ckt 1	17.3/20.0	2.3	25/28	30/30
		7,29.6	160	2-4.18	MULTIPLE Ckt 2	34.8/40.0	0.0	44/50	50/50
	RxBH-1734A16J-B	12,817.0	160	4-4.26	SINGLE	61.6/70.8	2.3	80/92	80/100
	RxBH-1734A16J-B	4,385.7	160	1-5.68	MULTIPLE Ckt 1	20.5/23.8	2.3	29/33	30/40
		8,511.3	160	2-5.68	MULTIPLE Ckt 2	41.1/47.2	0.0	52/59	60/60
	RxBH-1734A07C-B	5,47.2	360	3-2.4	SINGLE	15.9/17.3	2.3	22/25	30/30
	RxBH-1734A10C-B	7,29.6	360	3-3.2	SINGLE	20.9/23.1	2.3	28/32	30/40
3821MTANAJ 3821MTANNJ	RxBH-17793J-B	2,253.0	160	1-3.0	SINGLE	10.8/12.5	2.4	17/19	20/20
	RxBH-173493J-B	2,253.0	160	1-3.0	SINGLE	10.8/12.5	2.4	17/19	20/20
	RxBH-173495J-B	3,64.8	160	1-4.8	SINGLE	17.3/20.0	2.4	25/28	30/30
	RxBH-173497J-B	5,47.2	160	2-3.6	SINGLE	28.3/30.0	2.4	35/41	40/50
	RxBH-173498J-B	7,29.6	160	2-4.8	SINGLE	34.8/40.0	2.4	47/53	50/60
	RxBH-1734A13J-B	9,412.5	160	3-4.17	SINGLE	45.1/52.1	2.4	60/69	60/70
	RxBH-1734A13J-B	3,144.2	160	1-4.17	MULTIPLE Ckt 1	15.9/17.4	2.4	22/25	30/30
		6,388.3	160	2-4.17	MULTIPLE Ckt 2	30.1/34.7	0.0	38/44	40/50
	RxBH-1734A15J-B	10,814.4	160	3-4.18	SINGLE	51.9/60.0	2.4	68/78	70/80
	RxBH-1734A15J-B	3,64.8	160	1-4.18	MULTIPLE Ckt 1	17.3/20.0	2.4	25/28	30/30
		7,29.6	160	2-4.18	MULTIPLE Ckt 2	34.8/40.0	0.0	44/50	50/50
	RxBH-1734A16J-B	12,817.0	160	4-4.26	SINGLE	61.6/70.8	2.4	80/92	80/100
	RxBH-1734A16J-B	4,385.7	160	1-5.68	MULTIPLE Ckt 1	20.5/23.8	2.4	29/33	30/40
		8,511.3	160	2-5.68	MULTIPLE Ckt 2	41.1/47.2	0.0	52/59	60/60
	RxBH-1734A07C-B	5,47.2	360	3-2.4	SINGLE	15.9/17.3	2.4	22/25	30/30
	RxBH-1734A10C-B	7,29.6	360	3-3.2	SINGLE	20.9/23.1	2.4	28/32	30/40

- 1 Heater Kit Connection Type: A=Breaker; B=Terminal Block; C=Pullout Disconnect

3.12.6.2 ELECTRICAL DATA – WITH ELECTRIC HEAT: (-)H2T - continued

AIR HANDLER MODEL (-H2T)	HEATER MODEL NUMBER	HEATER KW (240/240V)	PHASE	NO. ELEMENTS - KW PER	TYPE SUPPLY CIRCUIT SINGLE CIRCUIT MULTIPLE CIRCUIT	HEATER AMPS	MOTOR AMPS	MINIMUM CIRCUIT CAPACITY	MAXIMUM OVERCURRENT PROTECTION
48218TAMUJ	RXBH-1724R06CE	3.648	1PH	1-4.8	SINGLE	17.322.0	3.7	2100	3000
	RXBH-1724R07CE	5.472	1PH	2-3.6	SINGLE	25.033.0	3.7	3843	4950
	RXBH-1724R10CE	7.296	1PH	2-4.8	SINGLE	34.041.0	3.7	4855	5900
	RXBH-1724A15LB	10.874.4	1PH	3-4.8	SINGLE	51.061.0	3.7	7080	7680
	RXBH-1724A15LB	3.648	1PH	1-4.8	MULTIPLE CRT 1	17.322.0	3.7	2100	3000
	RXBH-1724A15LB	7.296	1PH	2-4.8	MULTIPLE CRT 2	34.041.0	3.7	4855	5900
	RXBH-1724A18LB	12.877.0	1PH	4-4.8	SINGLE	61.071.8	3.7	8294	9000
	RXBH-1724A18LB	4.357	1PH	1-5.8	MULTIPLE CRT 1	20.521.8	3.7	3105	4040
	RXBH-1724A18LB	8.091.3	1PH	2-5.8	MULTIPLE CRT 2	41.047.2	3.7	5269	5900
	RXBH-34A31LB	14.478.2	1PH	4-4.8	SINGLE	69.288.0	3.7	10110	10810
	RXBH-34A31LB	7.238	1PH	2-4.8	MULTIPLE CRT 1	34.041.0	3.7	4855	5900
	RXBH-34A31LB	7.238	1PH	2-4.8	MULTIPLE CRT 2	34.041.0	3.7	4855	5900
	RXBH-34A31LB	18.024.0	1PH	6-4.8	SINGLE	88.288.0	3.7	110120	120150
	RXBH-34A31LB	8.091.0	1PH	2-4.8	MULTIPLE CRT 1	28.831.3	3.7	4147	5050
	RXBH-34A31LB	8.091.0	1PH	2-4.8	MULTIPLE CRT 2	28.831.3	3.7	3843	4950
	RXBH-1724R07CE	5.472	3PH	3-2.4	SINGLE	15.071.3	3.7	2927	3900
	RXBH-1724A10CE	7.296	3PH	3-3.2	SINGLE	20.031.1	3.7	3034	3940
	RXBH-1724A10CE	10.874.4	3PH	3-4.8	SINGLE	30.044.6	3.7	4248	5050
	RXBH-1724A18CE	12.877.0	3PH	3-5.8	SINGLE	38.041.0	3.7	4855	5900
	RXBH-34A20CE	14.478.2	3PH	6-3.2	SINGLE	40.041.2	3.7	5050	6000
	RXBH-34A20CE	7.238	3PH	3-3.2	MULTIPLE CRT 1	20.031.1	3.7	3034	3940
	RXBH-34A20CE	7.238	3PH	3-3.2	MULTIPLE CRT 2	20.031.1	3.7	3034	3940
	RXBH-34A20CE	18.024.0	3PH	6-4.0	SINGLE	30.047.4	3.7	6077	7080
	RXBH-34A20CE	8.092.3	3PH	3-4.0	MULTIPLE CRT 1	25.028.9	3.7	3841	4845
	RXBH-34A20CE	8.092.3	3PH	3-4.0	MULTIPLE CRT 2	25.028.9	3.7	3841	4845
48218TAMAJ	RXBH-1724R06CE	3.648	1PH	1-4.8	SINGLE	17.322.0	3.8	2100	3000
	RXBH-1724R07CE	5.472	1PH	2-3.6	SINGLE	25.033.0	3.8	3843	4950
	RXBH-1724R10CE	7.296	1PH	2-4.8	SINGLE	34.041.0	3.8	4855	5900
	RXBH-1724A15LB	10.874.4	1PH	3-4.8	SINGLE	51.061.0	3.8	7080	7680
	RXBH-1724A15LB	3.648	1PH	1-4.8	MULTIPLE CRT 1	17.322.0	3.8	2100	3000
	RXBH-1724A15LB	7.296	1PH	2-4.8	MULTIPLE CRT 2	34.041.0	3.8	4855	5900
	RXBH-1724A18LB	12.877.0	1PH	4-4.8	SINGLE	61.071.8	3.8	8294	9000
	RXBH-1724A18LB	4.357	1PH	1-5.8	MULTIPLE CRT 1	20.521.8	3.8	3105	4040
	RXBH-1724A18LB	8.091.3	1PH	2-5.8	MULTIPLE CRT 2	41.047.2	3.8	5269	5900
	RXBH-34A31LB	14.478.2	1PH	4-4.8	SINGLE	69.288.0	3.8	10110	10810
	RXBH-34A31LB	7.238	1PH	2-4.8	MULTIPLE CRT 1	34.041.0	3.8	4855	5900
	RXBH-34A31LB	7.238	1PH	2-4.8	MULTIPLE CRT 2	34.041.0	3.8	4855	5900
	RXBH-34A31LB	18.024.0	1PH	6-4.8	SINGLE	88.288.0	3.8	110120	120150
	RXBH-34A31LB	8.091.0	1PH	2-4.8	MULTIPLE CRT 1	28.831.3	3.8	4147	5050
	RXBH-34A31LB	8.091.0	1PH	2-4.8	MULTIPLE CRT 2	28.831.3	3.8	3843	4950
	RXBH-1724R07CE	5.472	3PH	3-2.4	SINGLE	15.071.3	3.8	2927	3900
	RXBH-1724A10CE	7.296	3PH	3-3.2	SINGLE	20.031.1	3.8	3034	3940
	RXBH-1724A10CE	10.874.4	3PH	3-4.8	SINGLE	30.044.6	3.8	4248	5050
	RXBH-1724A18CE	12.877.0	3PH	3-5.8	SINGLE	38.041.0	3.8	4855	5900
	RXBH-34A20CE	14.478.2	3PH	6-3.2	SINGLE	40.041.2	3.8	5050	6000
	RXBH-34A20CE	7.238	3PH	3-3.2	MULTIPLE CRT 1	20.031.1	3.8	3034	3940
	RXBH-34A20CE	7.238	3PH	3-3.2	MULTIPLE CRT 2	20.031.1	3.8	2930	3900
	RXBH-34A20CE	18.024.0	3PH	6-4.0	SINGLE	30.047.4	3.8	6077	7080
	RXBH-34A20CE	8.092.3	3PH	3-4.0	MULTIPLE CRT 1	25.028.9	3.8	3841	4845
	RXBH-34A20CE	8.092.3	3PH	3-4.0	MULTIPLE CRT 2	25.028.9	3.8	3841	4845
48248TAMUJ	RXBH-1724R06CE	3.648	1PH	1-4.8	SINGLE	17.322.0	3.2	2820	3000
	RXBH-1724R07CE	5.472	1PH	2-3.6	SINGLE	25.033.0	3.2	3140	4045
	RXBH-1724R10CE	7.296	1PH	2-4.8	SINGLE	34.041.0	3.2	4855	5000
	RXBH-1724A15LB	10.874.4	1PH	3-4.8	SINGLE	51.061.0	3.2	6870	7680
	RXBH-1724A15LB	3.648	1PH	1-4.8	MULTIPLE CRT 1	17.322.0	3.2	3820	3900
	RXBH-1724A15LB	7.296	1PH	2-4.8	MULTIPLE CRT 2	34.041.0	3.2	4855	5000
	RXBH-1724A18LB	12.877.0	1PH	4-4.8	SINGLE	61.071.8	3.2	6100	6000
	RXBH-1724A18LB	4.357	1PH	1-5.8	MULTIPLE CRT 1	20.521.8	3.2	3034	3900
	RXBH-1724A18LB	8.091.3	1PH	2-5.8	MULTIPLE CRT 2	41.047.2	3.2	5269	5900
	RXBH-34A31LB	14.478.2	1PH	4-4.8	SINGLE	69.288.0	3.2	10110	10810
	RXBH-34A31LB	7.238	1PH	2-4.8	MULTIPLE CRT 1	34.041.0	3.2	4855	5000
	RXBH-34A31LB	7.238	1PH	2-4.8	MULTIPLE CRT 2	34.041.0	3.2	4855	5000
	RXBH-34A31LB	18.024.0	1PH	6-4.8	SINGLE	88.288.0	3.2	110120	120150
	RXBH-34A31LB	8.091.0	1PH	2-4.8	MULTIPLE CRT 1	28.831.3	3.2	4088	5000
	RXBH-34A31LB	8.091.0	1PH	2-4.8	MULTIPLE CRT 2	28.831.3	3.2	3842	4950
	RXBH-34A31LB	8.091.0	1PH	2-4.8	MULTIPLE CRT 3	28.831.3	3.2	3842	4950
	RXBH-34A31LB	20.707.6	1PH	6-4.8	SINGLE	88.288.0	3.2	120128	130150
	RXBH-1724R07CE	5.472	3PH	3-2.4	SINGLE	15.071.3	3.2	2928	2900
	RXBH-1724A10CE	7.296	3PH	3-3.2	SINGLE	20.031.1	3.2	3030	3900
	RXBH-1724A10CE	10.874.4	3PH	3-4.8	SINGLE	30.044.6	3.2	4248	4900
	RXBH-1724A18CE	12.877.0	3PH	3-5.8	SINGLE	38.041.0	3.2	4855	5900
	RXBH-34A20CE	14.478.2	3PH	6-3.2	SINGLE	40.041.2	3.2	5050	6000
	RXBH-34A20CE	7.238	3PH	3-3.2	MULTIPLE CRT 1	20.031.1	3.2	3030	3900
	RXBH-34A20CE	7.238	3PH	3-3.2	MULTIPLE CRT 2	20.031.1	3.2	3030	3900
	RXBH-34A20CE	18.024.0	3PH	6-4.0	SINGLE	30.047.4	3.2	6077	7080
	RXBH-34A20CE	8.092.3	3PH	3-4.0	MULTIPLE CRT 1	25.028.9	3.2	3841	4845
	RXBH-34A20CE	8.092.3	3PH	3-4.0	MULTIPLE CRT 2	25.028.9	3.2	3841	4845

* ? Heater KJ-Connection Type: A=Breaker B=Terminal Block C=Pullout Disconnect

3.12.6.2 ELECTRICAL DATA – WITH ELECTRIC HEAT: (-)H2T - continued

AIR HANDLER MODEL (-H2T)	HEATER MODEL NUMBER	HEATER KW (200/240V)	PHASE	NO. ELEMENTS – KW PER	TYPE SUPPLY CIRCUIT SINGLE CIRCUIT MULTIPLE CIRCUIT	HEATER AMPS	MOTOR AMPS	MINIMUM CIRCUIT CAPACITY	MAXIMUM OVERCURRENT PROTECTION
4821H2TANFL	R08H-1724A1B0G5J-B	2.643	1ØD	1-4.8	SINGLE	17.320.2	3.0	20/28	30/35
	R08H-1724A1B0G7J-B	5.472	1ØD	2-3.6	SINGLE	28.050.2	3.0	37/42	45/45
	R08H-1724A1B0G9J-B	7.296	1ØD	2-4.8	SINGLE	34.640.2	3.0	47/54	55/55
	R08H-1724A1S1C-B	10.074.4	1ØD	3-4.8	SINGLE	61.860.2	3.0	80/79	75/80
	R08H-1724A1S1J-B	3.648	1ØD	1-4.8	MULTIPLE CRT 1	17.320.2	3.0	20/28	30/35
	R08H-1724A1S1J-B	7.296	1ØD	2-4.8	MULTIPLE CRT 2	34.640.2	3.0	47/54	55/55
	R08H-1724A1S1J-B	10.077.0	1ØD	3-4.8	SINGLE	61.870.8	3.0	81/83	80/100
	R08H-1724A1S1J-B	4.387	1ØD	1-5.68	MULTIPLE CRT 1	20.523.8	3.0	30/34	35/35
	R08H-1724A1S1J-B	8.571.3	1ØD	2-5.68	MULTIPLE CRT 2	41.147.2	3.0	59/59	55/55
	R08H-24A2B1J-B	14.078.2	1ØD	4-4.0	SINGLE	69.280.2	3.0	87/104	125/110
	R08H-24A2B1J-B	7.296	1ØD	2-4.8	MULTIPLE CRT 1	34.640.2	3.0	47/54	55/55
	R08H-24A2B1J-B	7.296	1ØD	2-4.8	MULTIPLE CRT 2	34.640.2	3.0	47/54	55/55
	R08H-24A2B1J-B	10.034.0	1ØD	3-4.0	SINGLE	80.499.2	3.0	112/129	125/120
	R08H-24A2B1J-B	6.08.0	1ØD	2-4.0	MULTIPLE CRT 1	28.823.3	3.0	40/48	45/55
	R08H-24A2B1J-B	6.08.0	1ØD	2-4.0	MULTIPLE CRT 2	28.823.3	3.0	40/48	45/55
	R08H-24A2B1J-B	6.08.0	1ØD	2-4.0	MULTIPLE CRT 3	28.823.3	3.0	40/48	45/55
	R08H-24A2B1J-B	20.728.2	1ØD	8-4.0	SINGLE	85.071.0	3.0	120/148	150/150
	R08H-1724A1B0C-B	6.472	3ØD	3-3.4	SINGLE	19.077.2	3.0	23/28	25/30
	R08H-1724A1B0C-B	7.296	3ØD	3-3.2	SINGLE	20.020.1	3.0	23/30	25/35
	R08H-1724A1B0C-B	10.074.4	3ØD	3-4.8	SINGLE	30.034.8	3.0	45/47	45/50
	R08H-1724A1B0C-B	12.817.0	3ØD	3-5.68	SINGLE	35.541.2	3.0	49/55	50/55
	R08H-24A2B1C-B	14.078.2	3ØD	8-3.2	SINGLE	40.040.2	3.0	54/58	60/70
	R08H-24A2B1C-B	7.296	3ØD	3-3.2	MULTIPLE CRT 1	30.020.1	3.0	30/33	35/35
	R08H-24A2B1C-B	7.296	3ØD	3-3.2	MULTIPLE CRT 2	30.020.1	3.0	30/33	35/35
	R08H-24A2B1C-B	10.034.0	3ØD	3-4.0	SINGLE	50.057.8	3.0	87/78	75/80
	R08H-24A2B1C-B	9.072.2	3ØD	3-4.0	MULTIPLE CRT 1	25.038.9	3.0	35/42	45/45
	R08H-24A2B1C-B	9.072.2	3ØD	3-4.0	MULTIPLE CRT 2	25.038.9	3.0	35/42	45/45
6021STANAJ	R08H-1724T0B0C-B	3.648	1ØD	1-4.8	SINGLE	17.320.2	3.0	20/28	30/35
	R08H-1724T0B0C-B	5.472	1ØD	2-3.6	SINGLE	28.050.2	3.0	40/45	45/45
	R08H-1724T1B0C-B	7.296	1ØD	2-4.8	SINGLE	34.640.2	3.0	51/57	55/55
	R08H-1724T0B0C-B	10.074.4	1ØD	3-4.8	SINGLE	61.860.2	3.0	72/85	80/80
	R08H-1724A1S1J-B	3.648	1ØD	1-4.8	MULTIPLE CRT 1	17.320.2	3.0	20/28	30/35
	R08H-1724A1S1J-B	7.296	1ØD	2-4.8	MULTIPLE CRT 2	34.640.2	3.0	47/54	55/55
	R08H-1724A1S1J-B	12.817.0	1ØD	4-4.8	SINGLE	61.870.8	3.0	80/83	80/100
	R08H-1724A1S1J-B	4.387	1ØD	1-5.68	MULTIPLE CRT 1	20.523.8	3.0	30/37	35/45
	R08H-1724A1S1J-B	8.571.3	1ØD	2-5.68	MULTIPLE CRT 2	41.147.2	3.0	59/59	55/55
	R08H-24A2B1J-B	14.078.2	1ØD	4-4.0	SINGLE	69.280.2	3.0	84/107	125/110
	R08H-24A2B1J-B	7.296	1ØD	2-4.8	MULTIPLE CRT 1	34.640.2	3.0	51/57	55/55
	R08H-24A2B1J-B	7.296	1ØD	2-4.8	MULTIPLE CRT 2	34.640.2	3.0	47/54	55/55
	R08H-24A2B1J-B	10.034.0	1ØD	3-4.0	SINGLE	80.499.2	3.0	112/132	125/140
	R08H-24A2B1J-B	6.08.0	1ØD	2-4.0	MULTIPLE CRT 1	28.823.3	3.0	40/48	50/55
	R08H-24A2B1J-B	6.08.0	1ØD	2-4.0	MULTIPLE CRT 2	28.823.3	3.0	38/42	45/55
	R08H-24A2B1J-B	6.08.0	1ØD	2-4.0	MULTIPLE CRT 3	28.823.3	3.0	38/42	45/55
	R08H-24A2B1J-B	20.727.8	1ØD	8-4.0	SINGLE	85.071.0	3.0	120/151	145/150
	R08H-24A2B1J-B	6.08.2	1ØD	2-4.8	MULTIPLE CRT 1	30.038.3	3.0	40/48	50/55
	R08H-24A2B1J-B	6.08.2	1ØD	2-4.8	MULTIPLE CRT 2	30.038.3	3.0	40/48	50/55
	R08H-24A2B1J-B	6.08.2	1ØD	2-4.8	MULTIPLE CRT 3	30.038.3	3.0	40/48	50/55
	R08H-1724A1B0C-B	6.472	3ØD	3-3.4	SINGLE	19.077.2	3.0	23/28	25/30
	R08H-1724A1B0C-B	7.296	3ØD	3-3.2	SINGLE	20.020.1	3.0	23/30	25/35
	R08H-1724A1B0C-B	10.074.4	3ØD	3-4.8	SINGLE	30.034.8	3.0	45/51	50/55
	R08H-1724A1B0C-B	12.817.0	3ØD	3-5.68	SINGLE	35.541.2	3.0	49/55	50/55
	R08H-24A2B1C-B	14.078.2	3ØD	8-3.2	SINGLE	40.040.2	3.0	54/58	60/70
	R08H-24A2B1C-B	7.296	3ØD	3-3.2	MULTIPLE CRT 1	30.020.1	3.0	32/38	35/45
	R08H-24A2B1C-B	7.296	3ØD	3-3.2	MULTIPLE CRT 2	30.020.1	3.0	32/38	35/35
	R08H-24A2B1C-B	10.034.0	3ØD	3-4.0	SINGLE	50.057.8	3.0	70/75	75/80
	R08H-24A2B1C-B	9.072.2	3ØD	3-4.0	MULTIPLE CRT 1	25.038.9	3.0	38/44	40/45
	R08H-24A2B1C-B	9.072.2	3ØD	3-4.0	MULTIPLE CRT 2	25.038.9	3.0	37/37	35/45
	R08H-24A2B1C-B	20.727.8	3ØD	8-4.0	SINGLE	87.566.4	3.0	75/95	95/95
	R08H-24A2B1C-B	10.033.8	3ØD	3-4.8	MULTIPLE CRT 1	28.820.2	3.0	40/48	50/55
	R08H-24A2B1C-B	10.073.0	3ØD	3-4.8	MULTIPLE CRT 2	28.820.2	3.0	38/43	45/45

- T Heater Kit Connection Type: A=Breaker B=Terminal Block C=Pullout Disconnect

3.12.6.2 ELECTRICAL DATA - WITH ELECTRIC HEAT: (-)H2T - continued

600H5TANWJ	R00H-1734100-J-B	2,641.8	1/80	1-4.8	SINGLE	17,350.0	4.7	30.31	30.31
	R00H-1734100-J-B	5,477.2	1/80	2-3.0	SINGLE	30,030.0	4.7	30.44	40.41
	R00H-1734110-L-B	7,209.6	1/80	2-4.8	SINGLE	34,640.0	4.7	30.38	30.38
	R00H-1734110-L-B	10,014.4	1/80	3-4.18	SINGLE	51,860.0	4.7	70.87	50.92
	R00H-1734150-J-B	3,641.8	1/80	1-4.18	MULTIPLE CRT 1	17,350.0	4.7	28.31	30.31
		7,209.6	1/80	1-4.18	MULTIPLE CRT 2	34,640.0	5	30.38	30.38
	R00H-1734180-L-B	12,017.0	1/80	4-4.28	SINGLE	51,860.0	4.7	85.91	50.700
	R00H-1734180-L-B	4,300.7	1/80	1-5.88	MULTIPLE CRT 1	30,530.0	4.7	33.38	35.43
		8,591.3	1/80	2-5.88	MULTIPLE CRT 2	41,787.2	5	33.38	35.38
	R00H-244300-L-B	14,413.2	1/80	4-4.8	SINGLE	82,280.0	4.7	85.108	130.110
	R00H-244300-L-B	7,209.6	1/80	2-4.8	MULTIPLE CRT 1	34,640.0	4.7	30.38	30.38
		7,209.6	1/80	2-4.8	MULTIPLE CRT 2	34,640.0	5	30.38	30.38
	R00H-244350-L-B	18,034.0	1/80	6-4.0	SINGLE	98,480.0	4.7	134.101	130.740
	R00H-244350-L-B	6,011.0	1/80	3-4.0	MULTIPLE CRT 1	28,830.0	4.7	40.48	40.48
		6,011.0	1/80	3-4.0	MULTIPLE CRT 2	28,830.0	5	40.48	40.48
		6,011.0	1/80	3-4.0	MULTIPLE CRT 3	28,830.0	5	40.48	40.48
	R00H-244350-L-B	20,737.8	1/80	8-4.8	SINGLE	103,6120.0	4.7	135.138	145.780
	R00H-244350-L-B	6,011.0	1/80	3-4.8	MULTIPLE CRT 1	34,640.0	4.7	30.38	30.38
		6,011.0	1/80	3-4.8	MULTIPLE CRT 2	34,640.0	5	30.38	30.38
		6,011.0	1/80	3-4.8	MULTIPLE CRT 3	34,640.0	5	30.38	30.38
	R00H-1734A50C-B	5,477.2	3/80	3-3.4	SINGLE	15,017.3	4.7	31.08	30.33
	R00H-1734A100C-B	7,209.6	3/80	3-3.2	SINGLE	20,030.1	4.7	31.03	40.40
	R00H-1734A150C-B	10,014.4	3/80	3-4.0	SINGLE	30,034.0	4.7	44.93	50.30
	R00H-1734A180C-B	12,817.0	3/80	3-5.88	SINGLE	30,541.2	4.7	51.58	80.53
	R00H-244200-L-B	14,413.2	3/80	8-3.2	SINGLE	40,048.0	4.7	50.44	80.70
	R00H-244200-L-B	7,209.6	3/80	3-3.2	MULTIPLE CRT 1	30,028.1	4.7	31.03	40.40
		7,209.6	3/80	3-3.2	MULTIPLE CRT 2	30,030.1	5	30.38	30.38
	R00H-244250-L-B	18,034.0	3/80	8-4.0	SINGLE	50,057.4	4.7	50.70	70.50
	R00H-244250-L-B	6,011.0	3/80	3-4.0	MULTIPLE CRT 1	29,038.0	4.7	38.40	40.50
		6,011.0	3/80	3-4.0	MULTIPLE CRT 2	29,038.0	5	30.37	40.40
	R00H-244250-L-B	20,737.8	3/80	8-4.8	SINGLE	57,530.4	4.7	58.88	80.50
	R00H-244250-L-B	10,373.8	3/80	3-4.8	MULTIPLE CRT 1	29,630.2	4.7	40.48	30.38
		10,373.8	3/80	3-4.8	MULTIPLE CRT 2	29,630.2	5	30.40	40.40
36110TANND	R00H-17A100	7.2	3/80	3-3.4	SINGLE	8.7	0.2	12	13
	R00H-17A150	9.6	3/80	3-3.2	SINGLE	11.8	0.2	18	20
	R00H-17A180	12.4	3/80	3-4.0	SINGLE	17.3	0.2	25	30
	R00H-17A180	17	3/80	3-5.88	SINGLE	30.4	0.2	27	30
3611MTANAD	R00H-24A100	7.2	3/80	3-3.4	SINGLE	8.7	0.2	12	13
	R00H-24A150	9.6	3/80	3-3.2	SINGLE	11.8	0.2	18	20
3621MTANND	R00H-24A150	12.4	3/80	3-4.0	SINGLE	17.3	0.2	25	30
	R00H-24A180	17	3/80	3-5.88	SINGLE	30.4	0.2	27	30
48210TANAD	R00H-24A100	7.2	3/80	3-3.4	SINGLE	8.7	1.1	13	13
	R00H-24A150	9.6	3/80	3-3.2	SINGLE	11.8	1.1	18	20
	R00H-24A180	12.4	3/80	3-4.0	SINGLE	17.3	1.1	25	30
	R00H-24A180	17	3/80	3-5.84	SINGLE	30.4	1.1	27	30
48210TANND	R00H-24A200	19.2	3/80	6-3.2	SINGLE	33.2	1.1	31	33
	R00H-24A250	24	3/80	8-4.0	SINGLE	38.8	1.1	38	40
48240TANND	R00H-24A100	7.2	3/80	3-3.4	SINGLE	8.7	0.0	12	13
	R00H-24A150	9.6	3/80	3-3.2	SINGLE	11.8	0.0	18	20
	R00H-24A180	12.4	3/80	3-4.0	SINGLE	17.3	0.0	25	30
	R00H-24A180	17	3/80	3-5.84	SINGLE	30.4	0.0	27	30
	R00H-24A200	19.2	3/80	6-3.2	SINGLE	33.2	0.0	31	33
	R00H-24A250	24	3/80	8-4.0	SINGLE	38.8	0.0	38	40
50010TANND	R00H-24A100	7.2	3/80	3-3.4	SINGLE	8.7	1.7	13	13
	R00H-24A150	9.6	3/80	3-3.2	SINGLE	11.8	1.7	17	20
	R00H-24A180	12.4	3/80	3-4.0	SINGLE	17.3	1.7	24	25
	R00H-24A180	17	3/80	3-5.84	SINGLE	30.4	1.7	28	30
50040TANND	R00H-24A200	19.2	3/80	6-3.2	SINGLE	33.2	1.7	31	33
	R00H-24A250	24	3/80	8-4.0	SINGLE	38.8	1.8	34	35
	R00H-24A100	7.2	3/80	3-3.4	SINGLE	8.7	1.8	13	13
	R00H-24A150	9.6	3/80	3-3.2	SINGLE	11.8	1.8	17	18
	R00H-24A180	12.4	3/80	3-4.0	SINGLE	17.3	1.8	24	25
	R00H-24A200	19.2	3/80	6-3.2	SINGLE	33.2	1.8	31	33

1 Heater R/F Connection Type A, Airflow B, Terminal Block C, Piping Dimensions

*Values only, no single point available

NOTES:

- Electric heater RTU - (heater watts + motor watts) x 3.413 (see air flow table for motor watts.)
- Supply circuit protective device may be taken as 114.5% of circuit load.
- If non-redundant data size is specified, use next size larger standard size.
- Largest motor load is included in single circuit or circuit 1 of multiple circuits.
- Heater loads are based on 0.8 power factor with 0.8-1.0 inverter only.
- No electrical heating elements are permitted to be used with A voltage (114V) or higher.
- 1 Voltage (114V) or 1 phase for heater is designed to be used with single or 3 phase 30A/60A heater. In the case of connecting 3 phase power to air handler terminal block supply the heater, bring only two leads to terminal block, cap, insulate and fully secure the third lead.
- Do not use relay electrical heater on 208/240V air handler.
- If the air is heated under both single and multiple circuits, the air is heated from factory as multiple circuits. For single phase application, jumper bus to R00H-A01 and R00H-A01 can be used to connect multiple circuits to a single supply circuit. Refer to Auxiliary Section for details.

3.12.6.3 ELECTRICAL DATA - WITH ELECTRIC HEAT: (-)H1A

AIR HANDLER MODEL (-)H1A	HEATER MODEL NUMBER	HEATER KW (208/240V)	PHHZ	NO. ELEMENTS - KW PER	TYPE SUPPLY CIRCUIT SINGLE CIRCUIT MULTIPLE CIRCUIT	HEATER AMPS	MOTOR AMPS	MINIMUM CIRCUIT AMPACITY	MAXIMUM OVERCURRENT PROTECTION
34175TANMJ	RXBH-1724151-B	2,253.0	180	1.30	SINGLE	10.812.5	18	1578	2000
	RXBH-1724151-B	2,253.0	180	1.30	SINGLE	10.812.5	18	1578	2000
	RXBH-1724151-B	3,164.3	180	1.43	SINGLE	17,100.0	18	2578	3000
	RXBH-1724151-B	5,417.2	180	2.38	SINGLE	28,908.0	18	3540	4000
	RXBH-1724151-B	7,200.3	180	2.43	SINGLE	38,900.0	18	4833	5000
	RXBH-1724151-B	8,417.2	180	3.17	SINGLE	45,152.1	18	5638	6000
	RXBH-1734A151-B	3,164.3	180	1.43	MULTIPLE CRT 1	15,917.4	18	1934	2000
	RXBH-1734A151-B	5,381.1	180	2.417	MULTIPLE CRT 2	30,104.7	0	3844	4000
	RXBH-1734A151-B	5,417.2	180	3.24	SINGLE	15,917.3	18	2004	3000
	RXBH-1734A151-B	7,200.3	180	3.32	SINGLE	20,000.1	18	2578	3000
36175TANMJ	RXBH-1724151-B	2,253.0	180	1.30	SINGLE	10.812.5	24	1719	2000
	RXBH-1724151-B	2,253.0	180	1.30	SINGLE	10.812.5	24	1719	2000
	RXBH-1724151-B	3,164.3	180	1.43	SINGLE	17,100.0	24	2578	3000
	RXBH-1724151-B	5,417.2	180	2.38	SINGLE	28,908.0	24	3541	4000
	RXBH-1724151-B	7,200.3	180	2.43	SINGLE	38,900.0	24	4753	5000
	RXBH-1724A151-B	8,417.2	180	3.17	SINGLE	45,152.1	24	5638	6000
	RXBH-1734A151-B	3,164.3	180	1.43	MULTIPLE CRT 1	15,917.4	24	1935	3000
	RXBH-1734A151-B	5,381.1	180	2.417	MULTIPLE CRT 2	30,104.7	0	3844	4000
	RXBH-1734A151-B	10,814.4	180	3.18	SINGLE	45,000.0	24	5678	7000
	RXBH-1734A151-B	3,164.3	180	1.43	MULTIPLE CRT 1	17,100.0	24	2578	3000
36215TANMJ	RXBH-1734A151-B	7,200.3	180	2.43	MULTIPLE CRT 2	38,900.0	0	4833	5000
	RXBH-1734A181-B	12,817.0	180	4.435	SINGLE	61,800.8	24	8030	8000
	RXBH-1734A181-B	4,385.7	180	1.388	MULTIPLE CRT 1	20,000.8	24	2578	3000
	RXBH-1734A181-B	8,511.3	180	2.588	MULTIPLE CRT 2	41,142.2	0	5238	6000
	RXBH-1724A07C-B	5,417.2	180	3.24	SINGLE	15,917.3	24	2005	3000
	RXBH-1734A07C-B	7,200.3	180	3.32	SINGLE	20,000.1	24	2579	3000
	RXBH-1734151-B	2,253.0	180	1.30	SINGLE	10.812.5	25	1719	2000
	RXBH-1724151-B	2,253.0	180	1.30	SINGLE	10.812.5	25	1719	2000
	RXBH-1724151-B	3,164.3	180	1.43	SINGLE	17,100.0	25	2578	3000
	RXBH-1724151-B	5,417.2	180	2.38	SINGLE	28,908.0	25	3541	4000
36215TANMJ	RXBH-1724151-B	7,200.3	180	2.43	SINGLE	38,900.0	25	4753	5000
	RXBH-1734A151-B	8,417.2	180	3.17	SINGLE	45,152.1	25	5638	6000
	RXBH-1734A151-B	3,164.3	180	1.43	MULTIPLE CRT 1	15,917.4	25	1935	3000
	RXBH-1734A151-B	5,381.1	180	2.417	MULTIPLE CRT 2	30,104.7	0	3844	4000
	RXBH-1734A151-B	10,814.4	180	3.18	SINGLE	45,000.0	25	5678	7000
	RXBH-1734A151-B	3,164.3	180	1.43	MULTIPLE CRT 1	17,100.0	25	2578	3000
	RXBH-1734A151-B	7,200.3	180	2.43	MULTIPLE CRT 2	38,900.0	0	4833	5000
	RXBH-1734A181-B	12,817.0	180	4.435	SINGLE	61,800.8	25	8030	8000
	RXBH-1734A181-B	4,385.7	180	1.388	MULTIPLE CRT 1	20,000.8	25	2578	3000
	RXBH-1734A181-B	8,511.3	180	2.588	MULTIPLE CRT 2	41,142.2	0	5238	6000
48215TANMJ	RXBH-1724A07C-B	5,417.2	180	3.24	SINGLE	15,917.3	25	2005	3000
	RXBH-1734A07C-B	7,200.3	180	3.32	SINGLE	20,000.1	25	2579	3000
	RXBH-1724151-B	3,164.3	180	1.43	SINGLE	17,100.0	52	2578	3000
	RXBH-1724151-B	5,417.2	180	2.38	SINGLE	28,908.0	52	3544	4000
	RXBH-1724151-B	7,200.3	180	2.43	SINGLE	38,900.0	52	4753	5000
	RXBH-1734A151-B	10,814.4	180	3.18	SINGLE	45,000.0	52	5678	6000
	RXBH-1734A151-B	3,164.3	180	1.43	MULTIPLE CRT 1	17,100.0	52	2578	3000
	RXBH-1734A151-B	7,200.3	180	2.43	MULTIPLE CRT 2	38,900.0	0	4833	5000
	RXBH-1734A181-B	4,385.7	180	1.388	SINGLE	61,800.8	52	8030	8000
	RXBH-1734A181-B	8,511.3	180	2.588	MULTIPLE CRT 1	20,000.8	52	2578	3000
48215TANMJ	RXBH-1734A181-B	12,817.0	180	4.435	MULTIPLE CRT 2	41,142.2	0	5238	6000
	RXBH-24A20U-1	14,410.2	180	4.43	SINGLE	69,280	52	8800	10000
	RXBH-24A20U-1	7,200.3	180	2.43	MULTIPLE CRT 1	38,900.0	52	4833	5000
	RXBH-24A20U-1	7,200.3	180	2.43	MULTIPLE CRT 2	38,900.0	0	4833	5000
	RXBH-24A25U-1	18,024.0	180	6.40	SINGLE	88,488.9	52	11570	12500
	RXBH-24A25U-1	5,081.3	180	2.40	MULTIPLE CRT 1	28,908.3	52	3543	4000
	RXBH-24A25U-1	5,081.3	180	2.40	MULTIPLE CRT 2	28,908.3	0	3543	4000
	RXBH-24A25U-1 (4-ton only)	5,081.3	180	2.40	MULTIPLE CRT 3	28,908.3	0	3543	4000
	RXBH-1734A07C-1	5,417.2	180	3.24	SINGLE	15,917.3	52	2005	3000
	RXBH-1734A18C-1	7,200.3	180	3.32	SINGLE	20,000.1	52	2578	3000
48215TANMJ	RXBH-1734A18C-1	10,814.4	180	3.18	SINGLE	30,000.8	52	4833	5000
	RXBH-1734A18C-1	12,817.0	180	3.588	SINGLE	35,947.0	52	5558	6000
	RXBH-24A20C-1	14,410.2	180	6.32	SINGLE	40,046.2	52	5038	6000
	RXBH-24A20C-1	7,200.3	180	3.32	MULTIPLE CRT 1	20,000.1	52	2578	3000
	RXBH-24A20C-1	7,200.3	180	3.32	MULTIPLE CRT 2	20,000.1	0	2578	3000
	RXBH-24A25C-1	18,024.0	180	6.40	SINGLE	80,887.8	52	8078	7000
	RXBH-24A25C-1 (4-ton only)	8,012.0	180	3.40	MULTIPLE CRT 1	25,008.9	52	3243	4000
	RXBH-24A25C-1 (4-ton only)	8,012.0	180	3.40	MULTIPLE CRT 2	25,008.9	0	3243	4000
	RXBH-24A25C-1 (4-ton only)	8,012.0	180	3.40	MULTIPLE CRT 3	25,008.9	0	3243	4000
	RXBH-24A25C-1 (4-ton only)	8,012.0	180	3.40	MULTIPLE CRT 4	25,008.9	0	3243	4000
	RXBH-24A25C-1 (4-ton only)	8,012.0	180	3.40	MULTIPLE CRT 5	25,008.9	0	3243	4000

- 1 Heater KA Connection Type: A=Breaker; B=Terminal Block; C=Pullout Disconnect

3.12.6.3 ELECTRICAL DATA - WITH ELECTRIC HEAT: (-)H1A - continued

AIR HANDLER MODEL (-)H1A	HEATER MODEL NUMBER	HEATER KW (200/240V)	PH/Hz	NO. ELEMENTS - KW PER	TYPE SUPPLY CIRCUIT SINGLE CIRCUIT MULTIPLE CIRCUIT	HEATER AMPS	MOTOR AMPS	MINIMUM CIRCUIT AMPACITY	MAXIMUM OVERCURRENT PROTECTION
60218TANAJ	RXEH-1724X05-B	3.89.8	1/60	1-4.3	SINGLE	17.322.0	5.6	2832	1035
	RXEH-1724X07-B	5.47.2	1/60	2-7.5	SINGLE	25.011.0	5.6	4055	4945
	RXEH-1724X10-B	7.29.8	1/60	3-4.3	SINGLE	34.841.0	5.6	5167	5950
	RXEH-1724A15-B	10.814.4	1/60	3-4.3	SINGLE	51.061.0	5.6	7282	8580
	RXEH-1724A15L-B	3.89.8	1/60	1-4.3	MULTIPLE CRT 1	17.322.0	5.6	2832	1035
	RXEH-1724A15L-B	7.29.8	1/60	2-4.3	MULTIPLE CRT 2	34.841.0	5.6	5167	5950
	RXEH-1724A18-B	12.817.0	1/60	4-4.3	SINGLE	51.061.0	5.6	8395	99100
	RXEH-1724A18L-B	4.35.7	1/60	1-5.8	MULTIPLE CRT 1	20.521.6	5.6	3337	1540
	RXEH-1724A18L-B	8.511.3	1/60	2-5.8	MULTIPLE CRT 2	41.047.2	5.6	5059	4950
	RXEH-24A20L-B	14.419.2	1/60	4-4.3	SINGLE	66.391.0	5.6	8410	100110
	RXEH-24A20L-B	7.29.8	1/60	2-4.3	MULTIPLE CRT 1	34.841.0	5.6	5167	5950
	RXEH-24A20L-B	7.29.8	1/60	2-4.3	MULTIPLE CRT 2	34.841.0	5.6	4450	5950
	RXEH-24A25L-B	18.024.0	1/60	4-4.3	SINGLE	84.491.0	5.6	115132	120140
	RXEH-24A25L-B	6.08.0	1/60	2-4.3	MULTIPLE CRT 1	28.311.3	5.6	4385	5950
		6.08.0	1/60	2-4.3	MULTIPLE CRT 2	28.311.3	5.6	3942	4950
		6.08.0	1/60	2-4.3	MULTIPLE CRT 3	28.311.3	5.6	3692	4950
	RXEH-24A30L-B	20.727.8	1/60	4-4.3	SINGLE	95.501.0	5.6	130150	140160
	RXEH-24A30L-B	6.99.2	1/60	2-4.3	MULTIPLE CRT 1	33.281.3	5.6	4855	5950
		6.99.2	1/60	2-4.3	MULTIPLE CRT 2	33.281.3	5.6	4385	5950
		6.99.2	1/60	2-4.3	MULTIPLE CRT 3	33.281.3	5.6	4048	5950
	RXEH-1724X07-B	5.47.2	1/60	2-4.3	SINGLE	25.011.0	5.6	4055	4940
	RXEH-1724X10-B	7.29.8	1/60	3-4.3	SINGLE	34.841.0	5.6	5167	5940
	RXEH-1724A15-B	10.814.4	1/60	3-4.3	SINGLE	51.061.0	5.6	7282	8580
	RXEH-1724A18-B	12.817.0	1/60	3-5.8	SINGLE	66.391.0	5.6	10200	9900
	RXEH-24A20C-B	14.419.2	1/60	5-3.2	SINGLE	40.081.2	5.6	5985	4970
	RXEH-24A20C-B	7.29.8	1/60	5-3.2	MULTIPLE CRT 1	20.031.1	5.6	3135	1540
	RXEH-24A20C-B	7.29.8	1/60	5-3.2	MULTIPLE CRT 2	20.031.1	5.6	2829	1540
	RXEH-24A25C-B	18.024.0	1/60	6-4.3	SINGLE	80.057.8	5.6	10979	7880
	RXEH-24A25C-B	6.012.3	1/60	3-4.3	MULTIPLE CRT 1	25.021.9	5.6	3841	4945
	RXEH-24A25C-B	6.012.3	1/60	3-4.3	MULTIPLE CRT 2	25.021.9	5.6	3137	4945
	RXEH-24A30C-B	20.727.8	1/60	6-4.3	SINGLE	95.501.0	5.6	13080	14000
	RXEH-24A30C-B	10.313.8	1/60	3-4.3	MULTIPLE CRT 1	28.311.3	5.6	4385	5950
	RXEH-24A30C-B	10.313.8	1/60	3-4.3	MULTIPLE CRT 2	28.311.3	5.6	3942	4950
60248TANAJ	RXEH-1724X05-B	3.89.8	1/60	1-4.3	SINGLE	17.322.0	4.7	2831	1035
	RXEH-1724X07-B	5.47.2	1/60	2-7.5	SINGLE	25.011.0	4.7	4044	4945
	RXEH-1724X10-B	7.29.8	1/60	3-4.3	SINGLE	34.841.0	4.7	5058	5950
	RXEH-1724A15-B	10.814.4	1/60	3-4.3	SINGLE	51.061.0	4.7	7181	8580
	RXEH-1724A15L-B	3.89.8	1/60	1-4.3	MULTIPLE CRT 1	17.322.0	4.7	2831	1035
	RXEH-1724A15L-B	7.29.8	1/60	2-4.3	MULTIPLE CRT 2	34.841.0	4.7	5058	5950
	RXEH-1724A18-B	12.817.0	1/60	4-4.3	SINGLE	51.061.0	4.7	8395	99100
	RXEH-1724A18L-B	4.35.7	1/60	1-5.8	MULTIPLE CRT 1	20.521.6	4.7	3336	1540
	RXEH-1724A18L-B	8.511.3	1/60	2-5.8	MULTIPLE CRT 2	41.047.2	4.7	5059	4950
	RXEH-24A20L-B	14.419.2	1/60	4-4.3	SINGLE	66.391.0	4.7	8410	100110
	RXEH-24A20L-B	7.29.8	1/60	2-4.3	MULTIPLE CRT 1	34.841.0	4.7	5058	5950
	RXEH-24A20L-B	7.29.8	1/60	2-4.3	MULTIPLE CRT 2	34.841.0	4.7	4450	5950
	RXEH-24A25L-B	18.024.0	1/60	4-4.3	SINGLE	84.491.0	4.7	114132	120140
	RXEH-24A25L-B	6.08.0	1/60	2-4.3	MULTIPLE CRT 1	28.311.3	4.7	4385	5950
		6.08.0	1/60	2-4.3	MULTIPLE CRT 2	28.311.3	4.7	3942	4950
		6.08.0	1/60	2-4.3	MULTIPLE CRT 3	28.311.3	4.7	3692	4950
	RXEH-24A30L-B	20.727.8	1/60	4-4.3	SINGLE	95.501.0	4.7	131150	140160
	RXEH-24A30L-B	6.99.2	1/60	2-4.3	MULTIPLE CRT 1	33.281.3	4.7	4855	5950
		6.99.2	1/60	2-4.3	MULTIPLE CRT 2	33.281.3	4.7	4385	5950
		6.99.2	1/60	2-4.3	MULTIPLE CRT 3	33.281.3	4.7	4048	5950
	RXEH-1724X07-B	5.47.2	1/60	2-4.3	SINGLE	25.011.0	4.7	4055	1030
	RXEH-1724X10-B	7.29.8	1/60	3-4.3	SINGLE	34.841.0	4.7	5165	4940
	RXEH-1724A15-B	10.814.4	1/60	3-4.3	SINGLE	51.061.0	4.7	7280	5950
	RXEH-1724A18-B	12.817.0	1/60	3-5.8	SINGLE	66.391.0	4.7	10150	4900
	RXEH-24A20C-B	14.419.2	1/60	5-3.2	SINGLE	40.081.2	4.7	5985	4970
	RXEH-24A20C-B	7.29.8	1/60	5-3.2	MULTIPLE CRT 1	20.031.1	4.7	3135	4940
	RXEH-24A20C-B	7.29.8	1/60	5-3.2	MULTIPLE CRT 2	20.031.1	4.7	2829	1540
	RXEH-24A25C-B	18.024.0	1/60	6-4.3	SINGLE	80.057.8	4.7	10979	7880
	RXEH-24A25C-B	6.012.3	1/60	3-4.3	MULTIPLE CRT 1	25.021.9	4.7	3841	4945
	RXEH-24A25C-B	6.012.3	1/60	3-4.3	MULTIPLE CRT 2	25.021.9	4.7	3137	4945
	RXEH-24A30C-B	20.727.8	1/60	6-4.3	SINGLE	95.501.0	4.7	13080	14000
	RXEH-24A30C-B	10.313.8	1/60	3-4.3	MULTIPLE CRT 1	28.311.3	4.7	4385	5950
	RXEH-24A30C-B	10.313.8	1/60	3-4.3	MULTIPLE CRT 2	28.311.3	4.7	3942	4950

1. Heater Wt Connection Type: A=Inlet/Outlet B=Terminal Block C=Patent Disconnect

*Values only. No single point in installation.

NOTES:

- 1. Electric heater (27.14 / 3-phase units) - motor units) x 3-1/4 inch (3-phase units for motor units).
- 2. Supply circuit protective device may be fused or HACR type circuit breaker.
- 3. If fuse-mounted fuse size is specified, use next size higher standard fuse size.
- 4. Largest motor load is included in single circuit or circuit 1 of multiple circuits.
- 5. Heater loads are based on 120 volt 60 Hz single phase, 1/60 Hz, 1/60 Hz, 1/60 Hz.
- 6. No electrical heating elements are permitted to be used with a voltage (115V) or higher.
- 7. Voltage (200/240V) single phase or 3-phase is designed to be used with single or three phase 200/240V electric heaters. In the case of connecting 3 phase power to air handler terminal block with- out the heater, bring only two leads to terminal block. (See Note 8) fully explain the third lead.
- 8. Do not use 480V electrical heaters or 200/240V air handlers.
- 9. If the unit is listed under both single and multiple circuits, the unit is shipped from factory as multiple circuits. For single phase applications, jumper bar at 200V-480V and 240V-480V can be used to carry- out multiple circuits to a single supply circuit. Refer to Accessory Section for details.

3.12.7 ELECTRIC HEATER KIT SUPPLEMENTAL INFORMATION

WELL-BOY-TECH
FEB. 1996/2006

ABBOTT/STANDARD

MODEL/HEATER #

VOLTS

PHASE

CHART 1/2/3

SERIAL/HEATER #

PRICE 250.00

NOTES (P/T) A

NOTES (P/T) B

1/2 4.5

ATTENTION: HEATER KIT INCLUDES 1 CIRCUIT OF OVERCURRENT PROTECTION & WIRING

HEATER KIT (P/T) A	HEATER KIT (P/T) B	HEATER KIT (P/T) C	HEATER KIT (P/T) D	HEATER KIT (P/T) E	HEATER KIT (P/T) F	HEATER KIT (P/T) G	HEATER KIT (P/T) H	HEATER KIT (P/T) I	HEATER KIT (P/T) J	HEATER KIT (P/T) K	HEATER KIT (P/T) L	HEATER KIT (P/T) M	HEATER KIT (P/T) N	HEATER KIT (P/T) O	HEATER KIT (P/T) P	HEATER KIT (P/T) Q	HEATER KIT (P/T) R	HEATER KIT (P/T) S	HEATER KIT (P/T) T	HEATER KIT (P/T) U	HEATER KIT (P/T) V	HEATER KIT (P/T) W	HEATER KIT (P/T) X	HEATER KIT (P/T) Y	HEATER KIT (P/T) Z
1/2 4.5	1/2 4.5	1/2 4.5	1/2 4.5	1/2 4.5	1/2 4.5	1/2 4.5	1/2 4.5	1/2 4.5	1/2 4.5	1/2 4.5	1/2 4.5	1/2 4.5	1/2 4.5	1/2 4.5	1/2 4.5	1/2 4.5	1/2 4.5	1/2 4.5	1/2 4.5	1/2 4.5	1/2 4.5	1/2 4.5	1/2 4.5	1/2 4.5	

Contractor should mark or check the left column for the kit installed.

These are the required maximum and minimum circuit breaker sizes for overcurrent protection and should not be confused with the size of the breakers installed in the heater kit.

Only listed kits can be applied

1 = SINGLE CIRCUIT (SINGLE PHASE) - 2 = MULTIPLE CIRCUIT (MULTI-PHASE)

MAXIMUM CIRCUIT BREAKER LOAD INCLUDED IN CIRCUIT #1 OR TOTAL SUPPLY WIRE MUST BE BASED AT 125% MAXIMUM CIRCUIT OVERCURRENT ONLY. TEST EXTERNAL CIRCUIT RANGE 1 TO 30A W.C. (WIRE PUMP & ELECTRIC HEAT).

UNIT WITH ELECTRIC HEATING: GUARANTEED TO CONSUME NO MORE THAN 1.5 KW TO UNIT USING AND 0.5 KW TO PUMP ON AND 0.5 KW FOR FRESH AIR IN HEATING. HAVE AN IDEAL CIRCUIT BREAKER WHICH PROVIDE SUPPLEMENTARY OVERCURRENT PROTECTION AND SERVE AS A MAINTENANCE "DISCONNECT". SUPPLY CIRCUIT MUST BE BASED ON VOLTAGE TO GROUND ON SINGLE PHASE (WIRE). REPLACE LINE WIRE BREAKER (CIRCUIT) AFTER MAKING WIRING CONNECTIONS TO WIRING. IF BREAKER CONTROL ACCORDS TO REQUIRE, SET "WIRING HAZARDOUS VOLTAGE".

DISCONNECT TO UNIT OR SUPPLY UNIT (INCLUDING CIRCUIT #1 OR CIRCUIT OR CIRCUIT OVERCURRENT TOTAL) MUST BE BASED ON MINIMUM OF CIRCUIT BREAKER OR CIRCUIT BREAKER. TEST INTERVALS STAY ON CIRCUIT. 1.5 KW POINT (THERMOSTAT) TO CIRCUIT BREAKER.

UNIT AND CIRCUIT BREAKER (CIRCUIT) ARE NOT TO BE USED TO CONSUME NO MORE THAN 1.5 KW TO UNIT USING AND 0.5 KW FOR FRESH AIR IN HEATING. HAVE AN IDEAL CIRCUIT BREAKER WHICH PROVIDE SUPPLEMENTARY OVERCURRENT PROTECTION AND SERVE AS A MAINTENANCE "DISCONNECT". SUPPLY CIRCUIT MUST BE BASED ON VOLTAGE TO GROUND ON SINGLE PHASE (WIRE). REPLACE LINE WIRE BREAKER (CIRCUIT) AFTER MAKING WIRING CONNECTIONS TO WIRING. IF BREAKER CONTROL ACCORDS TO REQUIRE, SET "WIRING HAZARDOUS VOLTAGE".

DISCONNECT TO UNIT OR SUPPLY UNIT (INCLUDING CIRCUIT #1 OR CIRCUIT OR CIRCUIT OVERCURRENT TOTAL) MUST BE BASED ON MINIMUM OF CIRCUIT BREAKER OR CIRCUIT BREAKER. TEST INTERVALS STAY ON CIRCUIT. 1.5 KW POINT (THERMOSTAT) TO CIRCUIT BREAKER.

UNIT AND CIRCUIT BREAKER (CIRCUIT) ARE NOT TO BE USED TO CONSUME NO MORE THAN 1.5 KW TO UNIT USING AND 0.5 KW FOR FRESH AIR IN HEATING. HAVE AN IDEAL CIRCUIT BREAKER WHICH PROVIDE SUPPLEMENTARY OVERCURRENT PROTECTION AND SERVE AS A MAINTENANCE "DISCONNECT". SUPPLY CIRCUIT MUST BE BASED ON VOLTAGE TO GROUND ON SINGLE PHASE (WIRE). REPLACE LINE WIRE BREAKER (CIRCUIT) AFTER MAKING WIRING CONNECTIONS TO WIRING. IF BREAKER CONTROL ACCORDS TO REQUIRE, SET "WIRING HAZARDOUS VOLTAGE".

DISCONNECT TO UNIT OR SUPPLY UNIT (INCLUDING CIRCUIT #1 OR CIRCUIT OR CIRCUIT OVERCURRENT TOTAL) MUST BE BASED ON MINIMUM OF CIRCUIT BREAKER OR CIRCUIT BREAKER. TEST INTERVALS STAY ON CIRCUIT. 1.5 KW POINT (THERMOSTAT) TO CIRCUIT BREAKER.

Heater Kit Supplemental Information: What allows the manufacturer to use standard Circuit Breakers up to 60 amps inside the air handler, when using an approved Heater Kit?

National Electric Code (Section 424-22b) and UL standards allow subdividing heating element circuits, of less than 48 amps, using breakers of not more than 60 amps. Additionally per NEC 424-3b, a rating not less than 125 percent of the load and NEC 424-22c, which describes the supplementary overcurrent protection required to be factory-installed within, or on the heater. The breakers in the heater kit are not, and have never been intended to protect power wiring leading to the air handler unit. The breakers in the heating kit are for short circuit protection and to provide a disconnect. All internal unit wiring, where the breakers apply, has been UL approved for short circuit protection.

Ampacity, (not breaker size), determines supply circuit wire size. The ampacity listed on the unit rating plate and the Maximum and Minimum circuit breaker size (noted above) or in the units specification sheet or installation instructions provides the information to properly select wire and circuit breaker/protector size. The National Electric Code (NEC) specifies that the supply or branch circuit must be protected at the source.

3.12.8 CONTROL WIRING

IMPORTANT: Class 2 low voltage control wire should not be run in conduit with power wiring and must be separated from power wiring, unless class 1 wire of proper voltage rating is used.

- Low voltage control wiring should be 18 Awg. color-coded. For lengths longer than 100 ft., 16 Awg. wire should be used.
- Low voltage control connections are made to low voltage pigtails extending from top of air handler (upflow position - see Figure 3). Connections for control wiring are made with wire nuts. Control wiring knockouts (5/8 and 7/8) are also provided on the right and left side of the unit for side connection.
- See Section 3.12.9 below for control wiring connections.
- Make sure, after installation, separation of control wiring and power wiring has been maintained.
- See Section 3.12.1 for how to reconfigure transformer for 208 volt applications.

3.12.9 THERMOSTAT & CONTROL WIRING CONNECTIONS

NOTE: These low voltage application diagrams are generic. Your indoor/outdoor units may not have all the characteristics shown or may not wire exactly as shown. Refer to the diagrams and information sent with your indoor/outdoor sections.

WIRE COLOR CODE:

BK - BLACK	G - GREEN	P - PINK	W - WHITE
BR - BROWN	GY - GRAY	PR - PURPLE	Y - YELLOW
BL - BLUE	O - ORANGE	R - RED	

FIGURE 14: (-)H1P/(-)H2T/(-)H1A
TYPICAL THERMOSTAT: SINGLE STAGE COOLING W/ ELECTRIC HEAT

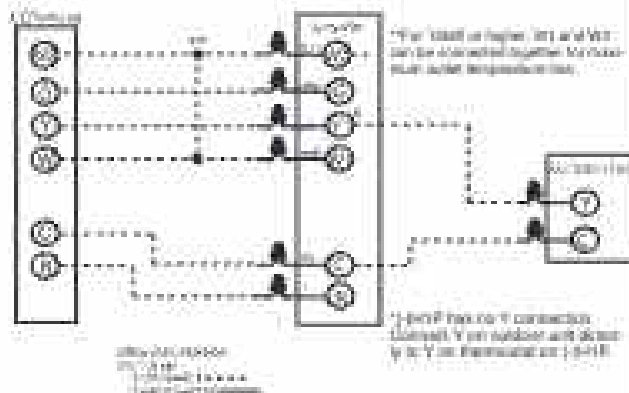


FIGURE 15: (-)H1P/(-)H2T
TYPICAL THERMOSTAT: SINGLE STAGE HEAT PUMP W/ ELECTRIC HEAT

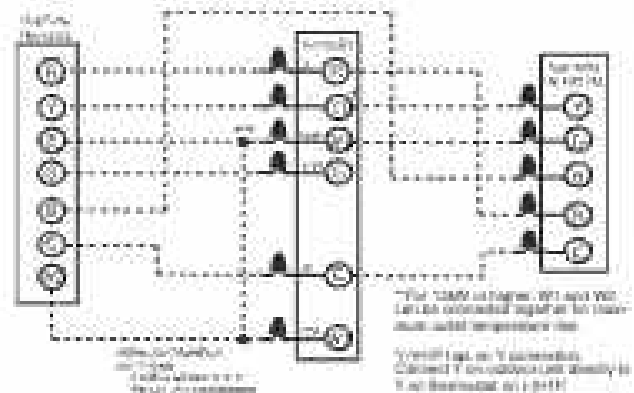


FIGURE 16: (-)H2T
TYPICAL 2-STAGE THERMOSTAT: 2-STAGE COOLING WITH ELECTRIC HEAT

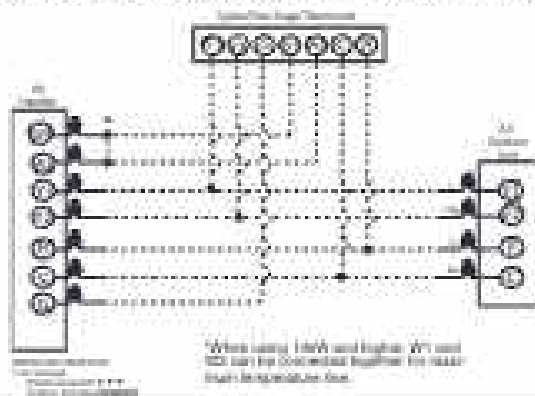
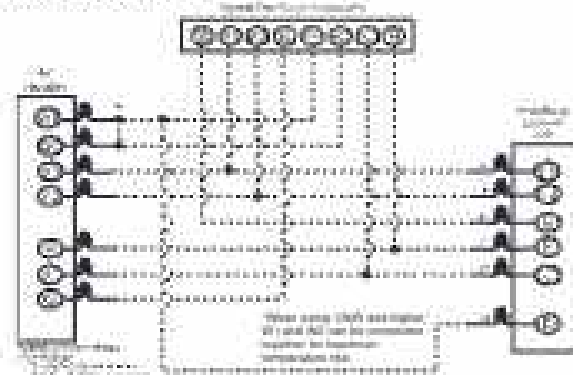
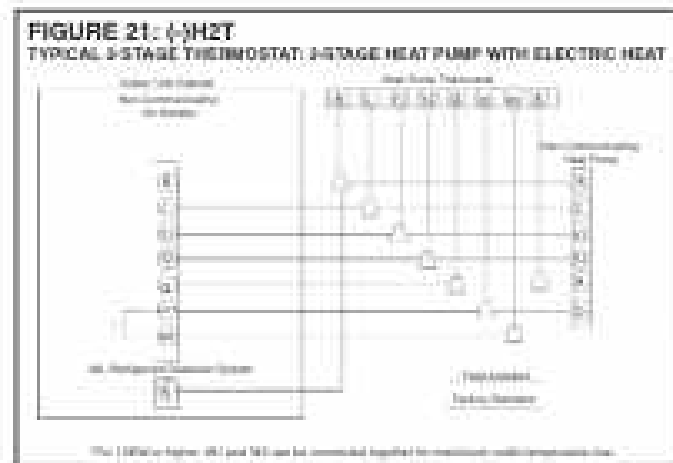
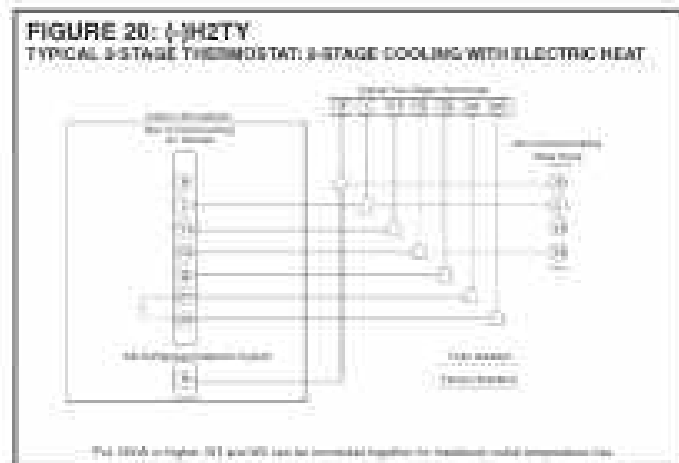
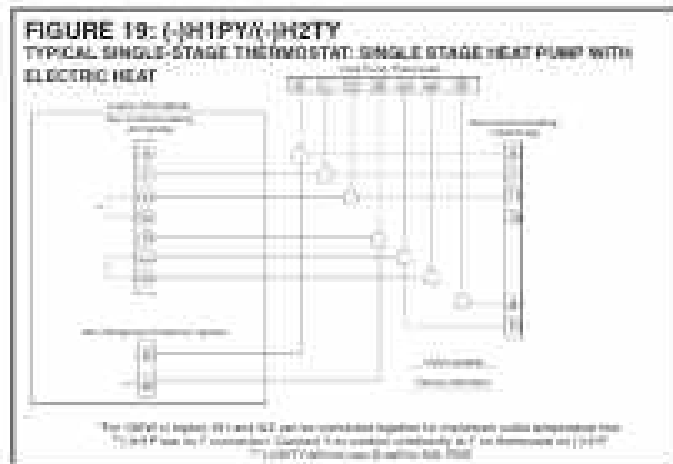
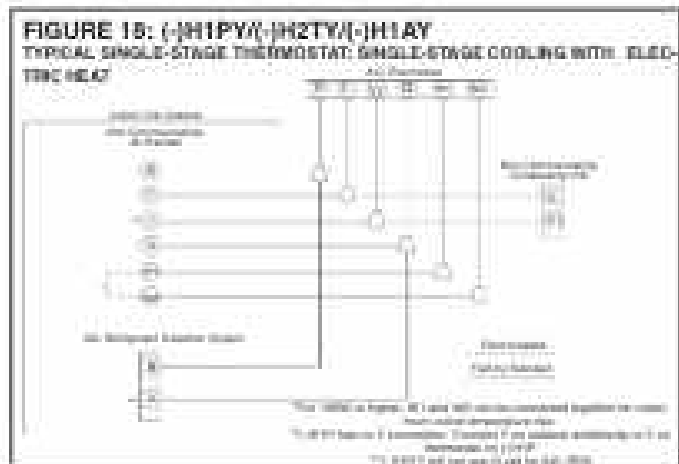


FIGURE 17: (-)H2T
TYPICAL 2-STAGE THERMOSTAT: 2-STAGE HEAT PUMP WITH ELECTRIC BACK-UP HEAT





3.13 Air-flow

Air-flow performance data is based on a dry indoor coil and no return air filter in place. Make sure external static applied to unit allows operation within the minimum and maximum limits shown in Section 3.13.1 below for both cooling and electric heat operation. For optimum blower performance, operate the unit in the .5 to .7 in W.C. external static range. Units should be applied with a minimum of .1 in W.C. external static pressure.

NOTE: The air-flow performance data tables (see Section 3.13.3) list air-flow information for air-handlers without heater and with maximum heater kW allowed for each model. The following formula can be used to calculate the adjusted CFM for smaller kW heaters.

$$\text{Adjusted CFM} = \text{No Heat CFM} - \left[\frac{(\text{No Heat CFM} - \text{Max kW CFM}) \times \text{Actual kW}}{\text{Max kW}} \right]$$

3.13.1 GENERAL AIR-FLOW OPERATING LIMITS

Cabinet Width	17		17 1/2		21			34	
Cooling BTU/h x 1,000	18	34	30	38	42	48	80	48	80
Cooling Tons Nominal	1.5	2	2.5	3	3.5	4	5	4	5
Heat Pump or Air Conditioning Maximum Heat/Cool CFM (L/s) (37.5 CFM (16 L/s)/1,000 BTU/h) (450 CFM (212 L/s)/Ton Nominal)	675 (315)	803 (425)	1125 (531)	1355 (637)	1575 (743)	1880 (866)	1925 (887)	1800 (855)	1930* (911)
Heat Pump or Air Conditioning Nominal Heat/Cool CFM (L/s) (33.3 CFM (16 L/s)/1,000 BTU/h) (400 CFM (189 L/s)/Ton Nominal)	600 (283)	800 (400)	1000 (472)	1200 (566)	1400 (651)	1600 (755)	1700 (828)	1500 (732)	1800* (850)
Heat Pump or Air Conditioning Minimum Heat/Cool CFM (L/s) (30.0 CFM (14 L/s)/1,000 BTU/h) (360 CFM (170 L/s)/Ton Nominal)	540 (255)	720 (340)	900 (425)	1080 (510)	1260 (595)	1440 (660)	1575 (743)	1440 (680)	1620* (765)
Maximum kW Electric Heating & Minimum Electric Heat CFM (L/s)	13 (487 (235))	13 (617 (291))	18 (814 (384))	18 (1054 (497))	20 (1171 (553))	25 (1502 (709))	25 (1502 (709))	25 (1502 (709))	1888 (788)
Maximum Electric Heat Rise °F (°C)	80 (26.7)	83 (17.2)	55 (18.3)	51 (10.8)	49 (9.4)	30 (10)	50 (10)	50 (10)	54 (12.2)

*CFM (L/s) per ton requirements are reduced for 5 ton systems.

3.13.2 SELECTING INDOOR BLOWER MOTOR SPEED

The (-)H1P/(-)H2T/(-)H1A air-handlers must be configured in the field to assure proper air-flow is delivered for the particular application it is being used in. Refer to the AIR-FLOW PERFORMANCE DATA in Section 3.13.3 to determine which speed tap is appropriate for the application.

Important: The pressure drop through the required external filter is not included in the external static pressure shown in the Air-Flow Performance Tables in Section 3.13.3. The filter pressure drop must be added to the duct system pressure drop to determine total external static pressure. Filter pressure drop increases as the filter becomes dirty and must be considered when calculating worst case external static pressure.

3.13.2.1 (-)H1P/(-)H1AY4821ST MODELS (PSC MOTOR)

(-)H1P models are designed to be matched to a specific capacity outdoor unit, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, or 5.0 tons. (-)H1AY4821ST models are designed to be matched to a specific capacity air conditioner, 4.0 ton only. They have PSC motors with 2 blower motor speed taps, low speed for applications with an external static pressure of up to 0.5 W.C. and high speed for applications with an external static pressure above 0.5 W.C. All models are shipped from the factory wired for high speed operation. **Note:** The external filter pressure drop must be included in the external static pressure when selecting a blower motor speed.

115V & 208/240V Models: The speed selection is made on the Blower Control Board. To change from high speed to low speed, remove the BLACK motor lead from the COM terminal, remove insulated cap from the end of the RED motor lead located in the control box and plug it into the terminal on the end of the BLACK motor lead to prevent it from shorting to ground. Attach RED wire to the COM terminal on the Blower Control Board.

480V Models: The speed selection is made on the Blower Relay. To change from high speed to low speed, remove the BLACK motor lead from terminal 3 on the Blower Relay and remove the cap from the terminal on the end of the RED motor lead. Connect the RED motor lead to terminal 3 on the Blower Relay. For 3-4 ton models only, connect the BLACK and YELLOW motor leads together.

3.13.2.2 (-)H2T MODELS (CONSTANT TORQUE ECM MOTOR) - 2 STAGE AIR-FLOW

(-)H2T models are specifically designed to be matched with 2-stage outdoor units, but can also be matched with single-stage outdoor units if properly configured for the correct indoor air-flow as covered in Section 3.13.2.3. They have constant torque ECM motors with 5 blower motor speed taps, labeled T1 through T5. Speed selections are made on the low voltage terminal block located on the motor housing. Speed tap T1 is always dedicated to continuous fan operation and delivers approximately 50% of the speed tap T4 air-flow. From factory, Yellow (Y1) and Blue (Y2) leads are connected to the motor low voltage terminal block taps T4 & T5. Yellow and Blue leads on 1/2 tonnages (1.5T, 2.5T, 3.5T) units use taps T2 & T3. Reference table 3.13.3.3. Yellow and Blue leads on Full Tonnages (2, 3, 4, 5) units use taps T4 and T5. Reference table 3.13.3.3.

3.13.2.3 (-)H2T/(-)H1A MODELS (CONSTANT TORQUE ECM MOTOR) - SINGLE STAGE AIR-FLOW

(-)H2T air-handlers may be matched to single stage outdoor units if properly configured. (-)H1A (constant torque) models should be matched to single stage air conditioners only. When using a single speed outdoor unit, Y1 and Y2 thermostat wires must connect to the Y2 (Yellow/Blue) wire on the air handler. For 1/2 tonnage outdoor units (1.5T, 2.5T and 3.5T) the blue wire from the control board should be connected to either T2 or T3 on the motor low voltage terminal block. For full tonnage outdoor units (2.0T, 3.0T, 4.0T and 5.0T) the blue wire from the control board should be connected to either T4 or T5 on the motor low voltage terminal block. Select the speed tap based on the general air-flow operating limits table 3.13.1 and static of the application. **Note:** (-)H1AY4821ST models contain a PSC motor as covered in Section 3.13.2.1.

3.13.3 AIR-FLOW PERFORMANCE DATA

3.13.3.1 240V AIR-FLOW PERFORMANCE DATA: (-)H1P (PSC MOTOR)

Model Number (-)H1P	Motor Speed From Factory	Manufacturer Recommended Air-Flow Range (Min-Max) CFM	Blower Size/ Motor HP (W) # of Speeds	Motor Speed	PSC CFM(In) Air Delivery/SPM/Watts (Dry Cool—No Filter)										
					External Static Pressure-Inches W.C.										
						0.1 (4)	0.2 (8)	0.3 (12)	0.4 (16)	0.5 (20)	0.6 (24)	0.7 (28)	0.8 (32)	0.9 (36)	1 (40)
1817S No heater	High	31275 CFM (244336 L/s)	1/2 HP (148) 2 Speed	Low	CFM	723	681	625	582	540	483	425	348	198	—
					SPM	525	526	581	734	758	828	881	945	1085	—
					Watts	192	178	176	172	167	161	153	145	128	—
				High	CFM	858	837	807	763	712	659	588	524	497	221
					SPM	664	715	756	797	845	881	923	958	1085	1082
					Watts	255	248	244	235	225	220	213	204	187	183
1817S with 15kw heater	High	40265 CFM (318312 L/s)	1/2 HP (148) 2 Speed	Low	CFM	631	621	585	552	515	452	383	311	188	—
					SPM	615	658	711	763	818	888	915	975	1035	—
					Watts	172	175	167	163	158	152	146	138	125	—
				High	CFM	818	787	757	711	662	608	545	478	387	271
					SPM	664	736	781	823	875	928	945	981	1035	1087
					Watts	244	237	233	225	218	208	203	198	178	182
2417S No heater	High	61088 CFM (505418 L/s)	1/2 HP (148) 2 Speed	Low	CFM	858	828	785	763	718	655	575	508	485	204
					SPM	648	704	756	802	847	883	919	981	1048	1044
					Watts	308	288	283	278	261	247	234	223	207	198
				High	CFM	1018	1008	951	882	828	787	722	701	685	385
					SPM	752	832	881	888	928	988	1043	1092	1032	1053
					Watts	418	412	388	378	368	348	333	313	285	283
2417S with 15kw heater	High	61782 CFM (501328 L/s)	1/2 HP (148) 2 Speed	Low	CFM	828	798	755	723	688	625	558	518	492	204
					SPM	878	734	788	812	875	912	943	981	1028	1078
					Watts	301	288	274	263	252	238	227	213	198	188
				High	CFM	1018	1008	951	882	838	787	722	715	688	375
					SPM	807	857	888	814	834	881	1008	1027	1027	1088
					Watts	428	421	387	368	358	338	318	302	284	282
3017S No heater	High	88415.4 CFM (708474 L/s)	1/2 HP (148) 2 Speed	Low	CFM	1148	1104	1025	1005	945	884	815	714	588	482
					SPM	732	771	855	838	875	885	924	975	1024	1035
					Watts	375	358	338	345	322	321	307	288	258	233
				High	CFM	1402	1388	1287	1251	1175	1108	1028	852	811	545
					SPM	882	888	883	823	851	875	1008	1018	1028	1082
					Watts	518	527	514	488	488	480	443	428	387	345
3017S with 15kw heater	High	81829 CFM (644427 L/s)	1/2 HP (148) 2 Speed	Low	CFM	1118	1084	1008	975	923	853	785	688	488	382
					SPM	752	821	853	888	834	885	884	1021	1024	1088
					Watts	378	348	338	338	312	321	307	288	258	238
				High	CFM	1332	1288	1187	1101	1075	1008	928	852	711	445
					SPM	882	878	883	884	878	1081	1025	1043	1082	1087
					Watts	511	487	484	482	458	458	418	388	387	345
3017S30625S No heater	High	110088 CFM (884888 L/s)	1/2 HP (148) 2 Speed	Low	CFM	1288	1218	1275	1228	1188	1120	1024	881	887	243
					SPM	758	838	875	904	832	882	885	1014	1048	1071
					Watts	475	457	442	438	418	384	378	352	328	382
				High	CFM	1875	1820	1694	1621	1581	1581	1218	1028	1024	882
					SPM	308	828	854	875	988	1018	1038	1058	1074	1084
					Watts	828	572	544	525	528	485	488	414	487	375

NOTE: (-) Indicate air-flow values outside unit static range. Some CFM values on the table are outside of the general air-flow operating limits and are for reference only.

3.13.3.1 240V AIR-FLOW PERFORMANCE DATA: (-)H1P (PSC MOTOR) - continued

Model Number (-)H1P	Motor Speed From Factory	Manufacturer Recommended Air-flow Range (Min - Max) CFM	Blower Static Motor HP (W) Full Speed	Motor Speed	PSC CFM(Air Air Delivery)RPM(Watts Dry Cell - No Filter)										
					External Static Pressure-Inches W.G.										
						0.1 [0.0]	0.2 [0.0]	0.3 [0.0]	0.4 [0.0]	0.5 [0.0]	0.6 [0.0]	0.7 [0.0]	0.8 [0.0]	0.9 [0.0]	1 [0.0]
817703210 with 18in. heater	High	1060/148 CFM (300/440 L/s)	1/4HP (24W) 2 Speed	Low	CFM	1280	1285	1225	1185	1125	1075	1034	995	957	920
					RPM	840	880	820	780	740	700	660	620	580	540
					Watts	455	437	422	406	390	374	358	343	328	313
				High	CFM	1475	1420	1374	1321	1264	1201	1138	1075	1014	950
					RPM	920	874	828	783	738	691	646	601	556	511
					Watts	573	542	514	486	457	428	400	374	347	320
42210 No heater	High	154/193 CFM (44/54 L/s)	1/4HP (24W) 2 Speed	Low	CFM	1645	1585	1528	1469	1410	1350	1287	1225	1164	1104
					RPM	961	907	843	793	740	686	633	580	526	473
					Watts	581	525	500	477	449	425	400	373	346	319
				High	CFM	2032	1938	1842	1782	1672	1561	1441	1320	1201	1081
					RPM	1223	1128	1040	1048	1008	931	850	760	660	560
					Watts	827	758.2	714	738.8	702	675	647	621	597	570
4225 with 20in. heater	High	1220/1590 CFM (34/45 L/s)	1/4HP (24W) 2 Speed	Low	CFM	1535	1515	1458	1390	1320	1257	1195	1132	1070	1008
					RPM	911	837	802	760	720	681	640	600	559	518
					Watts	521	508	482	457	428	400	380	363	346	328
				High	CFM	1822	1818	1762	1683	1593	1481	1341	1220	1101	981
					RPM	1048	1024	980	929	868	797	717	638	558	478
					Watts	787	758	730	700	672	644	610	581	552	523
4225/48245 No heater	High	1130/1324 CFM (32/37 L/s)	1/4HP (24W) 2 Speed	Low	CFM	1488	1468	1408	1342	1272	1208	1145	1082	1018	955
					RPM	900	864	820	771	723	675	626	577	528	479
					Watts	519	514	500	480	467	447	426	404	384	364
				High	CFM	2247	2217	2168	2120	2077	2018	1952	1872	1778	1674
					RPM	1322	1314	1290	1260	1240	1200	1151	1098	1042	987
					Watts	1209	1197	1180	1160	1140	1110	1074	1038	1002	966
48210/48245 with 20in. heater	High	1220/1590 CFM (34/45 L/s)	1/4HP (24W) 2 Speed	Low	CFM	1495	1478	1418	1352	1282	1218	1155	1092	1028	965
					RPM	900	794	760	717	673	630	586	543	499	456
					Watts	588	554	526	500	477	450	424	398	374	349
				High	CFM	2147	2117	2068	2020	1977	1918	1852	1772	1678	1574
					RPM	1220	1214	1190	1160	1130	1091	1038	972	907	842
					Watts	1088	1057	1030	1000	970	938	894	850	807	763
48245 No heater	High	1715/1847 CFM (48/51 L/s)	1/4HP (24W) 2 Speed	Low	CFM	1848	1812	1727	1631	1562	1491	1427	1363	1300	1236
					RPM	911	842	807	768	723	677	631	585	539	494
					Watts	732	745	724	700	669	638	605	573	540	507
				High	CFM	2104	2104	2084	2027	1975	1908	1831	1754	1680	1605
					RPM	984	910	838	780	729	679	629	579	529	479
					Watts	922	858.3	806	744.3	684	627	571	515	459	403
48245 with 10in. heater	High	1640/1195 CFM (46/34 L/s)	1/4HP (24W) 2 Speed	Low	CFM	1878	1842	1807	1761	1712	1663	1617	1570	1525	1480
					RPM	961	900	847	790	733	677	620	563	506	449
					Watts	727	715	704	685	666	642	620	598	576	552
				High	CFM	2219	2214	2184	2127	2075	2008	1931	1854	1780	1705
					RPM	1244	1238	1218	1188	1158	1118	1064	1009	954	899
					Watts	970	954.3	936	918.8	894	867	832	796	760	723

NOTE: (-) indicate air flow values outside unit static range. Some CFM values on the table are outside of the general air-flow operating limits and are for reference only.

3.13.3.2 115/208/480V AIR-FLOW PERFORMANCE DATA: (-)H1P (PSC MOTOR)

Model Number (-)H1P	Motor Speed (Flux Factory)	Manufacturer Recommended Air-Flow Range (Min./Max) CFM	Blower Size/ Motor HP (W) # of Speeds	Motor Speed	PSC CFM(24) Air Delivery:CFM/Watts (Dry Coil — No Filter)										
					External Static Pressure-Inches W.E.										
						0.1 [A]	0.2 [B]	0.3 [C]	0.4 [D]	0.5 [E]	0.6 [F]	0.7 [G]	0.8 [H]	0.9 [I]	1.0 [J]
1817S No heater	High	31975 CFM (24438 L/s)	10in 1/2 HP (148) 2 Speed	Low	CFM	733	881	926	952	945	912	825	745	688	—
					CFM	525	626	681	733	758	808	881	945	1005	—
					Watts	165	175	176	172	167	161	153	143	133	—
				High	CFM	888	1131	1177	1201	1112	1008	888	724	607	291
					CFM	654	715	756	787	845	881	923	958	1003	1062
					Watts	225	248	264	273	291	300	313	326	337	363
1817S with Clean heater	High	40764 CFM (23833 L/s)	10in 1/2 HP (148) 2 Speed	Low	CFM	624	821	885	932	915	852	765	688	—	—
					CFM	515	658	715	763	815	888	943	973	1005	—
					Watts	173	175	167	163	158	153	145	138	133	—
				High	CFM	836	1087	1137	1151	1062	968	842	698	587	271
					CFM	658	738	781	823	875	938	943	961	1005	1087
					Watts	244	237	233	225	220	208	203	198	175	152
2417S No heater	High	64086 CFM (30548 L/s)	10in 1/2 HP (148) 2 Speed	Low	CFM	855	1125	1205	1253	1118	1005	873	728	604	304
					CFM	648	754	798	833	841	843	815	761	688	1044
					Watts	208	238	253	259	261	247	238	222	207	176
				High	CFM	1055	1358	1411	1423	1338	1247	1123	951	805	583
					CFM	782	831	881	888	828	788	743	693	603	1003
					Watts	418	412	388	373	368	349	333	313	285	253
2417S with Clean heater	High	81283 CFM (39138 L/s)	10in 1/2 HP (148) 2 Speed	Low	CFM	828	108	115	123	108	100	888	738	604	—
					CFM	678	754	788	823	871	913	943	881	808	1076
					Watts	201	238	254	263	252	238	227	213	188	168
				High	CFM	1018	1388	141	152	148	137	123	101	848	575
					CFM	807	857	885	914	904	881	808	707	607	1088
					Watts	408	401	387	369	355	338	318	292	264	253
3017S No heater	High	864164 CFM (40847 L/s)	10in 1/2 HP (148) 2 Speed	Low	CFM	1183	1508	1583	1631	1443	1344	1195	1018	852	—
					CFM	732	171	883	838	874	888	834	771	684	1018
					Watts	275	368	258	246	232	221	207	188	158	233
				High	CFM	1403	1949	1987	1991	1775	1668	1508	1303	1111	543
					CFM	852	888	883	833	821	875	808	698	608	1082
					Watts	548	527	514	485	488	486	443	408	387	343
3017S with 1500 heater	High	818984 CFM (38442 L/s)	10in 1/2 HP (148) 2 Speed	Low	CFM	1188	1584	1683	171	1582	1524	133	111	481	352
					CFM	752	821	853	888	834	825	884	807	678	1008
					Watts	325	348	336	338	312	301	287	268	239	210
				High	CFM	1302	1949	1987	1991	1775	1668	1508	1303	1111	443
					CFM	857	888	883	834	878	808	698	608	1082	1087
					Watts	511	497	484	463	452	438	408	387	375	—
3017S/3062HS No heater	High	1119148 CFM (524850 L/s)	10in 1/2 HP (148) 2 Speed	Low	CFM	1345	1315	1273	1238	1188	1120	1004	888	887	743
					CFM	758	838	875	904	832	883	800	694	644	1071
					Watts	415	457	442	435	418	384	375	353	325	382
				High	CFM	1078	1020	1079	1021	1081	1081	1004	1008	1004	860
					CFM	808	828	854	875	888	1008	1008	1008	1008	1084
					Watts	808	872	544	525	508	485	488	404	487	375

NOTE: (-) indicate air-flow values outside unit static range. Some CFM values on the table are outside of the general air-flow operating limits and are for reference only.

3.13.3.2 115/208/480V AIR-FLOW PERFORMANCE DATA: (-)H1P (PSC MOTOR) - continued

Model Number (-)H1P	Motor Speed From Factory	Manufacturer Recommended Air-Flow Range (Min/Max) CFM	Blower Size Motor HP (W) Full Speed	Motor Speed	PSC CFM (34) Air Delivery (RPM) Watts (Dry Cell - No Filter)									
					External Static Pressure-Inches W.G.									
						0.1 [1.0]	0.1 [1.5]	0.2 [2.0]	0.4 [1.8]	0.5 [2.5]	0.6 [3.5]	0.7 [4.7]	0.8 [5.2]	0.9 [5.2]
8117/83215 with Filter/No Filter	High	1060/1140 CFM (306/340 L/s)	10.0/12.0 HP (3470) 2 Speed	Low	CFM	1284	1285	1225	1185	1125	1070	1044	1005	990
					RPM	840	884	870	864	862	863	860	864	864
					Watts	485	477	432	438	390	374	354	335	340
				High	CFM	1435	1425	1374	1337	1285	1231	1198	1159	1124
					RPM	921	954	879	880	838	801	801	788	768
					Watts	573	541	514	486	475	455	430	404	377
4225 No Filter	High	154/1631 CFM (346/375 L/s)	10.0/12.0 HP (3470) 2 Speed	Low	CFM	1545	1565	1528	1488	1420	1367	1385	1322	128
					RPM	881	887	911	840	870	880	1030	1038	1038
					Watts	581	525	510	477	449	425	400	355	358
				High	CFM	1632	1638	1640	1753	1675	1551	1441	1333	1261
					RPM	1023	1038	1040	1048	1008	920	880	860	818
					Watts	607	708.2	704	738.8	752	675	647	621	567
4225 with 20mic Filter	High	1625/1630 CFM (353/375 L/s)	10.0/12.0 HP (3470) 2 Speed	Low	CFM	1575	1615	1458	1385	1302	1227	1155	1082	104
					RPM	911	937	883	880	828	801	800	788	768
					Watts	571	565	483	437	403	380	363	358	358
				High	CFM	1622	1638	1662	1683	1530	1481	1341	1235	1181
					RPM	1048	1034	1035	1034	1000	917	877	838	818
					Watts	787	768	738	738	672	640	607	581	557
8325/83245 No Filter	High	188/1924 CFM (354/391 L/s)	10.0/12.0 HP (3470) 2 Speed	Low	CFM	1889	1894	1884	1882	1828	1788	1788	1787	1728
					RPM	920	944	933	937	893	880	880	880	888
					Watts	819	814	800	780	787	777	786	774	774
				High	CFM	2047	2017	2188	2130	2017	2018	1882	1872	1778
					RPM	982	914	948	940	888	880	1021	1038	1007
					Watts	1028	1007	888	880	885	878	854	838	787
8325/83245 with 20mic Filter	High	1920/1930 CFM (353/391 L/s)	10.0/12.0 HP (3470) 2 Speed	Low	CFM	1816	1824	1814	1782	1788	1728	1688	1627	1588
					RPM	900	914	913	937	893	878	880	880	888
					Watts	788	784	788	775	787	757	740	714	694
				High	CFM	2047	2117	2080	2020	1877	1818	1652	1772	1678
					RPM	982	914	918	980	1008	920	1041	1038	1007
					Watts	1028	857	816	880	885	878	884	778	787
8345 No Filter	High	1745/1837 CFM (381/391 L/s)	10.0/12.0 HP (3470) 2 Speed	Low	CFM	1848	1813	1877	1831	1782	1721	1687	1588	1532
					RPM	911	942	907	888	903	847	870	880	884
					Watts	757	745	734	710	689	682	680	645	618
				High	CFM	2108	2104	2084	2037	1875	1808	1831	1754	1688
					RPM	994	916	938	980	918	888	1034	1038	1008
					Watts	902	854.3	858	844.9	824	787	771	746	718
8345 with 30mic Filter	High	1840/1190 CFM (373/347 L/s)	10.0/12.0 HP (3470) 2 Speed	Low	CFM	1878	1842	1897	1781	1712	1652	1587	1525	1442
					RPM	981	902	917	948	873	887	900	1038	1004
					Watts	727	710	714	680	669	652	620	610	582
				High	CFM	2118	2024	2084	1907	1878	1808	1731	1654	1588
					RPM	994	908	938	1038	1038	948	1064	1038	1008
					Watts	870	854.3	858	814.8	794	787	782	746	671.2

NOTE: (-) indicate air-flow values outside unit static range. Some CFM values on the table are outside of the general air-flow operating limits and are for reference only.

3.13.3.3 115/208/240/480V AIR-FLOW PERFORMANCE DATA: (CONSTANT TORQUE MOTOR)

Model No. (GDTF)	Torque Application	Motor Speed from Factory	Blower Size/ Motor HP (kW) Full Speed	Motor Speed		CFM/SPM/WATTS - Dry Gas No Filter										
						External Static Pressure Index of 0.50										
						0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	
28T50T No. 400000	1.2 Ton	40	10.1 HP (273) 1 Speed	1	CFM	832	688	521	404	362	289	273	233	207	199	
					SPM	230	190	145	112	100	81	76	65	58	56	
					Watts	69	57	44	34	31	25	23	20	18	18	
				2	CFM	832	700	540	440	394	309	285	245	219	211	
					SPM	230	204	158	128	116	93	86	74	66	64	
					Watts	69	68	102	112	121	129	136	144	149	159	
28T50T with 400000	1.2 Ton	40	10.1 HP (273) 1 Speed	1	CFM	811	664	496	381	341	262	245	204	179	171	
					SPM	226	185	138	107	97	73	68	57	50	48	
					Watts	66	55	42	33	29	22	20	17	15	15	
				2	CFM	810	684	523	420	373	291	268	228	203	195	
					SPM	226	209	164	133	120	94	88	76	68	66	
					Watts	66	68	86	104	113	121	128	137	143	153	
28T50T No. 400000	2 Ton	40	10.1 HP (273) 1 Speed	4	CFM	829	688	523	402	360	283	267	227	201	193	
					SPM	231	190	145	112	101	81	76	65	58	56	
					Watts	69	57	44	34	30	25	23	20	18	18	
				5	CFM	879	707	553	438	394	303	279	239	213	205	
					SPM	243	208	162	130	118	93	87	75	67	65	
					Watts	107	102	102	101	109	109	116	125	130	139	
28T50T with 400000	2 Ton	40	10.1 HP (273) 1 Speed	4	CFM	808	642	478	367	327	252	235	195	169	161	
					SPM	226	183	138	107	97	73	68	57	50	48	
					Watts	66	55	42	33	29	22	20	17	15	15	
				5	CFM	880	705	550	438	394	303	279	239	213	205	
					SPM	243	208	162	130	118	93	87	75	67	65	
					Watts	112	102	102	101	109	109	116	125	130	139	
28T50T No. 400000	2.5 Ton	40	10.1 HP (273) 1 Speed	1	CFM	807	676	512	394	353	273	257	217	191	183	
					SPM	226	196	149	112	100	81	76	65	58	56	
					Watts	69	57	44	34	30	25	23	20	18	18	
				2	CFM	1023	879	688	540	494	383	359	319	293	285	
					SPM	284	239	190	152	139	107	100	86	77	75	
					Watts	112	110	109	102	104	112	121	128	137	143	
28T50T with 400000	2.5 Ton	40	10.1 HP (273) 1 Speed	1	CFM	807	676	512	394	353	273	257	217	191	183	
					SPM	226	196	149	112	100	81	76	65	58	56	
					Watts	69	57	44	34	30	25	23	20	18	18	
				2	CFM	1023	879	688	540	494	383	359	319	293	285	
					SPM	284	239	190	152	139	107	100	86	77	75	
					Watts	112	110	109	102	104	112	121	128	137	143	
28T50T No. 400000	3 Ton	40	10.1 HP (273) 1 Speed	1	CFM	829	700	540	420	373	291	268	228	203	195	
					SPM	231	204	158	128	116	93	86	74	66	64	
					Watts	69	68	86	86	94	94	102	109	116	125	
				2	CFM	1023	1112	1008	1026	919	873	823	736	746	701	
					SPM	284	314	279	282	262	244	235	209	209	198	
					Watts	114	114	112	119	123	121	121	120	120	120	
28T50T No. 400000	3 Ton	40	10.1 HP (273) 1 Speed	4	CFM	880	705	550	438	394	303	279	239	213	205	
					SPM	243	208	162	130	118	93	87	75	67	65	
					Watts	102	97	99	99	99	99	102	109	116	125	
				5	CFM	1023	1112	1008	1026	919	873	823	736	746	701	
					SPM	284	314	279	282	262	244	235	209	209	198	
					Watts	114	114	112	119	123	121	121	120	120	120	

NOTE: Some CFM values on the table are outside of the general air-flow operating limits and are for reference only.

3.13.3.3 115/208/240/480V AIR-FLOW PERFORMANCE DATA: (CONSTANT TORQUE MOTOR) - continued

Model No. (VFDV)	Torque Application	Motor Speed From Factory	Motor Size (Motor HP) @ 1800 RPM	Motor Speed		CFM@Pressure - In. H ₂ O @ 1000 ft/min										
						General Static Pressure Index of 0.1										
						0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1
3021ST with Huper	1 Ton	475	15/8 10/40 (12) 3 Speed	4	CFM	628	738	845	950	1055	1155	1255	1355	1455	1555	1655
					RPM	618	697	776	855	934	1013	1092	1171	1250	1329	1408
					Watts	112	81	64	50	38	28	19	11	5	2	1
	2 Ton	475	15/8 10/40 (12) 3 Speed	8	CFM	1288	1521	1754	1987	2220	2453	2686	2919	3152	3385	3618
					RPM	112	81	64	50	38	28	19	11	5	2	1
					Watts	214	228	242	256	270	284	298	312	326	340	354
3021ST for Huper	1.5 Ton	475	15/8 10/40 (12) 3 Speed	6	CFM	887	1043	1199	1355	1511	1667	1823	1979	2135	2291	2447
					RPM	891	988	1085	1182	1279	1376	1473	1570	1667	1764	1861
					Watts	107	74	64	53	43	34	25	16	8	4	2
	3 Ton	475	15/8 10/40 (12) 3 Speed	12	CFM	1788	2121	2454	2787	3120	3453	3786	4119	4452	4785	5118
					RPM	168	158	148	138	128	118	108	98	88	78	68
					Watts	328	342	356	370	384	398	412	426	440	454	468
3021ST with Huper	1.5 Ton	475	15/8 10/40 (12) 3 Speed	6	CFM	887	1043	1199	1355	1511	1667	1823	1979	2135	2291	2447
					RPM	891	988	1085	1182	1279	1376	1473	1570	1667	1764	1861
					Watts	107	74	64	53	43	34	25	16	8	4	2
	3 Ton	475	15/8 10/40 (12) 3 Speed	12	CFM	1788	2121	2454	2787	3120	3453	3786	4119	4452	4785	5118
					RPM	168	158	148	138	128	118	108	98	88	78	68
					Watts	328	342	356	370	384	398	412	426	440	454	468
3021ST for Huper	1 Ton	475	15/8 10/40 (12) 3 Speed	4	CFM	628	738	845	950	1055	1155	1255	1355	1455	1555	1655
					RPM	618	697	776	855	934	1013	1092	1171	1250	1329	1408
					Watts	112	81	64	50	38	28	19	11	5	2	1
	2 Ton	475	15/8 10/40 (12) 3 Speed	8	CFM	1288	1521	1754	1987	2220	2453	2686	2919	3152	3385	3618
					RPM	112	81	64	50	38	28	19	11	5	2	1
					Watts	214	228	242	256	270	284	298	312	326	340	354
3021ST with Huper	1 Ton	475	15/8 10/40 (12) 3 Speed	4	CFM	628	738	845	950	1055	1155	1255	1355	1455	1555	1655
					RPM	618	697	776	855	934	1013	1092	1171	1250	1329	1408
					Watts	112	81	64	50	38	28	19	11	5	2	1
	2 Ton	475	15/8 10/40 (12) 3 Speed	8	CFM	1288	1521	1754	1987	2220	2453	2686	2919	3152	3385	3618
					RPM	112	81	64	50	38	28	19	11	5	2	1
					Watts	214	228	242	256	270	284	298	312	326	340	354
480V3T-10 for Huper	1.5 Ton	475	15/8 10/40 (12) 3 Speed	6	CFM	887	1043	1199	1355	1511	1667	1823	1979	2135	2291	2447
					RPM	891	988	1085	1182	1279	1376	1473	1570	1667	1764	1861
					Watts	107	74	64	53	43	34	25	16	8	4	2
	3 Ton	475	15/8 10/40 (12) 3 Speed	12	CFM	1788	2121	2454	2787	3120	3453	3786	4119	4452	4785	5118
					RPM	168	158	148	138	128	118	108	98	88	78	68
					Watts	328	342	356	370	384	398	412	426	440	454	468
480V3T-10 with Huper	1.5 Ton	475	15/8 10/40 (12) 3 Speed	6	CFM	887	1043	1199	1355	1511	1667	1823	1979	2135	2291	2447
					RPM	891	988	1085	1182	1279	1376	1473	1570	1667	1764	1861
					Watts	107	74	64	53	43	34	25	16	8	4	2
	3 Ton	475	15/8 10/40 (12) 3 Speed	12	CFM	1788	2121	2454	2787	3120	3453	3786	4119	4452	4785	5118
					RPM	168	158	148	138	128	118	108	98	88	78	68
					Watts	328	342	356	370	384	398	412	426	440	454	468

NOTE: Some CFM values on the table are outside of the general air-flow operating limits and are for reference only.

3.13.3.3 115/208/240/480V AIR-FLOW PERFORMANCE DATA: (CONSTANT TORQUE MOTOR) - continued

Model No. (SSTF)	Sewage Application	Motor Speed from Factory	Blower Wheel Motor HP (W) P at Speed	Motor Speed		CFM @ 1000/775 - Dry Cell No Filter										
						External Static Pressure Inches of W.C.										
						0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1
4021ST**N No blower	4 Ton	480	100/10 31 HP (2275) 1 Speed	4	CFM	1000	1000	970	940	910	880	850	820	790	760	730
					BPM	800	800	770	740	710	680	650	620	590	560	530
					WPM	100	100	100	100	100	100	100	100	100	100	100
				5	CFM	1100	1080	1050	1020	990	960	930	900	870	840	810
					BPM	880	860	830	800	770	740	710	680	650	620	590
					WPM	110	108	105	102	99	96	93	90	87	84	81
4021ST**N with blower	4 Ton	480	100/10 31 HP (2275) 1 Speed	4	CFM	1000	1000	970	940	910	880	850	820	790	760	730
					BPM	800	800	770	740	710	680	650	620	590	560	530
					WPM	100	100	100	100	100	100	100	100	100	100	100
				5	CFM	1110	1090	1060	1030	1000	970	940	910	880	850	820
					BPM	890	870	840	810	780	750	720	690	660	630	600
					WPM	110	108	105	102	99	96	93	90	87	84	81
4040ST No blower	0.2 Ton	480	100/10 31 HP (2275) 1 Speed	2	CFM	800	800	780	760	740	720	700	680	660	640	620
					BPM	640	640	620	600	580	560	540	520	500	480	460
					WPM	80	80	80	80	80	80	80	80	80	80	80
				3	CFM	1000	1000	970	940	910	880	850	820	790	760	730
					BPM	800	800	770	740	710	680	650	620	590	560	530
					WPM	100	100	100	100	100	100	100	100	100	100	100
4040ST with blower	0.2 Ton	480	100/10 31 HP (2275) 1 Speed	2	CFM	800	800	780	760	740	720	700	680	660	640	620
					BPM	640	640	620	600	580	560	540	520	500	480	460
					WPM	80	80	80	80	80	80	80	80	80	80	80
				3	CFM	1000	1000	970	940	910	880	850	820	790	760	730
					BPM	800	800	770	740	710	680	650	620	590	560	530
					WPM	100	100	100	100	100	100	100	100	100	100	100
4040ST No blower	4 Ton	480	100/10 31 HP (2275) 1 Speed	4	CFM	1000	1000	970	940	910	880	850	820	790	760	730
					BPM	800	800	770	740	710	680	650	620	590	560	530
					WPM	100	100	100	100	100	100	100	100	100	100	100
				5	CFM	1100	1070	1040	1010	980	950	920	890	860	830	800
					BPM	880	850	820	790	760	730	700	670	640	610	580
					WPM	110	107	104	101	98	95	92	89	86	83	80
4040ST with blower	4 Ton	480	100/10 31 HP (2275) 1 Speed	4	CFM	1100	1070	1040	1010	980	950	920	890	860	830	800
					BPM	880	850	820	790	760	730	700	670	640	610	580
					WPM	110	107	104	101	98	95	92	89	86	83	80
				5	CFM	1200	1170	1140	1110	1080	1050	1020	990	960	930	900
					BPM	960	930	900	870	840	810	780	750	720	690	660
					WPM	120	117	114	111	108	105	102	99	96	93	90
4040ST No blower	0.2 Ton	480	100/10 31 HP (2275) 1 Speed	2	CFM	1000	1000	970	940	910	880	850	820	790	760	730
					BPM	800	800	770	740	710	680	650	620	590	560	530
					WPM	100	100	100	100	100	100	100	100	100	100	100
				3	CFM	1100	1080	1060	1040	1020	1000	980	960	940	920	900
					BPM	880	860	840	820	800	780	760	740	720	700	680
					WPM	110	108	106	104	102	100	98	96	94	92	90

NOTE: Some CFM values on the table are outside of the general air-flow operating limits and are for reference only.

3.13.3.3 115/208/240/480V AIR-FLOW PERFORMANCE DATA: (CONSTANT TORQUE MOTOR) - continued

Model No. (REF)	Package Application	Motor Speed, FPM, Factory	Blower Size/ Motor HP (W) Net Speed	Motor Speed		CFM (PERMITS) - Dry (2000) Filter										
						Based on Std. Pressure ratios of W.C.										
						0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	
6026ST with Heater	3.0 Ton	40	14.47 (33) 0 Speed	1	CFM	290	291	292	473	476	221	223	90	92	186	
					RPM	407	408	409	607	609	284	286	746	748	700	749
					Yards	32	31	30	76	75	31	30	91	91	31	91
				2	CFM	994	997	1000	1382	1388	1285	1294	1994	1998	1130	1008
					RPM	889	891	893	750	752	888	891	911	913	840	870
					Yards	251	250	250	295	296	308	314	323	316	316	344
6026ST No Heater	4 Ton	40	14.47 (33) 0 Speed	4	CFM	1084	1089	1093	1417	1422	129	131	174	175	131	440
					RPM	549	552	554	607	609	721	724	800	800	800	871
					Yards	131	130	131	125	124	146	146	156	161	161	152
				5	CFM	1714	1719	1723	1782	1788	1452	1460	1549	1550	1330	1230
					RPM	881	882	883	552	554	876	878	888	889	888	907
					Yards	280	280	281	314	315	337	338	349	350	372	382
6026ST with Heater	4 Ton	40	14.47 (33) 0 Speed	4	CFM	1080	1085	1089	1413	1418	129	131	174	175	131	440
					RPM	538	540	542	607	609	720	723	800	800	800	870
					Yards	131	130	132	125	127	146	147	157	162	162	152
				5	CFM	1600	1605	1610	1660	1666	1384	1391	1507	1508	1330	1180
					RPM	737	739	741	605	607	881	884	917	918	888	909
					Yards	280	281	282	320	321	340	342	362	363	382	394
6026ST No Heater	4.5 Ton	40	14.47 (33) 0 Speed	2	CFM	1021	1023	1024	1312	1316	121	123	167	167	120	411
					RPM	507	508	509	608	609	607	700	801	810	810	870
					Yards	134	133	133	76	76	89	93	76	76	76	74
				3	CFM	1710	1715	1719	1780	1785	1467	1474	1559	1560	1330	1230
					RPM	886	888	891	552	554	876	878	888	889	888	907
					Yards	234	233	233	322	323	338	347	400	410	410	410
6026ST with Heater	4.5 Ton	40	14.47 (33) 0 Speed	2	CFM	1021	1023	1024	1312	1316	121	123	167	167	120	411
					RPM	507	508	509	608	609	607	700	801	810	810	870
					Yards	134	133	133	76	76	89	93	76	76	76	74
				3	CFM	1710	1715	1719	1780	1785	1467	1474	1559	1560	1330	1230
					RPM	886	888	891	552	554	876	878	888	889	888	907
					Yards	234	233	233	322	323	338	347	400	410	410	410
6026ST No Heater	5 Ton	40	14.47 (33) 0 Speed	4	CFM	1047	1051	1055	1322	1327	124	126	171	171	124	410
					RPM	531	533	535	607	609	716	719	800	800	800	870
					Yards	136	135	135	76	76	91	94	76	76	76	74
				5	CFM	1660	1665	1670	1622	1627	1327	1337	1504	1505	1330	1230
					RPM	880	882	885	607	609	884	887	900	900	900	900
					Yards	241	240	242	327	328	354	356	441	440	440	473
6026ST with Heater	5 Ton	40	14.47 (33) 0 Speed	4	CFM	1048	1052	1056	1323	1328	124	126	171	171	124	410
					RPM	532	534	536	608	609	718	720	800	800	800	870
					Yards	136	135	135	76	76	91	94	77	77	77	75
				5	CFM	1660	1665	1670	1622	1627	1327	1337	1504	1505	1330	1230
					RPM	880	882	885	607	609	884	887	900	900	900	900
					Yards	241	240	242	327	328	354	356	441	440	440	473

NOTE: Some CFM values on the table are outside of the general air-flow operating limits and are for reference only.

3.13.3.3 115/208/240/480V AIR-FLOW PERFORMANCE DATA: (CONSTANT TORQUE MOTOR) - continued

Model No. (GDT)	Typical Application	Motor Speed From Factory	Blower Size/ Motor HP (W) at Speed	Motor Speed		CFM/HP/Watts - Dry Cooling Filter										
						External Static Pressure (inches of W.C.)										
						0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	
600 HGT No. 100000	4.2 Tons	40	15.11 24.4 HP (275) 1/2 Speed	1	CFM	1100	1080	997	876	816	777	712	678	600	581	
					30PM	807	713	773	804	863	877	883	881	1021	1067	
					Static	100	113	154	176	176	180	187	191	201	208	
				2	CFM	1600	1540	1350	1160	1070	1000	910	850	750	700	
					30PM	801	809	888	888	7887	7888	1124	1170	1228	1280	
					Static	186	208	277	327	328	354	471	488	587	678	
600 HGT with 440000	4.2 Tons	40	15.11 24.4 HP (275) 1/2 Speed	1	CFM	1000	1000	907	800	770	717	660	610	550	520	
					30PM	800	710	770	804	877	847	883	1027	1021	1087	
					Static	100	100	100	100	107	115	162	166	180	207	
				2	CFM	1700	1680	1520	1400	1400	1300	1170	1100	1000	950	
					30PM	800	800	888	876	1000	1110	1100	1200	1250	1380	
					Static	200	200	210	200	200	210	210	210	210	210	
600 HGT No. 100000	6 Tons	40	15.11 24.4 HP (275) 1/2 Speed	1	CFM	1600	1570	1510	1357	1277	1200	1100	1040	940	890	
					30PM	700	700	807	804	807	860	900	1027	1020	1080	
					Static	107	170	180	207	270	234	329	328	290	257	
				2	CFM	2000	1980	1800	1600	1600	1500	1320	1200	1100	1000	
					30PM	1070	1100	1120	1100	1180	1210	1210	1277	1320	1380	
					Static	200	200	207	270	270	242	350	350	370	400	
600 HGT with 440000	6 Tons	40	15.11 24.4 HP (275) 1/2 Speed	1	CFM	1700	1650	1570	1407	1307	1200	1100	1040	940	890	
					30PM	707	770	807	804	800	800	1027	1020	1080	1107	
					Static	100	170	180	190	270	270	320	320	290	260	
				2	CFM	2000	2000	2000	1800	1800	1800	1500	1400	1300	1200	
					30PM	1000	1070	1100	1100	1200	1200	1300	1300	1300	1307	
					Static	270	287	270	270	270	270	350	370	390	470	

NOTE: Some CFM values on the table are outside of the general air-flow operating limits and are for reference only.

3.13.3.4 115/208/240V AIR-FLOW PERFORMANCE DATA: (-)H1A (PSC MOTOR)

Model No. (-)H1A	Motor Speed From Factory	Manufacturer Recommended Airflow Range (Min/Max) CFM	SCIM Size Range (in) Full Speed	Motor Speed	CFM/INCHES H ₂ O - Dry Air at 70°F										
					External Static Pressure Inches wPG										
					0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	
40-107 No Heater	High	1380-1620 CFM (80-90 in. LG)	1 1/2 in. 34-42 (200) 2 Speed	Low	CFM	1639	1434	1284	1167	1035	939	859	797	750	710
					CFM	835	749	673	617	555	506	466	437	410	389
					Static	0.19	0.19	0.2	0.21	0.21	0.21	0.22	0.24	0.24	0.24
				High	CFM	2247	2017	1796	1626	1477	1342	1229	1142	1079	1034
					CFM	1120	1009	898	819	736	670	620	580	552	531
					Static	0.53	0.57	0.6	0.6	0.61	0.63	0.64	0.66	0.67	0.69
40-107 with Heater	High	1220-1620 CFM (80-90 in. LG)	1 1/2 in. 34-42 (200) 2 Speed	Low	CFM	1419	1224	1079	983	880	800	738	687	649	619
					CFM	709	612	540	491	440	400	369	347	330	315
					Static	0.48	0.49	0.5	0.51	0.51	0.52	0.54	0.54	0.54	0.54
				High	CFM	2117	2017	2086	2029	1977	1919	1852	1772	1679	1624
					CFM	1058	1009	998	989	969	949	929	899	872	851
					Static	0.58	0.57	0.56	0.55	0.55	0.55	0.54	0.54	0.53	0.53

NOTE: Some CFM values on the table are outside of the general air-flow operating limits and are for reference only.

3.13.3.5 115/208/240V AIR-FLOW PERFORMANCE DATA: (CONSTANT TORQUE MOTOR)

Model No. (HP/MF)	Name Speed, Full Voltage	Manufacturer Recommended Air-Flow Range (Min./Max.) CFM	Flower Star Motor HP (W) # of Speed	Motor Speed		CFM/INCH FTS - Dry Cell No. Filter										
						External Static Pressure Index (FPE)										
						0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	
20/30T No. 100mm	1.57m	45	Nob 1.0 (47/32) 2 Speed	2	CFM	232	228	221	214	202	194	173	162	157	156	
					4/PA	279	265	257	251	242	234	216	204	204	206	
					Wdts	88	15	34	58	72	78	78	52	58	58	
				4	CFM	452	794	794	885	885	888	842	839	831	821	
					4/PA	588	528	528	745	751	821	889	885	885	1049	
					Wdts	88	88	132	112	121	123	138	144	148	152	
20/30T with blower	1.57m	45	Nob 1.0 (47/32) 2 Speed	2	CFM	313	308	298	291	282	268	245	238	238	238	
					4/PA	368	352	348	331	323	304	288	288	287	288	
					Wdts	60	17	36	71	78	82	82	58	58	58	
				4	CFM	818	818	792	792	824	822	828	874	828	822	
					4/PA	1128	108	104	125	125	124	144	148	148	1101	
					Wdts	88	88	88	154	111	141	148	157	152	154	
20/30T No. 100mm	2.0m	45	Nob 1.0 (47/32) 2 Speed	4	CFM	529	542	538	532	525	513	500	500	502	491	
					4/PA	573	568	565	555	551	544	535	525	525	527	
					Wdts	88	15	34	73	80	86	82	58	58	58	
				6	CFM	979	927	932	938	794	794	713	658	675	582	
					4/PA	1431	1388	132	134	1121	1121	1021	975	1022	1187	
					Wdts	107	138	143	121	138	144	138	148	152	158	
20/30T with blower	2.0m	45	Nob 1.0 (47/32) 2 Speed	4	CFM	648	642	638	637	627	622	618	612	618	605	
					4/PA	692	682	688	741	745	822	820	871	1028	1179	
					Wdts	60	15	24	58	87	84	113	107	115	118	
				6	CFM	979	948	937	898	792	738	712	658	658	588	
					4/PA	1318	128	128	121	1171	1171	108	1028	1188	1118	
					Wdts	113	138	127	126	128	147	147	207	217	228	
30/150T No. 100mm	2.27m	60	Nob 1.0 (47/32) 2 Speed	2	CFM	327	321	318	314	308	293	273	262	258	258	
					4/PA	388	388	388	372	368	357	348	342	338	338	
					Wdts	81	17	36	81	88	114	112	118	122	127	
				4	CFM	1129	1078	1088	1085	1021	1021	1028	1018	1018	1021	
					4/PA	1118	1128	1184	1177	1124	1118	1118	1128	1144	1128	
					Wdts	173	181	188	182	184	212	211	228	248	248	
30/150T with blower	2.27m	60	Nob 1.0 (47/32) 2 Speed	4	CFM	431	438	442	438	423	428	428	428	428	428	
					4/PA	613	622	628	748	827	888	942	988	1028	1128	
					Wdts	60	34	88	88	118	124	127	132	132	138	
				6	CFM	1127	1112	1088	1022	814	812	828	798	798	791	
					4/PA	1028	1048	121	142	162	162	168	1028	1082	1082	
					Wdts	158	148	172	178	202	221	241	257	261	271	
30/150T No. 100mm	2.7m	60	Nob 1.0 (47/32) 2 Speed	4	CFM	422	428	438	432	427	428	418	418	422	418	
					4/PA	588	607	612	718	777	821	875	922	927	922	
					Wdts	102	87	84	188	118	142	122	132	138	141	
				6	CFM	1038	1252	1184	1122	1088	1028	1018	978	927	891	
					4/PA	1171	1172	1188	124	124	124	122	128	132	138	
					Wdts	228	248	258	261	272	288	287	288	288	297	

NOTE: Some CFM values on the table are outside of the general air-flow operating limits and are for reference only.

3.13.3.5 115/208/240V AIR-FLOW PERFORMANCE DATA: (CONSTANT TORQUE MOTOR) - continued

Motor No. (HVF#)	Motor Speed From Factory	Manufacturer Recommended Air-flow Range (Min / Max CFM)	Motor Size/ Motor HP (kW) at 5 Speed	Motor Speed	CFM@60Hz/115V - Dry 20000-Filter									
					General Data: Pressure Indices of W.C.									
						6.5	8.2	10	11.8	13.5	16	17.5	19.5	21.5
J01707 with Heater	3.7kw	45	1/2hp 115 HP (77.5) 1 Speed	4	CFM	85	110	135	155	175	195	215	235	255
					PRC	8.8	11.1	13.8	15.5	17.5	19.5	21.5	23.5	25.5
					WATER	12	15	18	20	22	24	26	28	30
				3	CFM	108	135	162	182	202	222	242	262	282
					PRC	11	14	17	19	21	23	25	27	29
					WATER	14	17	20	22	24	26	28	30	32
J01707 No Heater	3.7kw	45	1/2hp 115 HP (77.5) 1 Speed	4	CFM	87	112	137	157	177	197	217	237	257
					PRC	9.1	11.4	14.1	15.8	17.8	19.8	21.8	23.8	25.8
					WATER	13	16	19	21	23	25	27	29	31
				3	CFM	110	138	166	186	206	226	246	266	286
					PRC	11.2	14	17	19	21	23	25	27	29
					WATER	14	17	20	22	24	26	28	30	32
J01707 No Heater	3.7kw	45	1/2hp 115 HP (77.5) 1 Speed	4	CFM	87	112	137	157	177	197	217	237	257
					PRC	9.1	11.4	14.1	15.8	17.8	19.8	21.8	23.8	25.8
					WATER	13	16	19	21	23	25	27	29	31
				3	CFM	110	138	166	186	206	226	246	266	286
					PRC	11.2	14	17	19	21	23	25	27	29
					WATER	14	17	20	22	24	26	28	30	32
J01707 with Heater	3.7kw	45	1/2hp 115 HP (77.5) 1 Speed	4	CFM	87	112	137	157	177	197	217	237	257
					PRC	9.1	11.4	14.1	15.8	17.8	19.8	21.8	23.8	25.8
					WATER	13	16	19	21	23	25	27	29	31
				3	CFM	110	138	166	186	206	226	246	266	286
					PRC	11.2	14	17	19	21	23	25	27	29
					WATER	14	17	20	22	24	26	28	30	32
J01707 No Heater	3.7kw	45	1/2hp 115 HP (77.5) 1 Speed	4	CFM	87	112	137	157	177	197	217	237	257
					PRC	9.1	11.4	14.1	15.8	17.8	19.8	21.8	23.8	25.8
					WATER	13	16	19	21	23	25	27	29	31
				3	CFM	110	138	166	186	206	226	246	266	286
					PRC	11.2	14	17	19	21	23	25	27	29
					WATER	14	17	20	22	24	26	28	30	32
J01707 No Heater	3.7kw	45	1/2hp 115 HP (77.5) 1 Speed	4	CFM	87	112	137	157	177	197	217	237	257
					PRC	9.1	11.4	14.1	15.8	17.8	19.8	21.8	23.8	25.8
					WATER	13	16	19	21	23	25	27	29	31
				3	CFM	110	138	166	186	206	226	246	266	286
					PRC	11.2	14	17	19	21	23	25	27	29
					WATER	14	17	20	22	24	26	28	30	32
J01707 with Heater	4.17kw	45	3/4hp 225 HP (164) 1 Speed	4	CFM	108	135	162	182	202	222	242	262	282
					PRC	11.2	14	17	19	21	23	25	27	29
					WATER	14	17	20	22	24	26	28	30	32
				3	CFM	135	162	189	209	229	249	269	289	309
					PRC	13.5	16.2	18.9	20.9	22.9	24.9	26.9	28.9	30.9
					WATER	17	20	23	25	27	29	31	33	35
J01707 with Heater	4.17kw	45	3/4hp 225 HP (164) 1 Speed	4	CFM	108	135	162	182	202	222	242	262	282
					PRC	11.2	14	17	19	21	23	25	27	29
					WATER	14	17	20	22	24	26	28	30	32
				3	CFM	135	162	189	209	229	249	269	289	309
					PRC	13.5	16.2	18.9	20.9	22.9	24.9	26.9	28.9	30.9
					WATER	17	20	23	25	27	29	31	33	35

NOTE: Some CFM values on the table are outside of the general air-flow operating limits and are for reference only.

3.13.3.5 115/208/240V AIR-FLOW PERFORMANCE DATA: (CONSTANT TORQUE MOTOR) - continued

Model No. (3PH)	Motor Speed From Factory	Manufacturer Recommended Airflow Range (Min / Max) CFM	Blower Size Motor HP (W) @ 1/2 Speed	Motor Speed		CFM/PSIA/MTS - Dry Gas No Filter									
						External Static Pressure Inches of W.C.									
						0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
42H07 No Access	C25	45	1/2HP 34 (4) (25) 3 Speed	1	CTM	222	111	74.1	55.7	40.1	30.2	23.1	18.9	15.8	13.6
					AFM	250	125	83.7	62.8	45.7	34.0	26.0	20.7	17.2	14.9
					Wds	437	176	118	81	57.6	42.4	32.9	25.8	20.4	17.1
				2	CTM	228	114	75.6	56.7	40.9	30.7	23.5	19.2	16.0	13.8
					AFM	257	128	85.2	63.9	46.8	34.9	26.9	21.6	18.1	15.8
					Wds	448	182	121	83	59.2	44.0	33.9	26.8	21.4	18.1
42H07 with Access	C25	45	1/2HP 34 (4) (25) 3 Speed	1	CTM	113	56.5	37.6	27.9	20.1	15.1	11.6	9.2	7.5	6.4
					AFM	127	63.5	42.1	31.2	22.4	16.9	13.4	10.9	8.9	7.6
					Wds	142	71	46	34	24.1	18.1	14.1	11.6	9.6	8.3
				2	CTM	228	114	75.6	56.7	40.9	30.7	23.5	19.2	16.0	13.8
					AFM	257	128	85.2	63.9	46.8	34.9	26.9	21.6	18.1	15.8
					Wds	448	182	121	83	59.2	44.0	33.9	26.8	21.4	18.1
42H07 No Access	F175	45	1/2HP 34 (4) (25) 3 Speed	1	CTM	1125	562	376	279	201	151	116	92	75	64
					AFM	127	63.5	42.1	31.2	22.4	16.9	13.4	10.9	8.9	7.6
					Wds	142	71	46	34	24.1	18.1	14.1	11.6	9.6	8.3
				2	CTM	1118	559	373	276	199	149	114	90	73	62
					AFM	126	63	41.8	30.9	22.1	16.6	13.1	10.6	8.6	7.5
					Wds	141	70	45.5	33.5	23.6	17.6	13.6	11.1	9.1	7.8
42H07 with Access	F175	45	1/2HP 34 (4) (25) 3 Speed	1	CTM	1125	562	376	279	201	151	116	92	75	64
					AFM	127	63.5	42.1	31.2	22.4	16.9	13.4	10.9	8.9	7.6
					Wds	142	71	46	34	24.1	18.1	14.1	11.6	9.6	8.3
				2	CTM	1118	559	373	276	199	149	114	90	73	62
					AFM	126	63	41.8	30.9	22.1	16.6	13.1	10.6	8.6	7.5
					Wds	141	70	45.5	33.5	23.6	17.6	13.6	11.1	9.1	7.8
42H07 No Access	C25	45	1/2HP 34 (4) (25) 3 Speed	1	CTM	532	266	177	130	94	70	54	43	35	30
					AFM	599	299	200	147	109	81	63	50	41	35
					Wds	113	56.5	37.6	27.9	20.1	15.1	11.6	9.2	7.5	6.4
				2	CTM	532	266	177	130	94	70	54	43	35	30
					AFM	599	299	200	147	109	81	63	50	41	35
					Wds	113	56.5	37.6	27.9	20.1	15.1	11.6	9.2	7.5	6.4
42H07 with Access	C25	45	1/2HP 34 (4) (25) 3 Speed	1	CTM	532	266	177	130	94	70	54	43	35	30
					AFM	599	299	200	147	109	81	63	50	41	35
					Wds	113	56.5	37.6	27.9	20.1	15.1	11.6	9.2	7.5	6.4
				2	CTM	532	266	177	130	94	70	54	43	35	30
					AFM	599	299	200	147	109	81	63	50	41	35
					Wds	113	56.5	37.6	27.9	20.1	15.1	11.6	9.2	7.5	6.4

NOTE: Some CFM values on the table are outside of the general air-flow operating limits and are for reference only.

4.0 START-UP

4.1 PRE-START CHECKLIST

PRE-START CHECKLIST	
☐ YES ☐ NO	Is unit properly located, level, secure and serviceable?
☐ YES ☐ NO	Has auxiliary pan been provided under the unit with separate drain? (Units installed above a finished ceiling).
☐ YES ☐ NO	Is condensate line properly sized, run, trapped, pitched and tested?
☐ YES ☐ NO	Is ductwork correctly sized, run, taped and insulated?
☐ YES ☐ NO	Have all cabinet openings and wiring been sealed with caulking?
☐ YES ☐ NO	Is the filter clean, in place and of adequate size?
☐ YES ☐ NO	Is the wiring tight, correct and to the wiring diagram?
☐ YES ☐ NO	Is the unit properly grounded and protected (fused)?
☐ YES ☐ NO	Is the thermostat heat anticipator been set properly?
☐ YES ☐ NO	Is the unit circuit breaker(s) rotated properly on up - off down?
☐ YES ☐ NO	Are the unit circuit breaker(s) line lug cover(s) in place?
☐ YES ☐ NO	Are all access panels in place and secure?
Refer to outdoor unit installation instructions for system start-up instructions and refrigerant charging instructions.	

4.2 SYSTEM START-UP AND OPERATIONAL CHECK-OUT

After the air-handler and other system components have been installed and the Pre-Start Checklist has been completed, the system should be started up and an operational check-out should be performed. The operational check-out includes checking sequence of operation of the controls, air-flow, and refrigerant charge. If the controls are not found to be functioning properly, or the air-flow or refrigerant charge are not within specifications, corrective action must be taken. The following sections are provided to assist the installer with the operational check-out.

4.3 SEQUENCE OF OPERATION

4.3.1 COOLING MODE

When the thermostat calls for cooling, the G terminal on the blower control board is energized which in turn energizes the indoor blower motor. This causes the indoor blower to circulate air through the air-handler and duct system during the cooling cycle.

For (-)H2T air-handlers, when the Y1 (1st stage) thermostat pigtail is energized by the thermostat, the indoor blower motor operates at the 1st stage cooling air-flow level. When the Y2 (2nd stage) thermostat pigtail is energized by a 2-stage thermostat, the air-flow increases to the 2nd stage of cooling air-flow. As the 2-stage thermostat alternates between the 1st and 2nd cooling stages, the indoor air-flow alternates between the 1st and 2nd stages of air-flow.

When the thermostat call is satisfied or turned to the off position. The G and Y inputs from the thermostat are de-energized. A time delay programmed into the (-)H1P/(-)H1AY4821ST blower control board or (-)H2T/(-)H1A (constant torque) keeps the blower motor energized for an additional 30 seconds to extract the residual cooling from the cold indoor coil before it shuts down. If the thermostat is set for continuous fan operation, the motor continues to operate when the call for cooling ends. The air-flow on an (-)H2T/(-)H1A (constant torque) air-handler will be reduced to the continuous fan speed while the air-flow on a (-)H1P/(-)H1AY4821ST air-handler will remain constant.

4.3.2 ELECTRIC HEAT MODE

When the thermostat calls for the 1st stage of heat, the W1 terminal on the blower control board is energized. This energizes the indoor blower motor and all of the electric heater elements for heater kits with 10kW of heat or less and the 1st stage elements for 13kW heater kits and higher. If W1 and W2 thermostat pigtails at the air-handler are wired together on 13kW heater kits and higher, all of the elements to be energized. For 13kW heater kits and higher, a 2-stage heat thermostat can be used to energize the W2 terminal on the blower control board upon a call for a 2nd stage of heat which will in turn will energize the 2nd stage heater elements. The heater kit will cycle between the 1st and 2nd stages of heat at the direction of the thermostat.

When the thermostat call for heat is satisfied or the thermostat is turned to the off position, the W1 terminal on the blower control board is de-energized which will de-energize the heating elements in a few seconds as the bimetallic disc in the sequencer cools. The blower motor will be de-energized 75 seconds after the call for heat ends.

4.3.3 HEAT PUMP HEATING MODE

When the heat pump thermostat is set to heat mode, the B terminal on the outdoor unit is energized which energizes the reversing valve and switches it to the heating position. When the thermostat calls for heat, the G terminal on the blower control board is energized which in turn energizes the indoor blower motor. This causes the indoor blower to circulate air through the air-handler and duct system during the heating cycle.

For (-)H2T air-handlers, when the Y1 (1st stage) thermostat pigtail is energized by the thermostat, the indoor blower motor operates at the 1st stage heating air-flow level. When the Y2 (2nd stage) thermostat pigtail is energized by a 2-stage thermostat, the air-flow increases to the 2nd stage of heating air-flow. The air-flow levels for both stages the heat pump heating are the same for the cooling mode. As the 2-stage thermostat alternates between the 1st and 2nd heat pump heating stages, the indoor air-flow alternates between the 1st and 2nd stages of air-flow.

Should the room temperature continue to fall when the system is operating in the heat pump heating mode, the thermostat energizes the W2 terminal on the blower control board which energizes the supplemental electric heat. For 13kW heater kits and larger, the W1 and W2 pigtails can be connected together for maximum supplemental heat for 2nd stage or wired to the W1 and W2 terminals on the thermostat separately to provide a 3rd stage of heat as needed.

When the thermostat call is satisfied, The G and Y terminals inputs from the thermostat are de-energized. A time delay programmed into the (-)H1P blower control board or (-)H2T motor keeps the blower motor energized for an additional 30 seconds to extract the residual heat from the warm indoor coil. If the thermostat is set for continuous fan operation, the motor continues to operate when the call for heating ends. The air-flow on an (-)H2T air-handler will be reduced to the continuous fan speed while the air-flow on a (-)H1P air-handler will remain constant.

4.3.4 SUPPLEMENTAL ELECTRIC HEAT DURING DEFROST

Supplemental electric heat during the defrost cycle can be provided by running a wire from the purple pigtail wire (from D terminal on defrost control) on the outdoor heat pump unit to the W1 pigtail on the air-handler. This will energize the electric heat during the defrost cycle to prevent cold air from being discharged from the supply registers in the home.

For the most economical operation and if cold discharge air is not a concern, do not run the wire from the purple pigtail on the outdoor unit to the W1 pigtail on the air-handler. In this case, supplemental heat will only be energized if the thermostat energizes the 2nd stage of heat during the defrost cycle due to a significant drop in room temperature.

4.3.5 EMERGENCY HEAT (HEAT PUMP)

If heat pump thermostat is set to the Emergency Heat mode, the outdoor unit will be prevented from operating and heat will be provided solely by the electric heater. The electric heater elements and indoor blower motor will be energized any time there is a call for heat with no compressor and outdoor fan operation. A jumper should be installed between the W1 and E terminals on the thermostat sub-base so a call for emergency heat will be transferred to the 1st stage of heat of the thermostat. The indoor blower will cycle on and off with the electric heater elements when the thermostat fan setting is set to the auto mode, although there will be a 75 second delay off period for the blower motor after the call for heat ends.

4.3.6 THERMOSTAT FAN SETTING

If the thermostat FAN setting is adjusted to the AUTO position, the indoor blower motor will only operate when there is a call for cooling or heating. If the setting is adjusted to the ON position, the indoor blower motor will operate continuously. On (-)H2T/(-)H1A (constant torque) models, the indoor blower motor will operate at a reduced speed when there is no call for cooling and heating to reduce power consumption and noise.

4.4 CORRECTING ELECTRIC HEAT kW FOR VOLTAGE

The actual electric heat kW varies with the supply voltage. Use the following formula to correct the heater rated kW at voltages other than rated voltage.

$$\text{Actual kW} = \text{Rated kW} \times (\text{Actual Voltage}^2 / \text{Rated Voltage}^2).$$

4.5 CALCULATING ELECTRIC HEAT CAPACITY IN BTUH

Use the following formula to convert heater kW to heating capacity in BTUH.

$$\text{BTUH Capacity} = \text{kW} \times 3412$$

(Where 3412 = BTUH per kW)

4.6 CHECKING INDOOR AIR-FLOW

4.6.1 ESTIMATING CFM USING EXTERNAL STATIC PRESSURE

A common method of checking indoor is to measure the external static pressure that the air-handler is working against and then referring to the air-flow data in Section 3.13.3. Measuring external static pressure to a high degree of precision in the field is challenging, so keep in mind that the CFM determined by this method is an estimate, but is accurate enough for all practical purposes.

To determine external static pressure, the static pressure should be measured in inches of water column across the air-handler using an incline manometer, digital static pressure meter, or a Magnahelic. The static pressure inside the return plenum should be measured as close to the air-handler as possible and must be measured between any external filter rack and the unit so the pressure drop across the filter is accounted for. The static pressure inside the supply plenum should be measured at a point about halfway between the air-handler and the first elbow or the end of the plenum. Total external static pressure is the sum of the return and supply plenum static pressures. Even though the return plenum static pressure is a negative pressure, it must be added to the supply plenum static pressure, ignoring the negative sign. The supply and return plenum static pressure tubing can also be connected to both pressure ports of the pressure measuring device which will automatically add the two pressures together.

IMPORTANT:

When checking external static pressure in the cooling or heat pump heating mode on (-)H2T models that are matched to a 2-Stage outdoor unit, the thermostat set point must be adjusted so the system is operating in the 2nd stage mode to assure the air-handler is delivering 2nd stage air-flow.

4.6.2 ESTIMATING CFM USING ELECTRIC HEAT TEMPERATURE RISE

If the air-handler is equipped with an electric heater, the CFM can be estimated using the air temperature rise across the air-handler with the heater and blower both energized once the unit has run long enough for the temperatures to stabilize. As with determining CFM using external static pressure, the CFM determined by this method is an estimate, but is accurate enough for all practical purposes. Measure the return air temperature as close to the unit as possible and the supply air temperature about half way from the air-handler to the first elbow or end of the supply plenum. Use the following formula to calculate CFM once the temperature rise is determined.

$CFM = \text{Heating BTUH} / (\text{Elevation Factor} \times \text{Temp Rise } ^\circ F)$

Note: Refer to Section 4.5 to determine Heating BTUH and the following chart for Elevation Factor.

4.7 CHECKING REFRIGERANT CHARGE

System refrigerant charging should only be performed after the indoor air-flow is confirmed to be correct for the application. Once the air-flow is confirmed, refer to the manufacturer's outdoor unit charging chart and installation manual for the proper charging procedure for the system.

Note: The charging method for systems with a fixed orifice (piston) will likely be different than systems with TXV's.

Elevation (Feet)	Elevation Factor
Sea Level	1.08
500	0.98
1000	0.96
1500	0.95
2000	0.93
2500	0.91
3000	0.90
3500	0.88
4000	0.86
5000	0.83
6000	0.83
7000	0.77
8000	0.74
9000	0.72
10000	0.69

5.0 COMPONENTS & CONTROLS

5.1 BLOWER MOTOR

All (-)H1P and (-)H1AY4821ST models have 2-speed single-phase permanent split capacitor (PSC) style motors.

- The 208/240 volt models also have voltage taps that allow the motor to be configured to restore full air-flow performance in 208 volt applications.
- The low speed tap is for applications with duct system external static pressures up to 0.5 W.C. and the high speed tap is for applications with external static pressures from 0.5 – 0.7 W.C.
- A run capacitor is required for the PSC motors which is mounted on the blower housing. Speed and voltage change instructions are detailed in Section 3.13.2 of this manual.

All (-)H2T and (-)H1A models, except (-)H1AY4821ST, models have 5-speed constant torque electronically commutated (ECM) style motors that are significantly more efficient than PSC motors.

- The 208/240 volt models do not require the motor to be reconfigured for 208 volt applications, although the control transformer must still be reconfigured for 208 volt applications.
- The motor has a control module mounted on the end of the motor opposite the shaft end which is replaceable should only the control module itself fail.
- Constant torque ECM motors do not require a run capacitor.
- A terminal block on the motor shell is provided for the 5 speed taps, labeled T1 – T5. The speed taps are 24VAC inputs. Do not connect line voltage to these speed taps. T1 provides the slowest speed and is dedicated to continuous fan operation. T2 – T5 are for cooling & heating operation and are selectable at the terminal block using a single wire with an insulated terminal that plugs onto the terminals in the terminal block. Speed change instructions are detailed in Section 3.13.2.
- The constant torque motor has a built in soft start that will ramp the motor up to speed gradually.
- An off-delay is built into the control of the motor that keeps the motor energized for 30 seconds after 24 volts is removed from all speed tap terminals.
- If two of the speed tap terminals (T1 – T5) are energized with 24 volts simultaneously, the motor will operate at the higher of the 2 speeds. An example of this is when the G and Y thermostat inputs are both energized in the cooling or heat pump heating mode. In this case, T1 (continuous fan) and a higher numbered speed tap will both be energized resulting in the motor operating at the higher speed to support the cooling or heat pump heating air-flow requirement.
- For (-)H2T models matched to a 2-Stage thermostat and 2-Stage outdoor unit, a 2nd stage call for cooling or heat pump heating operation will result in both Y1+Y2 thermostat inputs being energized. The indoor blower motor will operate in the 2nd stage mode based on which terminal the blue (Y2) lead is connected to on the motor low voltage terminal block as long as it is connected to a terminal with a higher number than the yellow (Y1) lead.
- The air-flow delivery rate for a constant torque ECM motor will not decrease as much as it does with a PSC motor as external static pressure increases.

5.2 MOTOR RUN CAPACITOR

Only the (-)H1P and (-)H1AY4821ST models have run capacitors due to the fact they have PSC motors. The capacitor is mounted on the blower housing using a sheet metal strap. The microfarad (mfd) & voltage ratings vary depending on the blower motor and must be replaced with one with the same rating, except 370V rated capacitors can always be replaced with a 440V rated capacitor.

5.3 BLOWER CONTROL

An electronic blower control is provided to control blower motor & electric heat operation and is located inside the control box attached to the blower housing. The blower control in the (-)H1P/(-)H1AY4821ST and (-)H2T/(-)H1A (constant torque) operate differently as described below.

(-)H1P/(-)H1AY4821ST - Blower Control

- The contacts in the on-board relay (BR) are used to connect line voltage to the motor speed tap when there is a call for motor operation. Motor speed changes are made by switching motor speed taps at this relay.
- The control has an on-board 3 amp automotive-style fuse to protect the control circuit.
- A plug on the electric heater kit wiring harness plugs into a 4 pin plug receptacle on the blower control to allow control of the electric heater by the blower control based on thermostat input.
- There is a 5-pin connector for the thermostat pigtail harness to connect to. Wires from the thermostat do not connect directly to the blower control, but rather to the pigtails that are routed to the exterior of the air-handler cabinet.
- There is a 2 second on-delay for blower operation when there is a call for blower operation.
- There is a 30 second blower off-delay when a call for cooling or heat pump heating ends.

- There is a 75 second blower off-delay when a call for electric heating ends. This allows time for the contacts in the bi-metallic disc type heating sequencer to open which de-energizes the heater elements.

(-)H2T/(-)H1A (Constant Torque) - Blower Control

- There are two 24V outputs on the blower control for controlling the motor, one for continuous fan and one for cooling & heating operation.
- Motor speed changes are made at the motor speed terminal block instead of on the blower control.
- The control has an on-board 3-amp automotive style fuse to protect the control circuit.
- A plug on the electric heater kit wiring harness plugs into a 4 pin plug receptacle on the blower control to allow control of the electric heater by the blower control based on thermostat input.
- There is a 6-pin connector for the thermostat pigtail harness to connect to. Wires from the thermostat do not connect directly to the blower control, but rather to the pigtails that are routed to the exterior of the air-handler cabinet.
- There is no on-delay for blower operation when there is a call for blower operation.
- There is no blower off-delay provided by the blower control when a call for cooling or heat pump heating ends since a 30 second off-delay is programmed into the constant torque ECM motor.
- There is a blower off-delay programmed into the blower control when a call for electric heating ends. The delay is 45 seconds for the White-Rodgers control and 30 seconds for the UTEC control. This off-delay is added to the 30-second off delay programmed into the motor for a total off-delay of 75 or 60 seconds. This allows time for the contacts in the bi-metallic disc type heating sequencer to open which de-energizes the heater elements.

5.4 BLOWER

The blower utilizes a forward curved centrifugal wheel. The blower housing is constructed from galvanized sheet metal. The motor is attached with a 4-arm belly band type mount that screws into the side of the blower housing. The control box attaches to the front of the blower housing for access through the blower access door. The blower slides into place on a track and is secured by 4 sheet metal screws.

5.5 TRANSFORMER

A 40VA transformer is located inside the control box attached to the blower housing which provides 24V control voltage for both the air-handler & the outdoor unit. The transformer in 208/240V models is wired from the factory for 240V applications, but has a separate 208V tap for 208V applications. The black wires connected to the 240V tap must be moved to the 208V tap when installing the air-handler in 208V applications to assure full 24V+ control voltage for reliable operation of the system controls.

5.6 INDOOR COIL ASSEMBLY

- The indoor coil slabs are a fin & tube design with enhanced aluminum fins & internally grooved aluminum tubing.
- Most models have 3 coil slabs in an N configuration, but some models have 2 coil slabs in an A configuration.
- All (-)H1P, (-)H2T, and (-)H1A air-handlers have non-bleed thermal expansion valves (TXV) for refrigerant control.
- All models have a self-draining polypropylene condensate drain pan to eliminate standing water & a painted & insulated sheet metal drip pan to catch any water drips from the coil when the air-handler is oriented in the horizontal position.
- All models have built-in sheet metal channels in various locations designed to manage condensate when the air-handler is oriented in the horizontal position, thus preventing water blow-off.
- Copper stubs are provided for field tubing connections.
- The coil assembly slides into the air-handler on sheet metal rails. The coil is installed in the factory for upflow & horizontal left orientations. The coil must be removed and re-installed into the air-handler cabinet 180° from its factory orientation. An additional set of coil support rails must be installed before the coil can be re-installed. The additional set of rails are included with the air-handler for field installation. (See Section 3.2.2)
- The TXV sensing bulb is shipped unattached & must be securely attached to the vapor line with the supplied clamp and insulated with the supplied foam insulation. (See Section 3.10)

6.0 ACCESSORIES & KITS

6.1 ELECTRIC RESISTANCE HEATER KITS

- All (-)H1P, (-)H2T, and (-)H1A models are shipped without electric resistance heat.
- Electric heat kits ranging from 3kW to 30kW are available for field installation.
- Refer to Sections 3.13.5, 3.13.6, & 3.13.7 for electric heat kit model numbers available for specific air-handler models along with electrical ratings & additional information regarding the heater kits.
- Heater kit installation instructions are provided with the heater kit.
- All heater kits utilize open wire nickel chromium heating elements.
- An automatic reset over-temperature limit is provided to shut off the heater elements should air-flow become too restricted or if the blower motor fails.
- 13kW kits and larger are designed to operate in 2-stage heat mode if so desired or can be operated as single stage if the W1 & W2 thermostat pigtails are wired together.
- 208/240V single-phase (J Voltage), 208/240V 3-phase (C Voltage) & 480V 3-phase (D Voltage) heater kits are available.
- 115V (A Voltage) heater kits are not available.
- 208/240V 3-phase (C Voltage) heater kits must be installed in J Voltage air-handlers since there are no C Voltage air-handlers available. C voltage heater kits are for 3-phase applications and allow for smaller wire & fuse/breaker size compared to single-phase J Voltage heater kits.
- The heater kit is controlled by the blower control based on thermostat inputs.
- All heater kits are available with a circuit breaker style disconnect.
- 10kW heater kits and smaller are also available with either a pull-out style disconnect or with no disconnect.
- Incoming electric power is connected directly to the heater kit power terminals.
- The heater kit is provided with 2 power wires that connect to the air-handler power terminal block, providing power to operate the blower motor and controls.
- The heater kit is also provided with a 4-pin connector that plugs into a mating plug on the blower control to allow the control of the heater based on thermostat inputs.

6.2 JUMPER BAR KITS

- Jumper Bar Kit 3 Ckt. to 1 Ckt. RXBJ-A31 is used to convert single phase multiple three circuit units to a single supply circuit. Kit includes cover and screw for line side terminals.
- Jumper Bar Kit 2 Ckt. to 1 Ckt. RXBJ-A21 is used to convert single phase multiple two circuit units to a single supply circuit. Kit includes cover and screw for line side terminals.

NOTE: No jumper bar kit is available to convert three phase multiple two circuit units to a single supply circuit.

6.3 AUXILIARY HORIZONTAL OVERFLOW PANS

Cabinet Size	Auxiliary horizontal overflow pan accessory model number
17.5 wide & 3621S	RXBM-AC48
21" & 24.5 wide except 3621S	RXBM-AC61

6.4 EXTERNAL FILTER BASES

(See Figure 22)

6.5 COMBUSTIBLE FLOOR BASES

For high heat downflow applications. (See Section 3.2.2.)

Model Cabinet Size	Filter Size	Part Number	A	B
17	16 x 20 (406 x 508)	R0HF-17 Accommodate 1 or 2 filter	15.70	17.50
21	20 x 20 (508 x 508)	R0HF-21	19.20	21.00
24	25 x 20 (635 x 508)	R0HF-24	22.70	25.50

FIGURE 22
EXTERNAL FILTER BASE: R0HF.



6.6 HORIZONTAL ADAPTER KITS

This horizontal adapter kit is used to convert RCH replacement coils for horizontal applications if water management parts from original coil are not usable or are unavailable. See the following table to order proper horizontal adapter kit.

Model Cabinet Size	Combustible Floor Base Model Number
17	R30-B-17
21	R30-B-21
24	R30-B-24

7.0 INDOOR SERVICE/MAINTENANCE

For continuing high performance, and to minimize possible equipment failure, it is essential that periodic maintenance be performed on this equipment. Consult your local dealer as to the proper frequency of maintenance and the availability of

RCH Coil Model	Horizontal Adapter Kit Model Number (Single Qty.)	Horizontal Adapter Kit Model Number (10-pak Qty.)
2417	R30HH-A02	R30HH-A02x10
3617/3621S	R30HH-A03	R30HH-A03x10
3621M/4821S/4824S	R30HH-A04	R30HH-A04x10
4824M/6024S	R30HH-A05	R30HH-A05x10
3621M/4821S/R6021S*	R30HH-A06	R30HH-A06x10

*=A Coil

a maintenance contract.

IMPORTANT: Before performing any service or maintenance procedures, see the Safety Information (Section 1.0) at the front of this manual. Servicing shall be performed only as recommended by the manufacturer and by qualified personnel who are trained by a training organization or manufacturer accredited to teach national competency standards that maybe be set in legislation for servicing equipment with flammable refrigerant. The achieved competence should be documents by a certificate.

7.1 GENERAL GUIDELINES

Prior to beginning work on systems containing A2L REFRIGERANTS, safety checks are necessary to ensure that the risk of ignition is minimized. For repair to the REFRIGERATING SYSTEM, the following procedures shall be completed prior

WARNING

Units with circuit breaker(s) meet requirements as a service disconnect switch, however, if access is required to the line side (covered) of the circuit breaker, this side of the breaker(s) will be energized with the breaker(s) de-energized. Contact with the line side can cause electrical shock resulting in personal injury or death.

to conducting work on the system:

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

7.2 Checks to the Refrigerant Equipment

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

technical department for assistance.

The following checks shall be applied to installations using A2L REFRIGERANTS:

- The actual REFRIGERANT CHARGE is in accordance with the room size within which the refrigerant containing parts are installed.
- The ventilation machinery and outlets are operating adequately and are not obstructed.
- If an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant.
- Marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected.
- Refrigerating pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

7.3 Checks to Electrical Devices

Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. 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. This shall be reported to the owner of the equipment so all parties are advised. Initial safety checks shall include:

- That capacitors are discharged; this shall be done 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.
- That there is continuity of earth bonding.

7.4 Repairs to Sealed Components

During repairs to sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers, etc. If it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.

Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected. This shall include damage to cables, excessive number of connections, terminals not made to original specification, damage to seals, incorrect fitting of glands, etc.

- Ensure that the apparatus is mounted securely.
- Ensure that seals or sealing materials have not degraded to the point that they no longer serve the purpose of preventing the ingress of flammable atmospheres.
- Replacement parts shall be in accordance with the manufacturer's specifications. Sealed electrical components shall be replaced.

7.5 Repair to Intrinsically Safe Components

Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use.

Intrinsically safe components are the only types that can be worked on while live in the presence of a flammable atmosphere. The test apparatus shall be at the correct rating. Replace components only with parts specified by the manufacturer. Other parts may result in the ignition of refrigerant in the atmosphere from a leak.

NOTE: The use of silicon sealant can inhibit the effectiveness of some types of leak detection equipment. Intrinsically safe components must be replaced and do not have to be isolated prior to working on them.

7.6 Cabling

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

7.7 Detection of Flammable Refrigerants

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

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

- Electronic leak detectors may be used to detect refrigerant leaks but, in the case of FLAMMABLE REFRIGERANTS, the sensitivity may not be adequate, or may need 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 (such as bubble method or fluorescent method agents) 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. Removal of refrigerant shall be according to the next section (7.8 Removal and Evacuation).

7.8 Removal and Evacuation

When breaking into the refrigerant circuit to make repairs or for any other purpose, it is important that best practice is followed for A2L refrigerants. The following procedure shall be adhered to safely remove refrigerant following local and national regulations:

Evacuate

Purge the circuit with inert gas (optional for A2L)

Evacuate (optional for A2L)

Continuously flush or purge with inert gas when using flame to open circuit

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 A2L 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. The outlet for the vacuum pump shall NOT be close to any potential ignition sources, and ventilation shall be available.

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

7.9 Charging Procedures

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

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

For more in-depth charging procedures, refer to Refrigerant Charging section of the Outdoor Installation Instructions.

7.10 Recovery

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 labeled 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 the A2L refrigerant. If in doubt, the manufacturer should be consulted. 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.

The recovered refrigerant shall be processed according to local legislation 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 refrigerant does not remain within the lubricant. The compressor body shall not be heated by an open flame or other ignition sources to accelerate this process. When oil is drained from a system, it shall be carried out safely.

7.11 Decommissioning and Labeling

Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail. It is recommended good practice that all refrigerants are recovered safely. Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of recovered refrigerant. It is essential

that electrical power is available before the task is commenced.

a) Become familiar with the equipment and its operation.

b) Isolate system electrically.

c) Before attempting the procedure, ensure that:

Mechanical handling equipment is available, if required, for handling refrigerant cylinders;

All personal protective equipment is available and being used correctly;

The recovery process is supervised at all times by a competent person;

Recovery equipment and cylinders conform to the appropriate standards.

d) Pump down refrigerant system, if possible.

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

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

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

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

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

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

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

Equipment shall be labeled stating that it has been decommissioned and emptied of refrigerant. The label shall be dated and signed. Ensure that there are labels on the equipment stating the equipment contains FLAMMABLE REFRIGERANT.

7.12 AIR FILTER

Check the system filter every ninety days or as often as found to be necessary and if obstructed, clean or replace at once.

A qualified installer, service agency or HVAC professional should instruct the homeowner on how to access filters for regular maintenance.

IMPORTANT: Do not operate the system without a filter in place.

- New filters are available from a local distributor or home supply retailer.

7.13 INDOOR COIL, DRAIN PAN, DRAIN LINE

Inspect the indoor coil, drain pan, and drain line once each year for cleanliness and clean as necessary. Be sure to check the finned surface on the return side of the coil. It may be necessary to remove the air-filter and use a mirror and flashlight to view the return side of the coil.

NOTE: A proper filter is the best defense against a dirty coil. Regardless of the filter choice, proper air-flow and velocity also play a crucial role in how effective a filter will be. Most filters will lose their effectiveness when face velocities exceed 300 - 400 feet per minute. Excessive air velocity can allow particles to pass right through the media. Additionally, loaded or restrictive filters may lose their shape in higher air velocity applications and allow unfiltered air to bypass the filter altogether around the sides.

IMPORTANT: Coil and Drainpan Cleaning Method

Clean the finned surface of the indoor coil by rinsing the coil from both sides with clean warm water and/or with a vacuum with a soft brush attachment to remove accumulated contaminants and lint. It is important not to allow the tool to damage or bend the fins. Many chemical cleaners will attack the aluminum tubes which can cause refrigerant leaks. Therefore, use only clean warm water for cleaning aluminum tube evaporator coils. Do not use caustic household drain cleaners or bleach in the condensate pan or near the indoor coil as they will damage the aluminum fins and tubes.

7.14 BLOWER MOTOR AND WHEEL

Inspect the blower motor and wheel for cleanliness. It should be several years before it would become necessary to clean the blower motor and wheel.

- If it becomes necessary to remove the blower assembly from the unit, see instructions on removal and replacement of motor, blower, and blower wheel in Sections 7.5-7.7 below.
- The blower motor and wheel may be cleaned by using a vacuum with a soft brush attachment. Remove grease with a mild solvent such as hot water and detergent. Be careful not to disturb the balance weights (clips) on the blower wheel blades. Do not drop or bend wheel as balance will be affected.

7.15 MOTOR LUBRICATION

The blower motor sleeve bearings are pre-lubricated by the motor manufacturer and do not have oiling ports. Motor should operate for an indefinite period of time without additional lubrication.

7.16 BLOWER ASSEMBLY REMOVAL & REPLACEMENT

Removing the blower assembly is not normally required for normal service and maintenance. Removal is necessary for replacement of defective parts such as motor, blower wheel. After extended use, removal of the blower assembly may become necessary for a thorough cleaning of the blower motor and wheel.

WARNING

If removal of the blower assembly is required, all disconnect switches supplying power to the equipment must be de-energized and locked (if not in sight of unit) so the field power wires can be safely removed from the blower assembly. Failure to do so can cause electrical shock resulting in personal injury or death.

- Mark field power supply wiring (for replacement) attached to terminal block or circuit breaker(s) on blower assembly. Remove wiring from terminal block or circuit breaker(s).
- Mark low voltage control wiring (for replacement) where attached to unit control pigtail(s) on right side of blower housing. Remove wire nuts attaching field control wiring to unit control pigtail(s).
- Remove 4 screws holding blower assembly to front channel of cabinet and pull blower assembly from cabinet.
- To replace blower assembly, slide blower assembly into blower deck. Make sure blower assembly engages lances in deck properly. If assembly hangs up, check to make sure top and bottom are lined up in proper locations.
- Slide blower assembly to back of cabinet and make sure it is completely engaged.
- Replace 4 screws holding blower assembly to front channel of cabinet. Take care not to strip screws.
- Replace low voltage control wiring with wire nuts and make sure wiring is per the wiring diagram and all connections are tight and secure.
- Replace field power wiring to terminal block or circuit breaker(s) on control area of blower assembly. Make sure wires are connected per the wiring diagram. Tighten supply power wiring securely to terminals lugs.
- Make sure wiring is within cabinet and will not interfere with access door. Make sure there is proper separation between low voltage control wiring and field power wiring.
- Replace blower assembly control access panel before energizing equipment.

7.17 MOTOR REPLACEMENT

With the blower assembly removed, the indoor blower motor can be removed and replaced using the following procedure:

- Remove motor leads from the motor capacitor and blower control for (-)H1P/(-)H1A4821ST or motor terminals for (-)H2T/(-)H1A (constant torque) models. Note lead locations for ease of reassembly. Pull leads from plastic bushing in blower side.
- Loosen the set screw holding blower wheel onto the motor shaft. The shaft extends through blower hub so that a wrench can be used on the extended shaft to break the shaft loose if necessary. Be careful not to damage shaft. A wheel puller can be used on the groove in the blower hub if necessary.
- Remove 4 screws holding the motor mounts to the blower side and remove motor mount assembly from blower assembly.
- Remove the screw on the belly band strap around the motor shell and remove the 4 mounts from motor.
- Install (four) motor mounts and the belly band strap on the new motor using the screws removed in the previous step.
- Insert the motor shaft through the hub in blower wheel and orient motor to original position with motor leads and motor label facing the front of blower (control area).
- Reassemble 4 screws through motor mounts into blower side. Do not overtorque screws.
- Turn motor shaft so that flat on shaft is located under blower wheel setscrew, and blower wheel is centered in blower housing with the same distance on each side between the inlet orifice and outside of blower wheel. Tighten setscrew on motor shaft. Turn wheel by hand to make sure it runs true without hitting blower sides.
- Reassemble motor wiring to capacitor and blower control for (-)H1P/(-)H1A4821ST or motor terminals for (-)H2T/(-)H1A (constant torque) models, making sure that wires match wiring diagram and are tight and secure.

7.18 BLOWER WHEEL REPLACEMENT

- Hold blower wrap down into position and replace screws holding blower wrap to blower sides.
- See motor replacement and blower assembly instructions for remaining assembly procedure.

7.19 REPLACEMENT PARTS

Any replacement part used to replace parts originally supplied on equipment must be the same as or an approved alternate to the original part supplied. The manufacturer will not be responsible for replacement parts not designed to physically fit or operate within the design parameters the original parts were selected for.

These parts include but are not limited to: Circuit breakers, heater controls, heater limit controls, heater elements, motor, motor capacitor, blower control, control transformer, blower wheel, indoor coil and sheet metal parts.

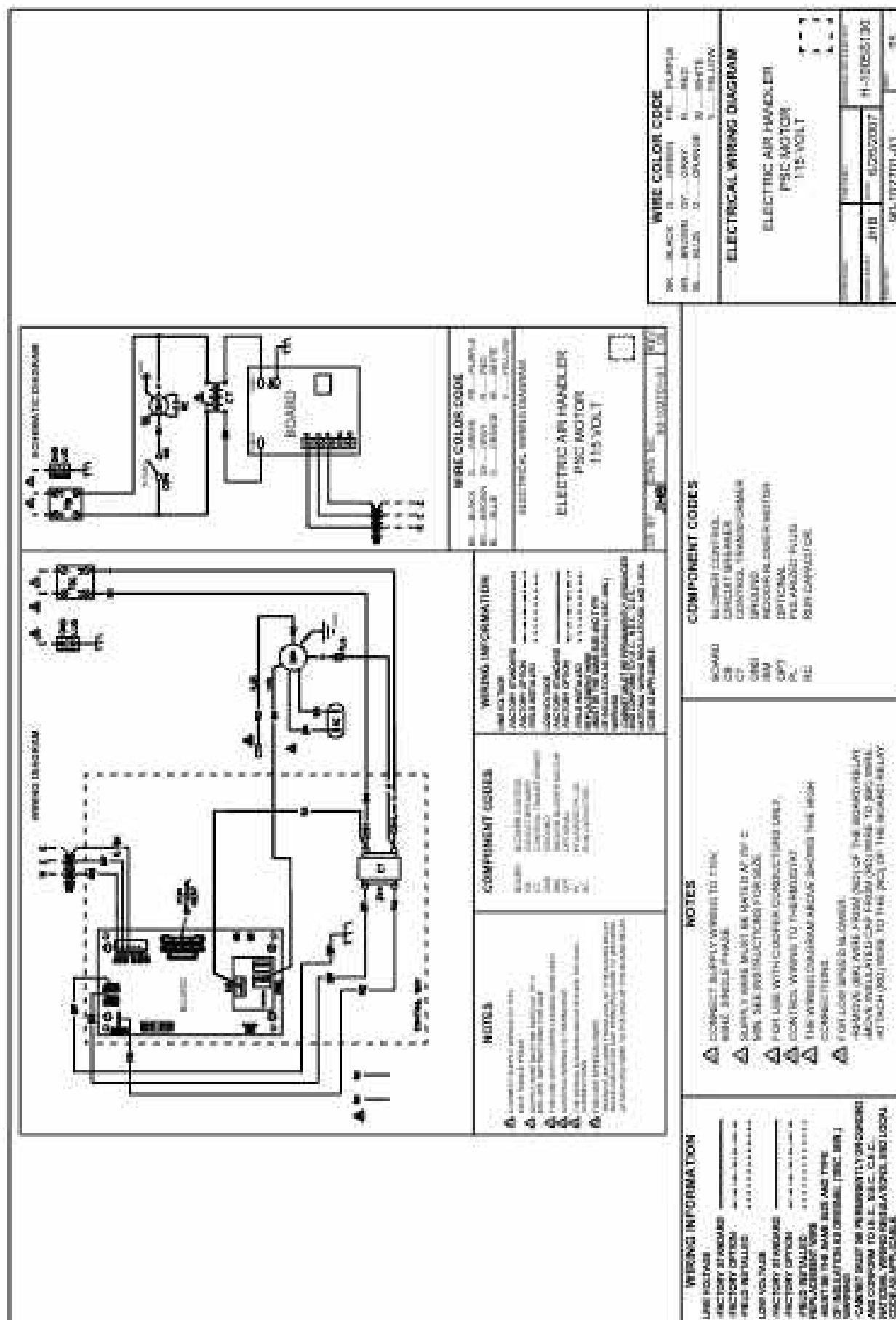
When ordering replacement parts, it is necessary to order by part number and include with the order the complete model number and serial number from the unit data plate. (See Parts List for unit component part numbers).

8.0 DIAGNOSTICS

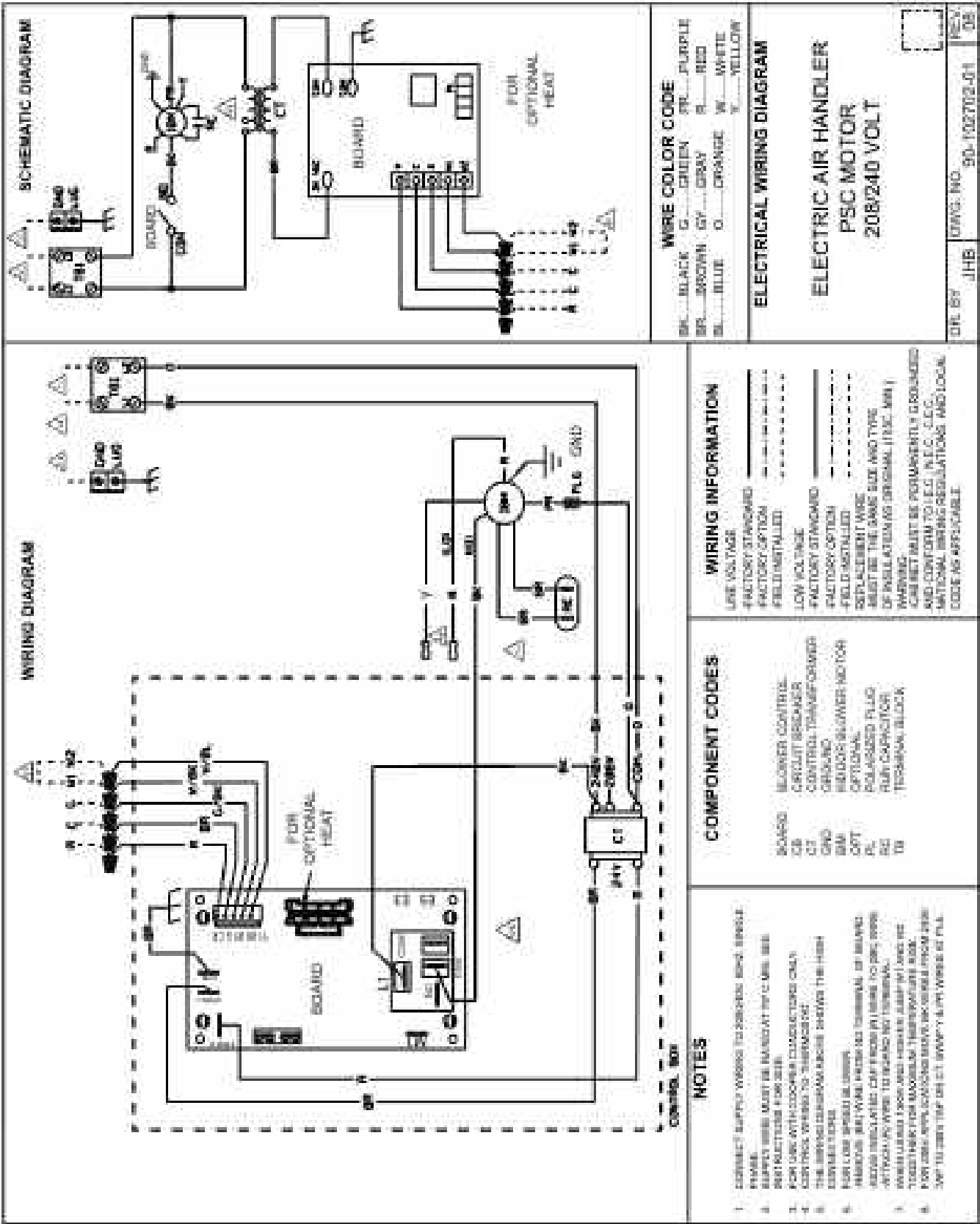
Problem	Possible Cause (Suggested Fix)
Blower Motor will not operate	- Failed run capacitor on (-)H1P/(-)H1A4821ST (replace) - Failed motor (replace) - Failed motor control module on (-)H2T/(-)H1A (constant torque) models (replace module) - Blown 3A fuse on blower control (check for control circuit short, replace fuse) - Loose wiring connection or broken wire (check connections & wiring) - Failed transformer (replace) - Failed blower control (replace) - Disconnect breaker is turned off or has tripped due to over-current or shorted circuit (check for shorts, reset breaker)
Excessive vibration	Blower wheel out of balance (replace or clean blower wheel)
Water overflowing drain pan	- Plugged drain (clear drain) - Unit not level (level unit)
Electric heater not heating properly or not heating at all, but blower motor is operating	- Over temperature limit has tripped (check for low air-flow) - Over temperature limit has failed (replace) - Sequencer or contactor has failed (replace) - One or more heating elements have burned out (replace)
Coil is frozen up	- System low on refrigerant charge (check for leaks & adjust charge) - Dirty return air filter (replace filter) - Inadequate air-flow due to incorrect blower motor speed selected (select higher speed) or excessively restrictive duct system (correct duct system)
Excessive air-flow	Incorrect blower motor speed selected (select lower speed)
Water blow-off from coil	- Excessive air-flow (select lower blower motor speed) - Contaminants on coil fins (clean coil) - Damaged coil fins (comb out fins or replace coil)
TXV not controlling properly	- TXV bulb not positioned correctly or clamp not tight (Check position of TXV sensing bulb and tightness of clamp) - Failed TXV (replace) - Plugged TXV inlet screen (clean or replace screen or replace TXV)
Blower Constantly Running	A2L Sensor Failure (Replace RDS if Necessary)

9.1 WIRING DIAGRAM (-)H1P/(-)H1AY4821ST - 115V

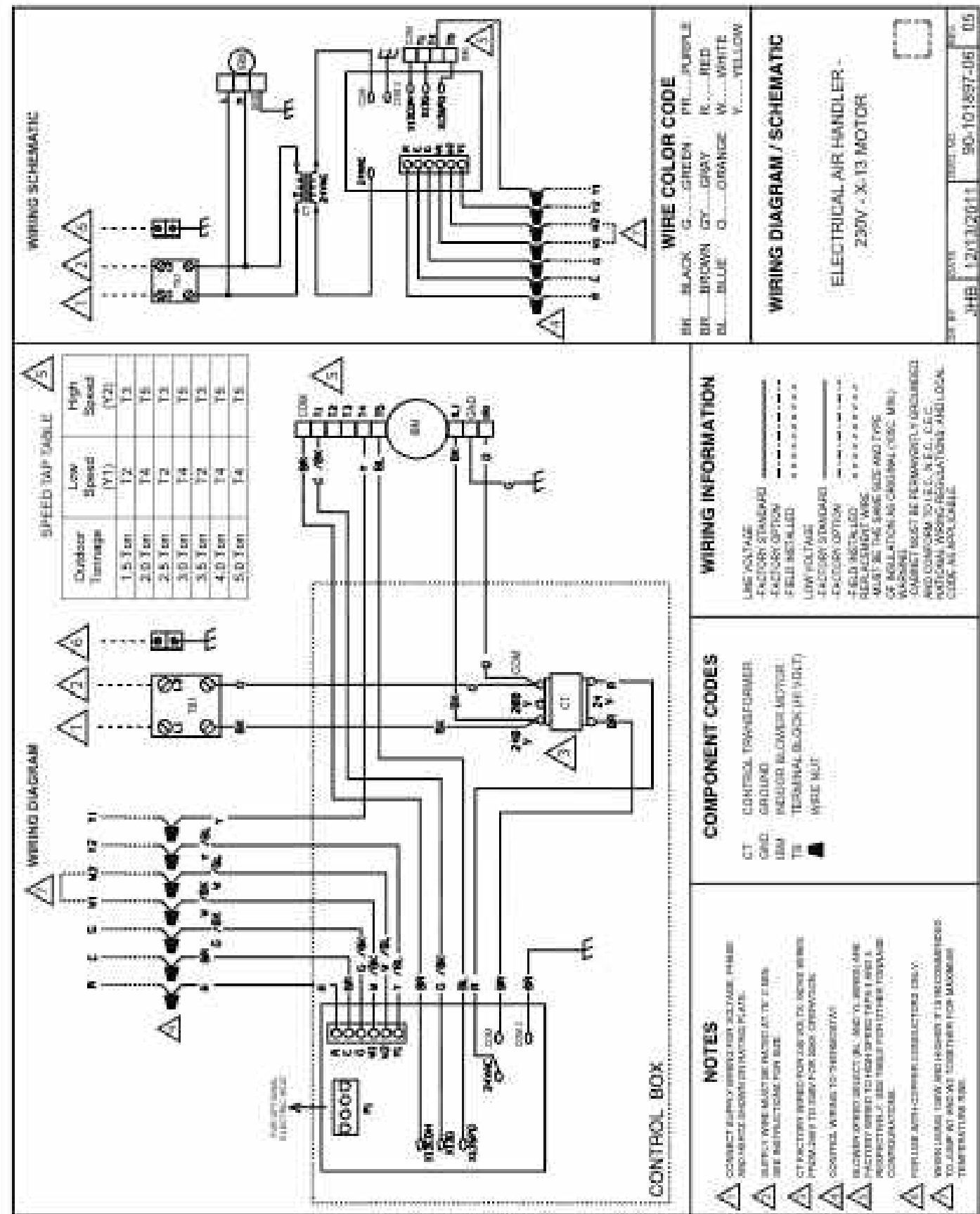
9.1 WIRING DIAGRAM (-)H1P/(-)H1AY4821ST - 115V



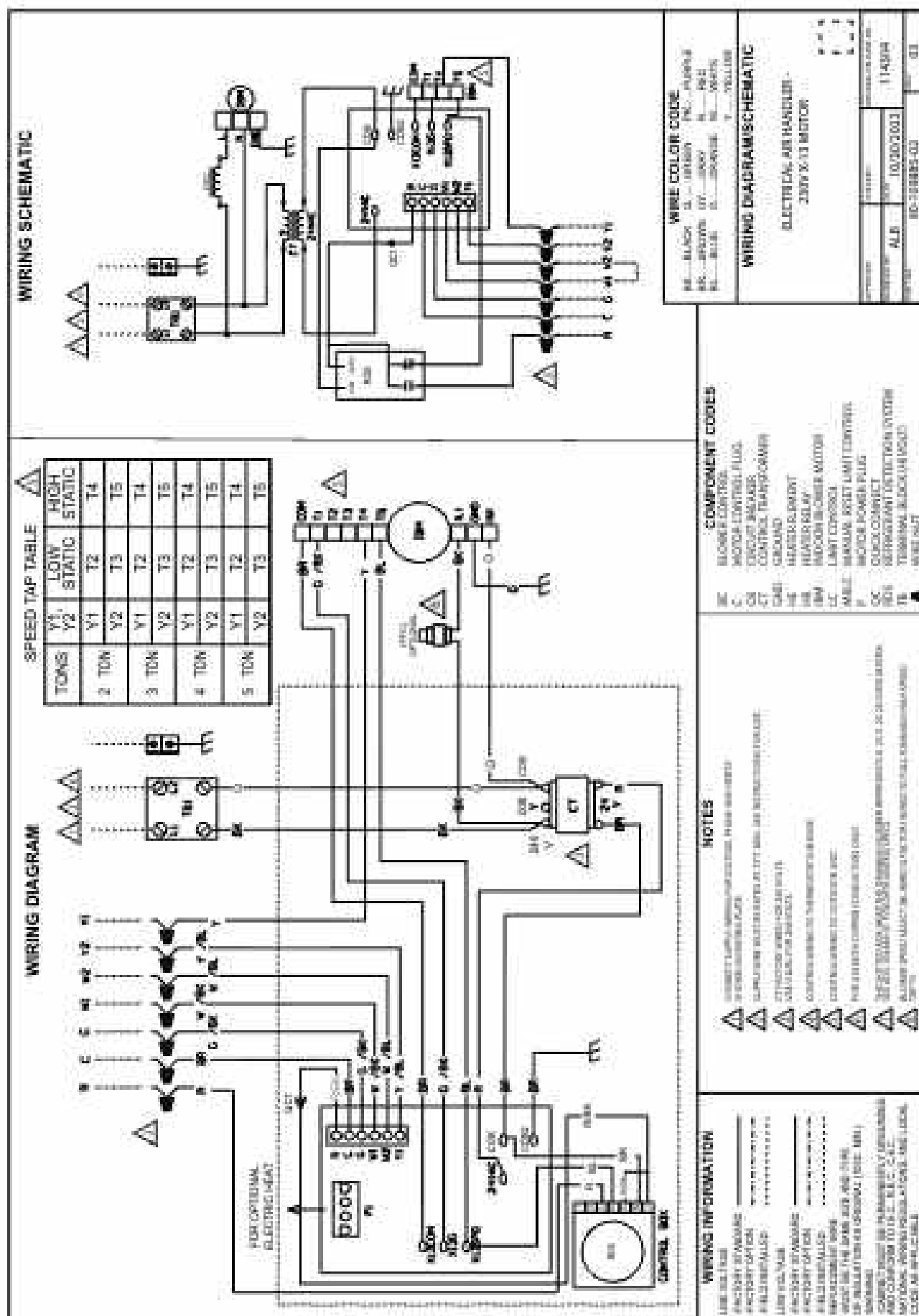
9.2 WIRING DIAGRAM (-)H1P/(-)H1AY4821ST - 208/240V



9.4 WIRING DIAGRAM (-)H2T/(-)H1A (CONSTANT TORQUE) - 230V



9.5 WIRING DIAGRAM (-)H2T/(-)H1A (CONSTANT TORQUE) - 230V



WINE COLOR CODE				
AL	ALCOY	AL - LITHIUM	AL - MAGNETA	
AL	ALCOY	AL - LITHIUM	AL - MAGNETA	
AL	ALCOY	AL - LITHIUM	AL - MAGNETA	
AL	ALCOY	AL - LITHIUM	AL - MAGNETA	

WINDING DYNAMICS, INC.ELECTRICAL AIR HANDLER -
200V X 11 MOTOR

10/20/2023	10/20/2023	10/20/2023
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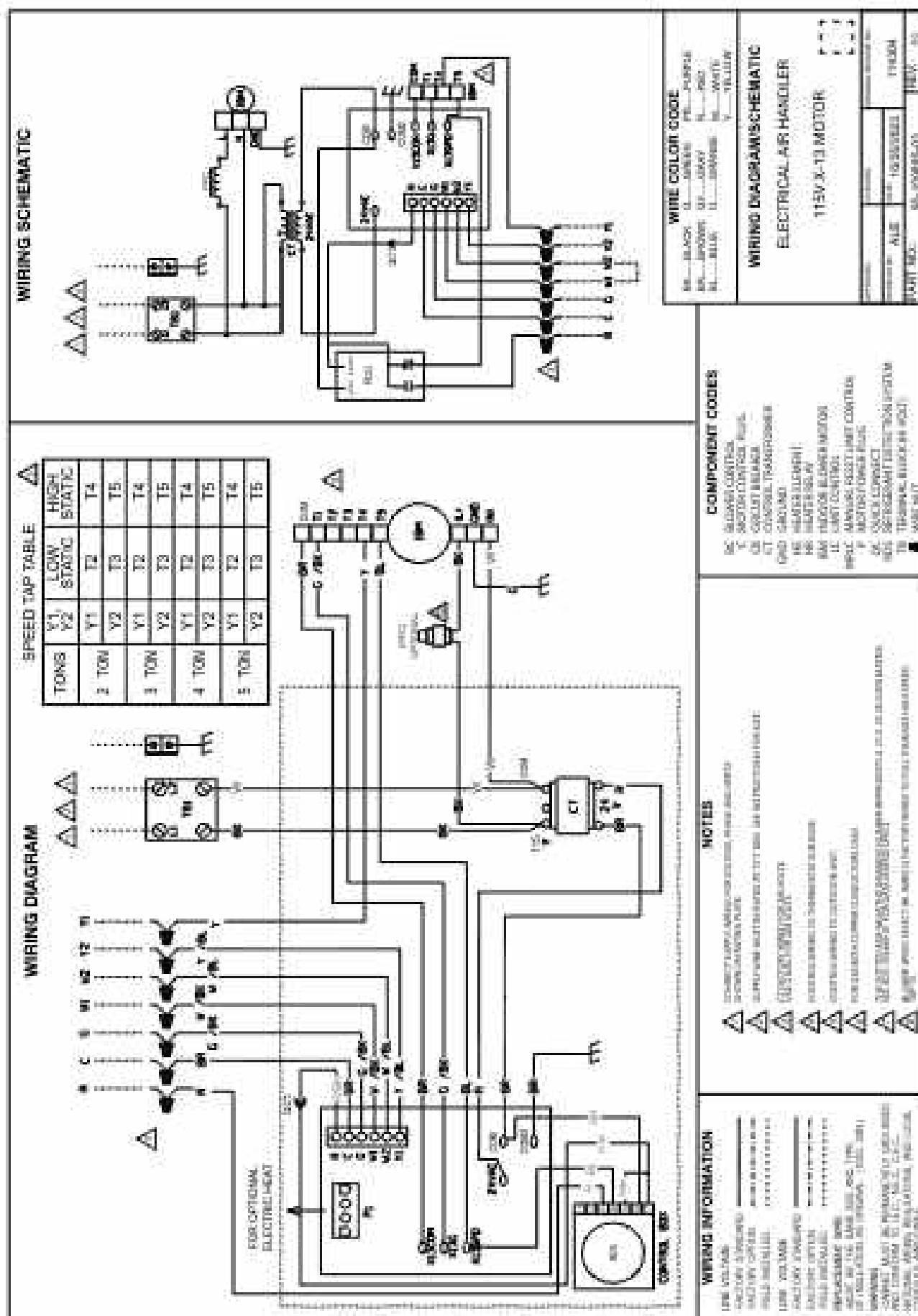
100-560002-001

COMPONENT CODES	
BC	BLOWER CONTROL
BD	BLOWER CONTROL FLUID
CM	CIRCUIT BREAKER
CC	CONTROL FLUID/CAMBER
CR	GROUND
CD	HEATER ELEMENT
HE	HEATER RELAY
BM	MODULO BLOWER MOTOR
LC	LIGHT CHIMNEY
MALE	MANUAL RESET LIMIT SWITCH
PC	PURGE POWER FLUID
CC	QUICK CONNECT
RO	RESEALANT VALVE/TWIN SYSTEM
TE	THERMAL SHOCK/LEAK STOP
	WIRE NUT

NOTES

[illegible]

9.6 WIRING DIAGRAM (-)H2T/(-)H1A (CONSTANT TORQUE) - 115V



SPEED TAP TABLE			Δ
TONS	Y1, Y2	LOW STATIC	HIGH STATIC
1 TON	Y1	T2	T4
	Y2	T3	T5
3 TON	Y1	T2	T4
	Y2	T3	T5
4 TON	Y1	T2	T4
	Y2	T3	T5
5 TON	Y1	T2	T4
	Y2	T3	T5

WINE COLOR CODE

STYLING: DUCHAMUSCHMATIC

ELECTRICAL & R. HANCOCK

150-1140000

[illegible]

COMPONENT CODES

1. BLUNDER CONTROL
2. BLUNDER CONTROL - RAMP
3. BLUNDER CONTROL - RAMP
4. COLLAR RELEASE
5. COLLAR RELEASE
6. COLLAR TRANSDUCER
7. COLLAR TRANSDUCER
8. COLLAR TRANSDUCER
9. COLLAR TRANSDUCER
10. COLLAR TRANSDUCER
11. COLLAR TRANSDUCER
12. COLLAR TRANSDUCER
13. COLLAR TRANSDUCER
14. COLLAR TRANSDUCER
15. COLLAR TRANSDUCER
16. COLLAR TRANSDUCER
17. COLLAR TRANSDUCER
18. COLLAR TRANSDUCER
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100. COLLAR TRANSDUCER

NOTES

1. CONDUCT is a verb meaning to organize, manage, direct, or control.

2. CONDUCT is a noun meaning a person's behavior or actions.

3. CONDUCT is a noun meaning a person's behavior or actions.

4. CONDUCT is a noun meaning a person's behavior or actions.

5. CONDUCT is a noun meaning a person's behavior or actions.

6. CONDUCT is a noun meaning a person's behavior or actions.

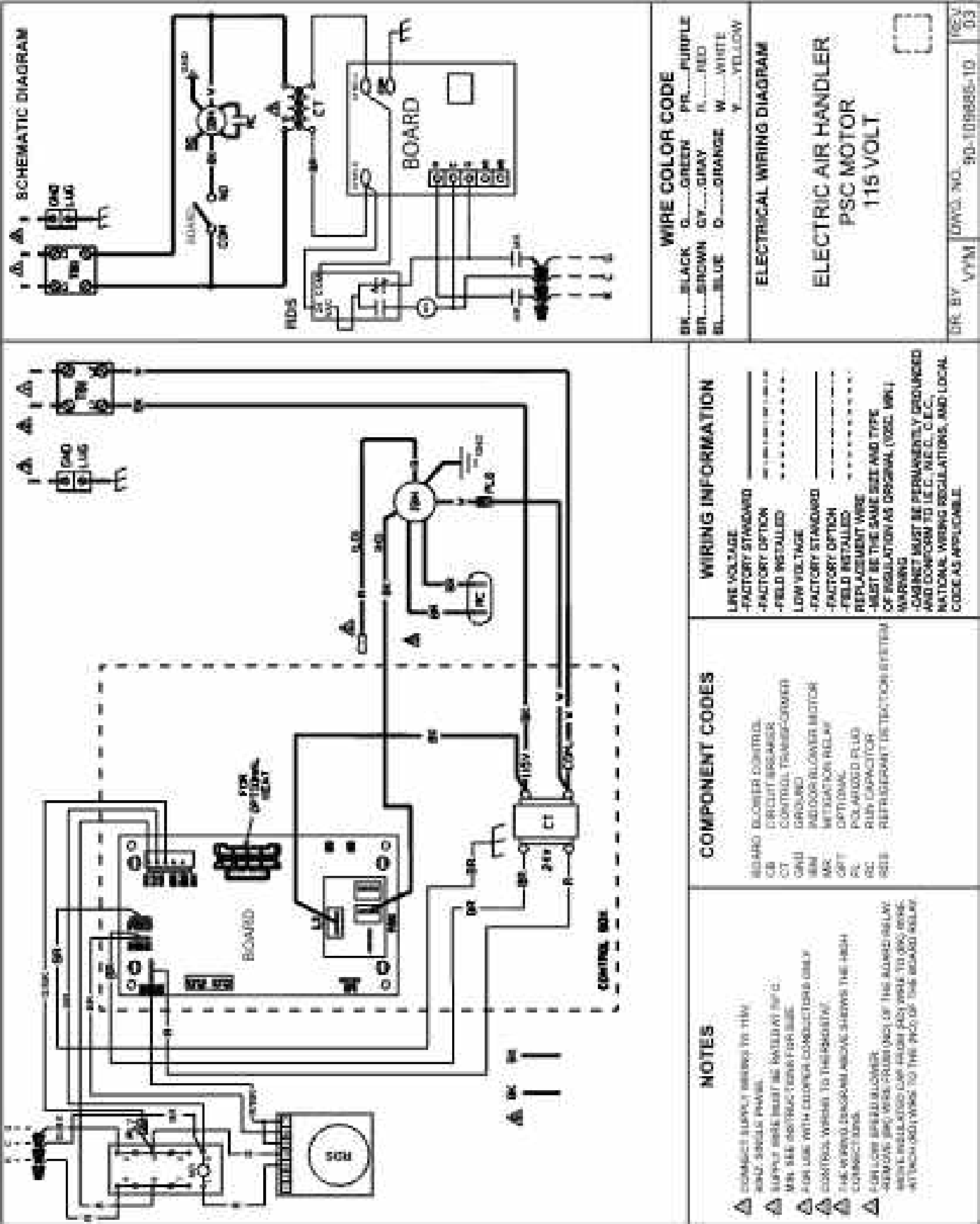
7. CONDUCT is a noun meaning a person's behavior or actions.

8. CONDUCT is a noun meaning a person's behavior or actions.

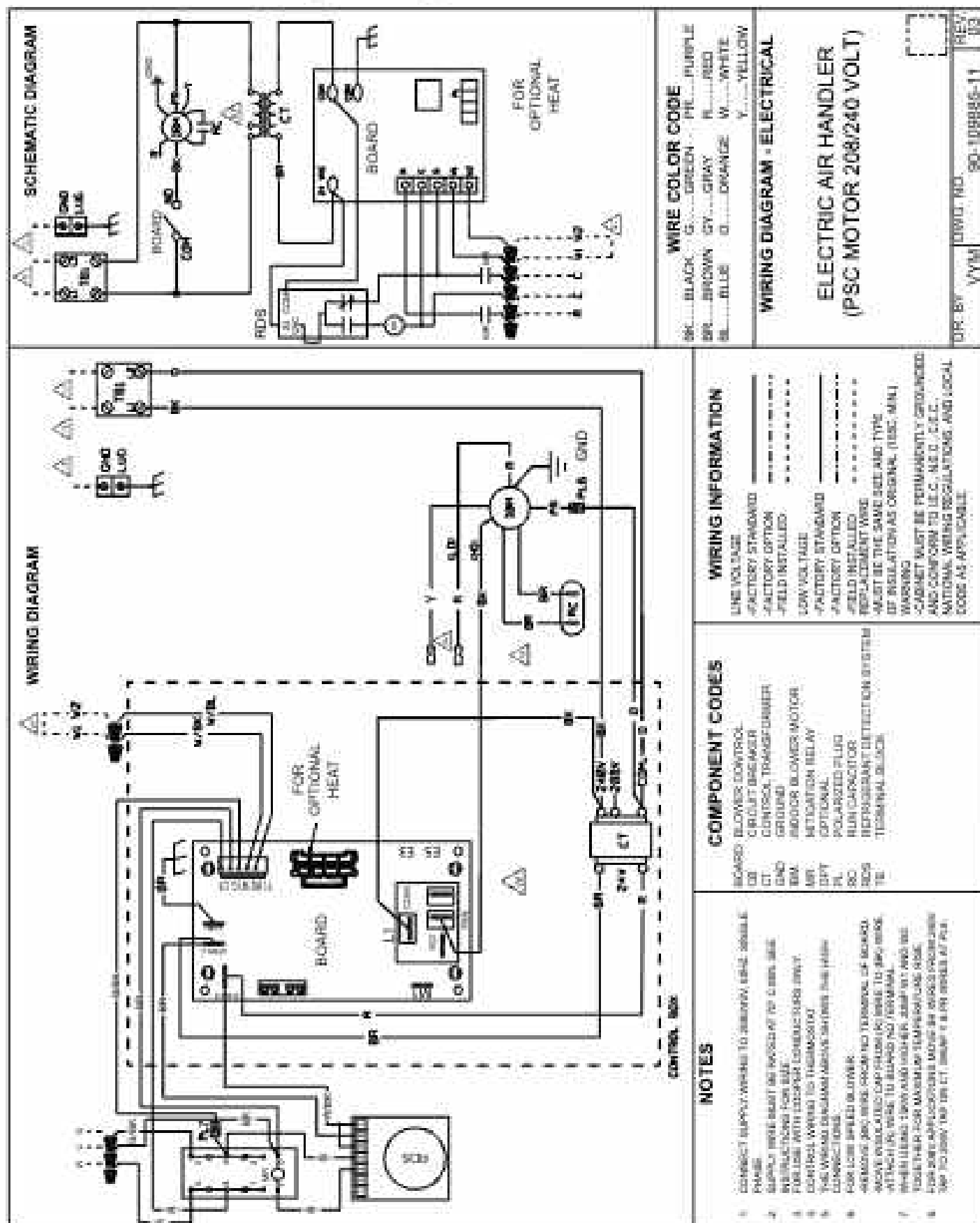
9. CONDUCT is a noun meaning a person's behavior or actions.

10. CONDUCT is a noun meaning a person's behavior or actions.

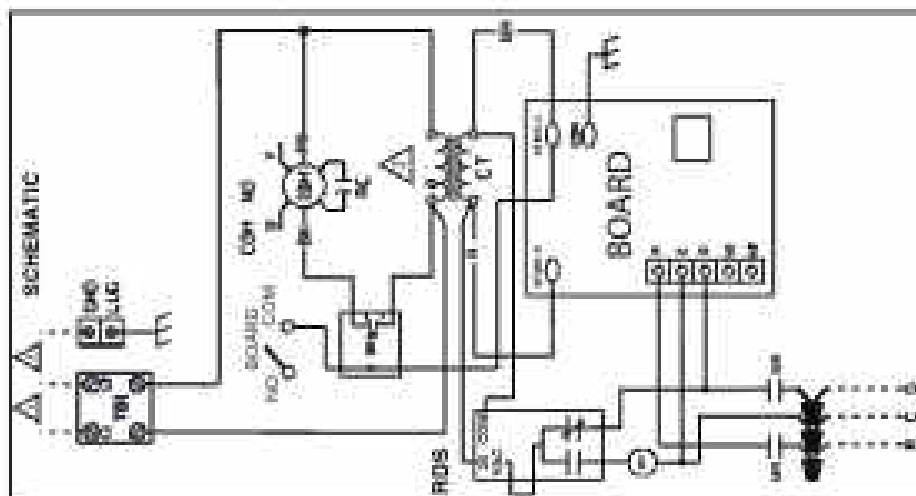
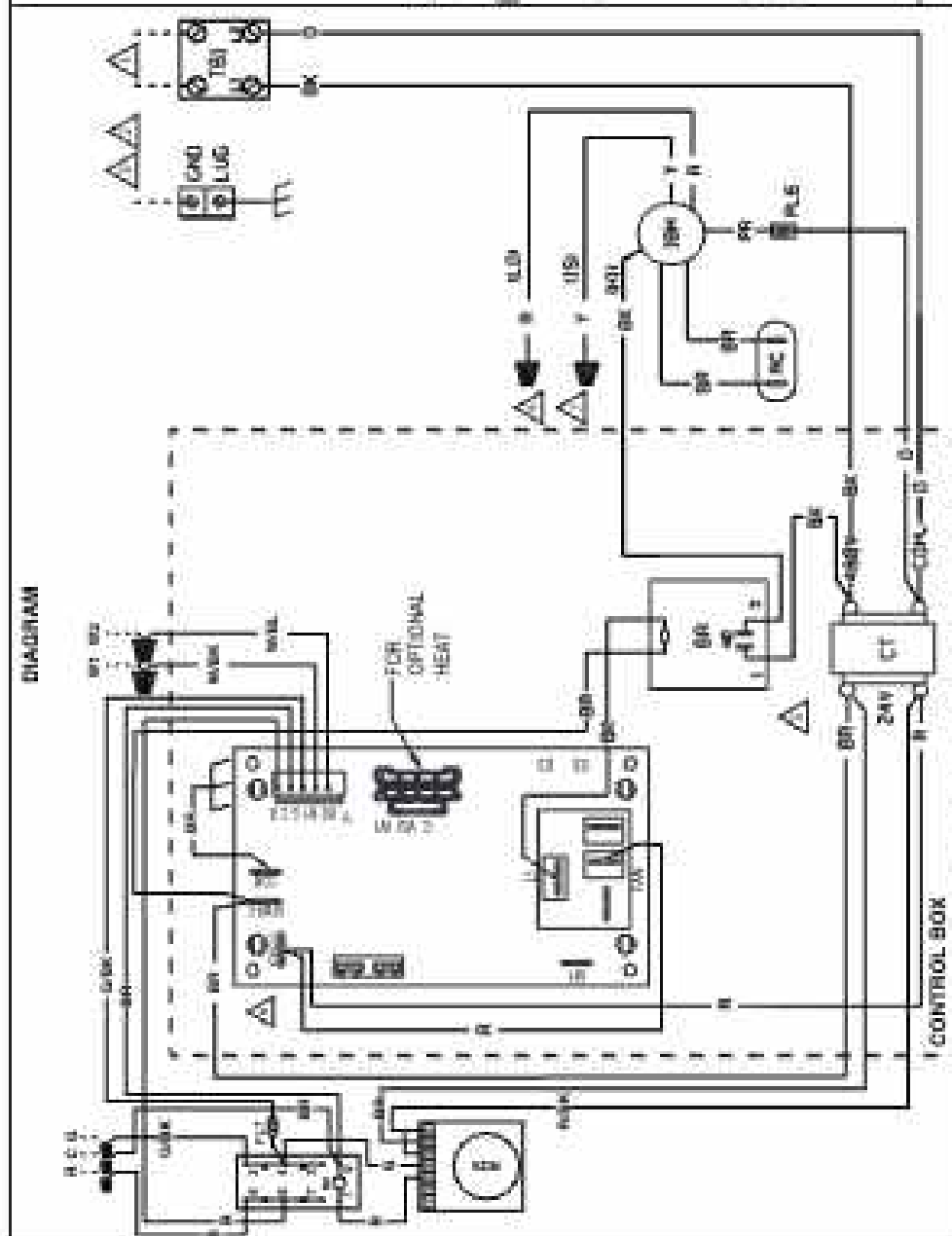
9.7 WIRING DIAGRAM (-)H1P/(-)H1AY4821ST - 115V



9.8 WIRING DIAGRAM (-)H1P/(-)H1AY4821ST - 208/240V



9.9 WIRING DIAGRAM (-)H1P - 480V



WIRE COLOR CODE

BK BLACK G GREEN GR GRAY
 BR BROWN CY CYAN
 BL BLUE O ORANGE W WHITE
 Y YELLOW

WIRING - DIAGRAM & SCHEMATIC

ELECTRIC AIR HANDLER -
PSC MOTOR - 480 VOLT

ON BY	OWN NO	REV
AL		00
MAJ	90-108803-19	

COMPONENT CODES

BOARD	CONTROL BOARD
BR	BLOWER RELAY
CB	CIRCUIT BREAKER
CT	CONTROL TRANSFORMER
HM	INDOOR SLOWER MOTOR
S	ISOLATED MAIN
OPT	OPTIONAL
PL	POLARIZED PLUG
RC	RUN CAPACITOR
TB	TERMINAL BLOCK

NOTES

- ▶ **Connectivity** refers to the ability of a device to connect to other devices or networks.
- ▶ **Security** refers to the ability of a device to protect its data and resources from unauthorized access.
- ▶ **Performance** refers to the ability of a device to perform tasks efficiently and effectively.
- ▶ **Portability** refers to the ability of a device to be easily moved and used in different environments.
- ▶ **Reliability** refers to the ability of a device to operate consistently and without errors.
- ▶ **Interoperability** refers to the ability of a device to work with other devices and systems.
- ▶ **Scalability** refers to the ability of a device to handle increasing amounts of data and users.
- ▶ **Flexibility** refers to the ability of a device to adapt to changing requirements and environments.
- ▶ **Cost-effectiveness** refers to the ability of a device to provide value for its cost.
- ▶ **Energy efficiency** refers to the ability of a device to consume less power and generate less heat.
- ▶ **Environmental friendliness** refers to the ability of a device to be eco-friendly and sustainable.
- ▶ **Compliance** refers to the ability of a device to meet regulatory requirements and standards.
- ▶ **Customizability** refers to the ability of a device to be tailored to specific user needs and preferences.
- ▶ **Integration** refers to the ability of a device to work seamlessly with other devices and systems.
- ▶ **Robustness** refers to the ability of a device to withstand physical damage and environmental factors.
- ▶ **Security** refers to the ability of a device to protect its data and resources from unauthorized access.
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- ▶ **Robustness** refers to the ability of a device to withstand physical damage and environmental factors.

SWIRLING INFORMATION

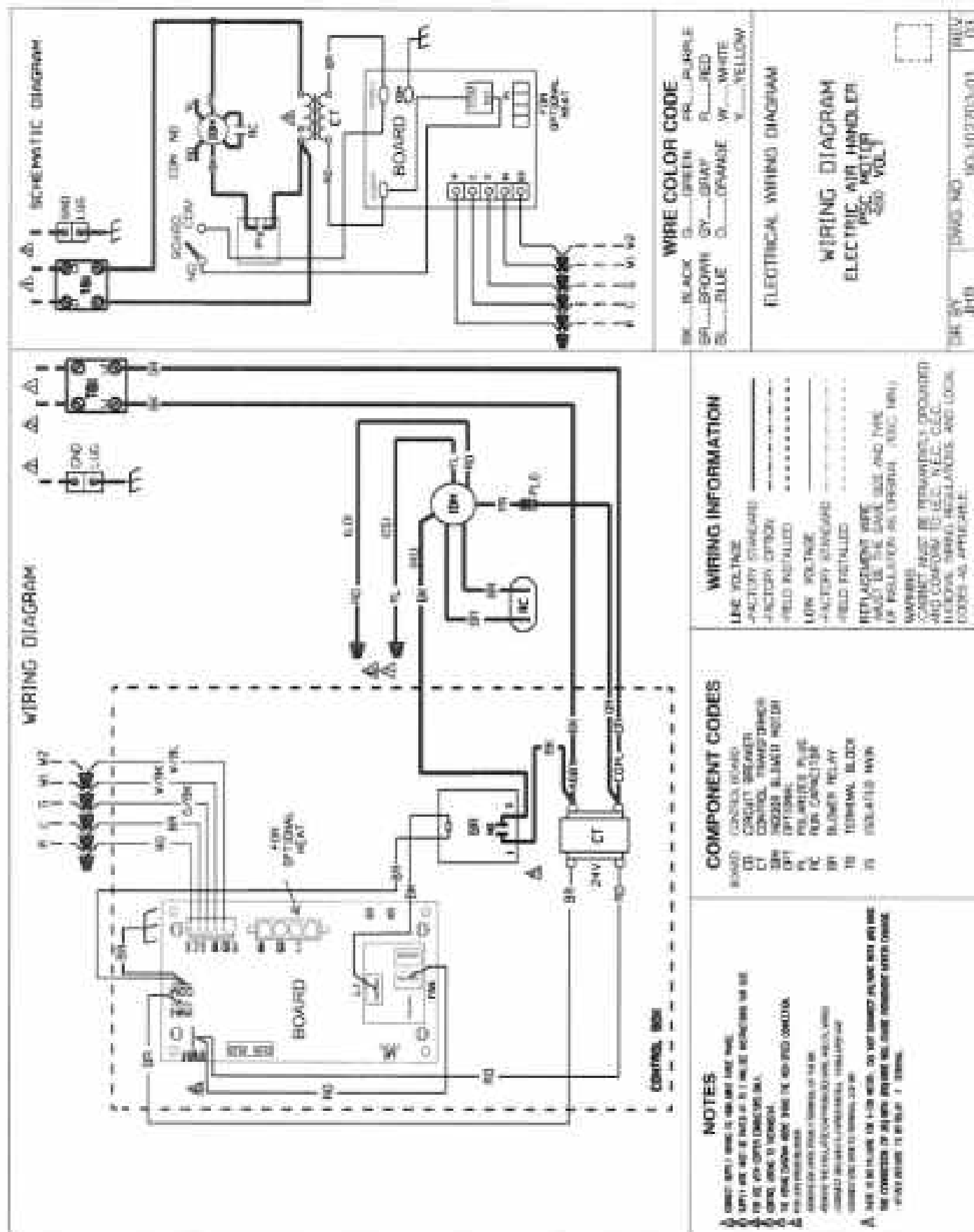
LINE VOLTAGE _____
FACTORY STANDARD _____
FACTORY OPTION _____
FIELD INSTALLED _____

LOW VOLTAGE _____
FACTORY STANDARD _____
FACTORY OPTION _____
FIELD INSTALLED _____

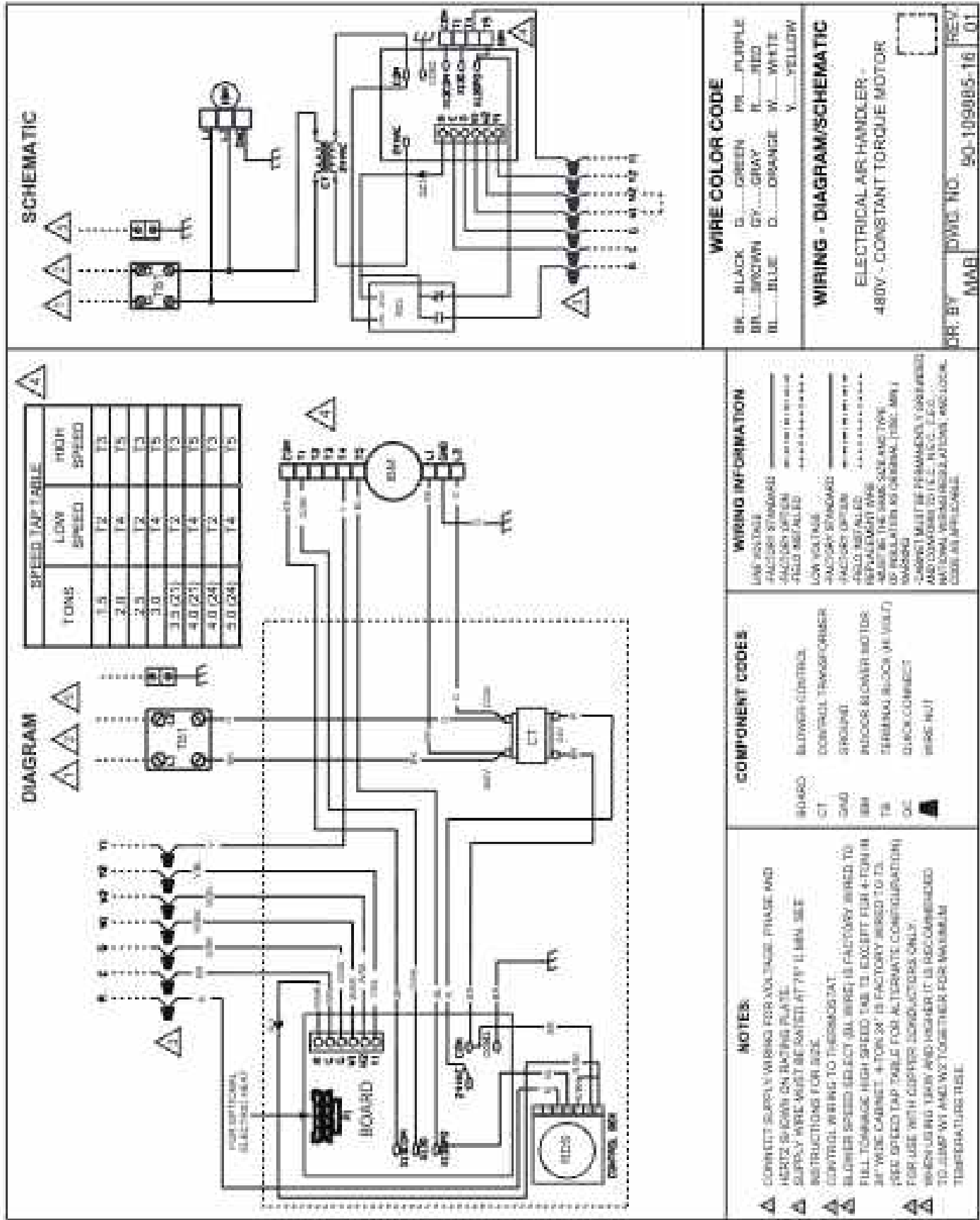
REPLACEMENT WIRE _____
MUST BE THE SAME GAGE AND TYPE _____
OF INSULATION AS ORIGINAL (SEE BEN.) _____

WARNING _____
CABINET MUST BE PERMANENTLY GROUND- _____
ED AND CONFORM TO D.C. N.E.C. I.E.C. _____
NATIONAL WIRING REGULATIONS AND LOCAL _____
CODE AS APPLICABLE _____

9.10 WIRING DIAGRAM (-)H1P - 480V



9.11 WIRING DIAGRAM (-)H2T - 480V



9.12 WIRING DIAGRAM (-)H2T - 480V

