INSTALLATION INSTRUCTIONS

AIR HANDLERS

FEATURING R-22 REFRIGERANT:

(-)HLA High Efficiency
(-)HSA Standard Efficiency

FEATURING EARTH-FRIENDLY R-410A REFRIGERANT:

(-)HLL High Efficiency
(-)HSL Standard Efficiency



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.

c UL us LISTED

Accredited by the RvA

ABS Quality Evaluations, Inc. Management System Certification

ANAB ACCREDITED

ISO 9001:2000
Certificate Number: 30164

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 4.0: 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 12.5: 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.

1.0 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.

⚠ WARNING (SEE WARNINGS IN REGARD TO DUCTWORK)

Do not install this unit in manufactured (mobile) homes. Improper installation is more likely in manufactured housing due to ductwork material, size, location, and arrangement. Installations in manufactured housing can cause a fire resulting in property damage, personal injury or death.

EXCEPTION: Manufactured housing installations are approved only with documentation by a recognized inspection authority that the installation has been made in compliance with the instructions and all warnings have been observed.

⚠ WARNING (SEE SECTION 3.2: 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 4.3: GROUNDING)

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

⚠ WARNING (SEE SECTION 12.0: 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.

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.

⚠ WARNING (SEE SECTION 5.0: 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.

⚠ WARNING (SEE SECTION 12.6: MOTOR REPLACEMENT)

To avoid electrical shock which can result in personal injury or death, use only the screws furnished in the motor shell mounting holds. Screws are #8-18 x .25 in. long blunt nose thread forming. Screws longer than 1/4 in. may contact the motor winding.

⚠ WARNING (SEE SECTION 7.0: 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 air handler elements. This residue could soil ceilings, walls, drapes, carpets and other articles in the house.

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

⚠ CAUTION (SEE SECTION 3.3: HORIZONTAL)

Horizontal units must be configured for right hand air supply or left hand air supply. Horizontal drain pan must be located under indoor coil. Failure to use the drain pan can result in property damage.

⚠ CAUTION (SEE SECTION 2.1: RECEIVING)

In compliance with recognized codes, it is recommended that an auxiliary drain pan be installed under all evaporator coils or units 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 accessories for auxiliary horizontal overflow pan RXBM.

⚠ CAUTION

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

2.0 GENERAL INFORMATION

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

2.1 RECEIVING

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 papers, and a damage claim filed with the last carrier.

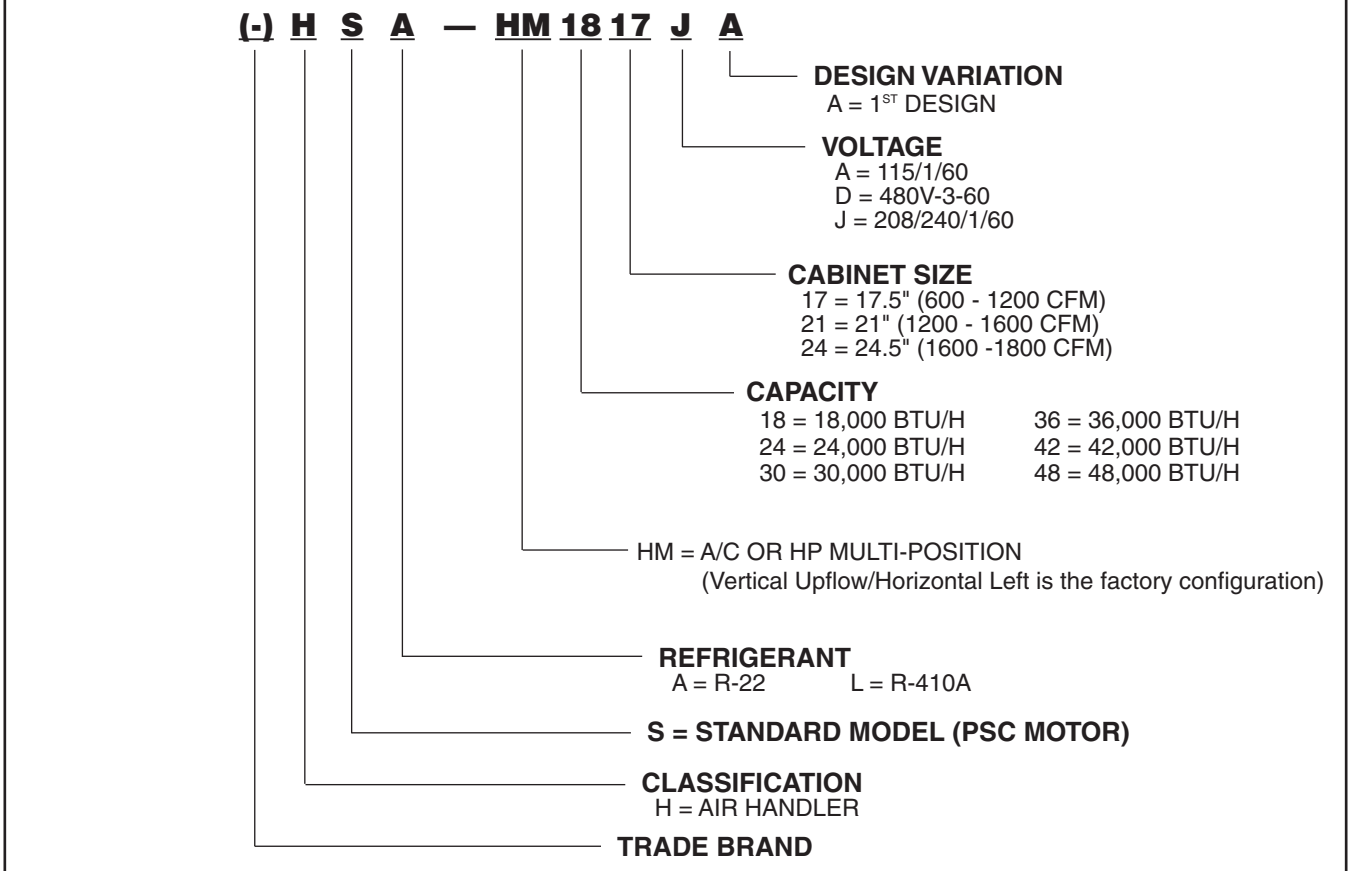
- After unit has been delivered to job site, remove carton taking care not to damage unit.
- Check the unit rating plate for unit size, electric heat, coil, voltage, phase, etc. to be sure equipment matches what is required for the job specification.
- Read the entire instructions before starting the installation. This is particularly important if this is the first installation for this specific model series.
- Some building codes require extra cabinet insulation and gasketing when unit is installed in attic applications.
- If installed in an unconditioned space, apply caulking around the 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. Caulking is required to prevent air leakage into and condensate from forming inside the unit, control box, and on electrical controls.
- Install the unit in such a way as to allow necessary access to the coil/filter rack and blower/control compartment.
- Install the unit in a level position to ensure proper condensate drainage. Make sure unit is level in both directions within 1/8".
- Install the unit in accordance with any local code which may apply and the national codes. Latest editions are available from: "National Fire Protection Association, Inc., Batterysmarch Park, Quincy, MA 02269." These publications are:
  - ANSI/NFPA No. 70-(Latest Edition) National Electrical Code.
  - NFPA90A Installation of Air Conditioning and Ventilating Systems.
  - NFPA90B Installation of warm air heating and air conditioning systems.
- The equipment has been evaluated in accordance with the Code of Federal Regulations, Chapter XX, Part 3280.

⚠ CAUTION

In compliance with recognized codes, it is recommended that an auxiliary drain pan be installed under all evaporator coils or units 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 accessories for auxiliary horizontal overflow pan RXBM.

2.2 MODEL NUMBER EXPLANATION

FIGURE 1
MODEL NUMBER EXPLANATION



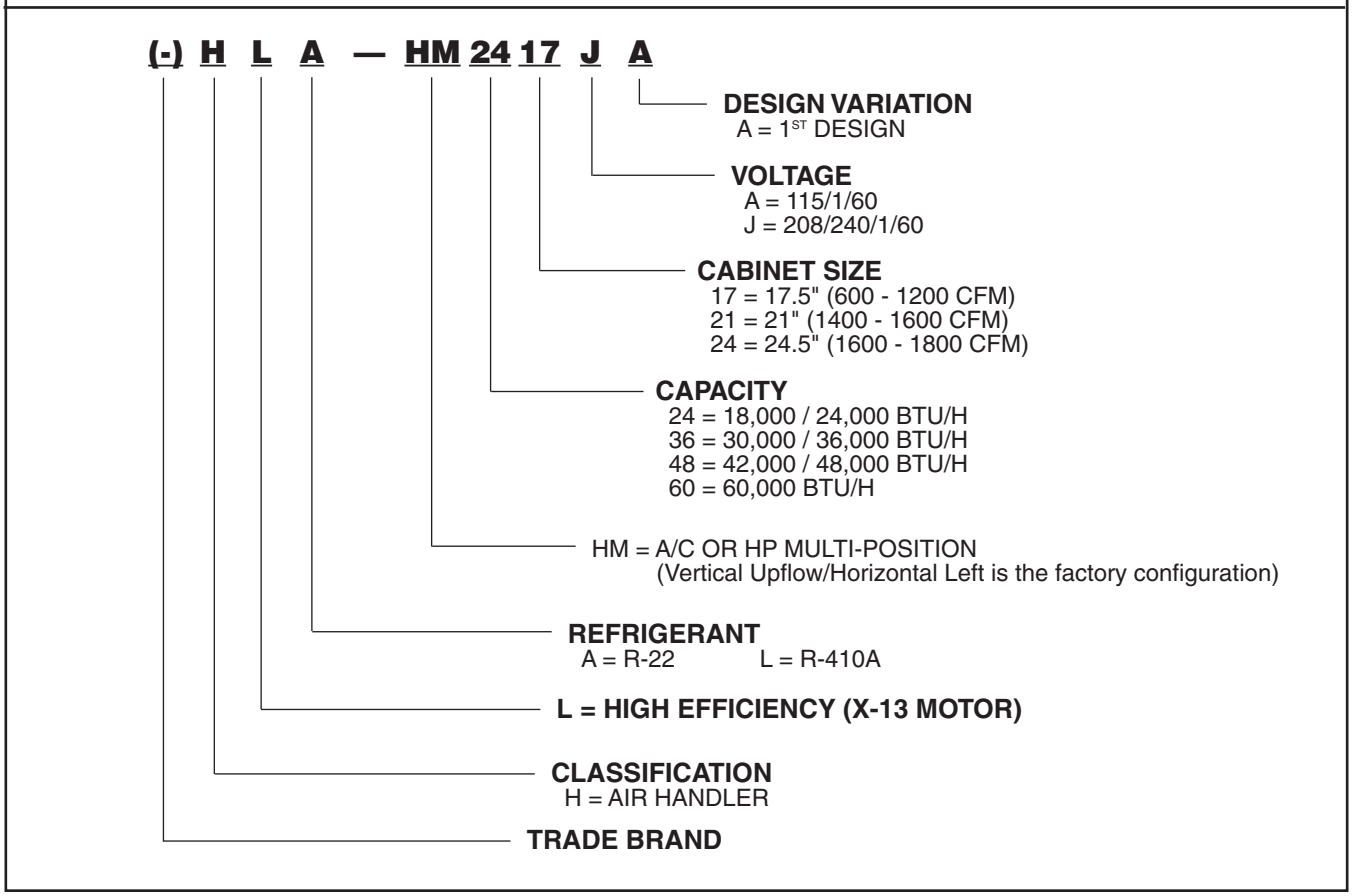


FIGURE 1 (continued)
MODEL NUMBER EXPLANATION

ELECTRICAL DESIGNATION & AIRFLOW PERFORMANCE INFORMATION

Cabinet Size	A 115V 1PH 60 HZ	J 208/240V 1PH 60HZ	C 208/240V 3PH 60HZ	D 480V 3PH 60HZ	1) MOTOR H.P. 2) BLOWER CFM LO/HI SPEED 3) BLOWER WHEEL DIA./WIDTH 4) TONNAGE
	HEATER kW				
	CONTROL DESIGNATION N = NO CIRCUIT BREAKERS S = CIRCUIT BREAKER(S)				
	N	S	S	N	
17 17.5"	00	3 5 7 10	7 10	—	1) 1/5-1/3 H.P. 2) LO 600 CFM HI 800 CFM 3) 10 X 6 4) 1½ & 2 TONNAGE
17 17.5"	00	3 5 7 10 15	7 10 15	10 15	1) 1/4-1/2 H.P. 2) LO 1000 CFM HI 1200 CFM 3) 10 X 8 4) 2½ & 3 TONNAGE
21 21.0"	00	3 5 7 10 15* 18 20	7 10 15* 18 20	10 15* 18 20	1) 1/3-3/4 H.P. 2) LO 1200 CFM [3 TON] 1400 CFM [3½ & 4 TON] HI 1600 CFM [3½ & 4 TON] 3) 10 X 10 4) 3, 3½ & 4 TONNAGE
24 24.5"	00	5 7 10 15 18 20 25 {(-)HLA/(-)HLL 5 Ton Only}	7 10 15 18 20 25 {(-)HLA/(-)HLL 5 Ton Only}	10 15 18 20	1) 3/4 H.P. 2) LO 1600 CFM [4 TON] HI 1800 CFM [5 TON] 3) 11 X 11 4) 4 & 5 TONNAGE

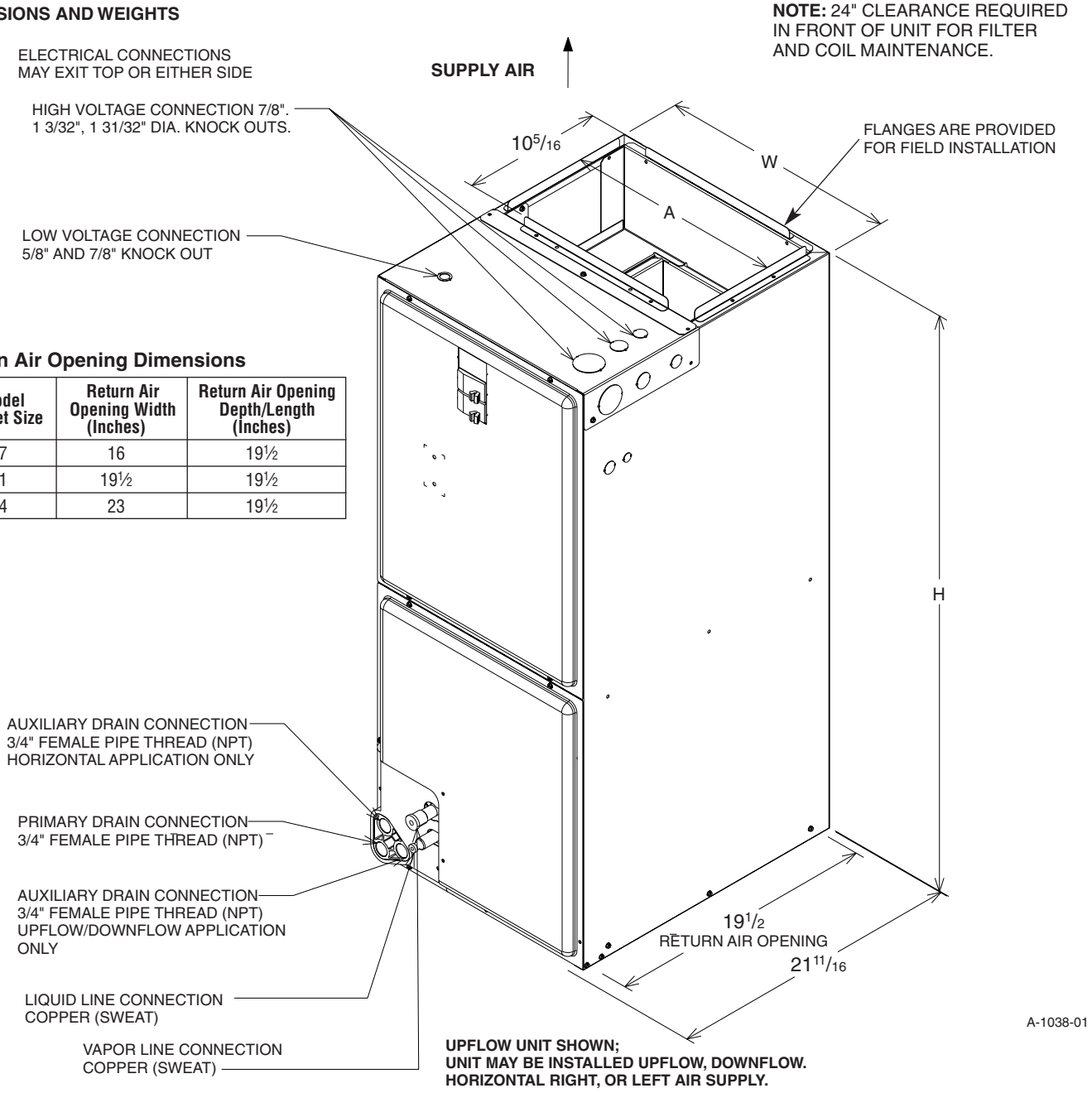
NOTES:

1) Electrical heat designation: see electric heat electrical data for actual heater kW represented by number above.
   Caution: The same heat designation number may represent different actual kW depending on Electrical designation.
2) Electric heater BTUH = (heater watts + motor watts) x 3.412 (see airflow table for motor watts).
3) The air handlers are shipped from factory with the proper indoor coil installed, and cannot be ordered without coil.
4) Electric heat elements are field-installed items.
5) The air handlers do not have an internal filter rack. An external filter rack or other means of filtration is required.
6) Match heater kit to voltage supplied. Heater kit and air handler must be same voltage and phase.

*3 ton maximum heater - 15 kW

2.3 DIMENSIONS & WEIGHTS

FIGURE 2
DIMENSIONS AND WEIGHTS



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

Return Air Opening Dimensions

Model Cabinet Size	Return Air Opening Width (Inches)	Return Air Opening Depth/Length (Inches)
17	16	19½
21	19½	19½
24	23	19½

DIMENSIONAL DATA

CAPACITY TONS	MODEL CABINET SIZE	UNIT HEIGHT IN. [mm]	UNIT WIDTH "W" IN. [mm]	SUPPLY DUCT "A" IN. [mm]	AIRFLOW COIL (NOM.) [L/s]		UNIT WEIGHT / SHIPPING WEIGHT (LBS.) [kg]
					LO	HI	UNIT WITH COIL (MAX. kW.)
1½ & 2	17	42½" [1080]	17½" [444.5]	16" [406.4]	600 [283]	800 [378]	82/96 [37.1]/[43.5]
2½ & 3	17	42½" [1080]	17½" [444.5]	16" [406.4]	1000 [472]	1200 [566]	92/106 [41.7]/[48.0]
3	21	42½" [1080]	21" [533.4]	19½" [495.3]	1200 [566]	—	97/112 [43.9]/[50.8]
3½ & 4	21	50½" [1283]	21" [533.4]	19½" [495.3]	1400 [661]	1600 [755]	150/166 [68.0]/[75.2]
4	24	55½" [1410]	24½" [622.3]	23" [581.2]	1600 [755]	—	162/180 [73.4]/[81.6]
5	24	55½" [1410]	24½" [622.3]	23" [581.2]	—	1800 [850]	181/198 [82.1]/[89.8]

2.4 CLEARANCES

- All units are designed for “0” inches clearance to combustible material on all cabinet surfaces.
- Some units require supply duct clearances and combustible floor bases depending on the heating kW. The following table should be used to determine these requirements:

Model Cabinet Size	17	21	24
Maximum Model Designation kW	15	20	25

Units with electric heating kW above that listed in the table require a one inch clearance to combustible material for the first three feet of supply plenum and ductwork. **Additionally, if these units are installed downflow, a combustible floor base is required.**

Units with electric heating kW equal to or less than the values listed in the table do not require supply ductwork clearances or combustible floor bases.

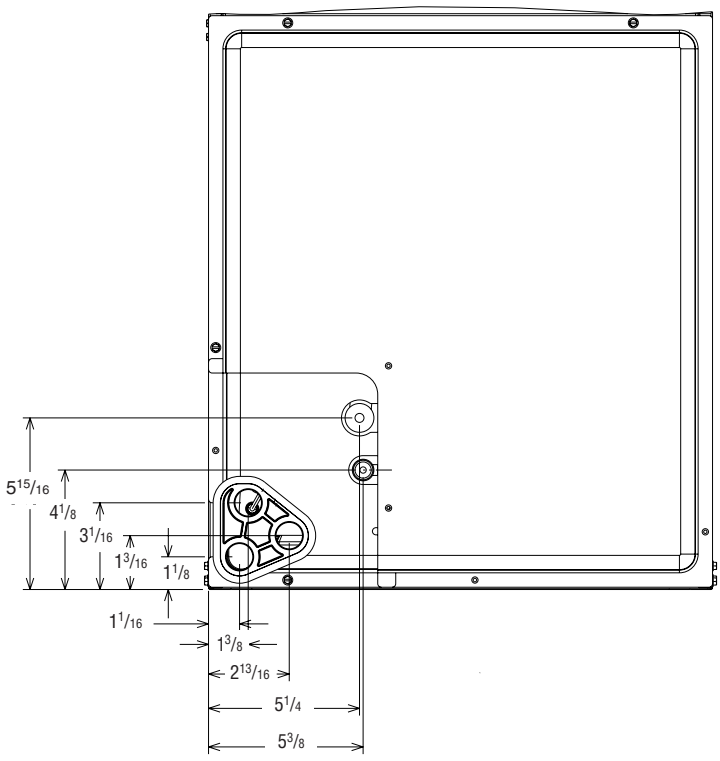
- Vertical units require clearance on at least one side of the unit for electrical connections. Horizontal units require clearance on either top or bottom for electrical connections. Refrigerant and condensate drain connections are made on the front of the unit.
- All units require 24 inches minimum access to the front of the unit for service.
- These units may be installed in either ventilated or nonventilated spaces.

3.0 APPLICATIONS

3.1 VERTICAL UPFLOW

- Vertical Upflow is the factory configuration for all models (see Figure 2).
- If a side return air opening is required, field fabricate a return air plenum with an opening large enough to supply unit and strong enough to support unit weight.
- If return air is to be ducted, 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.

FIGURE 3
DIMENSIONS FOR FRONT CONNECT COIL



3.2 VERTICAL DOWNFLOW

Conversion to Vertical Downflow: A vertical upflow unit may be converted to vertical downflow. Remove the door and indoor coil and reinstall 180° from original position (see Figure 4).

- RXHB combustible floor base is used for all unit sizes. Unit must be centered on combustible base in the width dimension (14⅜"). (See Section 14.0 for more information on the combustible floor base.)

> **⚠ 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 for units requiring a combustible floor base. See the accessory section in this manual for combustible floor base RXHB.**

3.3 HORIZONTAL

Horizontal left is the default factory configuration for "HM" (airflow direction) units.

Conversion to Horizontal: A vertical upflow unit (AU) may be converted to horizontal by removing the indoor coil and installing horizontal drain pan on coil as shown for right hand or left hand air supply. Reinstall coil in unit as shown for right or left hand air supply. See Figures 4 & 5. (See Section 14.0 for more information on the Horizontal Adapter Kit.)

Conversion in Horizontal Direction: Horizontal left-hand supply can be changed to horizontal right-hand supply by removing the indoor coil and reinstalling 180° from original. (See Figure 4.)

FIGURE 4
VERTICAL DOWNFLOW & HORIZONTAL RIGHT APPLICATIONS

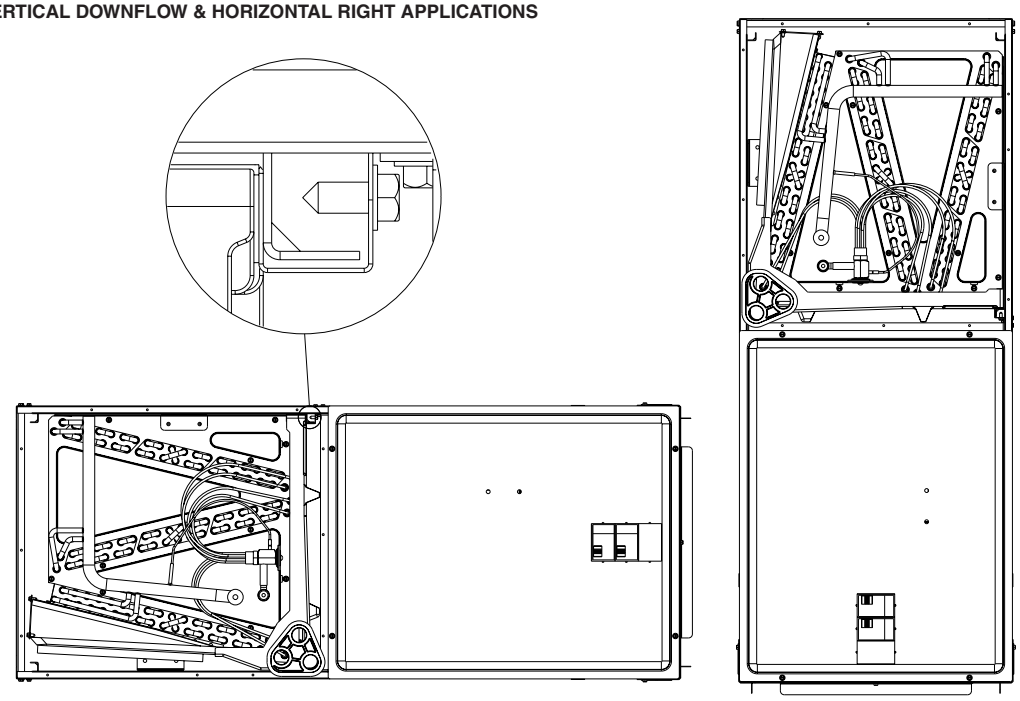
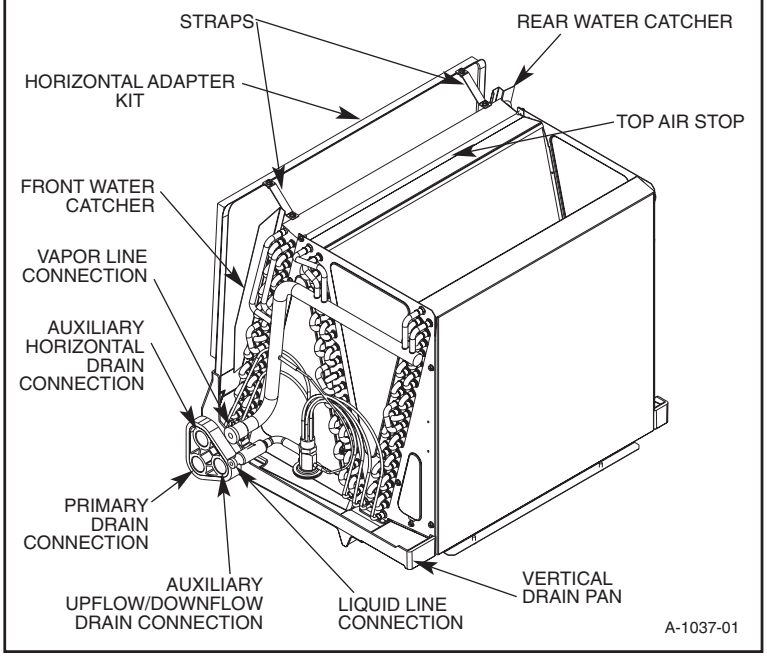


FIGURE 5
INDOOR COIL AND DRAIN PAN SET-UP



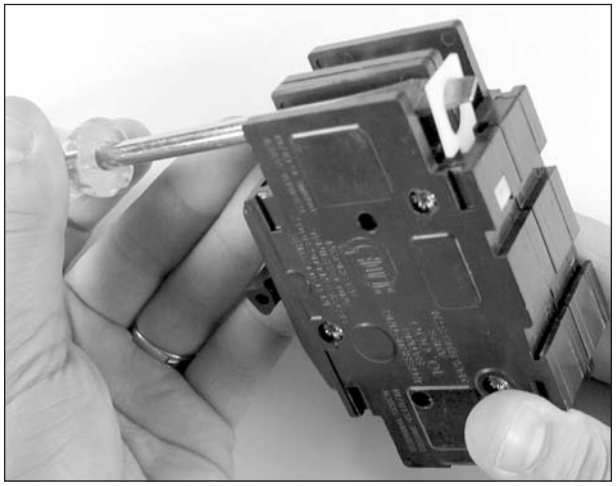
⚠ CAUTION

Horizontal units must be configured for right hand air supply or left hand air supply. Horizontal drain pan must be located under indoor coil. Failure to use the drain pan can result in property damage.

IMPORTANT: To comply with certification agencies and the National Electric Code, units with circuit breaker(s) on vertical units must have circuit breakers installed so that the breaker switch “on” position and marking is up and, “off” position and marking is down. (See Figure 6.)

- 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. Using a screwdriver or pencil, lift white plastic tab with hole away from breaker until breaker releases from mounting opening. With breaker held in hand, rotate breaker so that “on” position is up, “off” position is down with unit in planned vertical mounting position. Insert right wire bundle into top right breaker lug. Make sure all strands of all wires are inserted fully into lug, and no wire insulation is in lug. 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. Replace breaker by inserting breaker mounting tab opposite white pull tab in opening, hook mounting tab over edge in opening. 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. Repeat above operation for remaining breaker(s) (if more than one is provided). Replace single point wiring jumper bar, if it is used, on line side of breaker and tighten securely. 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.
- Support along the length of the unit, all units installed horizontally. Do not support or suspend unit from both ends without support in the center of the cabinet. If unit is to be supported or suspended from corners, run two reinforcing rails length of unit and support or suspend from reinforcing rails.

FIGURE 6
ROTATING CIRCUIT BREAKER



4.0 ELECTRICAL WIRING

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

⚠ WARNING

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.

4.1 POWER WIRING

It is important that proper electrical power is available for connection to the unit model being installed. See the unit nameplate, 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:** After the Electric Heater is installed, units may be equipped with one, two, or three 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 this section for ampacity, wire size and circuit protector requirement. Supply circuit protective devices may be either fuses or “HACR” type circuit breakers.
- Power wiring may be connected to either the right, left side or top. Three $^{7}/_{8}$”, $1^{3}/_{32}$”, $1^{31}/_{32}$” dia. concentric knockouts are provided for connection of power wiring to unit.
- Power wiring is connected to the power terminal block(s) in unit control compartment.

4.2 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). 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 wiring diagrams attached to indoor and outdoor sections to be connected, or control wiring diagram booklet supplied with outdoor heat pump section for wiring connection.
- Make sure, after installation, separation of control wiring and power wiring has been maintained.

4.3 GROUNDING

⚠ 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.

4.4 COPPER WIRE SIZE

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

SUPPLY WIRE LENGTH FEET																		
	200 [61]	12	10	8	8	8	6	6	6	4	4	3	3	2	2	1	0	00
	150 [46]	12	10	10	10	8	8	6	6	6	4	4	3	3	2	1	0	00
	100 [30]	14	12	10	10	8	8	8	6	6	4	4	3	3	2	1	0	00
	50 [15]	14	12	10	10	8	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	175
		SUPPLY CIRCUIT AMPACITY																

NOTE: WIRE BASED ON COPPER CONDUCTORS 75°C MINIMUM RATING.
FOR MORE THAN 3 CONDUCTORS IN A RACEWAY OR CABLE, SEE
N.E.C. FOR DERATING THE AMPACITY OF EACH CONDUCTOR.

4.5 BLOWER MOTOR ELECTRICAL DATA

4.5A Blower Motor Electrical Data: (-)HSA/(-)HSL

NOMINAL COOLING CAPACITY TONS	VOLTAGE	PHASE	HERTZ	HP	RPM	SPEEDS	CIRCUIT AMPS.	MINIMUM CIRCUIT AMPACITY	MAXIMUM CIRCUIT PROTECTOR
1 1/2	115	1	60	1/5	1020	2	2.3	3.0	15
2				1/5	1075	2	3.8	5.0	15
2 1/2				1/4	1075	2	4.7	6.0	15
3				1/3	1075	2	6.1	8.0	15
3 1/2				1/3	1075	2	7.9	10.0	15
4				3/4	1075	2	8.4	11.0	15
1 1/2	208/240	1 & 3	60	1/5	1075	2	1.4	1.8	15
2				1/5	1075	2	2.3	2.9	15
2 1/2				1/4	1075	2	2.4	3.0	15
3				1/3	1075	2	3.5	4.4	15
3 1/2				1/3	1075	2	8.3	10.3	15
4				3/4	1075	2	6.2	7.8	15
3	480	3	60	1/3	1075	2	1.4	2.0	15
3 1/2				1/3	1075	2	2.1	3.0	15
4				3/4	1075	2	2.2	3.0	15

4.5B Blower Motor Electrical Data: (-)HLA/(-)HLL

NOMINAL COOLING CAPACITY TONS	VOLTAGE	PHASE	HERTZ	HP	RPM	SPEEDS	CIRCUIT AMPS.	MINIMUM CIRCUIT AMPACITY	MAXIMUM CIRCUIT PROTECTOR
1 1/2 & 2	208/240	1 & 3	60	1/3	300-1100	4	2.8	3.5	15
2 1/2 & 3				1/2	300-1100	4	4.1	5.4	15
3 1/2 & 4				3/4	300-1100	4	6.0	8.5	15
5				3/4	300-1100	4	6.0	8.5	15
1 1/2 & 2	115	1	60	1/3	300-1100	4	4.8	6.3	15
2 1/2 & 3				1/2	300-1100	4	6.8	9.7	15
3 1/2 & 4				3/4	300-1100	4	8.4	12.0	15
5				3/4	300-1100	4	8.4	12.0	15

4.6 ELECTRIC HEAT ELECTRICAL DATA

4.6A Electric Heat Electrical Data: (-)HSA/(-)HSL

Nominal Cooling Capacity Tons / Cabinet Size	Rheem Model No.	HEATER KW 208/240V	PH/HZ	NO. ELEMENTS - KW PER	TYPE SUPPLY CIRCUIT SINGLE CIRCUIT MULTIPLE CIRCUIT	CIRCUIT AMPS	Motor AMPACITY	MINIMUM CIRCUIT AMPACITY	MAXIMUM CIRCUIT AMPACITY
1½ & 2 / 17	RXBH-17A03J	2.25/3.0	1/60	1 - 3.0	SINGLE	10.8/12.5	1.7	16/18	20/20
	RXBH-17A05J	3.6/4.8	1/60	1 - 4.8	SINGLE	17.3/20.0	1.7	24/28	25/30
	RXBH-17A07J	5.4/7.2	1/60	2 - 3.6	SINGLE	26.0/30.0	1.7	35/40	35/40
	RXBH-17A10J	7.2/9.6	1/60	2 - 4.8	SINGLE	34.6/40.0	1.7	46/53	50/60
	RXBH-17A07C	5.4/7.2	3/60	3 - 2.4	SINGLE	15.0/17.3	1.7	21/24	25/25
	RXBH-17A10C	7.2/9.6	3/60	3 - 3.2	SINGLE	20.0/23.1	1.7	28/31	30/35
2½ & 3 / 17	RXBH-17A03J	2.25/3.0	1/60	1 - 3.0	SINGLE	10.8/12.5	2.5	17/19	20/20
	RXBH-17A05J	3.6/4.8	1/60	1 - 4.8	SINGLE	17.3/20.0	2.5	25/29	25/30
	RXBH-17A07J	5.4/7.2	1/60	2 - 3.6	SINGLE	26.0/30.0	2.5	36/41	40/45
	RXBH-17A10J	7.2/9.6	1/60	2 - 4.8	SINGLE	34.6/40.0	2.5	47/54	50/60
	RXBH-17A15J	10.8/14.4	1/60	3 - 4.8	SINGLE	51.9/60.0	2.5	68/79	70/80
	RXBH-17A15J	3.6/4.8	1/60	1 - 4.8	MULTIPLE CKT 1	17.3/20.0	2.5	25/29	25/30
		7.2/9.6	1/60	2 - 4.8	MULTIPLE CKT 2	34.6/40.0	0.0	44/50	45/50
	RXBH-17A07C	5.4/7.2	3/60	3 - 2.4	SINGLE	15.0/17.3	2.5	22/25	25/25
	RXBH-17A10C	7.2/9.6	3/60	3 - 3.2	SINGLE	20.0/23.1	2.5	29/32	30/35
	RXBH-17A15C	10.8/14.4	3/60	3 - 4.8	SINGLE	30.0/34.6	2.5	41/47	45/50
	RXBH-17A07D	7.2	3/60	2 - 3.6	SINGLE	9.9/9.9	1.4	15/15	15/15
	RXBH-17A10D	9.6	3/60	3 - 3.2	SINGLE	11.8/11.8	1.4	17/17	20/20
	RXBH-17A15D	14.4	3/60	3 - 4.8	SINGLE	17.3/17.3	1.4	24/24	25/25
3 / 21	RXBH-24A03J	2.25/3.0	1/60	1 - 3.0	SINGLE	10.8/12.5	2.5	17/19	20/20
	RXBH-24A05J	3.6/4.8	1/60	1 - 4.8	SINGLE	17.3/20.0	2.5	25/29	25/30
	RXBH-24A07J	5.4/7.2	1/60	2 - 3.6	SINGLE	26.0/30.0	2.5	36/41	40/45
	RXBH-24A10J	7.2/9.6	1/60	2 - 4.8	SINGLE	34.6/40.0	2.5	47/54	50/60
	RXBH-24A15J	10.8/14.4	1/60	3 - 4.8	SINGLE	51.9/60.0	2.5	68/79	70/80
	RXBH-24A15J	3.6/4.8	1/60	1 - 4.8	MULTIPLE CKT 1	17.3/20.0	2.5	25/29	25/30
		7.2/9.6	1/60	2 - 4.8	MULTIPLE CKT 2	34.6/40.0	0.0	44/50	45/50
	RXBH-24A07C	5.4/7.2	3/60	3 - 2.4	SINGLE	15.0/17.3	2.5	22/25	25/25
	RXBH-24A10C	7.2/9.6	3/60	3 - 3.2	SINGLE	20.0/23.1	2.5	29/32	30/35
	RXBH-24A15C	10.8/14.4	3/60	3 - 4.8	SINGLE	30.0/34.6	2.5	41/47	45/50
	RXBH-24A07D	7.2	3/60	2 - 3.6	SINGLE	8.7	1.4	15/15	15/15
	RXBH-24A10D	9.6	3/60	3 - 3.2	SINGLE	11.8/11.8	1.4	17/17	20/20
	RXBH-24A15D	14.4	3/60	3 - 4.8	SINGLE	17.3/11.8	1.4	24/17	25/20
3½ & 4 / 21 and 4 / 24	RXBH-24A05J	3.6/4.8	1/60	1 - 4.8	SINGLE	17.3/20.0	5.2	29/32	30/35
	RXBH-24A07J	5.4/7.2	1/60	2 - 3.6	SINGLE	26.0/30.0	5.2	39/44	40/45
	RXBH-24A10J	7.2/9.6	1/60	2 - 4.8	SINGLE	34.6/40.0	5.2	50/57	50/60
	RXBH-24A15J	10.8/14.4	1/60	3 - 4.8	SINGLE	51.9/60.0	5.2	72/82	80/90
	RXBH-24A15J	3.6/4.8	1/60	1 - 4.8	MULTIPLE CKT 1	17.3/20.0	5.2	29/32	30/35
		7.2/9.6	1/60	2 - 4.8	MULTIPLE CKT 2	34.6/40.0	0.0	44/50	45/50
	RXBH-24A18J	12.8/17	1/60	4 - 4.26	SINGLE	61.6/70.8	5.2	84/95	90/100
	RXBH-24A18J	6.4/8.5	1/60	2 - 4.26	MULTIPLE CKT 1	30.8/35.4	5.2	45/51	45/60
		6.4/8.5	1/60	2 - 4.26	MULTIPLE CKT 2	30.8/35.4	0.0	39/45	40/45
	RXBH-24A20J	14.4/19.2	1/60	4 - 4.8	SINGLE	69.2/80	5.2	93/107	100/110
	RXBH-24A20J	7.2/9.6	1/60	2 - 4.8	MULTIPLE CKT 1	34.6/40.0	5.2	50/57	50/60
		7.2/9.6	1/60	2 - 4.8	MULTIPLE CKT 2	34.6/40.0	0.0	44/50	45/50
	RXBH-24A07C	5.4/7.2	3/60	3 - 2.4	SINGLE	15.0/17.3	5.2	26/29	30/30
	RXBH-24A10C	7.2/9.6	3/60	3 - 3.2	SINGLE	20.0/23.1	5.2	32/36	35/40
	RXBH-24A15C	10.8/14.4	3/60	3 - 4.8	SINGLE	30.0/34.6	5.2	44/50	45/50
	RXBH-24A18C	12.8/17	3/60	3 - 2.84	SINGLE	35.6/41	5.2	51/58	60/60
	RXBH-24A18C	6.4/8.5	3/60	3 - 2.84	MULTIPLE CKT 1	17.8/20.5	5.2	29/33	30/35
		6.4/8.5	3/60	3 - 2.84	MULTIPLE CKT 2	17.8/20.5	0.0	23/26	25/30
	RXBH-24A20C	14.4/19.2	3/60	3 - 3.2	SINGLE	40.0/46.2	5.2	57/65	60/70
	RXBH-24A20C	7.2/9.6	3/60	3 - 3.2	MULTIPLE CKT 1	20.0/23.1	5.2	32/36	35/40
		7.2/9.6	3/60	3 - 3.2	MULTIPLE CKT 2	20.0/23.1	0.0	25/29	25/30
	RXBH-24A07D	7.2	3/60	2 - 3.6	SINGLE	8.7	2.2	15/15	15/15
	RXBH-24A10D	9.8	3/60	3 - 3.2	SINGLE	11.8/11.8	2.2	18/18	20/20
	RXBH-24A15D	14.4	3/60	3 - 4.8	SINGLE	17.3/17.3	2.2	25/25	25/25
	RXBH-24A18D	17.0	3/60	2 - 3.8	SINGLE	20.4/20.4	2.2	29/29	30/30
	RXBH-24A18D	8.5	3/60	3 - 3.8	MULTIPLE CKT 1	10.2/10.2	2.2	16/16	20/20
		8.5	3/60	3 - 2.8	MULTIPLE CKT 2	10.2/10.2	0.0	13/13	15/15
	RXBH-24A20D	19.2	3/60	2 - 3.2	SINGLE	23.2/23.2	2.2	32/32	35/35
	RXBH-24A20D	9.6	3/60	3 - 3.2	MULTIPLE CKT 1	11.6/11.6	2.2	18/18	15/15
		9.6	3/60	4 - 3.2	MULTIPLE CKT 2	11.6/11.6	0.0	15/15	15/15

4.6B Electric Heat Electrical Data: (-)HLA/(-)HLL

Nominal Cooling Capacity Tons / Cabinet Size	Rheem Model No.	HEATER KW 208/240V	PH/HZ	NO. ELEMENTS - KW PER	TYPE SUPPLY CIRCUIT SINGLE CIRCUIT MULTIPLE CIRCUIT	CIRCUIT AMPS	Motor AMPACITY	MINIMUM CIRCUIT AMPACITY	MAXIMUM CIRCUIT AMPACITY
1½ & 2 / 17	RXBH-17A03J	2.25/3.0	1/60	1 - 3.0	SINGLE	10.8/12.5	2.8	17/20	20/20
	RXBH-17A05J	3.6/4.8	1/60	1 - 4.8	SINGLE	17.3/20.0	2.8	26/29	30/30
	RXBH-17A07J	5.4/7.2	1/60	2 - 3.6	SINGLE	26.0/30.0	2.8	36/41	40/45
	RXBH-17A10J	7.2/9.6	1/60	2 - 4.8	SINGLE	34.6/40.0	2.8	47/54	50/60
	RXBH-17A07C	5.4/7.2	3/60	3 - 2.4	SINGLE	15.0/17.3	2.8	23/26	25/30
	RXBH-17A10C	7.2/9.6	3/60	3 - 3.2	SINGLE	20.0/23.1	2.8	29/33	30/35
2½ & 3 / 17	RXBH-17A03J	2.25/3.0	1/60	1 - 3.0	SINGLE	10.8/12.5	4.1	19/21	20/25
	RXBH-17A05J	3.6/4.8	1/60	1 - 4.8	SINGLE	17.3/20.0	4.1	27/31	30/35
	RXBH-17A07J	5.4/7.2	1/60	2 - 3.6	SINGLE	26.0/30.0	4.1	38/43	40/45
	RXBH-17A10J	7.2/9.6	1/60	2 - 4.8	SINGLE	34.6/40.0	4.1	49/56	50/60
	RXBH-17A15J	10.8/14.4	1/60	3 - 4.8	SINGLE	51.9/60	4.1	70/81	70/90
	RXBH-17A15J	3.6/4.8	1/60	1 - 4.8	MULTIPLE CKT 1	17.3/20.0	4.1	27/31	30/35
		7.2/9.6	1/60	2 - 4.8	MULTIPLE CKT 2	34.6/40.0	0.0	44/50	45/50
	RXBH-17A07C	5.4/7.2	3/60	3 - 2.4	SINGLE	15.0/17.3	4.1	24/27	25/30
	RXBH-17A10C	7.2/9.6	3/60	3 - 3.2	SINGLE	20.0/23.1	4.1	31/34	35/35
	RXBH-17A15C	10.8/14.4	3/60	3 - 4.8	SINGLE	30.0/34.6	4.1	43/49	45/50
3½ & 4 / 21	RXBH-24A05J	3.6/4.8	1/60	1 - 4.8	SINGLE	17.3/20.0	6.0	30/33	30/35
	RXBH-24A07J	5.4/7.2	1/60	2 - 3.6	SINGLE	26.0/30.0	6.0	40/45	40/45
	RXBH-24A10J	7.2/9.6	1/60	2 - 4.8	SINGLE	34.6/40.0	6.0	51/58	60/60
	RXBH-24A15J	10.8/14.4	1/60	3 - 4.8	SINGLE	51.9/60.0	6.0	73/83	80/90
	RXBH-24A15J	3.6/4.8	1/60	1 - 4.8	MULTIPLE CKT 1	17.3/20.0	6.0	30/33	30/35
		7.2/9.6	1/60	2 - 4.8	MULTIPLE CKT 2	34.6/40.0	0.0	44/50	45/50
	RXBH-24A18J	12.8/17	1/60	4 - 4.26	SINGLE	61.2/70.8	6.0	84/96	90/100
	RXBH-24A18J	6.4/8.5	1/60	2 - 4.26	MULTIPLE CKT 1	30.8/35.4	6.0	46/52	50/60
		6.4/8.5	1/60	2 - 4.26	MULTIPLE CKT 2	30.8/35.4	0.0	39/45	40/45
	RXBH-24A20J	14.4/19.2	1/60	4 - 4.8	SINGLE	69.2/80	6.0	94/108	100/110
	RXBH-24A20J	7.2/9.6	1/60	2 - 4.8	MULTIPLE CKT 1	34.6/40.0	6.0	51/58	60/60
		7.2/9.6	1/60	2 - 4.8	MULTIPLE CKT 2	34.6/40.0	0.0	44/50	45/50
	RXBH-24A07C	5.4/7.2	3/60	3 - 2.4	SINGLE	15.0/17.3	6.0	27/30	30/30
	RXBH-24A10C	7.2/9.6	3/60	3 - 3.2	SINGLE	20.0/23.1	6.0	33/37	35/40
	RXBH-24A15C	10.8/14.4	3/60	3 - 4.8	SINGLE	30.0/34.6	6.0	45/51	45/60
	RXBH-24A18C	12.4/17	3/60	6 - 4.8	SINGLE	35.6/41.0	6.0	52/59	60/60
	RXBH-24A18C	6.4/8.5	3/60	3 - 2.84	MULTIPLE CKT 1	17.8/20.5	6.0	30/34	30/35
		6.4/8.5	3/60	3 - 2.84	MULTIPLE CKT 2	17.8/20.5	0.0	23/26	25/30
	RXBH-24A20C	14.2/192	3/60	6 - 3.2	SINGLE	40.0/46.2	6.0	58/66	60/70
	RXBH-24A20C	7.2/9.6	3/60	3 - 3.2	MULTIPLE CKT 1	20.0/23.1	6.0	33/37	35/40
		7.2/9.6	3/60	3 - 3.2	MULTIPLE CKT 2	20.0/23.1	0.0	25/29	25/30
4 & 5 / 24	RXBH-24A07J	5.4/7.2	1/60	2 - 3.6	SINGLE	26.0/30.0	6.0	40/45	40/45
	RXBH-24A10J	7.2/9.6	1/60	2 - 4.8	SINGLE	34.6/40.0	6.0	51/58	60/60
	RXBH-24A15J	10.8/14.4	1/60	3 - 4.8	SINGLE	51.9/60.0	6.0	73/83	80/90
	RXBH-24A15J	3.6/4.8	1/60	1 - 4.8	MULTIPLE CKT 1	17.3/20.0	6.0	30/33	30/35
		7.2/9.6	1/60	2 - 4.8	MULTIPLE CKT 2	34.6/40.0	0.0	44/50	45/50
	RXBH-24A18J	12.8/17	1/60	4 - 4.26	SINGLE	61.2/70.8	6.0	84/96	90/100
	RXBH-24A18J	6.4/8.5	1/60	2 - 4.26	MULTIPLE CKT 1	30.8/35.4	6.0	46/52	50/60
		6.4/8.5	1/60	2 - 4.26	MULTIPLE CKT 2	30.8/35.4	0.0	39/45	40/45
	RXBH-24A20J	14.4/19.2	1/60	4 - 4.8	SINGLE	69.2/80	6.0	94/108	100/110
	RXBH-24A20J	7.2/9.6	1/60	2 - 4.8	MULTIPLE CKT 1	34.6/40.0	6.0	51/58	60/60
		7.2/9.6	1/60	2 - 4.8	MULTIPLE CKT 2	34.6/40.0	0.0	44/50	45/50
	RXBH-24A25J (5 Ton Only)	15.0/24.0	1/60	3 - 4.0	SINGLE	72.0/99.9	6.0	98/133	100/150
	RXBH-24A25J (5 Ton Only)	5.0/8.0	1/60	2 - 4.0	MULTIPLE CKT 1	24.0/33.3	6.0	38/50	40/50
		5.0/8.0	1/60	2 - 4.0	MULTIPLE CKT 2	24.0/33.3	0.0	30/42	30/45
		5.0/8.0	1/60	2 - 4.0	MULTIPLE CKT 3	24.0/33.3	0.0	30/42	30/45
	RXBH-24A07C	5.4/7.2	3/60	3 - 2.4	SINGLE	15.0/17.3	6.0	27/30	30/30
	RXBH-24A10C	7.2/9.6	3/60	3 - 3.2	SINGLE	20.0/23.1	6.0	33/37	35/40
	RXBH-24A15C	10.8/14.4	3/60	3 - 4.8	SINGLE	30.0/34.6	6.0	45/51	45/60

4.6B Electric Heat Electrical Data: (-)HLA/(-)HLL - continued

Nominal Cooling Capacity/Tons / Cabinet Size	Rheem Model No.	HEATER KW 208/240V	PH/HZ	NO. ELEMENTS - KW PER	TYPE SUPPLY CIRCUIT SINGLE CIRCUIT MULTIPLE CIRCUIT	CIRCUIT AMPS	Motor AMPACITY	MINIMUM CIRCUIT AMPACITY	MAXIMUM CIRCUIT AMPACITY
4 & 5 / 24	RXBH-24A18C	12.8/17	3/60	6 - 2.84	SINGLE	35.6/41.0	6.0	52/59	60/60
	RXBH-24A18C	6.4/8.5	3/60	3 - 2.84	MULTIPLE CKT 1	17.8/20.5	6.0	30/34	30/35
		6.4/8.5	3/60	3 - 2.84	MULTIPLE CKT 2	17.8/20.5	0.0	23/26	25/30
	RXBH-24A20C	14.4/19.2	3/60	6 - 3.2	SINGLE	40/46.2	6.0	58/66	60/70
	RXBH-24A20C	7.2/9.6	3/60	3 - 3.2	MULTIPLE CKT 1	20.0/23.1	6.0	33/37	35/40
		7.2/9.6	3/60	3 - 3.2	MULTIPLE CKT 2	20.0/23.1	0.0	25/29	25/30
	RXBH-24A25C	18.0/24.0	3/60	6 - 4.0	SINGLE	50/57.8	6.0	70/80	70/80
	RXBH-24A25C (5 Ton Only)	9.0/12.0	3/60	3 - 4.0	MULTIPLE CKT 1	25.0/28.9	6.0	39/44	40/45
		9.0/12.0	3/60	3 - 4.0	MULTIPLE CKT 2	25.0/28.9	0.0	32/37	35/40

NOTES:
- Supply circuit protective devices may be fuses or “HACR” type circuit breakers.
- If non-standard fuse size is specified, use next size larger standard fuse size.
- Largest motor load is included in single circuit and circuit 1 multiple circuit.
- Heater loads are balanced on 3 phase models with 3 or 6 heaters only.
- No electrical heating elements are permitted to be used with A Voltage (115V) air handler.
- J Voltage (230V) signal phase air handler is designed to be used with single or three phase 230 volt electric heaters. In the case of connecting 3 phase power to air handler terminal block without the heater, bring only two leads to terminal block, cap, insulate and fully secure the third lead.
- Do not use 480 volts electrical heaters on 230 volts air handler.
- Do not use 230 volts electrical heaters on 480 volts air handler.

5.0 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 airflow be adequate. Make sure supply and return ductwork, grills, special filters, accessories, etc. are accounted for in total resistance. See airflow performance tables in this manual.
- 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 3/4” duct flanges supplied with the unit. Attach flanges around the blower outlet.

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 the duct-to-unit joint as required to prevent air leaks.

6.0 REFRIGERANT CONNECTIONS

Keep the coil connections sealed until refrigerant connections are to be made. See the Installation Instructions for the outdoor unit for details on line sizing, tubing installation, and charging information.

Coil is shipped with a low (5 - 10 PSIG) pressure charge of dry nitrogen. Evacuate the system before charging with refrigerant.

Install refrigerant tubing so that it does not block service access to the front of the unit.

Nitrogen should flow through the refrigerant lines while brazing.

Use a brazing shield to protect the cabinet's paint from being damaged by torch flames.

After the refrigerant connections are made, seal the gap around the connections with pressure sensitive gasket. If necessary, cut the gasket into two pieces for a better seal (See Figure 3.)

6.1 TEV SENSING BULB

IMPORTANT: DO NOT perform any soldering with the TEV bulb attached to any line.

After soldering operations have been completed, clamp the TEV bulb securely on the suction line at the 10 to 2 o'clock position with the strap provided in the parts bag.

Insulate the TEV sensing bulb and suction line with the provided pressure sensitive insulation (size 4" x 7") and secure with provided wire ties.

IMPORTANT: TEV sensing bulb should be located on a horizontal section of suction line, just outside of coil box.

6.2 CONDENSATE DRAIN TUBING

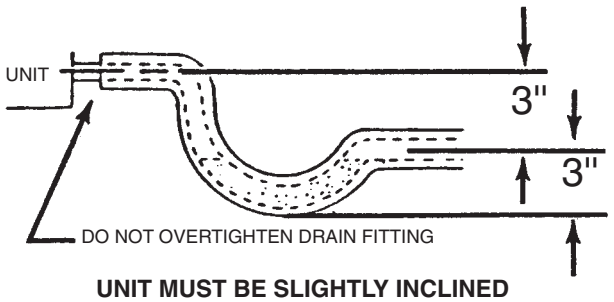
Consult local codes or ordinances for specific requirements.

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 connetions 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.
- Make sure unit is level or pitched slightly toward primary drain connection so that water will drain completely from the pan. (See Figure 7.)
- 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 7).
- Auxiliary drain line should be run to a place where it will be noticeable if it becomes operational. Occupant should be warned that a problem exists if water should begin running from the auxiliary drain line.
- 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 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 termination of the primary drain line.

FIGURE 7
CONDENSATE DRAIN TRAP



6.3 DUCT FLANGES

Field-installed duct flanges (4 pieces) are shipped with units. Install duct flanges as needed on top of the unit. (See Figure 2.)

7.0 AIR FILTER (not factory-installed)

- External filter or other means of filtration is required. Units should be sized for a maximum of 300 feet/min. air velocity or that recommended for the type filter installed.

Filter application and placement are critical to airflow, which may affect the heating and cooling system performance. Reduced airflow can shorten the life of the system's major components, such as motor, limits, elements, heat relays, evaporator coil or compressor. Consequently, we recommend that the return air duct system have only one filter location. For systems with a return air filter grill or multiple filter grills, can have a filter installed at each of the return air openings.

If high efficiency filters or electronic air cleaners are used in the system, it is important that the airflow is not reduced to maximize system performance and life. Always verify that the system's airflow is not impaired by the filtering system that has been installed, by performing a temperature rise and temperature drop test.

IMPORTANT: DO NOT DOUBLE FILTER THE RETURN AIR DUCT SYSTEM. DO NOT FILTER THE SUPPLY AIR DUCT SYSTEM.

⚠ 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 air handler elements. This residue could soil ceilings, walls, drapes, carpets and other articles in the house.

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

8.0 AIRFLOW PERFORMANCE

Airflow performance data is based on cooling performance with dry coil and filter in place. Select performance table for appropriate unit size, voltage and number of electric heaters to be used. Make sure external static applied to unit allows operation within the minimum and maximum limits shown in table below for both cooling and electric heat operation. For optimum blower performance, operate the unit in the .3 to .7 in W.C. external static range. Units with coils should be applied with a minimum of .1 in W.C. external static.

8.1 AIRFLOW OPERATING LIMITS – (-)HSA/(-)HSL (PSC MOTOR)

Cabinet Size	17		17		21		24
Cooling BTUH x 1,000 Cooling Tons Nominal	-018 1.5	-024 2	-030 2.5	-036 3	-042 3.5	-048 4	-048 4
Heat Pump or Air Conditioning Maximum Heat/Cool CFM [L/s] (37.5 CFM [18 L/s]/1,000 BTUH) (450 CFM [212 L/s]/Ton Nominal)	711 [336]	897 [423]	1015 [480]	1200 [566]	1514 [715]	1787 [843]	1787 [843]
Heat Pump or Air Conditioning Nominal Heat/Cool CFM [L/s] (33.3 CFM [16 L/s]/1,000 BTUH) (400 CFM [189 L/s]/Ton Nominal)	600 [283]	800 [378]	1000 [472]	1200 [566]	1400 [661]	1600 [755]	1600 [755]
Heat Pump or Air Conditioning Minimum Heat/Cool CFM [L/s] (30.0 CFM [14 L/s]/1,255 BTUH) (360 CFM [170 L/s]/Ton Nominal)	500 [236]	650 [307]	865 [408]	1015 [480]	1200 [566]	1400 [660]	1400 [660]
Blower Motor Speed-Factory Setting	Low	Low	Low	Low	Low	Low	Low
Maximum kW Electric Heating & Minimum Electric Heat CFM [L/s]	10 500 [236]	10 650 [308]	15 865 [408]	15 1015 [480]	20 1200 [566]	20 1400 [660]	20 1400 [660]
Maximum Electric Heat Rise °F [°C]	85 [29]	85 [29]	85 [29]	85 [29]	85 [29]	85 [29]	85 [29]

8.2 240V AIRFLOW PERFORMANCE DATA – (-)HSA/(-)HSL (PSC MOTOR)

Cabinet Size	Nominal Cooling Capcity Tons	Motor Speed From Factory	Manufacturer Recommended Air Flow Range (Min / Max) CFM	Blower Size/ Motor H.P. # of Speeds	Motor Speed	PSC CFM Air Delivery/RPM/Watts-240 Volts External Static Pressure-Inches W.C.							
							0.10	0.20	0.30	0.40	0.50	0.60	0.70
17	1½	Low 240 V	517/711	10x6 1/5 2 Speeds	Low	CFM	668	637	595	560	517	—	—
						RPM	541	596	657	706	761	—	—
						Watts	180	171	166	161	169	—	—
					High	CFM	—	—	—	—	711	662	614
						RPM	—	—	—	—	812	853	890
						Watts	—	—	—	—	243	227	210
	2	Low 240 V	697/888	10x6 1/5 2 Speeds	Low	CFM	817	779	757	693	647	—	—
						RPM	616	667	715	770	808	—	—
						Watts	239	230	221	206	205	—	—
					High	CFM	—	—	—	—	888	828	774
						RPM	—	—	—	—	875	908	958
						Watts	—	—	—	—	331	313	301
	2½	Low 240 V	864/1004	10x8 1/8 2 Speeds	Low	CFM	1022	987	940	903	864	—	—
						RPM	700	754	794	633	870	—	—
						Watts	344	313	302	309	288	—	—
					High	CFM	—	—	—	—	1004	951	883
						RPM	—	—	—	—	924	953	975
						Watts	—	—	—	—	364	352	344
17 & 21	3	Low 240 V	1013/1178	10x8 1/3 2 Speeds	Low	CFM	1139	1114	1078	1051	1013	—	—
						RPM	820	848	896	921	969	—	—
						Watts	440	425	420	400	374	—	—
					High	CFM	—	—	—	—	1178	1129	1053
						RPM	—	—	—	—	1024	1036	1060
						Watts	—	—	—	—	496	464	453
21	3½	Low 240 V	1241/1537	10x10 1/2 2 Speeds	Low	CFM	1526	1474	1427	1307	1241	—	—
						RPM	834	870	902	948	968	—	—
						Watts	560	549	535	476	462	—	—
					High	CFM	—	—	—	—	1537	1418	1334
						RPM	—	—	—	—	1072	1077	1085
						Watts	—	—	—	—	860	835	820
	4	Low 240 V	1395/1776	10x10 3/4 2 Speeds	Low	CFM	1488	1419	1466	1430	1395	—	—
						RPM	812	861	912	943	973	—	—
						Watts	554	545	526	508	491	—	—
					High	CFM	—	—	—	—	1776	1650	1521
						RPM	—	—	—	—	1080	1099	1113
						Watts	—	—	—	—	706	655	603

8.3 115/208/480V AIRFLOW PERFORMANCE DATA – (-)HSA/(-)HSL (PSC MOTOR)

Cabinet Size	Nominal Cooling Capacity Tons	Motor Speed From Factory*	Manufacturer Recommended Air Flow Range (Min / Max) CFM	Blower Size/ Motor H.P./ # of Speeds	Motor Speed		PSC CFM Air Delivery/RPM/Watts-115/208/480 Volts External Static Pressure-Inches W.C.						
							0.10	0.20	0.30	0.40	0.50	0.60	0.70
17	1½	Low 240 V	523/705	10x6 1/5 2 Speeds	Low	CFM	681	636	606	567	523	—	—
						RPM	541	601	670	714	768	—	—
						Watts	193	181	173	164	157	—	—
					High	CFM	—	—	—	—	705	650	599
						RPM	—	—	—	—	815	861	989
						Watts	—	—	—	—	239	227	204
	2	Low 240 V	682/897	10x6 1/5 2 Speeds	Low	CFM	875	806	787	739	682	—	—
						RPM	648	700	745	794	827	—	—
						Watts	259	255	243	234	227	—	—
					High	CFM	—	—	—	—	897	851	765
						RPM	—	—	—	—	906	925	955
						Watts	—	—	—	—	332	318	306
	2½	Low 240 V	883/1015	10x8 1/4 2 Speeds	Low	CFM	1038	1010	976	925	883	—	—
						RPM	721	771	799	848	880	—	—
						Watts	325	314	313	290	286	—	—
					High	CFM	—	—	—	—	1015	963	890
						RPM	—	—	—	—	928	955	974
						Watts	—	—	—	—	356	341	339
17 & 21	3	Low 240 V	1062/1201	10x8 1/3 2 Speeds	Low	CFM	1201	1170	1141	1104	1062	—	—
						RPM	833	872	909	951	965	—	—
						Watts	462	427	406	406	385	—	—
					High	CFM	—	—	—	—	1194	1134	1078
						RPM	—	—	—	—	1028	1042	1060
						Watts	—	—	—	—	475	454	417
21	3½	Low 240 V	1211/1514	10x10 1/2 2 Speeds	Low	CFM	1493	1449	1363	1287	1211	—	—
						RPM	822	858	865	931	958	—	—
						Watts	540	519	506	484	459	—	—
					High	CFM	—	—	—	—	1514	1411	1315
						RPM	—	—	—	—	1061	1069	1078
						Watts	—	—	—	—	710	702	677
	4	Low 240 V	1455/1787	10x10 3/4 2 Speeds	Low	CFM	1560	1550	1543	1510	1455	—	—
						RPM	807	840	914	941	989	—	—
						Watts	601	589	553	541	507	—	—
					High	CFM	—	—	—	—	1787	1679	1575
						RPM	—	—	—	—	1089	1098	1110
						Watts	—	—	—	—	695	665	630

NOTES (PSC motor speed changes):
- All 208/240V PSC motors have a voltage tap for 208 and 240 volts.
- All 208/240V motors are shipped on low static speed and 240V.
- If application exceeds 0.5" of static, adjust the motor speed to the high static speed as described below:
  – Pull the red wire off the relay on the control board. Take the black wire from the motor and remove the wire cap.
  – Replace cap on the red wire and plug black wire onto the relay on the board.
- Voltage change (208/240V motors):
  – Move the orange leads to the transformer from the 240-volt tap to the 208-volt tap. Replace the wire cap from 208 to 240 volt tap.
  – Unplug the purple wire from the pigtail from the transformer. Take the yellow wire from the motor and remove the wire cap.
  – Replace the cap on the purple wire and plug the yellow wire into the pigtail.

[ ] Designates Metric Conversions

8.4 AIRFLOW OPERATING LIMITS – (-)HLA/(-)HLL (X-13 MOTOR)

Cabinet Size	17		17		21		24
Cooling BTUH x 1,000 Cooling Tons Nominal	-018 1½	-024 2	-030 2½	-036 3	-042 3½	-048 4	-060 5
Heat Pump or Air Conditioning Maximum Heat/Cool CFM [L/s] (37.5 CFM [18 L/s]/1,000 BTUH) (450 CFM [212 L/s]/Ton Nominal)	690 [326]	875 [413]	1093 [516]	1275 [601]	1475 [696]	1665 [785]	1900 [897]
Heat Pump or Air Conditioning Nominal Heat/Cool CFM [L/s] (33.3 CFM [16 L/s]/1,000 BTUH) (400 CFM [189 L/s]/Ton Nominal)	600 [283]	800 [378]	1000 [472]	1200 [566]	1400 [661]	1600 [755]	1800 [850]
Heat Pump or Air Conditioning Minimum Heat/Cool CFM [L/s] (30.0 CFM [14 L/s]/1,255 BTUH) (360 CFM [170 L/s]/Ton Nominal)	509 [240]	730 [344]	935 [441]	1140 [538]	1340 [632]	1535 [724]	1739 [846]
Blower Motor Speed-Factory Setting	4	4	4	4	4	4	4
Maximum kW Electric Heating & Minimum Electric Heat CFM [L/s]	10 509 [240]	10 730 [345]	15 935 [441]	15 1140 [538]	20 1340 [632]	20 1535 [724]	25 1730 [821]
Maximum Electric Heat Rise °F [°C]	85 [29]	85 [29]	85 [29]	85 [29]	85 [29]	85 [29]	85 [29]

8.5 115/208/240V AIRFLOW PERFORMANCE DATA – (-)HLA/(-)HLL (X-13 MOTOR)

Cabinet Size	Nominal Cooling Capcity Tons	Motor Speed From Factory	Manufacturer Recommended Air Flow Range (Min / Max) CFM	Blower Size/ Motor H.P. # of Speeds	Motor Speed		X-13 CFM Air Delivery/RPM/Watts-115/208/240 Volts External Static Pressure-Inches W.C. 0.10	0.20	0.30	0.40	0.50	0.60	0.70
17	1½	4	509/690	10x6 1/3 5 Speeds	2	CFM	689	644	602	563	509	—	—
						RPM	580	633	683	728	781	—	—
						Watts	66	84	89	88	91	—	—
					3	CFM	—	—	—	—	681	644	603
						RPM	—	—	—	—	835	879	916
						Watts	—	—	—	—	136	143	152
	2		730/875		4	CFM	875	839	804	762	730	—	—
						RPM	679	724	765	810	852	—	—
						Watts	121	131	135	142	143	—	—
					5	CFM	—	—	—	—	862	828	801
						RPM	—	—	—	—	904	940	970
						Watts	—	—	—	—	203	215	212
	2½		935/1093	10x8 1/2 5 Speeds	2	CFM	1093	1050	1017	977	935	—	—
						RPM	671	725	764	809	852	—	—
						Watts	153	168	174	180	188	—	—
					3	CFM	—	—	—	—	1084	1040	1001
						RPM	—	—	—	—	896	936	971
						Watts	—	—	—	—	249	257	261
	3		1140/1275		4	CFM	1275	1238	1200	1168	1139	—	—
						RPM	759	803	846	881	912	—	—
						Watts	237	247	255	264	263	—	—
					5	CFM	—	—	—	—	1275	1244	1211
						RPM	—	—	—	—	963	999	1029
						Watts	—	—	—	—	338	348	363
21	3½	4	1340/1475	10x10 3/4 5 Speeds	2	CFM	1473	1442	1401	1373	1337	—	—
						RPM	781	825	867	905	949	—	—
						Watts	257	271	303	298	315	—	—
					3	CFM	—	—	—	—	1447	1433	1402
						RPM	—	—	—	—	987	1034	1065
						Watts	—	—	—	—	394	406	405
	4		1535/1665		4	CFM	1665	1631	1601	1572	1535	—	—
						RPM	853	893	934	968	1015	—	—
						Watts	351	387	401	406	422	—	—
					5	CFM	—	—	—	—	1654	1624	1563
						RPM	—	—	—	—	1036	1078	1095
						Watts	—	—	—	—	500	513	513
24	4	4	1595/1796	11x11 3/4 5 Speeds	2	CFM	1748	1669	1639	1599	1545	—	—
						RPM	660	698	734	762	795	—	—
						Watts	297	311	326	340	253	—	—
					3	CFM	—	—	—	—	1732	1682	1630
						RPM	—	—	—	—	840	872	899
						Watts	—	—	—	—	448	467	480
	5		1734/1900		4	CFM	1902	1862	1809	1781	1739	—	—
						RPM	712	749	787	815	856	—	—
						Watts	389	409	419	432	459	—	—
					5	CFM	—	—	—	—	1905	1866	1832
						RPM	—	—	—	—	894	924	950
						Watts	—	—	—	—	565	570	592

NOTES (X-13 motor speed changes):
X-13 motors require no voltage change between 208 and 240 volts.
All X-13 motors have 5 speed tabs. Speed tab 1 is for continuous fan. Speed tab 2 (low static) and Speed tab 3 (high static) are for lower tonnage. Speed tab 4 (low static) and Speed tab 5 (high static) are for higher tonnage.

X-13 air handlers are always shipped from factory at Speed tab 4. For an example, RHLA-HM2417JA is always shipped at low static 2-ton airflow (Speed tab 4). To have 1.5-ton airflow, move the blue wire from the X-13 motor to Speed tab 2.

The low static Speed tab 2 (lower tonnage) and Speed tab 4 (higher tonnage) are used for external static below 0.5". For external static exceeding 0.5", move the blue wire from the X-13 motor to appropriate high static Speed tab 3 (lower tonnage) or Speed tab 5 (higher tonnage).

[ ] Designates Metric Conversions

9.0 SEQUENCE OF OPERATION

9.1 COOLING (COOLING ONLY OR HEAT PUMP)

- When the thermostat “calls for cooling,” the circuit between R and G is completed, causing the blower relay (BR) to energize. The N.O. contacts will close, causing the indoor blower motor (IBM) to operate. The circuit between R and Y is also completed: This circuit closes the contactor (CC) in the outdoor unit starting the compressor (COMP) and outdoor fan motor (OFM).

9.2 HEATING (ELECTRIC HEAT ONLY)

- When the thermostat “calls for heat,” the circuit between R and W is completed, and the heater sequencer (HR_1) is energized. The heating elements (HE) and the indoor blower motor (IBM) will come on. Units with a second heater sequencer (HR_2) can be connected with the first sequencer (HR_1) to W on the thermostat sub-base or connected to a second stage W_2 on the sub-base.

9.3 HEATING (HEAT PUMP)

- When the thermostat “calls for heat,” the circuits between R and B, R and Y and R and G are completed. Circuit R and B energizes the reversing valve (RV) switching it to the heating position (remains energized as long as selector switch is in “heat” position). Circuit R and Y energizes the contactor (CC) starting the outdoor fan motor (OFM) and compressor (COMP). Circuit R and G energizes the blower relay (BR) starting the indoor blower motor (IBM).
- If the room temperature should continue to fall, circuit R and W_2 is completed by the second-stage heat room thermostat. Circuit R-W_2 energizes a heat sequencer (HR_1). The completed circuit will energize supplemental electric heat. Units with a second heater sequencer (HR_2) can be connected with first sequencer (HR_1) to W_2 on thermostat or connected to a third heating stage W_2 on the thermostat sub-base. A light on the thermostat indicates when supplemental heat is being energized.

9.4 BLOWER TIME DELAY (HEATING OR COOLING)

- All models are equipped with a blower time delay (BTD) in lieu of a blower relay (BR) (see wiring diagram). The blower will run for 30 seconds after the blower time delay (BTD) is de-energized.

9.5 DEFROST (DEFROST HEAT CONTROL)

- For sequence of operation for defrost controls, see outdoor heat pump installation instructions.
- Supplemental heat during defrost can be provided by connecting the purple (PU) pigtail in the outdoor unit to the purple (PU) pigtail in the indoor unit. This will complete the circuit between R and W through a set of contacts in the defrost relay (DR) when the outdoor heat pump is in defrost. This circuit, if connected, will help prevent cold air from being discharged from the indoor unit during defrost.
- Defrost heat control (DHC) is used in series on the circuit described above on units where the supplemental heat is more than would be required to offset the defrost cooling capacity. Defrost heat control (DHC) is provided on the same models described above having watt restrictors.
- When the outdoor unit goes into defrost, the circuit between R and W is completed through a set of contacts on the defrost relay (DR) in series with the contacts on the defrost heat control (DHC). Purple (PU) pigtails on the indoor unit and outdoor units must be connected to make circuit. During defrost, the defrost heat control (DHC) senses the air temperature leaving the indoor unit and cycles the supplemental electric heat to maintain comfort (75° to 85°) air temperature and prevent objectable cold air during defrost. This limits the electric heat output to the minimum required, to conserve energy and prevent the thermostat from being satisfied with electric heat and preventing completion of the defrost cycle.
- For most economical operation, if cold air is not of concern during defrost, the purple wire can be left disconnected. Supplemental heat will then come on only when called for by second stage room thermostat.

9.6 EMERGENCY HEAT (HEATING HEAT PUMP)

- If selector switch on thermostat is set to the emergency heat position, the heat pump will be locked out of the heating circuit, and all heating will be electric heat. Jumper should be placed between W_2 and E on the thermostat sub-base so that the electric heat control will transfer to the first stage heat on the thermostat. This will allow the indoor blower to cycle on and off with the electric heat when the fan switch is in the auto position.

9.7 ROOM THERMOSTAT (ANTICIPATOR SETTING)

See instructions with outdoor section, condensing unit or heat pump for recommended room thermostats.

- On units with one electric heat sequencer (HR_1) (see wiring diagram on unit), heat anticipator setting should be .16.
- On units with two electric heat sequencers (HR_1 & HR_2) (see wiring diagram on unit), heat anticipator setting should be .32 if both are connected to same stage on thermostat. Setting should be .16 if (HR_1 &HR_2) 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.

10.0 CALCULATIONS

10.1 CALCULATING TEMPERATURE RISE

- The formula for calculating air temperature rise for electric resistance heat is:

$$\text{Temperature Rise °F} = \frac{3.16 \times \text{Watts}}{\text{CFM}}$$

Where: 3.16 = Constant, CFM = Airflow

10.2 CALCULATING BTUH HEATING CAPACITY

- The formula for calculating BTUH heating capacity for electric resistance heat is:

  BTUH Heating = Watts x 3.412

  Where: 1 kW = 1000 Watts, 3.412 = Btuh/Watt

10.3 CALCULATING AIRFLOW CFM

- The formula for calculating airflow using temperature rise and heating BTUH for units with electric resistance heat is:

$$\text{CFM} = \frac{\text{Heating BTUH}}{1.08 \times \text{Temp. Rise}}$$

10.4 CALCULATING CORRECTION FACTOR

- For correction of electric heat output (kW or BTUH) or temperature rise at voltages other than rated voltage multiply by the following correction factor:

$$\text{Correction Factor} = \frac{\text{Applied Voltage}^2}{\text{Rated Voltage}^2}$$

11.0 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.	

12.0 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 a maintenance contract

IMPORTANT: Before performing any service or maintenance procedures, see the “Safety Information” section at the front of this manual.

⚠ 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.

12.1 AIR FILTER (NOT FACTORY-INSTALLED)

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

FILTER MAINTENANCE

Have your qualified installer, service agency or HVAC professional instruct you on how to access your filters for regular maintenance.

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

- New filters are available from your local distributor.

12.2 INDOOR COIL - DRAIN PAN - DRAIN LINE

Inspect the indoor coil once each year for cleanliness and clean as necessary. In some cases, it may be necessary to remove the filter and check the return side of the coil with a mirror and flashlight.

IMPORTANT: Do not use caustic household drain cleaners, such as bleach, in the condensate pan or near the indoor coil. Drain cleaners will quickly damage the indoor coil.

12.3 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 disassembly of motor, blower and heater parts.
- 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.

12.4 LUBRICATION

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

12.5 BLOWER ASSEMBLY REMOVAL AND REPLACEMENT

Removing the blower assembly is not 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 pigtails on right side of blower housing. Remove wire nuts attaching field control wiring to unit control pigtails.
- 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, just snug into place.
- Replace low voltage control wiring with wire nuts and make sure wiring is to wiring diagram and a good connection has been made.
- Replace field power wiring to terminal block or circuit breaker(s) on control area of blower assembly. Make sure wires are replaced as they were, check wiring diagram if necessary. Tighten supply power wiring securely to terminals lugs.
- Make sure wiring is within cabinet and will not interfere with access door. Make sure proper separation between low voltage control wiring and field power wiring has been maintained.
- Replace blower assembly control access panel before energizing equipment.

12.6 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 relay. 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. 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 metal screws holding motor mounts to blower side and remove motor from blower assembly.
- To install new motor, remove 1 screw holding motor mounts to motor shell and remove mounts (four) from motor.
- Install (four) motor mounts to motor using same screw or screws supplied with replacement motor.

⚠ WARNING

To avoid electrical shock which can result in personal injury or death, use only the screws furnished in the motor shell mounting holds. Screws are #8-18 x .25 in. long blunt nose thread forming. Screws longer than 1/4 in. may contact the motor winding.

- To reassemble, insert motor shaft through hub in blower wheel and orient motor to original position with motor leads and motor label to front of blower (control area).
- Reassemble 12 sheet metal screws through motor mounts into blower side. Do not overtorque screws, blower side is light gage sheet metal, just snug screws tight enough to hold motor mounts in position.
- 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 venturi 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 relay making sure that wires match wiring diagram and are tight and secure.

12.7 BLOWER WHEEL REPLACEMENT

With the blower assembly removed and the motor assembly removed (see above instructions), remove the 4 screws holding the blower wrap (cutoff) to the blower sides.

- With wrap (cutoff) screws removed, cut off end of blower wrap will spring up. Lifting wrap blower wheel is removed through the discharge opening in the blower housing.
- To replace, make sure wheel is oriented properly with hub to the opposite side from the motor. Lift blower wrap and insert blower wheel through discharge opening in the blower housing.
- Hold blower wrap down into position and replace two screws holding blower wrap to blower sides.
- See motor replacement and blower assembly instructions for remaining assembly procedure.

13.0 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 relay, control transformer, blower wheel, filter, 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).

14.0 ACCESSORIES-KITS-PARTS

- **Combustible Floor Base RXHB-** for downflow applications.

Model Cabinet Size	Combustible Floor Base Model Number
17	RXHB-17
21	RXHB-21
24	RXHB-24

- **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.
- **External Filter Base RXHF-**

Model Cabinet Size	Filter Size	Part Number
17	16 x 20 [406 x 508]	RXHF-17
21	20 x 20 [508 x 508]	RXHF-21
24	25 x 20 [635 x 508]	RXHF-24

- **Horizontal Adapter Kit RXHH-**
  This horizontal adapter kit is used to convert Upflow/Downflow only models to horizontal flow. See the following table to order proper horizontal adapter kit.

Coil Model	Horizontal Adapter Kit Model Number
2414	RXHH-A01
2417	RXHH-A02
3617/3621	RXHH-A03
4821/4824	RXHH-A04
6024	RXHH-A05

- **Auxiliary Horizontal Overflow Pan RXBM-**

Nominal Cooling Capacity Tons	Auxiliary Horizontal Overflow Pan Accessory Model Number
1½ - 3	RXBM-AB48
3½ - 5	RXBM-AB61