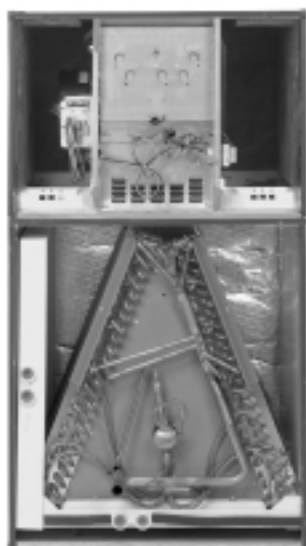


AIR HANDLERS

R410A
 Peak Performance
 earth friendly refrigerant

PRELIMINARY
 NOT FOR DISTRIBUTION

RUUD
ULTRA
 Series



UBHN- SERIES AIR HANDLERS AND FAN COIL UNIT

Features

- Versatile 3-way convertible design for upflow, horizontal left and horizontal right.
- Available from the factory in upflow and horizontal left configurations.
- Nominal airflow up to 1.0" external static pressure.
- Standard factory installed high efficiency coils.
- Sturdy double wall construction with .5 inch [12.7 mm] of foil faced insulation for excellent sound and insulating characteristics.
- Designed for use with exterior high-static filters.
- Circuit breaker (standard on units with more than 11 kW) meets U.L. and cUL requirements for service disconnect.
- Factory installed auxiliary electric heat provides exact heat for indoor comfort over a variety of applications.
- Dip switch settings for selectable, customized cooling airflow over a wide variety of applications.
- On-demand dehumidification terminal that adjusts airflow to help control humidity for unsurpassed comfort in cooling mode.



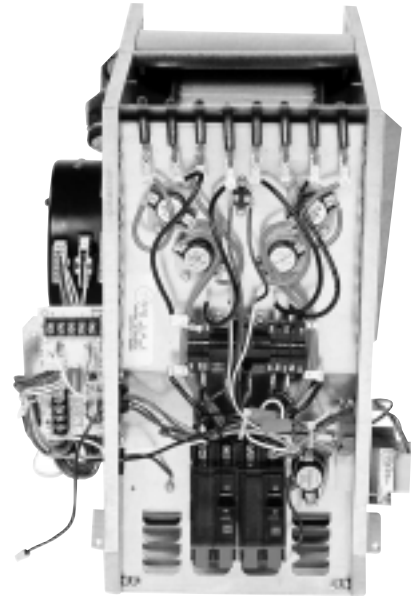
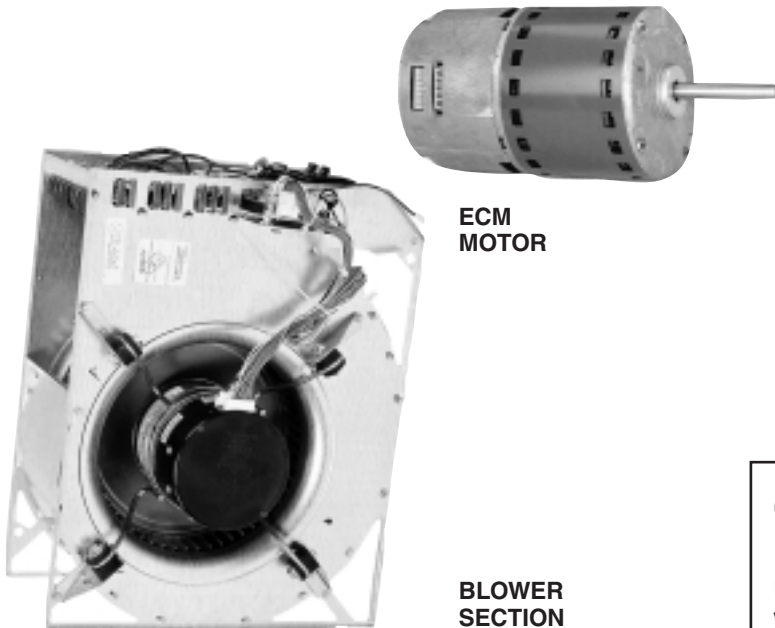
"CERTIFIED UNDER THE
 A.R.I. CERTIFICATION
 PROGRAM—A.R.I.
 STANDARDS 210/240-84"

Engineering Features

UBHN- Series

- Quiet, energy efficient ECM motor technology providing nominal airflow to 1.0 inch [25 kPa] of external static pressure.
- Interface board with dip switches conveniently located in the blower compartment allows for precise, field selectable airflow to meet the requirements of particular applications.
- Selectable continuous fan “on” options.
- Attractive pre-painted cabinet exterior.
- Rugged double wall steel cabinet construction, designed for added strength and versatility.
- .5" foil faced insulation mechanically retained in blower compartment.
- Four leg rubber insulated wire motor mount.
- Circuit breakers standard on 1-phase models above 11 kW and optional on models with 11 kW or less.
- Models supplied with circuit breakers meet UL and CUL requirements as a service disconnect switch.
- Provisions for field electrical connections from either side of air handler cabinet.
- Tab lock blower housing with integrated electric heaters, controls, motor and blower. Slide out design for service and maintenance convenience.
- Exclusive, dependable Incoloy sheath-type electric heating elements located in the blower housing provide mixed warm air.
- Field convertible for vertical upflow, horizontal left hand or right hand air supply.
- Indoor coil design provides low air side pressure drop, high performance and extremely compact size. All coils come with PVC condensate elbow standard.
- All indoor coils have copper tubing and aluminum fins.
- Molded polymer corrosion resistant condensate drain pan is provided on all indoor coils.
- Both supply and return duct flanges provided as standard on air handler cabinet.
- Connection points for both high voltage and low voltage control wiring inside air handler cabinet.
- Concentric knockouts are provided for power connection to cabinet. Installer may pull desired hole size up to 2 inches [51 mm] for 1½ inch [38 mm] conduit.
- Front refrigerant and drain connections.

[] Designates Metric Conversions



GENERAL TERMS OF LIMITED WARRANTY

Ruud will furnish a replacement for any part of this product which fails in normal use and service within the applicable periods stated, in accordance with the terms of the limited warranty.

Ruud Ultra Series® equipment features a 10-year limited parts warranty*

For Complete Details of the Limited Warranty, Including Applicable Terms and Conditions, See Your Local Installer or Contact the Manufacturer for a Copy.

***This 10-year limited warranty is applicable only to single-phase products installed in residential applications.**

Model Identification

| U | B | H | N | 24 | J | 11 | S | M | B | Additional Inform. |
|------|-------------|-----------------|---------------|------------|-------------------------|--|---|-------------------|-----------------|---|
| Ruud | Blower Unit | Type Unit | Design Series | Cab. Width | Electrical Designations | Electrical Heat (KW) Designation See Electrical Heat Data for Actual KW at 208 Volts. | Control Designation | Airflow Direction | Coil Code | 1) Motor H.P. [W] 2) Blower CFM [L/s] 1st/2nd Stage 3) Blower Wheel Dia./Width [mm] 4) Filter Size Width/Length [mm] 5) Outdoor Unit Size |
| | | H = Air Handler | | 24 | J = 208/240V, 1PH, 60HZ | 00 = No Heat 06 = 4.9 kW 07 = 7.0 kW 11 = 10.0 kW 14 = 14.0 kW | N = No Circuit Breakers Single Supply Circuit S = Circuit Breaker(s) Single Supply Circuit | M = Multiposition | | |
| | | | | 24-24.5" | J | 00, 07, 11 | N | | R = RCQD-3624AS | 1) 3/4 H.P. [559] 2) 875/1050 CFM [413/496] 3) 11 ²⁹ / ₃₂ x 9 ¹ / ₂ [302 x 241] 4) N/A ⁵ 5) -036 |
| | | | | | | 07, 11, 14 | S | | | |

- NOTES:** 1) UBHN Air Handler cannot be ordered without coil.
 2) Electrical heat designation: set electric heat data for actual heater kW represented by number above.
 3) Electric heater BTUH = (heater watts + motor watts) x 3.412 (See airflow table for motor watts).
 4) Air Handlers with A-Coils do not come with a factory installed air filter. External filter rack or other means of filtration is required.

[] Designates Metric Conversions

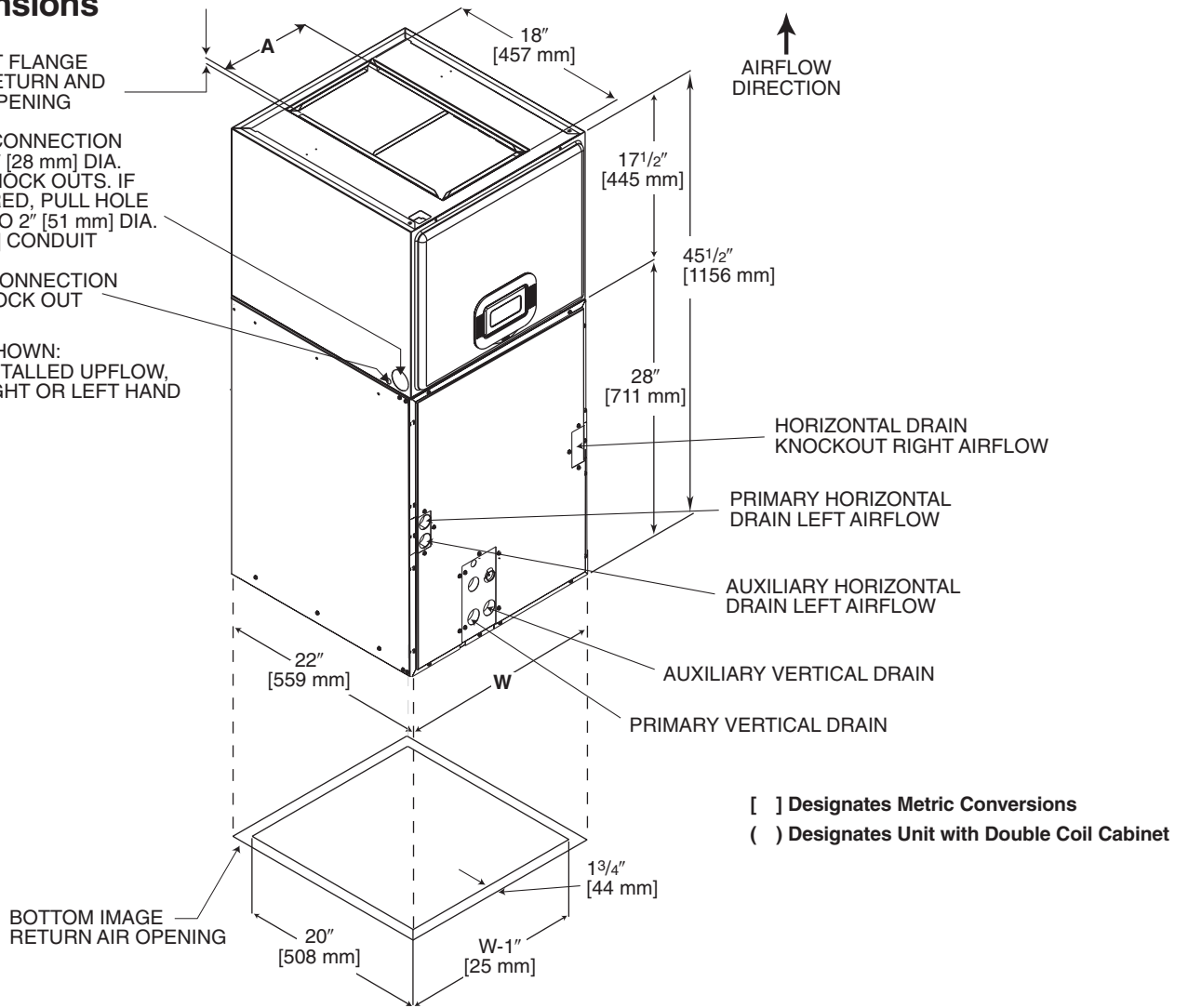
Unit Dimensions

3/4" [19 mm] DUCT FLANGE SUPPLIED ON RETURN AND SUPPLY DUCT OPENING

HIGH VOLTAGE CONNECTION 7/8" [22 mm], 1 3/32" [28 mm] DIA. CONCENTRIC KNOCK OUTS. IF LARGER REQUIRED, PULL HOLE SIZE REQ'D UP TO 2" [51 mm] DIA. FOR 1 1/2" [38 mm] CONDUIT

LOW VOLTAGE CONNECTION 1/2" [12.5 mm] KNOCK OUT

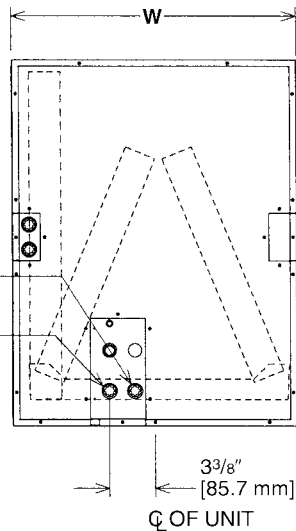
UPFLOW UNIT SHOWN: UNIT MAY BE INSTALLED UPFLOW, HORIZONTAL RIGHT OR LEFT HAND AIR SUPPLY.



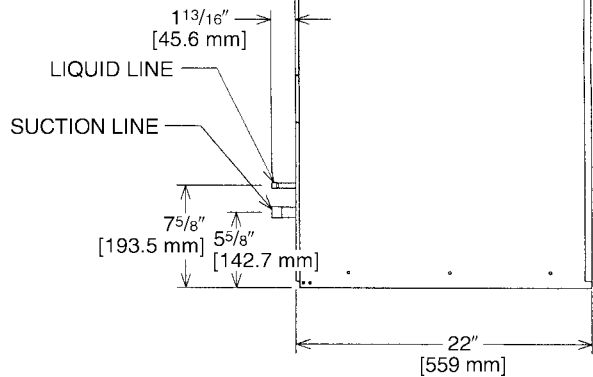
FRONT VIEW

AIRFLOW ↑

3/4" [19.1 mm] NPT DRAIN (SECONDARY)
3/4" [19.1 mm] NPT DRAIN (PRIMARY)



SIDE VIEW



Unit Dimensions & Weights

| Model Number UBHN- (with double coil) | Unit Width "W" In. [mm] | Supply Duct "A" In. [mm] | Nominal Coil Airflow Stage | | | | Unit Weight/Shipping Weight (Lbs.) [kg] |
|---|----------------------------|-----------------------------|----------------------------|--------|-----|--------|---|
| | | | 1st | | 2nd | | Unit With Coil (Max. KW) |
| | | | ODD | Normal | ODD | Normal | |
| 24 | 24 1/2 [622] | 11 3/4 [298] | 700 | 875 | 925 | 1150 | 196/205 [89/93] |

Airflow Performance

Airflow performance data is based on cooling performance with wet 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 .2" to .5" in. W.C.

external static range. In general, the indoor motor speed tap should be as shown in table for the appropriate cooling capacity shown. Always check to make sure proper motor speed tap is connected as units are shipped from the factory connected for high speed operation.

Airflow Performance Data

| Model Cabinet Size | Blower Motor | | CFM [L/s] (Watts)/External Static Pressure—Inches W.C. [kPa] | | | | | | | | | | |
|--------------------|---------------|-------|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | Nominal Speed | Volts | 0.1 [.02] | 0.2 [.05] | 0.3 [.07] | 0.4 [.10] | 0.5 [.12] | 0.6 [.15] | 0.7 [.17] | 0.8 [.20] | 0.9 [.23] | 1.0 [.25] | |
| -24 | Low | 240 | CFM | 1204 [568] | 1211 [572] | 1216 [574] | 1220 [576] | 1222 [577] | 1222 [577] | 1220 [576] | 1217 [574] | 1212 [572] | 1205 [569] |
| | | | RPM | 552 | 597 | 643 | 688 | 733 | 779 | 824 | 869 | 915 | 960 |
| | | | WATTS | 122 | 156 | 189 | 220 | 251 | 281 | 310 | 337 | 364 | 390 |
| | High | 240 | CFM | 1280 [604] | 1282 [605] | 1284 [606] | 1287 [607] | 1289 [608] | 1292 [610] | 1294 [611] | 1297 [612] | 1299 [613] | 1302 [614] |
| | | | RPM | 552 | 598 | 645 | 692 | 738 | 785 | 832 | 879 | 925 | 972 |
| | | | WATTS | 164 | 191 | 218 | 246 | 275 | 306 | 337 | 369 | 403 | 437 |

WARNING: Observe airflow operating limits. Do not operate above 1.0 in. W.C. system external static.

Blower Motor Electrical Data

| Model Size/Elec. Designation | HP [W] | Voltage | Phase | Hertz | RPM | Circuit Amps. | Minimum Circuit Ampacity | Maximum Circuit Protector |
|------------------------------|-----------|---------|-------|-------|----------|---------------|--------------------------|---------------------------|
| 24J | 3/4 [559] | 208/230 | 1 | 60 | 300-1100 | 6.6/5.9 | 9/8 | 15 |

Electric Heat Electrical Data

| Model Elec./KW Designation | PH/HZ | Type Supply Circuit Single Circuit Multiple Circuit* | Heater No./KW 240V | Heater KW 208/240V | Circuit Amps. | Minimum Circuit Ampacity | Maximum Circuit Protector |
|----------------------------|-------|--|-----------------------|-----------------------|---------------|--------------------------|---------------------------|
| 24J07 | 1/60 | Single Circuit | 2/3.5 | 5.3/7.0 | 31.8/35.1 | 40/44 | 40/45 |
| 24J11 | 1/60 | Single Circuit | 3/3.5 | 7.9/10.5 | 44.4/49.7 | 56/63 | 60/70 |
| 24J14 | 1/60 | Single Circuit | 4/3.5 | 10.5/14.0 | 57.0/64.3 | 72/81 | 80/90 |
| | | Multiple Ckt. 1 | 2/3.5 | 5.3/7.0 | 31.8/35.1 | 40/44 | 40/45 |
| | | Multiple Ckt. 2 | 2/3.5 | 5.3/7.0 | 25.2/29.2 | 32/37 | 35/40 |

*Unit shipped from factory wired for single supply circuit. Unit may be field converted to multiple supply circuit.

[] Designates Metric Conversions

Copper Wire Size—AWG. (3% Voltage Drop)

| | | | | | | | | | | | | | | | | | | | |
|--|--|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|
| S U P P L Y | L E N G T H | 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 |
| W I R E | F E E T | | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 125 | 150 | 175 |
| | | <p>SUPPLY CIRCUIT AMPACITY</p> <p>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.</p> | | | | | | | | | | | | | | | | | |
| | [m] | | | | | | | | | | | | | | | | | | |

Combustible Floor Base for Downflow Installations

ACCESSORIES—KITS—PARTS

- Filter Bases

| <u>Model</u> | <u>Filter Size In. [mm]</u> | <u>Filter Width</u> | <u>Part Number</u> |
|---------------------|-----------------------------|---------------------|--------------------|
| Cabinet Size -24 | 25 x 20 [635 x 508] | 1" or 2" | 54-2025-E3 |

[] Designates Metric Conversions

NOTES

Before proceeding with installation, refer to installation instructions packaged with each model, as well as complying with all Federal, State, Provincial, and Local codes, regulations, and practices.

**RUUD
AIR CONDITIONING
DIVISION**

5600 Old Greenwood Road, Fort Smith, Arkansas 72908



"In keeping with its policy of continuous progress and product improvement, Ruud reserves the right to make changes without notice."