

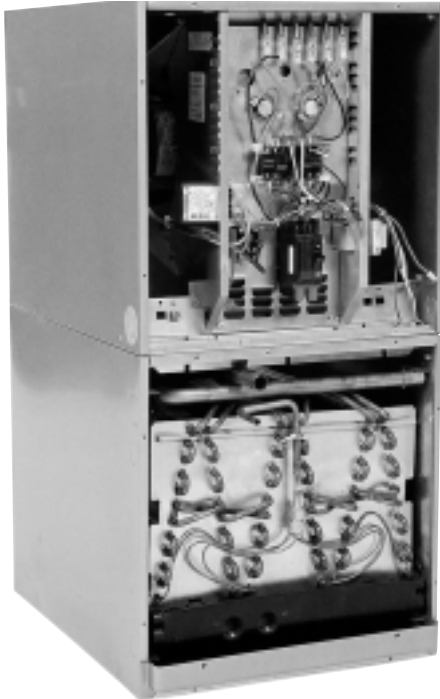
AIR HANDLERS



UBHC- SERIES HEAT PUMP AIR HANDLERS AND FAN COIL UNIT

Features

- 1 1/2 ton [5.3 kW] through 5 ton [17.6 kW] models are always just 35 inches [889 mm] tall and 22 inches [559 mm] deep.
- Available from factory in upflow and horizontal configurations.
- Versatile 4-way convertible design for upflow, downflow, horizontal left and horizontal right.
- All models meet or exceed 400 CFM [189 L/s] per ton at .5 inches [12 kPa] of external static pressure.
- Enhanced airflow up to 1.0" external static pressure.
- Optional factory or field installed MultiFlex® coils.
- Sturdy double wall construction with .5 inch [12 kPa] of reinforced foil faced insulation for excellent thermal and sound insulation
- Permanent, easily accessible and washable filter furnished standard.
- Circuit breaker (standard on units with more than 11 kW) meets U.L. and CUL requirements for service disconnect.
- Factory installed electric heat. Available in 5-25 kW.
- Watt restrictors, standard on UBHC-14 models above 7 kW and on UBHC-17, 21, and 24 models above 11 kW, stage supplemental heat so that only the necessary amount is engaged to maintain comfort in the conditioned space.



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

Engineering Features

UBHC- Series

- The most compact unit design available, all standard heat air handler models only 35 inches [89 mm] high. (High heat models 45" high).
- 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 flexible blower 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.
- Traditional open wire element design optional for high heat applications.
- Field convertible for vertical upflow, vertical downflow, horizontal left hand or right hand air supply.
- 2 combustible floor base accessories fit all model sizes when required for downflow installations on combustible floors.
- Durable framed cleanable air filter provided as standard in unit filter rack.
- MultiFlex® indoor coil design provides low air side pressure drop, high performance and extremely compact size. All coils come with PVC condensate elbow standard.
- Flow check piston or expansion valve on indoor coil provides for operation with air conditioning or heat pump using the same coil. (Some models require piston size change.)
- 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 1 1/2 inch [38 mm] conduit.
- Patented watt restrictor on heat pump models to control electric heat during heating operation.
- Separate filter door with thumbscrews provides easy access to the air filter in upflow and horizontal applications.
- Front refrigerant and drain connections.

Watt-restrictor

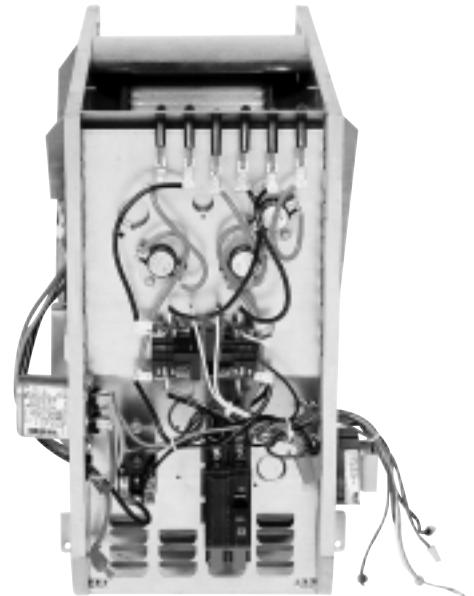
Supplemental heat, provided by electric heating elements may be necessary in some areas when heating requirements for indoor comfort exceed the capacity of the heat pump system. When supplemental heat is required, units with the Watt Restrictor will restrict the amount of supplemental electric heat that can be energized dependent on the heat output of the heat pump (temperature of the air leaving the indoor heat pump coil).

The Watt-restrictor utilizes sensing devices in the unit to sense the air temperature leaving the indoor coil and disengage unnecessary heating elements when that temperature is at least 85°F [29°C]. (In this mode your system is controlled by the first stage of the wall thermostat.) This occurs only when the second stage of the wall thermostat calls for heat.

Since the heat output of the heat pump is dependent upon the outdoor air temperature, this control performs the same function as a field installed outdoor thermostat.

An additional benefit of the Watt Restrictor is that it can sense a degradation in heat pump performance due to causes other than outdoor temperature and react accordingly to bring on more supplemental electric heat.

[] Designates Metric Conversions



BLOWER SECTION

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.

MultiFlex Coil leaks caused by	
factory defects	Five (5) Years
Electric Heating Element	Five (5) Years
Any Other Part	Five (5) Years

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

Model Identification

U	B	H	C	17	J	11	S	F	D	Additional Inform.	
Ruud	Blower Unit	Type Unit H = Air Handler	Design Series	Nom. Cab. Width [mm] 14 17 21 24 High Heat 15 18 22 26	Electrical Designations A = 115V, 1PH, 60HZ J = 208/240V, 1PH, 60HZ C = 208/240V, 3PH, 60HZ D = 480V, 3PH, 60HZ (Some D Models Are 1PH)	Electrical Heat (KW) Designation See Electrical Heat Data for Actual KW at 208 Volts. 00 = No Heat 06 = 4.9 kW 07 = 7.0 kW 09 = 9.8 kW 11 = 10.0 kW 13 = 12.5 kW 14 = 14.0 kW 18 = 17.5 kW 20 = 20.0 kW 21 = 21.0 kW 25 = 25.0 kW	Control Designation M = Circuit Breakers Multi-Supply Circuit N = No Circuit Breakers Single Supply Circuit S = Circuit Breaker(s) Single Supply Circuit	Airflow Direction F = Front Upflow Connection Options	Coil Code A = w/o Coil With Casing	Motor H.P. [W] Blower CFM [L/s] Lo/Hi Speed Blower Wheel Dia./Width [mm] Filter Size Width/Length [mm] Nominal Outdoor Unit Size	
				14 14.0" [356]	A or J	00	N	H = Horizontal Left Front Connection Option	A = No Coil D = RCBA-2457 E = RCGA-24A1 F = RCGA-24A2 G = RCHA-24A1 H = RCHA-24A2	1/6 H.P. [124] LO-600 CFM [142] HI-800 CFM [378]	
					J	06, 07 , 11	N or S			11.9 x 3.81 [302 x 97] 12.75 x 21 [324 x 533]	
				15 14.0" [356]	J	13	S			-018 -024	
				17 17.5" [445]	A	00	N			A = No Coil D = RCBA-3765 E = RCGA-37A1 F = RCGA-36A2 G = RCHA-36A1 H = RCHA-36A2	1/4 H.P. [186] LO-1000 CFM [472] HI-1200 CFM [566]
					J	00, 06, 07, 11 06, 07, 11, 14	N S				11.9 x 5.29 [302 x 134] 16.25 x 21 [413 x 533]
					C	08, 11, 14	S				-030 -036
				18 17.5" [445]	J	20	S		A = No Coil C = RCBA-4882 E = RCGA-48A1 G = RCHA-48A1		1/3 H.P. [249] LO-1400 CFM [661] HI-1600 CFM [755]
					A	00	N				11.9 x 7.12 [302 x 181] 19.75 x 21 [502 x 533]
					J	00, 06, 07, 11 06, 07, 11, 14 , 18	N S				-042 -048
					C	08, 11, 14* 18*	S M			A = No Coil B = RCBA-6089 E = RCGA-60A1 G = RCHA-60A1	
				D	09-3PH	N					
				21 21.0" [533]	J		S				1/2 H.P. [373] HI-1800 CFM [850] 11.9 x 9.50 [302 x 241] 23.25 x 21 [591 x 533]
					A	00	N				
					J	00, 11 11, 14 , 18 , 21	N S				
					C	11, 14* 18 , 21*	S M				
					D	1PH 09-3PH, 16-3PH, 21-3PH	N				
				22 21.0" [533]	J	25	S				
				24 24.5" [622]	A	00	N	1/2 H.P. [373] HI-1800 CFM [850] 11.9 x 9.50 [302 x 241] 23.25 x 21 [591 x 533]			
					J	00, 11 11, 14 , 18 , 21	N S				
					C	11, 14* 18 , 21*	S M				
					D	1PH 09-3PH, 16-3PH, 21-3PH	N				
					26 24.5" [622]	J	25		S		

- NOTES:**
- Coil piston size indicated by last two digits of RCBA- coil model number.
 - Electric heater BTUH = (heater watts + motor watts) x 3.412 (See airflow table for motor watts).
 - Models with **BOLD** numerals in the electrical heat (kw) column, have watt restrictor and defrost heat controls.
 - Electric heat models with one asterisk "*" represent 3 phase models with unbalanced loads.

[] Designates Metric Conversions

Unit Dimensions

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

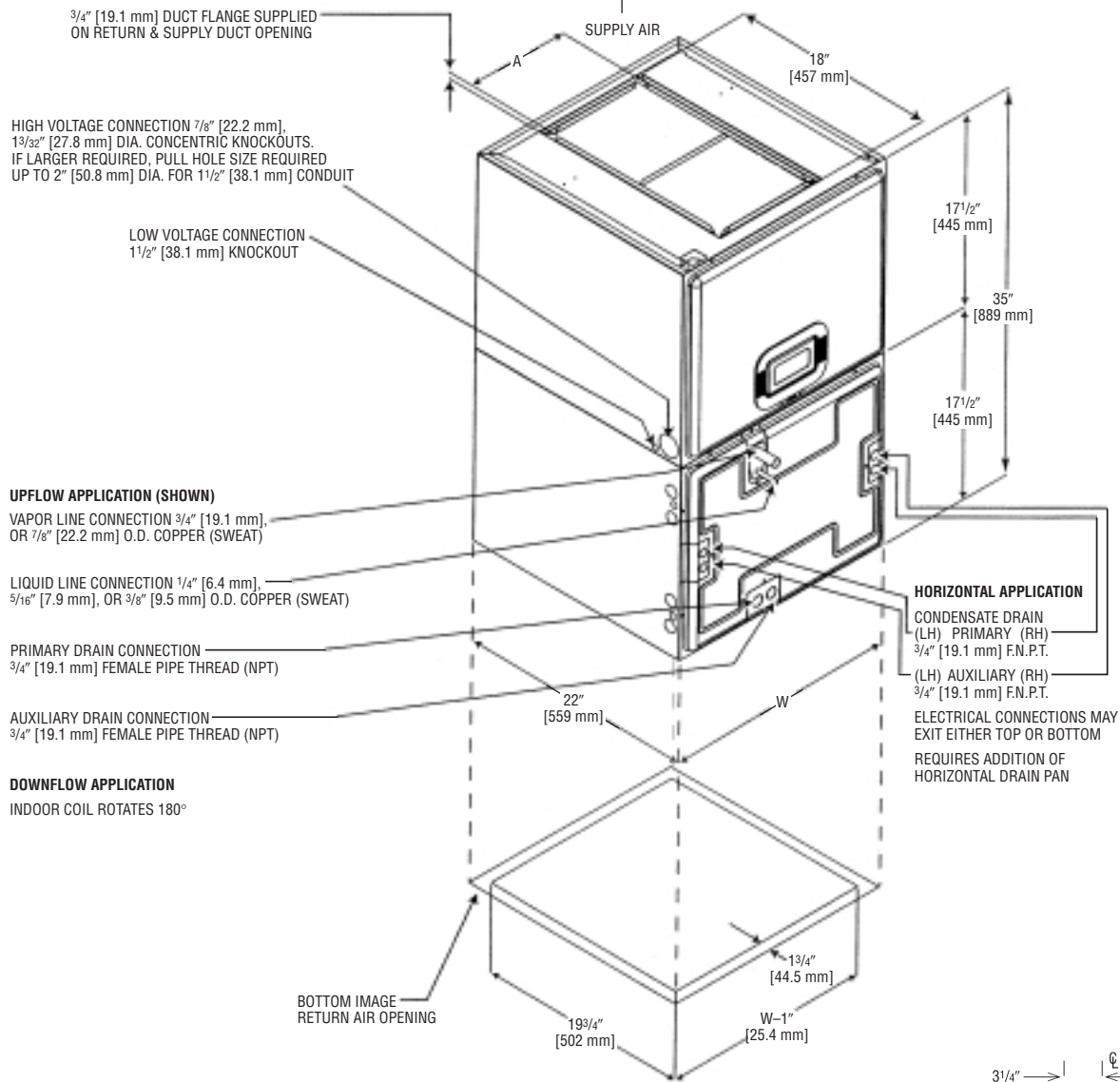
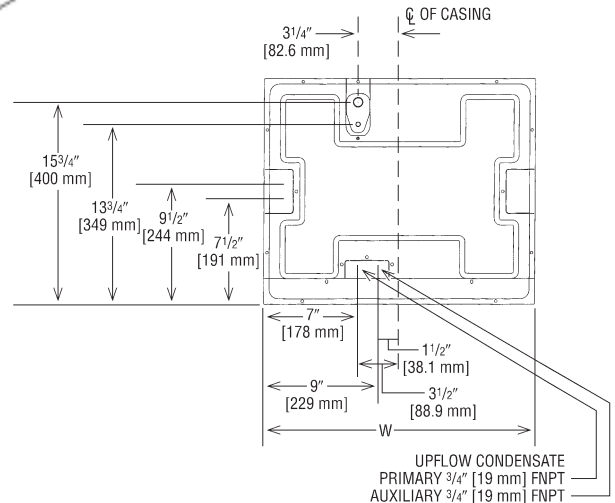


Illustration No. ST-A0970-03 Sheet 2

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



Unit Dimensions & Weights

Model Number UBHC-	Unit Width "W" In. [mm]	Supply Duct "A" In. [mm]	Air Flow CFM (Nom.) [L/s]		Unit Weight/Shipping Weight (Lbs.) [kg]		
			Lo	Hi	Unit With Coil (Max. kW)	Unit Without Coil	Unit Without Coil Casing
14	14 [356]	6 3/32 [155]	600 [283]	800 [378]	81/88 [37/40]	66/73 [30/33]	49/54 [22/24]
17	17 1/2 [445]	7 9/16 [192]	1000 [472]	1200 [566]	92/99 [42/45]	72/79 [33/36]	53/59 [24/27]
21	21 [533]	9 7/16 [240]	1400 [661]	1600 [755]	109/117 [49/53]	83/91 [38/41]	63/69 [29/31]
24	24 1/2 [622]	11 3/4 [298]	—	2000 [944]	125/134 [57/61]	93/102 [42/46]	71/78 [32/35]

NOTE: Subtract 1.5 lbs. [.68 kg] for each heater element less than maximum.

Unit Dimensions

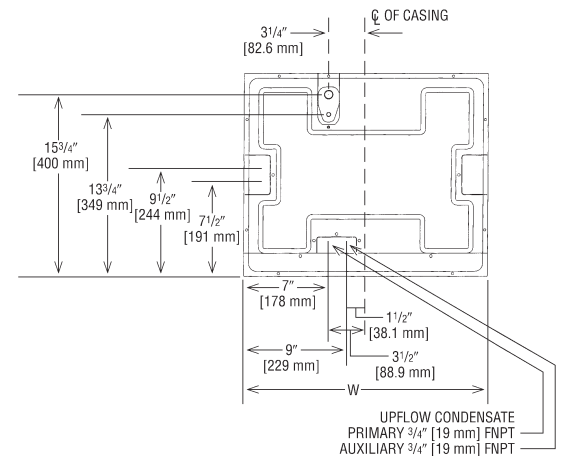
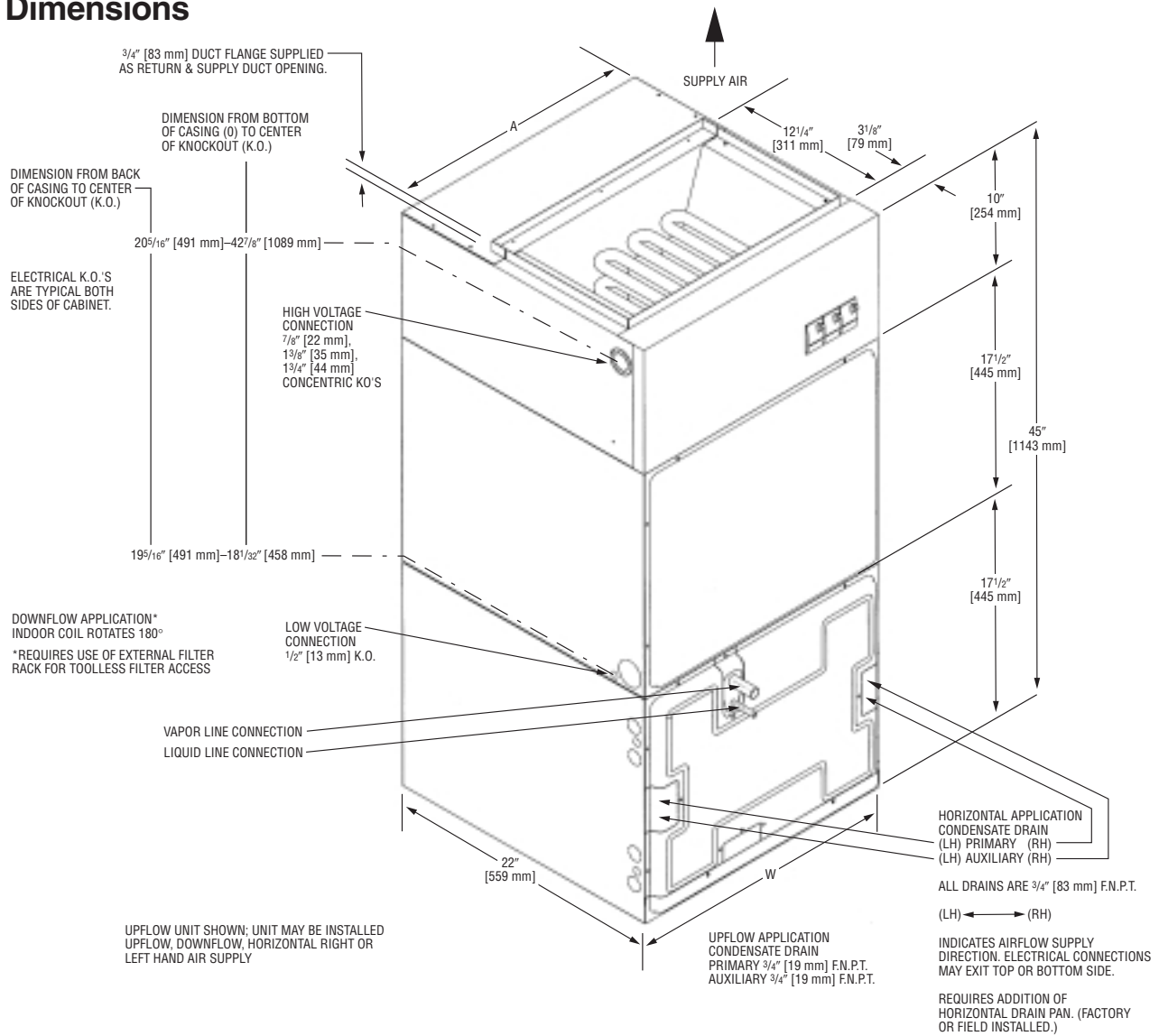


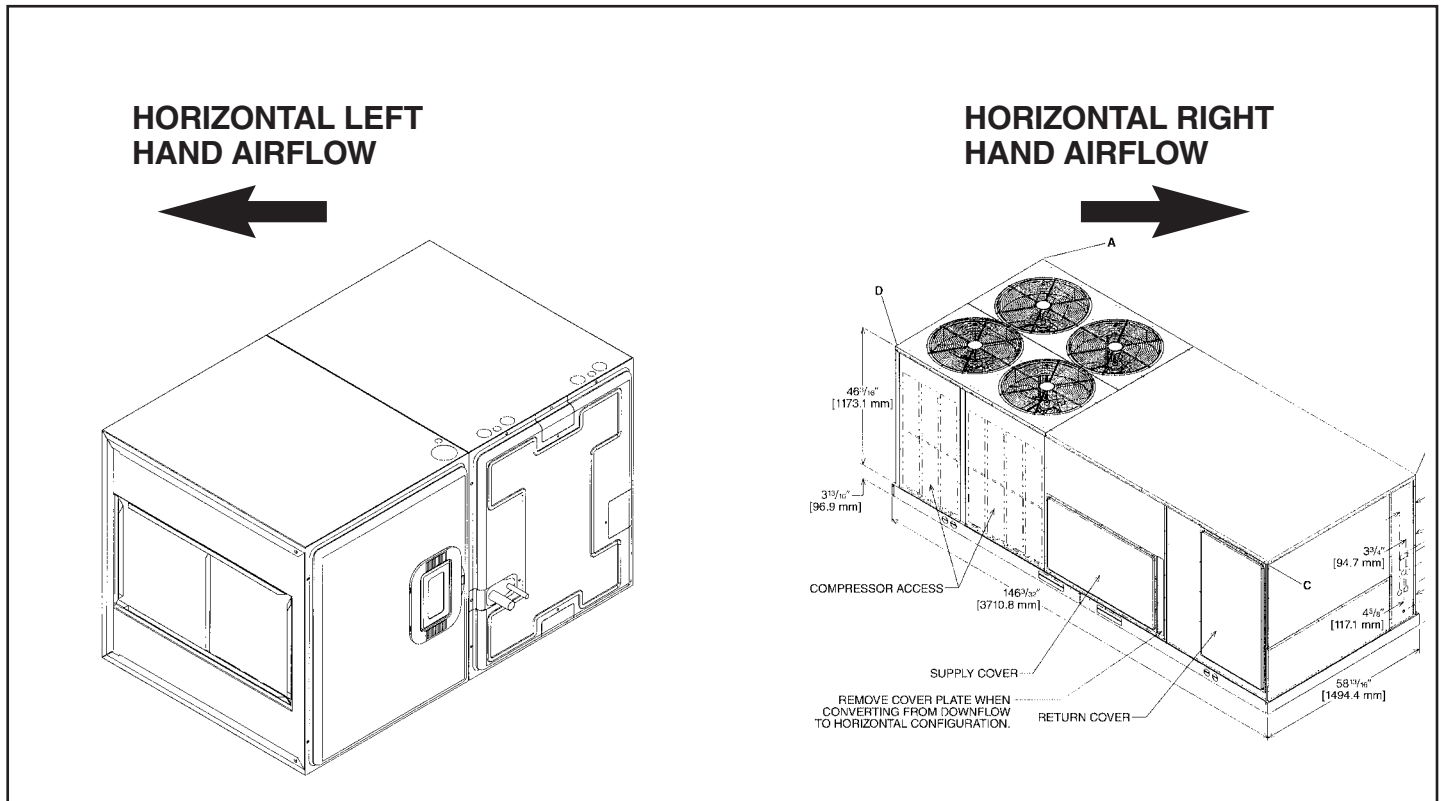
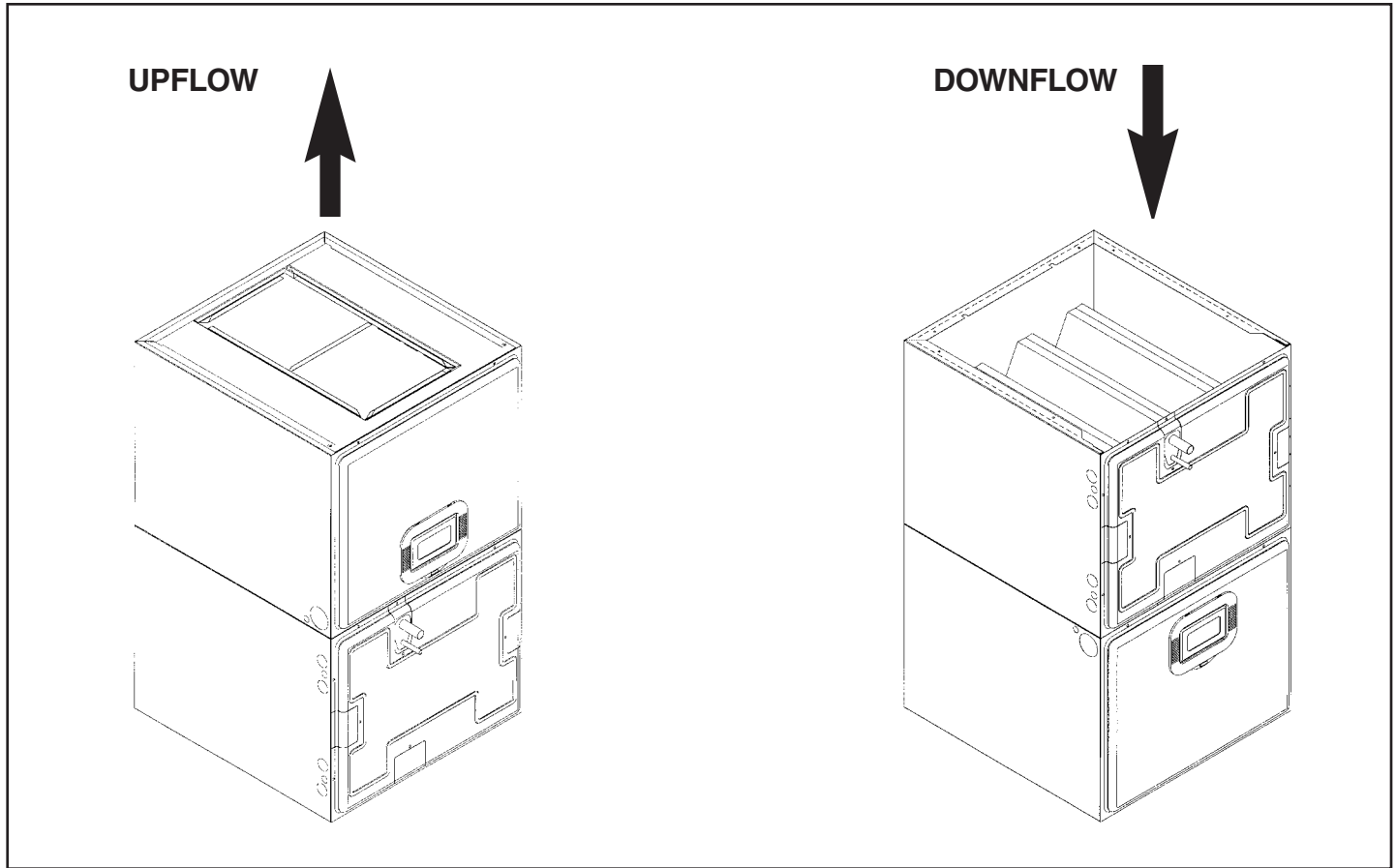
Illustration No. ST-A0970-03 Sheet 3

Unit Dimensions & Weights

Model Number UBHC-	Unit Width "W" In. [mm]	Supply Duct "A" In. [mm]	Air Flow CFM (Nom.) [L/s]		Unit Weight/Shipping Weight (Lbs.) [kg]		
			Lo	Hi	Unit With Coil (Max. kW)	Unit Without Coil	Heater Box (removed from unit)
15	14 [356]	11 ³ / ₄ [298]	600 [283]	800 [378]	103/111 [47/50]	88/96 [40/44]	22 [10]
18	17 ¹ / ₂ [445]	15 ¹ / ₄ [387]	1000 [472]	1200 [566]	117/124 [53/56]	96/104 [44/47]	24 [11]
22	21 [533]	18 ⁷ / ₈ [479]	1400 [661]	1600 [755]	137/145 [62/66]	110/119 [50/54]	27 [12]
26	24 ¹ / ₂ [622]	22 ¹ / ₂ [572]	—	1800 [850]	155/164 [70/74]	122/132 [55/60]	29 [13]

NOTE: Subtract 1.5 lbs. [.68 kg] for each heater element less than maximum.

Airflow Directions



NOTE: Coil and blower section are always in a draw through configuration.

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 .2 [5 mm] to .5 inches [13 mm] W.C. external static range. Units with coils should be applied with a minimum of .1 inch [3 mm] W.C. exter-

nal static range. Units without coils should be applied with a minimum of .2 inches [5 mm] W.C. external static pressure. In general, the indoor motor speed tap should be as shown in table for the appropriate cooling capacity shown; however, at extremes of external static, voltage and number of heaters the higher or lower speed tap may be necessary or more desirable. Always check to make sure proper motor speed tap is connected as units are shipped from the factory connected for high speed operation.

Airflow Operating Limits

Model Cabinet Size	14		17		21		24
Cooling BTUH x 1,000	-018	-024	-030	-036	-042	-048	-060
Cooling Tons Nominal	1.5	2	2.5	3	3.5	4	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)	675 [319]	900 [425]	1125 [531]	1350 [637]	1575 [743]	1800 [850]	1930 [911]
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)	540 [255]	720 [340]	900 [425]	1080 [510]	1260 [595]	1440 [680]	1620 [765]
Blower Motor Speed	Low	High	Low	High	Low	High	High
Maximum kW Electric Heating & Minimum Electric Heat CFM [L/s]	13 490 [231]	13 490 [231]	20 900 [425]	20 900 [425]	25 1220 [576]	25 1220 [576]	25 1500 [708]
Maximum Electric Heat Rise °F [°C]	85 [29]	85 [29]	70 [21]	70 [21]	65 [18]	65 [18]	55 [13]

Airflow Performance Data—Standard Models

Model Cabinet Size	Electric Heaters	Blower Motor		CFM [L/s] (Watts)/External Static Pressure—Inches W.C. [kPa]											
		Speed	Volts*	.00	.10 [.02]	.20 [.05]	.30 [.07]	.40 [.10]	.50 [.12]	.60 [.15]	.70 [.17]	.80 [.20]	.90 [.22]	1.0 [.25]	
-14	None	Low	230	CFM	723 [341]	711 [336]	693 [327]	671 [317]	644 [304]	612 [289]	▲575 [271]	▲533 [252]	▲487 [230]	▲436 [206]	▲379 [179]
				RPM	588	626	663	701	738	776	813	850	888	925	963
				Watts	210	209	208	205	202	197	192	187	180	172	164
				Amps	1.01	1.01	0.99	0.98	0.97	0.93	0.93	0.90	0.86	0.83	0.78
	3 (Max.)	Low	230	CFM	†	658 [311]	649 [306]	632 [298]	609 [287]	577 [272]	▲539 [254]	▲492 [232]	▲439 [207]	▲378 [178]	▲309 [146]
				RPM	†	640	679	718	757	796	835	875	914	953	992
				Watts	†	204	203	200	197	193	188	182	175	167	157
				Amps	†	0.94	0.94	0.92	0.90	0.84	0.85	0.82	0.79	0.74	0.70
	None	Low	208	CFM	707 [334]	699 [330]	686 [324]	668 [315]	644 [304]	615 [290]	▲581 [274]	▲542 [256]	▲497 [235]	▲488 [211]	▲393 [185]
				RPM	587	624	662	699	736	774	811	848	886	923	960
				Watts	207	207	206	204	201	197	192	186	179	172	163
				Amps	1.05	1.04	1.03	1.02	1.00	0.99	0.96	0.94	0.90	0.87	0.81
	3 (Max.)	Low	208	CFM	†	666 [314]	652 [308]	632 [298]	606 [286]	573 [270]	▲535 [252]	▲491 [232]	▲441 [208]	▲385 [182]	▲323 [152]
				RPM	†	633	672	712	752	791	831	870	910	949	989
				Watts	†	204	203	201	198	194	189	182	175	166	157
				Amps	†	1.02	1.03	1.02	1.00	0.97	0.93	0.91	0.87	0.84	0.79
	None	High	230	CFM	943 [445]	926 [437]	906 [428]	881 [416]	853 [403]	821 [387]	▲785 [370]	▲745 [352]	▲702 [331]	▲655 [309]	▲604 [285]
				RPM	751	775	799	822	846	870	893	917	941	964	988
				Watts	312	309	304	300	294	288	281	274	266	257	248
				Amps	1.44	1.43	1.41	1.39	1.36	1.33	1.30	1.26	1.23	1.19	1.15
	3 (Max.)	High	230	CFM	†	†	854 [403]	833 [393]	806 [380]	772 [364]	▲732 [345]	▲685 [323]	▲632 [298]	▲572 [270]	▲506 [239]
				RPM	†	†	804	831	857	884	910	937	963	989	1016
				Watts	†	†	297	294	290	284	277	268	258	247	235
				Amps	†	†	1.33	1.32	1.29	1.26	1.22	1.18	1.14	1.10	1.04

*For 115 and 460 volt units use 230 volt data shown above.
† Airflow becomes unstable at low static pressures.

▲ WARNING: Observe airflow operating limits if operating in area of airflow table shown in bold.

Airflow Performance Data, continued

Model Cabinet Size	Electric Heaters	Blower Motor		CFM [L/s] (Watts)/External Static Pressure—Inches W.C. [kPa]											
		Speed	Volts*	.00	.10 [.02]	.20 [.05]	.30 [.07]	.40 [.10]	.50 [.12]	.60 [.15]	.70 [.17]	.80 [.20]	.90 [.22]	1.0 [.25]	
-14	None	High	208	CFM	973 [459]	956 [451]	935 [441]	911 [430]	883 [417]	851 [402]	▲815 [385]	▲775 [366]	▲732 [345]	▲684 [323]	▲633 [299]
				RPM	762	785	808	831	854	877	900	923	946	969	992
				Watts	326	321	317	311	305	299	292	284	277	268	259
				Amps	1.64	1.63	1.60	1.57	1.56	1.54	1.49	1.47	1.41	1.38	1.33
	3 (Max.)	High	208	CFM	†	†	879 [415]	860 [406]	834 [394]	801 [378]	▲762 [360]	▲717 [338]	▲664 [313]	▲606 [286]	▲540 [255]
				RPM	†	†	822	847	871	895	919	943	968	992	1016
				Watts	†	†	316	311	305	298	290	281	272	261	249
				Amps	†	†	1.52	1.51	1.48	1.46	1.41	1.37	1.32	1.27	1.20
-17	None	Low	230	CFM	1130 [533]	1114 [526]	1095 [517]	1072 [506]	1045 [493]	1015 [479]	▲981 [463]	▲944 [446]	▲902 [426]	▲858 [405]	▲809 [382]
				RPM	650	681	712	743	775	806	837	868	899	931	962
				Watts	368	366	362	358	352	345	338	329	319	308	296
				Amps	1.73	1.70	1.66	1.64	1.60	1.57	1.53	1.49	1.43	1.38	1.32
	4 (Max.)	Low	230	CFM	1140 [538]	1123 [530]	1100 [519]	1070 [505]	1035 [488]	993 [469]	946 [446]	892 [421]	833 [393]	†	†
				RPM	702	733	763	794	824	855	885	916	946	†	†
				Watts	374	369	363	356	348	339	329	318	306	†	†
				Amps	1.70	1.67	1.63	1.62	1.57	1.51	1.47	1.42	1.35	†	†
	None	Low	208	CFM	1176 [555]	1161 [548]	1141 [538]	1118 [528]	1091 [515]	1060 [500]	▲1025 [484]	▲986 [465]	▲944 [446]	▲897 [423]	▲847 [400]
				RPM	673	702	731	760	789	818	847	877	906	935	964
				Watts	395	392	387	381	375	367	359	350	339	328	315
				Amps	1.99	1.96	1.94	1.90	1.86	1.82	1.77	1.72	1.68	1.60	1.54
	4 (Max.)	Low	208	CFM	1182 [558]	1156 [546]	1127 [532]	1094 [516]	1057 [499]	1015 [479]	970 [458]	921 [435]	867 [409]	†	†
				RPM	727	755	784	813	841	870	899	928	956	†	†
				Watts	390	385	379	372	364	355	349	332	319	†	†
				Amps	1.97	1.95	1.90	1.84	1.81	1.74	1.71	1.63	1.58	†	†
	None	High	230	CFM	1363 [643]	1340 [632]	1314 [620]	1284 [606]	1251 [590]	1214 [573]	▲1173 [554]	▲1129 [533]	▲1081 [510]	▲1030 [486]	▲976 [461]
				RPM	775	797	818	840	862	883	905	926	948	969	991
				Watts	476	470	463	455	445	435	423	411	397	382	366
				Amps	2.14	2.11	2.09	2.05	1.99	1.94	1.88	1.83	1.79	1.72	1.65
	4 (Max.)	High	230	CFM	1334 [630]	1315 [621]	1289 [608]	1256 [593]	1216 [574]	1169 [552]	1116 [527]	1055 [498]	988 [466]	913 [431]	832 [393]
				RPM	815	836	858	879	901	922	944	965	987	1008	1030
				Watts	464	458	451	442	431	420	407	393	378	361	343
				Amps	2.08	2.06	2.02	1.97	1.92	1.87	1.82	1.75	1.67	1.60	1.57
None	High	208	CFM	1445 [540]	1418 [669]	1389 [656]	1357 [640]	1322 [624]	1284 [606]	▲1242 [586]	▲1198 [565]	▲1151 [543]	▲1101 [520]	▲1048 [495]	
			RPM	814	833	852	871	891	910	929	949	968	987	1006	
			Watts	516	508	499	489	479	469	458	446	434	421	408	
			Amps	2.56	2.52	2.48	2.42	2.37	2.32	2.26	2.22	2.14	2.08	2.01	
4 (Max.)	High	208	CFM	1407 [664]	1384 [653]	1355 [639]	1319 [622]	1276 [602]	1226 [579]	1169 [552]	1105 [522]	1034 [488]	957 [452]	872 [412]	
			RPM	857	876	894	912	931	949	967	986	1004	1022	1041	
			Watts	504	497	489	479	468	456	443	428	413	396	377	
			Amps	2.52	2.46	2.41	2.36	2.31	2.26	2.17	2.13	2.05	1.96	1.82	
-21	None	Low	230	CFM	1547 [730]	1527 [721]	1503 [709]	1474 [696]	1440 [680]	1402 [662]	▲1360 [642]	▲1312 [619]	▲1260 [595]	▲1204 [568]	▲1143 [539]
				RPM	646	674	703	731	760	788	817	846	874	903	931
				Watts	541	536	531	525	518	510	501	491	479	467	454
				Amps	2.38	2.36	2.32	2.30	2.26	2.22	2.19	2.14	2.08	2.01	1.94
	5 (Max.)	Low	230	CFM	1490 [703]	1476 [697]	1455 [687]	1425 [673]	1388 [655]	1342 [633]	▲1288 [608]	▲1227 [579]	▲1157 [546]	▲1079 [509]	▲994 [469]
				RPM	672	702	732	762	792	822	852	882	912	942	972
				Watts	529	528	524	519	511	502	491	479	464	448	430
				Amps	2.35	2.33	2.29	2.26	2.23	2.18	2.13	2.08	2.00	1.92	1.81
	None	Low	208	CFM	1555 [734]	1542 [728]	1523 [719]	1498 [707]	1467 [692]	1431 [675]	▲1389 [656]	▲1342 [633]	▲1289 [608]	▲1230 [580]	▲1166 [550]
				RPM	651	679	708	736	765	793	822	850	879	907	935
				Watts	549	546	542	536	529	522	512	502	491	478	464
				Amps	2.69	2.66	2.63	2.59	2.56	2.51	2.46	2.41	2.35	2.29	2.19
	5 (Max.)	Low	208	CFM	1521 [718]	1505 [710]	1482 [699]	1452 [685]	1414 [667]	1369 [646]	▲1317 [622]	▲1257 [593]	▲1190 [562]	▲1116 [527]	▲1034 [488]
				RPM	680	709	739	768	798	827	857	886	916	945	975
				Watts	543	540	535	529	521	512	501	488	474	458	440
				Amps	2.63	2.62	2.60	2.56	2.51	2.46	2.39	2.33	2.27	2.17	2.08

*For 115 and 460 volt units use 230 volt data shown above.

† Airflow becomes unstable at low static pressures.

▲ WARNING: Observe airflow operating limits if operating in area of airflow table shown in bold.

Airflow Performance Data, continued

Model Cabinet Size	Electric Heaters	Blower Motor		CFM [L/s] (Watts)/External Static Pressure—Inches W.C. [kPa]											
		Speed	Volts*	.00	.10 [.02]	.20 [.05]	.30 [.07]	.40 [.10]	.50 [.12]	.60 [.15]	.70 [.17]	.80 [.20]	.90 [.22]	1.0 [.25]	
-21	None	High	230	CFM	1744 [823]	1725 [814]	1700 [802]	1671 [789]	1637 [773]	1598 [754]	▲1555 [734]	▲1506 [711]	▲1453 [686]	▲1395 [658]	▲1332 [629]
				RPM	729	752	775	798	821	844	867	890	913	937	960
				Watts	654	649	643	636	627	618	607	594	581	566	551
				Amps	2.88	2.85	2.81	2.78	2.73	2.67	2.60	2.57	2.52	2.46	2.37
	5 (Max.)	High	230	CFM	1707 [806]	1688 [797]	1662 [784]	1628 [768]	1587 [749]	1538 [726]	▲1482 [699]	▲1418 [669]	▲1346 [635]	▲1267 [598]	▲1180 [557]
				RPM	754	777	801	825	849	873	896	920	944	968	991
				Watts	646	642	635	627	616	604	591	575	558	539	518
				Amps	2.83	2.81	2.77	2.73	2.68	2.63	2.55	2.48	2.41	2.32	2.22
	None	High	208	CFM	1821 [859]	1796 [848]	1766 [833]	1733 [367]	1696 [800]	1654 [781]	▲1609 [759]	▲1559 [736]	▲1505 [710]	▲1447 [683]	▲1385 [654]
				RPM	752	773	795	817	839	860	882	904	926	947	969
				Watts	690	683	674	665	655	644	632	619	605	590	574
				Amps	3.32	3.29	3.23	3.18	3.12	3.10	3.01	2.95	2.90	2.82	2.72
	5 (Max.)	High	208	CFM	1764 [833]	1741 [822]	1711 [808]	1675 [791]	1632 [770]	1583 [747]	▲1527 [721]	▲1464 [691]	▲1394 [658]	▲1318 [622]	▲1236 [583]
				RPM	785	806	828	849	871	892	914	935	957	978	1000
				Watts	676	668	660	650	638	625	611	595	578	560	540
				Amps	3.27	3.21	3.16	3.13	3.07	3.02	2.93	2.85	2.78	2.68	2.57
-24	None	High	230	CFM	1984 [936]	1961 [925]	1932 [912]	1895 [894]	1851 [874]	1800 [850]	▲1741 [822]	▲1675 [791]	▲1602 [756]	▲1521 [718]	▲1433 [676]
				RPM	652	680	708	736	764	791	819	847	875	903	931
				Watts	713	710	706	702	695	688	680	670	660	648	635
				Amps	3.17	3.14	3.14	3.12	3.10	3.09	3.07	3.06	3.03	3.01	2.97
	6 (Max.)	High	230	CFM	1935 [913]	1902 [898]	1861 [878]	1811 [855]	1753 [827]	1687 [796]	▲1612 [761]	▲1529 [722]	▲1438 [679]	▲1338 [631]	†
				RPM	684	712	741	769	798	827	855	884	912	941	†
				Watts	699	696	693	687	680	671	661	649	635	620	†
				Amps	3.13	3.12	3.11	3.10	3.08	3.08	3.02	3.00	2.97	2.93	†
	None	High	208	CFM	2062 [973]	2033 [959]	1998 [943]	1956 [923]	1907 [900]	1852 [874]	▲1790 [845]	▲1722 [813]	▲1647 [777]	▲1566 [739]	▲1478 [698]
				RPM	678	704	731	757	783	810	836	863	889	916	942
				Watts	745	742	738	733	727	720	712	703	694	683	672
				Amps	3.70	3.69	3.67	3.64	3.63	3.62	3.61	3.58	3.54	3.53	3.48
	6 (Max.)	High	208	CFM	2003 [945]	1973 [931]	1934 [913]	1885 [890]	1826 [862]	1757 [829]	▲1677 [791]	▲1588 [749]	▲1489 [703]	▲1380 [651]	▲1261 [595]
				RPM	704	732	759	786	813	840	867	895	922	949	976
				Watts	747	742	736	729	720	710	698	685	670	654	637
				Amps	3.72	3.70	3.70	3.65	3.63	3.60	3.58	3.56	3.53	3.49	341

*For 115 and 460 volt units use 230 volt data shown above.

† Airflow becomes unstable at low static pressures.

▲ WARNING: Observe airflow operating limits if operating in area of airflow table shown in bold.

[] Designates Metric Conversions

Blower Motor Electrical Data

Model Size/Elec. Designation	Voltage	Phase	Hertz	HP [W]	RPM	Speeds	Circuit Amps.	Minimum Circuit Ampacity	Maximum Circuit Protector
14A	115	1	60	1/6 [124]	900	2	3.2	4.0	15
17A	115	1	60	1/4 [186]	900	2	4.5	5.7	15
21A	115	1	60	1/3 [249]	900	2	7.2	9.0	15
24A	115	1	60	1/2 [373]	900	1	9.9	12.4	15
The above motors are also used on "C" electrical designation with electric heat.									
14J/15J	200/230	1	50/60	1/6 [124]	900	2	1.3	1.7	15
17J/18J	200/230	1	50/60	1/4 [186]	900	2	2.1	2.7	15
21J/22J	200/230	1	50/60	1/3 [249]	900	2	3.2	4.0	15
24J/26J	200/230	1	50/60	1/2 [373]	900	1	2.9	3.7	15
21D	480	1	60	1/3 [249]	900	2	1.5	1.9	15
24D	480	1	60	1/2 [373]	900	1	1.9	2.4	15
21N	380/415	1	50	1/3 [249]	690	2	1.6	2.0	15
24N	380/415	1	50	1/2 [373]	690	1	1.9	2.4	15

Electric Heat Electrical Data

Model Elec./kW Designation	Heater kW 208/240 V.	PH/Hz	Heater No./kW	Type Supply Circuit Single Circuit Multiple Circuit*	Circuit Amps.	Minimum Circuit Ampacity	Maximum Circuit Protector
J06	3.7/4.9	1/60	2/2.5	Single Circuit	20.9/23.6	26.2/29.5	30/30
J07	5.3/7.0	1/60	2/3.5	Single Circuit	28.5/32.4	35.7/40.5	40/45
J11	7.3/9.8	1/60	3/3.3	Single Circuit	38.4/43.8	48.0/54.8	50/60
J13	9.4/12.5	1/60	3/4.2	Single Circuit	43.8/53.4	54.8/66.8	60/70
				Multiple Ckt. 1	29.6/36.0	37.1/45.0	40/45
				Multiple Ckt. 2	14.2/17.4	17.8/21.8	20/25
J14	10.5/14.0	1/60	4/3.5	Single Circuit	53.8/61.6	67.3/77.0	70/80
				Multiple Ckt. 1	28.5/32.4	35.7/40.5	40/45
				Multiple Ckt. 2	25.3/29.2	31.7/36.5	35/40
J18	13.2/17.5	1/60	5/3.5	Single Circuit	66.4/76.2	83.0/95.3	90/100
				Multiple Ckt. 1	41.1/47.0	51.4/58.8	60/60
				Multiple Ckt. 2	25.3/29.2	31.7/36.5	35/40
J20	14.4/19.2	1/60	4/4.8	Single Circuit	71.3/82.1	89.2/102.7	90/110
				Multiple Ckt. 1	36.7/42.1	45.9/52.7	50/60
				Multiple Ckt. 2	34.6/40.0	43.3/50.0	45/50
J21	15.8/21.0	1/60	6/3.5	Single Circuit	79.0/90.8	98.8/113.5	100/125
				Multiple Ckt. 1	41.1/47.0	51.4/58.8	60/60
				Multiple Ckt. 2	37.9/43.8	47.4/54.8	50/60
J25	18.0/24.0	1/60	5/4.8	Single Circuit	89.7/103.2	112.2/129.0	125/150
				Multiple Ckt. 1	37.8/43.2	47.3/54.0	50/60
				Multiple Ckt. 2	34.6/40.0	43.3/50.0	45/50
				Multiple Ckt. 3	17.3/20.0	21.7/25.0	25/25
C08	5.5/7.4	3/60	3/2.5	Single Circuit	18.2/20.5	22.8/25.7	25/30
C11	7.5/10.0	3/60	3/3.3	Single Circuit	23.7/26.9	29.7/33.7	30/35
C14	10.5/14.0	3/60	4/3.5	Single Circuit	36.5/41.7	45.7/52.2	50/60
C18	13.2/17.5	3/60	5/3.5	Multiple Ckt. 1	24.7/28.5	30.9/35.7	35/40
				Multiple Ckt. 2	21.9/25.3	27.4/31.7	35/35
C21	15.8/21.0	3/60	6/3.5	Multiple Ckt. 1	24.7/28.5	30.9/35.7	35/40
				Multiple Ckt. 2	21.9/25.3	27.4/31.7	30/35
480 Volts							
D09	9.8	3/60	3/3.3	Single Circuit	13.7	17.2	20
D16	14.7	3/60	6/2.5	Single Circuit	19.4	24.3	25
D21	21.0	3/60	6/3.5	Single Circuit	27.0	33.8	35

• Supply circuit protective devices may be fused or "HACR" type circuit breakers.

• If non-standard fuse size is specified, use next size larger standard fuse size.

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

• Largest motor load is included in single circuit and circuit 1 multiple circuit.

• Heater loads are balanced on 3 PH. models with 3 or 6 heaters only.

[] Designates Metric Conversions

Electric Heat Electrical Data, continued

Model Elec./kW Designation	Heater kW 220/240 V.	PH/Hz	Heater No./kW	Type Supply Circuit Single Circuit Multiple Circuit*	Circuit Amps.	Minimum Circuit Ampacity	Maximum Circuit Protector
T07	5.9/7.0	1/50	2/3.5	Single Circuit	30.0/32.4	37.5/40.5	40/45
T11	8.0/10.5	1/50	3/3.5	Single Circuit	43.3/47.0	54.2/58.8	60/60
T18	14.7/17.5	1/50	5/3.5	Single Circuit	70.1/76.2	87.7/95.3	90/100
				Multiple Ckt. 1	43.3/47.0	54.2/58.8	60/60
				Multiple Ckt. 2	26.8/29.2	33.5/36.5	35/40
T21	17.7/21.0	1/50	6/3.5	Single Circuit	83.4/90.8	104.3/113.5	110/125
				Multiple Ckt. 1	43.3/47.0	54.2/58.8	60/60
				Multiple Ckt. 2	40.1/43.8	50.2/54.8	60/60
380/415 Volts							
N08	6.2/7.4	3/50	3/2.5	Single Circuit	11.3/12.1	14.2/15.2	15/20
N11	8.8/10.5	3/50	3/3.5	Single Circuit	15.3/16.5	19.2/20.7	20/25
N15	12.3/14.7	3/50	6/2.5	Single Circuit	20.6/22.3	25.8/27.9	30/30
N16	13.2/15.7	3/50	2/2.6, 3/3.5	Single Circuit	26.9/29.1	33.7/36.4	35/40
N21	17.6/21.0	3/50	6/3.5	Single Circuit	28.7/31.2	35.9/39.0	40/40

• Supply circuit protective devices may be fused or "HACR" type circuit breakers.

• If non-standard fuse size is specified, use next size larger standard fuse size.

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

• Largest motor load is included in single circuit and circuit 1 multiple circuit.

• Heater loads are balanced on 3 PH. models with 3 or 6 heaters only.

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	2	1	0	00
		100 [30]	14	12	10	10	8	8	8	6	6	4	4	3	3	2	2	1	0	00
		50 [15]	14	12	10	10	8	8	8	6	6	4	4	3	3	2	2	1	0	00
			15	20	25	30	35	40	45	50	60	70	80	90	100	110	125	150	175	
W I R E	F E E T	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.																		
	[m]																			

Combustible Floor Base for Downflow Installations

Model Cabinet Size	Combustible Floor Base Model Number	Opening Front of Unit "W" Width-Inches [mm]	Opening Side of Unit "D" Depth-Inches [mm]
-14 -17 -21 -24	RXBB-AA	14 ³ / ₈ " [365]	20 ⁵ / ₈ " [524]
-15 -18 -22 -26	RXBB-AB	24 ⁷ / ₈ " [632]	14 ⁵ / ₈ " [371]

[] Designates Metric Conversions

Combustible Floor Base for Downflow Installations (cont.)

ACCESSORIES—KITS—PARTS

- **Combustible Floor Base RXBB-AB** for downflow applications with open wire heating elements.
- **RXBB-AA** for downflow applications except for high heat.
- **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.
- **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.
- **Note:** No jumper bar kit is available to convert three phase multiple two circuit units to a single supply circuit.
- If a factory supplied jumper bar for single supply circuit is removed from unit to make multiple supply circuits, the line side of the circuit breakers must be covered with finger safe covers. Each circuit breaker pole must be covered with a finger safe cover.
- **Finger Safe Circuit Breaker Cover**—Part Number 45-23203-01. One is required for each circuit breaker pole, if jumper bar is removed to provide multiple supply circuits.
- **Horizontal Drain Pan Accessories**
RXBD-CA
x50 = Bulk Pack.
- **RXBM-AA06**—Auxiliary horizontal drain pan. (All models except high heat).

• Replacement Filters

Model Cabinet Size	Filter Size In. [mm]	Part Number
-14	12.75 x 21 [324 x 533]	54-23217-01
-17	16.25 x 21 [413 x 533]	54-23217-02
-21	19.75 x 21 [502 x 533]	54-23217-03
-24	23.25 x 21 [591 x 533]	54-23217-04

[] Designates Metric Conversions

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



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