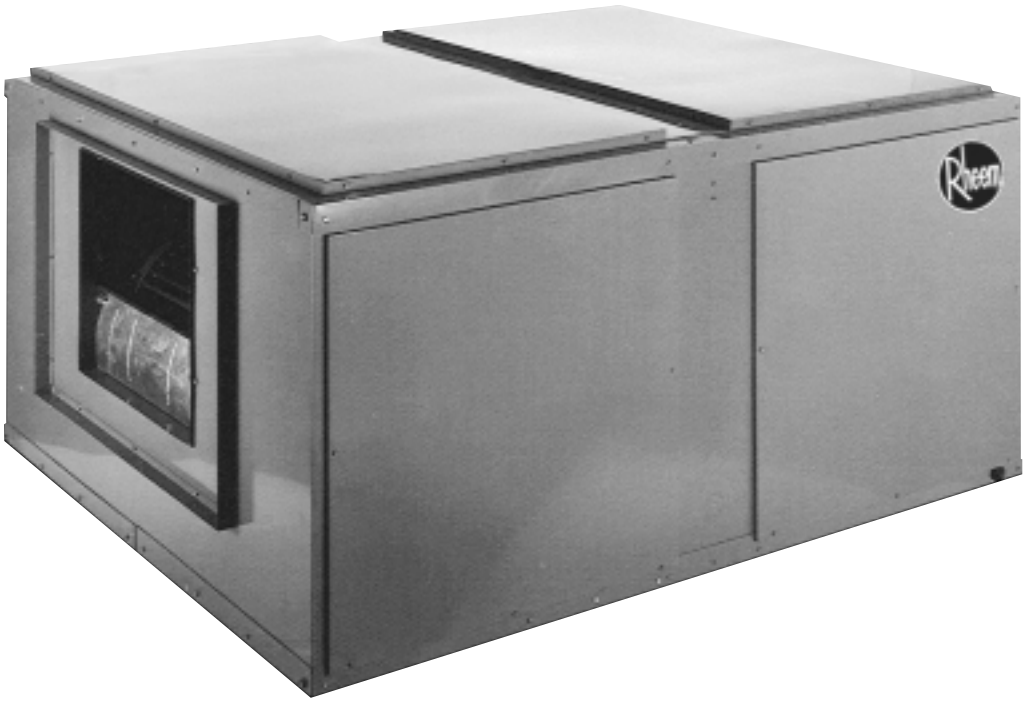
COMMERCIAL AIR HANDLER

FORM NO. EXH11-529 REV. 4
Supersedes Form No. EXH11-529 Rev. 3

Featuring Earth-Friendly R-410A Refrigerant

SHGL- 090, 120, 180 & 240 SERIES

NOMINAL SIZES 7.5, 10, 15 & 20 TONS [26, 35, 53, & 70 kW]



Accredited by the RvA
ABS Quality Evaluations, Inc. Management System Certification
ANAB ACCREDITED
ISO 9001:2000
Certificate Number: 30164

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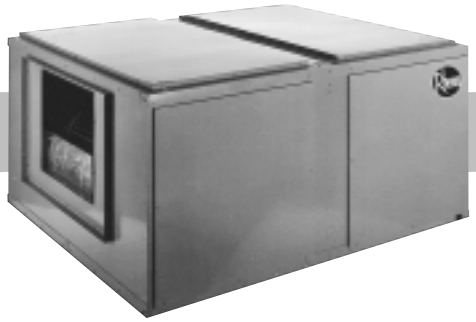


CABINET—Powder coat painted. Matching discharge plenums and decorative supply and return air grilles are available for use when units are to be installed within conditioned space.

MOTOR—Inherently protected motors are mounted inside of insulated cabinet to reduce motor noise. A choice of motor horsepowers and drive combinations are available to allow you to meet specified CFM at various static pressures up to 2" [.498 kPa] external static pressure.

LOW PROFILE—Allows for horizontal installation in most standard drop ceiling applications, and the movement of units through most standard doorways for addition or replacement work.

THERMAL EXPANSION VALVES—Standard all models.

FILTERS—One inch [25 mm] throwaway filters are standard, but filter racks are designed to accept either one inch [25 mm] or two inch [51 mm] filters.

EVAPORATOR COIL—Two circuit, interlaced row split coils are constructed with copper tubes and aluminum fins mechanically bonded to the tubes for maximum heat transfer capabilities. All coil assemblies are leak tested up to 450 PSIG [3100 kPa] internal pressure prior to installation into units.

REFRIGERANT CONNECTIONS—Field piping connections are made through a fixed post between two side access panels on either side of the unit. Allows flexibility to meet most field conditions as well as full accessibility after the installation is complete. Units may be used with two straight cool condensing units or single circuit manifolded in the field using the copper fittings shipped with each unit. The SHGL Air Handler has not been tested, rated or certified to operate with dual remote heat pumps.

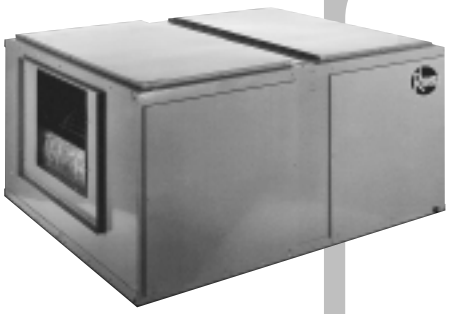
DRAIN PAN—The galvanized steel drain pan is designed to trap condensate in either vertical or horizontal installations. Condensate drain connections are located on both sides of the unit allowing complete flexibility to meet most field conditions.

SERVICE ACCESS—Two removable panels on top and each side of the unit are easily removed for access to motors, blowers, sheaves, and filters.

HORIZONTAL OR VERTICAL—All models are designed for either application and can be installed in either position as supplied from the factory. (See page 22)

TESTING—All units are run tested at the factory prior to shipment. Units are shipped with a holding charge of nitrogen.

HEAT PUMP—The SHGL-120 Air Handler is designed for heat pump and air conditioning applications. It has two TX valves with internal check valves that allow reverse flow to occur, providing superior control during heating and cooling cycles. SHGL-120 Air Handler has been rated and certified to operate with 7.5 ton [26 kW] and 10 ton [35 kW] condensing units and 7.5 ton [26 kW] and 10 ton [35 kW] remote heat pumps. A 7.5 ton [26 kW], 15 ton [53 kW], or 20 ton [70 kW] heat pump air handler is **NOT** available.

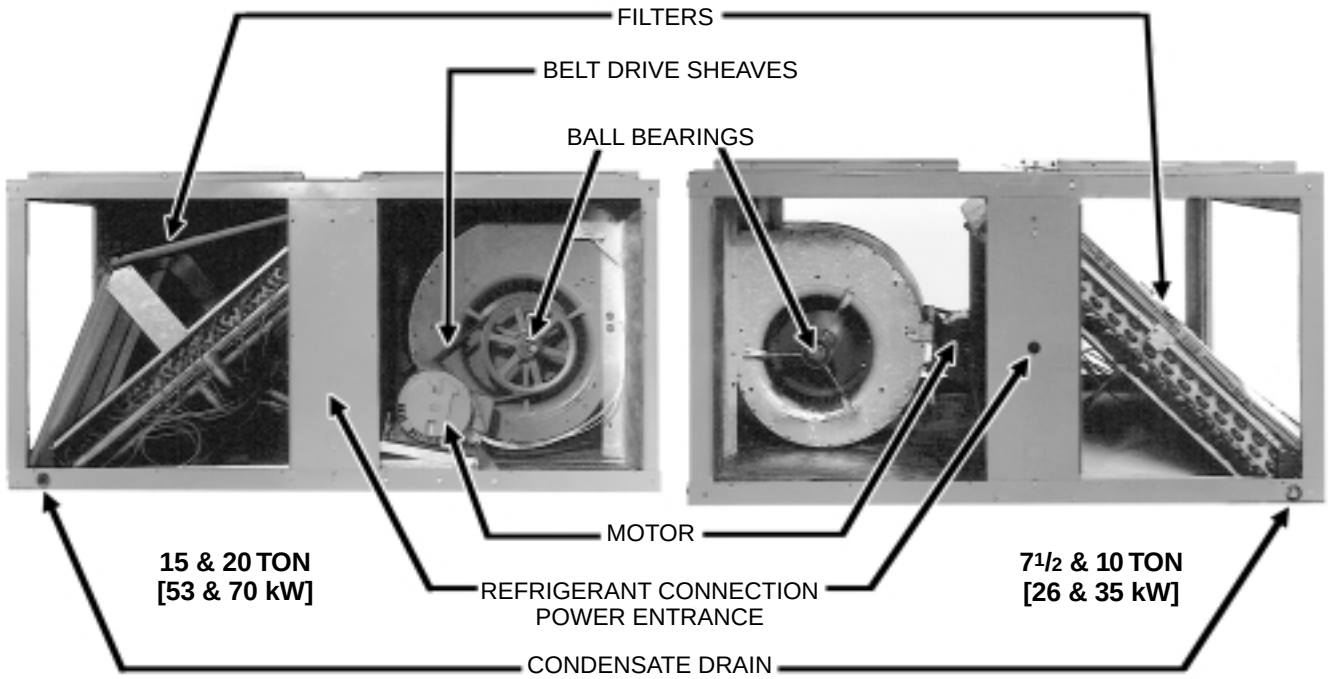


S H G L — 090 N K

- K: Drive Package (see page 7)
  - *K = Standard
  - L = Optional
  - M = Optional
- N: Electrical Designation
  - N = 380-415V. 3PH, 50 Hz
  - P = 200-220V, 3PH, 50 Hz
- 090: Nominal Tons
  - 090 = 7.5 Tons [26 kW]
  - 120 = 10.0 Tons [35 kW]
  - 180 = 15.0 Tons [53 kW]
  - 240 = 20.0 Tons [70 kW]
- L: Design Series
  - L = Refrigerant R-410A
- G: Type
- H: Air Handler
- S: Rheem Export

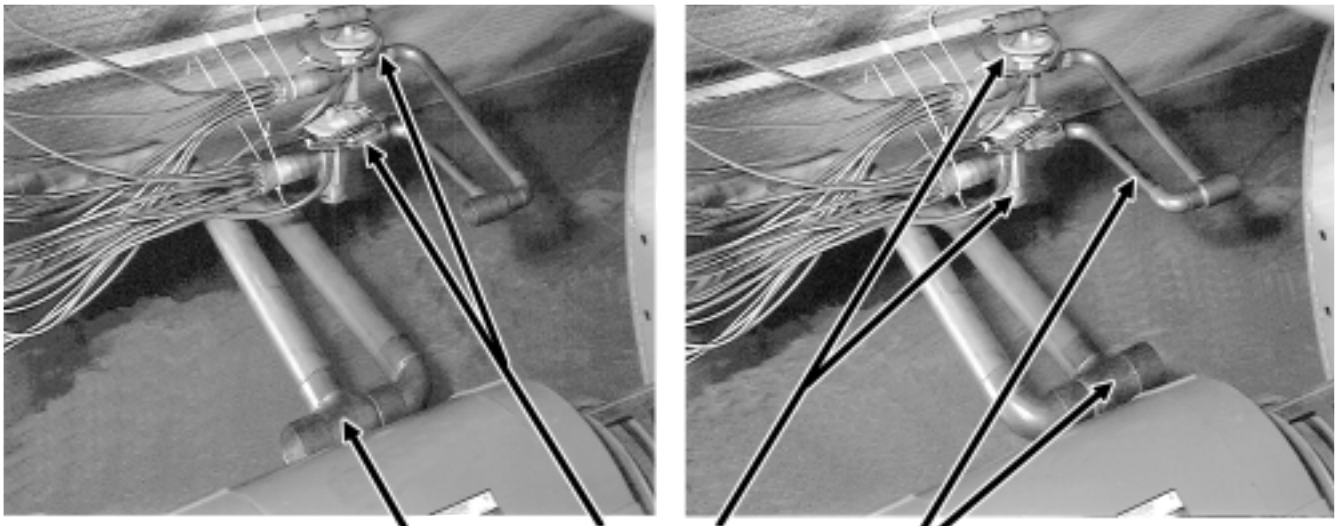
[ ] Designates Metric Conversions

COMPONENT LOCATION—SHGL- SERIES



15 ton [53 kW] & 20 ton [70 kW] unit with side panel removed for blower and air filter access.

7½ ton [26 kW] & 10 ton [35 kW] unit with side panel removed for coil connections and air filter access.



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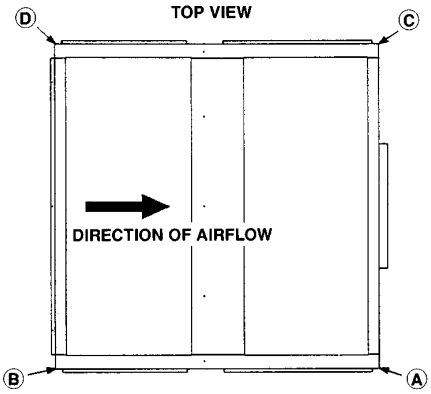
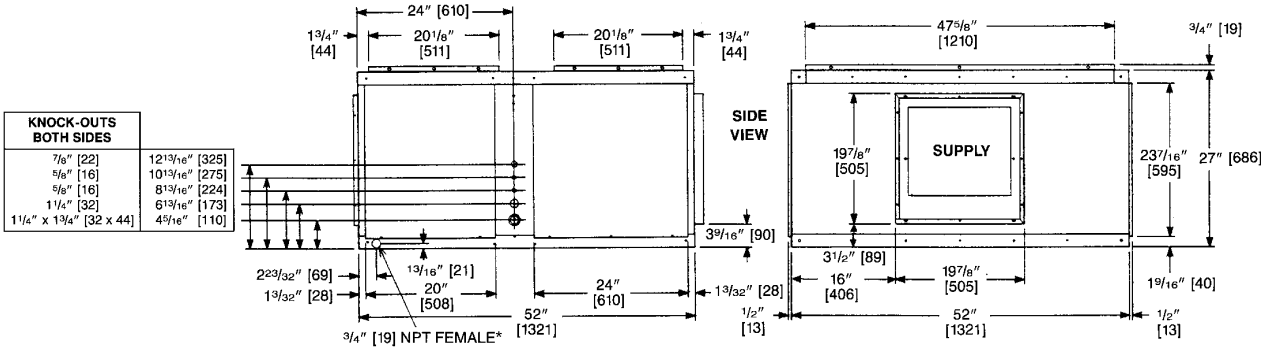


RETURN AIR OPENINGS = 47 3/8″ [1203] WIDTH x 19 7/8″ [505] HEIGHT

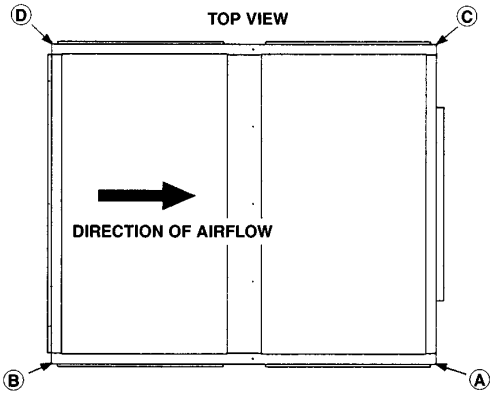
7 1/2 & 10 NOMINAL TONS [26 & 35 kW]

MODEL	REFRIGERANT STUB SIZES, IN. [mm]			
	DUAL LIQ.	DUAL SUC.	SINGLE LIQ.	SINGLE SUC.
090	1/2, 1/2 [13, 13]	7/8, 7/8 [22, 22]	1/2 [13]	1 1/8 [29]
120	1/2, 1/2 [13, 13]	7/8, 7/8 [22, 22]	5/8 [16]	1 3/8 [35]

MODEL	CORNER WEIGHTS, LBS. [kg]				TOTAL WEIGHT
	A	B	C	D	
090	88 [40]	78 [35]	87 [39]	77 [35]	330 [150]
120	93 [42]	82 [37]	92 [42]	80 [36]	347 [157]



*Drain connections are provided on both sides of the drain pan. The drain can be connected to either side of the drain pan, but not both. The drain must be trapped.

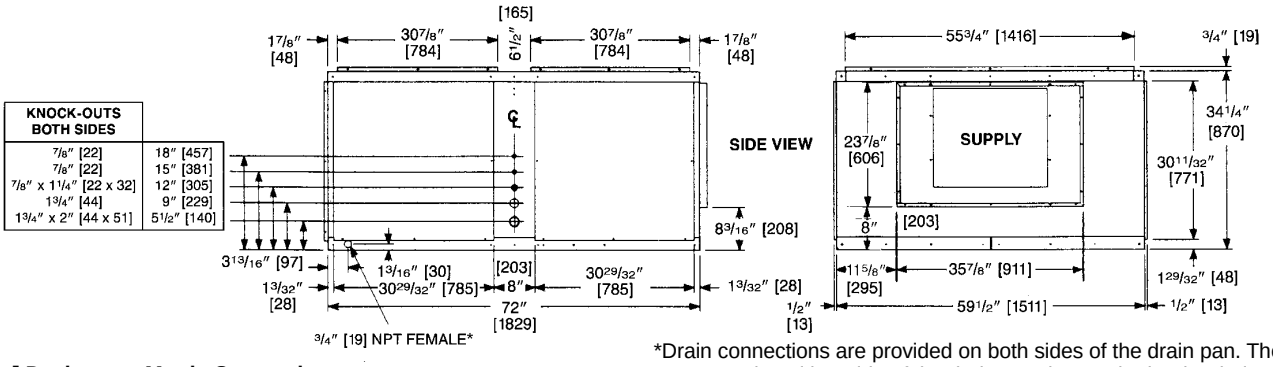


RETURN AIR OPENINGS = 55 1/2″ [1410] WIDTH x 30 9/16″ [776] HEIGHT

15 & 20 NOMINAL TONS [53 & 70 kW]

MODEL	REFRIGERANT STUB SIZES, IN. [mm]			
	DUAL LIQ.	DUAL SUC.	SINGLE LIQ.	SINGLE SUC.
180	1/2, 1/2 [13, 13]	1 1/8, 1 1/8 [29, 29]	5/8 [16]	1 5/8 [41]
240	5/8, 5/8 [16, 16]	1 3/8, 1 3/8 [35, 35]	7/8 [22]	1 5/8 [41]

MODEL	CORNER WEIGHTS, LBS. [kg]				TOTAL WEIGHT
	A	B	C	D	
180	144 [65]	127 [58]	117 [53]	105 [48]	495 [225]
240	159 [72]	142 [64]	129 [59]	115 [52]	545 [247]



[ ] Designates Metric Conversions

*Drain connections are provided on both sides of the drain pan. The drain can be connected to either side of the drain pan, but not both. The drain must be trapped.

PHYSICAL DATA TABLE

ITEM		MODEL NO. SHGL-		MODEL NO. SHGL-	
		090	120	180	240
Nominal Size tons [kW]		7.5 [26]	10 [35]	15 [53]	20 [70]
Nominal CFM [L/s] @ Rated E.S.P., in. [kPa] of water		2500 @ .25 [1180 @ .062]	3167 @ .30 [1495 @ .075]	5000 @ .35 [2360 @ .087]	6667 @ .40 [3146 @ .099]
MOTOR	Standard—1500 RPM [W] 3 Ø	1 HP [766] 1 HP [766]	2 HP [1491] 1 1/2 HP [1119]	— 2 HP [1491]	— 5 HP [3729]
	Optional— 1500 RPM [W] 3 Ø	1/2 HP, 2 HP [1119, 1491]	2 HP, 3 HP [1491, 2237]	3 HP, 5 HP [2237, 3729]	7 1/2 HP [5593]
Blower Size—diameter & width, in. [mm]		12 x 12 [305 x 305]	12 x 12 [305 x 305]	18 x 15 [457 x 381]	18 x 18 [457 x 457]
Blower Shaft Size (diameter) in. [mm]		3/4 [19]	3/4 [19]	1 [25]	1 [25]
Motor Sheave Size Adjustment (std.) in. [mm] 1725 RPM 3		3.4-4.4 [86-112]	4.0-5.0 [102-127]	— 3.1-4.1 [79-104]	— 4.3-5.5 [109-140]
Coil Face Area, sq. feet [m^2]		10.2 [.95]	10.2 [.95]	16.5 [1.53]	16.5 [1.53]
Coil Tube Diameter in. [mm]		3/8 [10]	3/8 [10]	3/8 [10]	3/8 [10]
Coil, Rows Deep—Fins Per Inch [mm]		3/15 [.59]	4/15 [.59]	3/13 [.51]	4/15 [.59]
Refrigerant Control—Thermal Expansion Valves (Quantity)		(2)	(2)	(2)	(2)
Filter Size, in. [mm] (Number Required) Disposable*		16 x 25 x 1 (4) [406 x 635 x 25]	16 x 25 x 1 (4) [406 x 635 x 25]	20 x 25 x 1 (6) [508 x 635 x 25]	20 x 25 x 1 (6) [508 x 635 x 25]
CABINET: Finish		Powder Paint	Powder Paint	Powder Paint	Powder Paint
Sheet Metal		Galvanized	Galvanized	Galvanized	Galvanized
Gauge (nominal) Top		18	18	18	18
Sides		16	16	16	16
Bottom		18	18	16	16
Doors and Covers		20 min.	20 min.	20 min.	20 min.
UNIT WEIGHTS: Operating (lbs.) [kg]		330 [150]	347 [157]	495 [225]	545 [247]
Shipping (lbs.) [kg]		350 [159]	367 [166]	530 [240]	580 [263]
PACKAGED DIMENSIONS: (H x W x L) [mm]		31 1/2" x 56" x 57 1/4" [800 x 1422 x 1454]	31 1/2" x 56" x 57 1/4" [800 x 1422 x 1454]	39" x 63" x 76 1/2" [991 x 1600 x 1943]	39" x 63" x 76 1/2" [991 x 1600 x 1943]

*Unit will accept 2" [51 mm] filters.

NOTE: If a factory accessory heater kit is not used, a field supplied fan contactor is required and should have a 24 volt coil with contacts rated to handle the evaporator motor FLA at desired voltage. A factory supplied 30 Amp 3 Pole (Part #42-17810-83) contactor may be purchased from the Parts Department.

[ ] Designates Metric Conversions

DRIVE PACKAGE DATA

NOMINAL TONS [kW]	DRIVE PACKAGE	— BELT	SHEAVE SELECTIONS*, IN. [mm] MOTOR/BORE		BLOWER	MOTOR HP [W]/PHASE	APPROX. BLOWER RPM @ MOTOR SHEAVE TURNS OPEN 0	1	2	3	4	5	6
7.5 [26] ①	① K	4L530	3.4-4.4-5/8	[86-112-16]	9.75 [248]	1 [746]/3Ø	658	633	608	583	554	525	—
	L	4L530	4.2-5.2-5/8	[107-132-16]	9.75 [248]	1.5 [1119]/3Ø	771	746	717	688	658	625	—
	① M	4L550	5.2-6.2-5/8	[132-157-16]	9.75 [248]	1.5 [1119]/3Ø	938	908	879	850	821	788	—
	◇N	4L550	5.7-6.7-7/8	[145-170-22]	9.75 [248]	2 [1491]/3Ø	996	971	942	917	888	858	—
10 [35] ①	J+	4L530	3.4-4.4	[86-112]	9.75 [248]	1.5 [1119]/3Ø	658	633	604	575	550	525	—
	K	4L530	4.0-5.0-5/8	[102-127-16]	9.75 [248]	1.5 [1119]/3Ø	738	713	688	663	633	608	—
	L	4L540	4.6-5.6-7/8	[117-142-22]	9.75 [248]	2 [1491]/3Ø	829	800	775	746	717	688	—
	M	4L550	5.2-6.2-7/8	[132-157-22]	9.75 [248]	3 [2237]/3Ø	938	908	879	850	821	788	—
	ΔN	4L530	4.7-5.7-7/8	[119-145-22]	7.75 [197]	3 [2237]/3Ø	1021	992	958	925	892	858	—
	□O	4L540	5.7-6.7-7/8	[145-170-22]	8.75 [222]	3 [2237]/3Ø	1067	1042	1017	988	958	929	—
15 [53] ①	K	BP-52	3.1-4.1-7/8	[79-104-22]	11.4 [290]	2 [1491]/3Ø	538	517	492	471	446	425	400
	L	BP-52	3.7-4.7-7/8	[94-119-22]	11.4 [290]	3 [2237]/3Ø	608	588	567	546	525	500	475
	M	BP-45	3.7-4.7-1 1/8	[94-119-29]	9.4 [239]	5 [3729]/3Ø	725	700	675	650	625	596	567
	#N	BP-50	4.8-6.0-1 1/8	[122-152-29]	10.4 [264]	5 [3729]/3Ø	821	800	779	758	738	717	696
20 [70] ①	K	BP-50	4.3-5.5-1 1/8	[109-140-29]	11.4 [290]	5 [3729]/3Ø	708	688	667	646	621	596	571
	L	BP-48(2)	4.3-5.5-1 3/8	[109-140-35]	10.4 [264]	7.5 [5593]/3Ø	796	771	746	721	696	671	650
	M	BP-47(2)	4.3-5.5-1 3/8	[109-140-35]	9.4 [239]	7.5 [5593]/3Ø	858	829	800	771	742	713	679

*Actual pitch diameter in inches. Minimum and maximum pitch diameter shown for adjustable motor sheave. ◇ Field Supplied (Motor Sheave: Browning IVP75, Blower Sheave: Browning AZ100, Motor: 2HP [1491 W], 4 Pole, 3Ø). Δ Field Supplied (Motor Sheave: Browning IVP65, Blower Sheave: Browning AZ80). □ Field Supplied (Motor Sheave: Browning IVP75, Blower Sheave: Browning AZ90). # Field Supplied (Motor Sheave: Browning IVP65, Blower Sheave: Browning BK110). + Field Supplied (Motor Sheave: Browning IVP50, Blower Sheave: Browning AZ100).
Shaded Area Represents Factory Sheave Setting.
① All Drives may not be available as factory installed options.

[ ] Designates Metric Conversions

INDOOR BLOWER PERFORMANCE (DRY COIL) SHGL-090 N/P

DRIVE PKG	STD CFM [L/s]	E.S.P.—INCHES OF WATER [kPa]																																					
		.1 [0.02]		.2 [0.05]		.3 [0.07]		.4 [0.10]		.5 [0.12]		.6 [0.15]		.7 [0.17]		.8 [0.20]		.9 [0.22]		1.0 [0.25]		1.1 [0.27]		1.2 [0.30]		1.3 [0.32]		1.4 [0.35]		1.5 [0.37]		1.6 [0.40]		1.7 [0.42]		1.8 [0.45]		1.9 [0.47]		2.0 [0.50]	
		RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W
K L M N	1600 [755]	—	—	—	—	—	—	—	—	—	—	538	350	558	383	575	417	604	467	688	525	717	558	742	583	771	617	804	633	825	671	850	700	875	746	900	771	925	821	929	842
	1667 [787]	—	—	—	—	—	—	—	—	538	338	563	392	575	429	608	463	667	538	696	579	721	608	750	642	775	675	813	700	833	725	858	763	883	817	908	846	938	892	933	900
	1833 [865]	—	—	—	—	—	—	—	—	558	408	567	450	600	483	654	533	675	596	700	638	725	683	758	725	792	733	817	767	842	813	867	854	892	900	921	938	917	950	942	1008
	2000 [944]	—	—	—	—	—	—	542	425	575	475	600	508	642	558	667	629	692	671	717	725	746	771	775	808	808	821	829	858	858	900	879	967	900	1000	933	1058	938	1054	950	1125
	2167 [1023]	—	—	—	—	529	454	563	517	596	554	625	600	650	663	675	721	708	775	738	825	763	871	800	883	821	921	842	963	867	1025	888	1075	925	1121	929	1125	946	1204	967	1258
	2333 [1101]	—	—	525	496	554	554	588	600	617	646	646	708	667	767	692	821	721	883	754	942	813	950	813	992	833	1042	858	1100	883	1167	908	1208	913	1213	933	1275	958	1346	983	1417
	2500 [1180]	525	550	550	608	579	646	608	700	642	767	667	829	692	883	717	954	742	1017	779	1025	804	1071	829	1121	850	1171	875	1254	900	1300	925	1367	929	1375	950	1450	975	1513	996	1571
	2667 [1259]	550	675	579	717	604	767	638	833	663	892	688	950	713	1021	742	1096	767	1142	800	1154	821	1204	846	1275	867	1350	892	1404	904	1413	929	1483	946	1563	—	—	—	—	—	—
	2833 [1337]	575	783	604	833	633	908	658	963	683	1021	708	1104	738	1175	763	1217	792	1238	817	1308	842	1383	858	1400	871	1454	896	1525	—	—	—	—	—	—	—	—	—	—	—	—
	3000 [1416]	600	933	625	988	658	1042	683	1096	708	1192	738	1267	763	1325	788	1338	813	1413	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

K = IVP50, AZ100, 1 HP [766 W] M = IVP68, AZ100, 1½ [1119 W] HP
L = IVP60, AZ100, 1½ HP [1119 W] N = IVP75, AZ100, 2 HP [1491 W] [Field Supplied]

SHGL-120 N/P

DRIVE PKG	STD CFM [L/s]	E.S.P.—INCHES OF WATER [kPa]																																					
		.1 [0.02]		.2 [0.05]		.3 [0.07]		.4 [0.10]		.5 [0.12]		.6 [0.15]		.7 [0.17]		.8 [0.20]		.9 [0.22]		1.0 [0.25]		1.1 [0.27]		1.2 [0.30]		1.3 [0.32]		1.4 [0.35]		1.5 [0.37]		1.6 [0.40]		1.7 [0.42]		1.8 [0.45]		1.9 [0.47]		2.0 [0.50]	
		RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W
K L M N O	2500 [1180]	—	—	—	—	—	—	—	733	629	783	658	838	688	888	713	942	738	992	767	1075	796	1150	817	1188	842	1250	863	1350	888	1408	917	1458	925	1500	950	1567	958	1600	988	1650
	2667 [1259]	—	—	—	—	608	792	625	838	654	900	679	958	708	1021	733	1071	758	1158	792	1225	813	1283	842	1350	858	1450	888	1517	913	1567	921	1575	938	1654	963	1704	979	1742	992	1800
	2833 [1337]	—	—	—	—	621	908	650	967	675	1033	704	1100	729	1158	758	1250	788	1325	808	1375	829	1438	854	1550	879	1617	879	1583	917	1646	925	1746	950	1821	971	1871	983	1892	1000	1929
	3000 [1416]	—	—	621	979	650	1042	675	1117	704	1196	729	1258	754	1350	788	1429	800	1483	825	1546	850	1663	875	1733	900	1800	900	1804	921	1854	946	1938	963	2000	979	2050	996	2092	1017	2146
	3167 [1495]	621	1054	650	1125	675	1213	700	1292	729	1358	754	1450	783	1533	796	1588	825	1708	854	1788	871	1854	896	1929	896	1892	917	1992	942	2079	958	2158	975	2208	992	2258	1017	2308	1054	2413
	3333 [1573]	650	1221	675	1313	708	1408	733	1483	758	1567	783	1675	808	1758	825	1817	850	1917	875	2000	896	2075	896	2038	917	2142	942	2242	954	2321	975	2379	988	2433	1013	2488	1050	2575	1063	2638
	3500 [1652]	688	1458	713	1533	738	1604	767	1717	783	1800	804	1883	829	1971	854	2058	875	2133	900	2233	900	2238	917	2329	942	2408	958	2500	971	2567	992	2621								
	3667 [1731]	704	1604	754	1750	771	1829	792	1933	808	2025	829	2125	858	2208	875	2296	879	2300	904	2379	917	2488	942	2596	—	—	—	—	—	—	—	—								
	3833 [1809]	763	1854	775	1979	796	2079	817	2183	842	2292	858	2367	863	2458	879	2467	900	2558	—	—	—	—	—	—	—	—	—	—	—	—	—	—								
	4000 [1888]	775	2129	800	2233	821	2342	846	2450	871	2533	863	2538	879	2650	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—								
	4167 [1967]	800	2392	825	2508	850	2613	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—								

K = IVP56, AZ100, 1½ HP [1119 W]
L = IVP62, AZ100, 2 HP [1491 W]
M = IVP68, AZ100, 3 HP [2237 W]
N = IVP65, AZ80, 3 HP [2237 W] [Field Supplied]
O = IVP75, AZ90, 3 HP [2237 W] [Field Supplied]

[ ] Designates Metric Conversions

INDOOR BLOWER PERFORMANCE SHGG-15 TON [53 kW] & 20 TON [70 kW] (DRY COIL)

SHGL-180 N/P

DRIVE PKG	STD CFM [L/s]	E.S.P.—INCHES OF WATER [kPa]																																					
		.1 [0.02]		.2 [0.05]		.3 [0.07]		.4 [0.10]		.5 [0.12]		.6 [0.15]		.7 [0.17]		.8 [0.20]		.9 [0.22]		1.0 [0.25]		1.1 [0.27]		1.2 [0.30]		1.3 [0.32]		1.4 [0.35]		1.5 [0.37]		1.6 [0.40]		1.7 [0.42]		1.8 [0.45]		1.9 [0.47]		2.0 [0.50]	
		RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W
K	3333 [1573]	—	—	—	—	—	—	400	792	425	850	450	908	471	996	496	1042	517	1100	538	1167	554	1313	575	1450	592	1550	608	1633	613	1850	638	1796	667	1879	683	1950	696	2029	708	2167
	3667 [1731]	—	—	—	—	—	—	421	908	442	979	467	1042	488	1104	508	1154	529	1238	546	1375	567	1475	583	1621	604	1696	613	1750	629	1854	654	1950	675	2025	688	2104	700	2204	713	2292
	4000 [1888]	—	—	—	—	413	988	433	1063	458	1129	479	1200	496	1267	517	1333	538	1417	554	1567	575	1679	592	1808	608	1908	621	1958	646	2058	663	2146	679	2242	692	2325	704	2413	717	2583
L	4333 [2045]	—	—	408	1083	429	1154	454	1238	471	1292	492	1383	513	1467	529	1542	550	1708	571	1808	588	1933	604	2050	617	2117	642	2213	658	2308	675	2408	688	2500	700	2600	713	2721	725	2804
	4667 [2203]	408	1183	429	1254	450	1350	467	1417	492	1517	508	1588	529	1733	550	1867	567	1971	583	2092	600	2221	617	2283	638	2383	654	2488	671	2588	683	2688	696	2792	708	2908	725	3075	750	3125
	5000 [2360]	425	1367	442	1458	467	1550	492	1625	508	1804	525	1892	550	2042	563	2142	579	2271	600	2421	617	2479	638	2583	650	2683	667	2796	679	2900	696	3017	708	3129	721	3208	746	3238	758	3363
M-N	5333 [2517]	442	1583	463	1650	492	1879	508	1975	525	2058	546	2217	563	2333	579	2471	600	2650	613	2713	633	2800	646	2904	667	3025	683	3125	692	3242	708	3363	721	3442	742	3458	754	3558	767	3700
	5667 [2675]	475	1975	492	2046	508	2146	521	2225	546	2392	563	2525	583	2546	600	2646	617	2792	633	2904	650	3017	667	3125	679	3233	692	3350	704	3467	721	3600	742	3692	754	3829	767	3963	779	4113
	6000 [2832]	492	2238	508	2333	525	2454	542	2583	567	2663	583	2758	600	2875	621	3008	600	3121	650	3258	667	3367	683	3525	692	3621	704	3725	721	3858	742	3992	754	4154	767	4292	—	—	—	—

K = IVP44, BK120, 2 HP [1491 W]
L = IVP50, BK120, 3 HP [2237 W]
M = IVP50, BK100, 5 HP [3729 W]
N = IVP65, BK110, 5 HP [3729 W] [Field Supplied]

SHGL-240 N/P

DRIVE PKG	STD CFM [L/s]	E.S.P.—INCHES OF WATER [kPa]																																					
		.1 [0.02]		.2 [0.05]		.3 [0.07]		.4 [0.10]		.5 [0.12]		.6 [0.15]		.7 [0.17]		.8 [0.20]		.9 [0.22]		1.0 [0.25]		1.1 [0.27]		1.2 [0.30]		1.3 [0.32]		1.4 [0.35]		1.5 [0.37]		1.6 [0.40]		1.7 [0.42]		1.8 [0.45]		1.9 [0.47]		2.0 [0.50]	
		RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W
K	5000 [2360]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	579	1913	596	2104	617	2229	629	2350	650	2479	667	2458	683	2583	700	2650	721	2817	729	2896	742	2992	758	3075
	5417 [2557]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	579	2133	592	2288	608	2375	629	2500	646	2638	671	2725	688	2804	704	2913	721	3083	733	3167	746	3275	758	3358	775	3438
	5833 [2753]	—	—	—	—	—	—	—	—	—	—	—	—	579	2404	592	2492	608	2608	629	2738	646	2875	658	2942	688	3092	704	3221	721	3350	729	4096	746	3558	758	3633	775	3775	792	3854
	6250 [2950]	—	—	—	—	—	—	—	—	—	—	579	2658	600	2792	613	2908	633	3063	650	3167	671	3333	692	3400	708	3538	721	3642	733	3767	746	3850	758	3988	775	4100	792	4242	804	4450
	6667 [3146]	—	—	—	—	—	—	571	2858	583	2967	604	3100	617	3229	633	3383	654	3533	679	3629	696	3788	708	3863	725	3979	733	4096	750	4213	763	4333	779	4467	796	4625	804	4842	817	4988
L-M	7083 [3343]	—	—	—	—	575	3171	596	3333	608	3463	625	3604	642	3750	658	3917	683	3996	700	4104	708	4221	725	4346	742	4471	754	4579	767	4704	779	4813	792	5100	808	5258	817	5400	833	5538
	7500 [3540]	571	3392	583	3533	600	3700	613	3846	633	3992	650	4163	679	4304	692	4417	708	4529	721	4642	733	4767	746	4883	758	5050	771	5142	683	5308	796	5550	813	5717	825	5867	842	6033	854	6250
	7917 [3736]	583	3942	600	4117	654	4438	667	4583	683	4725	696	4825	708	4933	721	5050	733	5175	746	5308	754	5442	771	5583	783	5708	792	5950	804	6113	821	6267	—	—	—	—	—	—	—	—
	8333 [3933]	671	5067	679	5121	692	5392	700	5513	717	5600	725	5742	738	5867	750	6017	763	6192	771	6333	825	6333	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

K = IVP60, BK120, 5 HP [3729 W]
L = 2VP60, 2BK110, 7½ HP [5593 W]
M = 2VP60, 2BK100, 7½ HP [5593 W]

NOTES: 1. Standard air @ .075 lbs/ft³ [m³]
2. Operation below heavy lines require optional drives.
3. Motor efficiency = .85
4. BHP = $\frac{\text{WATTS x MOTOR EFFICIENCY}}{746}$
5. BHP = Brake Horsepower
RPM = Blower Speed

[ ] Designates Metric Conversions

COMPONENT AIR RESISTANCE

SHGL 7.5 TON [26 kW] & 10 TON [35 kW]

CFM [L/s]	1500 [708]	1833 [865]	2167 [1023]	2500 [1180]	2833 [1337]	3167 [1495]	3500 [1652]	3833 [1809]	4167 [1967]
Electric Heater 20 kW, 30 kW	0.020	0.047	0.081	0.120	0.165	0.215	0.270	0.332	0.399
Electric Heater 40 kW	0.003	0.046	0.096	0.155	0.223	0.299	0.383	0.476	0.578
Mixing Box (R/A Damper Open)	0.001	0.002	0.008	0.015	0.023	0.031	0.041	0.052	0.063
Discharge Grille (Set Max. Open)	0.004	0.007	0.010	0.013	0.017	0.022	0.026	0.032	0.038
Inlet Grille	0.004	0.007	0.010	0.014	0.018	0.022	0.028	0.033	0.039
Discharge Plenum	0.014	0.022	0.032	0.042	0.055	0.069	0.085	0.102	0.120

SHGL 15 TON [53 kW]

CFM [L/s]	3333 [1573]	3667 [1731]	4000 [1888]	4333 [2045]	4667 [2203]	5000 [2360]	5333 [2517]	5667 [2675]	6000 [2832]
Electric Heater 30 kW	0.144	0.155	0.166	0.179	0.193	0.208	0.224	0.242	0.260
Electric Heater 40 kW, 60 kW	0.245	0.265	0.287	0.311	0.336	0.364	0.393	0.425	0.458
Mixing Box (R/A Damper Open)	0.016	0.022	0.028	0.034	0.041	0.049	0.057	0.066	0.075
Discharge Grille (Set Max. Open)	5E-04	0.002	0.006	0.010	0.014	0.018	0.023	0.029	0.034
Inlet Grille	5E-04	0.003	0.007	0.013	0.018	0.024	0.031	0.038	0.045
Discharge Plenum	5E-04	0.009	0.020	0.032	0.044	0.058	0.073	0.089	0.105

SHGL 20 TON [70 kW]

CFM [L/s]	5333 [2517]	5667 [2675]	6000 [2832]	6333 [2989]	6667 [3146]	7000 [3304]	7333 [3461]	7667 [3618]	8000 [3776]
Electric Heater 30 kW	0.176	0.187	0.199	0.211	0.224	0.237	0.251	0.266	0.281
Electric Heater 40 kW, 60 kW	0.287	0.308	0.330	0.354	0.378	0.405	0.432	0.461	0.491
Mixing Box (R/A Damper Open)	0.088	0.091	0.094	0.098	0.102	0.105	0.110	0.114	0.118
Discharge Grille (Set Max. Open)	0.010	0.018	0.026	0.035	0.044	0.054	0.065	0.076	0.087
Inlet Grille	0.004	0.009	0.022	0.036	0.051	0.066	0.083	0.100	0.117
Discharge Plenum	0.023	0.048	0.074	0.101	0.130	0.161	0.192	0.226	0.261

NOTE: Add component resistance to duct resistance to determine total E.S.P.

[ ] Designates Metric Conversions

EVAPORATOR PERFORMANCE DATA (GROSS CAPACITY)

EVAPORATOR/AIR HANDLER SHGL-090 @ 2500 CFM [1180 L/s] 105°F (40.8°C) LIQUID TEMPERATURE AT TXV

AIRFLOW	EVAP. TEMP	75/63°F				80/67°F				55/71°F			
		TC	SC	LDB °F	LWB °F	TC	SC	LDB °F	LWB °F	TC	SC	LDB °F	LWB °F
2500	40	86,354	62,623	52.9	51.0	108,254	71,966	53.8	51.9	130,893	80,631	54.9	53.1
	45	68,790	53,535	57.3	54.8	88,055	62,194	58.5	56.3	111,346	71,391	59.4	57.3
	50	50,176	44,587	61.6	58.7	68,847	53,040	63.0	60.2	89,523	61,691	64.1	61.6

EVAPORATOR/AIR HANDLER SHGL-120 @ 3167 CFM [1495 L/s] 105°F (40.6°C) LIQUID TEMPERATURE AT TXV

AIRFLOW	EVAP. TEMP	75/63°F				80/67°F				85/71°F			
		TC	SC	LDB °F	LWB °F	TC	SC	LDB °F	LWB °F	TC	SC	LDB °F	LWB °F
3167	40	130,960	92,157	49.6	48.2	161,702	104,801	50.5	49.1	135,974	90,782	60.4	58.6
	45	103,483	78,526	54.1	52.3	133,628	91,511	55.0	53.4	166,819	104,100	55.9	54.3
	50	76,202	65,542	58.5	56.3	104,357	78,122	59.5	57.5	135,974	90,782	60.4	58.6

EVAPORATOR/AIR HANDLER SHGL-180 @ 5000 CFM [2360 L/s] 105°F (40.6°C) LIQUID TEMPERATURE AT TXV

AIRFLOW	EVAP. TEMP	75/63°F				80/67°F				85/71°F			
		TC	SC	LDB °F	LWB °F	TC	SC	LDB °F	LWB °F	TC	SC	LDB °F	LWB °F
5000	40	160,748	120,887	53.1	51.7	200,306	138,346	54.9	53.7	243,367	155,223	56.8	55.6
	45	126,896	103,094	56.3	54.3	163,287	119,936	58.2	56.4	204,745	136,930	60.1	58.4
	50	93,022	86,975	59.2	56.7	126,843	102,340	61.4	59.0	165,375	118,890	63.4	61.0

EVAPORATOR/AIR HANDLER SHGL-240 @ 6667 CFM [3147 L/s] 105°F (40.6°C) LIQUID TEMPERATURE AT TXV

AIRFLOW	EVAP. TEMP	75/63°F				80/67°F				85/71°F			
		TC	SC	LDB °F	LWB °F	TC	SC	LDB °F	LWB °F	TC	SC	LDB °F	LWB °F
6667	40	216,179	161,424	53.0	51.6	268,475	159,627	58.3	53.6	321,606	204,380	57.2	55.7
	45	170,734	137,812	56.2	54.2	218,206	183,853	55.0	56.4	276,205	182,580	60.1	58.2
	50	126,381	116,269	59.2	56.6	171,784	137,922	61.2	58.9	221,237	158,341	63.4	61.0

NOTES: 1. Total and sensible capacity is gross with no deduction for indoor blower motor heat. 2. Interpolation is permissible. Do not extrapolate.
3. Capacities are based on 105°F (40.6°C) liquid temperature at the TXV or about 95°F (35°C) dry bulb outdoor ambient.
TC = Total Capacity, BTUH LDB = Leaving Air Dry Bulb
SC = Sensible Capacity, BTUH LWB = Leaving Air Wet Bulb

AIRFLOW CORRECTION FACTORS

SHGL-090 @ 2500 CFM [1180 L/s]								SHGL-120 @ 3167 CFM [1495 L/s]									
ACTUAL—CFM [L/s]	2000 [944]	2167 [1023]	2333 [1101]	2500 [1180]	2667 [1259]	2833 [1337]	3000 [1416]	2500 [1180]	2667 [1259]	2833 [1337]	3000 [1416]	3167 [1495]	3333 [1573]	3500 [1652]	3667 [1731]	3833 [1809]	4000 [1888]
TOTAL MBH	.85	.90	.95	1.00	1.04	1.09	1.13	.86	.89	.93	.97	1.00	1.03	1.06	1.10	1.12	1.15
SENSIBLE MBH	.83	.88	.94	1.00	1.06	1.11	1.16	.82	.87	.91	.96	1.00	1.04	1.08	1.13	1.17	1.21

SHGL-180 @ 5000 CFM [2360 L/s]										SHGL-240 @ 6667 CFM [3146 L/s]								
ACTUAL—CFM [L/s]	3667 [1730]	4000 [1888]	4333 [2045]	4667 [2202]	5000 [2359]	5333 [2359]	5583 [2635]	6000 [2831]	6333 [2989]	5333 [2517]	5667 [2674]	6000 [2831]	6333 [2989]	6667 [3146]	7000 [3303]	7333 [3460]	7667 [3618]	8000 [3775]
TOTAL MBH	0.83	0.88	0.92	0.96	1.00	1.04	1.07	1.10	1.13	0.88	0.91	0.94	0.97	1.00	1.03	1.05	1.07	1.09
SENSIBLE MBH	0.78	0.84	0.89	0.95	1.00	1.05	1.10	1.15	1.20	0.84	0.88	0.92	0.96	1.00	1.04	1.08	1.11	1.15

NOTES: 1. Multiply correction factor times gross performance data.
2. Resulting sensible capacity cannot exceed total capacity.

[ ] Designates Metric Conversions

ELECTRICAL HEATER KIT CHARACTERISTICS

AIR HANDLER NOM. TONNAGE [kW]/HEATER NOM. 240V K.W. 1ST STAGE/TOTAL	AMPS HEATER ONLY	HEATER KIT CAPACITY KW INPUT	HEATING CAPACITY— MBH [kW]	MINIMUM CIRCUIT AMPACITY	MAXIMUM FUSE OR HACR BREAKER SIZE
200/220 VOLT MODELS					
7.5 [26], 10/20	42/48	15/20	51,200/68,300 [15/20]	66/72	70/80
7.5 [26], 15/30	60/70	21.6/28.8	73,700/98,300 [22/29]	88/100	90/100
7.5 [26], 20/40	83/96	30/40	102,400/136,500 [30/40]	117/132	125/150
15 [53], 10/20	42/48	15/20	51,200/68,300 [15/20]	83/88	90/90
15 [53], 15/30	60/70	21.6/28.8	73,700/98,300 [22/29]	105/115	110/125
15 [53], 20/40	83/96	30/40	102,400/136,500 [30/40]	134/148	150/150
15 [53], 30/60	120/139	43.2/57.6	147,500/196,600 [43/58]	180/201	200/225
380/415 VOLT MODELS					
7.5 [26], 10/20	19/21	12.5/15	42,800/51,000 [13/15]	30/32	30/35
7.5 [26], 10/30	28/30	18.1/21.5	61,600/73,500 [18/22]	41/44	45/45
7.5 [26], 10/40	38/42	25.1/29.9	85,600/102,000 [25/30]	54/58	60/60
15 [53], 20/20	19/21	12.5/15	42,800/51,000 [13/15]	38/40	40/40
15 [53], 20/30	28/30	18.1/21.5	61,600/73,500 [18/22]	49/52	50/60
15 [53], 20/40	38/42	25.1/29.9	85,600/102,000 [25/30]	62/66	70/70
15 [53], 20/60	55/60	36.1/43.1	123,200/147,000 [36/43]	83/89	90/90

NOTE: All kits have two stages of capacity, first stage heating is 50% of total capacity.

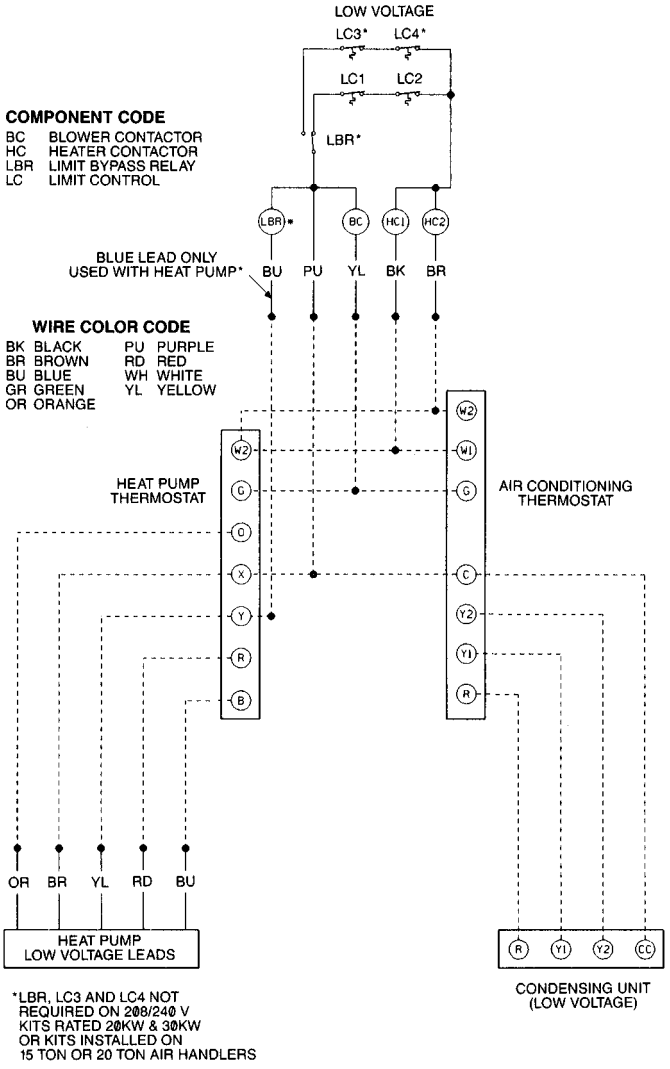
ELECTRICAL DATA TABLE

AIR HANDLER MOTOR			RATING PLATE AMPS	MOTOR LRA	MINIMUM CIRCUIT AMPACITY	RECOMMENDED MINIMUM Cu WIRE SIZE (3% VOLTAGE 75°C DROP) MAX. RUN IN FEET	MAX. FUSES BREAKERS
HP [W]	VOLTS	PHASE					
1 [746] 1 [746]	200/220 380/415	3Ø 3Ø	4.0/3.6 1.8	23.9/21.6 10.8	15 15	#14/240 #14/400	15 15
1½ [1119] 1½ [1119]	200/220 380/415	3Ø 3Ø	5.7/5.2 2.6	34.5/31.2 15.6	15 15	#14/230 #14/300	15 15
2 [1491] 2 [1491]	200/220 380/415	3Ø 3Ø	7.5/6.8 3.4	45.1/40.8 20.4	15 15	#14/165 #14/275	15 15
3 [2237] 3 [2237]	200/220 380/415	3Ø 3Ø	10.6/9.6 4.8	64.1/58 26.8	15 15	#14/135 #14/230	15 15
5 [3729] 5 [3729]	200/220 380/415	3Ø 3Ø	16.7/15.2 7.6	100.6/91 45.6	21/19 15	#10/240 #12/150 #14/185	25/20 15
7½ [5593] 7½ [5593]	200/220 380/415	3Ø 3Ø	24.2/22.0 11.0	146/132 66	30/28 15	#10/150 #14/135	30/30 15

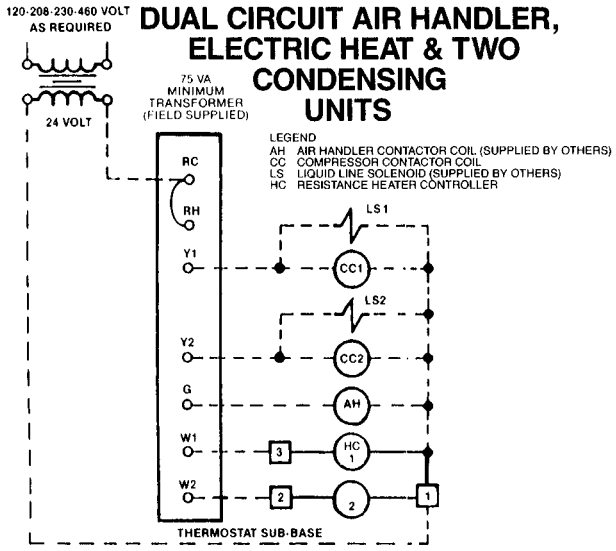
NOTE: N.E.C., C.E.C. and local codes take precedence over suggested wire and fuse sizes.

[ ] Designates Metric Conversions

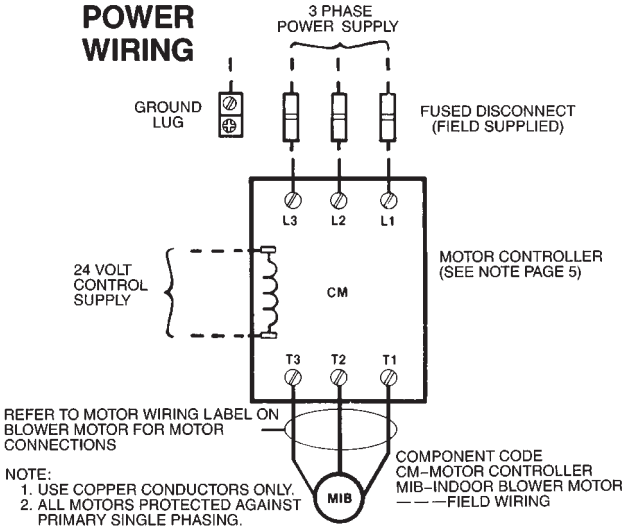
OPTIONAL HEATER KIT



TYPICAL WIRING CONNECTIONS WITH DUAL CIRCUIT AIR HANDLER, ELECTRIC HEAT & TWO CONDENSING UNITS



POWER WIRING



AIR HANDLER ACCESSORIES

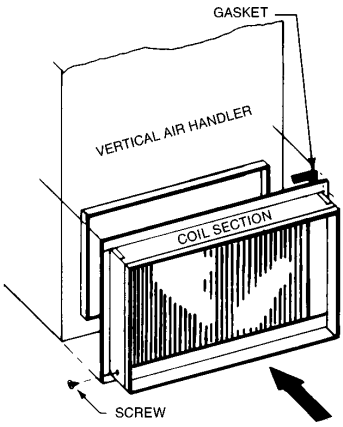
ACCESSORY DESCRIPTION	MODEL NUMBER	SIZES USED ON	NET WEIGHT (LBS) [kg]
Hot Water Coil	RXHC-C74W	090, 120	200 [91]
	RXHC-C76W	180, 240	200 [91]
Steam Coil	RXHC-C74S	090, 120	200 [91]
	RXHC-C76S	180, 240	200 [91]
Filter Frame Kit	RXHF-B74A	090, 120	90 [41]
	RXHF-B76A	180, 240	117 [53]
Inlet Grille Kit	RXHG-C74A	090, 120	9 [4]
	RXHG-C76A	180, 240	12 [5]
Discharge Grille Kit	RXHG-C74B	090, 120	15 [7]
	RXHG-C76B	180, 240	23 [10]
Discharge Plenum Kit	RXHL-C74B	090, 120	38 [17]
	RXHL-C76B	180, 240	62 [28]
Mixing Box	RXHM-BC74H	090, 120	120 [54]
	RXHM-BC76H	180, 240	195 [88]
Auxiliary Heater Kit	RXHE-DE020*A	090, 120	75 [34]
	RXHE-DE030*A	090, 120	75 [34]
	RXHE-CE030*C	180, 240	90 [41]
	RXHE-CE040*C	180, 240	98 [44]

NOTE: *Designates “C”, “D” or “Y” Voltage

RXHM MIXING BOX

RXHE ELECTRIC HEATER KIT

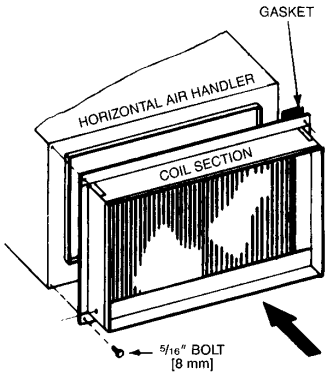
HOT WATER OR STEAM COILS



(090, 120) **RXHC-C74W RXHC-C74S**

or

(180, 240) **RXHC-C76W RXHC-C76S**



(090, 120) **RXHC-C74W RXHC-C74S**

or

(180, 240) **RXHC-C76W RXHC-C76S**

[ ] Designates Metric Conversions

AIR HANDLER ACCESSORIES (con't)

PHYSICAL SPECIFICATIONS

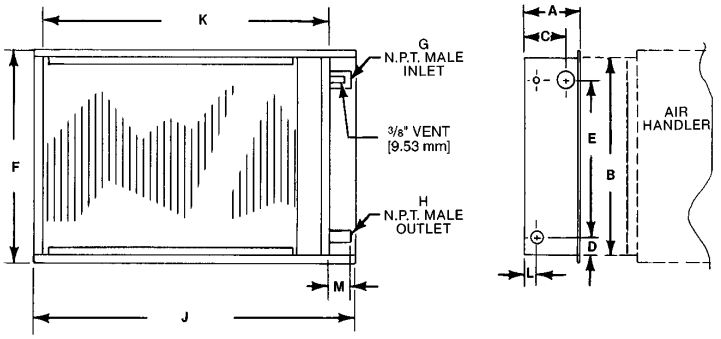
NOMINAL TONS [kW]	FINNED HEIGHT– IN. [mm]	FINNED LENGTH– IN. [mm]	FACE AREA FT² [m²]	CIRCUITS & TUBES HIGH
7 1/2 [26.38]-10 [35.17]	18 [457]	40 [1016]	5.0 [.46]	12
15 [52.75]-20 [70.34]	27 [686]	48 [1219]	9.0 [.84]	18

GROSS COIL PERFORMANCE

NOMINAL TONS [kW]	NOMINAL BTUH		NOMINAL CFM [L/s]	VELOCITY FPM
	STEAM	WATER		
7 1/2 [26.38]	242,500	185,000	3,000 [1416]	600
10 [35.17]	285,000	240,000	4,000 [1888]	800
15 [52.75]	465,000	375,000	6,000 [2832]	667
20 [70.34]	540,000	464,000	8,000 [3776]	888

1. Entering air temperature @ 60°F
2. Entering steam @ 5 PSIG
3. Entering water @ 200°F
4. Face velocity = $\frac{\text{CFM}}{\text{Face Area}}$

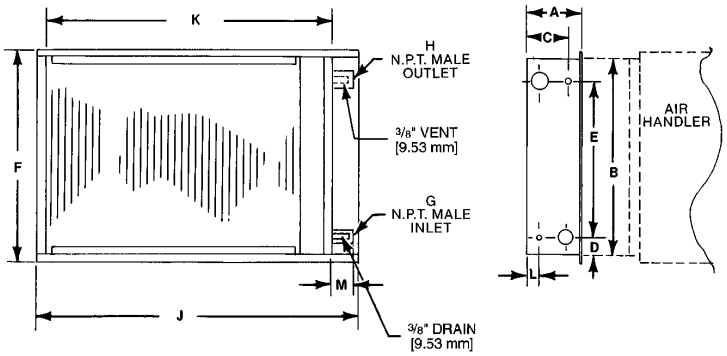
STEAM COIL



STEAM COIL COIL DIMENSIONS—INCHES [mm]

MODEL	NOMINAL TONS [kW]	A	B	C	D	E	F	G	H	J	K	L	M
RXHC-C74	7 1/2 [26.38]- 10 [35.17]	9 1/16 [230]	21 3/8 [543]	5 3/8 [137]	3 3/16 [81]	15 [381]	24 [610]	1 1/2 [38]	1 1/4 [32]	51 1/2 [1308]	47 5/8 [1210]	2 13/16 [71]	3 1/4 [83]
RXHC-C76S	15 [52.75]- 20 [70.34]	9 1/16 [230]	30 7/8 [784]	5 3/8 [137]	3 3/16 [81]	24 [610]	35 [889]	2 [51]	1 1/2 [38]	59 1/2 [1511]	55 5/8 [1413]	2 13/16 [71]	3 1/2 [89]

HOT WATER COIL



HOT WATER COIL DIMENSIONS—INCHES [mm]

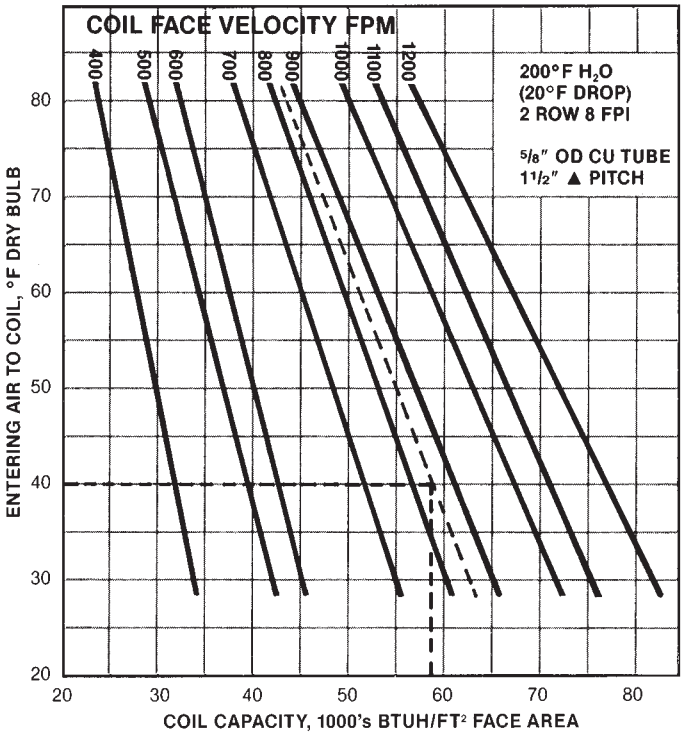
MODEL	NOMINAL TONS [kW]	A	B	C	D	E	F	G	H	J	K	L	M
RXHC-C74W	7 1/2 [26.38]- 10 [35.17]	9 1/16 [230]	21 3/8 [543]	5 3/8 [137]	3 3/16 [81]	15 [381]	24 [610]	1 1/4 [32]	1 1/4 [32]	51 1/2 [1308]	47 5/8 [1210]	2 13/16 [71]	3 [76]
RXHC-C76W	15 [52.75]- 20 [70.34]	9 1/16 [230]	30 7/8 [784]	5 3/8 [137]	3 3/16 [81]	24 [610]	35 [889]	1 1/2 [38]	1 1/2 [38]	59 1/2 [1511]	55 5/8 [1413]	2 13/16 [71]	3 1/4 [83]

[ ] Designates Metric Conversions

AIR HANDLER ACCESSORIES (con't)

HOT WATER COILS

CURVE 2
HOT WATER COIL



CURVE 3
HOT WATER COIL WATER PRESSURE DROP

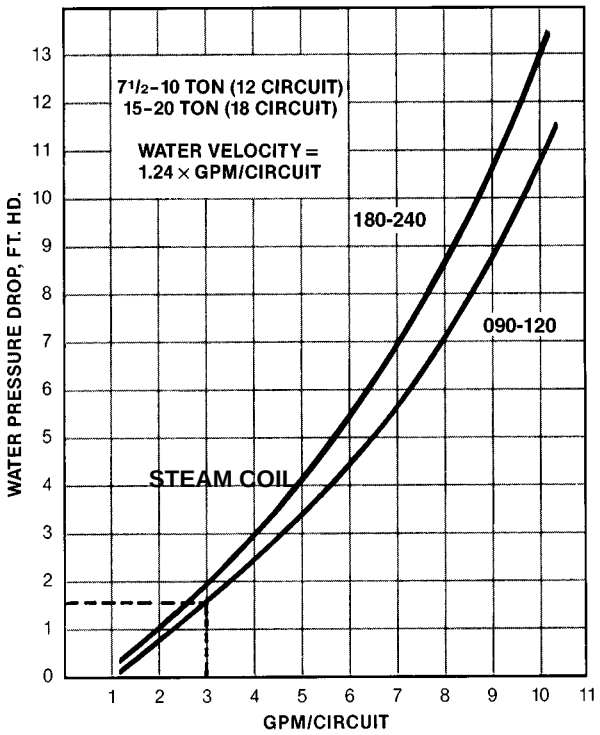


TABLE IV

Curve 2 ratings are based on 200°F entering water and 20°F temperature drop. For other conditions use the following correction factors:

ENTERING WATER °F	FACTOR	WATER TEMPERATURE DROP °F	FACTOR
220	1.14	10	1.030
210	1.07	15	1.015
200	1.00	20	1.000
190	.98	25	.985
180	.93	30	.970

BASIC FORMULA:

$$\text{Air Temperature Rise, °F} = \frac{\text{BTUH}}{1.08 \times \text{CFM}}$$

$$\text{Water Temperature Drop, °F} = \frac{\text{BTUH}}{500 \times \text{GPM}}$$

HOT WATER COIL SELECTION:

Specified:
Entering Air Temp. @ 40°F
5000 CFM @ 6000 Ft. Elevation
220°F Entering Water Temp. @ 36 GPM

Select 10 Ton Nominal Coil:
Face Area = 5 Ft^2
Circuits = 12

Determine Coil Performance:
From Table I, Altitude and Temperature Correction Factor = 1.19 Std. CFM = 5000/1.19 = 4202
Face Velocity = 4202/5 = 840 FPM
From Curve 2, BTUH/Ft^2 = 57,500
Coil Capacity = 5 x 58,000 = 287,500 BTUH
Water Temp. Drop = 290,000/(500 x 36) = 16.1°F
From Table IV, Water Temp. Factor = 1.14
From Table IV, Water Temp. Drop Factor = 1.012
Total Capacity = 287,500 x 1.14 x 1.015 = 334,570 BTUH
From Curve 3, Water Pressure Drop 36 GPM/12 Circuits = 3 GPM/Circuit = 1.6 FT. HD.
From Table II, Air Side Pressure Drop = .38" H_2O

AIR HANDLER ACCESSORIES (con't)

STEAM COILS AIRFLOW

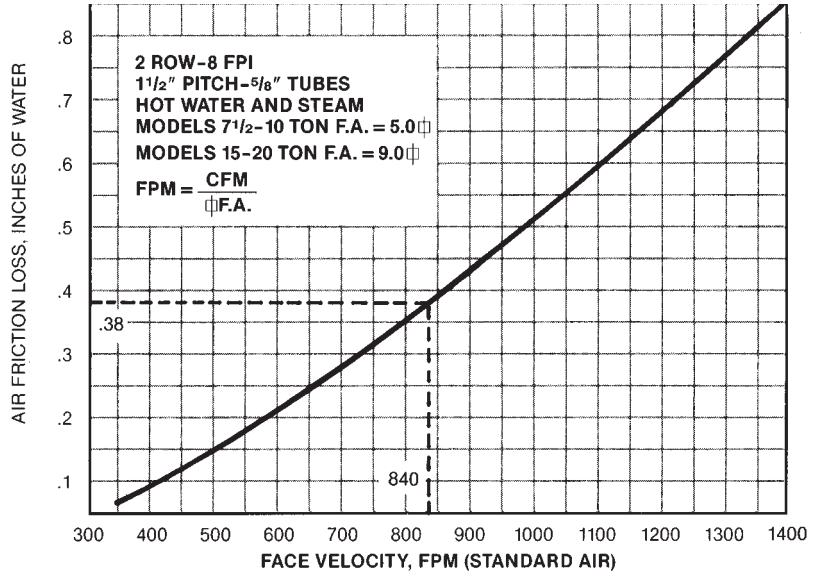
TABLE I
ALTITUDE AND TEMPERATURE CORRECTION FACTOR TABLE

AIR TEMP. (F)	ALTITUDE IN FEET ABOVE SEA LEVEL															
	0	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	6000	7000	8000	9000	10,000
0	.87	.89	.91	.92	.94	.96	.98	.99	1.01	1.03	1.05	1.09	1.13	1.17	1.22	1.26
40	.94	.96	.98	1.00	1.02	1.04	1.06	1.08	1.10	1.12	1.14	1.19	1.23	1.28	1.32	1.36
70	1.00	1.02	1.04	1.06	1.08	1.10	1.12	1.14	1.19	1.18	1.20	1.25	1.30	1.35	1.40	1.45
100	1.06	1.08	1.10	1.12	1.14	1.16	1.19	1.21	1.23	1.25	1.28	1.33	1.38	1.43	1.48	1.54
120	1.09	1.12	1.14	1.16	1.18	1.20	1.23	1.25	1.28	1.30	1.32	1.38	1.43	1.48	1.53	1.58

EXAMPLE: Determine Equivalent "Standard Air" for use in System Performance Calculations:

$$\text{Standard Air} = \frac{\text{Specified CFM}}{\text{Correction Factor}}$$

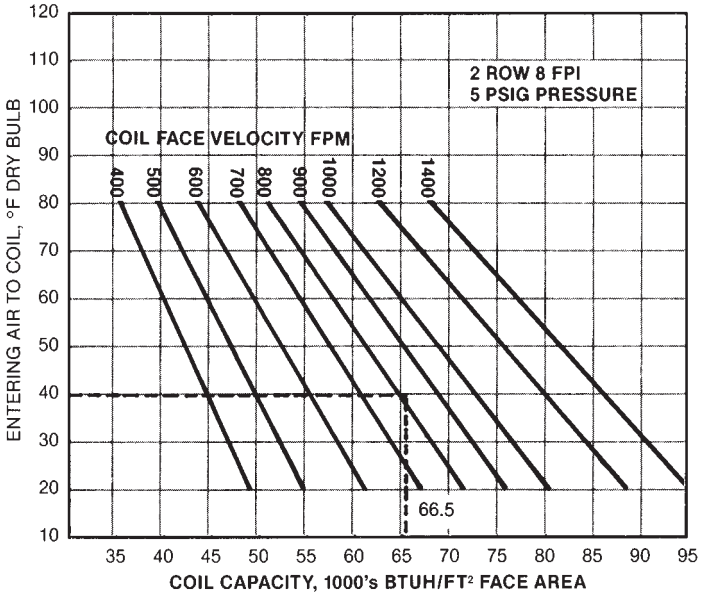
TABLE II
AIR FRICTION LOSS



AIR HANDLER ACCESSORIES (con't)

STEAM COILS

CURVE 1
STEAM COIL CAPACITY



TEMPERATURE OF STEAM AT VARIOUS PRESSURES

Approximate Gauge Pressure (lbs.)	2	5	10	15	20	30
Temperature °F	218	227	240	250	259	275

TABLE III

Steam Coil Capacity, factors are based on 5 PSIG Steam Pressure. For other conditions use the adjacent correction factors.

STEAM PR., PSIG	FACTOR
2	.96
5	1.00
10	1.06
15	1.11
20	1.16
30	1.24

BASIC FORMULA:

$$\text{Air Temperature Rise, °F} = \frac{\text{BTUH}}{1.08 \times \text{CFM}}$$

STEAM COIL SELECTION:

Specified:
Steam @ 30 PSIG
Entering Air Temp. @ 40°F Dry Bulb
5000 CFM @ 6000 Ft. Elevation

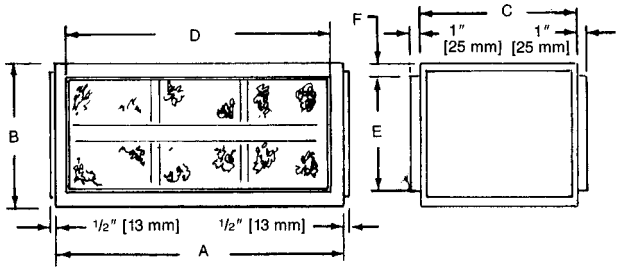
Select 10 Ton Nominal Coil:
Face Area = 5 Ft^2
Circuits = 12

Determine Coil Performance:
From Table I (page 21), Altitude and Temperature Correction Factor = 1.19
Std. CFM = 5000/1.19 = 4202
Face Velocity = 4202/5 = 840 FPM
From Curve 1, BTUH/Ft = 66,500
Coil Capacity = 5 x 65,000 = 325,000 BTUH
From Table III, Steam Correction Factor = 1.24
Total Coil Capacity = 1.24 x 332,500 = 412,300 BTUH
Air Temp. Rise = 403,000/(1.08 x 4202) = 90.85°F
From Table II, Air Side Pressure Drop = .38" H_2O

FILTER RACK

The filter rack accessory can be connected directly to the hot water/steam coil accessory. The filter rack accessory is ONLY needed when hot water steam coils are used.

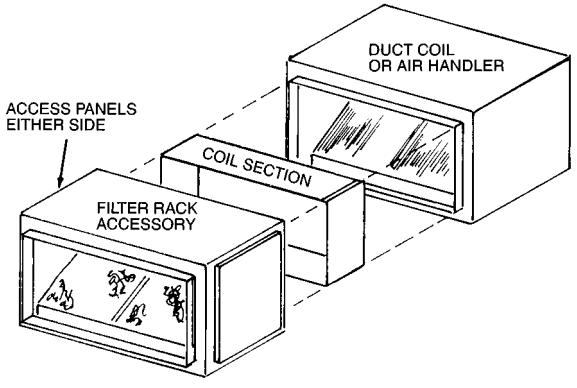
MODEL NO.	AIR HANDLER SIZES USE ON	IN. [mm]					
		A	B	C	D	E	F
RXHF-B74A	090, 120	51 1/2 [1308]	24 [610]	25 1/8 [638]	47 3/8 [1203]	19 7/8 [505]	2 1/16 [52]
RXHF-B76A	180, 240	59 1/2 [1511]	34 1/2 [876]	27 [686]	55 1/2 [1410]	30 1/2 [775]	2 [51]



MODEL NO.	FILTER SIZE (QTY.) TYPE
RXHF-B74A	16x20x1 (4) Disposable 20x20x1 (2) Disposable
RXHF-B76A	20x25x1 (6) Disposable

FILTER PRESSURE DROP:

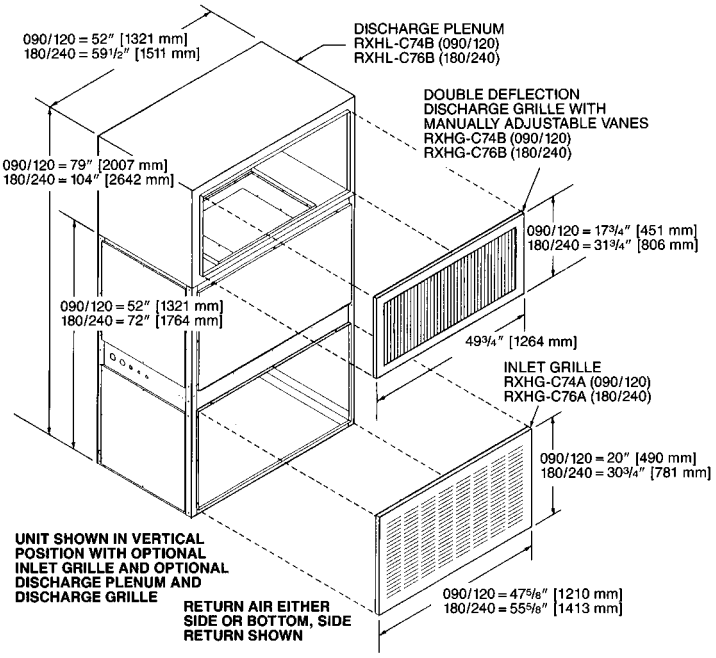
MODEL NO.	CFM [L/s] x 1000 [472]								
	2	3	4	5	6	7	8	9	10
RXHF-B74A	.01 [2]	.02 [4]	.03 [7]	.07 [16]	.10 [22]	.15 [33]	—	—	—
RXHF-B76A	—	—	—	—	.05 [11]	.06 [13]	.10 [22]	.12 [27]	.15 [33]



[ ] Designates Metric Conversions

AIR HANDLER ACCESSORIES (con't)

UNIT WITH ACCESSORIES
7.5 THROUGH 10 NOMINAL TONS [26 THROUGH 35 kW]



DOUBLE DEFLECTION DISCHARGE GRILLE

MODEL NO.	AIR HANDLER SIZES USED ON	NOMINAL CFM [L/s]	FT. [m] OF THROW
RXHG-C74B	090	3000 [1416]	0° DEFLECTION - 43' [13.1] 22° DEFLECTION - 37' [11.3] 45° DEFLECTION - 22' [6.7]
	120	4000 [1888]	0° DEFLECTION - 53' [16.2] 22° DEFLECTION - 46' [14] 45° DEFLECTION - 27' [8.2]
RXHG-C76B	180	6000 [2831]	0° DEFLECTION - 52' [15.8] 22° DEFLECTION - 36' [11] 45° DEFLECTION - 18' [5.5]
	240	8000 [3775]	0° DEFLECTION - 65' [19.8] 22° DEFLECTION - 45' [13.7] 45° DEFLECTION - 22' [6.7]

TYPICAL APPLICATION
7.5, 10, 15 & 20 NOMINAL TONS [26, 35, 53 & 70 kW]

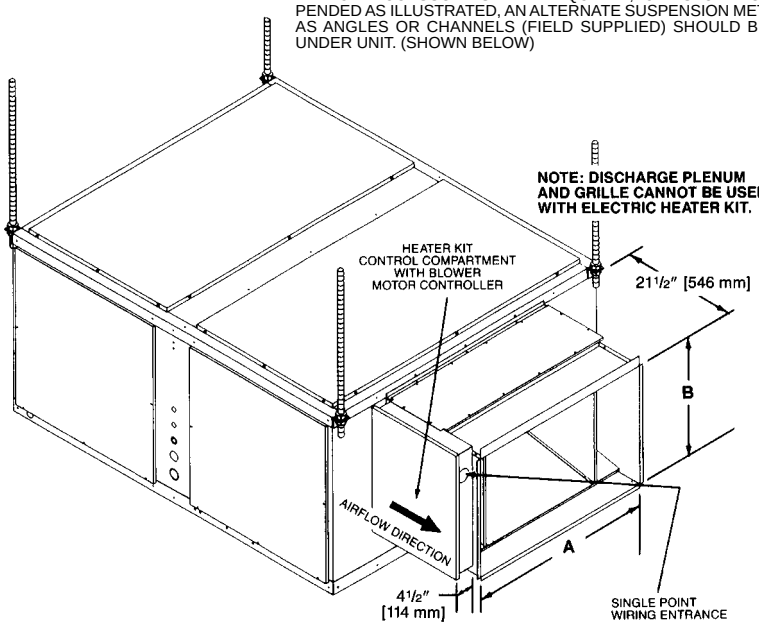
OPTIONAL ELECTRICAL HEATER KIT SHOWN INSTALLED IN HORIZONTAL POSITION AND CONNECTED DIRECTLY TO THE AIR HANDLER. THE HEATER KIT MAY ALSO BE INSTALLED WITH THE AIR HANDLER SET IN THE VERTICAL POSITION. IN EITHER POSITION THE HEATER KIT CONTROL COMPARTMENT MUST BE ON THE LEFT SIDE FACING THE AIR DISCHARGE OPENING.

MODEL NO.	AIR HANDLERS SIZES USED ON	IN. [mm]	
		A	B
RXHE-DE****A	090, 120	20 [508]	20 [508]
RXHE-CE****C	180, 240	36 [914]	24 [610]

THE BOTTOM OF THE AIR HANDLER SHOULD BE SLOPED IN TWO PLANES THAT PITCH THE CONDENSATE TO THE DRAIN CONNECTION. THE DRAIN PAN SHOULD NOT LEAVE PUDDLES LARGER THAN 2 INCHES IN DIAMETER AND 1/8 INCH DEEP FOR MORE THAN 3 MINUTES.

FOUR HEAVY GAUGE ANGLES ARE FURNISHED (SHIPPED LOOSE) FOR SUSPENDING UNITS FROM ALL FOUR CORNERS, MINIMUM OF ½" [13] SUPPORT RODS ARE RECOMMENDED. IF ALL-THREAD IS USED, IT IS ALSO RECOMMENDED THAT TWO NUTS AND TWO LOCKWASHERS BE TIGHTENED SECURELY AGAINST THE SUSPENSION ANGLES.

WHEN HOT WATER OR STEAM COIL, MIXING BOX OR DISCHARGE AIR PLENUM ACCESSORIES ARE REQUIRED, UNITS CANNOT BE SUSPENDED AS ILLUSTRATED, AN ALTERNATE SUSPENSION METHOD SUCH AS ANGLES OR CHANNELS (FIELD SUPPLIED) SHOULD BE LOCATED UNDER UNIT. (SHOWN BELOW)



[ ] Designates Metric Conversions

MIXING BOX ACCESSORY—OPERATING SEQUENCE

COOLING SEASON—Thermostat set at "Cool" and "Fan Auto," outside air damper goes to "minimum fresh air" position when cooking thermostat closes, energizing mechanical cooling. When cooling thermostat is satisfied, mechanical cooling is de-energized, and outside air damper closes.

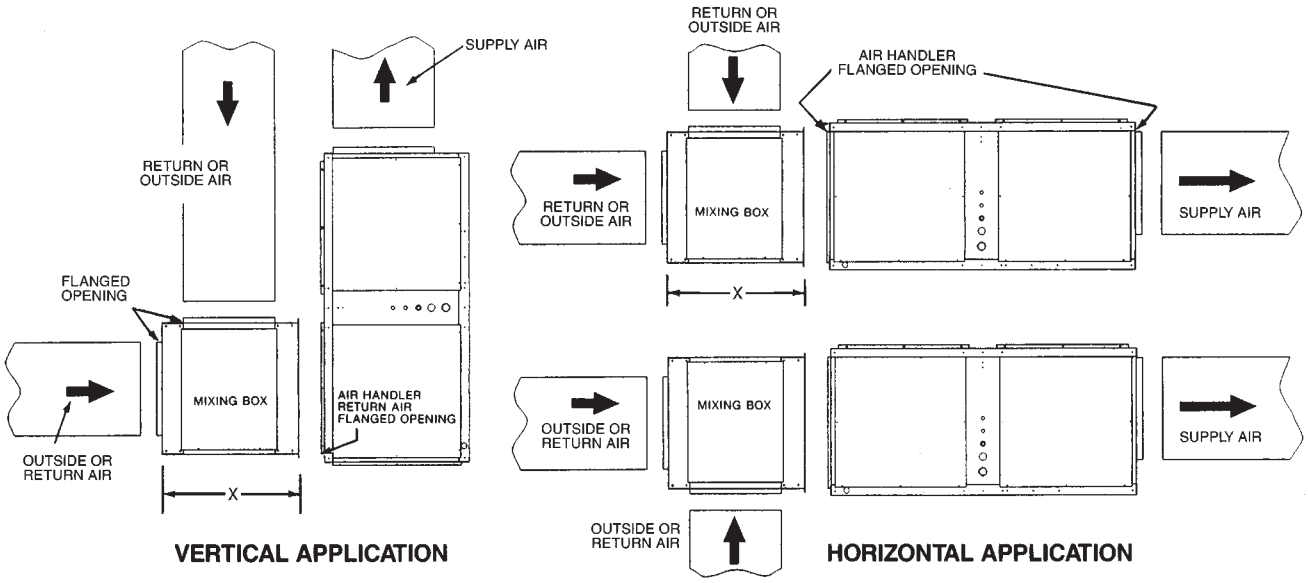
INTERMEDIATE SEASON—Same as for cooling season, except that cooling thermostat closes, starting indoor blower motor, the enthalpy control, mounted on outside air, determines if "free" cooling or mechanical cooling should be utilized. If outside air conditions are suitable for cooling, the mechanical cooling remains off and the mixed air controller modulates the damper motor to assume the proper damper position to maintain mixed air setting. If outside conditions are not suitable for cooling, then the dampers go to "minimum fresh air" position and mechanical cooling is energized.

HEATING SEASON—Damper always stays at "minimum fresh air" position while fan motor is operating. Outside air damper closes when blower motor is off. "Minimum fresh air" position must not allow mixed air temperatures to air handler below 50°F. [10°C] during heating seasons.

CAUTION: IT IS NOT RECOMMENDED THAT HOT WATER OR STEAM COILS BE USED WITH THE MIXING BOX ACCESSORY WITHOUT A SUITABLE FREEZE-STAT TO PREVENT THE POSSIBILITY OF FREEZING THE COIL.

MIXING BOX

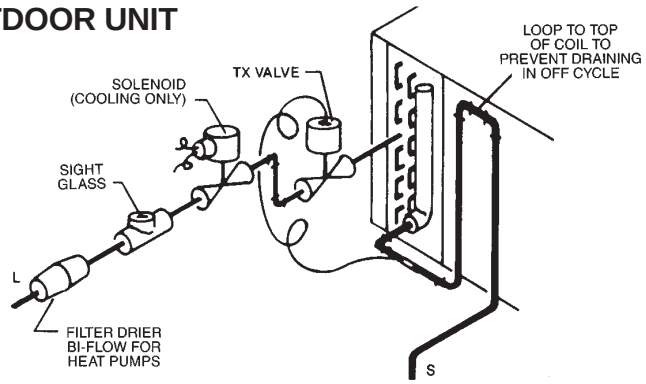
MODEL NO.	AIR HANDLER SIZES USED ON	FLANGED DUCT OPENINGS		IN. [mm]
		LENGTH IN. [mm]	WIDTH IN. [mm]	"X"
RXHM-BC74H	090, 120	42 [1067]	16 7/8 [454]	27 [686]
RXHM-BC76H	180, 240	48 3/8 [1229]	22 [559]	32 [813]



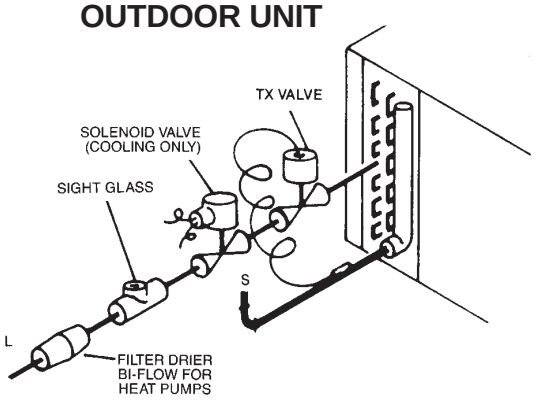
[ ] Designates Metric Conversions

TYPICAL PIPING RECOMMENDATIONS

INDOOR COIL ABOVE OUTDOOR UNIT



INDOOR COIL BELOW OUTDOOR UNIT



NOTE: PIPING ACCESSORIES SHOWN SHOULD BE MOUNTED AS CLOSE TO AIR HANDLING UNIT AS POSSIBLE.

The 7.5 [26 kW] and 10 [35 kW] Air Handlers are designed as two (2) circuit, full face equal distribution coils. As shipped from the factory, the suction and liquid lines are dual circuits. Copper fittings are supplied in the unit to field manifold the suction and liquid lines for single circuit.

NOTE: The expansion valve bulbs must be secured to the corresponding suction lines. The circuits are marked accordingly. See illustration under Typical Piping recommendations for additional information.

When dual straight cool condensing units are used refer to the refrigerant piping size charts for the individual condensing unit piping.

REFRIGERANT PIPING (See Tables at Right)

The following will be of help in accomplishing a successful installation.

1. Size liquid line for no more than 50 PSIG [345 kPa] pressure drop.
2. Size suction lines for no more than 2°F [1.1°C] loss which corresponds to approximately 5 PSIG [34 kPa] pressure drop.
3. When indoor unit is installed below outdoor unit, do not exceed the recommended vapor line O.D. This will insure adequate velocities for proper oil return.
4. Install strainer-drier and sight glass in liquid line.
5. Pitch all horizontal suction lines downward in the direction of flow for cooling only applications.
6. Locate the outdoor unit and indoor unit as close together as possible to minimize piping runs.
7. A liquid line solenoid installed just ahead of the expansion value is recommended for cooling only applications. Be sure condensing unit is suitable for pump down.
8. Piping runs between condenser and evaporator not to exceed 150' [46 m] linear length (90' [27 m] linear length for heat pumps).

NOTE: Refer to suction and liquid line pressure drop charts found in condensing unit and remote heat pump literature.

[ ] Designates Metric Conversions

CONDENSATE DRAIN PIPING

- Consult local codes or ordinances for specific requirements regarding condensate drain.
- Condensate drain is open to atmosphere and must be trapped. Trap must be at least 3 inches [76 mm] deep and made of flexible material or fabricated to prevent freeze-up.
- Pitch the drain line at least 1/4 inch [6 mm] per foot away from the drain pan.
- Do not reduce the drain line size from the connection size provided on the unit.
- Do not connect the drain line to a closed sewer line.

PIPING SIZES 090 & 120				
LINEAR LENGTH, FT. [m]	LIQUID LINE O.D., IN. [mm]		SUCTION LINE O.D., IN. [mm]	
	090	120	090	120
0-50 [0-15]	1/2 [13]	5/8 [16]	1 1/8 [29]	1 3/8 [35]
51-100* [16-30]	1/2 [13]	5/8 [16]	1 3/8 [35]	1 5/8 [41]
101-150 [31-46]	1/2 [13]	5/8 [16]	1 3/8 [35]	1 5/8 [41]

*For cooling only, refer to remote heat pump literature for piping recommendations.

PIPING SIZES 180 & 240				
LINEAR LENGTH, FT. [m]	LIQUID LINE O.D., IN. [mm]		SUCTION LINE O.D., IN. [mm]	
	180	240	180	240
0-50 [0-15]	3/4 [19]	7/8 [22]	1 3/8 [35]	1 5/8 [41]
51-100 [16-30]	3/4 [19]	7/8 [22]	1 5/8 [41]	2 1/8 [54]
101-150 [31-46]	3/4 [19]	7/8 [22]	2 1/8 [54]	2 1/8 [54]

EQUIVALENT LENGTH, FT. [m] OF STRAIGHT TYPE "L" TUBING FOR NON-FERROUS VALVES AND FITTINGS (BRAZED)						
TUBE SIZE INCHES [mm] O.D.	SOLENOID VALVE	ANGLE VALVE	SHORT RADIUS ELL	LONG RADIUS ELL	TEE LINE FLOW	TEE BRANCH FLOW
1/2 [13]	12 [3.7]	8.3 [2.5]	1.6 [0.5]	1.0 [0.3]	1.0 [0.3]	3.1 [0.9]
5/8 [16]	15 [4.6]	10.4 [3.2]	1.9 [0.8]	1.2 [0.4]	1.2 [0.4]	3.6 [1.1]
3/4 [19]	18 [5.5]	12.5 [3.8]	2.1 [0.7]	1.4 [0.4]	1.4 [0.4]	4.2 [1.3]
7/8 [22]	21 [6.4]	14.8 [4.4]	2.4 [0.7]	1.6 [0.5]	1.6 [0.5]	4.8 [1.5]
1 1/8 [29]	12 [3.7]	18.8 [5.7]	3.0 [0.9]	2.0 [0.6]	2.0 [0.6]	6.0 [1.8]
1 3/8 [35]	15 [4.6]	22.9 [7.0]	3.6 [1.1]	2.4 [0.7]	2.4 [0.7]	7.2 [2.2]
1 5/8 [41]	18 [5.5]	27.1 [8.3]	4.2 [1.3]	2.8 [0.8]	2.8 [0.8]	8.4 [2.6]
2 1/8 [54]	21 [6.4]	35.4 [10.8]	5.3 [1.6]	3.5 [1.1]	3.5 [1.1]	10.7 [3.3]

OPERATING SEQUENCE

NOTE: Please refer to specification sheets covering SAWL- condensing units for operating sequence.

GUIDE SPECIFICATIONS

Furnish and install as shown on the drawing Rheem Model _____ draw through air handler suitable for both horizontal and vertical applications. The entire assembly shall be UL and cUL listed with the cooling (and heat pump heating) capacity A.R.I. Certified.

DRIVE PACKAGE—A complete drive package shall be factory or field installed. Package shall consist of a dual voltage, single phase open drip proof motor not requiring an external starter. Variable pitch motor sheave, fixed pitch fan sheave, and belt.

COILS—Coils shall be fabricated of 3/8" [10 mm] O.D. seamless copper tubing expanded into aluminum fins. All coils shall be submitted to an air pressure test of up to 550 PSIG [2068 kPa] under water after fabrication and dehydrated prior to assembly in unit. Units shall be shipped with a nitrogen holding charge. Airflow shall be draw through design providing uniform air distribution across the coil surface.

BLOWER, BEARINGS AND SHAFT—Fans shall be a double width, double inlet, forward curve, centrifugal type, statically and dynamically balanced, and constructed of galvanized steel. They shall be mounted on 3/4" [19 mm] = 7.5 ton [26 kW] & 10 ton [35 kW], diameter solid shafts made of high carbon steel, centerless ground and polished, supported by resilient mounted sealed bearings.

DRAIN PAN—The drain pan shall be manufactured of zinc coated steel. The pan shall have internally threaded pipe size drain connections and shall be designed to accept condensate in either horizontal or vertical type applications on either side of unit.

FILTERS—Filter mounting hardware shall be designed to accept up to 2" [51 mm] filters for field replacement. One inch [25 mm] throw away filters shall be furnished with the unit.

CABINET—Cabinets shall be manufactured of galvanized steel subjected to multi-stage cleaning and finished with powder coat paint. Units shall have removable service access panels on each side and top.

INSULATION—Cabinets shall be insulated with 1/2" [13 mm] by 1 1/2 pound [.68 kg] density fiberglass insulation coated with neoprene and bonded to the cabinet surface with a U.L. approved adhesive. Insulation shall have fire retarding characteristics in accordance with smoke developed rating not to exceed 50 and flame spread rating of 25 per Underwriters Laboratories testing procedures.

FACTORY TESTING—In addition to the pre-assembly testing mentioned above, each coil shall be leak tested after assembly into the unit. While under pressure, the coil shall be leak tested using an Electronic Leak Detector.

ELECTRIC HEATERS—UL and cUL listed electric heater kits shall be available in a wide range of capacities. All kits shall offer two stages of capacity, blower motor controller and single point connection. Heater kits shall be available for installation directly on the supply fan discharge for either horizontal or vertical application.

MIXING BOX—Mixing box accessory shall be available for mixing return air with outside air before entering the air handler. The accessory shall include both return and outside air dampers and economizer controls factory mounted. Economizer controls shall include enthalpy and mixed air sensors and damper motors. Mixing box accessory shall be available for installation to the return air section of the air handler for either horizontal or vertical applications.

DISCHARGE PLENUM AND GRILLE—Shall be available for vertical application. Discharge grille shall provide manually adjustable double deflection discharge vanes.

RETURN AIR GRILLES—Shall be provided for vertical return applications.

HOT WATER OR STEAM COILS—Shall be available for field installation. All coils shall be tested to 300 psi. Coils shall be available for either horizontal or vertical air handler applications.

[ ] 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.

Rheem Heating, Cooling and Water Heating

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

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