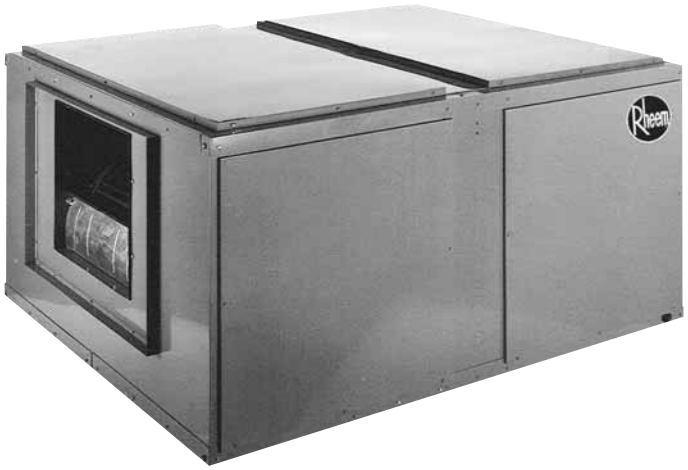
The new degree of comfort.™

Rheem Commercial Air Handler



RHGN-H120 Series

Featuring 2-Stage Airflow
Nominal Sizes 10 Ton [35 kW]

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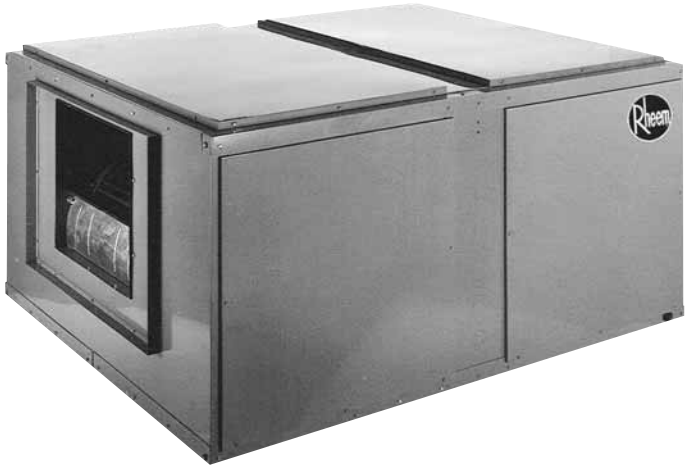


CABINET—Unit cabinet should be constructed of galvanized, pre-painted steel.

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 RHGN Air Handler has not been tested, rated or certified to operate with dual residential 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.

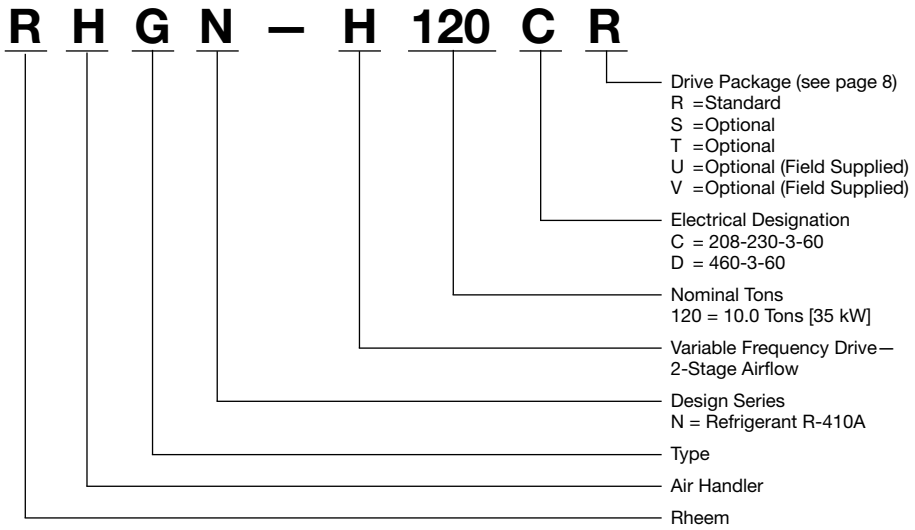
SERVICE ACCESS—Two removable panels on top and each side of the unit are easily removed for access to motors, blowers, sheaves, and filters.

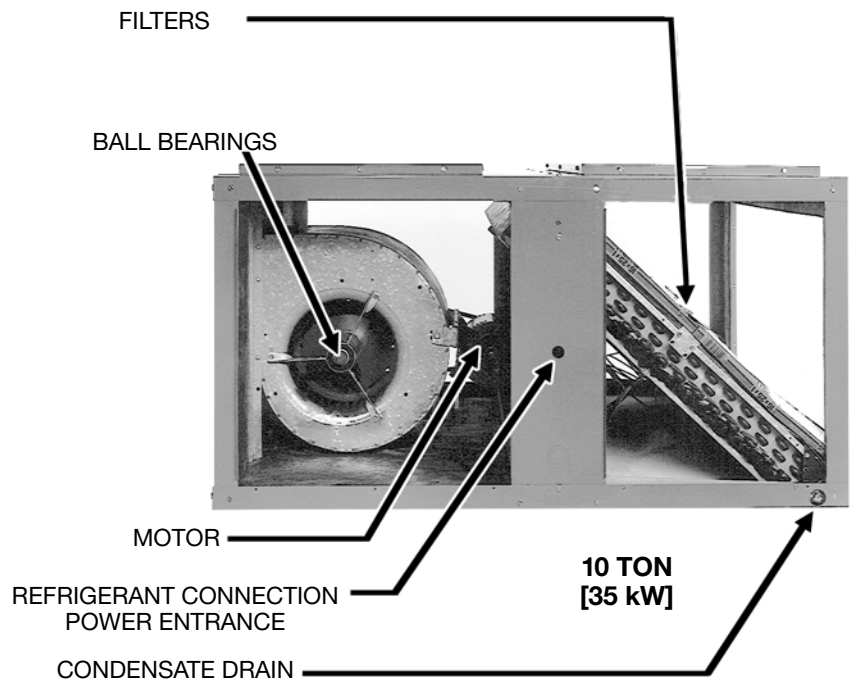
HORIZONTAL OR VERTICAL—All models are designed for either application and can be installed in either position as supplied from the factory.

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

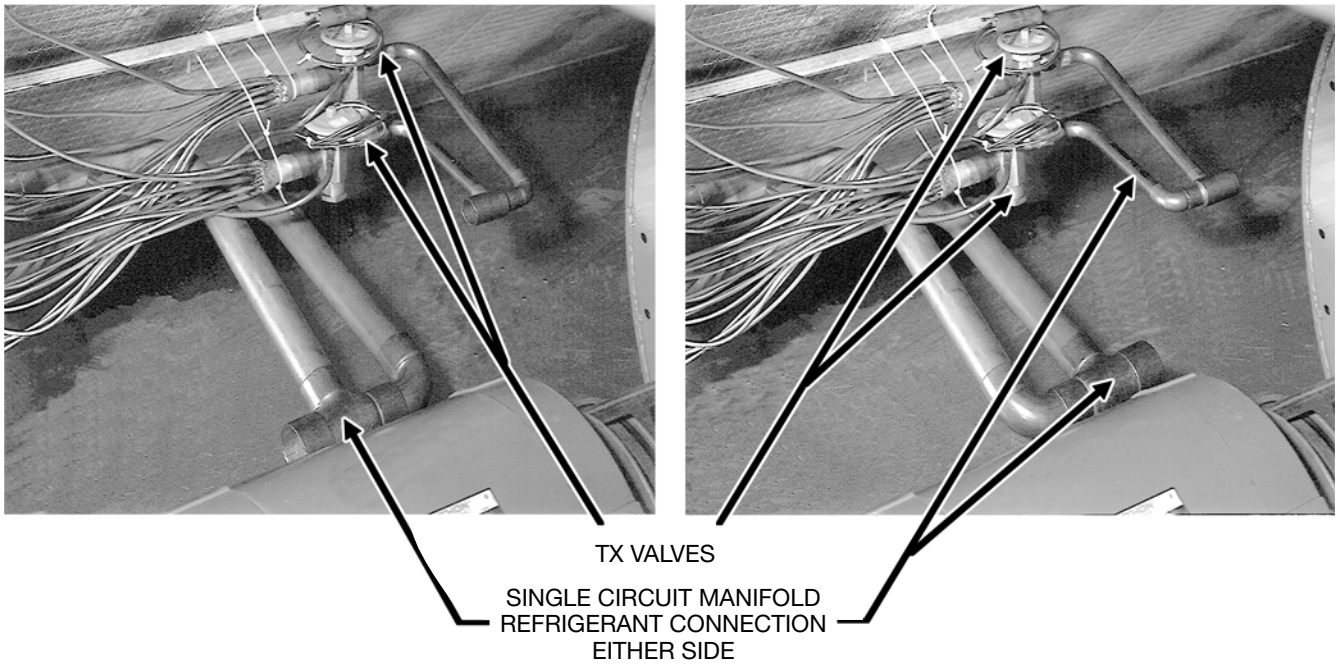
VARIABLE FREQUENCY DRIVE—Provides 2-stage airflow for improved part load efficiency and dehumidification. Meets California Title 24 requirements.

[ ] Designates Metric Conversions

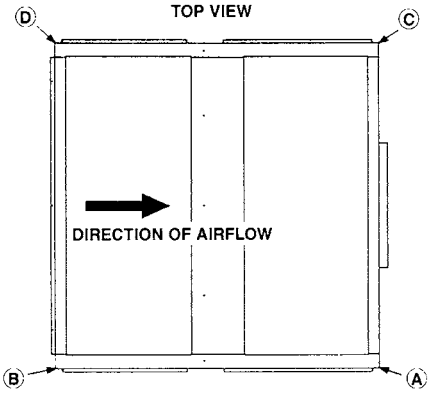

R H G N – H 120 C R
Drive Package (see page 8)
R =Standard
S =Optional
T =Optional
U =Optional (Field Supplied)
V =Optional (Field Supplied)
Electrical Designation
C = 208-230-3-60
D = 460-3-60
Nominal Tons
120 = 10.0 Tons [35 kW]
Variable Frequency Drive—
2-Stage Airflow
Design Series
N = Refrigerant R-410A
Type
Air Handler
Rheem



Unit with side panel removed for coil connections and air filter access.



[ ] Designates Metric Conversions

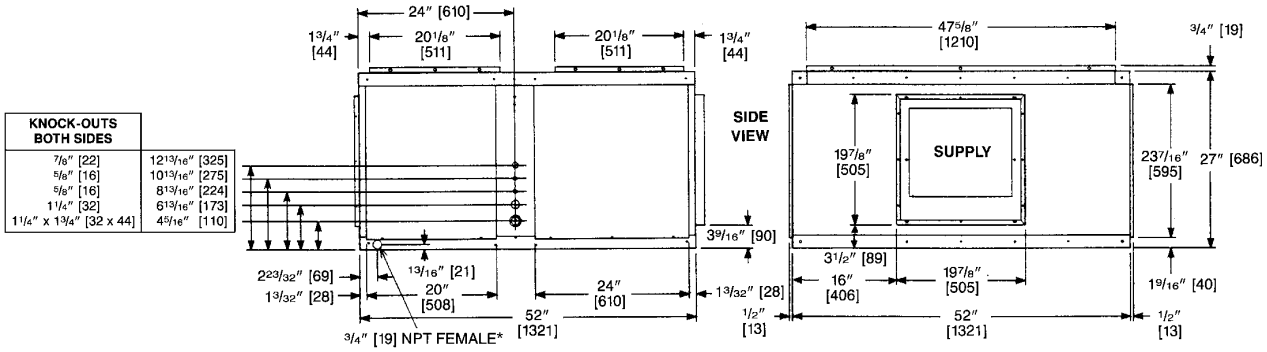


RETURN AIR OPENINGS = 47 3/8″ [1203] WIDTH x 19 7/8″ [505] HEIGHT

10 NOMINAL TONS [35 kW]

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

DRIVE PACKAGE	CORNER WEIGHTS, LBS. [kg]				TOTAL WEIGHT
	A	B	C	D	
R & S	105 [48]	86 [39]	97 [44]	84 [38]	372 [169]
T	109 [49]	88 [40]	100 [45]	86 [39]	383 [174]



*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.

[ ] Designates Metric Conversions

ITEM		MODEL NO. RHGN-120
Nominal Size tons [kW]		10 [35]
Nominal CFM [L/s] @ Rated E.S.P., in. [kPa] of water		3000 @ .25 [1416 @ .062] 4000 @ .30 [1888 @ .075]
MOTOR	Standard—1725 RPM [W] 3 Ø	2 HP [1491]
	Optional—1725 RPM [W] 3 Ø	2 HP, 3 HP [1491, 2237]
Blower Size—diameter & width, in. [mm]		12 x 12 [305 x 305]
Blower Shaft Size (diameter) in. [mm]		3/4 [19]
Motor Sheave Size Adjustment (std.) in. [mm]		4.0-5.0 [102-127]
Coil Face Area, sq. feet [m^2]		10.2 [.95]
Coil Tube Diameter in. [mm]		3/8 [10]
Coil, Rows Deep—Fins Per Inch [mm]		4/15 [.59]
Refrigerant Control—Thermal Expansion Valves (Quantity)		CBBIZE-5-GA (2)
Filter Size, in. [mm] (Number Required) Disposable*		16 x 25 x 1 (4) [406 x 635 x 25]
CABINET: Finish		Galvanized, pre-painted
Sheet Metal		Galvanized
Gauge (nominal) Top		18
Sides		16
Bottom		18
Doors and Covers		20 min.
UNIT WEIGHTS: Operating (lbs.) [kg]		372 [169] — R & S Drive 383 [174] — T Drive
Shipping (lbs.) [kg]		438 [199] —R & S Drive 449 [204] — T Drive
PACKAGE DIMENSIONS: (H x W x L) [mm]		31 1/2" x 56" x 57 1/4" [800 x 1422 x 1454]

*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 or 30 Amp 2 Pole contactor may be purchased from the Parts Department.

[ ] Designates Metric Conversions

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
10 [35]	Q+	4L530	3.4-4.4-7/8 [86-112-22]	9.75 [248]	2 [1491]/3Ø	790	760	725	690	660	630
	R	4L530	4.0-5.0-7/8 [102-127-22]	9.75 [248]	2 [1491]/3Ø	885	**855**	825	795	760	730
	S	4L540	4.6-5.6-7/8 [117-142-22]	9.75 [248]	2 [1491]/3Ø	995	960	**930**	895	860	825
	T	4L550	5.2-6.2-7/8 [132-157-22]	9.75 [248]	3 [2237]/3Ø	1125	1090	**1055**	1020	985	945
	ΔU	4L530	4.7-5.7-7/8 [119-145-22]	7.75 [197]	3 [2237]/3Ø	1225	1190	1150	1110	1070	1030
	□V	4L540	5.7-6.7-7/8 [145-170-22]	8.75 [222]	3 [2237]/3Ø	1280	1250	1220	1185	1150	1115

* Actual pitch diameter in inches. Minimum and maximum pitch diameter shown for adjustable motor sheave.
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 IVP50). Factory sheave settings are shown in bold print.
The R, S and T drives are available from the factory. The Q, U and V drives are not available from the factory and these sheaves and belts must be field supplied. A motor change is not required. The field supplied sheaves and belts are standard shelf items that are readily available from local equipment supply houses. The chart above gives the necessary specifications for these field supplied sheaves and belts.

[ ] Designates Metric Conversions

INDOOR BLOWER PERFORMANCE (DRY COIL) RHGN-H120 C/D

DRIVE PKG	STD CFM (2ND STAGE)	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
Q R S T U V	2400 [1133 L/s]	—	—	—	—	—	—	650	510	690	570	720	610	760	670	790	755	815	805	845	860	875	940	920	1125	955	1110	990	1200	1000	1320	1040	1350	1080	1490	1100	1630	1130	1670	1150	1700
	2600 [1227 L/s]	—	—	—	—	635	545	675	620	715	665	750	720	780	795	810	860	830	910	860	990	890	1070	930	1150	960	1230	995	1310	1020	1400	1060	1460	1100	1510	1120	1680	1140	1730	1160	1790
	2800 [1321 L/s]	—	—	630	595	665	665	705	720	740	775	775	850	795	915	825	975	855	1075	885	1165	915	1210	950	1285	980	1370	1000	1450	1040	1530	1080	1590	1120	1650	1130	1720	1150	1800	1175	1880
	3000 [1416 L/s]	630	660	660	730	695	775	730	880	755	940	790	1005	825	1065	855	1130	885	1190	920	1290	955	1380	980	1425	1010	1500	1035	1620	1065	1690	1100	1750	1110	1800	1140	1880	1160	1920	1185	1980
	3200 [1510 L/s]	660	810	695	860	730	950	750	1005	785	1080	815	1150	850	1225	880	1285	910	1390	950	1470	975	1540	1010	1620	1030	1740	1065	1820	1095	1880	1095	1890	1125	1985	1155	2045	1175	2090	1190	2160
	3400 [1605 L/s]	690	940	725	1000	745	1090	780	1160	810	1240	845	1320	875	1390	910	1500	945	1590	970	1650	995	1725	1025	1860	1055	1940	1055	1900	1080	1975	1110	2095	1140	2185	1165	2245	1180	2270	1200	2315
	3600 [1699 L/s]	730	1100	745	1175	780	1250	810	1340	845	1435	875	1510	905	1620	945	1715	960	1780	990	1855	1020	1995	1050	2080	1080	2160	1080	2165	1105	2225	1135	2325	1155	2400	1175	2460	1195	2510	1220	2575
	3800 [1793 L/s]	745	1265	780	1350	810	1455	840	1550	875	1630	905	1740	940	1840	955	1905	990	2050	1025	2145	1045	2225	1075	2315	1075	2270	1100	2390	1130	2495	1150	2590	1170	2650	1190	2710	1220	2770	1265	2895
	4000 [1888 L/s]	780	1465	810	1575	850	1690	880	1780	910	1880	940	2010	970	2110	990	2180	1020	2300	1050	2400	1075	2490	1075	2445	1100	2570	1130	2690	1145	2785	1170	2855	1185	2920	1215	2985	1260	3090	1275	3165
	4200 [1982 L/s]	825	1750	855	1840	885	1925	920	2060	940	2160	965	2260	995	2365	1025	2470	1050	2560	1080	2680	1080	2685	1100	2795	1130	2890	1150	3000	1165	3080	1190	3145	—	—	—	—	—	—	—	—
	4400 [2077 L/s]	845	1925	905	2100	925	2195	950	2320	970	2430	995	2550	1030	2650	1050	2755	1055	2760	1085	2855	1100	2985	1130	3115	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	4600 [2171 L/s]	915	2225	930	2375	955	2495	980	2620	1010	2750	1030	2840	1035	2950	1055	2960	1080	3070	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	4800 [2265 L/s]	930	2555	960	2680	985	2810	1015	2940	1035	3040	1035	3045	1055	3180	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	5000 [2360 L/s]	960	2870	990	3010	1020	3135	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Q = IVP50, AZ100, 2 HP [1491 W] [Field Supplied]
R = IVP56, AZ100, 2 HP [1491 W]
S = IVP62, AZ100, 2 HP [1491 W]
T = IVP68, AZ100, 3 HP [2237 W]
U = IVP65, AZ80, 3 HP [2237 W] [Field Supplied]
V = IVP75, AZ90, 3 HP [2237 W] [Field Supplied]
NOTE: Bold lines separate Q, R, S, T, U and V drives respectively.

[ ] Designates Metric Conversions

COMPONENT AIR RESISTANCE

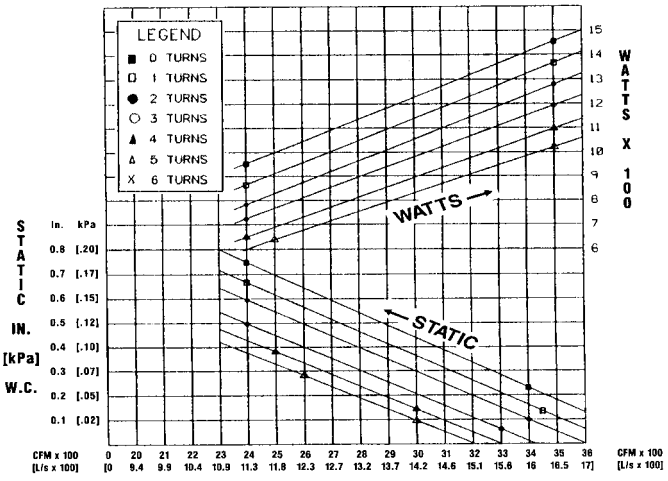
RHGN 10 TON [35 kW]

CFM [L/s]	1800 [850]	2200 [1038]	2600 [1227]	3000 [1416]	3400 [1605]	3800 [1793]	4200 [1982]	4600 [2171]	5000 [2360]
Electric Heater 20KW, 30KW	.060 [.015]	.100 [.025]	.140 [.034]	.160 [.040]	.230 [.057]	.320 [.080]	.410 [.102]	.500 [.124]	.600 [.150]
Mixing Box (R/A Damper Open)	.006 [.001]	.008 [.002]	.012 [.003]	.024 [.006]	.038 [.009]	.053 [.013]	.068 [.017]	.080 [.020]	.095 [.024]
Discharge Grille (Set Max. Open)	.008 [.002]	.011 [.003]	.015 [.004]	.020 [.005]	.025 [.006]	.031 [.008]	.039 [.010]	.046 [.012]	.055 [.014]
Inlet Grille	.008 [.002]	.010 [.002]	.014 [.003]	.020 [.005]	.026 [.006]	.032 [.008]	.039 [.010]	.049 [.012]	.058 [.014]
Discharge Plenum	.02 [.005]	.04 [.010]	.05 [.012]	.065 [.016]	.085 [.021]	.100 [.025]	.120 [.030]	.150 [.037]	.180 [.045]

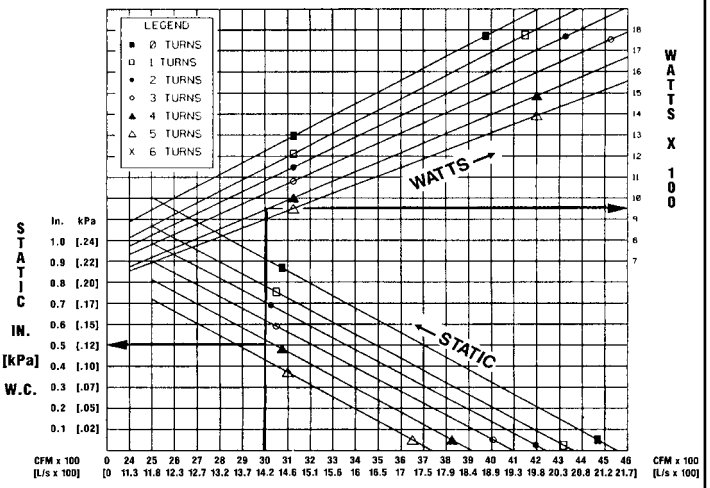
[ ] Designates Metric Conversions

BLOWER PERFORMANCE CURVES—10 TON [35 kW] (WET COIL)

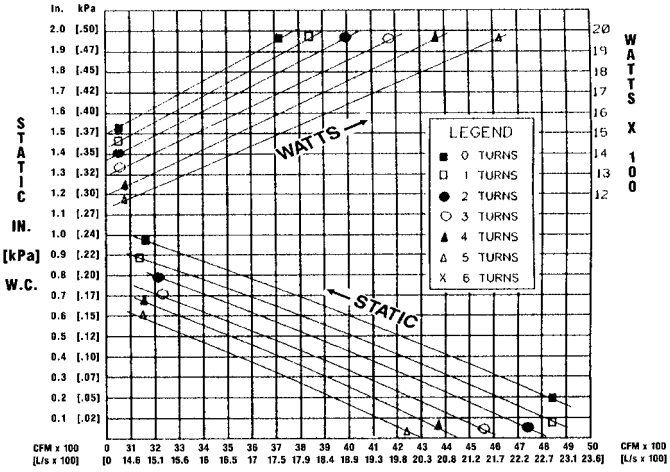
10 TON [35 kW]
Q DRIVE



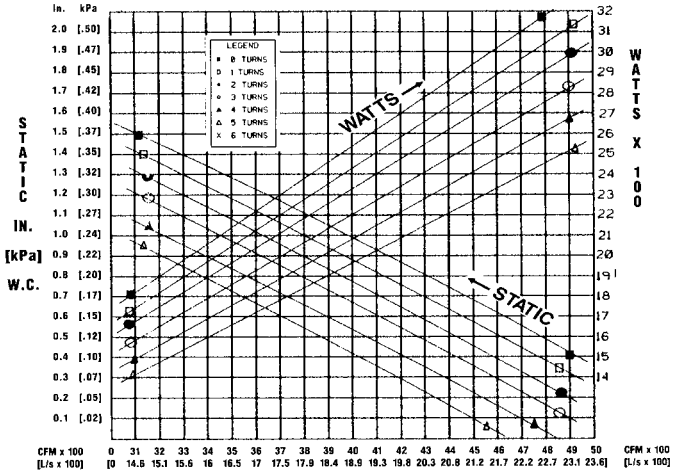
10 TON [35 kW]
R DRIVE



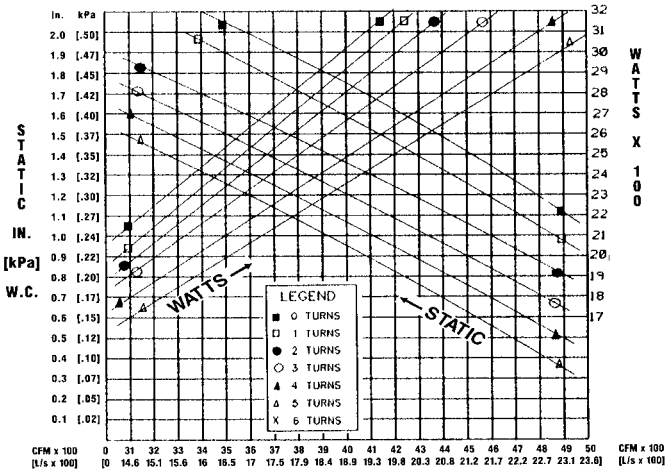
10 TON [35 kW]
S DRIVE



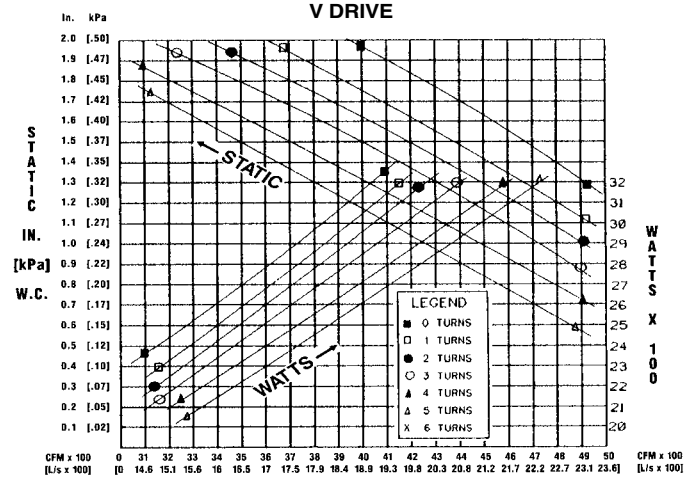
10 TON [35 kW]
T DRIVE



10 TON [35 kW]
U DRIVE



10 TON [35 kW]
V DRIVE



[ ] Designates Metric Conversions

EVAPORATOR PERFORMANCE DATA (GROSS CAPACITY)

EVAPORATOR/AIR HANDLER RHGN-H120 @ 3800 CFM [1793 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
3800	40	154,071	108,420	49.6	48.2	190,237	123,295	50.5	48.1	189,959	10,8803	60.4	58.6
	45	121,745	92,384	54.1	52.3	157,209	107,660	66.0	53.4	196,257	122,470	55.9	54.3
	50	88,849	77,108	58.5	56.3	122,773	91,908	59.5	57.5	159,969	108,803	60.4	56.6

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

RHGN-H120 @ 3800 CFM [1793 L/s]													
ACTUAL—CFM [L/s]	2400 [1133]	2600 [1227]	2800 [1321]	3000 [1416]	3200 [1510]	3400 [1605]	3600 [1699]	3800 [1793]	4000 [1888]	4200 [1982]	4400 [2077]	4600 [2171]	4800 [2265]
TOTAL MBH	0.76	0.79	0.82	0.85	0.89	0.93	0.97	1.00	1.03	1.06	1.10	1.12	1.15
SENSIBLE MBH	0.68	0.73	0.78	0.82	0.87	0.91	0.96	1.00	1.04	1.08	1.13	1.17	1.21

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

PERFORMANCE DATA @ AHRI STANDARD CONDITIONS

MODEL NUMBERS		80°F [26.5°C] DB 67°F [19.5°C] WB INDOOR AIR 95°F [35°C] DB OUTDOOR AIR					RATED INDOOR CFM [L/s]
OUTDOOR UNIT RAWL	INDOOR COIL AND/OR AIR HANDLER	TOTAL CAPACITY BTU/H [Kw]	NET SENSIBLE BTU/H [Kw]	NET SENSIBLE BTU/H [Kw]	EER	IEER	
121CAZ	RHGN-H12OC ①	113,000 [33.1]	82,100 [24.1]	30,900 [9.06]	11.20	12.90	3735 [1762]
121DAZ	RHGN-H12OD ①	113,000 [33.1]	82,100 [24.1]	30,900 [9.06]	11.20	12.90	3735 [1762]

① Highest sales volume tested combination required by D.O.E. test procedures.

[ ] Designates Metric Conversions

ELECTRIC HEATER KIT DATA TABLE

AIR HANDLER MODEL	HEATER KIT MODEL	HEATER KIT VOLTAGE	HEATER KIT [kW]	HEATER KIT AMPS	HEATING CAPACITY [kW]	HEATING CAPACITY MBH	MINIMUM CIRCUIT AMPACITY	MAX. FUSE OR HACR BREAKER SIZE
RHGN-H120C	RXHE-DE020CA	208/240	20	43.1/48.9	15.6/20.2	53.2/68.9	67/73	70/80
RHGN-H120C	RXHE-DE030CA	208/240	30	60.8/70.2	22.0/29.6	75.1/101	89/100	90/100
RHGN-H120D	RXHE-DE020DA	480	20	24.7	20.2	68.9	37	40
RHGN-H120D	RXHE-DE030DA	480	30	35	29.7	101.3	50	50

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

[ ] Designates Metric Conversions

ELECTRICAL DATA TABLE—BLOWER MOTOR ONLY

MODEL NUMBER	DRIVE PACKAGE	AIR HANDLER MOTOR HORSEPOWER, VOLTS, PHASE	RATING PLATE AMPS	MOTOR LRA	MINIMUM CIRCUIT AMPACITY	RECOMMENDED MINIMUM COPPER WIRE SIZE/ MAX. RUN IN FEET	MAXIMUM OVERCURRENT PROTECTION AMPS
RHGN-H120C	Q, R, S	2, 208/230, 3-Phase	6.2	47.0	15	#14/165	15
RHGN-H120C	Q, R, S	2, 460, 3-Phase	3.0	24.0	15	#14/275	15
RHGN-H120D	T, U, V	3, 208/230, 3-Phase	9.2	74.5	15	#14/135	20
RHGN-H120D	T, U, V	3, 460, 3-Phase	4.6	38.1	15	#14/230	15

AIR HANDLER ACCESSORIES

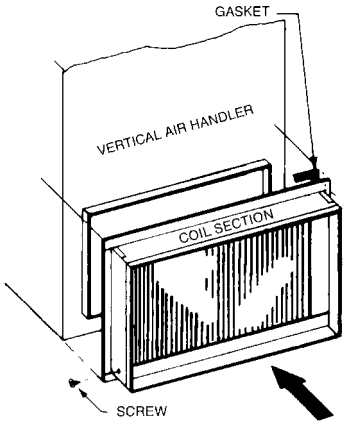
ACCESSORY DESCRIPTION	MODEL NUMBER	SIZES USED ON	NET WEIGHT (LBS) [kg]
Hot Water Coil	RXHC-C74W	120	200 [91]
Steam Coil	RXHC-C74S	120	200 [91]
Auxiliary Heater Kit	RXHE-DE020*A	120	75 [34]
	RXHE-DE030*A	120	75 [34]

NOTE: *Designates “C” or “D” Voltage

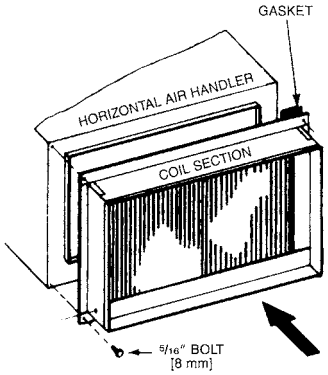
[ ] Designates Metric Conversions

RXHE ELECTRIC HEATER KIT

HOT WATER OR STEAM COILS



MODEL #	APPLICATION
RXHC-C74W	HOT WATER
RXHC-C74S	STEAM



AIR HANDLER ACCESSORIES (con't)

PHYSICAL SPECIFICATIONS

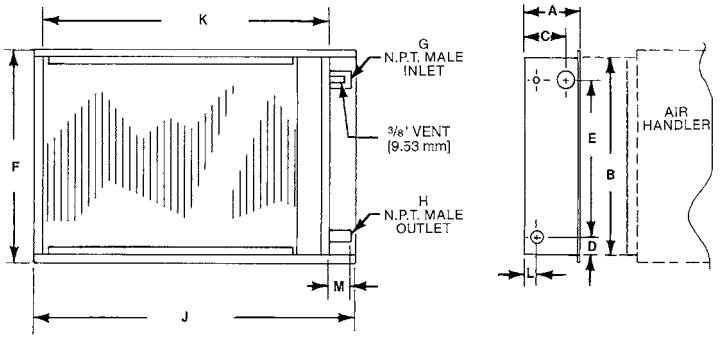
NOMINAL TONS [kW]	FINNED HEIGHT– IN. [mm]	FINNED LENGTH– IN. [mm]	FACE AREA FT² [m²]	CIRCUITS & TUBES HIGH
10 [35.17]	18 [457]	40 [1016]	5.0 [.46]	12

GROSS COIL PERFORMANCE

NOMINAL TONS [kW]	NOMINAL BTUH		NOMINAL CFM [L/s]	VELOCITY FPM
	STEAM	WATER		
10 [35.17]	285,000	240,000	4,000 [1888]	800

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

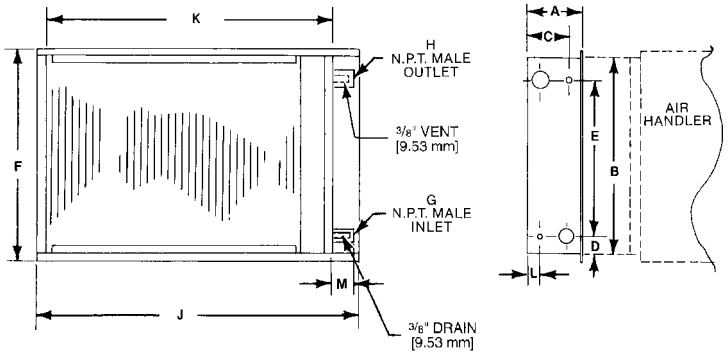
STEAM COIL



STEAM COIL COIL DIMENSIONS—INCHES [mm]

MODEL	NOMINAL TONS [kW]	A	B	C	D	E	F	G	H	J	K	L	M
RXHC-C74S	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]

HOT WATER COIL



HOT WATER COIL DIMENSIONS—INCHES [mm]

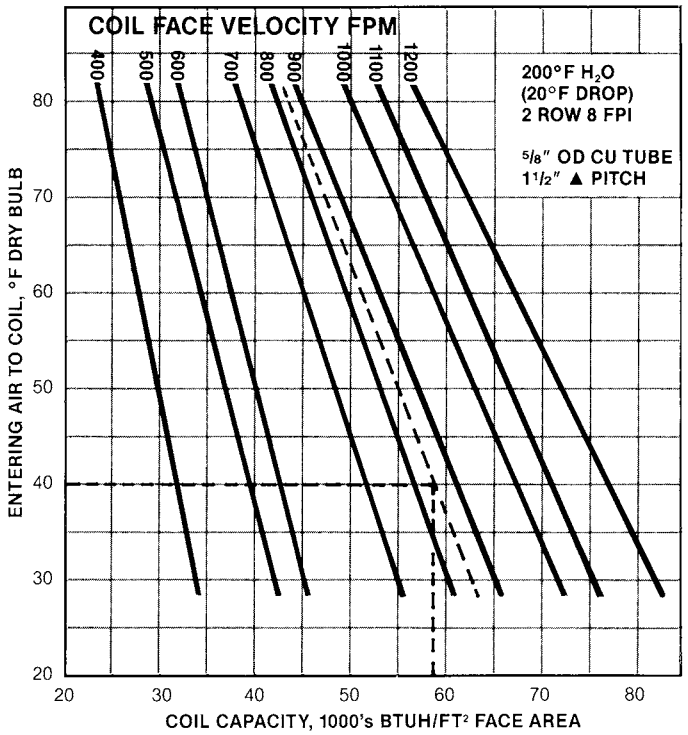
MODEL	NOMINAL TONS [kW]	A	B	C	D	E	F	G	H	J	K	L	M
RXHC-C74W	10 [35.17]	9 1/16 [230]	21 3/8 [543]	5 3/8 [137]	3 3/16 [81]	15 [381]	24 [610]	1 1/4 [32]	1 1/4 [32]	51 1/2 [1308]	47 5/8 [1210]	2 13/16 [71]	3 [76]

[ ] Designates Metric Conversions

AIR HANDLER ACCESSORIES (con't)

HOT WATER COILS

CURVE 2
HOT WATER COIL



CURVE 3
HOT WATER COIL WATER PRESSURE DROP

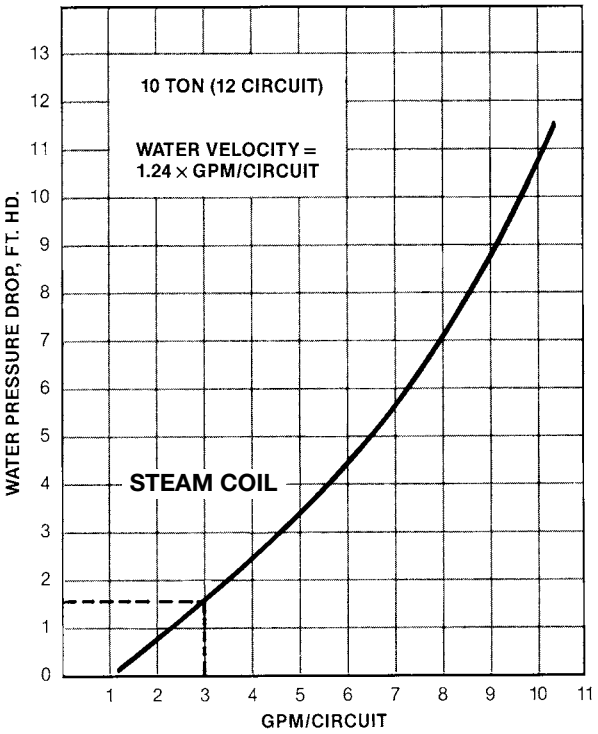


TABLE IV

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

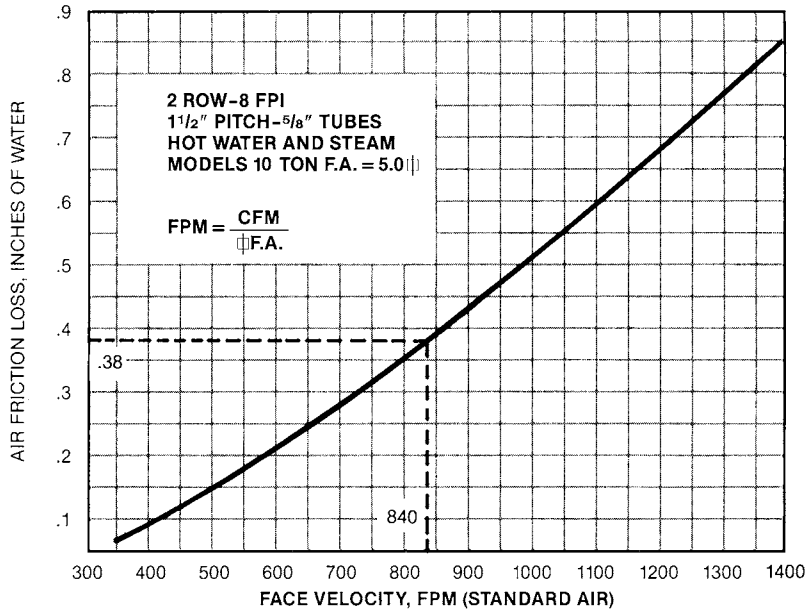
TABLE I
ALTITUDE AND TEMPERATURE CORRECTION FACTOR TABLE

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:

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

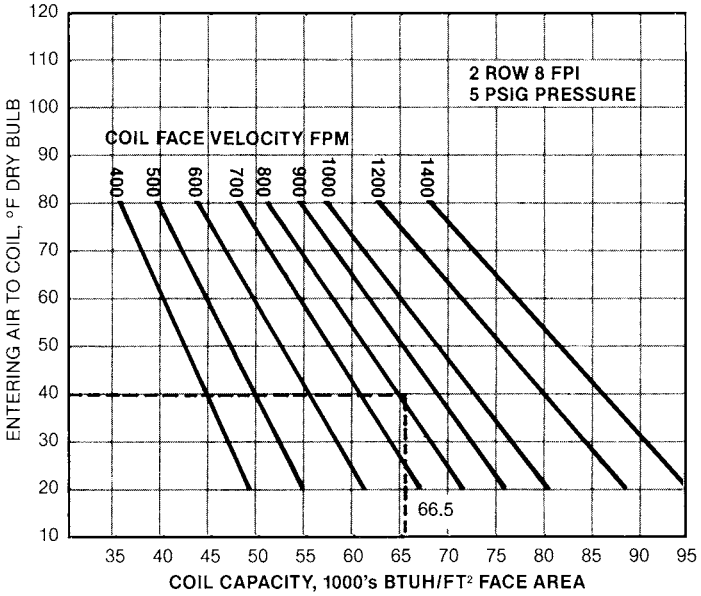
TABLE II
AIR FRICTION LOSS



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

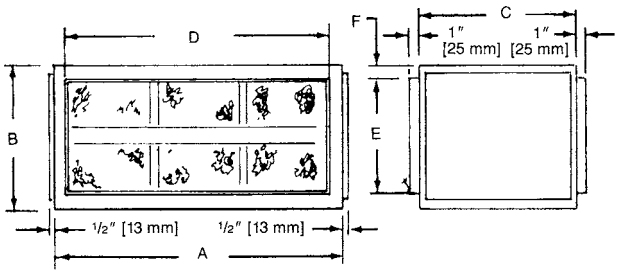
Select 10 Ton Nominal Coil:
Face Area = 5 Ft^2
Circuits = 12

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.

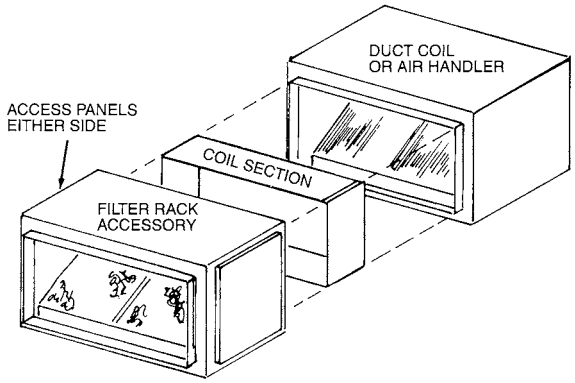
MODEL NO.	AIR HANDLER SIZES USE ON	IN. [mm]					
		A	B	C	D	E	F
RXHF-B74A	120	51 1/2 [1308]	24 [610]	25 1/8 [638]	47 3/8 [1203]	19 7/8 [505]	2 1/16 [52]



MODEL NO.	FILTER SIZE (QTY.) TYPE
RXHF-B74A	16x20x1 (4) Disposable 20x20x1 (2) 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]	—	—	—



[ ] Designates Metric Conversions

AIR HANDLER ACCESSORIES (con't)

TYPICAL APPLICATION
10 NOMINAL TONS
[35 kW]

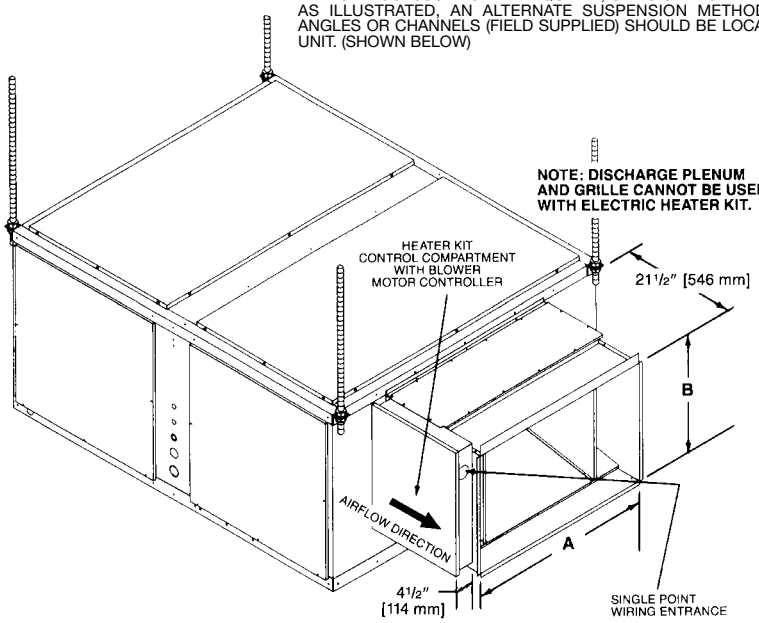
OPTIONAL ELECTRICAL HEATER KIT SHOWN INSTALLED IN HORIZONTAL POSITION AND CONNECTED DIRECTLY TO THE AIR HANDLER. THE HEATER KIT MAY ALSO BE INSTALLED WITH THE AIR HANDLER SET IN THE VERTICAL POSITION. IN EITHER POSITION THE HEATER KIT CONTROL COMPARTMENT MUST BE ON THE LEFT SIDE FACING THE AIR DISCHARGE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

MODEL NO.	AIR HANDLERS SIZES USED ON	IN. [mm]	
		A	B
RXHE-DE****A	120	20 [508]	20 [508]

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 1/2" [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.

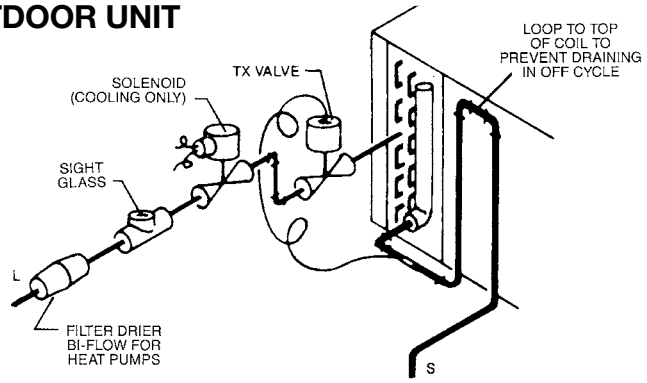
WHEN HOT WATER OR STEAM COIL, MIXING BOX OR DISCHARGE AIR PLENUM ACCESSORIES ARE REQUIRED, UNITS CANNOT BE SUSPENDED AS ILLUSTRATED, AN ALTERNATE SUSPENSION METHOD SUCH AS ANGLES OR CHANNELS (FIELD SUPPLIED) SHOULD BE LOCATED UNDER UNIT. (SHOWN BELOW)



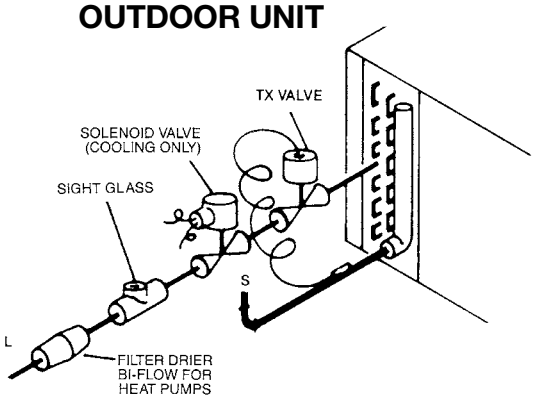
[ ] Designates Metric Conversions

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 RHGN-H120		
LINEAR LENGTH, FT. [m]	**LIQUID LINE O.D., IN. [mm]**	**SUCTION LINE O.D., IN. [mm]**
0-50 [0-15]	5/8 [16]	1 3/8 [35]
51-100* [16-30]	5/8 [16]	1 5/8 [41]
101-150 [31-46]	5/8 [16]	1 5/8 [41]

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

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 RAWL- 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 AHRI Certified.

DRIVE PACKAGE—A complete drive package shall be factory or field installed. Package shall consist of a 3 phase 1750 RPM open drip proof internally protected 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], 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.

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

GENERAL TERMS OF LIMITED WARRANTY*

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

Any Part.....One (1) Year

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

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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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