



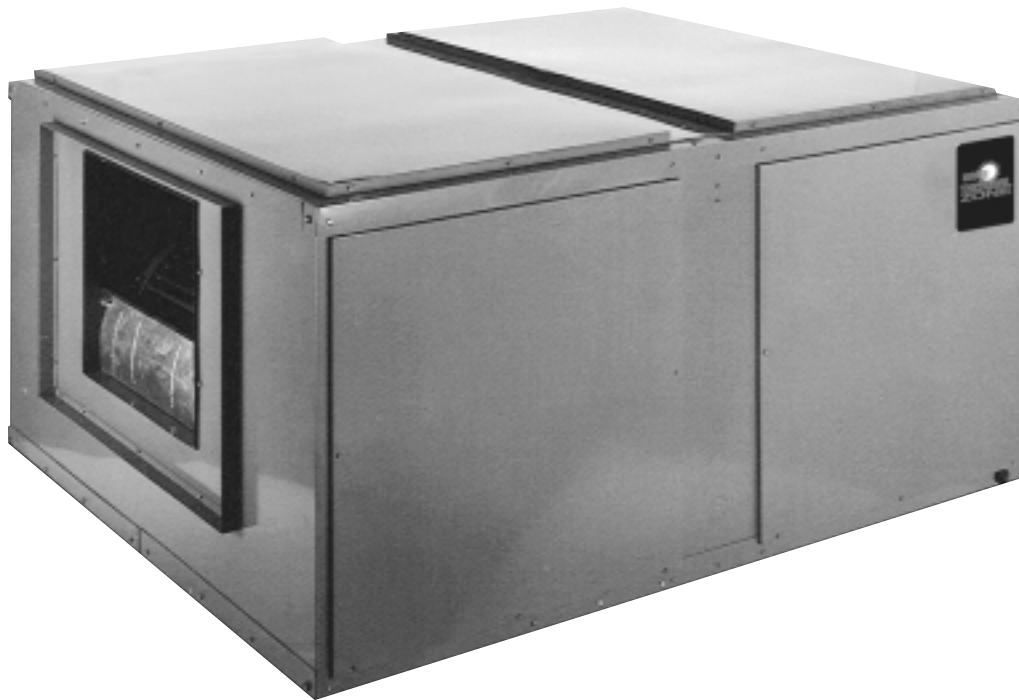
# COMMERCIAL AIR HANDLER

FORM NO. HTZ-529 REV. 3  
Supersedes Form No. HTZ-529 Rev. 2

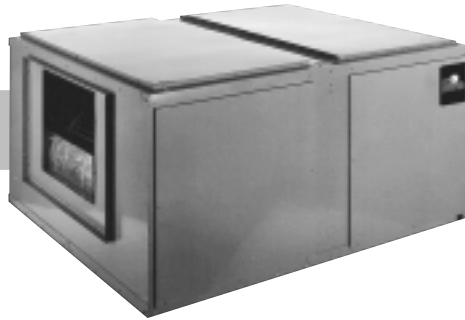
Featuring New Industry Standard R-410A Refrigerant

**R410A**

**TZHGL 90, 120, 180 & 240 SERIES**  
**NOMINAL SIZES 7.5, 10, 15 & 20 TONS [26, 35, 53, & 70 kW]**



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# UNIT FEATURES/MODEL IDENTIFICATION—TZHGL SERIES

**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 horsepower 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 RHGL 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.

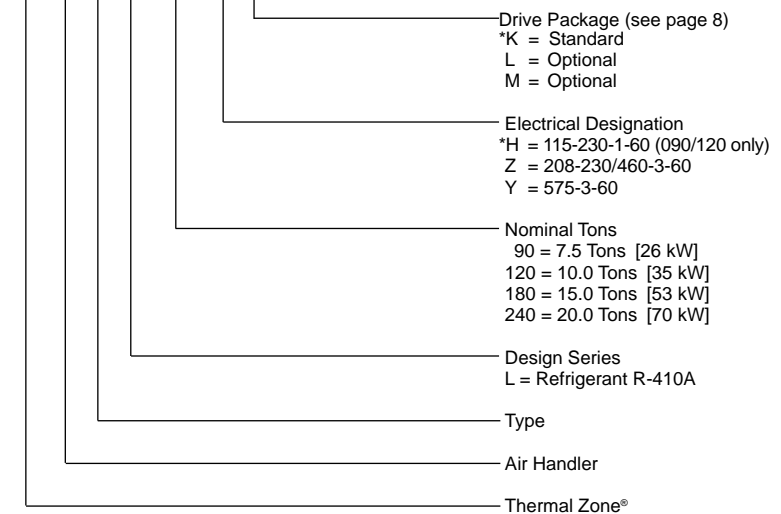
**SERVICE ACCESS**—Two removable panels on top and each side of the unit are easily removed for access to motors, blowers, sheaves, and filters.

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

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



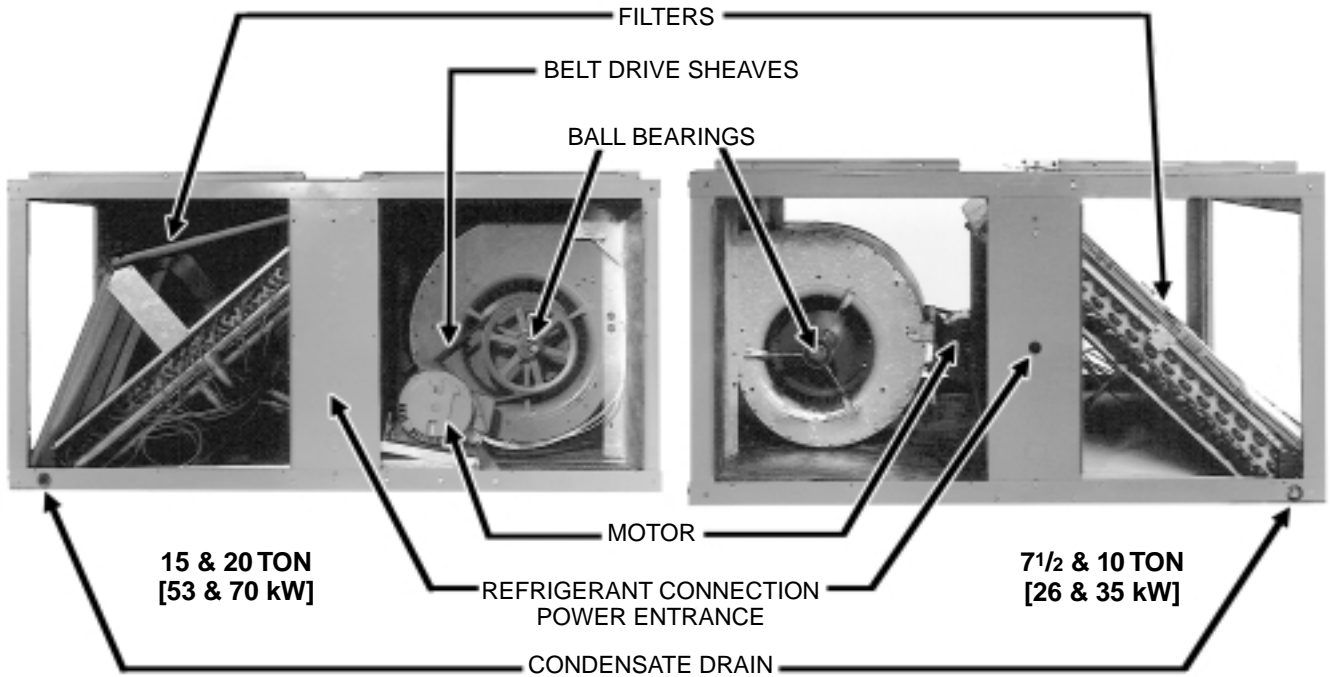
**TZ H G L 120 Z L**



\*\*"H" voltage models are available with "K" drive package only.

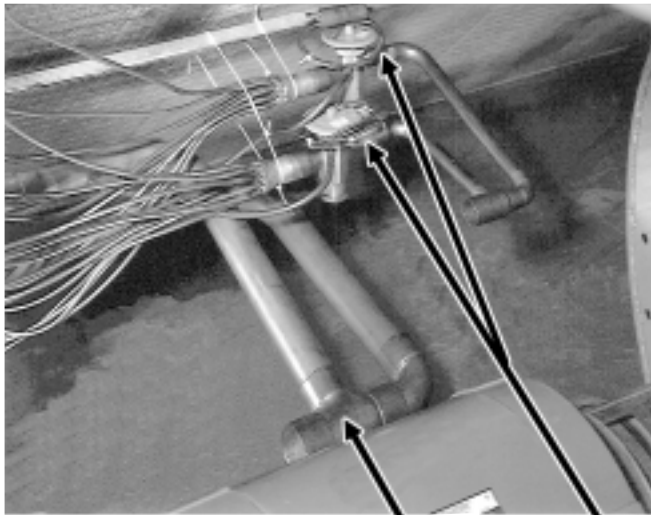
[ ] Designates Metric Conversions

# COMPONENT LOCATION—TZHGL SERIES

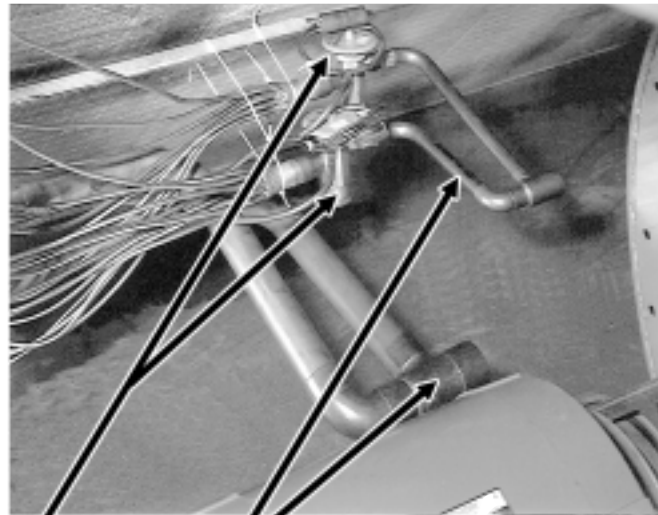


15 ton [53 kW] & 20 ton [70 kW] unit with side panel removed for blower and air filter access.

7 1/2 ton [26 kW] & 10 ton [35 kW] unit with side panel removed for coil connections and air filter access.



**TZHGL**  
7 1/2-20 TON  
[26-70 kW]



**TZHGL**  
7 1/2-20 TON  
[26-70 kW]

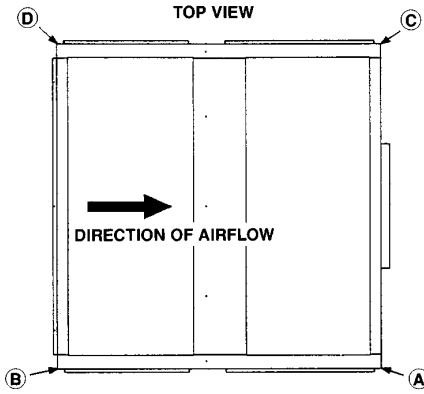
TX VALVES

SINGLE CIRCUIT MANIFOLD  
REFRIGERANT CONNECTION  
EITHER SIDE

[ ] Designates Metric Conversions

# UNIT DIMENSIONS—TZHGL SERIES

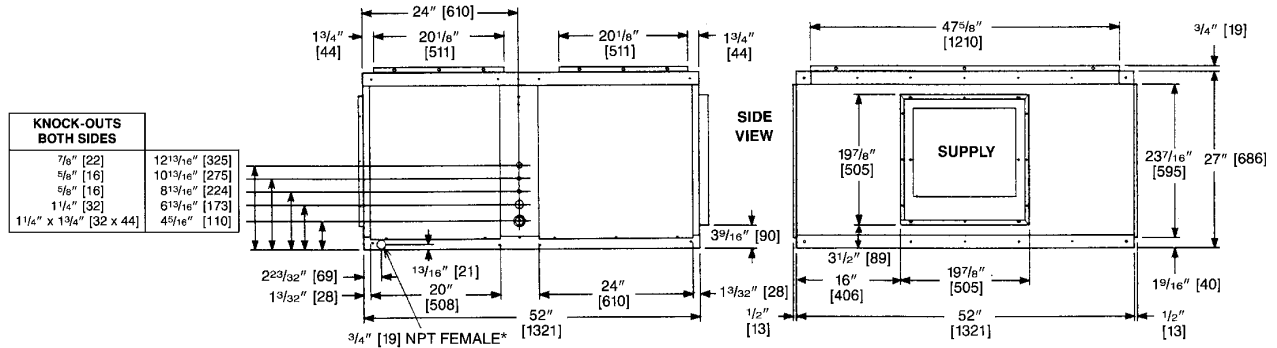
## 7 1/2 AND 10 NOMINAL TONS [26 AND 35 kW]



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

MODEL	REFRIGERANT STUB SIZES, IN. [mm]			
	DUAL LIQ.	DUAL SUC.	SINGLE LIQ.	SINGLE SUC.
90	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]

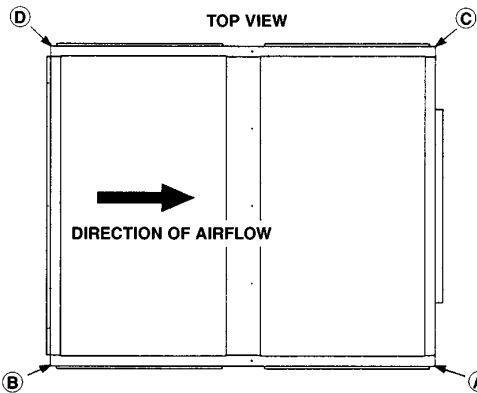
MODEL	CORNER WEIGHTS, LBS. [kg]				TOTAL WEIGHT
	A	B	C	D	
90	88 [40]	78 [35]	87 [39]	77 [35]	330 [150]
120	93 [42]	82 [37]	92 [42]	80 [36]	347 [157]



KNOCK-OUTS BOTH SIDES	
7/8" [22]	12 13/16" [325]
5/8" [16]	10 13/16" [275]
5/8" [16]	8 13/16" [224]
1 1/4" [32]	6 13/16" [173]
1 1/4" x 1 3/4" [32 x 44]	4 5/16" [110]

\*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.

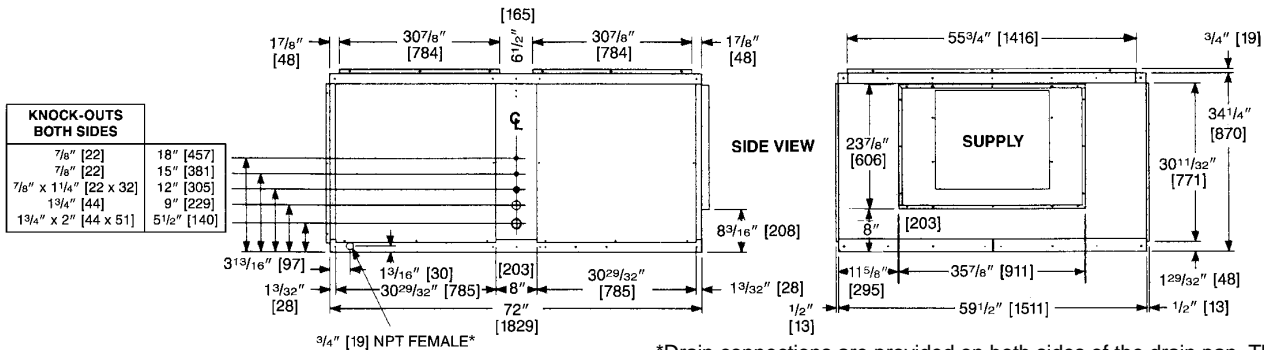
## 15 AND 20 NOMINAL TONS [53 & 70 kW]



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

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]



KNOCK-OUTS BOTH SIDES	
7/8" [22]	18" [457]
7/8" [22]	15" [381]
7/8" x 1 1/4" [22 x 32]	12" [305]
1 3/4" [44]	9" [229]
1 3/4" x 2" [44 x 51]	5 1/2" [140]

[ ] 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/DRIVE PACKAGE DATA—TZHGL SERIES

ITEM		MODEL NO. TZHGL			
		90	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		3000 @ .25 [1416 @ .062]	3000 @ .25 [1416 @ .062] 4000 @ .30 [1888 @ .075]	6000 @ .35 [2832 @ .087]	8000 @ .40 [3776 @ .099]
MOTOR	Standard—3450 RPM [W] 1 Ø 1725 RPM [W] 3 Ø	1 HP [766] 1 HP [766]	2 HP [1491] 1½ HP [1119]	— 2 HP [1491]	— 5 HP [3729]
	Optional—1725 RPM [W] 3 Ø	1½ HP [1119]	2 HP, 3 HP [1491, 2237]	3 HP, 5 HP [2237, 3729]	7½ 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]		¾ [19]	¾ [19]	1 [25]	1 [25]
Motor Sheave Size 3450 RPM 1 Ø Adjustment (std.) in. [mm] 1725 RPM 3		1.9-2.9 [48-74] 3.4-4.4 [86-112]	2.4-3.2 [61-81] 4.0-5.0 [102-127]	— 3.1-4.1 [79-104]	— 4.3-5.5 [109-140]
Coil Face Area, sq. feet [m²]		10.2 [.95]	10.2 [.95]	16.5 [1.53]	16.5 [1.53]
Coil Tube Diameter in. [mm]		⅜ [10]	⅜ [10]	⅜ [10]	⅜ [10]
Coil, Rows Deep—Fins Per Inch [mm]		3/15 [.51]	4/15 [.59]	3/15 [.51]	4/15 [.59]
Refrigerant Control—Thermal Expansion Valves (Quantity)		BBIZE-3-GA (2)	CBBIZE-5-GA (2)	BBIZE-6-GA (2)	BBIZE-8-GA (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]
<b>CABINET:</b>					
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.
<b>UNIT WEIGHTS:</b>					
Operating (lbs.) [kg]		330 [150]	347 [157]	495 [225]	545 [247]
Shipping (lbs.) [kg]		350 [159]	367 [166]	530 [240]	580 [263]
<b>PACKAGED DIMENSIONS:</b> (H x W x L) [mm]		31½" x 56" x 57¼" [800 x 1422 x 1454]	31½" x 56" x 57¼" [800 x 1422 x 1454]	39" x 63" x 76½" [991 x 1600 x 1943]	39" x 63" x 76½" [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 or 30 Amp 2 Pole contactor may be purchased from the Parts Department.

[ ] Designates Metric Conversions



# AIRFLOW PERFORMANCE—TZHGL SERIES

## INDOOR BLOWER PERFORMANCE (DRY COIL) TZHGL120 HK

DRIVE PKG	STD CFM	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 T.O.	W	RPM T.O.	W	RPM T.O.	W	RPM T.O.	W	RPM T.O.	W	RPM T.O.	W	RPM T.O.	W	RPM T.O.	W	RPM T.O.	W	RPM T.O.	W	RPM T.O.	W	RPM T.O.	W	RPM T.O.	W	RPM T.O.	W	RPM T.O.	W	RPM T.O.	W	RPM T.O.	W	RPM T.O.	W	RPM T.O.	W																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
	3000 [1416 L/s]	780	1110	820	1200	860	1280	950	1350	980	1440	950	1500	1005	1670	1035	1780	1090	1870	1115	1960	1120	2030	1115	2130	1090	2235	1060	2325	1030	2415	1000	2500	970	2580	940	2660	910	2740	880	2820	850	2900	820	2980	790	3060	760	3140	730	3220	700	3300	670	3380	640	3460	610	3540	580	3620	550	3700	520	3780	490	3860	460	3940	430	4020	400	4100	370	4180	340	4260	310	4340	280	4420	250	4500	220	4580	190	4660	160	4740	130	4820	100	4900	70	4980	40	5060	10	5140		5220		5300		5380		5460		5540		5620		5700		5780		5860		5940		6020		6100		6180		6260		6340		6420		6500		6580		6660		6740		6820		6900		6980		7060		7140		7220		7300		7380		7460		7540		7620		7700		7780		7860		7940		8020		8100		8180		8260		8340		8420		8500		8580		8660		8740		8820		8900		8980		9060		9140		9220		9300		9380		9460		9540		9620		9700		9780		9860		9940		10020		10100		10180		10260		10340		10420		10500		10580		10660		10740		10820		10900		10980		11060		11140		11220		11300		11380		11460		11540		11620		11700		11780		11860		11940		12020		12100		12180		12260		12340		12420		12500		12580		12660		12740		12820		12900		12980		13060		13140		13220		13300		13380		13460		13540		13620		13700		13780		13860		13940		14020		14100		14180		14260		14340		14420		14500		14580		14660		14740		14820		14900		14980		15060		15140		15220		15300		15380		15460		15540		15620		15700		15780		15860		15940		16020		16100		16180		16260		16340		16420		16500		16580		16660		16740		16820		16900		16980		17060		17140		17220		17300		17380		17460		17540		17620		17700		17780		17860		17940		18020		18100		18180		18260		18340		18420		18500		18580		18660		18740		18820		18900		18980		19060		19140		19220		19300		19380		19460		19540		19620		19700		19780		19860		19940		20020		20100		20180		20260		20340		20420		20500		20580		20660		20740		20820		20900		20980		21060		21140		21220		21300		21380		21460		21540		21620		21700		21780		21860		21940		22020		22100		22180		22260		22340		22420		22500		22580		22660		22740		22820		22900		22980		23060		23140		23220		23300		23380		23460		23540		23620		23700		23780		23860		23940		24020		24100		24180		24260		24340		24420		24500		24580		24660		24740		24820		24900		24980		25060		25140		25220		25300		25380		25460		25540		25620		25700		25780		25860		25940		26020		26100		26180		26260		26340		26420		26500		26580		26660		26740		26820		26900		26980		27060		27140		27220		27300		27380		27460		27540		27620		27700		27780		27860		27940		28020		28100		28180		28260		28340		28420		28500		28580		28660		28740		28820		28900		28980		29060		29140		29220		29300		29380		29460		29540		29620		29700		29780		29860		29940		30020		30100		30180		30260		30340		30420		30500		30580		30660		30740		30820		30900		30980		31060		31140		31220		31300		31380		31460		31540		31620		31700		31780		31860		31940		32020		32100		32180		32260		32340		32420		32500		32580		32660		32740		32820		32900		32980		33060		33140		33220		33300		33380		33460		33540		33620		33700		33780		33860		33940		34020		34100		34180		34260		34340		34420		34500		34580		34660		34740		34820		34900		34980		35060		35140		35220		35300		35380		35460		35540		35620		35700		35780		35860		35940		36020		36100		36180		36260		36340		36420		36500		36580		36660		36740		36820		36900		36980		37060		37140		37220		37300		37380		37460		37540		37620		37700		37780		37860		37940		38020		38100		38180		38260		38340		38420		38500		38580		38660		38740		38820		38900		38980		39060		39140		39220		39300		39380		39460		39540		39620		39700		39780		39860		39940		40020		40100		40180		40260		40340		40420		40500		40580		40660		40740		40820		40900		40980		41060		41140		41220		41300		41380		41460		41540		41620		41700		41780		41860		41940		42020		42100		42180		42260		42340		42420		42500		42580		42660		42740		42820		42900		42980		43060		43140		43220		43300		43380		43460		43540		43620		43700		43780		43860		43940		44020		44100		44180		44260		44340		44420		44500		44580		44660		44740		44820		44900		44980		45060		45140		45220		45300		45380		45460		45540		45620		45700		45780		45860		45940		46020		46100		46180		46260		46340		46420		46500		46580		46660		46740		46820		46900		46980		47060		47140		47220		47300		47380		47460		47540		47620		47700		47780		47860		47940		48020		48100		48180		48260		48340		48420		48500		48580		48660		48740		48820		48900		48980		49060		49140		49220		49300		49380		49460		49540		49620		49700		49780		49860		49940		50020		50100		50180		50260		50340		50420		50500		50580		50660		50740		50820		50900		50980		51060		51140		51220		51300		51380		51460		51540		51620		51700		51780		51860		51940		52020		52100		52180		52260		52340		52420		52500		52580		52660		52740		52820		52900		52980		53060		53140		53220		53300		53380		53460		53540		53620		53700		53780		53860		53940		54020		54100		54180		54260		54340		54420		54500		54580		54660		54740		54820		54900		54980		55060		55140		55220		55300		55380		55460		55540		55620		55700		55780		55860		55940		56020		56100		56180		56260		56340		56420		56500		56580		56660		56740		56820		56900		56980		57060		57140		57220		57300		57380		57460		57540		57620		57700		57780		57860		57940		58020		58100





# AIRFLOW PERFORMANCE—TZHGL SERIES

## COMPONENT AIR RESISTANCE

### TZHGL 7.5 TON [26 kW] & 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]

### TZHGL 15 TON [53 kW]

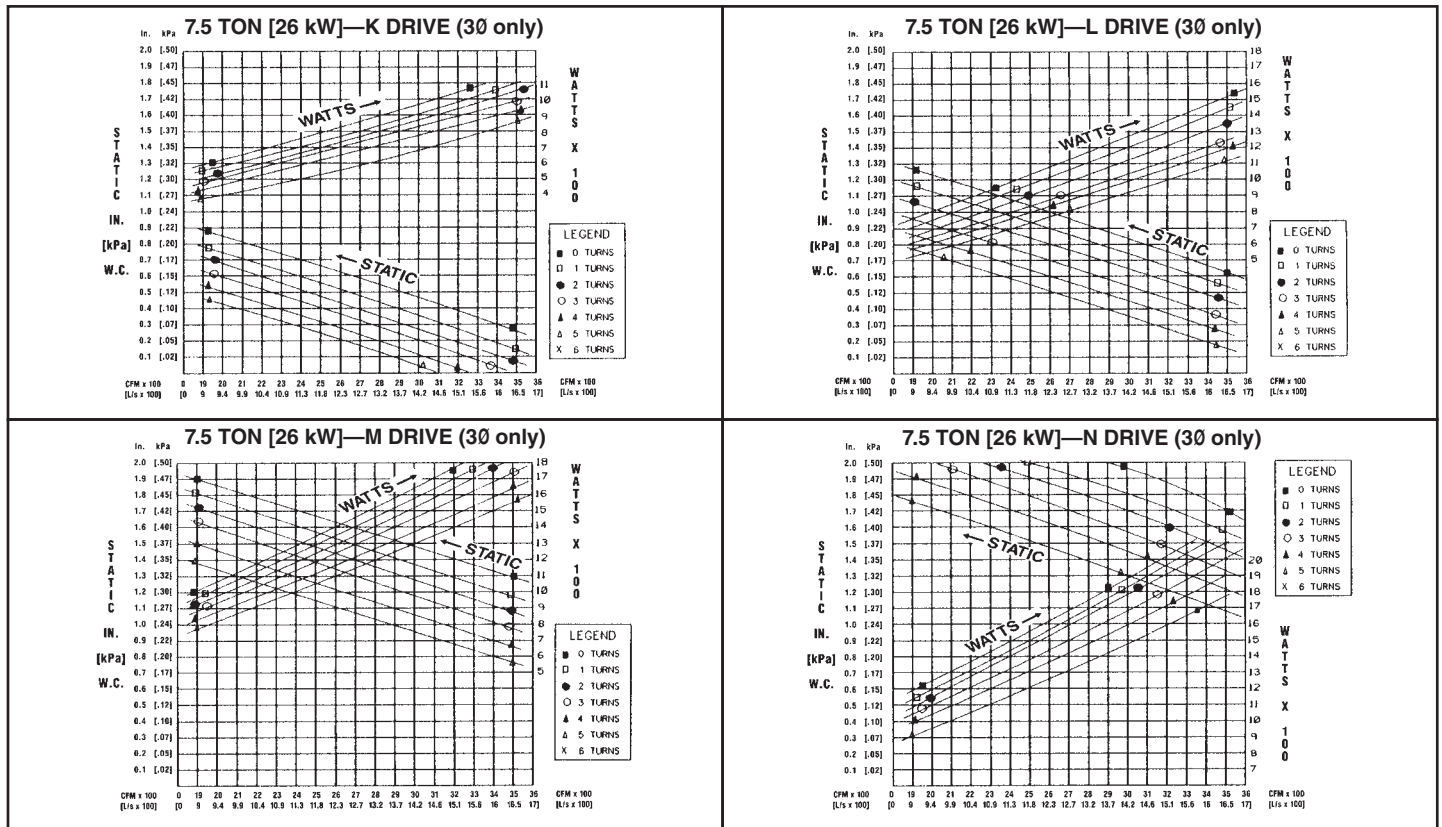
CFM [L/s]	4000 [1888]	4400 [2077]	4800 [2265]	5200 [2454]	5600 [2643]	6000 [2832]	6400 [3020]	6800 [3209]	7200 [3398]
Electric Heater 30KW	.175 [.040]	.187 [.050]	.200 [.049]	.215 [.053]	.230 [.057]	.250 [.062]	.275 [.068]	.305 [.076]	.350 [.087]
Electric Heater 40KW	.290 [.070]	.320 [.080]	.350 [.087]	.380 [.095]	.410 [.102]	.450 [.112]	.495 [.123]	.550 [.137]	.600 [.149]
Mixing Box (R/A Damper Open)	.030 [.007]	.037 [.009]	.044 [.011]	.052 [.013]	.061 [.015]	.071 [.018]	.091 [.023]	.102 [.025]	.110 [.027]
Discharge Grille (Set Max. Open)	.010 [.003]	.012 [.003]	.014 [.004]	.017 [.004]	.019 [.005]	.022 [.006]	.025 [.006]	.029 [.007]	.032 [.008]
Inlet Grille	.010 [.002]	.014 [.003]	.020 [.005]	.027 [.007]	.035 [.009]	.044 [.011]	.054 [.013]	.065 [.016]	.077 [.019]
Discharge Plenum	.02 [.005]	.04 [.010]	.05 [.012]	.065 [.016]	.085 [.021]	.100 [.025]	.120 [.030]	.150 [.037]	.180 [.045]

### TZHGL 20 TON [70 kW]

CFM [L/s]	6400 [3020]	6800 [3209]	7200 [3398]	7600 [3586]	8000 [3776]	8400 [3964]	8800 [4153]	9200 [4342]	9600 [4531]
Electric Heater 30KW	.220 [.055]	.230 [.057]	.240 [.060]	.260 [.065]	.280 [.070]	.300 [.075]	.320 [.080]	.340 [.085]	.370 [.092]
Electric Heater 40KW	.360 [.090]	.390 [.097]	.420 [.104]	.450 [.112]	.490 [.122]	.530 [.132]	.570 [.142]	.610 [.152]	.650 [.162]
Mixing Box (R/A Damper Open)	.095 [.023]	.102 [.025]	.110 [.027]	.115 [.030]	.121 [.030]	.126 [.031]	.128 [.032]	.135 [.034]	.142 [.035]
Discharge Grille (Set Max. Open)	.025 [.006]	.029 [.007]	.032 [.008]	.036 [.009]	.040 [.010]	.044 [.011]	.048 [.012]	.053 [.013]	.057 [.014]
Inlet Grille	.054 [.013]	.065 [.016]	.077 [.019]	.090 [.022]	.104 [.026]	.120 [.030]	.150 [.037]	.190 [.047]	.240 [.060]
Discharge Plenum	.120 [.030]	.150 [.037]	.180 [.045]	.210 [.052]	.250 [.062]	.290 [.072]	.340 [.085]	.400 [.010]	.470 [.117]

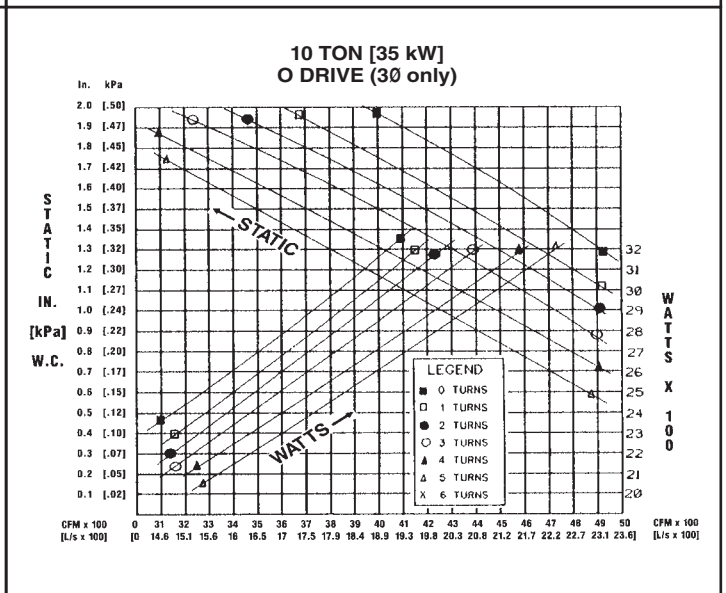
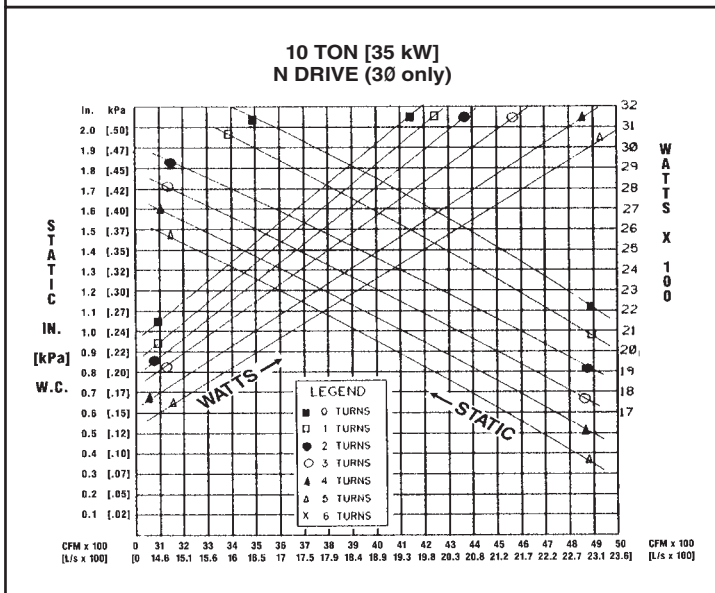
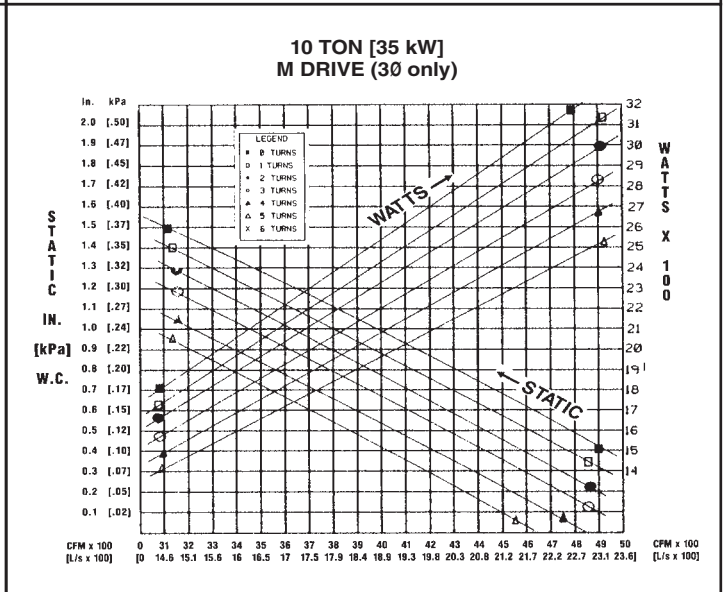
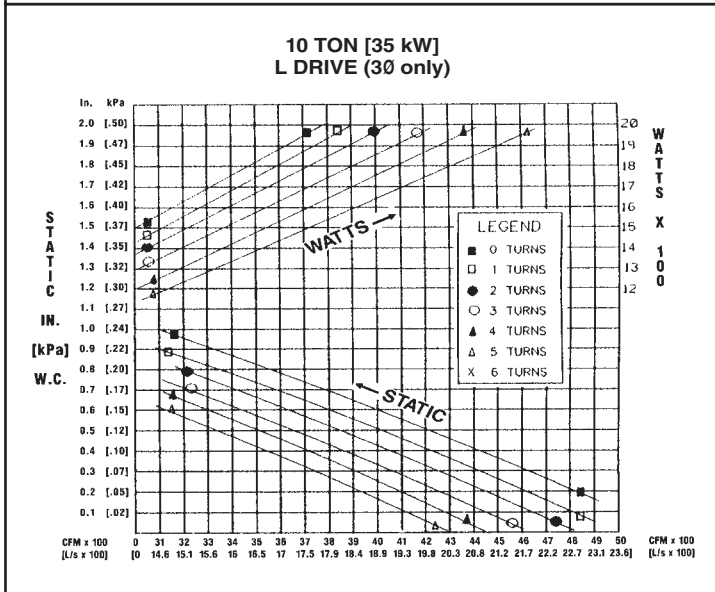
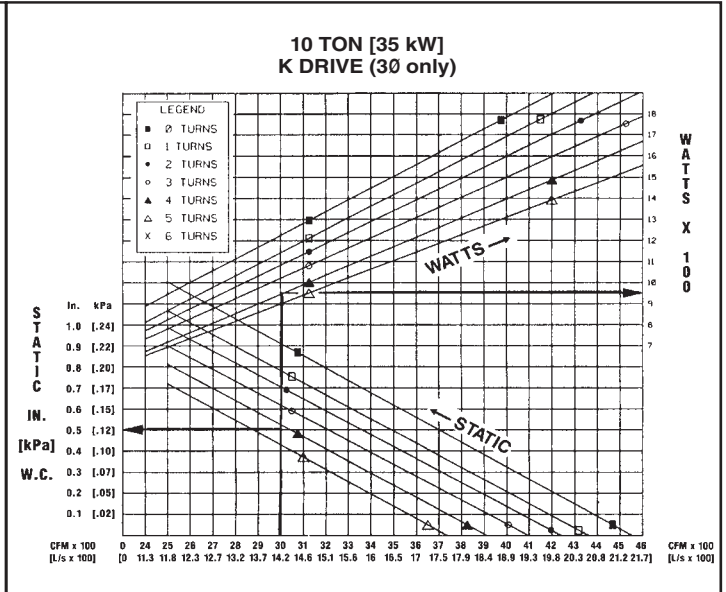
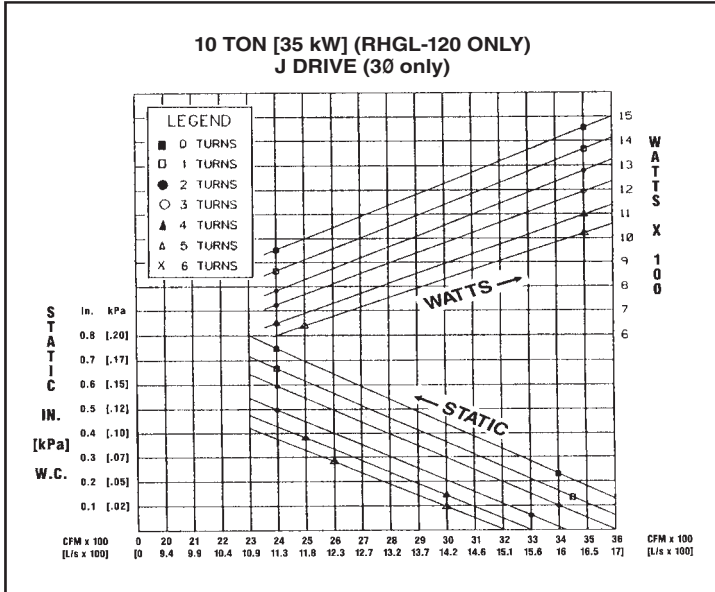
NOTE: Add component resistance to duct resistance to determine total E.S.P.

## BLOWER PERFORMANCE CURVES—7.5 TON [26 kW] (WET COIL)



[ ] Designates Metric Conversions

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



[ ] Designates Metric Conversions

# PERFORMANCE DATA—TZHGL SERIES

## EVAPORATOR PERFORMANCE DATA (GROSS CAPACITY)

EVAPORATOR/AIR HANDLER TZHGL90 @ 3000 CFM [1416 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
3000	40	101,593	73,674	52.9	51.0	127,358	84,666	63.8	51.9	153,992	94,880	54.9	53.1
	45	80,928	62,952	57.3	54.8	103,594	73,170	58.8	56.3	130,995	83,959	59.4	57.3
	50	59,031	52,456	61.6	66.7	80,997	82,400	63.0	50.2	105,321	72,678	64.1	61.6

EVAPORATOR/AIR HANDLER TZHGL120 @ 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

EVAPORATOR/AIR HANDLER TZHGL180 @ 6000 CFM [2832 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
6000	40	189,115	142,220	53.1	51.7	235,654	162,761	54.9	53.7	286,314	182,615	56.8	55.6
	45	149,290	121,287	56.3	54.3	192,102	141,102	58.2	56.4	240,876	161,094	60.1	58.4
	50	109,437	102,323	59.2	56.7	149,227	120,400	61.4	59.0	194,559	139,871	63.4	61.0

EVAPORATOR/AIR HANDLER TZHGL240 @ 8000 CFM [3776 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
8000	40	254,328	189,910	53.0	51.6	315,853	187,796	58.3	53.6	378,360	240,448	57.2	55.7
	45	200,864	162,132	56.2	54.2	256,712	216,298	55.0	56.4	324,947	214,800	60.1	58.2
	50	148,684	136,787	59.2	56.6	202,098	162,261	61.2	58.9	260,278	186,284	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

[ ] Designates Metric Conversions

## AIRFLOW CORRECTION FACTORS

TZHGL90 @ 3000 CFM [1416 L/s]							
ACTUAL—CFM [L/s]	2400 [1133]	2600 [1227]	2800 [1321]	3000 [1416]	3200 [1510]	3400 [1605]	3600 [1699]
TOTAL MBH	0.85	0.90	0.95	1.00	1.04	1.09	1.13
SENSIBLE MBH	0.83	0.88	0.94	1.00	1.06	1.11	1.16

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

TZHGL120 @ 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.

TZHGL180 @ 6000 CFM [2832 L/s]										TZHGL240 @ 8000 CFM [3776 L/s]								
ACTUAL—CFM [L/s]	4400 [2077]	4800 [2265]	5200 [2454]	5600 [2643]	6000 [2832]	6400 [3020]	6800 [3209]	7200 [3398]	7600 [3587]	6400 [3020]	6800 [3209]	7200 [3398]	7600 [3587]	8000 [3776]	8400 [3964]	8800 [4153]	9200 [4342]	9600 [4531]
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

# PERFORMANCE DATA/ELECTRIC HEATER KITS—TZHGL SERIES

## ELECTRIC HEATER KIT CHARACTERISTICS

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
TZHGL90 / TZHGL120	RXHE-DE020CA	208/240	20	43.1/48.9	15.6/20.2	53.2/68.9	67/73	70/80
TZHGL90 / TZHGL120	RXHE-DE030CA	208/240	30	60.8/70.2	22.0/29.6	75.1/101	89/100	90/100
TZHGL90 / TZHGL120	RXHE-DE020DA	480	20	24.7	20.2	68.9	37	40
TZHGL90 / TZHGL120	RXHE-DE030DA	480	30	35	29.7	101.3	50	50
TZHGL180 / TZHGL240	RXHE-CE030CC	208/240	30	60/70	21.6/28.8	73.7/98.3	105/115	110/125
TZHGL180 / TZHGL240	RXHE-CE040CC	208/240	40	83/96	30/40	102.4/136.5	134/148	150/150
TZHGL180 / TZHGL240	RXHE-CE030DC	480	30	35	28.8	98.3	58	60
TZHGL180 / TZHGL240	RXHE-CE040DC	480	40	48	40	136.5	74	80

**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]	208-230	3Ø	4.0/3.6	23.9/21.6	15	#14/240	15
1 [746]	460	3Ø	1.8	10.8	15	#14/400	15
1 [746]	575	3Ø	1.4	8.4	15	#14/425	15
1 [746]	115-230	1Ø	16/8	96/48	20/15	#12/120 #14/180	20/15
1 1/2 [1119]	208-230	3Ø	5.7/5.2	34.5/31.2	15	#14/230	15
1 1/2 [1119]	460	3Ø	2.6	15.6	15	#14/300	15
1 1/2 [1119]	575	3Ø	2.1	12.6	15	#14/325	15
2 [1491]	208-230	3Ø	7.5/6.8	45.1/40.8	15	#14/165	15
2 [1491]	460	3Ø	3.4	20.4	15	#14/275	15
2 [1491]	575	3Ø	2.7	16.2	15	#14/300	15
2 [1491]	115-230	1Ø	24/12	144/72	30/15	#10/140 #14/120	30/15
3 [2237]	208-230	3Ø	10.6/9.6	64.1/58	15	#14/135	15
3 [2237]	460	3Ø	4.8	26.8	15	#14/230	15
3 [2237]	575	3Ø	3.9	23.4	15	#14/240	15
5 [3729]	208-230	3Ø	16.7/15.2	100.6/91	21/19	#10/240 #12/150	25/20
5 [3729]	460	3Ø	7.6	45.6	15	#14/185	15
5 [3729]	575	3Ø	6.1	36.6	15	#14/220	15
7 1/2 [5593]	208-230	3Ø	24.2/22.0	146/132	30/28	#10/150	30/30
7 1/2 [5593]	460	3Ø	11.0	66	15	#14/135	15
7 1/2 [5593]	575	3Ø	9.0	54	15	#14/150	15

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

[ ] Designates Metric Conversions

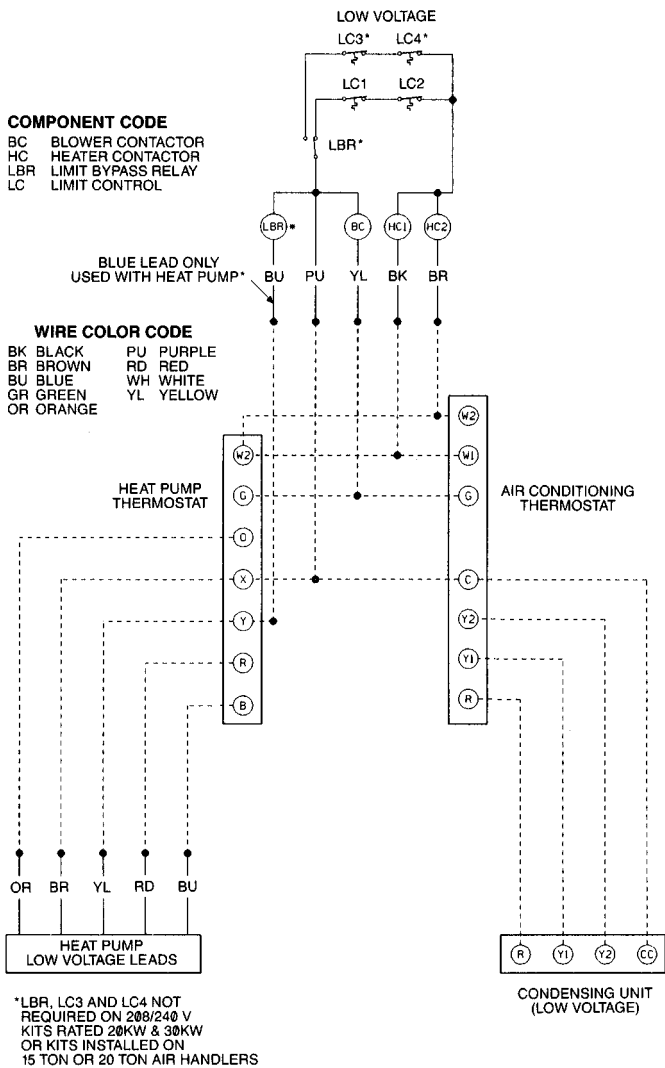
## OPTIONAL HEATER KIT

### COMPONENT CODE

BC BLOWER CONTACTOR  
 HC HEATER CONTACTOR  
 LBR LIMIT BYPASS RELAY  
 LC LIMIT CONTROL

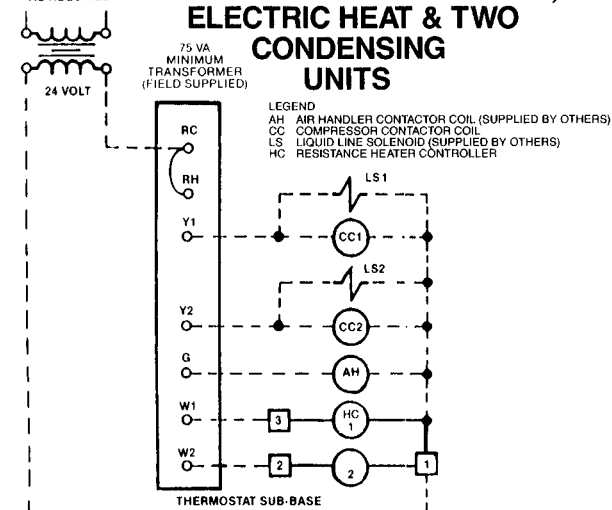
### WIRE COLOR CODE

BK BLACK PU PURPLE  
 BR BROWN RD RED  
 BU BLUE WH WHITE  
 GR GREEN YL YELLOW  
 OR ORANGE

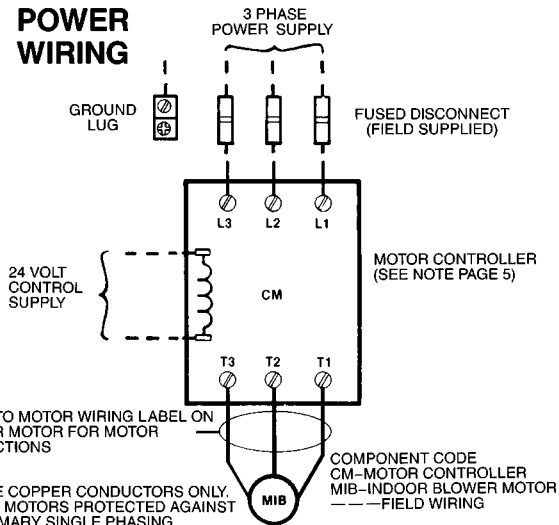


## TYPICAL WIRING CONNECTIONS WITH DUAL CIRCUIT AIR HANDLER, ELECTRIC HEAT & TWO CONDENSING UNITS

120-208-230-460 VOLT AS REQUIRED



## POWER WIRING



# ACCESSORIES—TZHGL SERIES

## 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

[ ] Designates Metric Conversions

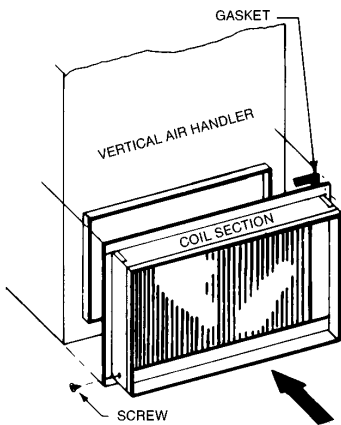
## RXHM MIXING BOX



## RXHE ELECTRIC HEATER KIT

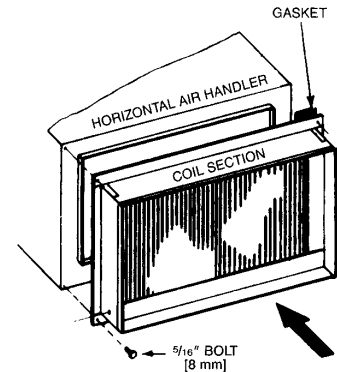


## HOT WATER OR STEAM COILS



(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





## AIR HANDLER ACCESSORIES (con't)

### PHYSICAL SPECIFICATIONS

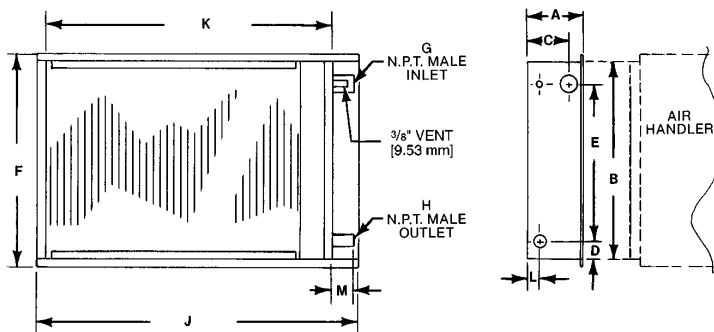
NOMINAL TONS [kW]	FINNED HEIGHT—IN. [mm]	FINNED LENGTH—IN. [mm]	FACE AREA FT <sup>2</sup> [m <sup>2</sup> ]	CIRCUITS & TUBES HIGH
7½ [26.38]-10 [35.17]	18 [457]	40 [1016]	5.0 [.46]	12
15 [52.75]-20 [70.34]	27 [686]	48 [1219]	9.0 [.84]	18

### GROSS COIL PERFORMANCE

NOMINAL TONS [kW]	NOMINAL BTUH		NOMINAL CFM [ L/s]	VELOCITY FPM
	STEAM	WATER		
7½ [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 =  $\frac{\text{CFM}}{\text{Face Area}}$

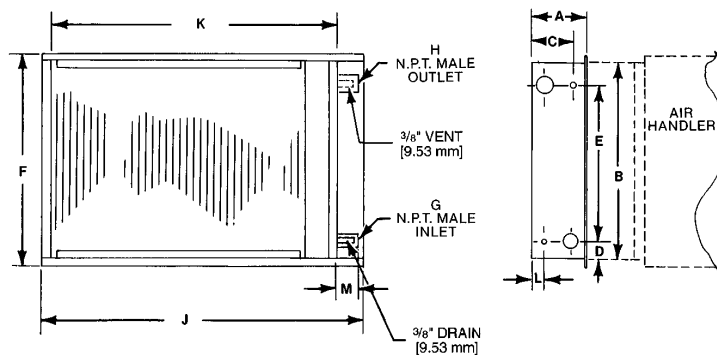
#### STEAM COIL



#### STEAM COIL COIL DIMENSIONS—INCHES [mm]

MODEL	NOMINAL TONS [kW]	A	B	C	D	E	F	G	H	J	K	L	M
RXHC-C74	7½ [26.38]-10 [35.17]	9 <sup>1</sup> / <sub>16</sub> [230]	21 <sup>3</sup> / <sub>8</sub> [543]	5 <sup>3</sup> / <sub>8</sub> [137]	3 <sup>3</sup> / <sub>16</sub> [81]	15 [381]	24 [610]	1½ [38]	1¼ [32]	51½ [1308]	47 <sup>5</sup> / <sub>8</sub> [1210]	2 <sup>13</sup> / <sub>16</sub> [71]	3¼ [83]
RXHC-C76S	15 [52.75]-20 [70.34]	9 <sup>1</sup> / <sub>16</sub> [230]	30 <sup>7</sup> / <sub>8</sub> [784]	5 <sup>3</sup> / <sub>8</sub> [137]	3 <sup>3</sup> / <sub>16</sub> [81]	24 [610]	35 [889]	2 [51]	1½ [38]	59½ [1511]	55 <sup>5</sup> / <sub>8</sub> [1413]	2 <sup>13</sup> / <sub>16</sub> [71]	3½ [89]

#### HOT WATER COIL



#### HOT WATER COIL DIMENSIONS—INCHES [mm]

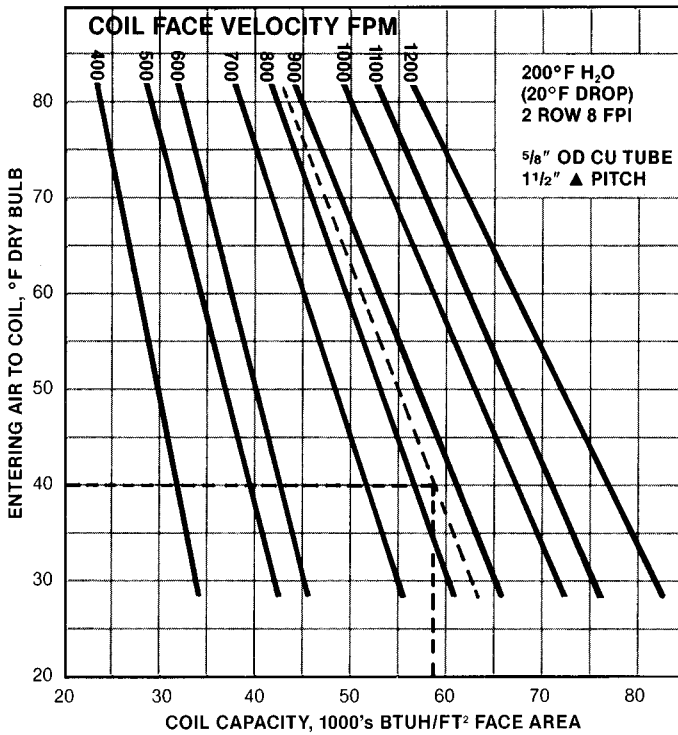
MODEL	NOMINAL TONS [kW]	A	B	C	D	E	F	G	H	J	K	L	M
RXHC-C74W	7½ [26.38]-10 [35.17]	9 <sup>1</sup> / <sub>16</sub> [230]	21 <sup>3</sup> / <sub>8</sub> [543]	5 <sup>3</sup> / <sub>8</sub> [137]	3 <sup>3</sup> / <sub>16</sub> [81]	15 [381]	24 [610]	1¼ [32]	1¼ [32]	51½ [1308]	47 <sup>5</sup> / <sub>8</sub> [1210]	2 <sup>13</sup> / <sub>16</sub> [71]	3 [76]
RXHC-C76W	15 [52.75]-20 [70.34]	9 <sup>1</sup> / <sub>16</sub> [230]	30 <sup>7</sup> / <sub>8</sub> [784]	5 <sup>3</sup> / <sub>8</sub> [137]	3 <sup>3</sup> / <sub>16</sub> [81]	24 [610]	35 [889]	1½ [38]	1½ [38]	59½ [1511]	55 <sup>5</sup> / <sub>8</sub> [1413]	2 <sup>13</sup> / <sub>16</sub> [71]	3¼ [83]

[ ] Designates Metric Conversions

# ACCESSORIES—TZHGL SERIES

## AIR HANDLER ACCESSORIES (con't) HOT WATER COILS

**CURVE 2  
HOT WATER COIL**



**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

### HOT WATER COIL SELECTION:

#### Specified:

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

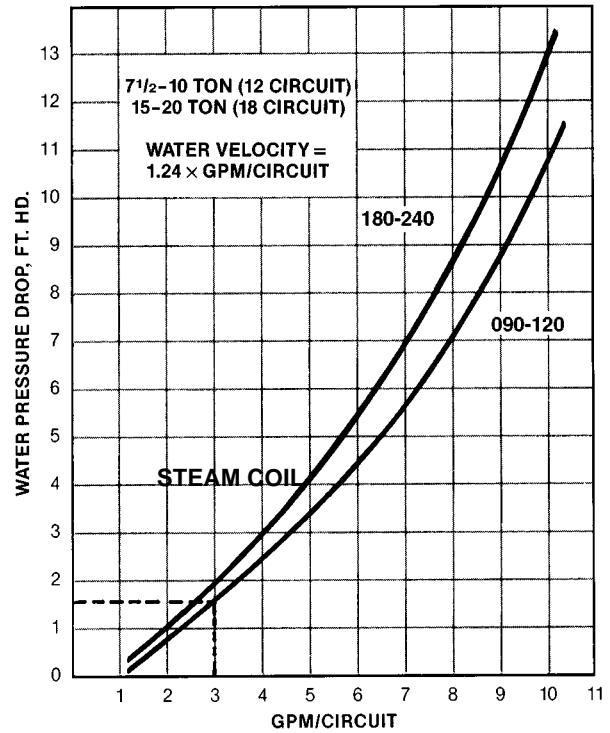
#### Select 10 Ton Nominal Coil:

Face Area = 5 Ft<sup>2</sup>  
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<sup>2</sup> = 57,500  
Coil Capacity = 5 x 57,500 = 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<sub>2</sub>O

**CURVE 3  
HOT WATER COIL WATER  
PRESSURE DROP**



#### BASIC FORMULA:

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

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

**AIR HANDLER ACCESSORIES (con't)**  
**STEAM COILS AIRFLOW**

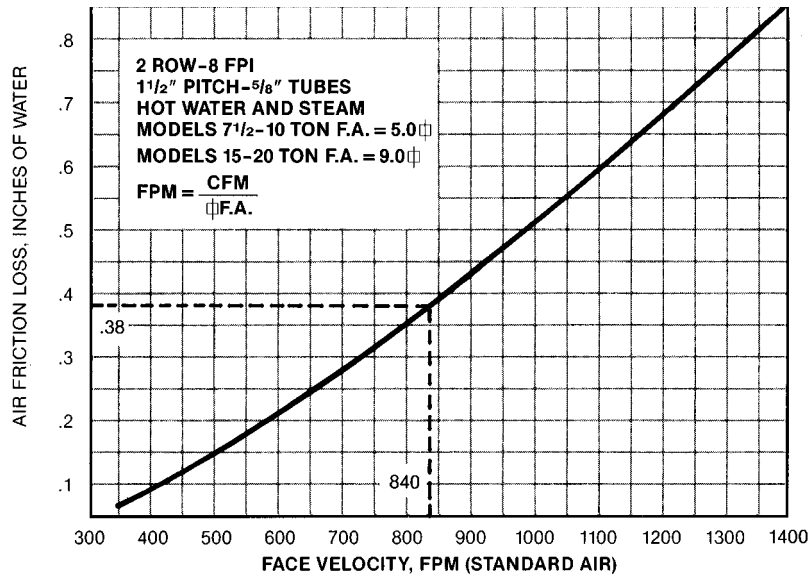
**TABLE I**  
**ALTITUDE AND TEMPERATURE CORRECTION FACTOR TABLE**

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:

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

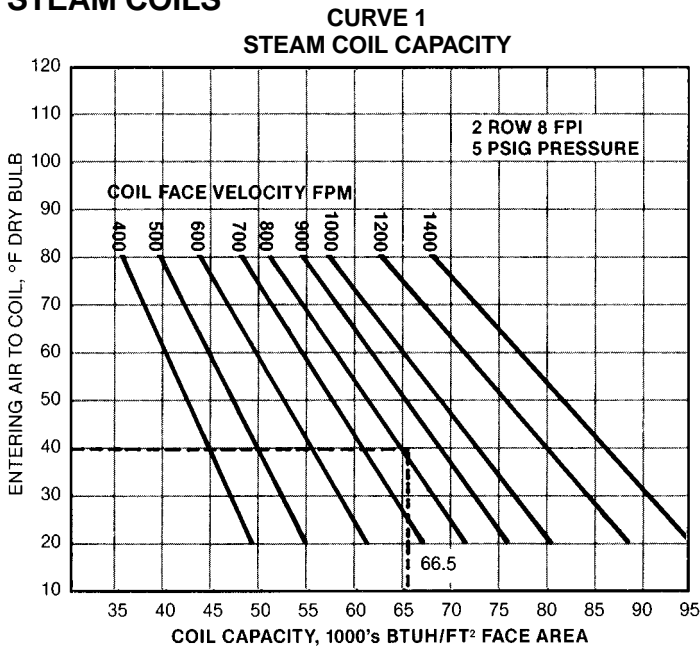
**TABLE II**  
**AIR FRICTION LOSS**



# ACCESSORIES—TZHGL SERIES

## AIR HANDLER ACCESSORIES (con't)

### STEAM COILS



#### 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:

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

#### 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<sup>2</sup>  
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 325,000 = 403,000 BTUH

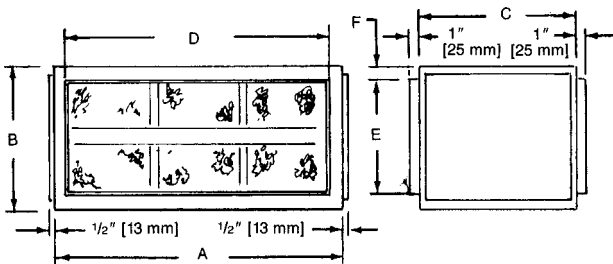
Air Temp. Rise = 403,000/(1.08 x 4202) = 90.85°F

From Table II, Air Side Pressure Drop = .38" H<sub>2</sub>O

### FILTER RACK

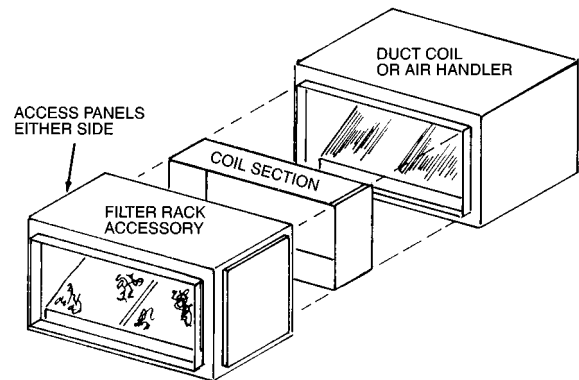
The filter rack accessory can be connected directly to the hot water/steam coil accessory. The filter rack accessory is ONLY needed when hot water steam coils are used.

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]



#### 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]



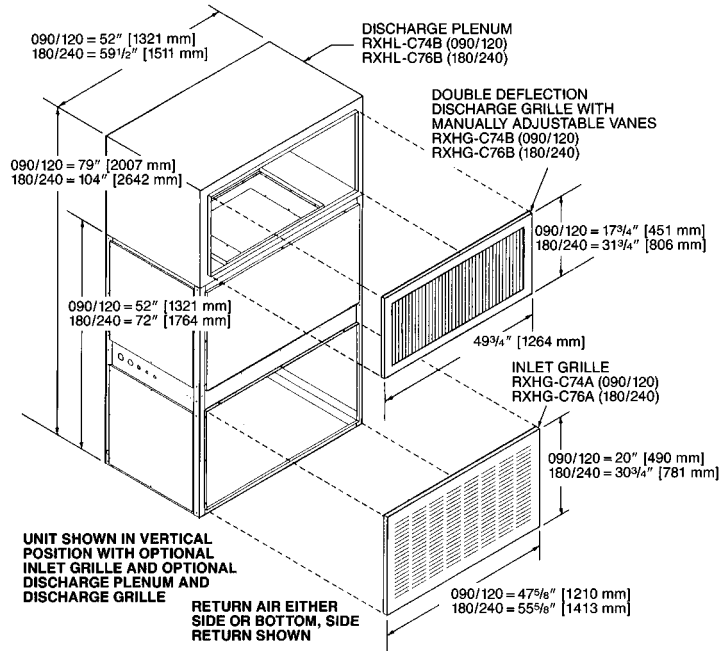
MODEL NO.	FILTER SIZE (QTY.) TYPE
RXHF-B74A	16x20x1 (4) Disposable 20x20x1 (2) Disposable
RXHF-B76A	20x25x1 (6) Disposable

[ ] 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 AND 20 NOMINAL TONS  
[26, 35, 53 AND 70 kW]

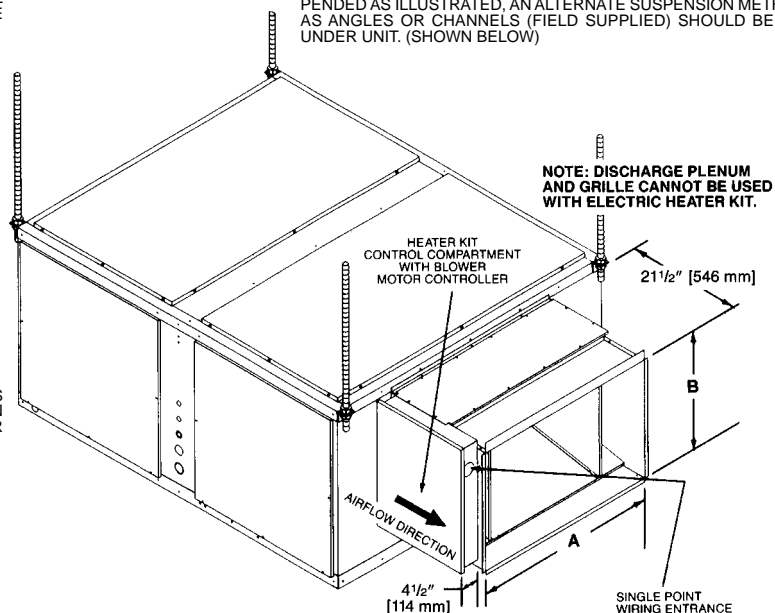
OPTIONAL ELECTRICAL HEATER KIT SHOWN INSTALLED IN HORIZONTAL POSITION AND CONNECTED DIRECTLY TO THE AIR HANDLER. THE HEATER KIT MAY ALSO BE INSTALLED WITH THE AIR HANDLER SET IN THE VERTICAL POSITION. IN EITHER POSITION THE HEATER KIT CONTROL COMPARTMENT MUST BE ON THE LEFT SIDE FACING THE AIR DISCHARGE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

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)

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.



[ ] Designates Metric Conversions

# ACCESSORIES—TZHGL SERIES

## MIXING BOX ACCESSORY—OPERATING SEQUENCE

**COOLING SEASON**—Thermostat set at “Cool” and “Fan Auto,” outside air damper goes to “minimum fresh air” position when cooling 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

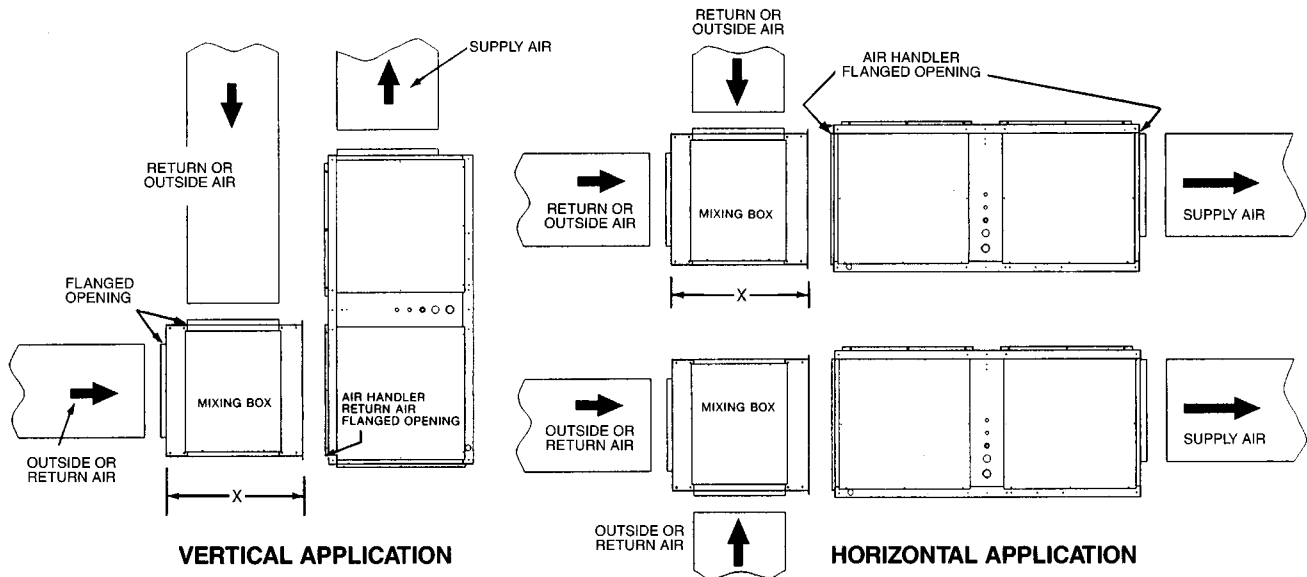
are not suitable for cooling, then the dampers go to “minimum fresh air” position and mechanical cooling is energized.

**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

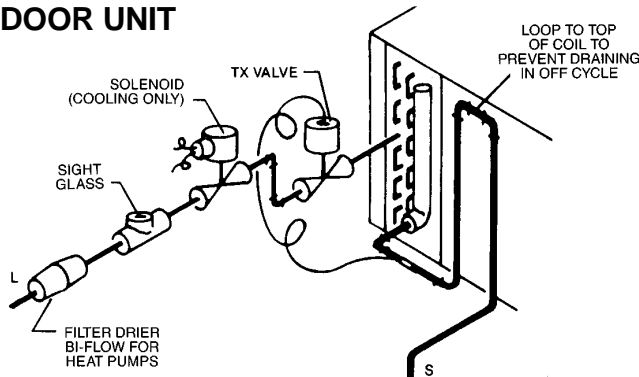
MODEL NO.	AIR HANDLER SIZES USED ON	FLANGED DUCT OPENINGS		IN. [mm]
		LENGTH IN. [mm]	WIDTH IN. [mm]	“X”
RXHM-BC74H	090, 120	42 [1067]	16 <sup>7</sup> / <sub>8</sub> [454]	27 [686]
RXHM-BC76H	180, 240	48 <sup>3</sup> / <sub>8</sub> [1229]	22 [559]	32 [813]



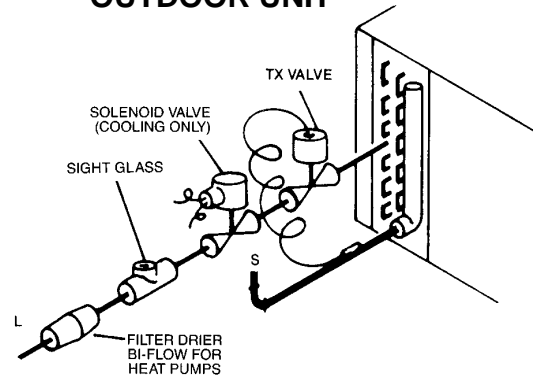
[ ] Designates Metric Conversions

## 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 valve 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 O.D. [mm]	SOLE-NOID VALVE	ANGLE VALVE	SHORT RADIUS ELL	LONG RADIUS ELL	TEE LINE FLOW	TEE BRANCH FLOW
1/2 [13]	70 [21.3]	8.3 [2.5]	1.6 [0.5]	1.0 [0.3]	1.0 [0.3]	3.1 [0.9]
5/8 [16]	72 [21.9]	10.4 [3.2]	1.9 [0.8]	1.2 [0.4]	1.2 [0.4]	3.6 [1.1]
3/4 [19]	75 [22.9]	12.5 [3.8]	2.1 [0.7]	1.4 [0.4]	1.4 [0.4]	4.2 [1.3]
7/8 [22]	78 [23.8]	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]

# GUIDE SPECIFICATIONS—TZHGL SERIES

## OPERATING SEQUENCE

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

## GUIDE SPECIFICATIONS

Furnish and install as shown on the drawing Thermal Zone® 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 3450 RPM dual voltage, single phase open drip proof motor or 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] = 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

## GENERAL TERMS OF LIMITED WARRANTY\*

Thermal Zone® 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.

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.

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