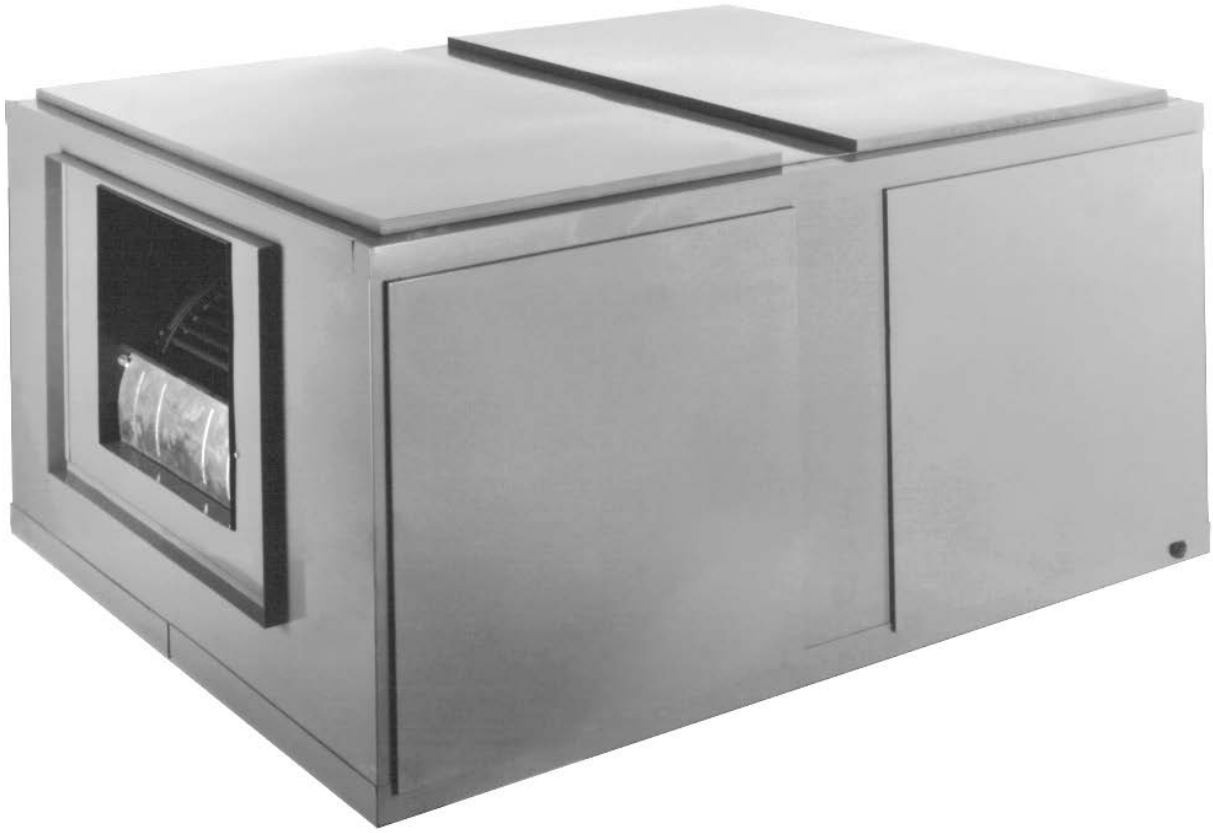
INSTALLATION INSTRUCTIONS

(-)HGL 50 & 60 Hz COMMERCIAL AIR HANDLERS
NOMINAL 7.5 - 20 TON [26 - 70 kW] AIR CONDITIONING



RECOGNIZE THIS SYMBOL AS AN INDICATION OF IMPORTANT SAFETY INFORMATION!

⚠ WARNING

THESE INSTRUCTIONS ARE INTENDED AS AN AID TO QUALIFIED, LICENSED SERVICE PERSONNEL FOR PROPER INSTALLATION, ADJUSTMENT AND OPERATION OF THIS UNIT. READ THESE INSTRUCTIONS THOROUGHLY BEFORE ATTEMPTING INSTALLATION OR OPERATION. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN IMPROPER INSTALLATION, ADJUSTMENT, SERVICE OR MAINTENANCE POSSIBLY RESULTING IN FIRE, ELECTRICAL SHOCK, PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

Accredited by the RvA

ABS Quality Evaluations, Inc. Management System Certification

ANAB ACCREDITED

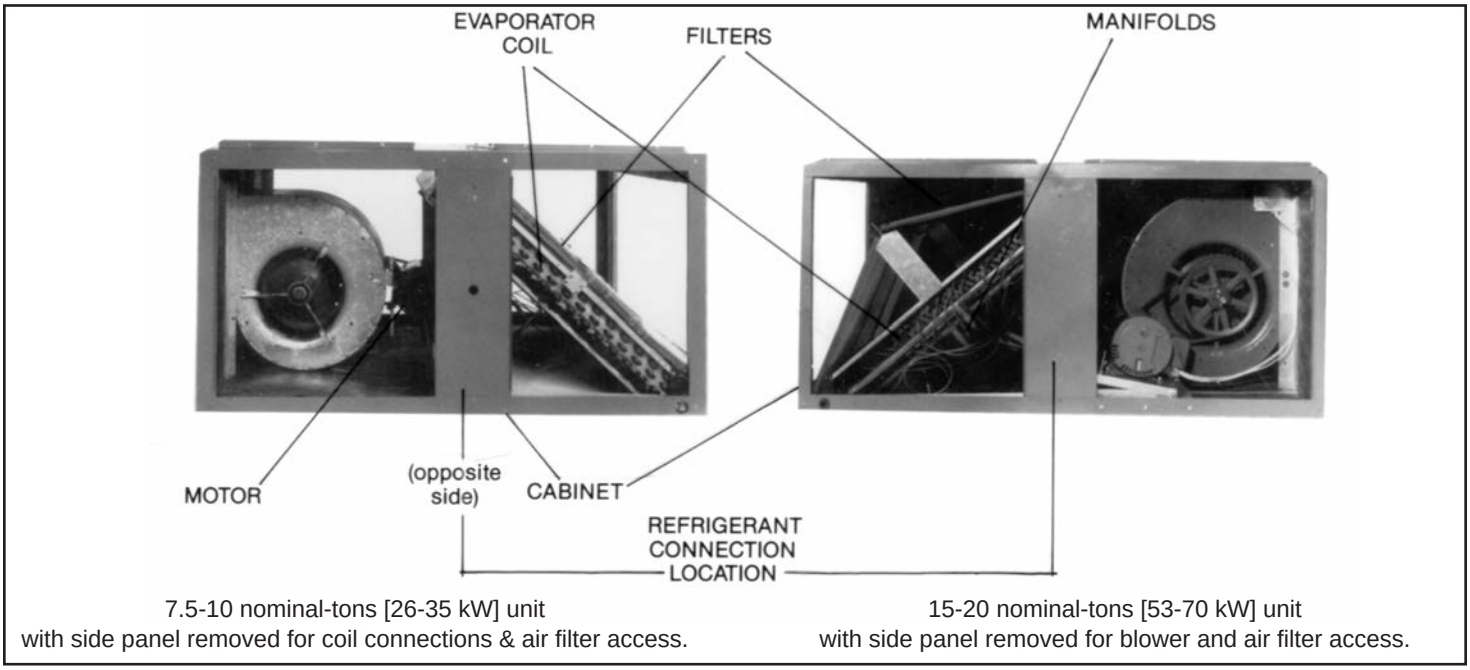
ISO 9001:2000

Certificate Number: 30164

DO NOT DESTROY THIS MANUAL

PLEASE READ CAREFULLY AND KEEP IN A SAFE PLACE FOR FUTURE REFERENCE BY A SERVICEMAN

INDEX



7.5-10 nominal-tons [26-35 kW] unit with side panel removed for coil connections & air filter access.

15-20 nominal-tons [53-70 kW] unit with side panel removed for blower and air filter access.

INTRODUCTION

Reference the model nameplate and brand label on the unit for the following product information:

- **Model Number**
- **Serial Number**
- **Country of Origin**
- **Rated Voltage and Frequency**

⚠ Recognize this symbol as an indication of Important Safety Information!

⚠ WARNING

THE MANUFACTURER'S WARRANTY DOES NOT COVER ANY DAMAGE OR DEFECT TO THE AIR HANDLER CAUSED BY THE ATTACHMENT OR USE OF ANY COMPONENTS, ACCESSORIES OR DEVICES (OTHER THAN THOSE AUTHORIZED BY THE MANUFACTURER) INTO, ONTO OR IN CONJUNCTION WITH THE AIR HANDLER. YOU SHOULD BE AWARE THAT THE USE OF UNAUTHORIZED COMPONENTS, ACCESSORIES OR DEVICES MAY ADVERSELY AFFECT THE OPERATION OF THE AIR HANDLER AND MAY ALSO ENDANGER LIFE AND PROPERTY. THE MANUFACTURER DISCLAIMS ANY RESPONSIBILITY FOR SUCH LOSS OR INJURY RESULTING FROM THE USE OF SUCH UNAUTHORIZED COMPONENTS, ACCESSORIES OR DEVICES.

⚠ WARNING

BEFORE OBTAINING ACCESS TO TERMINALS, ALL CIRCUITS MUST BE DISCONNECTED. FAILURE TO DO SO CAN CAUSE ELECTRICAL SHOCK RESULTING IN SEVERE PERSONAL INJURY OR DEATH.

This booklet contains the installation and operating instructions for your air handler. There are a few precautions that should be taken to derive maximum satisfaction from it. Improper installation can result in unsatisfactory operation or dangerous conditions.

Read this booklet and any instructions packaged with separate equipment required to make up the system prior to installation. Give this booklet to the owner and explain its provisions. The owner should retain this booklet for future reference.

CHECKING PRODUCT RECEIVED

Upon receiving the unit, inspect it for any damage from shipment. Claims for damage, either shipping or concealed, should be filed immediately with the shipping company. Check the unit model number and electrical characteristics to determine if they are correct.

STANDARD UNIT FEATURES

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

MANIFOLD—All models are furnished with dual circuit manifolds for dual condensing unit application. The circuitry is so arranged to provide full face coil operation from each unit. Fittings are provided with each unit for single condensing unit application. The fittings may be installed for either right or left hand tubing connections.

DRAIN PAN (not visible)—The zinc coated steel drain pan is designed to trap condensate in either vertical or horizontal installations. All pans are insulated with fiberglass insulation between the bottom of the pan and the unit and may be connected for either right or left hand drains. If unit is to be installed over a finished ceiling and in an unconditioned space, it is recommended an auxiliary drain pan be placed under the entire unit.

⚠ WARNING

THESE INSTRUCTIONS ARE INTENDED AS AN AID TO QUALIFIED LICENSED SERVICE PERSONNEL FOR PROPER INSTALLATION, ADJUSTMENT AND OPERATION OF THIS UNIT. READ THESE INSTRUCTIONS THOROUGHLY BEFORE ATTEMPTING INSTALLATION OR OPERATION. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN IMPROPER INSTALLATION, ADJUSTMENT, SERVICE OR MAINTENANCE POSSIBLY RESULTING IN FIRE, ELECTRICAL SHOCK, PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

⚠ WARNING

THE MANUFACTURER'S WARRANTY DOES NOT COVER ANY DAMAGE OR DEFECT TO THE UNIT CAUSED BY THE ATTACHMENT OR USE OF ANY COMPONENTS, ACCESSORIES OR DEVICES (OTHER THAN THOSE AUTHORIZED BY THE MANUFACTURER) INTO, ONTO OR IN CONJUNCTION WITH THE UNIT. YOU SHOULD BE AWARE THAT THE USE OF UNAUTHORIZED COMPONENTS, ACCESSORIES OR DEVICES MAY ADVERSELY AFFECT THE OPERATION OF THE UNIT AND MAY ALSO ENDANGER LIFE AND PROPERTY. THE MANUFACTURER DISCLAIMS ANY RESPONSIBILITY FOR SUCH LOSS OR INJURY RESULTING FROM THE USE OF SUCH UNAUTHORIZED COMPONENTS, ACCESSORIES OR DEVICES.

⚠ WARNING

DISCONNECT ALL POWER TO UNIT BEFORE STARTING MAINTENANCE. FAILURE TO DO SO CAN CAUSE ELECTRICAL SHOCK RESULTING IN SEVERE PERSONAL INJURY OR DEATH.

⚠ WARNING

DO NOT USE OXYGEN TO PURGE LINES OR PRESSURIZE SYSTEM FOR LEAK TEST. OXYGEN REACTS VIOLENTLY WITH OIL, WHICH CAN CAUSE AN EXPLOSION RESULTING IN SEVERE PERSONAL INJURY OR DEATH.

⚠ WARNING

THE UNIT MUST BE PERMANENTLY GROUNDED. FAILURE TO DO SO CAN CAUSE ELECTRICAL SHOCK RESULTING IN SEVERE PERSONAL INJURY OR DEATH.

⚠ WARNING

TURN OFF ELECTRIC POWER AT THE FUSE BOX OR SERVICE PANEL BEFORE MAKING ANY ELECTRICAL CONNECTIONS.

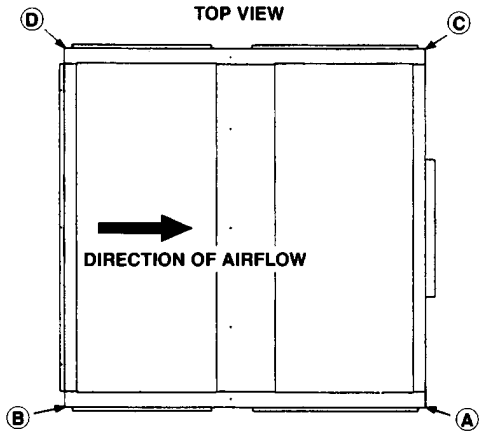
ALSO, THE GROUND CONNECTION MUST BE COMPLETED BEFORE MAKING LINE VOLTAGE CONNECTIONS. FAILURE TO DO SO CAN RESULT IN ELECTRICAL SHOCK, SEVERE PERSONAL INJURY OR DEATH.

⚠ CAUTION

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with this appliance.

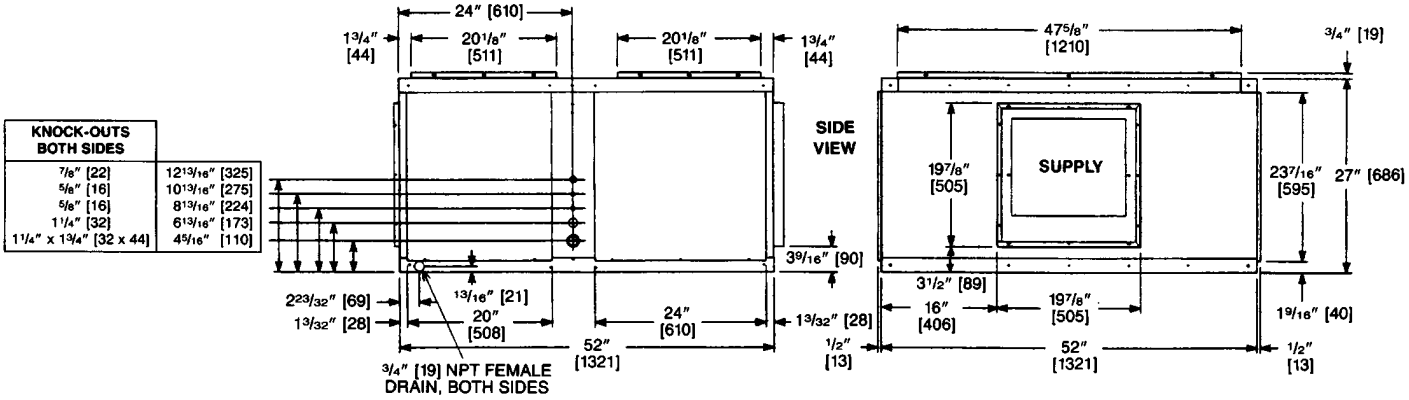
UNIT DIMENSIONS, IN. [MM]

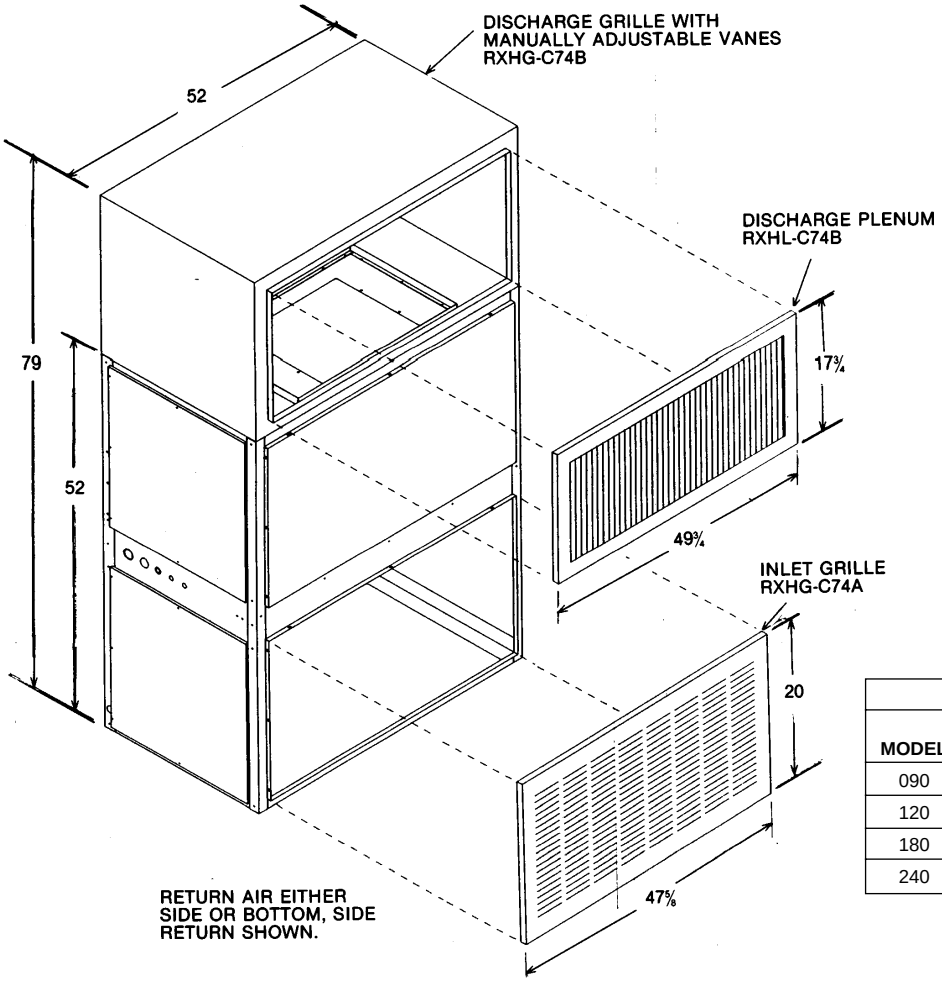


RETURN AIR OPENINGS = 47³/₈" [1203] WIDTH x 19⁷/₈" [505] HEIGHT

UNIT DIMENSIONS
7.5 AND 10 NOMINAL TONS [26 & 35 kW]

MODEL	CORNER WEIGHTS				TOTAL WEIGHT
	A	B	C	D	
7.5 TON [26 kW]	88 [40kg]	78 [35kg]	87 [39kg]	77 [35kg]	330 [150kg]
10 TON [35 kW]	93 [42kg]	82 [37kg]	92 [42kg]	80 [36kg]	347 [157kg]



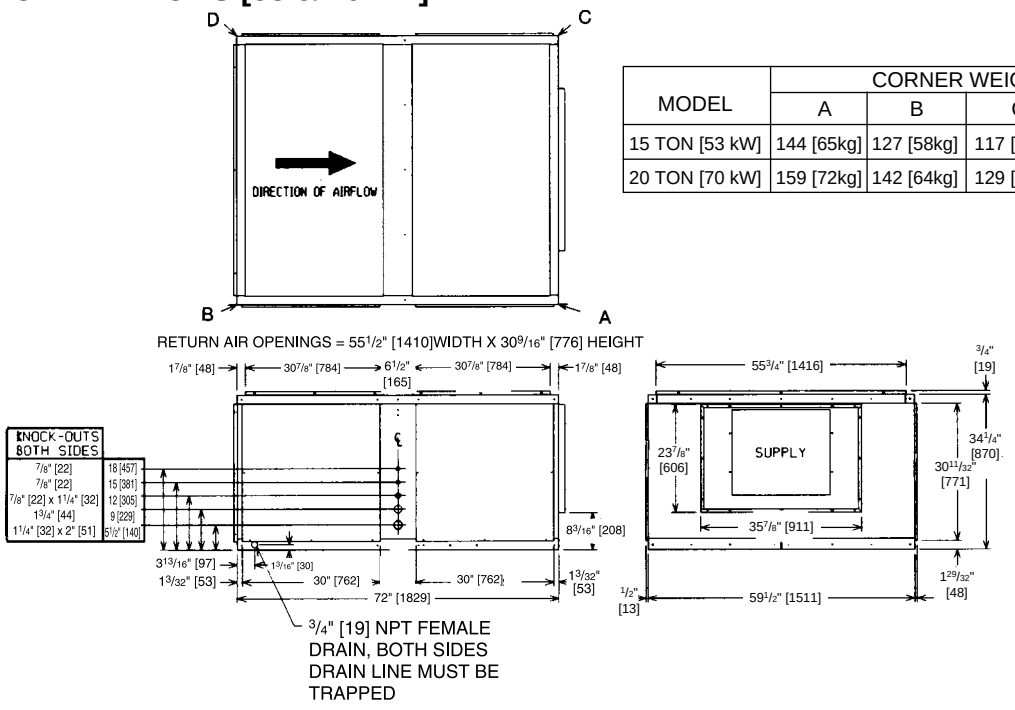


UNIT SHOWN IN VERTICAL POSITION WITH OPTIONAL INLET GRILLE AND OPTIONAL DISCHARGE PLENUM AND DISCHARGE GRILLE

MODEL	REFRIGERANT STUB SIZES			
	DUAL LIQUID	DUAL SUCTION	SINGLE LIQUID	SINGLE SUCTION
090	1/8, 1/8	7/8, 7/8	1/2	1 1/8
120	1/2, 1/2	7/8, 7/8	5/8	1 3/8
180	1/2, 1/2	1 1/8, 1 1/8	5/8	1 5/8
240	5/8, 5/8	1 3/8, 1 3/8	7/8	1 5/8

UNIT DIMENSIONS

15 AND 20 NOMINAL TONS [53 & 70 kW]

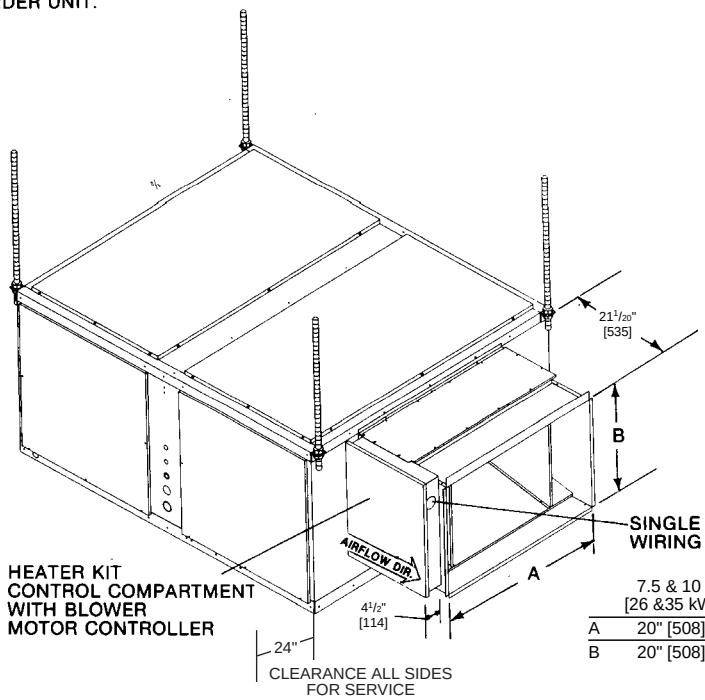


MODEL	CORNER WEIGHTS				TOTAL WEIGHT
	A	B	C	D	
15 TON [53 kW]	144 [65kg]	127 [58kg]	117 [53kg]	105 [48kg]	495 [225kg]
20 TON [70 kW]	159 [72kg]	142 [64kg]	129 [59kg]	115 [52kg]	545 [247kg]

7.5, 10, 15 AND 20 TON [26, 35, 53 & 70 kW]

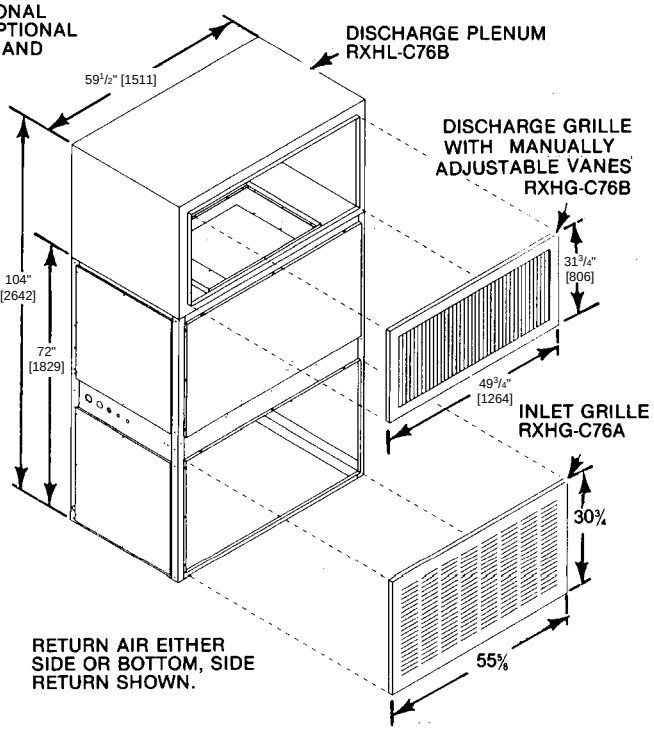
FOUR HEAVY GAUGE ANGLES ARE FURNISHED (SHIPPED LOOSE) FOR SUSPENDING UNITS FROM ALL FOUR CORNERS. MINIMUM OF ½" SUPPORT RODS ARE RECOMMENDED. IF ALL-THREAD IS USED, IT IS ALSO RECOMMENDED THAT TWO NUTS AND TWO LOCKWASHERS BE TIGHTENED SECURELY AGAINST THE SUSPENSION ANGLES.

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



	7.5 & 10 [26 &35 kW]	15 & 20 [53 & 70 kW]
A	20" [508]	36" [914]
B	20" [508]	24" [609]

UNIT SHOWN IN VERTICAL POSITION WITH OPTIONAL INLET GRILLE AND OPTIONAL DISCHARGE PLENUM AND DISCHARGE GRILLE



OPTIONAL ELECTRIC 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

NOTE: DISCHARGE PLENUM AND GRILLE CANNOT BE USED WITH ELECTRIC HEATER KIT

PHYSICAL DATA TABLE – 50 HZ

		MODEL NO. (-)HGL-			
		090	120	180	240
Nominal Size (tons)		7.5 [26 kW]	10 [35 kW]	15 [53 kW]	20 [70 kW]
Nominal CFM @ Rated E.S.P.		2500 @ .25”	3333 @ .30”	5000 @ .35”	6670 @ .40”
MOTOR HORSEPOWER	Standard— 3450 RPM 1 Ø 1750 RPM 3 Ø	 1 HP 1 HP	 2 HP 1½ HP	 — 2 HP	 — 5 HP
	Optional— 1750 RPM 3 Ø	1½ HP, 2 HP	2 HP, 3 HP	3 HP, 5 HP	7½ HP
Blower Size—diameter x width		12 x 12	12 x 12	18 x 15	18 x 18
Blower Shaft Diameter		¾	¾	1	1
Blower Sheave Diameter (Std.)		10	10	12	12
Motor Sheave Size Adjustment (Std.)	3450 RPM 1 Ø 1750 RPM 3 Ø	1.9-2.9 3.4-4.4	2.4-3.2 4.4-5.0	— 3.1-4.1	— 4.3-5.5
Belt Type & Size Std.		A-53	A-53	B-52	B-52
Coil Face Area (sq. ft.)		10.2	10.2	16.5	16.5
Coil Tube Dia.		⅜	⅜	⅜	⅜
Coil, Rows Deep-Fins Per Inch		3/15	4/15	3/13	4/15
T.X. Valve Refrigerant Control		(2) BBIZE-3-GA	(2) CBBIZE-5-GA	(2) BBIZE-6-GA	(2) BBIZE-8-GA
Filter Size (std.)* No. Req’d		(4) 16 x 25 x 1	(4) 16 x 25 x 1	(6) 20 x 25 x 1	(6) 20 x 25 x 1
CABINET: Finish		Powder Paint	Powder Paint	Powder Paint	Powder Paint
Sheet Metal		Galvanized	Galvanized	Galvanized	Galvanized
Gauge Top		18	18	18	18
Sides		16	16	16	16
Bottom		18	18	18	18
Doors and Covers		20 min.	20 min.	20 min.	20 min.
UNIT WEIGHTS: Operating		330	347	495	545
Shipping		350	367	530	580
OPTIONAL ACCESSORIES WEIGHTS: Hot Water Coils		200	200	200	200
Steam Heating Coils		200	200	200	200
Inlet Grille		9	62	9	12
Discharge Plenum		38	38	38	62
Discharge Grille		15	15	15	23

*Unit will accept 2” filters.

DRIVE PACKAGE DATA – 50 HZ

NOMINAL TONS [kW]	DRIVE PACKAGE	— BELT	SHEAVE SELECTIONS*, IN. [mm]			MOTOR	APPROX. BLOWER RPM @ MOTOR SHEAVE TURNS OPEN						
			MOTOR/BORE		BLOWER	HP [W]/PHASE	0	1	2	3	4	5	6
7.5 [26]	K	4L530	3.4-4.4-⅝	[86-112-16]	9.75 [248]	1 [746]/3Ø	658	633	608	583	554	525	—
	K	4L480	1.9-2.9	[48-74]	9.75 [248]	1 [746]/1Ø	854	804	750	692	633	579	—
	L	4L530	4.2-5.2-⅝	[107-132-16]	9.75 [248]	1.5 [1119]/3Ø	771	746	717	688	658	625	—
	M	4L550	5.2-6.2-⅝	[132-157-16]	9.75 [248]	1.5 [1119]/3Ø	938	908	879	850	821	788	—
	◇N	4L550	5.7-6.7-⅞	[145-170-22]	9.75 [248]	2 [1491]/3Ø	996	971	942	917	888	858	—
10 [35]	J+	4L530	3.4-4.4	[86-112]	9.75 [248]	1.5 [1119]/3Ø	658	633	604	575	550	525	—
	K	4L530	4.0-5.0-⅝	[102-127-16]	9.75 [248]	1.5 [1119]/3Ø	738	713	688	663	633	608	—
	K	4L480	1.9-2.9	[48-74]	8.75 [222]	2 [1491]/1Ø	950	892	829	767	704	642	—
	L	4L540	4.6-5.6-⅞	[117-142-22]	9.75 [248]	2 [1491]/3Ø	829	800	775	746	717	688	—
	M	4L550	5.2-6.2-⅞	[132-157-22]	9.75 [248]	3 [2237]/3Ø	938	908	879	850	821	788	—
	ΔN	4L530	4.7-5.7-⅞	[119-145-22]	7.75 [197]	3 [2237]/3Ø	1021	992	958	925	892	858	—
	□O	4L540	5.7-6.7-⅞	[145-170-22]	8.75 [222]	3 [2237]/3Ø	1067	1042	1017	988	958	929	—
15 [53]	K	BP-52	3.1-4.1-⅞	[79-104-22]	11.4 [290]	2 [1491]/3Ø	538	517	492	471	446	425	400
	L	BP-52	3.7-4.7-⅞	[94-119-22]	11.4 [290]	3 [2237]/3Ø	608	588	567	546	525	500	475
	M	BP-45	3.7-4.7-1⅛	[94-119-29]	9.4 [239]	5 [3729]/3Ø	725	700	675	650	625	596	567
	#N	BP-50	4.8-6.0-1⅛	[122-152-29]	10.4 [264]	5 [3729]/3Ø	821	800	779	758	738	717	696
20 [70]	K	BP-50	4.3-5.5-1⅛	[109-140-29]	11.4 [290]	5 [3729]/3Ø	708	688	667	646	621	596	571
	L	BP-48 (2)	4.3-5.5-1⅜	[109-140-35]	10.4 [264]	7.5 [5593]/3Ø	796	771	746	721	696	671	650
	M	BP-47 (2)	4.3-5.5-1⅜	[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: 2 HP, 4 Pole, 3 Ø) 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. **[ ] Designates Metric Conversions**

PHYSICAL DATA TABLE – 60 HZ

		MODEL NO. (-)HGL-			
Cooling Size		090	120	180	240
Nominal Size (tons)		7.5	10	15	20
Nominal CFM @ Rated E.S.P.		3000 @ .25”	4000 @ .30”	6000 @ .35”	8000 @ .40”
MOTOR HORSEPOWER	Standard— 3450 RPM 1 phase 1750 RPM 3 phase	 1 HP 1 HP	 2 HP 1½ HP	 2 HP	 5 HP
	Optional— 1750 RPM 3 phase	 1½ HP, 2 HP	 2 HP, 3 HP	 3 HP, 5 HP	 7½ HP
Blower Size—diameter x width		12 x 12	12 x 12	18 x 15	18 x 18
Blower Shaft Diameter		¾	¾	1	1
Blower Sheave Diameter (Std.)		10	10	12	12
Motor Sheave Size Adjustment (Std.)	3450 RPM 1 phase 1750 RPM 3 phase	1.9-2.9 3.4-4.4	2.4-3.2 4.4-5.0	 3.1-4.1	 4.3-5.5
Belt Type & Size Std.		A-53	A-53	B-52	B-52
Coil Face Area (sq. ft.)		10.2	10.2	16.5	16.5
Coil Tube Dia.		⅜	⅜	⅜	⅜
Coil, Rows Deep-Fins Per Inch		3/15	4/15	3/13	4/15
T.X. Valve Refrigerant Control		(2) BBIZE-3-GA	(2) CBBIZE-5-GA	(2) BBIZE-6-GA	(2) BBIZE-8-GA
Filter Size (std.)* No. Req’d		(4) 16 x 25 x 1	(4) 16 x 25 x 1	(6) 20 x 25 x 1	(6) 20 x 25 x 1
CABINET: Finish		 Powder Paint	 Powder Paint	 Powder Paint	 Powder Paint
Sheet Metal		Galvanized	Galvanized	Galvanized	Galvanized
Gauge; Top		18	18	18	18
Sides		16	16	16	16
Bottom		18	18	18	18
Doors and Covers		20 min.	20 min.	20 min.	20 min.
UNIT WEIGHTS: Operating		 330	 347	 495	 545
Shipping		350	367	530	580
OPTIONAL ACCESSORIES WEIGHTS: Hot Water Coils		 200	 200	 200	 200
Steam Heating Coils		200	200	200	200
Inlet Grille		9	62	9	12
Discharge Plenum		38	38	38	62
Discharge Grille		15	15	15	23

*Unit will accept 2” filters.

DRIVE PACKAGE DATA – 60 HZ

NOMINAL TONS	3 PH DRIVE	SHEAVE SELECTIONS*		MOTOR	APPROX. BLOWER RPM @ MOTOR SHEAVE TURNS OPEN						
		MOTOR	BLOWER	HP / PH	0	1	2	3	4	5	6
7.5	K	3.4-4.4	9.75	1 / 3	790	760	730	700	665	630	—
	L	4.2-5.2	9.75	1 1/2 / 3	925	895	860	825	790	750	—
	M	5.2-6.2	9.75	1 1/2 / 3	1125	1090	1055	1020	985	945	—
	N◇	5.7-6.7	9.75	2 / 3	1195	1165	1130	1100	1065	1030	—
10	K	4.0-5.0	9.75	1 1/2 / 3	885	855	825	795	760	730	—
	L	4.6-5.6	9.75	2 / 3	995	960	930	895	860	825	—
	M	5.2-6.2	9.75	3 / 3	1100	1060	1020	985	945	905	—
	N◇	4.7-5.7	8.75	3 / 3	1225	1190	1150	1110	1070	1030	—
	O□	5.7-6.7	8.75	3 / 3	1280	1250	1220	1185	1150	1115	—
15	K	3.1-4.1	11.4	2 / 3	645	620	590	565	535	510	480
	L	3.7-4.7	11.4	3 / 3	730	705	680	655	630	600	570
	M	3.7-4.7	9.4	5 / 3	870	840	810	780	750	715	680
	N#	4.8-6.0	10.4	5 / 3	985	960	935	910	885	860	835
20	K	4.3-5.5	11.4	5 / 3	850	825	800	775	745	715	685
	L	4.3-5.5	10.4	7.5 / 3	995	925	895	865	835	805	780
	M	4.3-5.5	9.4	7.5 / 3	1030	995	960	9225	890	855	815
NOMINAL TONS	**1 PH DRIVE**	**SHEAVE SELECTIONS***		**MOTOR**	**APPROX. BLOWER RPM @ MOTOR SHEAVE TURNS OPEN**						
		MOTOR	**BLOWER**	**HP / PH**	**0**	**1**	**2**	**3**	**4**	**5**	**6**
7½	K	1.9-2.9	9.75	1 / 1	1025	965	900	830	760	695	—
10	K	1.9-2.9	8.75	2 / 1	1140	1070	995	920	845	770	—

*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, Belt: A-50, Motor: 2 HP, 4 Pole, 3 Ø)
Δ Field Supplied (Motor Sheave: Browning IVP75, Blower Sheave: Browning AZ80, Belt: A-50)
□ Field Supplied (Motor Sheave: Browning IVP75, Blower Sheave: Browning AZ90, Belt: A-54)
Field Supplied (Motor Sheave: Browning IVP65, Blower Sheave: Browning BK110, Belt B-50)

INDOOR BLOWER PERFORMANCE (DRY COIL) (-)HGL-090 – 50 HZ

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

(-)HGL-120 – 50 HZ

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 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 (-)HGL-15 TON [53 kW] & 20 TON [70 kW] (DRY COIL)

(-)HGL-180 – 50 HZ

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]

(-)HGL-240 – 50 HZ

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	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 [m²]
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

INDOOR BLOWER PERFORMANCE 7.5 TON (DRY COIL) – 60 HZ
090Z

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	1800 [850]	—	—	—	—	—	—	—	—	—	—	645	420	670	460	690	500	725	560	825	630	860	670	890	700	925	740	965	760	990	805	1020	840	1050	895	1080	925	1110	985	1115	1010
	2000 [944]	—	—	—	—	—	—	—	—	645	405	675	470	690	515	730	555	800	645	835	695	865	730	900	770	930	810	975	840	1000	870	1030	915	1060	980	1090	1015	1125	1070	1120	1080
	2200 [1038]	—	—	—	—	—	—	—	—	670	490	680	540	720	580	785	640	810	715	840	765	870	820	910	870	950	880	980	920	1010	975	1040	1025	1070	1080	1105	1125	1100	1140	1130	1210
	2400 [1133]	—	—	—	—	—	—	650	510	690	570	720	610	770	670	800	755	830	805	860	870	895	925	930	970	970	985	995	1030	1030	1080	1055	1160	1080	1200	1120	1270	1125	1265	1140	1350
	2600 [1227]	—	—	—	—	635	545	675	620	715	665	750	720	780	795	810	865	850	930	885	990	915	1045	960	1060	985	1105	1010	1155	1040	1230	1065	1290	1110	1345	1115	1350	1135	1445	1160	1510
	2800 [1321]	—	—	630	595	665	665	705	720	740	775	775	850	800	920	830	985	865	1060	905	1130	975	1140	975	1190	1000	1250	1030	1320	1060	1400	1090	1450	1095	1455	1120	1530	1150	1615	1180	1700
	3000 [1416]	630	660	660	730	695	775	730	840	770	920	800	995	830	1060	860	1145	890	1220	935	1230	965	1285	995	1345	1020	1405	1050	1505	1080	1560	1110	1640	1115	1650	1140	1740	1170	1815	1195	1885
	3200 [1510]	660	810	695	860	725	920	765	1000	975	1070	825	1140	855	1225	890	1315	920	1370	960	1385	985	1445	1015	1530	1040	1620	1070	1685	1085	1695	1115	1780	1135	1875	—	—	—	—	—	—
	3400 [1605]	690	940	725	1000	760	1090	790	1155	820	1225	850	1325	885	1410	915	1460	950	1485	980	1570	1010	1660	1030	1680	1045	1745	1075	1830	—	—	—	—	—	—	—	—	—	—	—	—
	3600 [1699]	720	1120	750	1185	790	1250	820	1315	850	1430	885	1520	915	1590	945	1605	975	1695	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

K = IVP50, AZ100, 1 HP [766 W]
L = IVP60, AZ100, 1½ HP [1119 W]
M = IVP68, AZ100, 1½ HP [1119 W]
N = [IVP75, AZ100, Belt A050, 2 HP [1491 W] Field Supplied

INDOOR BLOWER PERFORMANCE 10 TON (DRY COIL) – 60 HZ
120 Z

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 O	3000 [1416]	—	—	—	—	—	—	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]	—	—	—	—	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]	—	—	—	—	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]	—	—	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]	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]	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]	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]	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]	915	2225	930	2375	955	2495	980	2620	1010	2750	1030	2840	1035	2950	1055	2960	1080	3070	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	4800 [2265]	930	2555	960	2680	985	2810	1015	2940	1035	3040	1035	3045	1055	3180	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	5000 [2360]	960	2870	990	3010	1020	3135	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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 15 & 20 TON (DRY COIL) – 60 HZ

180Z

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	4000 [850]	—	—	—	—	—	—	480	950	510	1020	540	1090	565	1165	595	1250	620	1320	645	1400	665	1575	690	1740	710	1860	730	1960	735	2220	765	2155	800	2255	820	2340	835	2435	850	2600
	4400 [944]	—	—	—	—	—	—	505	1090	530	1175	560	1250	585	1325	610	1385	635	1485	655	1650	680	1770	700	1945	725	2035	735	2100	755	2225	785	2340	810	2430	825	2525	840	2645	855	2750
	4800 [1038]	—	—	—	—	495	1185	520	1275	550	1355	575	1440	595	1520	620	1600	645	1700	665	1880	690	2015	710	2170	730	2290	745	2350	775	2470	795	2575	815	2690	830	2790	845	2895	860	3100
	5200 [1133]	—	—	490	1300	515	1385	545	1485	565	1550	590	1660	615	1760	635	1850	660	2050	685	2170	705	2320	725	2460	740	2540	770	2655	790	2770	810	2890	825	3000	840	3120	855	3265	870	3365
	5600 [1227]	490	1420	515	1505	540	1620	560	1700	590	1820	610	1905	635	2080	660	2240	680	2365	700	2510	720	2665	740	2740	765	2860	785	2985	805	3105	820	3225	835	3350	850	3490	870	3690	900	3750
	6000 [1321]	510	1640	530	1750	560	1860	590	1950	610	2165	630	2270	660	2450	675	2570	695	2725	720	2905	740	2975	765	3100	780	3220	800	3355	815	3480	835	3620	850	3755	865	3850	895	3885	910	4035
	6400 [1416]	530	1900	555	1980	590	2255	610	2370	630	2470	655	2660	675	2800	695	2965	720	3180	735	3255	760	3360	775	3485	800	3630	820	3750	830	3890	850	4035	865	4130	890	4150	905	4270	920	4440
	6800 [1510]	570	2370	590	2455	610	2575	625	2670	655	2870	675	3030	700	3055	720	3175	740	3350	760	3485	780	3620	800	3750	815	3880	830	4020	845	4160	865	4320	890	4430	905	4595	920	4755	935	4935
	7200 [1605]	590	2685	610	2800	630	2945	650	3100	680	3195	700	3310	720	3450	745	3610	720	3745	780	3910	800	4040	820	4230	830	4345	845	4470	865	4630	890	4790	905	4985	920	5150	—	—	—	—

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

240Z

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	6000 [2832]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	695	2295	715	2525	740	2675	755	2820	780	2975	800	2950	820	3100	840	3180	865	3380	875	3475	890	3590	910	3690
	6500 [3068]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	695	2560	710	2745	730	2850	755	3000	775	3165	805	3270	825	3365	845	3495	865	3700	880	3800	895	3930	910	4030	930	4125
	7000 [3304]	—	—	—	—	—	—	—	—	—	—	—	—	695	2865	710	2990	730	3130	755	3285	775	3450	790	3530	825	3710	845	3865	865	4020	875	4915	895	4270	910	4360	930	4530	950	4625
	7500 [3540]	—	—	—	—	—	—	—	—	—	—	695	3190	720	3350	735	3490	760	3675	780	3800	805	4000	830	4080	850	4245	865	4370	880	4520	895	4620	910	4785	930	4920	950	5090	965	5340
	8000 [3776]	—	—	—	—	—	—	685	3430	700	3560	725	3720	740	3875	760	4060	785	4240	815	4355	835	4545	850	4635	870	4775	880	4915	900	5055	915	5200	935	5360	955	5550	965	5810	980	5985
	8500 [4012]		—	—	—	690	3805	715	4000	730	4155	750	4325	770	4500	790	4700	820	4795	840	4925	850	5065	870	5215	890	5365	905	5495	920	5645	935	5775	950	6120	970	6310	980	6480	1000	6645
	9000 [4248]	685	4070	700	4240	720	4440	735	4615	760	4790	780	4995	815	5165	830	5300	850	5435	865	5570	880	5720	895	5860	910	6060	925	6170	940	6370	955	6660	975	6860	990	7040	1010	7240	1025	7500
	9500 [4484]	700	4730	720	4940	785	5325	800	5500	820	5670	835	5790	850	5920	865	6060	880	6210	895	6370	905	6530	925	6700	940	6850	950	7140	965	7335	985	7520	—	—	—	—	—	—	—	—
	10000 [4720]	805	6080	815	6145	830	6470	840	6615	860	6720	870	6890	885	7040	900	7220	915	7430	925	7600	990	7600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

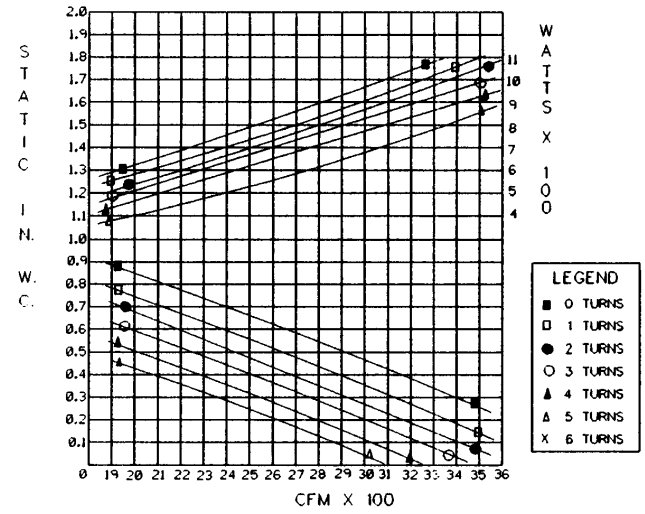
K = IVP60, BK120, 5 HP [3729 W]
L = 2VP60, 2BK110, 7½ HP [5593 W]
M = 2VP650, 2BK100, 7½ HP [5593 W]

NOTES:

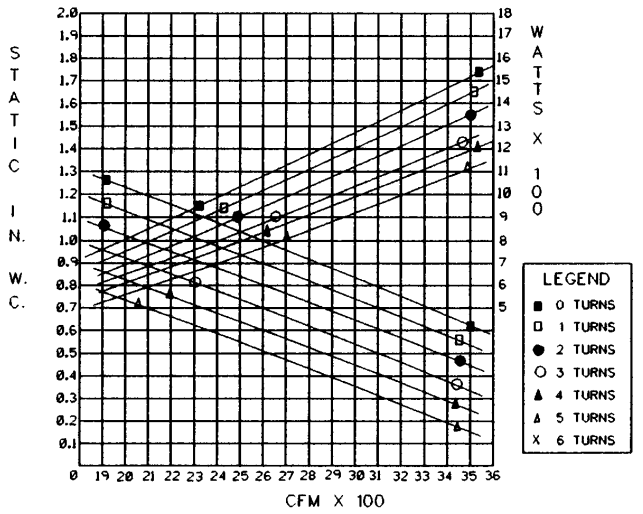
1. Standard Air @ .075 lbs./Ft.^{3} [m^2]
2. Operation below heavy lines require optional L drive.
3. Motor efficiency = .85
4. BHP = $\frac{\text{Watts x Motor Efficiency}}{746}$
5. Code:
   BHP = Brake Horsepower
   RPM = Blower Speed

[ ] Designates Metric Conversions

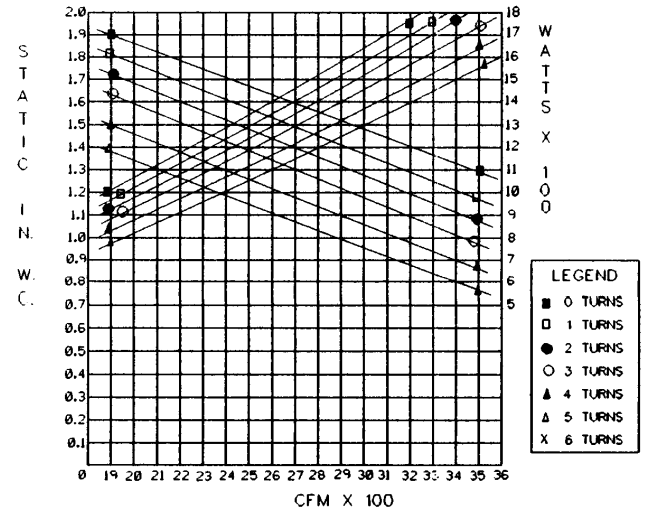
7½TON
K DRIVE (WET COIL)



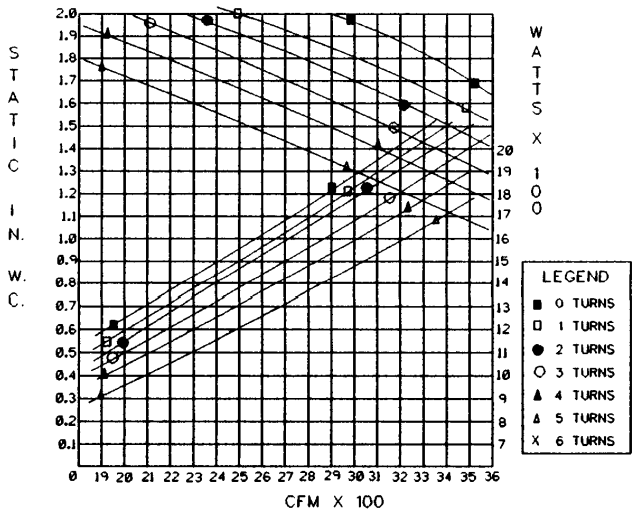
7½TON
L DRIVE (WET COIL)



7½TON
M DRIVE (WET COIL)

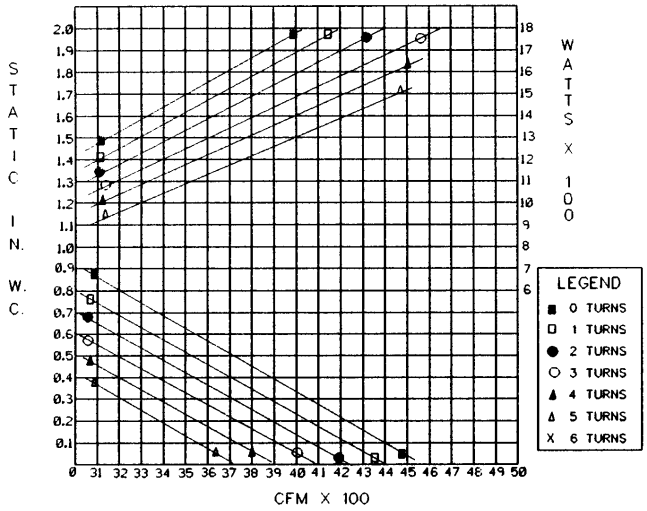


7½TON
N DRIVE (WET COIL)

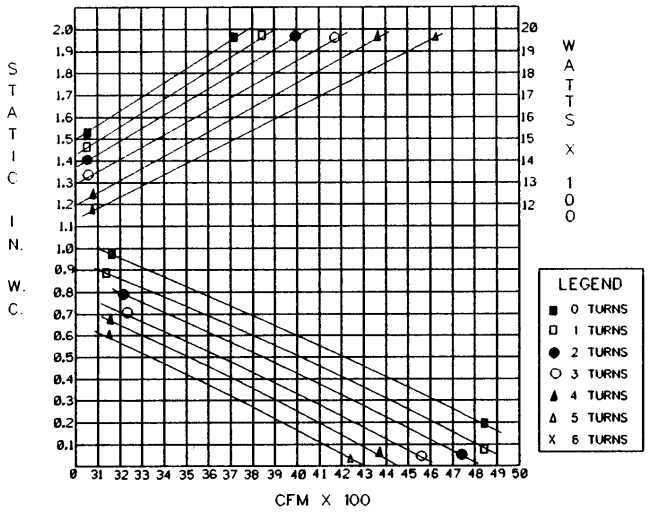


NOTE: CMM = CFM x 0.02832

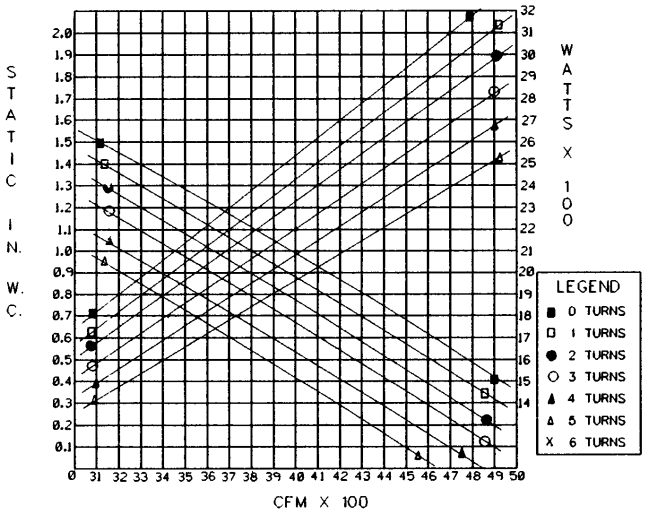
10 TON
K DRIVE (WET COIL)



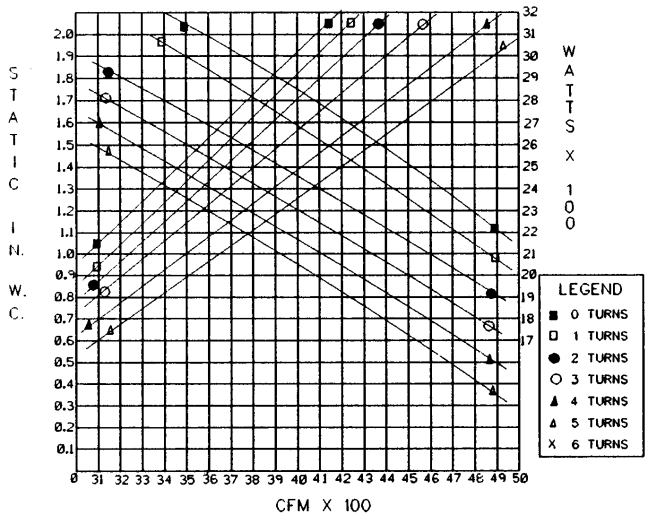
10 TON
L DRIVE (WET COIL)



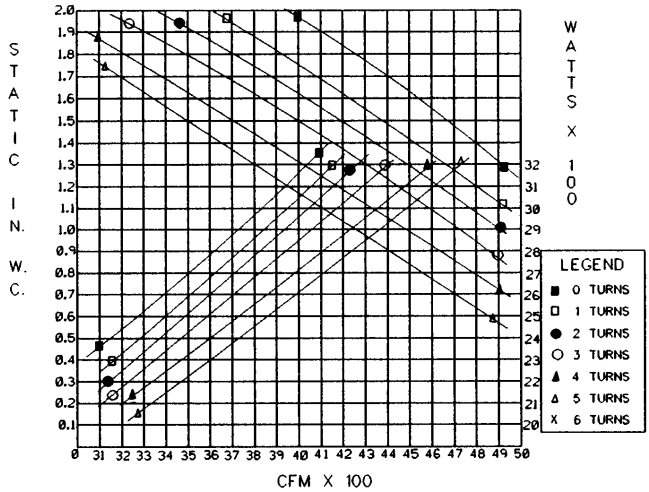
10 TON
M DRIVE (WET COIL)



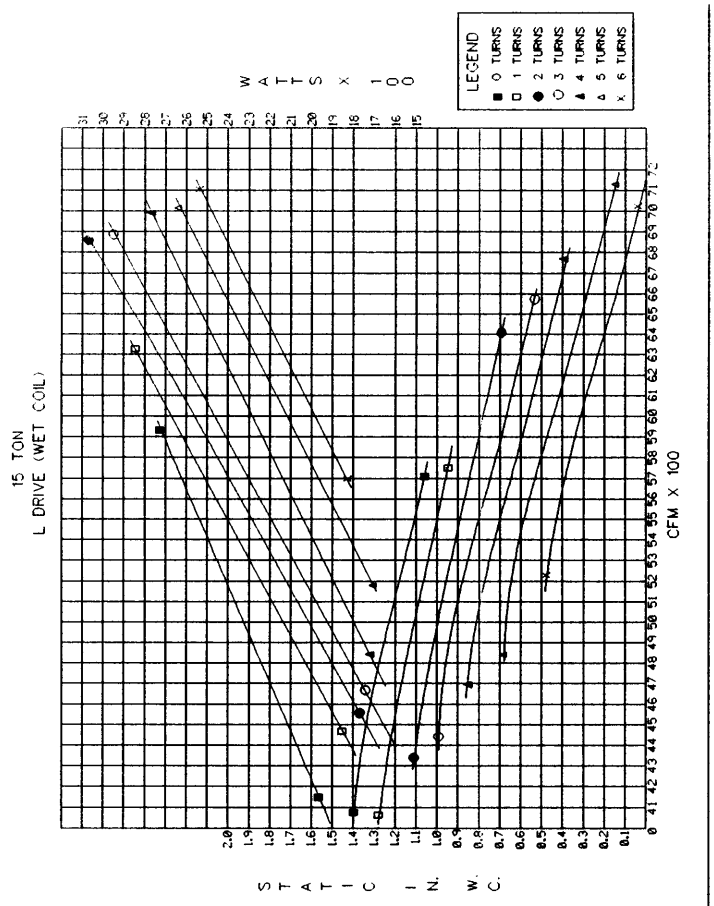
10 TON
N DRIVE (WET COIL)

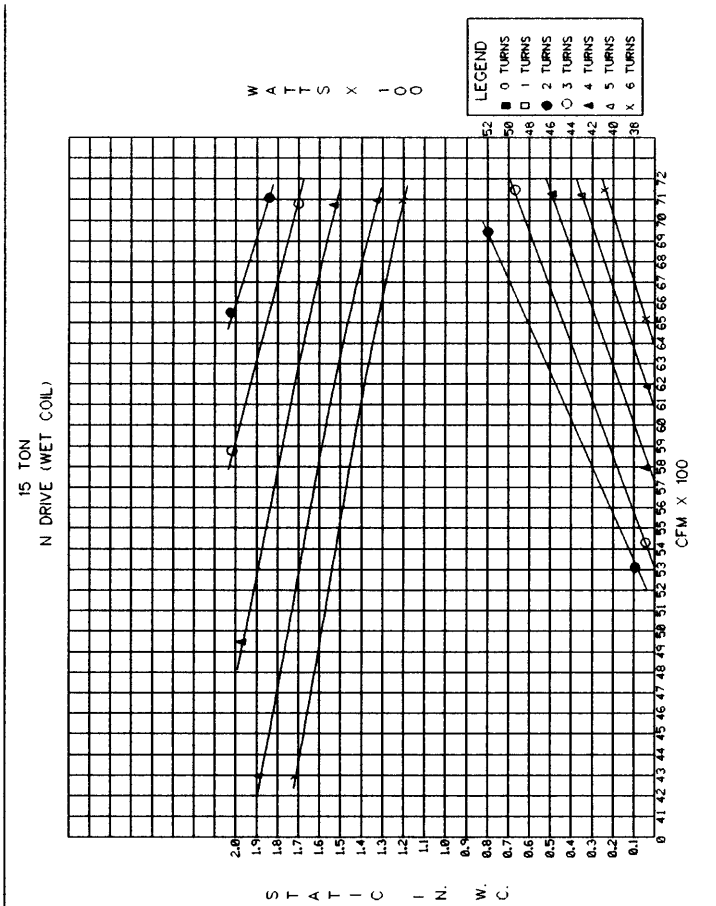


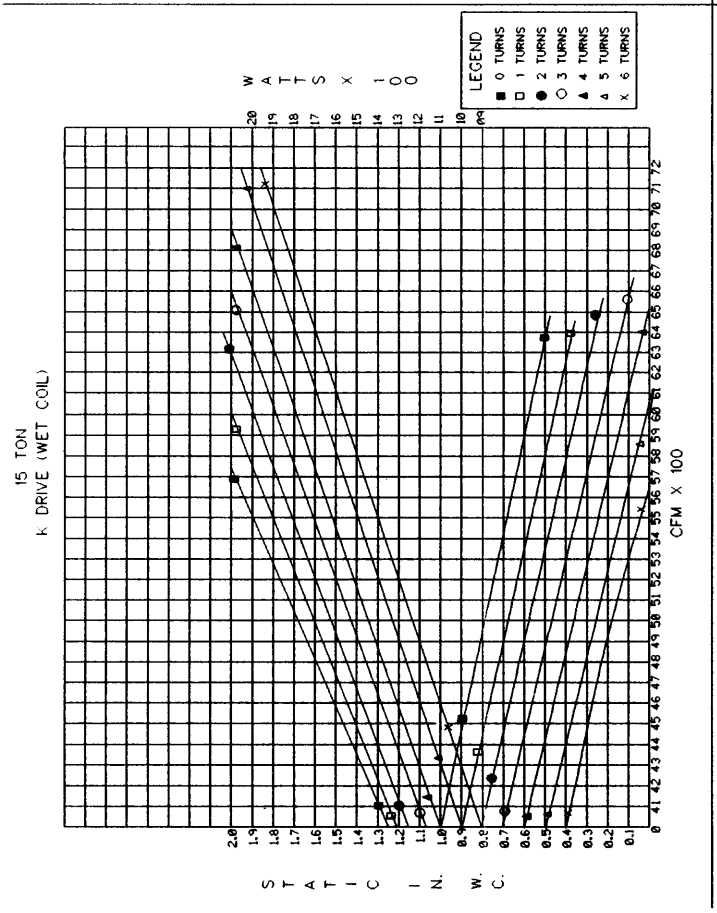
10 TON
O DRIVE (WET COIL)

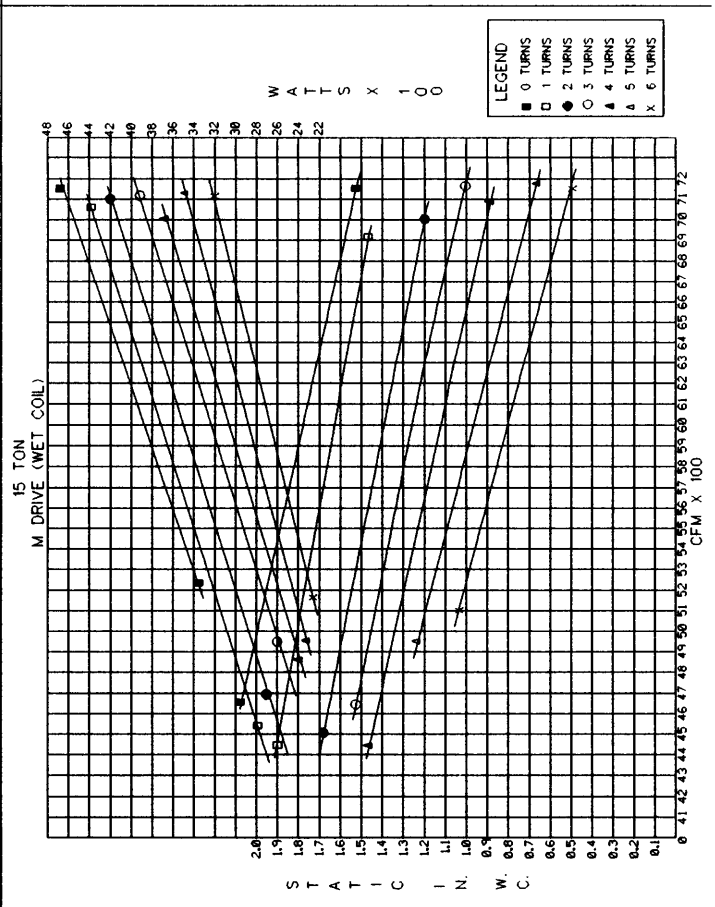


NOTE: CMM = CFM x 0.02832



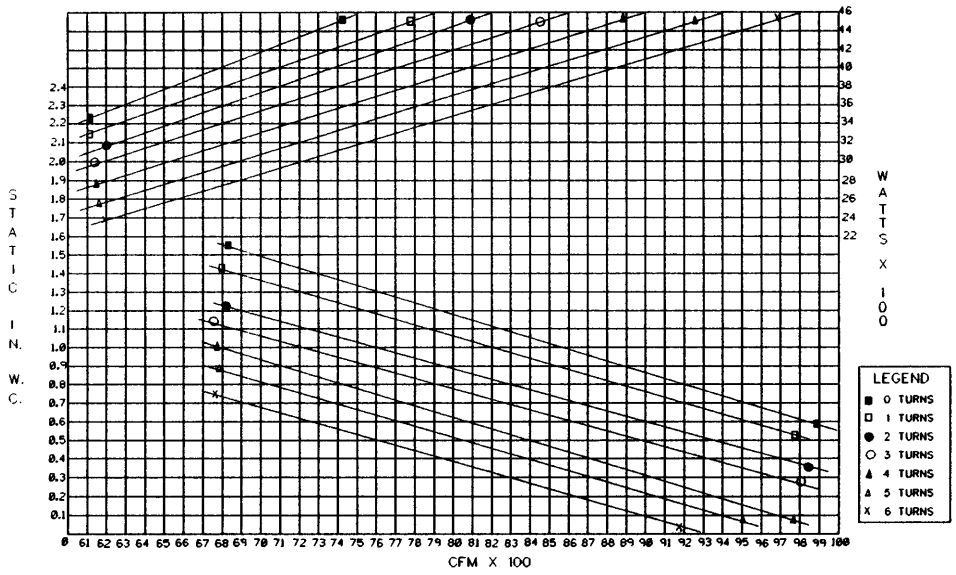




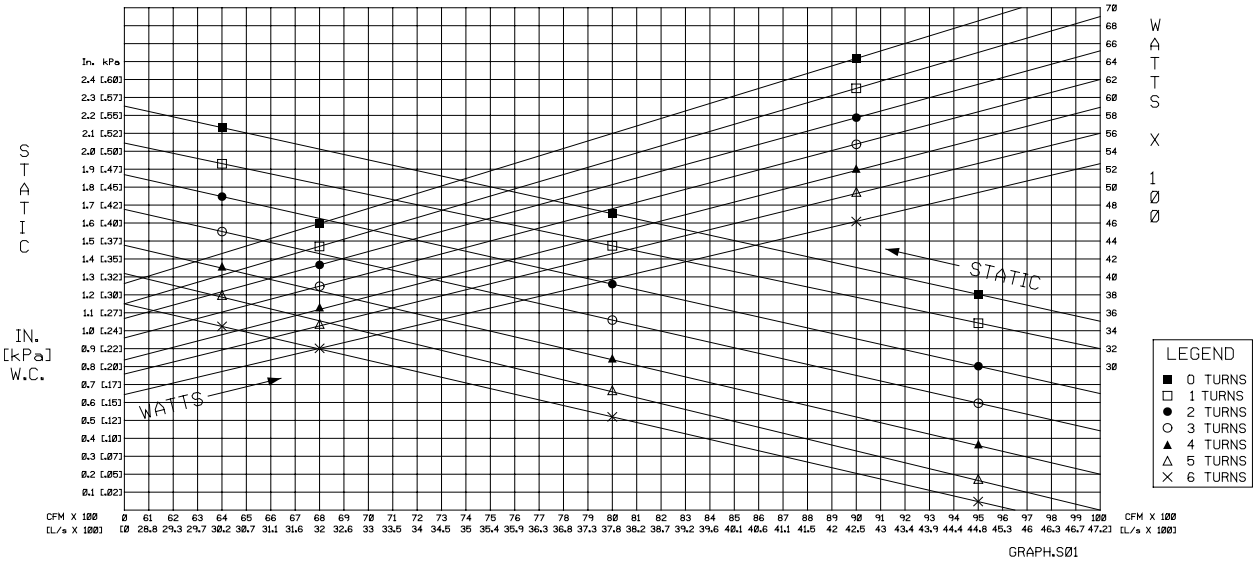


NOTE: CMM = CFM x 0.02832

20 TON
K DRIVE (WET COIL)

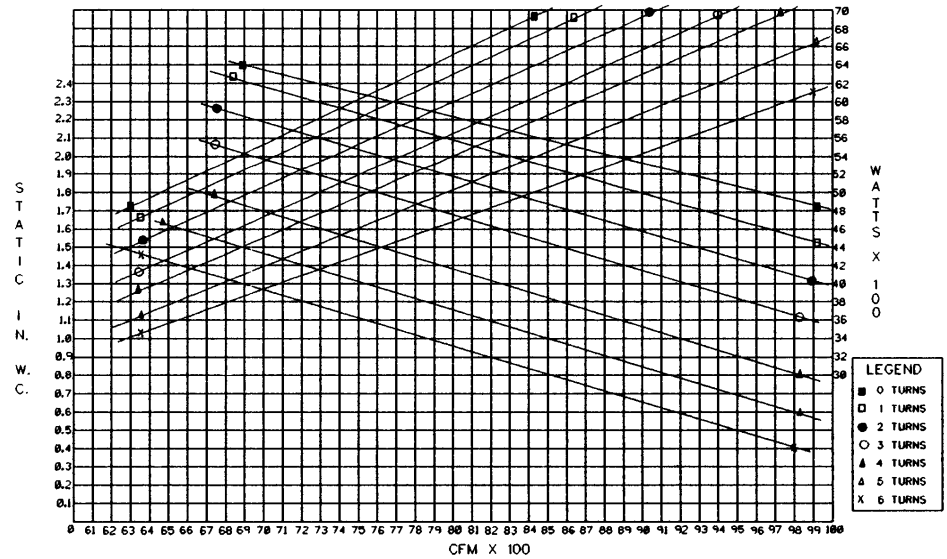


20Ø TON
L DRIVE
(WET COIL)



GRAPH.SØ1

20 TON
M DRIVE (WET COIL)



NOTE: CMM = CFM x 0.02832

⚠ WARNING

After completion of wiring check all electrical connections, including factory wiring within the unit, and make sure all connections are tight, replace and secure all electrical box covers and access doors before leaving unit or turning on power to circuit supply unit. Failure to do so can cause a fire or electrical shock resulting in property damage, personal injury or death.

WIRING

Field wiring must comply to applicable national and local codes.

NOTE: Means for disconnection (having a contact separation of at least 3 mm in all poles) must be incorporated in the fixed wiring.

POWER WIRING

Power wiring should be run in grounded rain-tight conduit. See unit rating plate for wire ampacity and proper wire size.

WIRE ROUTING

POWER WIRING MUST BE RUN IN CONDUIT. Conduit must be run through the connector panel below the service cover and attached to the bottom of the control box.

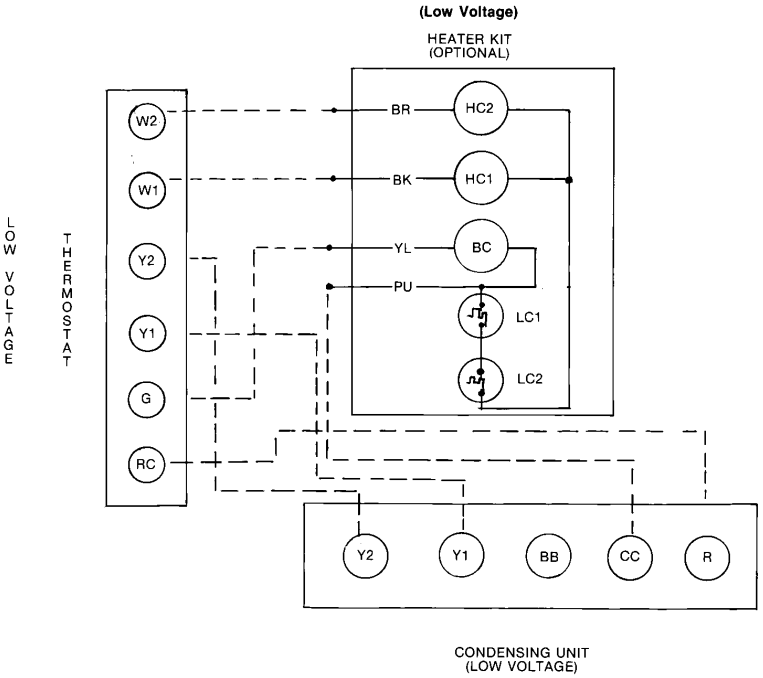
If low voltage control wire is run in conduit with power supply, Class I insulation is required. If run separate, Class II is required. Low voltage wiring may be run through the insulated bushing provided in the 7/8" hole in the connector panel then route to the control box.

GROUNDING

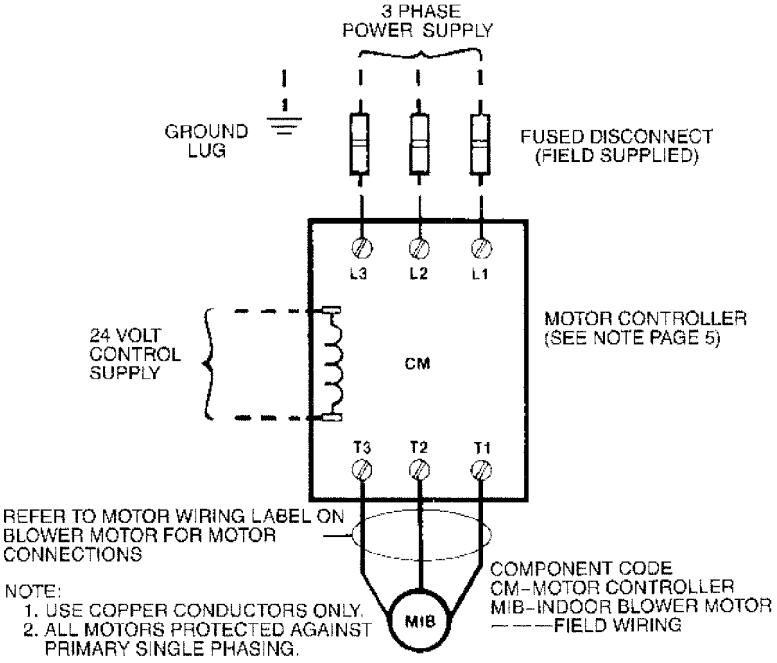
⚠ WARNING

THIS UNIT MUST BE PERMANENTLY GROUNDED. A GROUND LUG IS PROVIDED FOR A GROUND WIRE. FAILURE TO DO SO CAN CAUSE A FIRE OR ELECTRICAL SHOCK RESULTING IN PROPERTY DAMAGE, SEVERE PERSONAL INJURY OR DEATH.

TYPICAL LOW VOLTAGE CONNECTIONS



POWER WIRING



FIELD INSTALLED MIXING BOX ACCESSORY

7½ AND 10 ACCESSORY MODEL RXHM-A74F
15 AND 20 ACCESSORY MODEL RXHM-A76F

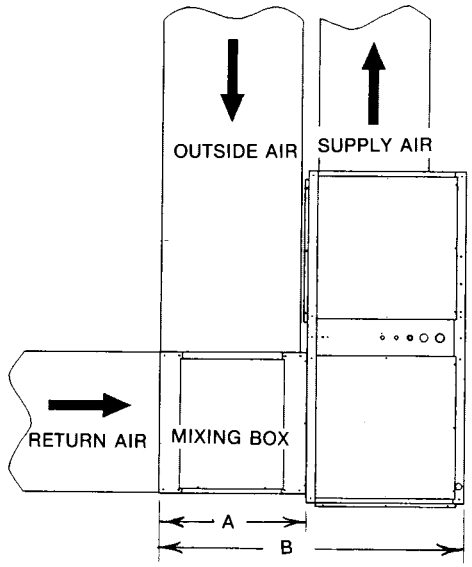
COOLING SEASON—Thermostat set at "Cool" and "Fan Auto," outside air damper goes to "minimum fresh air" position when cooling thermostat closes, energizing mechanical cooling. When cooling thermostat is satisfied, mechanical cooling is de-energized, and outside air damper closes.

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. during heating seasons.

CAUTION: Because of the possibility of freeze damage, it is not recommended that hot water or steam coils be used with the mixing box accessory, unless provision is made to shut-off the outside air duct 100% during freezing conditions.

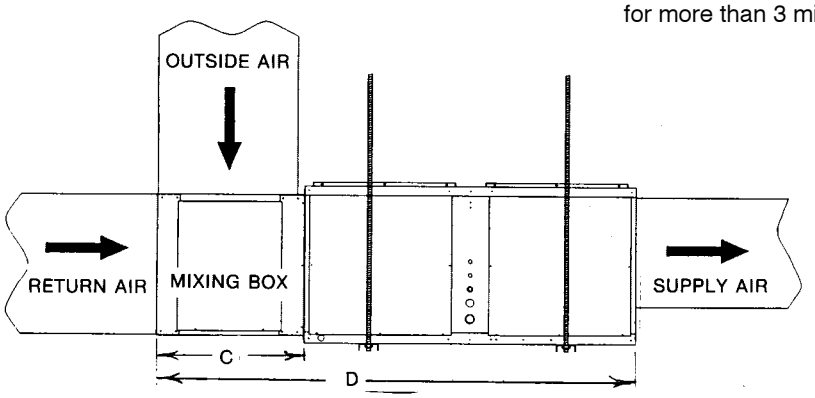
Another possible system enhancement would be to install an air proving switch in the air handler supply duct wired in series with the compressor contactor coil (24V) which would lock out the compressor in the event of air flow failure.



VERTICAL APPLICATION		
	A	B
7½ and 10	27	54
15 and 20	32	67

HORIZONTAL APPLICATION		
	C	D
7½ and 10	27	79
15 and 20	32	104

NOTE:
The bottom of the air handler should be sloped in two planes that pitch the condensate to the drain connection. The drain pan shall not leave puddles larger than 2 inches in diameter and 1/8 inch deep for more than 3 minutes.



INSPECTION

The complete unit should be examined thoroughly upon receipt, for either hidden or apparent damage, and if necessary, a claim should be entered at once against the last carrier. It is the responsibility of the consignee to file such a claim since the unit is shipped F.O.B. Factory.

LOCATION

The location of the unit must be determined with the following factors in mind: available electric power, plumbing facilities and ample space for arranging the refrigeration equipment, and conforming with proper duct design. In addition, provision should also be made for accessibility to service parts and for complete removal and replacement of any replaceable part.

INSTALLATION

The construction of the building must be substantial enough to support the unit. Set the air handler on a suitable foundation so that the weight is evenly distributed. After locating the unit, shim up the side opposite the drain to allow the water to drain from the pan.

If return air duct is not used, applicable installation codes may limit this cabinet to single story buildings only.

See example of both vertical and horizontal mounting.

The units may also be suspended from the ceiling.

Supply conduit to equipment must terminate at junction box located in the unit.

NOTE: When installed in horizontal position, drain end must be 1/2" lower than leaving air end.

REFRIGERANT PIPING

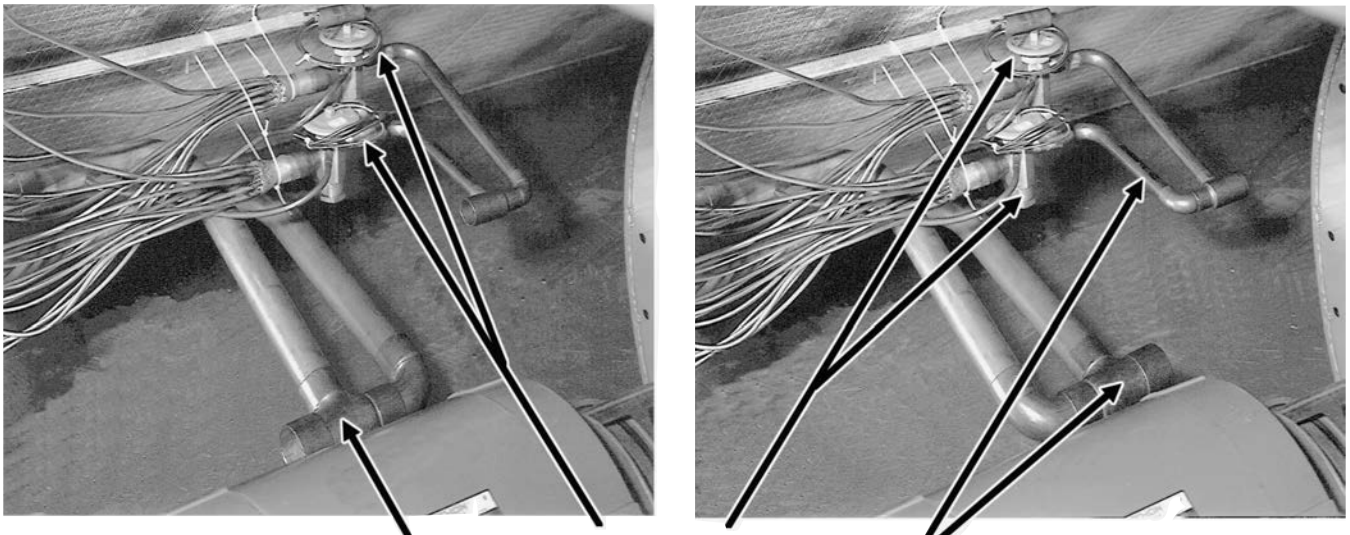
The following will be of help in accomplishing a successful installation.

1. Size liquid line for no more than 50 PSIG pressure drop.
2. Size suction lines for no more than 2° F loss which corresponds to approximately 5 PSIG pressure drop.
3. When evaporator is installed below condensing unit, do not exceed the recommended suction 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.
6. When making up refrigerant piping, take every precaution to prevent dirt and moisture from entering the piping.
7. Locate the condensing unit and evaporator(s) as close together as possible to minimize piping runs.
8. A liquid line solenoid installed just ahead of the expansion valve is recommended

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

PIPING SIZES 7.5-10 TONS [26 - 35 kW] (INCHES)			
EQUIV. LENGTH TO EVAP. (FT.)	LIQUID LINE O.D.	SUCTION LINE O.D.	
	7.5-10 [26 - 35 kW]	7.5 [26 kW]	10 [35 kW]
0-50 [0-15m]	5/8 [26mm]	1 1/8 [29mm]	1 3/8 [35mm]
51-100 [16-30m]	5/8 [26mm]	1 3/8 [35mm]	1 5/8 [41mm]
101-150 [31-46m]	5/8 [26mm]	1 5/8 [41mm]	1 5/8 [41mm]

PIPING SIZES 15-20 TONS [53 - 70 kW] (INCHES)				
EQUIV. LENGTH TO EVAP. (FT.)	LIQUID LINE O.D.		SUCTION LINE O.D.	
	15 [53 kW]	20 [70 kW]	15 [53 kW]	20 [70 kW]
0-50 [0-15m]	3/4 [19mm]	7/8 [22mm]	1 3/8 [35mm]	1 5/8 [41mm]
51-100 [16-30m]	3/4 [19mm]	7/8 [22mm]	1 5/8 [41mm]	2 1/8 [54mm]
101-150 [31-46m]	3/4 [19mm]	7/8 [22mm]	2 1/8 [54mm]	2 1/8 [54mm]

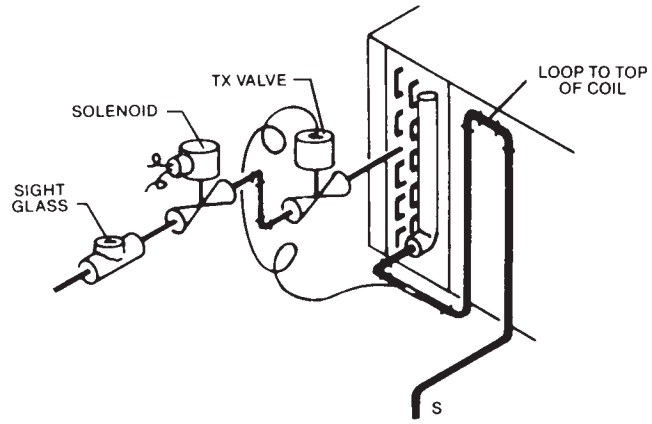


(-)HGL-7½-20 TON [26-70 kW]

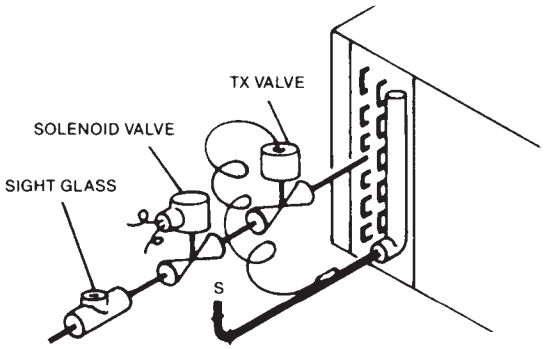
(-)HGL-7½-20 TON [26-70 kW]

TYPICAL PIPING RECOMMENDATIONS

COIL ABOVE CONDENSING UNIT



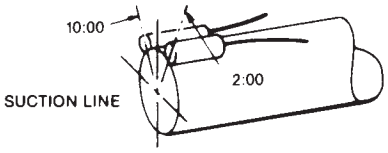
COIL BELOW CONDENSING UNIT



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

INSTALLATION OF THE FEELER BULB OF THE EXPANSION VALVE

7.5 - 20 TON UNITS HAVE TWO (2) TX VALVES. THE FEELER BULB OF EACH VALVE SHOULD BE SECURED TO ITS CORRESPONDING SUCTION LINE INSIDE THE UNIT BETWEEN THE EQUALIZED TUBE AND THE TEE FITTING.



TYPICAL EXPANSION VALVE BULB LOCATIONS

HORIZONTAL UNITS:
LOCATE BULB BETWEEN TEN O'CLOCK AND TWO O'CLOCK ON A STRAIGHT RUN OF LINE NEAR THE EVAPORATOR.

VERTICAL UNITS:
IF THE BULB IS ATTACHED TO THE SUCTION LINE INSIDE THE UNIT, LOCATE IT BETWEEN EIGHT O'CLOCK AND TEN O'CLOCK (BACK SIDE) NEAR THE FIELD CONNECTION. ALWAYS SECURE THE BULB ON A CLEAN, SMOOTH SECTION OF PIPING AND INSULATE IT FROM THE SURROUNDING AMBIENT.

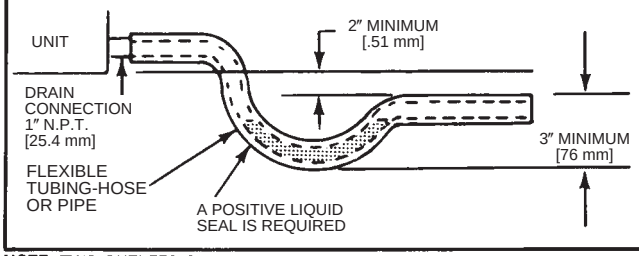
CONDENSATE DRAIN PIPING

- Two drain couplings are provided on all models.
- 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 deep and made of flexible material or fabricated to prevent freeze-up.
- If air handler is installed in a non-conditioned space, it is recommended an auxiliary drain pan be fabricated and installed under entire unit.
- Pitch the drain line at least 1/4 inch [6.35mm] 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.

IMPORTANT

CONDENSATE DRAIN

INSTALL CONDENSATE DRAIN TRAP AS SHOWN BELOW. USE DRAIN CONNECTION SIZE OR LARGER. DO NOT OPERATE UNIT WITHOUT TRAP. UNIT MUST BE SLIGHTLY INCLINED TOWARD DRAIN.



NOTE: TWO OUTLETS ON ALL MODELS.

MOTOR MOUNTING

One of the most critical aspects of an air handler installation is the mounting of the motor, motor sheave, fan pulley and the belts, and the adjustment of these items.

The motor base for the air handlers is raised or lowered by means of the adjusting hex nuts.

MOTOR SHEAVE AND FAN PULLEY MOUNTING AND ADJUSTMENT

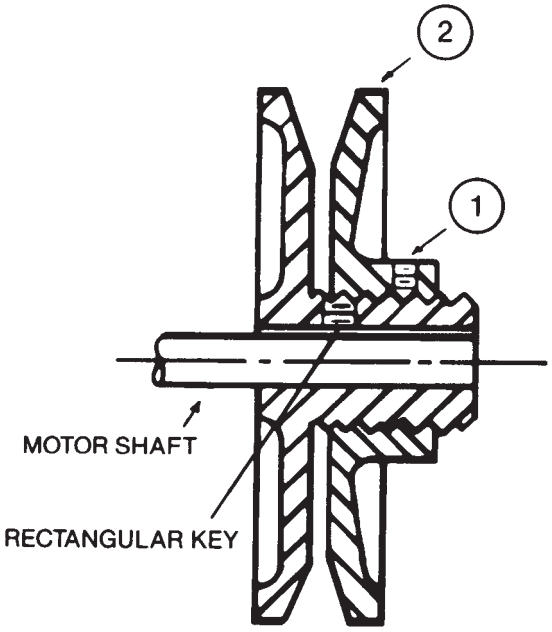
The adjustable pitch sheave which is mounted on the motor shaft controls the fan speed. To adjust the fan speed refer to figure at right, proceed as follows:

a. Loosen the set screw, item 1.

b. Rotate the adjustable sheave, item 2, to the desired position.

c. Lock the adjustable sheave in place by tightening the set screw, item 1.

NOTE: The adjustable sheave is not to be used to adjust belt tension.



WARNING

BEFORE MAKING FAN ADJUSTMENTS, BE SURE THE MAIN ELECTRICAL DISCONNECT SWITCH IS IN THE "OFF" POSITION TO PREVENT POSSIBLE INJURY DUE TO ACCIDENTAL OPERATION OF THE MOTOR.

FAN BELT ALIGNMENT AND ADJUSTMENT

Place belt on the groove of the fan pulley and motor sheave to obtain the approximate alignment and belt tension. Remove the belt and align the fan pulley and motor sheave using a straight edge. When the pulley and sheave are properly aligned, re-install belt. Do not force or pry the belt onto the pulley and sheave. With the belt in place, adjust so that all the slack is on one side of the drive. The belt should have from 3/4" to 1" [19 to 25 mm] of slack at 3 lbs. [21 kPa] pressure. Adjust the belt to this tension, by raising or lowering the swing base via the adjusting rods and nuts.

PRE-START CHECK LIST

1. Leak test entire system.
2. Check motor mounting to make sure all nuts are tight.
3. Check motor sheave and fan pulley to make sure they are in proper alignment and set screws are tight.
4. Check belt tension—belts should be fairly tight for the initial "start-up".
5. Check bearing—collar set screws on fan shaft to make sure they are tight.
6. Ball type bearings are factory lubricated and do not require additional grease before starting.
7. Rotate blower shaft by hand to be sure it is free.
8. Check motor and fan rotation.
9. Check all screws, bolts, set screws and piping connections for tightness.
10. Check drain.
11. Insure that filters are in place.
12. Insure all manual valves are open.
13. Be sure that electrical controls and motors are properly wired and fused in accordance with applicable codes.
14. Check wheel position in scrolls. See Figure 1 a and b.

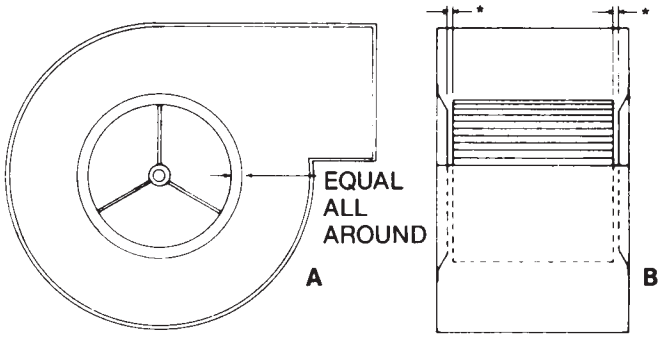


FIGURE 1 * EQUAL

OPERATING INSTRUCTIONS

1. Start fan motor—immediately observe noise level and secure fan motor if unusual sound is heard. Check bearings in particular for proper noise level and temperature. Be sure fans do not rub on scrolls.
2. Check fan RPM and adjust as necessary.
3. Check for motor overloading.
4. Check for proper CFM delivery.
5. Check all necessary items and controls for proper operation.
6. Insure that condensate is being properly discharged from drain pan.
7. If humidifier is installed insure that it is controlled such that the by-pass damper closes tightly when the damper is in a closed position.

PERIODIC SERVICE AND MAINTENANCE

1. Filters—Dirty filters reduce air flow and, in turn, the capacity of the unit. Therefore, when dirty, replace or clean, depending on the type.
2. Coils—Dirt should not be permitted to build up on the fins of the coils. An air stream or water jet can be used to remove dirt and lint.
3. Check all moving parts for wear and alignment every six (6) months.
4. Check bearing-collar set screws on fan shaft to make sure they are still tight. Do this at least every six months. THIS IS VERY IMPORTANT.

⚠ WARNING

BEFORE PERFORMING PERIODIC SERVICE AND MAINTENANCE, BE SURE THE MAIN ELECTRICAL DISCONNECT SWITCH IS IN THE "OFF" POSITION TO PREVENT POSSIBLE INJURY DUE TO ACCIDENTAL OPERATION OF THE MOTOR.

LUBRICATION

GREASING BALL BEARINGS—MOTORS

All ball bearing motors are prelubricated and do not require the addition of grease at time of installation. However, periodic cleaning out and renewal of grease in ball bearings is necessary. Please note that extreme care must be exercised to prevent foreign matter from entering the bearing.