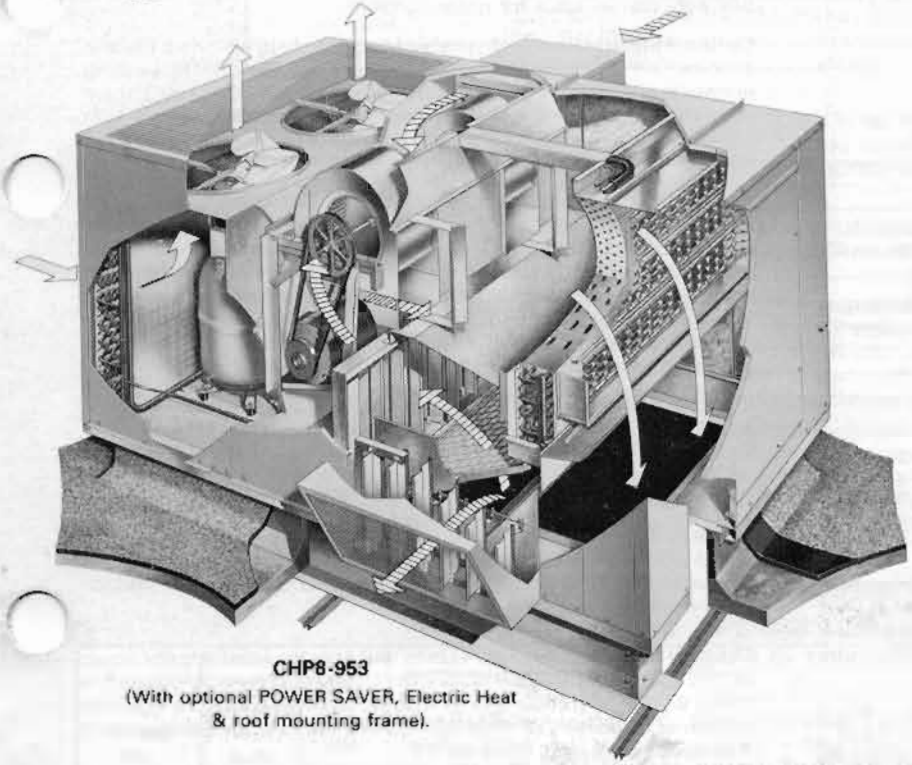
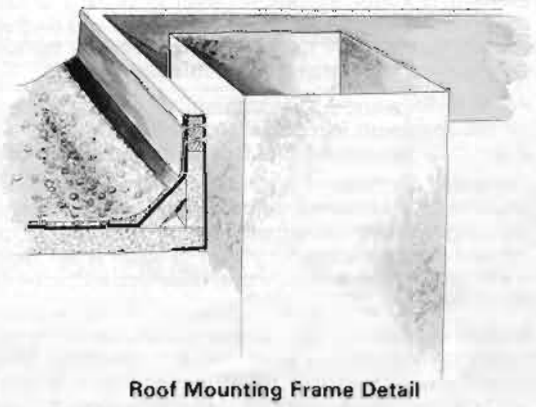
LENNOX®

SINGLE PACKAGE HEAT PUMPS
CHP8-953 AND CHP8-1353
HORIZONTAL & DOWN-FLO

***89,000 to 122,000 Btuh Total Cooling Capacity**
***95,000 to 122,000 Btuh Total Heating Capacity**
36,200 to 192,000 Btuh Optional Electric Heat
***At ARI Standard test conditions**



CHP8-953
(With optional POWER SAVER, Electric Heat & roof mounting frame).

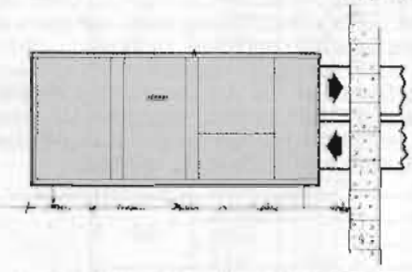


Roof Mounting Frame Detail

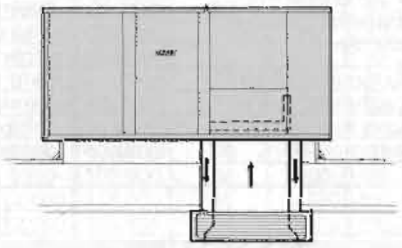
Roof mounting frame extends around entire perimeter of CHP8 base making a weatherproof installation. Duct connection and entry into the conditioned area are accomplished within the confines of the weatherproof frame.

Three Air Patterns Possible

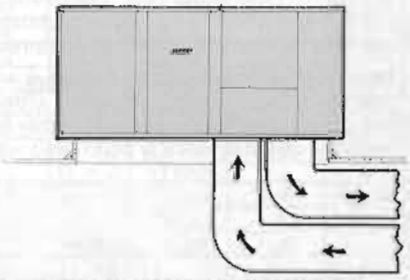
End panels fit bottom openings to give air pattern choice. Separate adapter required for combination ceiling supply and return applications.



Installation thru the wall—Slab or Roof



Combination Supply and Return Air Ceiling Diffuser Step-down or Flush grille



Separate Supply and Return (Double) Duct

Single Package Rooftop Heat Pump & Mounting Frame Saves Installation Costs & Floor Space

The CHP8 series Heat Pump units with bottom handling of conditioned air, are designed primarily for rooftop installation with the optional POWER SAVER ® and RMF3 roof mounting frame. The separate roof frame mates to the bottom of the CHP8 unit and when flashed into the roof permits weatherproof duct connection and entry into the conditioned area. No additional roof curbing or flashing is required, The single package unit can also be installed on a slab at grade level with end handling of conditioned air. The insulated single cabinet houses highly efficient air cooled DX cooling, powerful belt drive blowers, air filters, optional electric heat and optional POWER SAVER dampers which are shipped complete with all controls wired. Complete factory sealed refrigeration system consists of compressor(s), outdoor coil and fans, indoor coil and twin blowers, refrigerant drier, reversing valve, refrigerant lines connected and a full charge of refrigerant. Controls furnished consists of pressure switches, compressor relay, overload protection and timed-off cycle. Optional POWER SAVER equipment and controls reduce cooling operating costs and satisfy any local code fresh air requirements. An external mounted OAD3 minimum fresh air damper (manual or auto) is also available. Units are shipped assembled, wired and piped ready to install. Each unit is test operated at the factory insuring proper operation. Installer has only to set unit, connect ductwork, power supply and thermostat field wiring connections.

NOTE — Specifications, Ratings and Dimensions are subject to change without notice.

FEATURES

Dependable Lennox Compressor(s) — The large casing, spring loaded discharge valve, high suction intake ports and crankcase heater result in effective "slugging" protection. Crankshaft is statically and dynamically balanced and has patented 3 mode oil pumping for positive pressure lubrication. Contoured piston for increased volumetric efficiency. 17 strategically located discharge mufflers result in extremely quiet operation. Motor is located within refrigerant flow pattern resulting in low motor winding temperature. Twin internally mounted motor in-winding temperature sensing thermostats provide safe operation. High and low pressure controls are provided and factory installed in compressor terminal box. High and low pressure reset are both automatic. The entire running gear assembly is spring mounted within the sealed shell. In addition, the compressor is installed in the unit on resilient rubber mounts assuring quiet and vibration free operation.

Lennox Coils — Extra large coils (outdoor and indoor) are constructed of rippled edged aluminum fins machine fitted to copper tubes for maximum strength and heat transfer. Coils are thoroughly tested under pressure to insure leak proof construction.

Efficient Outdoor Section — Direct drive fans draw large air volumes through the extra large outdoor coil and discharge the air out the top. Outdoor coil has sub-cooling rows for increased efficiency. Outdoor coil discharge grille is furnished.

Powerful Blowers — Twin resiliently mounted blowers deliver large air volumes with low power consumption. Rugged blower motor support allows quick belt adjustment and motor changeover.

Cleanable Air Filter — Washable, vacuum cleanable polyurethane filter media is furnished as standard. Filters are easily accessible for cleaning and are coated with oil for increased efficiency. Use RP products filter coating No. 418 (P-8-5069) when reoiling. One inch frame filter is standard, however filter rack will receive up to two inch thick filters.

Rugged Cabinet — Heavy gauge galvanized hot dipped steel cabinet panels. A five station wash metal preparation assures a perfect bonding surface for the finish coat of baked on outdoor enamel. Large removable panels give complete access to interior for servicing all the components within the cabinet.

Thick Interior Insulation — All of the interior panels where conditioned air is handled are lined with thick fiberglass insulation. This results in quiet and efficient operation due to the excellent acoustical and insulating qualities of fiberglass. In addition, the entire bottom of unit is also insulated with thick fiberglass insulation.

Thermostat — A deluxe wall mounted heating-cooling (2 stage heat — 1 stage cool) thermostat is furnished as standard. It has a system selector switch, blower switch for automatic or continuous operation and built in heat and cool anticipation. The four separate mercury bulbs control cooling cycle, first stage heating (heat pump), second stage heating (electric heat) and reversing valve operation. An optional emergency heat thermostat subbase P-8-11225 is available and must be ordered extra. Subbase permits auxiliary electric heat only to operate in case of compressor malfunction.

Optional Minimum Fresh Air Dampers — Externally mounted OAD3 fresh air damper section complete with cleanable polyurethane air filter is available. See accessories table for ordering. It can be either manually or automatically controlled with a damper motor.

Optional POWER SAVER (Fresh Air) — Available factory or field installed. The Lennox POWER SAVER system consists of: mechanically linked outdoor air, recirculated air and exhaust air dampers. The positioning of these dampers is accomplished by a 24 volt modulating spring return damper motor and controlled by the room thermostat, adjustable mixed air controller, adjustable compressor monitor and enthalpy control. The enthalpy control senses the total heat content of the outdoor air. This unique control prevents excessive moisture laden outdoor air that will add to the cooling load from entering the unit and yet permits cool dry air capable of cooling to enter, thus taking full advantage of free outdoor air for cooling. For field installation the two damper sections simply slide in cavities provided in the unit cabinet. Equipment is shipped factory wired and only requires simple plug-in connection for operation. Fresh air intake section is furnished with cleanable polyurethane air filters. See Accessories table for ordering table.

Optional Electric Heat — Available factory or field installed. Electric heat section is installed downstream from indoor coil. The heating elements are helix wound Nichrome wire exposed to the air stream resulting in rapid heat transfer, lower coil temperatures and longer heater life. The elements are accurately located and insulated from the plated supporting frame by insulators.

Optional Combination Supply and Return Diffusers — Lennox offers two different styles of air diffusers. The RTD step-down model extends below the ceiling level and discharges conditioned air out through grilles on all four sides. The FD model installs almost flush with the ceiling and discharges air down and out through the outside vanes. Both models are equipped with adjustable vanes for distribution and diffusion of conditioned air. Return air enters through the center grille on both models.

Optional Roof Mounting Frame — Durable and serviceable frame is 13 inches high. It sets on the roof support members and is actually built into the roof structure. The top mates to the CHP8 base. A securing bolt kit (BM-6909), containing bolts to secure unit to frame, is available as optional equipment and must be ordered extra.

Optional Outdoor Thermostat — Keeps heating load on the heat pump as long as possible before letting optional auxiliary heat come on the line. Use M-1595 thermostat box and LB-29740BA outdoor thermostat.

Optional Low Ambient Kit — Units will operate satisfactorily down to 35°F outdoor air temperature without any additional controls. For cases where operation of the unit is required below 35°F a Low Ambient Control Kit (LB-44961BA) can be added in the field enabling it to operate properly down to 0°F.

Thoroughly Tested and Approved — Heat pump system has been thoroughly tested and rated in the Lennox environmental test room according to ARI standard 240 conditions. In addition units have been sound tested in the Lennox reverberant sound test room and rated according to ARI standard 270 conditions. Units coming within the scope of this standard (135,000 Btuh or less) carry the ARI certification seal and are Certified under the ARI Certification Program. Heat pump equipment and optional electric heating are U.L. listed. Units and components within are bonded for grounding to meet safety standards for servicing required by U.L. and NEC.

ACCESSORIES

Accessory Description	Accessory Order No. & Net Weigt (lbs.)	
	CHP8-953	CHP8-1353
POWER SAVER and No. & size of filters (in.)	RD3-95 (275 lbs.) (2) 20 x 25 x 1	RD3-135 (360 lbs.) (4) 16 x 25 x 1
Minimum fresh air damper and No. & size of filters (in.)	OAD3-95 (38 lbs.) (1) 16 x 20 x 1	OAD3-135 (60 lbs.) (1) 20 x 20 x 1
Automtic Kit for OAD3 Damper	BM-5563 (9 lbs.)	BM-5563 (9 lbs.)
Roof Mounting Frame	RMF3-95 (100 lbs.)	RMF3-135 (140 lbs.)
Combination Ceiling Supply and Return Kit	BM-3564 (20 lbs.)	BM-3565 (29 lbs.)
Combination Ceiling Supply And Return Step Down Diffuser	RTD-95 (60 lbs.)	RTD-135 (118 lbs.)
Combination Ceiling Supply And Return Flush Diffuser	FD-95 (50 lbs.) *FD-95-D (50 lbs.)	FD-135 (60 lbs.) *FD-135-D (60 lbs.)
Low Ambient Control	LB-44961BA	LB-44961BA

*Flush diffuser with adjustable baffle blades.

SPECIFICATIONS

Model No.		CHP8-953	CHP8-1353
★ARI Standard 270 SRN		22	22
*ARI Certified Cooling Capacity	Total capacity (Btuh)	89,000	†122,000
	Total unit watts	12,500	17,600
	EER (Btuh/Watts)	7.1	6.9
	Dehumidifying capacity	23%	29%
*ARI Certified High Temperature Heating Capacity	Total capacity (Btuh)	95,000	122,000
	Total unit watts	10,700	14,900
	C.O.P.	2.6	2.4
*ARI Certified Low Temperature Heating Capacity	Total capacity (Btuh)	58,000	74,000
	Total unit watts	9100	12,500
	C.O.P.	1.9	1.7
Refrigerant charge (R-22)		22 lbs. 8 oz.	30 lbs.
Indoor Coil	Net face area (sq. ft.)	7.73	9.38
	Tube diam. (in.) & No. of rows	1/2 — 4	1/2 — 4
	Fins per inch	10	13
Blower wheel nominal diam. x wid. (in.)		(2) 12 x 6	(2) 15 x 9
Blower motor hp See Drive Table	Minimum	2	3
	Maximum	3	5
No. & size of air filters		(1) 20 x 25 x 1 (2) 16 x 25 x 1	(6) 16 x 20 x 1
Outdoor Coil	Net face area (sq. ft.)	10.38	14.32
	Tube diam. (in.) & No. of rows	1/2 — 4	1/2 — 4
	Fins per inch	13	13
Outdoor Coil Fan	Diam. (in.) & No. of blades	(2) 22 — 4	(2) 22 — 4
	Air volume (cfm)	6200	8000
	Motor hp	(1) 1/2 & (1) 3/4	(2) 3/4
	Watts input (total)	1280	1560
Condensate drain size mpt (in.)		3/4	1
Net weight of basic unit (lbs.)		1425	1860
Electrical characteristics		208v to 480v — 60 hertz — 3 phase	

★Rated in accordance with ARI Standard 270.
*Rated in accordance with ARI Standard 240: At 450 cfm (maximum) indoor air volume per ton of cooling capacity.
Cooling Ratings — 95F outdoor air temperature and 80F db/67F wb entering indoor coil air.
High Temperature Heating Ratings — 47F db/43F wb outdoor air temperature and 70F db entering indoor coil air.
Low Temperature Heating Ratings — 17F db/15F wb outdoor air temperature and 70F db entering indoor coil air.
†Deduct 9000 Btuh at 208 volts.

RATINGS

CHP8-953 AND CHP8-1353 COOLING CAPACITY

Unit Model No.	Indoor Coil Air 80F Dry Bulb		Outdoor Air Temperature Entering Outdoor Coil (F)											
			85			95			105			115		
	Entering Wet Bulb Degrees (F)	Total Air Volume (cfm)	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input
CHP8-953	63	3000	92,700	.85	8200	87,400	.88	8700	82,200	.92	9400	76,900	.95	10,400
		3375	94,300	.89	8300	89,000	.92	8840	83,700	.95	9500	78,300	.99	10,500
		3750	96,000	.92	8400	90,500	.95	8900	85,000	.98	9500	79,400	1.00	10,600
	67	3000	100,000	.68	8600	94,600	.70	9100	89,200	.72	9800	83,800	.74	11,000
		3375	101,800	.70	8700	96,300	.72	9200	90,700	.74	9900	85,200	.77	11,200
		3750	103,600	.71	8700	97,900	.74	9300	92,200	.76	10,000	86,500	.78	11,300
	71	3000	107,700	.53	8900	102,000	.54	9500	96,000	.55	10,200	90,600	.56	11,600
		3375	109,700	.54	9000	103,800	.55	9600	97,600	.56	10,300	92,100	.58	11,700
		3750	111,700	.54	9100	105,600	.56	9700	99,200	.56	10,400	93,600	.58	11,900
CHP8-1353	63	4400	125,200	.91	12,600	118,600	.95	13,400	111,900	.98	14,200	103,600	1.00	15,300
		4950	127,000	.96	12,700	120,400	.99	13,500	113,400	1.00	14,300	105,000	1.00	15,300
		5500	128,900	1.00	12,800	122,000	1.00	13,600	115,000	1.00	14,400	106,300	1.00	15,400
	67	4400	135,000	.72	13,200	128,200	.74	14,000	121,000	.76	14,700	112,000	.80	15,800
		4950	136,900	.75	13,300	130,000	.77	14,100	122,700	.79	14,800	113,600	.83	15,900
		5500	139,200	.77	13,400	132,000	.79	14,200	124,600	.82	14,900	115,100	.86	16,000
	71	4400	145,300	.55	13,700	138,000	.56	14,500	130,500	.58	15,300	120,900	.60	16,300
		4950	147,500	.57	13,900	139,900	.58	14,700	132,300	.59	15,400	122,500	.61	16,400
		5500	149,800	.58	14,000	142,200	.59	14,800	134,400	.61	15,500	124,300	.63	16,500

CHP8-953 AND CHP8-1353 HEATING CAPACITY

Unit Model No.	Indoor Coil Air Volume (cfm) 70F db	Outdoor Air Temperature Entering Outdoor Coil (F)							
		65		45		25		5	
		Total Heating Capacity (Btuh)	Comp. Motor Watts Input	Total Heating Capacity (Btuh)	Comp. Motor Watts Input	Total Heating Capacity (Btuh)	Comp. Motor Watts Input	Total Heating Capacity (Btuh)	Comp. Motor Watts Input
CHP8-953	3000	118,000	10,400	82,300	8200	63,500	7000	45,500	5900
	3375	119,000	10,100	83,000	8000	64,000	6800	46,000	5800
	3750	120,500	9800	84,000	7800	64,500	6600	46,500	5700
CHP8-1353	4400	150,500	13,600	117,500	11,406	81,500	9800	56,500	8200
	4950	153,000	13,300	119,000	11,200	83,000	9600	57,500	8100
	5500	155,500	13,000	120,500	11,000	84,500	9400	58,500	8000

NOTE — Heating capacities include the effect of defrost cycles in the temperature range where defrost occurs.

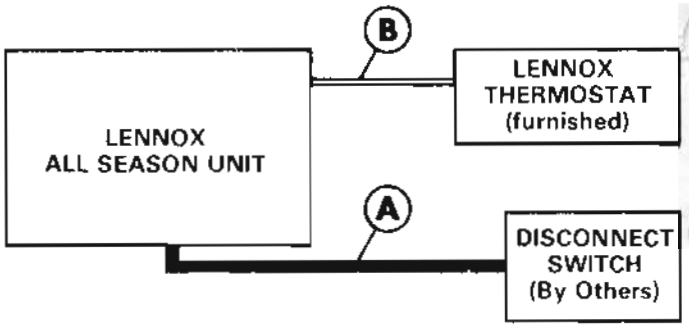
RATINGS

CHP8-953 AND CHP8-1353 HEATING PERFORMANCE

*Outdoor Temperature (Degrees F)	CHP8-953 3375 cfm Indoor Coil Air		CHP8-1353 4950 cfm Indoor Coil Air	
	Compressor Watts	Total Output (Btuh)	Compressor Watts	Total Output (Btuh)
65	10,100	119,000	13,300	153,000
60	9600	110,000	12,800	144,000
55	9000	103,000	12,250	136,000
50	8500	95,000	11,700	127,000
45	8000	83,000	11,200	119,500
40	7700	75,000	10,850	103,000
35	7300	70,000	10,450	94,000
30	7000	68,500	10,000	87,500
25	6800	64,000	9600	83,000
20	6650	60,500	9200	78,000
15	6450	56,000	8800	72,000
10	6100	51,500	8506	64,500
5	5800	46,000	8100	57,500
0	5550	41,000	7700	51,000

*Outdoor temperature at 70% relative humidity; indoor temperature at 70°

FIELD WIRING



A — Three wire power
(see electrical data table for wire size)
B - Five wire low voltage 18 ga. minimum

All wiring must conform to NEC and local electrical codes.
If local electrical code permits may be class 2 wiring.

Additional field wiring is not required when POWER SAVER is used. All wiring is provided in CHP8 and in POWER SAVER, simply make plug-in connections to complete job.

GUIDE SPECIFICATIONS

General — *Furnish and install a one piece air to air DX mechanical heat pump system complete with automatic controls.*
The installed weight shall not be more than . . . . . lbs. The equipment shall be shipped completely factory assembled, precharged, piped and wired internally ready for field connections. In addition manufacturer shall test operate system at the factory before shipment.

Roof Mounting Frame — *Furnish and install a steel roof mounting frame. It shall mate to the bottom perimeter of the equipment. When flashed into the roof it shall make a unit mounting curb and provide weatherproof duct connection and entry into the conditioned area.*

Air Distribution — *Equipment shall be capable of (end or bottom) handling of conditioned air.*
Furnish and install a (flush or stepdown) combination ceiling supply and return grille. It shall be capable of not less than . . . . . ft. radius of effective throw.

Power Saver (Fresh Air Dampers) — *Furnish and install complete with all controls an air mixing damper assembly including fresh air, recirculated air and exhaust air dampers. The fresh air section shall be equipped with cleanable air filters. The assembly shall mount within the confines of the CHP8 casing.*

Cooling System — *The total certified cooling capacity shall not be less than . . . . . Btuh with an indoor coil air volume of . . . . . cfm, an entering wet bulb air temperature of . . . . . F, and entering dry bulb air temperature of . . . . . F and an outdoor unit entering air temperature of . . . . . F. The total compressor power input shall not exceed . . . . . Kw at the above conditions.*

Coils — *The coils shall be non-ferrous construction with aluminum fins mechanically bonded to copper tubes. Outdoor coil shall have sub-cooling rows.*

Compressor And Controls — *The compressor shall be resiliently mounted, have built-in 3 mode crankshaft lubricaion, crankcase heater, discharge temperature limiter, current and temperature sensing motor overloads. The system shall be protected by high and low pressure switches and a compressor timed off cycle controller.*

Heating System — *The total certified heating capacity shall not be less than . . . . . Btuh with an indoor coil air volume of . . . . . cfm, an entering dry bulb temperature of . . . . . F and an outdoor coil entering air temperaure of . . . . . F. The total compressor power input shall not exceed . . . . . Kw at the above conditions.*

Auxiliary Heat — *Furnish and install a nichrome bare wire electric heat section of . . . . . Kw capacity. They shall be equipped with fusible links. Sections having more than one circuit shall be step started in 40 second increments per circuit.*

Air Movers — *Twin centrifugal conditioned air blowers shall have permanently lubricated ball bearings, adjustable belt drives and be capable of delivering . . . . . cfm at an external static pressure of . . . . . inches water gauge requiring not more than . . . . . bhp and . . . . . rpm. The outdoor unit fans shall be direct driven. All motors shall have inherent protection devices.*

Frame And Casing — *The frame shall be of welded construction. The casing shall be of galvanized panels with a baked on outdoor enamel finish. The entire bottom of cabinet shall be insulated with not less than 1" thick fiberglass. Cabinet panels shall be insulated with not less than 1-1/2" thick fiberglass.*

Air Filters — *Cleanable filters furnished shall have not less than . . . . . sq. ft. of free area.*

Service Access — *All components, wiring and inspection areas shall be completely accessible through removable panels.*

ELECTRICAL DATA

Model No.		CHP8-953				CHP8-1353			
Line voltage (60 Hertz — 3 phase)		208/230		460		208/240		440/480	
Compressor(s)	RLA (total)	31.8		14.6		46.7		22.8	
	LRA (total)	185.0		79.0		240.0		128.0	
	Power factor	.85		.85		.85		.85	
Outdoor coil	FLA (total)	6.0		*3.0		7.6		*3.8	
Fan motors (2)	LRA (total)	24.0		12.0		28.0		14.0	
Indoor Coil	Horsepower	2	3	2	3	3	5	3	5
Blower	FLA	6.2	9.4	3.1	4.7	9.4	14.6	4.7	7.3
Motor	LRA	44.0	64.0	22.0	32.0	64.0	92.0	32.0	46.0
Recommended Maximum Fuse Size (amps)		80	80	35	40	110	125	50	60
†Minimum circuit ampacity		60.2	63.3	27.6	29.0	84.1	90.3	40.3	43.1

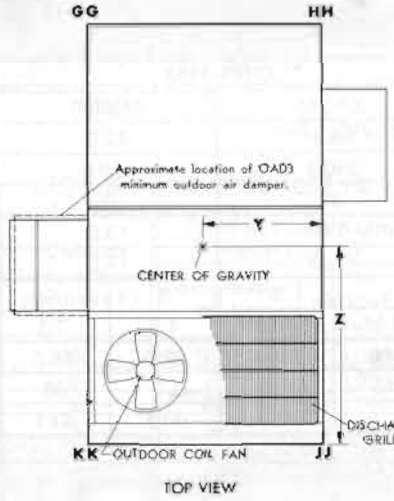
†Refer to National Electric Code manual to determine wire, fuse and disconnect size requirements.
*Motors are rated at 230v. FLA shown is for step-down transformer.
NOTE — Extremes of operating range are plus and minus 10% of line voltage.

ELECTRIC HEAT DATA (Optional)
(With various supply air blower motors)

Unit Model No.	Electric Heat Model No. & Net Weight	No. Of Steps	Volts Input	Kw Input	Btuh Output	†Minimum Circuit Ampacity		
						2 hp	3 hp	5 hp
CHP8-953	ECH8-135-483 (70 lbs.)	1	208	10.6	36,200	102.7	105.8	----
			220	11.85	40,500			
			230	12.95	44,200			
			240	14.1	48,000			
	ECH8-135-483 (70 lbs.)	1	440	11.85	40,500	48.8	50.2	----
			480	14.1	48,000			
	*ECH8-135-963 (90 lbs.)	2	208	21.2	72,400	145.2	148.3	----
			220	23.7	80,800			
			230	25.9	88,400			
			240	28.2	96,000			
	*ECH8-135-963 (137 lbs.)	2	440	23.7	80,800	70.0	71.4	----
			480	28.2	96,000			
	*ECH8-135-1443 (142 lbs.)	3	208	31.8	108,000	187.7	190.8	----
			220	35.6	121,000			
			230	38.8	132,000			
			240	42.3	144,000			
	*ECH8-135-1443 (137 lbs.)	3	440	35.6	121,000	91.3	92.7	----
			480	42.3	144,000			
CHP8-1353	ECH8-135-483 (70 lbs.)	1	208	10.6	36,200	----	126.6	132.8
			220	11.85	40,500			
			230	12.95	44,200			
			240	14.1	48,000			
	ECH8-135-483 (70 lbs.)	1	440	11.85	40,500	----	61.4	64.2
			480	14.1	48,000			
	*ECH8-135-963 (90 lbs.)	2	208	21.2	72,400	----	169.1	175.3
			220	23.7	80,800			
			230	25.9	88,400			
			240	28.2	96,000			
	*ECH8-135-963 (137 lbs.)	2	440	23.7	80,800	----	82.7	85.5
			480	28.2	96,000			
	*ECH8-135-1443 (142 lbs.)	3	208	31.8	108,000	----	211.6	217.8
			220	35.6	121,000			
			230	38.8	132,000			
			240	42.3	144,000			
	*ECH8-135-1443 (137 lbs.)	3	440	35.6	121,000	----	103.9	106.7
			480	42.3	144,000			
	*ECH8-135-1923 (150 lbs.)	4	208	42.4	144,500	----	254.1	260.3
			220	47.4	161,500			
			230	51.7	176,000			
			240	56.4	192,000			
	*ECH8-135-1923 (150 lbs.)	4	440	47.4	161,000	----	125.2	128.0
			480	56.4	192,000			

†Refer to National Electric Code manual to determine wire, fuse and disconnect size requirements.
NOTE — Time delay fuses for sub-fusing of CHP8 units not furnished.
*May be two stage controlled.

DIMENSIONS (inches)



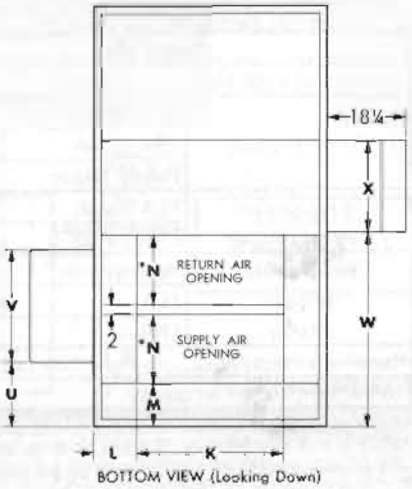
TOP VIEW

CORNER WEIGHTS (lbs.)

Model No.		GG	HH	KK	JJ
CHP8-953	With Power Saver	324	368	472	536
	Without Power Saver	239	327	362	497
CHP8-1353	With Power Saver	408	455	641	716
	Without Power Saver	301	406	490	663

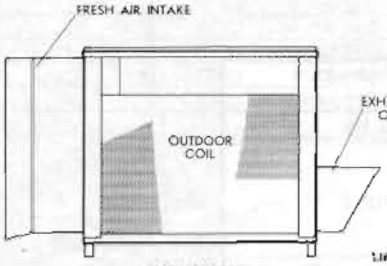
CENTER OF GRAVITY

Model No.		Y	Z
CHP8-953	With Power Saver	25-1/2	39-1/2
	Without Power Saver	23	38-1/2
CHP8-1353	With Power Saver	30	45-1/2
	Without Power Saver	27	44-1/2

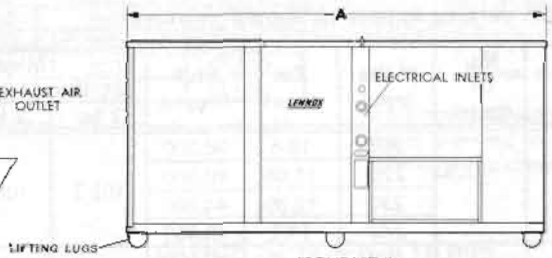


BOTTOM VIEW (Looking Down)

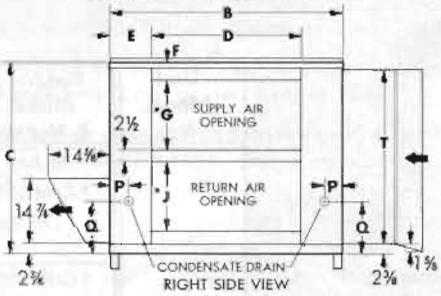
* The air opening panel furnished fits either end or bottom openings to give choice of bottom or end handling of conditioned air.



LEFT SIDE VIEW



FRONT VIEW



RIGHT SIDE VIEW

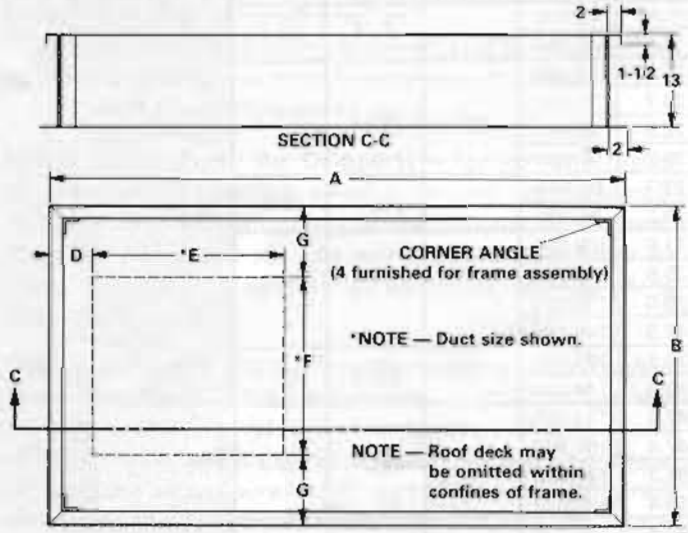
Model No.	A	B	C	D	E	F	G	J	K	L	M	N	P	Q	T	U	V	W	X
CHP8-953	97	54	44-5/8	34-3/8	9-13/16	4-1/4	16-3/8	16-3/8	34-1/16	9-7/8	10	16-1/16	3-3/4	17-5/8	40-3/4	15-1/8	25-7/8	45-1/8	21
CHP8-1353	117	63	50-5/8	40-3/8	11-5/16	2-1/2	20-3/8	20-3/8	40-1/16	11-3/8	12-5/8	20-1/16	3-5/16	17-1/2	46-3/4	18-3/8	36-1/2	58-7/8	31-1/2

RMF3 ROOF MOUNTING FRAME
Frame Specifications

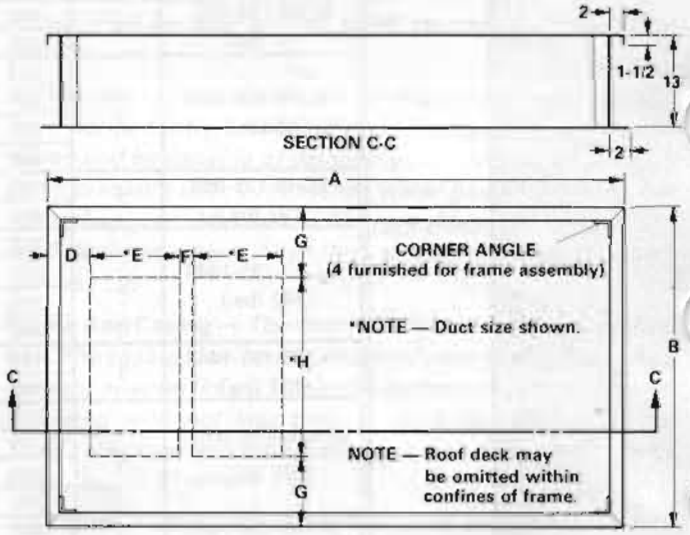
Mounting Frame Height	13 inches
Frame moment of inerta (I)	70 in.⁴
Frame section modulus $\frac{I}{C}$	10.8 in.³
Mounting frame weight (foot of length)	5.3
Mounting frame design strength (psi)	20,000

Roof mounting frame can be spanned over its entire length or cantilevered if supported on both sides of the center of gravity.

Mounting Frame with Combination Ceiling Supply & Return Opening



Mounting Frame with Double Duct Openings

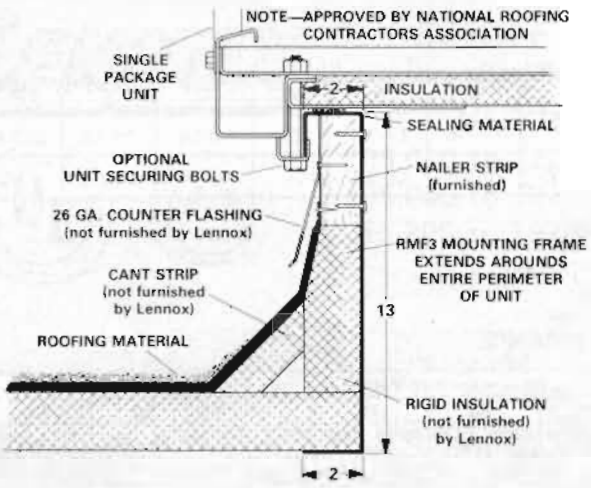


Model No.	Roof Mounting Frame	A	B	D	E	F	G
CHP8-953	RMF3-95	86-3/4	47-3/4	7	34-1/8	34	6-7/8
CHP8-1353	RMF3-135	106-1/4	56-3/4	9-5/8	42-1/8	40	8-3/8

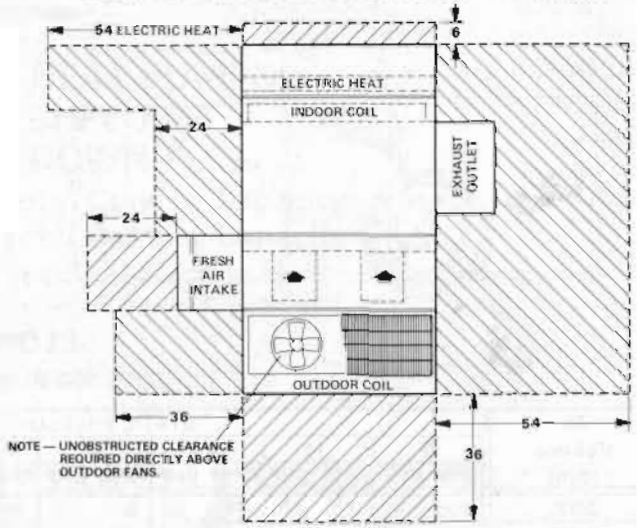
Model No.	Roof Mounting Frame	A	B	D	E	F	G	H
CHP8-953	RMF3-95	86-3/4	47-3/4	7	16	2	6-7/8	34-1/8
CHP8-1353	RMF3-135	106-1/4	56-3/4	9-5/8	20	2	8-3/8	40

DIMENSIONS — (inches)

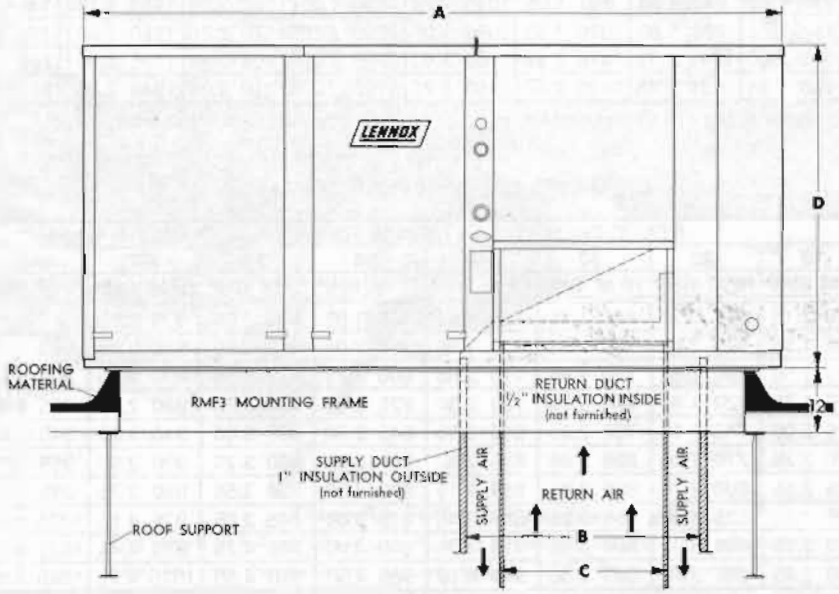
RECOMMENDED FLASHING FOR RMF3 ROOF MOUNTING FRAME



INSTALLATION CLEARANCES — (inches)



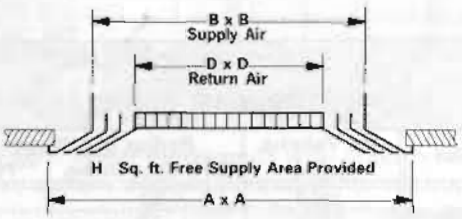
COMBINATION CEILING SUPPLY AND RETURN AIR DISTRIBUTION SYSTEM



Unit Model No.	A	B	C	D
CHP8-953	97	34 x 33-7/8	22-7/8 x 22-7/8	44-5/8
CHP8-1353	117	42 x 39-7/8	28-7/8 x 28-7/8	50-5/8

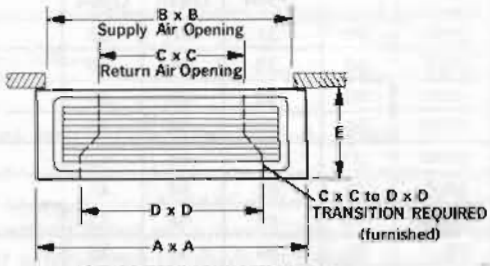
CEILING DIFFUSERS

FD Flush



NOTE — Also available with adjustable baffle blades. Same dimensions as above.

RTD Step-down

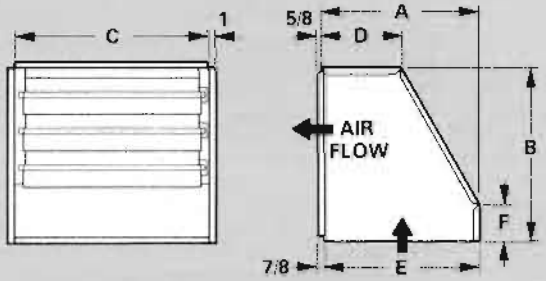


(4) F x G Supply Air Grilles Furnished
(1) E x E Return Air Grille Furnished

Unit Model No.	Supply and Return Air Grille Model No.	A	B	C	D	E	F	G	H
CHP8-953	RTD-95 step-down	41-1/2	36-1/2	23-1/8	29-1/4	10	36	6	----
	FD-95 Flush FD-95-D Flush (Adj. Baffle Blades)	47-3/4	42	----	30	----	----	----	6 sq. ft.
CHP8-1353	RTD-135 step-down	48	44-1/2	29-1/8	36	12	36	8	----
	FD-135 Flush FD-135-D Flush (Adj. Baffle Blades)	51-3/4	48	----	36	----	----	----	7 sq. ft.

OAD3 SERIES DAMPER ASSEMBLY (Optional)

DIMENSIONS (inches)



Unit	A	B	C	D	E	F
OAD3-95	17-1/8	17-3/4	21	10-1/8	16-7/8	5-3/4
OAD3-135	20-3/8	22-3/8	25	10-1/8	20-1/8	4-5/8

BLOWER DATA

CHP8-953 BLOWER PERFORMANCE

Air Volume (cfm)	STATIC PRESSURE EXTERNAL TO UNIT — Inches Water Gauge																			
	0		.10		.20		.30		.40		.50		.60		.70		.80		.90		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2600	700	.70	750	.80	795	.90	840	1.00	880	1.07	920	1.15	960	1.25	995	1.35	1030	1.45	1065	1.55	1100	1.70
2800	750	.90	800	1.00	845	1.10	885	1.20	925	1.30	960	1.40	1000	1.50	1035	1.60	1070	1.70	1100	1.80	1130	1.90
3000	810	1.10	850	1.20	890	1.30	930	1.40	970	1.50	1005	1.60	1040	1.75	1075	1.85	1110	1.95	1140	2.05	1170	2.15
3200	860	1.30	900	1.40	940	1.55	980	1.65	1015	1.75	1050	1.90	1080	2.00	1115	2.15	1145	2.25	1175	2.35	1210	2.50
3400	915	1.55	950	1.70	990	1.80	1025	1.95	1060	2.05	1090	2.15	1125	2.30	1150	2.40	1185	2.50	1215	2.65	1245	2.80
3600	970	1.85	1005	2.00	1045	2.15	1075	2.25	1105	2.40	1135	2.50	1165	2.65	1195	2.80	1255	2.90	1255	3.00	1285	3.15
3800	1020	2.20	1050	2.35	1085	2.45	1120	2.60	1150	2.75	1180	2.90	1210	3.05	1240	3.15	1270	3.30	1300	3.45	----	----

NOTE — All cfm data is measured external to the unit using standard return air opening and with air filters in place.

CHP8-1353 BLOWER PERFORMANCE

Air Volume (cfm)	STATIC PRESSURE EXTERNAL TO UNIT — Inches Water Gauge																			
	0		.10		.20		.30		.40		.50		.60		.70		.80		.90		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3800	555	1.00	600	1.15	640	1.30	680	1.45	725	1.60	765	1.85	800	2.05	835	2.25	----	----	----	----	----	----
4000	585	1.20	625	1.35	665	1.50	705	1.65	745	1.85	780	2.00	815	2.20	850	2.45	890	2.65	----	----	----	----
4200	615	1.40	650	1.50	690	1.65	730	1.85	770	2.05	800	2.25	835	2.50	870	2.70	905	2.90	935	3.15	----	----
4400	645	1.60	680	1.75	720	1.90	755	2.10	790	2.30	825	2.55	855	2.70	890	2.90	925	3.20	955	3.45	985	3.65
4600	675	1.80	710	2.00	745	2.15	780	2.35	815	2.60	845	2.80	880	3.00	910	3.20	945	3.50	975	3.70	1005	3.95
4800	700	2.05	740	2.25	770	2.40	805	2.65	835	2.80	865	3.00	900	3.25	930	3.50	965	3.75	995	4.00	1020	4.25
5000	735	2.35	765	2.55	800	2.75	830	2.95	860	3.10	890	3.30	920	3.55	950	3.75	985	4.10	1015	4.30	1040	4.55
5200	765	2.65	795	2.85	825	3.05	855	3.25	885	3.45	915	3.60	945	3.85	975	4.15	1005	4.35	1035	4.60	1060	4.90
5400	795	2.95	820	3.15	850	3.35	880	3.55	910	3.75	940	4.00	965	4.25	995	4.45	1025	4.75	1050	5.00	1080	5.30
5600	825	3.30	850	3.45	880	3.70	905	3.90	930	4.10	960	4.30	990	4.50	1015	4.75	1045	5.05	1070	5.35	1095	5.60

NOTE — All cfm data is measured external to the unit using standard return air opening and with air filters in place.

ACCESSORY PRESSURE DROP

Model No.	Air Volume (cfm)	Total Pressure Drop (inches water gauge)				
		Power Saver	RTD Combination Ceiling Supply and Return			FD Ceiling Supply & Return
			2 Sides Open	3 Sides Open	4 Sides Open	
CHP8-953	2600	.08	.31	.28	.23	.19
	2800	.08	.38	.34	.29	.23
	3000	.09	.43	.39	.34	.26
	3200	.09	.49	.44	.38	.29
	3400	.09	.55	.49	.43	.32
	3600	.10	.62	.54	.48	.36
	3800	.10	.68	.59	.53	.40
CHP8-1353	3800	.03	.39	.31	.25	.18
	4000	.03	.43	.35	.28	.21
	4200	.03	.49	.40	.33	.25
	4400	.04	.55	.45	.38	.29
	4600	.04	.62	.51	.43	.34
	4800	.04	.70	.57	.49	.39
	5000	.05	.79	.66	.57	.46
	5200	.05	.87	.73	.63	.51
	5400	.05	.93	.79	.68	.55

NOTE — Pressure drop includes grille and 3' of ductwork.
NOTE — ECH8 electric heaters have no appreciable pressure drop.

DRIVE SELECTION

Model No.	Nominal Motor Hp	Maximum Usable Hp	*Rpm Range Of All Available Drive Setups @1720 Rpm Motor Speed
CHP8-953	2	2.30	860-1200
	3	3.45	990-1200
CHP8-1353	3	3.45	765-955
	5	5.75	893-1087

*Specify exact Bhp, Rpm and power characteristics required when ordering unit.

CEILING SUPPLY AIR THROW DATA

Model No.	Air Volume (cfm)	Radius of Diffusion (Feet)	
		*RTD Step Down	**FD (Flush)
CHP8-953	3000	33	20
	3375	37	22
	3750	41	25
CHP8-1353	4400	44	22
	4950	48	25
	5500	53	28

* Four sides open and terminates at a point where conditioned air reaches a velocity of 50 fpm at the ceiling.
**Four sides open and terminates at a point where conditioned air reaches a velocity of 35 fpm at the ceiling.

FD CEILING DIFFUSER RECOMMENDED MAXIMUM AIR FLOW

Ceiling Height (feet)	8	9	10	12	15	20
Air Flow (cfm) per side	200	350	550	900	1500	4000

NOTE — This data is based on differentials between 15 and 25 degrees.