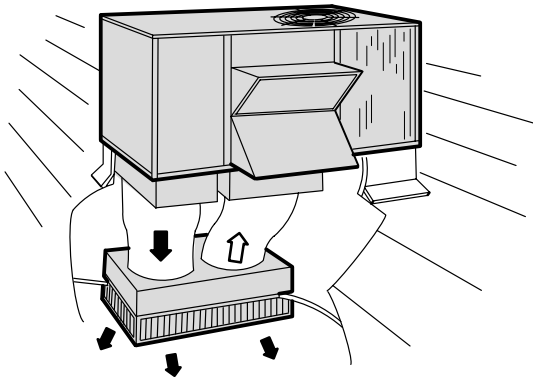


CHA16-072-090-120-150

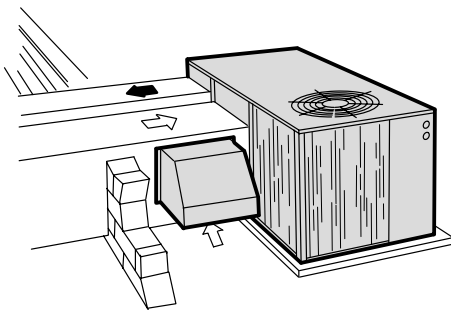
6, 7.5, 10 and 12-1/2 Ton
(21.1, 26.4, 35.2 and 44 kW)

Cooling Capacity - 72,000 to 144,000 Btuh (21.1 to 42.2 kW)
Optional Electric Heat - 34,100 to 170,600 Btuh (10 to 50 kW)

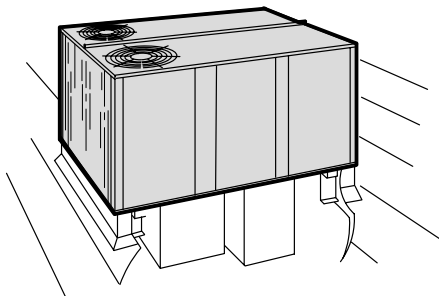
Bulletin #210229
August 2001
Supersedes January 2000



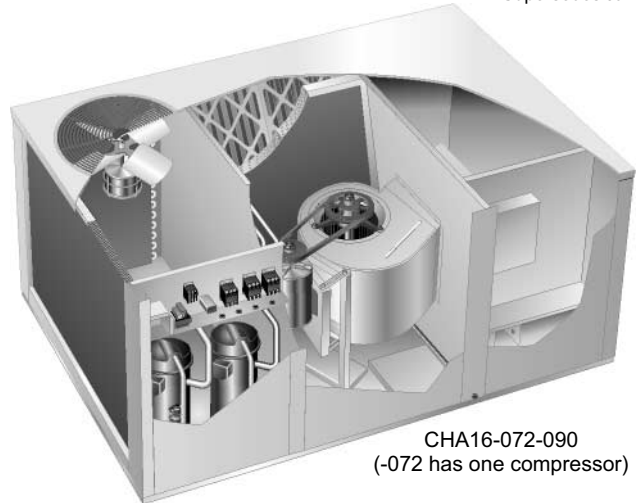
Down-Flow Supply and Return Air Installation
With RMF16 Roof Mounting Frame, REMD16 Economizer
and RTD11 Ceiling Diffuser.



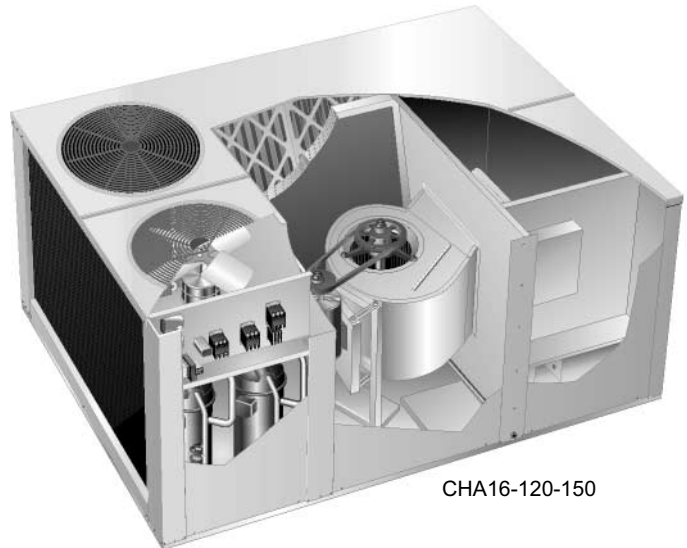
Horizontal (Side) Supply and Return Air
Installation with OAD16 Outdoor Air Dampers.



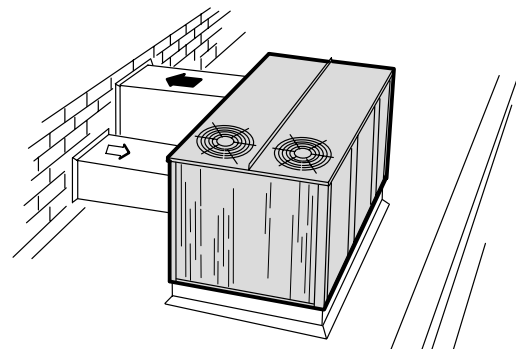
Down-Flow Supply and Return Air Installation
With RMF16 Roof Mounting Frame.



CHA16-072-090
(-072 has one compressor)



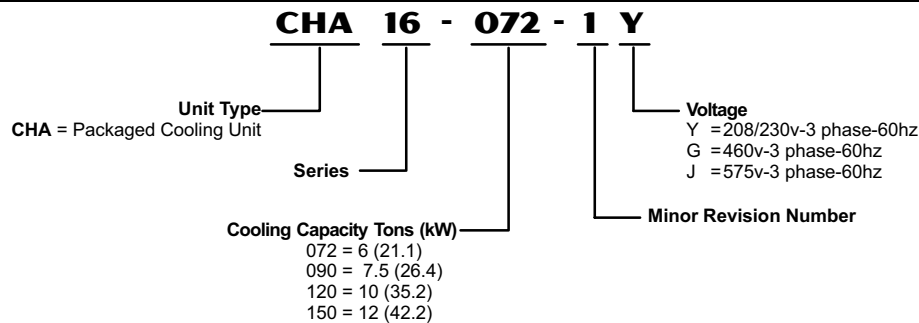
CHA16-120-150



Horizontal (Side) Supply and Return Air Installation
With RMF16 Roof Mounting Frame.

NOTE - Due to Lennox' ongoing commitment to quality, Specifications, Ratings and Dimensions subject to change without notice and without incurring liability. Improper installation, adjustment, alteration, service or maintenance can cause property damage or personal injury. Installation and service must be performed by a qualified installer and servicing agency.

MODEL NUMBER IDENTIFICATION



FEATURES

Air Flow Choice

- Bottom (down-flow) or horizontal (side) supply and return air.

Approvals

- UL and CSA listed.
- Components bonded for grounding to meet safety standards for servicing required by UL, CSA and National and Canadian Electrical Codes.
- Developed in accordance with ISO 9002 quality standards

ARI Rated and Certified

- Certified in accordance with the ULE certification program, which is based on ARI Standard 340/360-2000.

Cabinet

- Constructed of heavy gauge galvanized steel.
- Powdered enamel paint finish.
- Removable cabinet panels allow service access.
- Base section and cabinet panels exposed to conditioned air lined with thick fiberglass insulation.
- Electrical inlets provided in cabinet base and evaporator coil section cabinet panel for wiring entry.
- Control box with low voltage pigtail wiring connections and controls conveniently located for service access.
- Indoor coil condensate drain connection extends outside cabinet for ease of connection.
- Lifting brackets furnished for handling and rigging.

Coil Construction (Evaporator and Condenser)

- Extra large surface area and circuiting of coils provide maximum cooling efficiency, excellent heat transfer and low air resistance.
- Constructed of precisely spaced ripple-edged aluminum fins fitted to copper tubes.
- Fins equipped with collars that grip tubing for maximum contact area.
- Flared shoulder tubing connections and silver soldering provide tight, leakproof joints.
- Long life copper tubing is easy to field service.
- Coil is factory tested under high pressure to insure leakproof construction.

Compressors

- Copeland Scroll™ type.
- 072 model has one compressor. 090-120 and -150 models have two.

Condenser Coils

- Formed coil construction.

Condenser Fans

- 072 and 090 models have a single fan, 120 and 150 models have two.
- Low sound operating levels, PVC coated fan guard furnished.

Condenser Fan Motors

- Overload protected, permanently lubricated, ball bearings

Filters

- Unit is furnished with disposable 2 inch (51 mm) pleated MERV 7 rated filters (Minimum Efficiency Reporting Value based on ASHRAE 52.2).

Refrigeration System

- Consists of: compressors, condenser coil and direct drive fan(s), evaporator coil and belt drive blower, expansion valves, high capacity driers, high pressure switches (072-090 only), full refrigerant charge, freezestats (prevents coil freeze-up during low ambient operation), independent refrigerant circuits (allows staging), low ambient cooling operation down to 30°F (-1°C) without additional controls.

Sound Rating

- Tested in accordance with conditions included in ARI 270.

Supply Air Blower

- Belt drive.
- Forward curved blades with double inlet.
- Statically and dynamically balanced.
- Permanently lubricated self aligning sleeve bearings with adjustable pulley.

Supply Air Motor

- Overload protected, equipped with ball bearings.
- Motor mounting base permits quick and simple motor changeover, belt tension adjustment or belt changing.
- Adjustable motor pulley allows for variable speed adjustments.

Warranty

- Compressor - limited warranty for five years.
- All other covered components — limited warranty for one year.
- Refer to Lennox Equipment Limited Warranty certificate included with unit for specific details.

OPTIONAL ACCESSORIES (MUST BE ORDERED EXTRA)

Item		CHA16-072	CHA16-090	CHA16-120	CHA16-150
Bottom Power Entry		LB-55757CA (34G70) - 12 lbs. (5 kg)			
Ceiling Diffusers (Step-Down) - Aluminum grilles, double deflection louvers, large center grille, insulated diffuser box with flanges, hanging rings furnished, interior transition (even air flow), internally sealed (prevents recirculation), adapts to T-bar ceiling grids or plaster ceilings		RTD11-95 125 lbs. (57 kg)		RTD11-135 205 lbs. (93 kg)	
Ceiling Diffusers (Flush) - Aluminum grilles, fixed blade louvers, large center grille, insulated diffuser box with flanges, hanging rings furnished, interior transition (even air flow), internally sealed (prevents recirculation), adapts to T-bar ceiling grids or plaster ceilings		FD11-95 95 lbs. (43 kg)		FD11-135 174 lbs. (79 kg)	
Ceiling Diffuser Transitions (Supply and Return) - Used with diffusers, installs in roof mounting frame, galvanized steel construction, flanges furnished for duct connection, fully insulated		SRT16-09 38 lbs. (17 kg)		SRT16-12 38 lbs. (17 kg)	
Coil Guard - PVC coated steel wire guards to protect outdoor coil. Not used with Hail Guards.		60L31		60L32	
Control Systems		See Page 16			
Crankcase Heaters - Ensures proper compressor lubrication at all times.	208/230 volt	67K90	90P12	67K90	
	460 volt	67K89	49K11	67K89	
	575 volt	42J85	49K12	42J85	
Economizer Dampers (Down-Flow) - Mechanically linked recirculated air and outdoor air dampers, plug-in connections to unit, nylon bearings, stainless steel seals (outdoor dampers), 24 volt fully modulating spring return damper motor, adjustable minimum damper position switch, mixed air controller, solid-state adjustable outdoor air enthalpy control, 0 to 100% outdoor air adjustable, gravity exhaust air dampers furnished, powdered enamel paint finish NOTE - Fresh air/exhaust air hood with cleanable aluminum mesh frame filter, is required and must be ordered separately for field installation (see below)	Model No. - Net Wt.	REMD16M-09 60 lbs. (27 kg)		REMD16M-12 80 lbs. (36 kg)	REMD16M-15 100 lbs (45 kg)
	Net face area	2.1 ft. ² (0.20 m ²)		2.8 ft. ² (0.26 m ²)	3.6 ft. ² (0.33 m ²)
Economizer Damper Hood (Down-flow) - For use with REMD16M economizer dampers (see above). Must be ordered separately.	Order No.	27L58		27L60	48L00
	No. & Size of Filters	(1) 32-1/4 x 16-1/2 x 1 (819 x 419 x 25)		(1) 32-1/4 x 21-1/4 x 1 (819 x 546 x 25)	(1) 40-1/4 x 21-1/2 x 1 (1022 x 546 x 25)
Economizer Dampers (Horizontal) - Mechanically linked recirculated air and outdoor air dampers, plug-in connections to unit, nylon bearings, stainless steel seals (outdoor dampers), 24 volt fully modulating spring return damper motor, adjustable minimum damper position switch, mixed air controller, solid-state adjustable outdoor air enthalpy control, 0 to 100% outdoor air adjustable, galvanized steel cabinet, flanged air openings on return air section, powdered enamel paint finish, fully insulated. NOTE - Outdoor air hood with two cleanable aluminum mesh frame filters is required and must be ordered separately. Also requires optional Horizontal Supply and Return Air Kit for duct connection	Order No.	68G80		68G80	68G77
	No. & Size of Filters	(2) 16 x 25 x 1 (406 x 635 x 25)		(2) 16 x 25 x 1 (406 x 635 x 25)	(2) 20 x 25 x 1 (508 x 635 x 25)
Economizer Gravity Exhaust Dampers (Horizontal) - For use with EMDH16 horizontal economizer damper sections, two neoprene coated fiberglass dampers furnished, rainhoods furnished, bird screen furnished	GED16-09/12 (5 lbs.) (2 kg) Net face area - 0.43 sq. ft. (0.04 m ²) used with EMDH16M				
Economizer Differential Enthalpy Control - For use with economizer dampers, solid-state return air sensor allows selection between outdoor air and return air (whichever has lowest enthalpy)	54G44				
Electric Heat - Field installed, helix wound nichrome elements, time delay for element staging, individual element limit controls, may be two-stage controlled, requires optional Fuse Block	See Electric Heat Data Tables, pages 11-12				
Unit Fuse Block - Required for electric heat installation, wiring harness and mounting screws furnished	208/230volt	50L22 (50 amp)		50L25 (70 amp)	50L25 (70 amp)
	460 volt	50L24 (25 amp)		50L26 (35 amp)	50L26 (35 amp)
	575 volt	50L23 (20 amp)		50L24 (25 amp)	50L27 (30 amp)
Hail Guards - Heavy duty field installed coil guard protects coils from damage. Not used with Coil Guards.	60L33		60L34		
Horizontal Supply and Return Air Kit - Provides duct connection to unit, flanges furnished, hardware furnished, two filler panels furnished for unused air openings, filter access panel furnished	LB-55756BA (34G71) 30 lbs. (14 kg)		LB-55756BB (35G42) 35 lbs. (16 kg)	LB-55756BC (51G27) 39 lbs. (18 kg)	
Low Ambient Controls - Allows unit operation down to 0°F (-17.7°C)	LB-57113BC (24H77)	LB-57113BG (15J80)	LB-57113BW (53L84)		
Outdoor Air Damper/Hood Section - Linked mechanical dampers, two-piece cabinet (control access), cleanable polyurethane frame type filter furnished, 0 to 25% (fixed) outdoor air adjustable, manual or automatic operation (kit required for automatic operation), installs on unit for down-flow applications, installs in return air duct for horizontal applications	Model No. - Net Wt.	OAD16-09 41 lbs. (19 kg)		OAD16-12 43 lbs. (20 kg)	OAD16-15 50 lbs. (23 kg)
	No. & Size of Filters	(1) 16 x 20 x 1 (406 x 508 x 25)		(1) 16 x 20 x 1 (406 x 508 x 25)	(1) 16 x 20 x 1 (406 x 508 x 25)
Outdoor Air Damper Panel Kit - Required with OAD16 Damper/Hood for down-flow applications. Interchangeable unit panel.	35G22		35G23	64G94	
Outdoor Air Damper Motorized Damper Kit - 3 position damper actuator, plug-in connection	35G21 - 7 lbs. (3 kg)				
Roof Mounting Frame - Nailer strip furnished, mates to unit, U.S. National Roofing Contractors Approved, shipped knocked down	RMF16-09 107 lbs. (49 kg)		RMF16-12 119 lbs. (54 kg)		

SPECIFICATIONS

Cooling Performance	Model No.	CHA16-072	CHA16-090	CHA16-120	CHA16-150
	Nominal Tonnage (kW)	6 (21.1)	7.5 (26.4)	10	12
	Gross cooling capacity - Btuh (kW)	74,800 (21.9)	92,800 (27.2)	123,000 (36.0)	152,000 (44.5)
	★Net cooling capacity - Btuh (kW)	72,000 (21.1)	88,000 (25.8)	117,000 (34.3)	144,000 (42.2)
	Total unit kW	8.0	9.8	13.0	16.0
	★EER (Btuh/Watts)	9.0	9.0	9.0	9.0
	★Integrated Part Load Value	- - -	9.5	9.2	8.5
	*Sound Rating Number (db)	81	86	82	88
	Refrigerant Charge (HCFC-22) Circuit 1	9 lbs. 8 oz. (4.31 kg)	6 lbs. 0 oz. (2.72 kg)	7 lbs. 8 oz. (3.4 kg)	8 lbs. 8 oz. (3.9 kg)
	Circuit 2	- - -	6 lbs. 0 oz. (2.72 kg)	7 lbs. 8 oz. (3.4 kg)	8 lbs. 8 oz. (3.9 kg)
Condenser Coil	Net face area - sq. ft. (m ²)	13.0 (1.21)	15.67 (1.46)	24.0 (2.23)	24.0 (2.23)
	Tube diameter - in. (mm)	3/8 (9.5)	3/8 (9.5)	3/8 (9.5)	3/8 (9.5)
	No. of rows	2	2	2	2
	Fins per inch (m)	20 (787)	20 (787)	20 (787)	20 (787)
Condenser Fan(s)	Motor horsepower (W)	(1) 1/3 (249)	(1) 3/4 (560)	(2) 1/3 (249)	(2) - 1/2 (373)
	Motor rpm	1075	1075	1075	1075
	Motor watts	450	650	650	1250
	Diameter - in. (mm) & No. of blades	(1) 24 (610) - 3	(1) 24 (610) - 4	(2) 20 (508) - 4	(2) 24 (610) - 3
	Air volume - cfm (L/s)	4100 (1935)	5150 (2430)	6400 (3020)	8400 (3965)
Evaporator Coil	Net face area - sq. ft. (m ²)	7.75 (0.72)	7.75 (0.72)	9.46 (0.88)	11.92 (1.11)
	Tube diameter - in. (mm)	3/8 (9.5)	3/8 (9.5)	3/8 (9.5)	3/8 (9.5)
	No. of rows	3	3	3	4
	Fins per inch (m)	14 (551)	14 (551)	14 (551)	14 (551)
	Expansion device type	Thermostatic Expansion Valve			
	Condensate drain connection size	1 in. - 11-1/2 npt pipe nipple			
Evaporator Blower	Nominal motor hp (kW)	2 (1.5)	2 (1.5)	3 (2.2)	3 (2.2)
	Maximum usable hp (kW)	2.30 (1.7)	2.30 (1.7)	3.45 (2.6)	3.45 (2.6)
	RPM range	845 - 1130	845 - 1130	735 - 1015	735 - 1015
	Blower wheel nominal diameter x width - in. (mm)	12 x 12 (305 x 305)	12 x 12 (305 x 305)	15 x 15 (381 x 381)	15 x 15 (381 x 381)
Filters (furnished)	Filter type	Disposable, MERV 7 rated, commercial grade, pleated			
	No. & size - in. (mm)	(4) 16 x 20 x 2 (406 x 508 x 51)	(4) 16 x 20 x 2 (406 x 508 x 51)	(2) 16 x 25 x 2 (406 x 635 x 51) & (2) 16 x 20 x 2 (406 x 508 x 51)	(2) 20 x 25 x 2 (508 x 635 x 51) & (2) 20 x 20 x 2 (508 x 508 x 51)
Shipping Data	Net weight of basic unit - lbs. (kg)	660 (299)	810 (367)	1000 (454)	1100 (499)
	Shipping weight of basic unit - lbs. (kg) (1 Pkg.)	800 (363)	995 (451)	1185 (538)	1285 (583)
Electrical characteristics		208/230v, 460v or 575v - 60 hertz - 3 phase			

*Sound Rating Number in accordance with test conditions included in ARI Standard 270.

★Certified in accordance with the ULE certification program, which is based on ARI Standard 340/360; 95°F (35°C) outdoor air temperature and 80°F (27°C) db/67°F (19°C) wb entering evaporator air; minimum external duct static pressure. Integrated Part Load Value tested at 80°F (27°C) outdoor air temperature.

NOTE - ARI capacity is net and includes evaporator blower motor heat deduction. Gross capacity does not include evaporator blower motor heat deduction.

NOTE - Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor output required. Maximum usable output of motors furnished by Lennox are shown. In Canada, nominal motor output is also maximum usable motor output. If motors of comparable output are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

BLOWER DATA

ACCESSORY AIR RESISTANCE

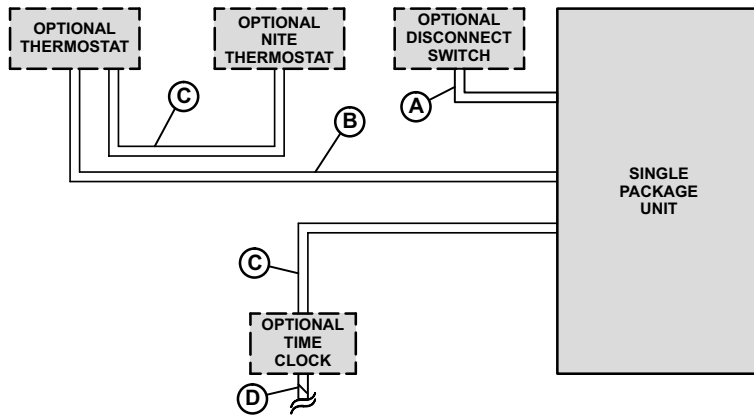
Unit Model No.	Air Volume		Total Resistance													
			Wet Evaporator Coil		REMD16M Down-Flow Economizer		EMDH16M Horizontal Economizer		RTD11 Step-Down Diffuser						FD11 Flush Diffuser	
									2 Ends Open		1 Side 2 Ends Open		All Ends & Sides Open			
cfm	L/s	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	
CHA16-072 CHA16-090	2000	945	0.10	25	0.11	27	0.02	5	0.15	37	0.12	30	0.11	27	0.08	20
	2200	1040	0.11	27	0.15	37	0.03	7	0.18	45	0.15	37	0.13	32	0.11	27
	2400	1185	0.12	30	0.19	47	0.03	7	0.21	52	0.18	45	0.15	37	0.14	35
	2600	1225	0.13	32	0.23	57	0.04	10	0.24	60	0.21	52	0.18	45	0.17	42
	2800	1320	0.14	35	0.27	67	0.04	10	0.27	67	0.24	60	0.21	52	0.20	50
	3000	1415	0.16	40	0.31	77	0.05	12	0.32	80	0.29	72	0.25	62	0.25	62
	3200	1510	0.18	45	0.35	87	0.05	12	0.41	102	0.37	92	0.32	80	0.31	77
	3400	1605	0.19	47	0.41	102	0.06	15	0.50	124	0.45	112	0.39	97	0.37	92
	3600	1700	0.21	52	0.47	117	0.06	15	0.61	152	0.54	134	0.48	119	0.44	109
	3800	1795	0.23	57	0.57	142	0.07	17	0.73	182	0.63	157	0.57	142	0.51	127
CHA16-120	3600	1700	0.12	30	0.14	35	0.03	7	0.36	90	0.28	70	0.23	57	0.15	37
	3800	1795	0.13	32	0.15	37	0.04	10	0.40	99	0.32	80	0.26	65	0.18	45
	4000	1890	0.14	35	0.16	40	0.04	10	0.44	109	0.36	90	0.29	72	0.21	52
	4200	1980	0.15	37	0.17	42	0.05	12	0.49	122	0.40	99	0.33	82	0.24	60
	4400	2075	0.16	40	0.18	45	0.05	12	0.54	134	0.44	109	0.37	92	0.27	67
	4600	2170	0.17	42	0.20	50	0.06	15	0.60	149	0.49	122	0.42	104	0.31	77
	4800	2265	0.18	45	0.22	55	0.07	17	0.65	162	0.53	132	0.46	114	0.35	87
	5000	2360	0.19	47	0.24	60	0.09	22	0.69	172	0.58	144	0.50	124	0.39	97
	5200	2455	0.20	50	0.27	67	0.10	25	0.75	186	0.62	154	0.54	134	0.43	107
CHA16-150	4200	1980	0.17	42	0.18	45	0.06	15	0.49	122	0.40	99	0.33	82	0.24	60
	4400	2075	0.18	45	0.20	50	0.07	17	0.54	134	0.44	109	0.37	92	0.27	67
	4600	2170	0.20	50	0.21	52	0.07	17	0.60	149	0.49	122	0.42	104	0.31	77
	4800	2265	0.21	52	0.23	57	0.08	20	0.65	162	0.53	132	0.46	114	0.35	87
	5000	2360	0.22	55	0.26	65	0.08	20	0.69	172	0.58	144	0.50	124	0.39	97
	5200	2455	0.24	60	0.31	77	0.09	22	0.75	186	0.62	154	0.54	134	0.43	106
	5400	2550	0.25	62	0.34	85	0.10	25	0.82	204	0.68	169	0.56	139	0.47	117
	5600	2640	0.26	65	0.38	94	0.12	30	0.88	219	0.73	182	0.64	159	0.52	129
	5800	2735	0.28	70	0.40	99	0.13	32	0.97	241	0.79	196	0.69	172	0.58	144

NOTE - Electric heat has no appreciable air resistance.

CEILING DIFFUSER AIR THROW DATA						
Model No.	Air Volume		Effective Throw Range			
			RTD11 Step-Down		FD11 Flush	
			cfm	L/s	ft.	m
CHA16-072 CHA16-090	2625	1240	24 - 29	7 - 9	22 - 26	7 - 8
	3000	1415	27 - 33	8 - 10	25 - 30	8 - 9
	3375	1595	30 - 37	9 - 11	28 - 34	9 - 10
	3750	1770	34 - 41	10 - 12	31 - 38	9 - 12
CHA16-120	4400	2075	34 - 42	10 - 13	32 - 40	10 - 12
	4950	2335	38 - 47	12 - 14	36 - 45	11 - 14
	5500	2595	43 - 52	13 - 16	40 - 50	12 - 15
CHA16-150	4200	1980	39 - 46	12 - 14	40 - 48	12 - 15
	5000	2360	41 - 50	12 - 15	43 - 52	13 - 16
	5800	2735	43 - 52	13 - 16	45 - 54	14 - 16

Effective Throw Range is the horizontal or vertical distance an airstream travels on leaving the outlet or diffuser before the maximum velocity is reduced to 50 ft. (15 m) per minute. Four sides open.

ELECTRO-MECHANICAL THERMOSTAT CONTROL SYSTEM

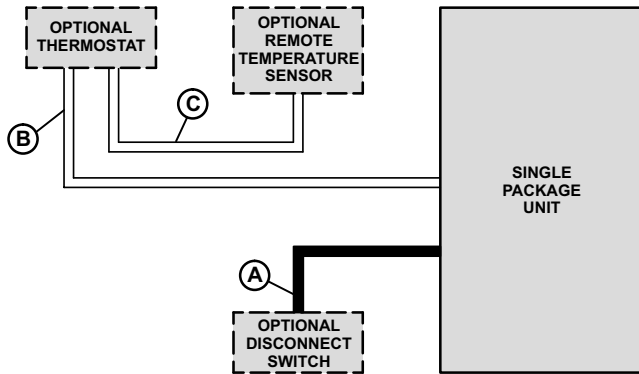


- A - Three wire power (See Electrical Data Table)
- B - Six wire low voltage
- C - Two wire low voltage
- D - Two wire power

- Field wiring not furnished -

NOTE - All wiring must conform to NEC or CEC and local electrical codes.

T7300 OR T8600D/T8624D THERMOSTAT CONTROL SYSTEM



- A - Three wire power (See Electrical Data Table)
- B - Nine wire low voltage
- C - Two wire low voltage
- Seven wire low voltage (T7300 Room Sensor with override)

- Field wiring not furnished -

NOTE - All wiring must conform to NEC or CEC and local electrical codes.

ELECTRICAL DATA

General Data		Model No. CHA16-072			CHA16-090			CHA16-120			CHA16-150		
Line voltage data - 60 Hz - 3 ph		208/230v	460v	575v	208/230v	460v	575v	208/230v	460v	575v	208/230v	460v	575v
Rec. max. fuse size (amps)		50	25	20	50	25	20	70	35	25	70	35	30
†Minimum Circuit Ampacity		34	17	14	42	21	17	58	28	21	59	29	24
Compressor(s)	No. of compressors	1	1	1	2	2	2	2	2	2	2	2	2
	Rated load amps - each (total)	18.8	9.1	7.5	13.3 (26.6)	6.7 (13.4)	5.4 (10.8)	18.6 (37.2)	9.0 (18.0)	6.6 (13.2)	18.8 (37.6)	9.1 (18.2)	7.5 (15.0)
	Locked rotor amps - each (total)	156	75	54	91 (182)	46 (92)	37 (74)	128 (256)	63 (126)	49 (98)	156 (312.0)	75 (150.0)	54 (108.0)
Condenser Fan Motor(s)	No. of Fan Motors	1	1	1	1	1	1	2	2	2	2	2	2
	Full load amps - total	2.4	1.3	1	3.7	1.9	1.6	4.8	2.6	2	6	3	2.4
	Locked rotor amps - total	4.7	2.4	1.9	7.3	3.7	2.9	9.4	4.8	3.8	12	6	5.8
Evaporator Blower Motor	Motor output - hp (kW)	2 (1.5)	2 (1.5)	2 (1.5)	2 (1.5)	2 (1.5)	2 (1.5)	3 (2.2)	3 (2.2)	3 (2.2)	3 (2.2)	3 (2.2)	3 (2.2)
	Full load amps	7.5	3.4	2.7	7.5	3.4	2.7	10.6	4.8	3.9	10.6	4.8	3.9
	Locked rotor amps	41	20.4	16.2	41	20.4	16.2	66	26.8	23.4	66	26.8	23.4

†Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.
NOTE - Extremes of operating range are plus and minus 10 % of line voltage.

ELECTRIC HEAT DATA - FUSE BLOCK REQUIRED

CHA16-072 MODELS

Electric Heat Model No. & Net Weight	No. of Steps	Volts Input	kw Input	Btuh Output	†Total Unit + Electric Heat Minimum Circuit Ampacity	Total Unit + Electric Heat Maximum Fuse Size
10kW ECH16-82/95-10 208/230v (61H68) 460v (61H73) 575v (61H78) 38 lbs. (17 kg)	1	208	7.5	25,600	②40	50
	1	220	8.4	28,700	②40	50
	1	230	9.2	31,400	②40	50
	1	240	10.0	34,100	②40	50
	1	440	8.4	28,700	②20	25
	1	460	9.2	31,400	②20	25
	1	480	10.0	34,100	②20	25
	1	550	8.4	28,700	②16	20
15 kW ECH16-82/95-15 208/230v (61H69) 460v (61H74) 575v (61H79) 38 lbs. (17 kg)	1	208	11.3	38,600	②55	60
	1	220	12.6	43,000	②55	60
	1	230	13.5	46,100	②55	60
	1	240	15.0	51,200	②55	60
	1	440	12.6	43,000	②27	30
	1	460	13.8	46,100	②27	30
	1	480	15.0	51,200	②27	30
	1	550	12.6	43,000	②22	25
20 kW ECH16-82/95-20 208/230v (61H70) 460v (61H75) 575v (61H80) 42 lbs. (19 kg)	①2	208	15.0	51,200	②70	70
	①2	220	16.8	57,300	②70	70
	①2	230	18.4	62,800	②70	70
	①2	240	20.0	68,300	②70	70
	1	440	16.8	57,300	②35	35
	1	460	18.4	62,800	②35	35
	1	480	20.0	68,300	②35	35
	1	550	16.8	57,300	②28	30
30 kW ECH16-82/95-30 208/230v (19M34) 460v (19M35) 575v (19M36) 42 lbs. (19 kg)	①2	208	22.5	76,800	③100	100
	①2	220	25.2	86,000	③100	100
	①2	230	27.5	93,900	③100	100
	①2	240	30.0	102,400	③100	100
	1	440	25.2	86,000	③50	50
	1	460	27.6	93,900	③50	50
	1	480	30.0	102,400	③50	50
	1	550	25.2	86,000	③40	40
40 kW ECH16-82/95-40 208/230v (61H72) 460v (61H77) 575v (61H82) 53 lbs. (24 kg)	①3	208	30.0	102,400	②130	150
	①3	220	33.6	114,700	②130	150
	①3	230	36.8	125,600	②130	150
	①3	240	40.0	136,500	②130	150
	①2	440	33.6	114,700	②65	70
	①2	460	36.8	125,600	②65	70
	①2	480	40.0	136,500	②65	70
	①2	550	33.6	114,700	②52	60
575v ①2 575 36.8 125,600 ②52 60 ①2 600 40.0 136,500 ②52 60						

†Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

①May be used with two stage control.

②Use wires suitable for at least 167°F (75°C).

③Use wires suitable for at least 194°F (90°C).

ELECTRIC HEAT DATA - FUSE BLOCK REQUIRED

CHA16-090 MODELS

Electric Heat Model No. & Net Weight	No. of Steps	Volts Input	kw Input	Btuh Output	†Total Unit + Electric Heat Minimum Circuit Ampacity	Total Unit + Electric Heat Maximum Fuse Size
10 kW ECH16-82/95-10 208/230v (61H68) 460v (61H73) 575v (61H78) 38 lbs. (17 kg)	1	208	7.5	25,600	②42	50
	1	220	8.4	28,700	②42	50
	1	230	9.2	31,400	②42	50
	1	240	10.0	34,100	②42	50
	1	440	8.4	28,700	②21	25
	1	460	9.2	31,400	②21	25
	1	480	10.0	34,100	②21	25
	1	550	8.4	28,700	②17	20
15 kW ECH16-82/95-15 208/230v (61H69) 460v (61H74) 575v (61H79) 38 lbs. (17 kg)	1	208	11.3	38,600	②49	50
	1	220	12.6	43,000	②55	60
	1	230	13.5	46,100	②55	60
	1	240	15.0	51,200	②55	60
	1	440	12.6	43,000	②27	30
	1	460	13.8	46,100	②27	30
	1	480	15.0	51,200	②27	30
	1	550	12.6	43,000	②22	25
20 kW ECH16-82/95-20 208/230v (61H70) 460v (61H75) 575v (61H80) 42 lbs. (19 kg)	①2	208	15.0	51,200	②62	70
	①2	220	16.8	57,300	②70	70
	①2	230	18.4	62,800	②70	70
	①2	240	20.0	68,300	②70	70
	1	440	16.8	57,300	②35	35
	1	460	18.4	62,800	②35	35
	1	480	20.0	68,300	②35	35
	1	550	16.8	57,300	②28	30
30 kW ECH16-82/95-30 208/230v (19M34) 460v (19M35) 575v (19M36) 42 lbs. (19 kg)	①2	208	22.5	76,800	③88	90
	①2	220	25.2	86,000	③100	100
	①2	230	27.5	93,900	③100	100
	①2	240	30.0	102,400	③100	100
	1	440	25.2	86,000	③50	50
	1	460	27.6	93,900	③50	50
	1	480	30.0	102,400	③50	50
	1	550	25.2	86,000	③40	40
40 kW ECH16-82/95-40 208/230v (61H72) 460v (61H77) 575v (61H82) 53 lbs. (24 kg)	①3	208	30.0	102,400	②114	125
	①3	220	33.6	114,700	②130	150
	①3	230	36.8	125,600	②130	150
	①3	240	40.0	136,500	②130	150
	①2	440	33.6	114,700	②65	70
	①2	460	36.8	125,600	②65	70
	①2	480	40.0	136,500	②65	70
	①2	550	33.6	114,700	②52	60
①2	575	36.8	125,600	②52	60	
	600	40.0	136,500	②52	60	

†Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

① May be used with two stage control.

② Use wires suitable for at least 167°F (75°C).

③ Use wires suitable for at least 194°F (90°C).

ELECTRIC HEAT DATA - FUSE BLOCK REQUIRED

CHA16-120 MODELS

Electric Heat Model No. & Net Weight	No. of Steps	Volts Input	kw Input	Btuh Output	†Total Unit + Electric Heat Minimum Circuit Ampacity	Total Unit + Electric Heat Maximum Fuse Size
15 kW ECH16-135-15 208/230v (72G21) 460v (72G26) 575v (72G31) 38 lbs. (17 kg)	1	208	11.3	38,600	59	70
	1	220	12.6	43,000	59	70
	1	230	13.5	46,100	59	70
	1	240	15.0	51,200	59	70
	1	440	12.6	43,000	29	35
	1	460	13.8	46,100	29	35
	1	480	15.0	51,200	29	35
	1	550	12.6	43,000	23	25
20 kW ECH16-135-20 208/230v (72G22) 460v (72G27) 575v (72G32) 42 lbs. (19 kg)	1	208	15.0	51,200	74	80
	1	220	16.8	57,300	74	80
	1	230	18.4	62,800	74	80
	1	240	20.0	68,300	74	80
	1	440	16.8	57,300	37	40
	1	460	18.4	62,800	37	40
	1	480	20.0	68,300	37	40
	1	550	16.8	57,300	29	30
30 kW ECH16-135-30 208/230v (72G23) 460v (72G28) 575v (72G33) 42 lbs. (19 kg)	†2	208	22.5	76,800	104	110
	†2	220	25.2	86,000	104	110
	†2	230	27.5	93,900	104	110
	†2	240	30.0	102,400	104	110
	†2	440	25.4	86,000	52	60
	†2	460	27.5	93,900	52	60
	†2	480	30.0	102,400	52	60
	†2	550	25.2	86,000	41	45
40 kW ECH16-135-40 208/230v (72G24) 460v (72G29) 575v (72G34) 53 lbs. (24 kg)	†2	208	30.0	102,400	134	150
	†2	220	33.6	114,700	134	150
	†2	230	36.8	125,600	134	150
	†2	240	40.0	136,500	134	150
	†2	440	33.6	114,700	67	70
	†2	460	36.8	125,600	67	70
	†2	480	40.0	136,500	67	70
	†2	550	33.6	114,700	53	60
50 kW ECH16-135-50 208/230v (72G25) 460v (72G30) 575v (72G35) 58 lbs. (26 kg)	†2	208	37.5	128,000	134	150
	†2	220	42.0	143,300	134	150
	†2	230	46.0	157,000	134	150
	†2	240	50.0	170,600	134	150
	†2	440	43.8	149,500	67	70
	†2	460	46.0	157,000	67	70
	†2	480	50.0	170,600	67	70
	†2	550	43.8	149,500	53	60
(72G25) 460v (72G30) 575v (72G35)	†2	575	46.0	157,000	53	60
	†2	600	50.0	170,600	53	60

†Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F (75°C).

† May be used with two stage control.

ELECTRIC HEAT DATA - FUSE BLOCK REQUIRED

CHA16-150 MODELS

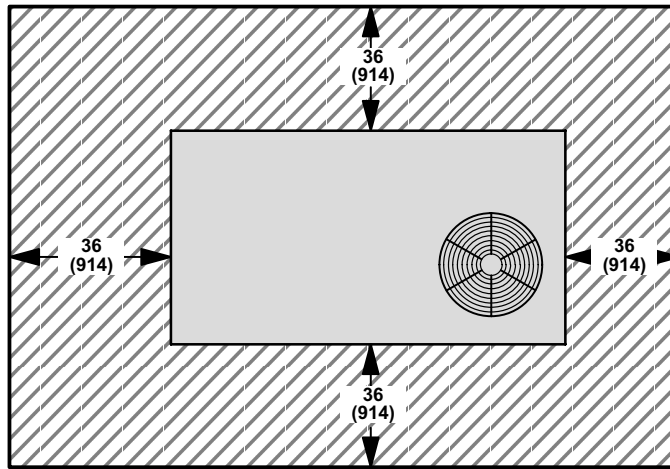
Electric Heat Model No. & Net Weight	No. of Steps	Volts Input	kw Input	Btuh Output	†Total Unit + Electric Heat Minimum Circuit Ampacity	Total Unit + Electric Heat Maximum Fuse Size
15 kW ECH16-135-15 208/230v (72G21) 460v (72G26) 575v (72G31) 38 lbs. (17 kg)	1	208	11.3	38,600	59	70
	1	220	12.6	43,000	59	70
	1	230	13.5	46,100	59	70
	1	240	15.0	51,200	59	70
	1	440	12.6	43,000	29	35
	1	460	13.8	46,100	29	35
	1	480	15.0	51,200	29	35
	1	550	12.6	43,000	23	30
20 kW ECH16-135-20 208/230v (72G22) 460v (72G27) 575v (72G32) 42 lbs. (19 kg)	1	208	15.0	51,200	74	80
	1	220	16.8	57,300	74	80
	1	230	18.4	62,800	74	80
	1	240	20.0	68,300	74	80
	1	440	16.8	57,300	37	40
	1	460	18.4	62,800	37	40
	1	480	20.0	68,300	37	40
	1	550	16.8	57,300	29	30
30 kW ECH16-135-30 208/230v (72G23) 460v (72G28) 575v (72G33) 42 lbs. (19 kg)	□12	208	22.5	76,800	104	110
	□12	220	25.2	86,000	104	110
	□12	230	27.5	93,900	104	110
	□12	240	30.0	102,400	104	110
	□12	440	25.4	86,000	52	60
	□12	460	27.5	93,900	52	60
	□12	480	30.0	102,400	52	60
	□12	550	25.2	86,000	41	45
40 kW ECH16-135-40 208/230v (72G24) 460v (72G29) 575v (72G34) 53 lbs. (24 kg)	□12	208	30.0	102,400	134	150
	□12	220	33.6	114,700	134	150
	□12	230	36.8	125,600	134	150
	□12	240	40.0	136,500	134	150
	□12	440	33.6	114,700	67	70
	□12	460	36.8	125,600	67	70
	□12	480	40.0	136,500	67	70
	□12	550	33.6	114,700	53	60
50 kW ECH16-135-50 208/230v (72G25) 460v (72G30) 575v (72G35) 58 lbs. (26 kg)	□12	208	37.5	128,000	134	150
	□12	220	42.0	143,300	134	150
	□12	230	46.0	157,000	134	150
	□12	240	50.0	170,600	134	150
	□12	440	43.8	149,500	67	70
	□12	460	46.0	157,000	67	70
	□12	480	50.0	170,600	67	70
	□12	550	43.8	149,500	53	60

†Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F (75°C).

□12 May be used with two stage control.

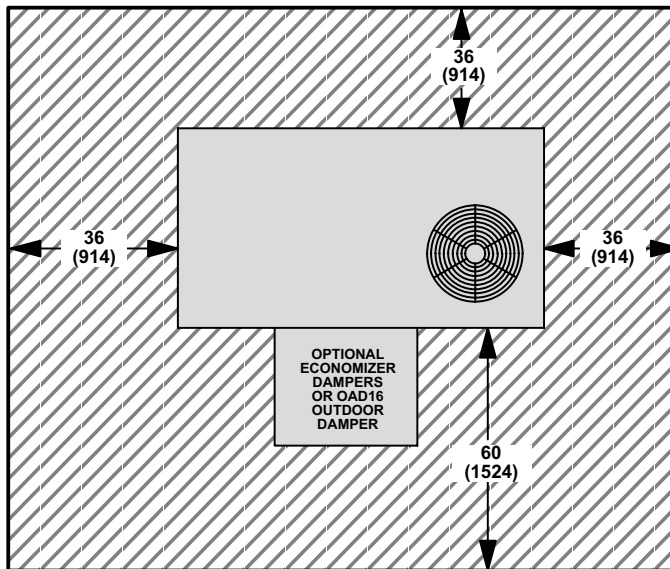
INSTALLATION CLEARANCES - INCHES (MM)

CHA16 BASIC UNIT



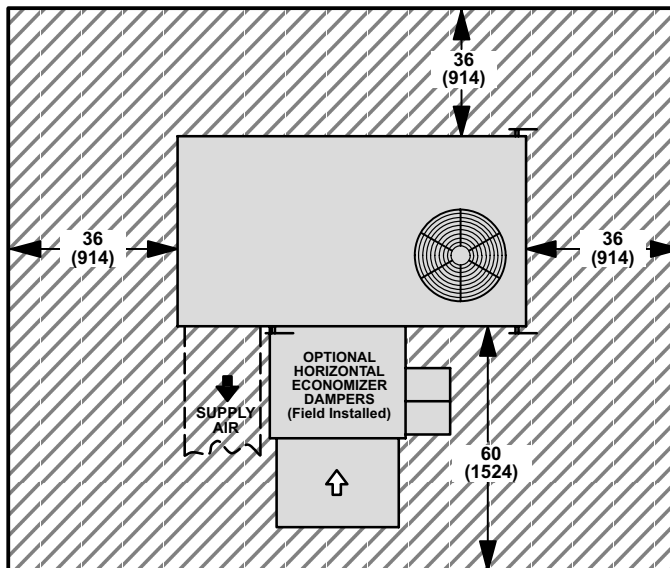
NOTE - Top Clearance Unobstructed.
NOTE - Entire perimeter of unit requires support when elevated above mounting surface.

CHA16 UNIT WITH REMD16M ECONOMIZER DAMPER SECTION OR OAD16 OUTDOOR AIR DAMPER SECTION



NOTE - Top Clearance Unobstructed.

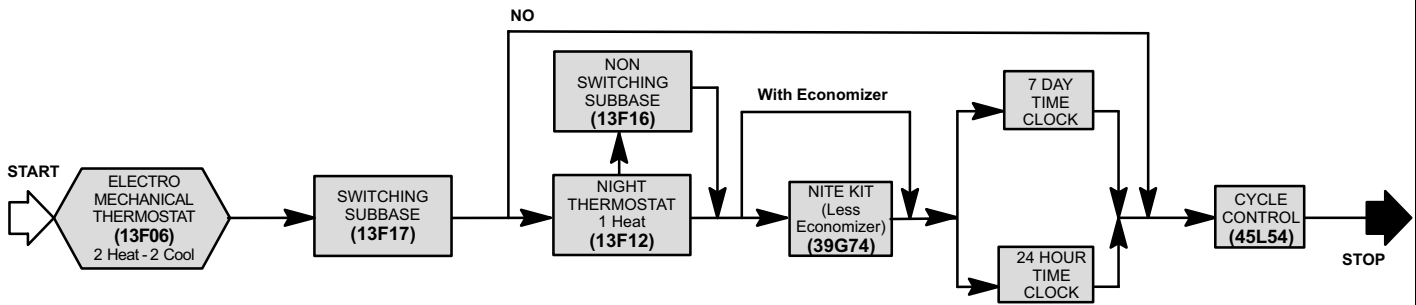
CHA16 UNIT WITH EMDH16M HORIZONTAL ECONOMIZER DAMPER SECTION



NOTE - Top Clearance Unobstructed.

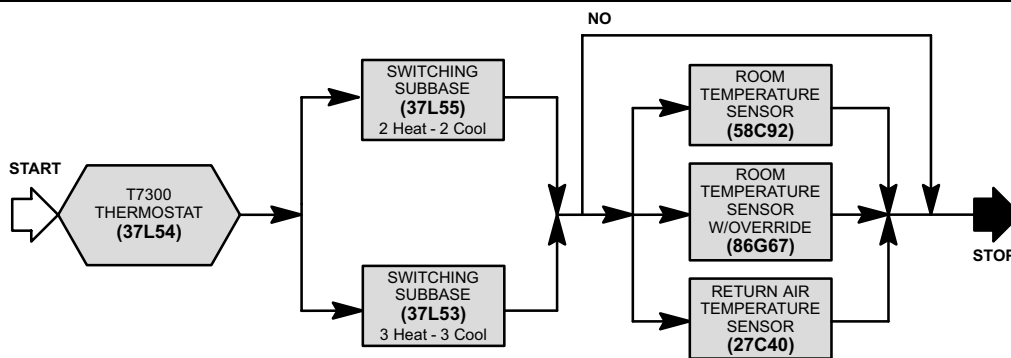
OPTIONAL TEMPERATURE CONTROL SYSTEMS

System and Component Description	Catalog No.
ELECTRO-MECHANICAL THERMOSTAT CONTROL SYSTEM	
Thermostat - Two stage heat & two stage cool with dual temperature levers, subbase choice	13F06
Subbase - Manual system switch (Off-Heat-Auto-Cool), fan switch (Auto-On)	13F17
Night Setback Operation - Order components below	---
Heating Thermostat - Single stage heat	13F12
Subbase - Non-switching	13F16
Nite Kit - Required if economizer is not used, contains plug-in relay, overrides operation of day thermostat	39G74
Time Clock - 7 day operation, indicates day and night periods, 2 hour increments, battery back-up	See Price Book for Selection
Time Clock - 24 hour night setback operation, 15 minute increments, battery back-up	See Price Book for Selection
Cycle Control (Required) - provides timed-on and off function, prevents compressor short cycling	45L54



T7300 THERMOSTAT CONTROL SYSTEM

Thermostat - Programmable, internal or optional remote temperature sensing (sensor required), touch sensitive keyboard, automatic switching, °F or °C readout, no anticipator, droop/no droop selection, indicator LED's, hour/day programming, override capabilities, time and operational mode readout, stage status indicators, battery back-up, subbase choice	37L54
Subbase - Selectable staging up to two stage heat & two stage cool, manual system switch (Heat-Off-Auto-Cool), fan switch (Auto-On), indicator LED's, auxiliary relay output for economizer operation	37L55
Subbase - Selectable staging up to three stage heat & three stage cool, manual system switch (Auto-Cool-Off-Heat-Emergency Heat) (heat pump only), fan switch (Auto-On), indicator LED's, auxiliary relay output for economizer operation	37L53
Sensor - Room temperature	58C92
Sensor - Room temperature with 3 hour override and setpoint adjustment	86G67
Sensor - Return air temperature	27C40



HONEYWELL T8600D/T8624D THERMOSTAT

Thermostat - Programmable, touch sensitive keypad, automatic heat/cool switching, °F or °C readout, indicator LED's, four temperature settings per daily schedule, override capabilities, time and operational mode readout, battery back-up (batteries included)	---
T8600D Thermostat - 1 heat/1 cool, 7 day programming, wiring wall plate included	37L59
T8624D Thermostat - 2 heat/2 cool, 7 day programming, switching subbase included	37L61

DIMENSIONS - INCHES (MM)

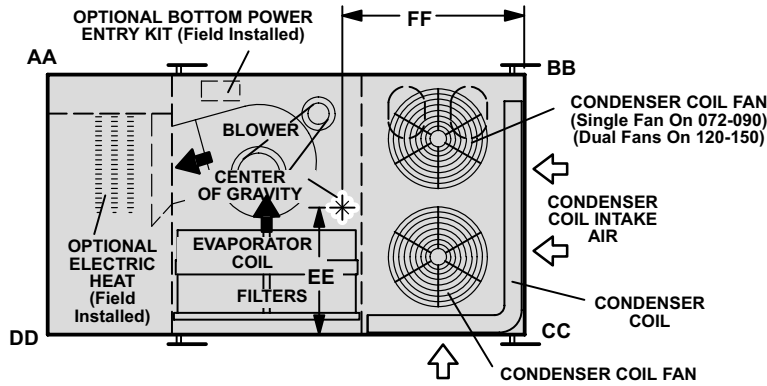
Basic Unit

CORNER WEIGHTS

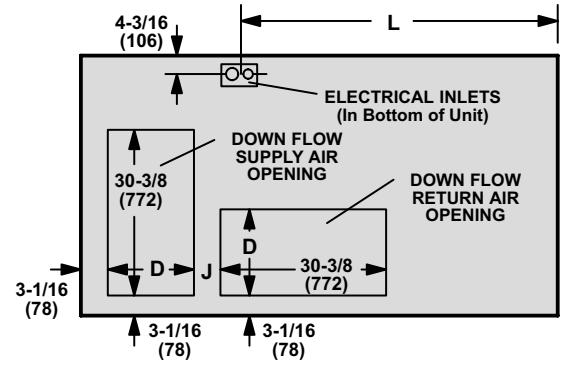
Model Number	AA		BB		CC		DD	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg
CHA16-072	156	71	186	84	172	78	147	67
CHA16-090	201	91	289	131	189	86	131	59
CHA16-120	233	106	302	137	255	116	210	95
CHA16-150	246	112	333	151	293	133	228	103

CENTER OF GRAVITY

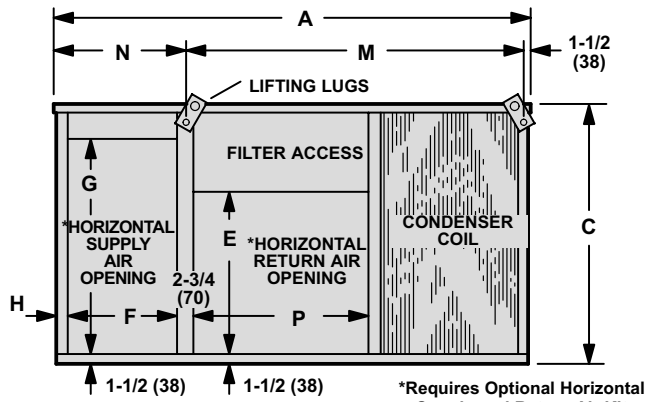
Model Number	EE		FF	
	inch	mm	inch	mm
CHA16-072	27-1/2	699	39-1/2	1003
CHA16-090	29	737	36-1/2	921
CHA16-120	37	940	39-1/2	1003
CHA16-150	35-3/4	908	41-1/2	1054



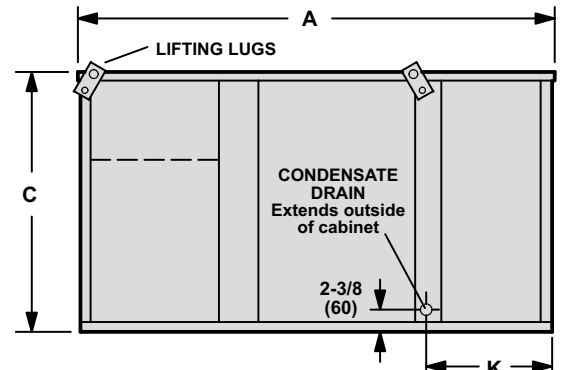
TOP VIEW



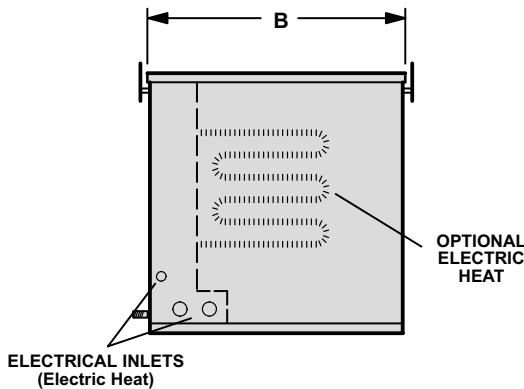
TOP VIEW BASE SECTION



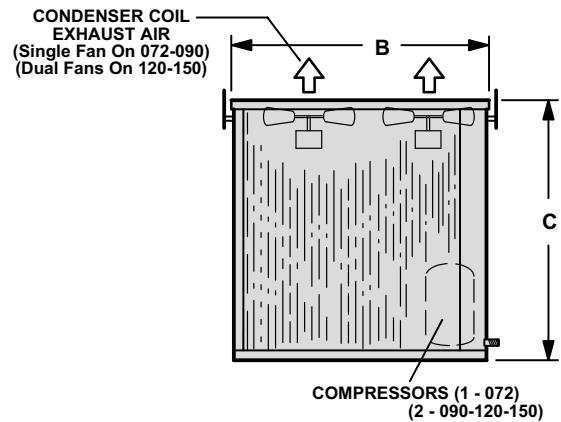
BACK VIEW WITH HORIZONTAL SUPPLY & RETURN AIR OPENING



FRONT VIEW



HEAT SECTION END VIEW



CONDENSER SECTION END VIEW

Model No.	A		B		C		D		E		F		G	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
CHA16-072 CHA16-090	88-1/2	2248	48	1219	39	991	16-1/2	419	24-5/8	625	19-7/16	494	32-1/8	816
CHA16-120	94	2388	60	1524	46	1168	24	610	31-5/8	803	25-1/4	641	39-1/8	994
CHA16-150	102	2591	60	1524	46	1168	24	610	31-5/8	803	25-1/4	641	39-1/8	994

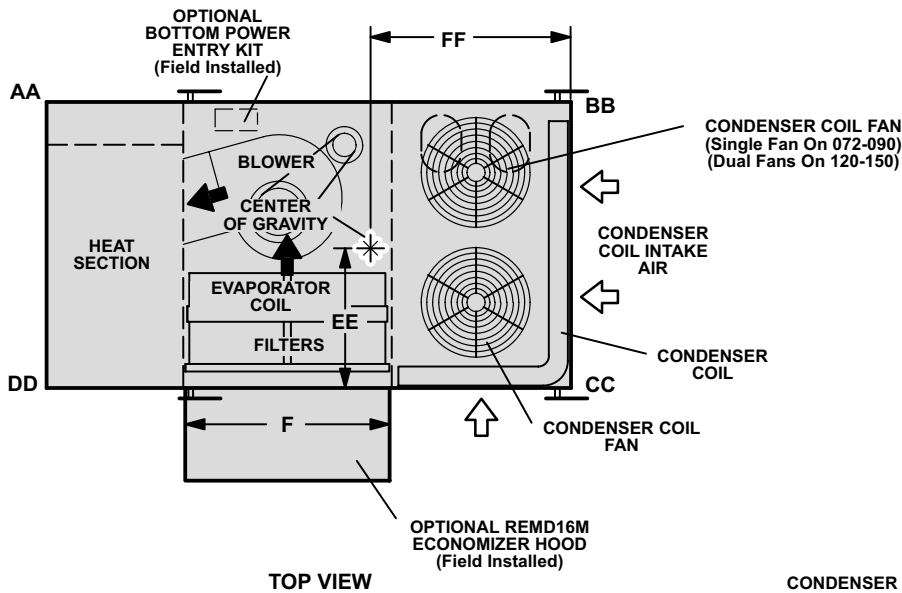
Model No.	H		J		K		L		M		N		P	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
CHA16-072 CHA16-090	1-5/8	41	5-5/8	143	25	635	54-1/2	1384	64-7/8	1648	22-1/8	562	33	838
CHA16-120	2	51	4-7/16	113	31-1/8	791	57-1/2	1461	64	1626	28-1/2	724	33	838
CHA16-150	2	51	4-7/16	113	31-1/8	791	65-1/2	1664	72	1829	28-1/2	724	41	1041

ACCESSORY DIMENSIONS - INCHES (MM)

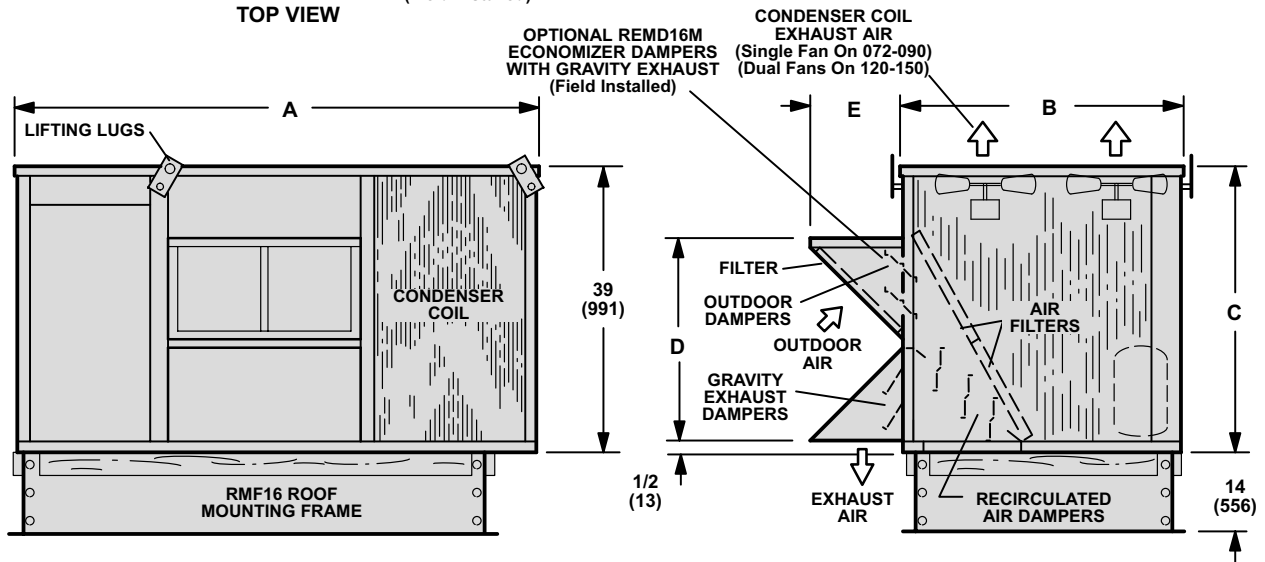
Basic Unit with REMD16M (Down-Flow) Economizer Damper Section and RMF16 Roof Mounting Frame

CORNER WEIGHTS								
Model Number	AA		BB		CC		DD	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg
CHA16-072	197	89	217	98	210	95	181	82
CHA16-090	204	93	271	123	260	118	196	89
CHA16-120	253	115	325	147	288	131	234	106
CHA16-150	267	121	359	163	329	149	254	115

CENTER OF GRAVITY				
Model Number	EE		FF	
	inch	mm	inch	mm
CHA16-072	24-1/2	622	39-1/2	1003
CHA16-090	24-1/2	622	38	965
CHA16-120	39	991	39-1/2	1003
CHA16-150	37-3/4	958	41-1/2	1054



TOP VIEW



BACK VIEW

CONDENSER SECTION END VIEW

Model No.	A		B		C		D		E		F	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
CHA16-072 CHA16-090	88-1/2	2248	48	1219	39	991	25-3/4	654	15-1/2	394	32-1/2	826
CHA16-120	94	2388	60	1524	46	1168	33-1/8	841	18-1/4	464	32-1/2	826
CHA16-150	102	2591	60	1524	46	1168	33-1/8	841	18-1/4	464	40-1/2	1029

ACCESSORY DIMENSIONS - INCHES (MM)

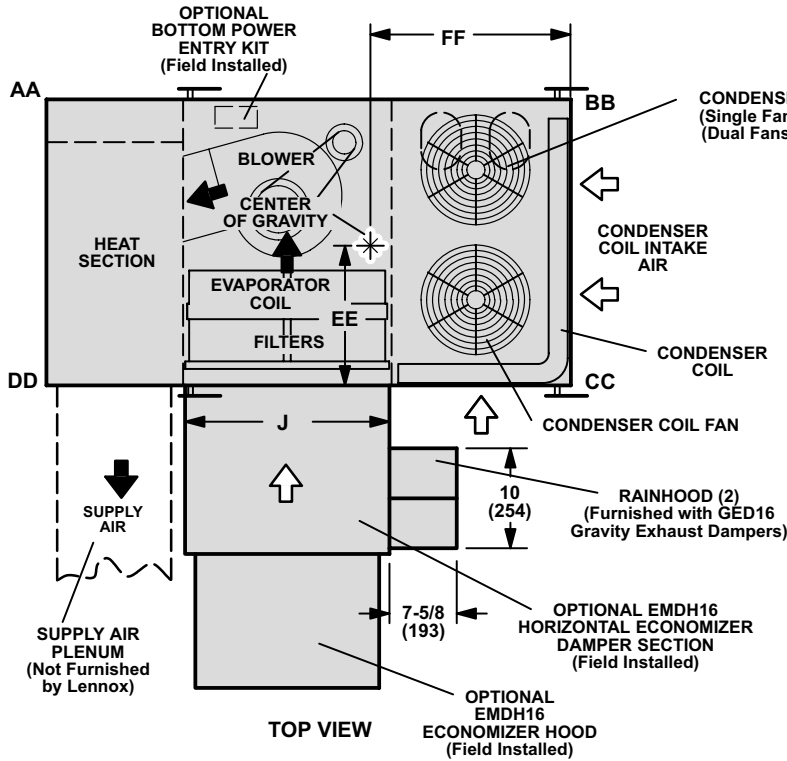
Basic Unit with EMDH16M (Horizontal) Economizer Damper Section

CORNER WEIGHTS

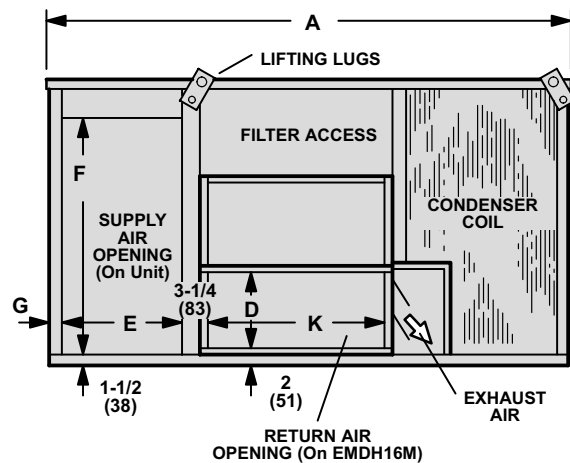
Model Number	AA		BB		CC		DD	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg
CHA16-072	173	78	204	93	202	92	171	78
CHA16-090	233	107	325	147	244	111	175	79
CHA16-120	279	127	293	133	270	122	259	117
CHA16-150	266	121	355	161	333	151	256	116

CENTER OF GRAVITY

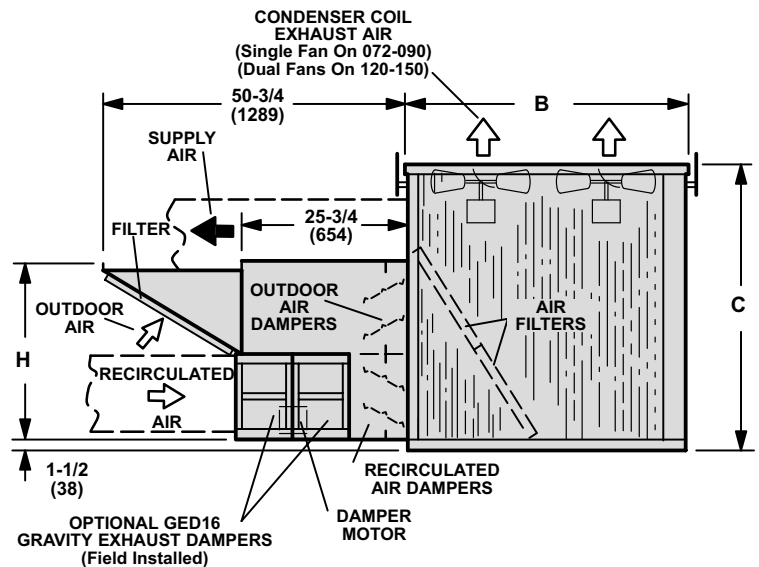
Model Number	EE		FF	
	inch	mm	inch	mm
CHA16-072	24-1/2	622	39-1/2	1003
CHA16-090	27-1/2	700	37	940
CHA16-120	34	864	39-1/2	1003
CHA16-150	32-3/4	832	41-1/2	1054



TOP VIEW



BACK VIEW

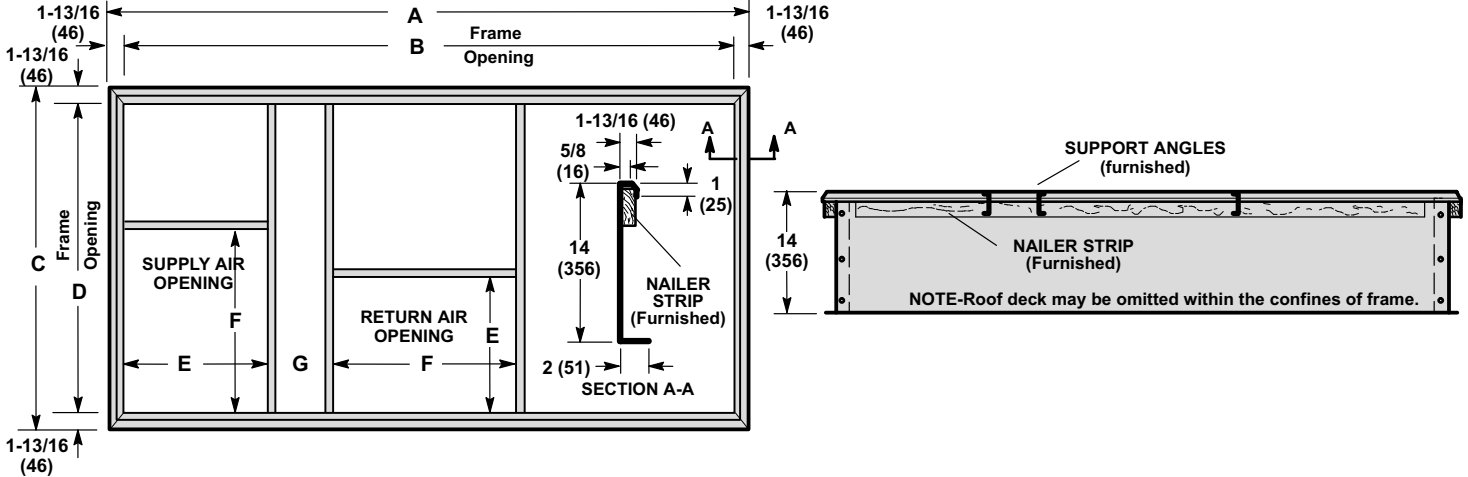


CONDENSER SECTION END VIEW

Model No.	A		B		C		D		E		F		G		H		J		K	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
CHA16-072 CHA16-090	88-1/2	2248	48	1219	39	991	13-1/4	337	19-7/16	494	32-1/2	816	1-5/8	41	28-3/4	730	32-9/16	827	31-1/2	800
CHA16-120	94	2388	60	1524	46	1168	19-1/4	489	25-1/4	641	39-1/8	994	2	51	34-3/4	883	32-9/16	827	31-1/2	800
CHA16-150	102	2591	60	1524	46	1168	19-1/4	489	25-1/4	641	39-1/8	994	2	51	34-3/4	883	40-9/16	1030	39-1/2	1003

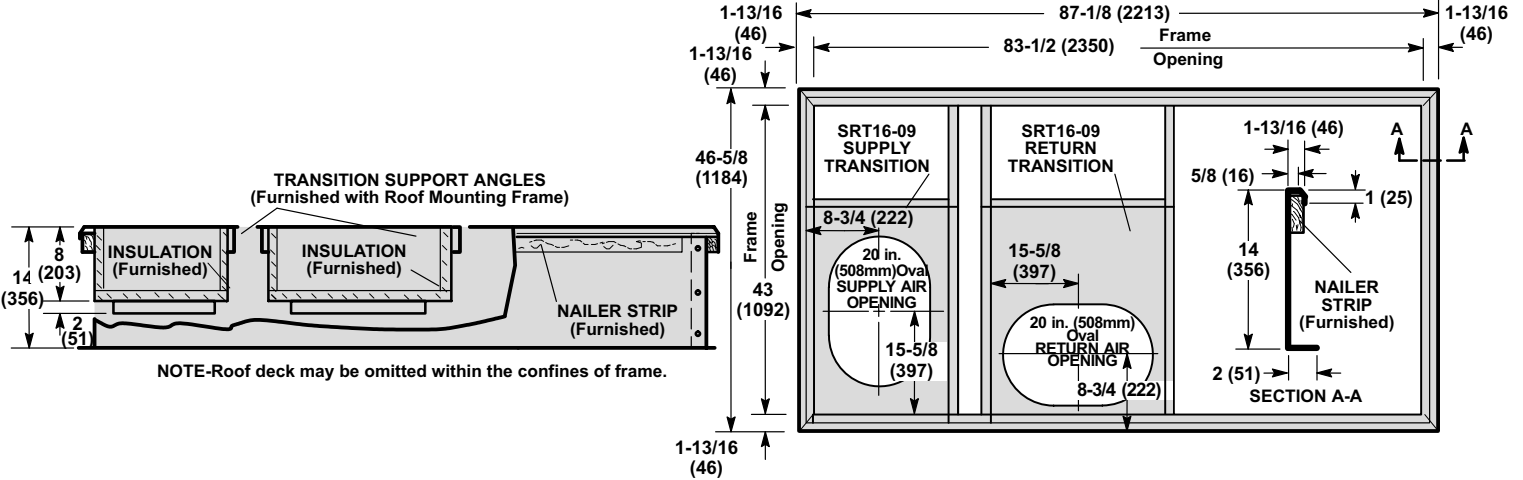
ACCESSORY DIMENSIONS - INCHES (MM) NOT FOR CANADA

RMF16 SERIES ROOF MOUNTING FRAME WITH DOUBLE DUCT OPENING

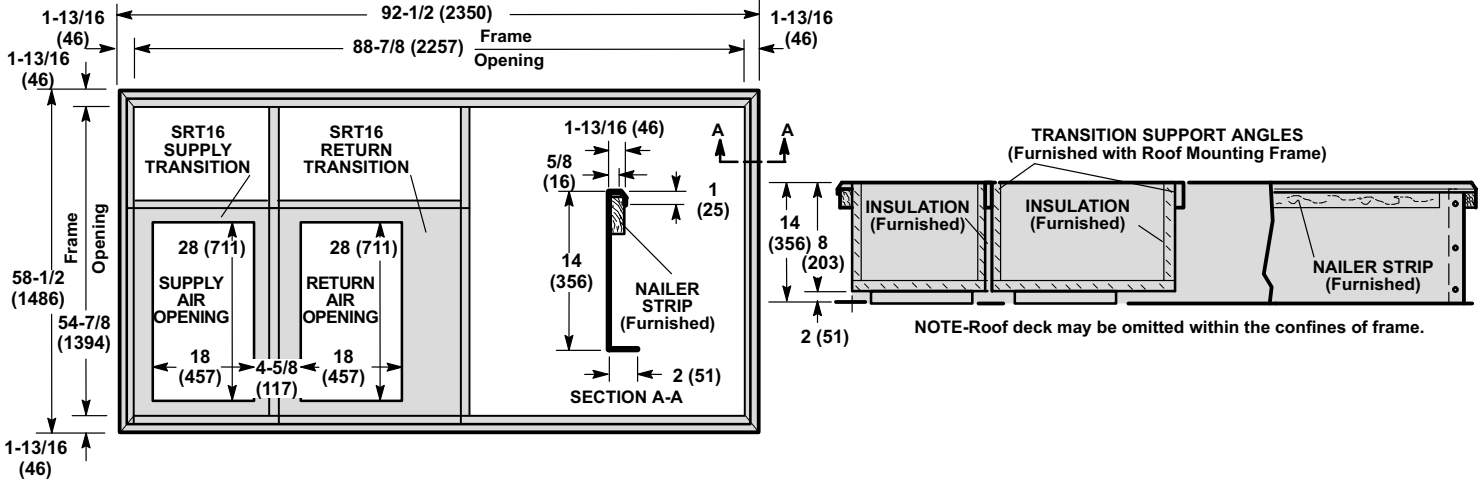


Model No.	A		B		C		D		E		F		G	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
RMF16-09	87-1/8	2213	83-1/2	2121	46-5/8	1184	43	1092	17-15/16	456	31-1/2	800	4	102
RMF16-12	92-1/2	2350	88-7/8	2257	58-1/2	1486	54-7/8	1394	25-1/4	641	31-1/2	800	3-3/16	81

RMF16-09 ROOF MOUNTING FRAME WITH SRT16-09 SUPPLY AND RETURN AIR TRANSITIONS FOR FD11-95 & RTD11-95 CEILING DIFFUSERS

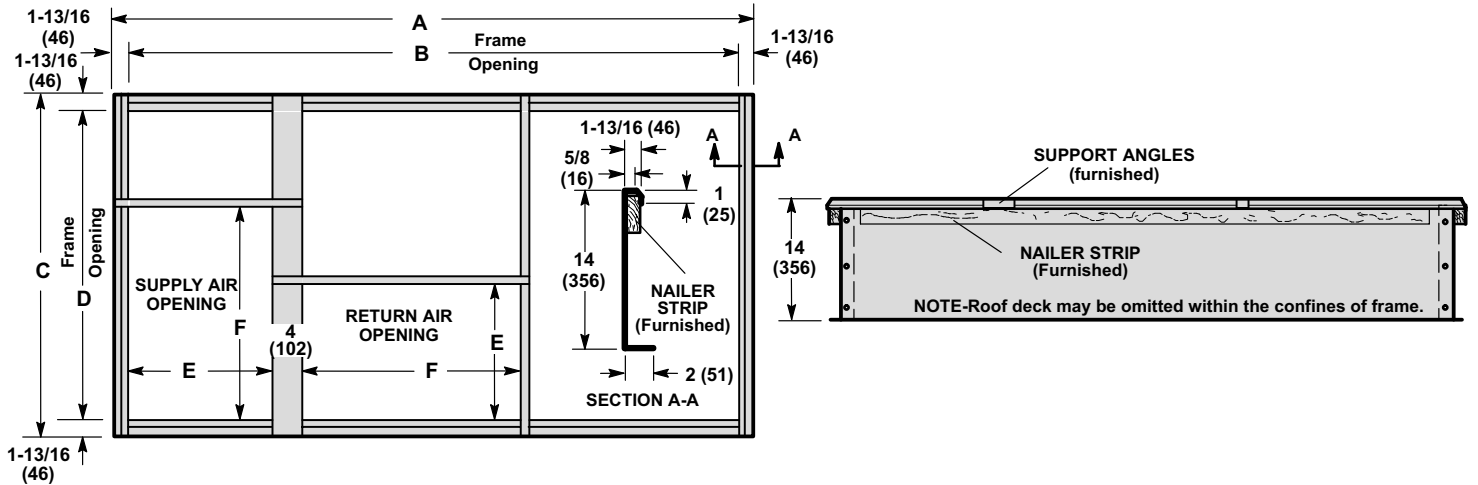


RMF16-12 ROOF MOUNTING FRAMES WITH SRT16-12 SUPPLY AND RETURN AIR TRANSITIONS FOR FD11-135 & RTD11-135 CEILING DIFFUSERS



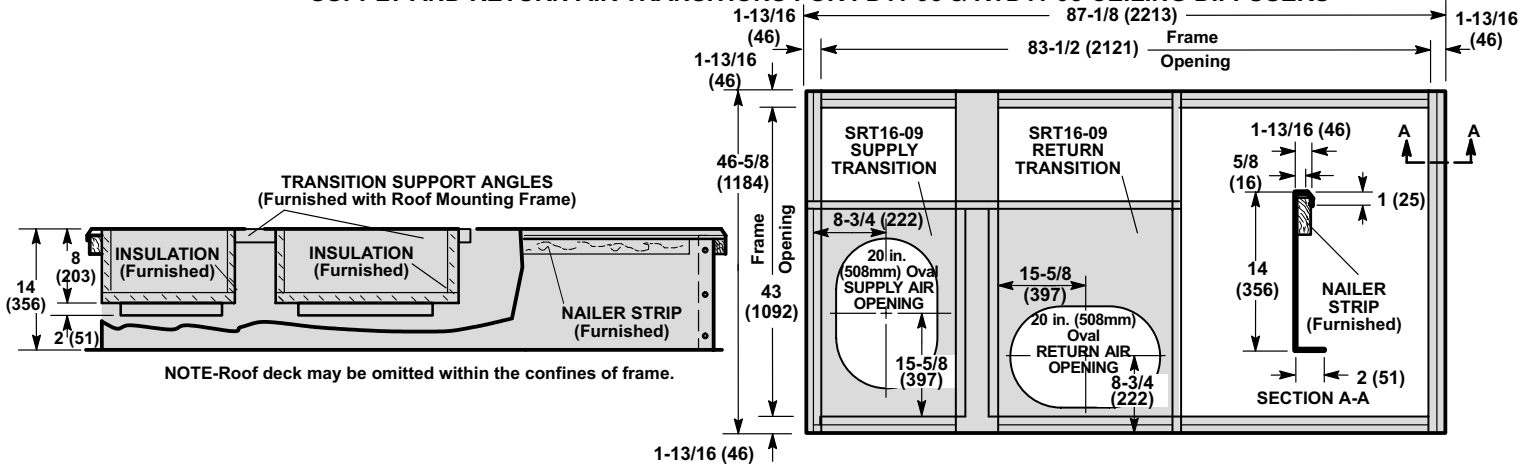
ACCESSORY DIMENSIONS - INCHES (MM) CANADA ONLY

RMF16-09 AND RMF16-12 SERIES ROOF MOUNTING FRAMES WITH DOUBLE DUCT OPENING

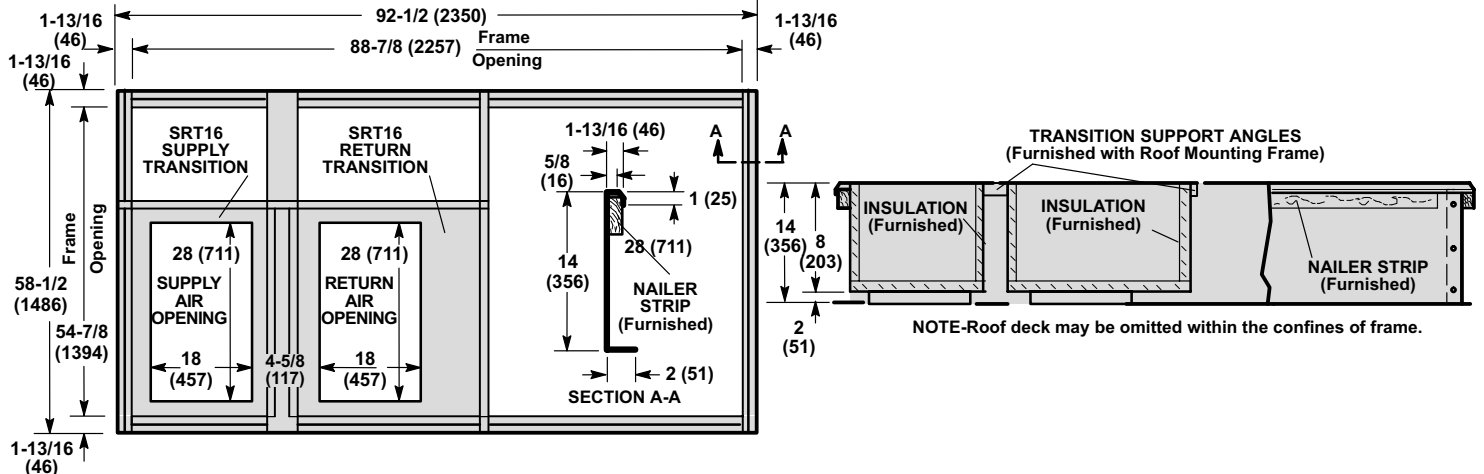


Model No.	A		B		C		D		E		F	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
RMF16-09	87-1/8	2213	83-1/2	2121	46-5/8	1184	43	1092	17-15/16	456	31-1/2	800
RMF16-12	92-1/2	2350	88-7/8	2257	58-1/2	1486	54-7/8	1394	25-1/4	641	31-1/2	800

RMF16-09 ROOF MOUNTING FRAMES WITH SRT16-09 SUPPLY AND RETURN AIR TRANSITIONS FOR FD11-95 & RTD11-95 CEILING DIFFUSERS

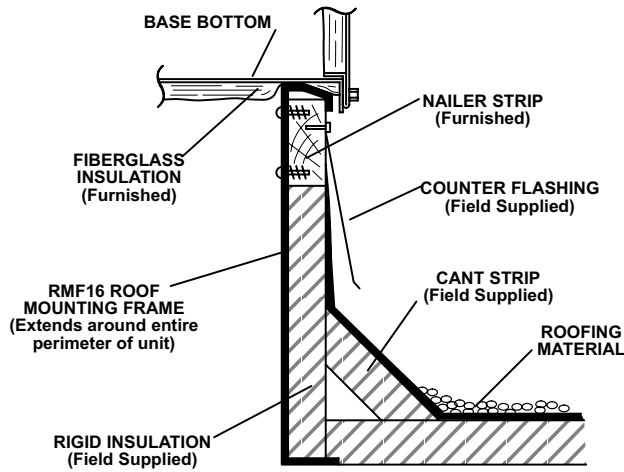


RMF16-12 ROOF MOUNTING FRAMES WITH SRT16-12 SUPPLY AND RETURN AIR TRANSITIONS FOR FD11-135 & RTD11-135 CEILING DIFFUSERS



ACCESSORY DIMENSIONS - INCHES (MM)

TYPICAL FLASHING DETAIL FOR RMF16 ROOF MOUNTING FRAME



ROOF MOUNTING FRAME SPECIFICATIONS

Roof Mounting frame is rigid enough to be spanned over its entire length or cantilevered if supported on both sides of center of gravity.

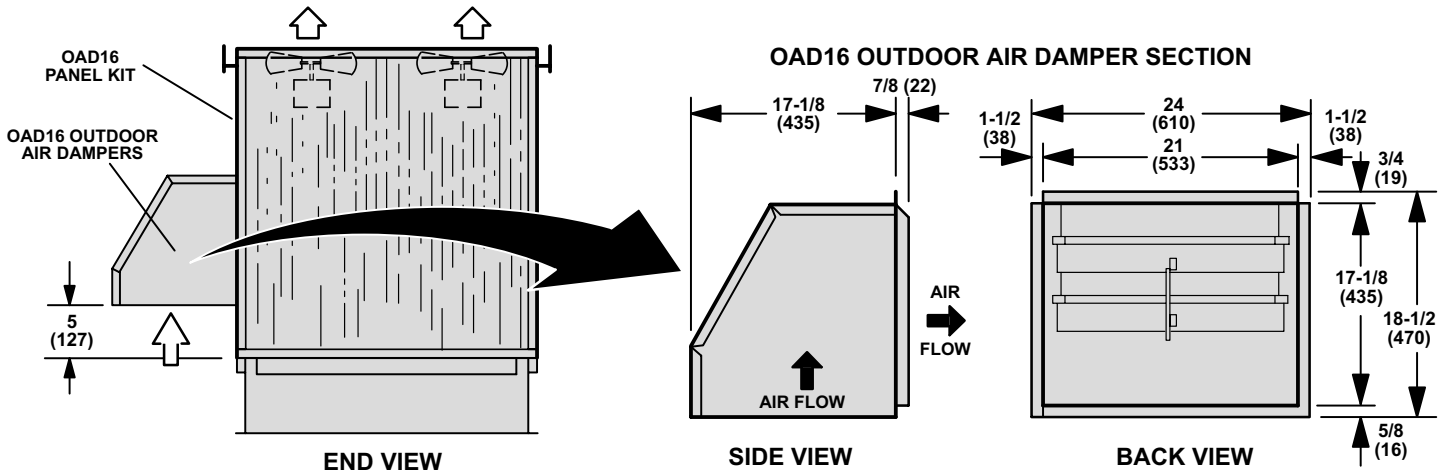
Roof Mounting Frames	RMF16
*Moment of inertia (I) (in. ⁴) (cm ⁴)	42 (1748)
*Section modulus $\frac{I}{C}$ (in. ³) (cm ³)	5.8 (95)
Maximum weight (lb/ft.) (kg/m) of length	5.5 (8.2)
Design strength (psi) (kPa)	20,000 (137,900)

*Includes both sides of frame.

CHA16 UNIT WITH OAD16 OUTDOOR AIR DAMPER SECTION DOWN-FLOW SUPPLY AND RETURN AIR

NOTE - For Horizontal (Side) Supply And Return Air, OAD16 Field Installs on Return Air Duct

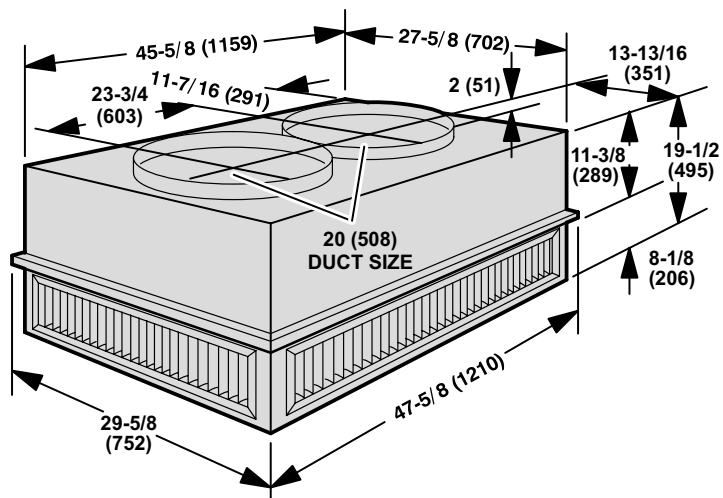
NOTE - Panel Kit is not required for horizontal applications.



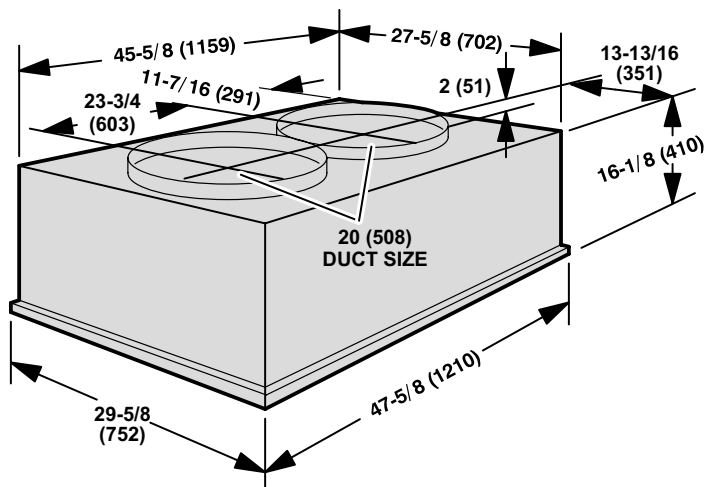
ACCESSORY DIMENSIONS - INCHES (MM)

COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS

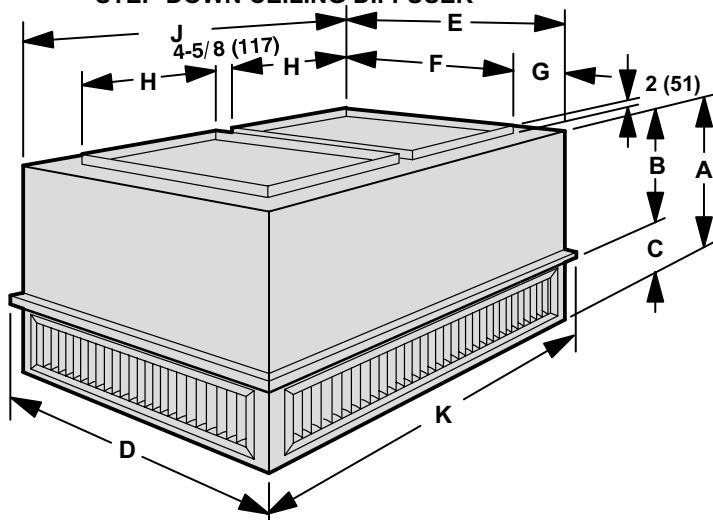
RTD11-95 STEP-DOWN CEILING DIFFUSER



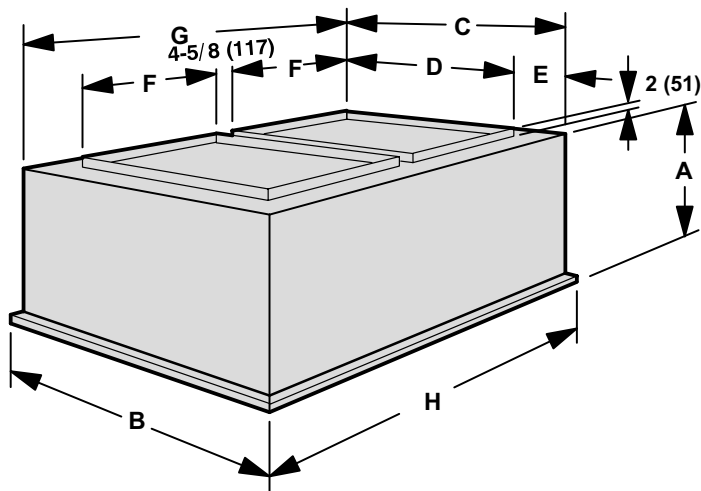
FD11-95 FLUSH CEILING DIFFUSER



RTD11-135 STEP-DOWN CEILING DIFFUSER



FD11-135 FLUSH CEILING DIFFUSER



Model Number	A		B		C		D		E	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
RTD11-135	28	711	18-7/8	479	9-1/8	232	35-5/8	905	33-5/8	854

Model Number	A		B		C		D	
	in.	mm	in.	mm	in.	mm	in.	mm
FD11-135	24-1/8	613	35-5/8	905	33-5/8	854	28	711

Model Number	F		G		H		J		K	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
RTD11-135	28	711	2-13/16	71	18	457	45-5/8	1159	47-5/8	1210

Model Number	E		F		G		H	
	in.	mm	in.	mm	in.	mm	in.	mm
FD11-135	2-13/16	71	18	457	45-5/8	1159	47-5/8	1210

GUIDE SPECIFICATIONS

General

- Furnish and install a single package air to air DX mechanical cooling system, complete with automatic controls.
- The single package unit shall be a standard product of a firm regularly engaged in the manufacture of heating-cooling equipment.
- The manufacturer shall have parts and service available throughout the U.S. and Canada.
- The equipment shall be shipped completely factory assembled, precharged, piped and wired internally ready for field connections.
- The manufacturer shall test operate system at the factory before shipment.

Air Distribution

- Equipment shall be capable of bottom (down-flow) or side (horizontal) handling of conditioned air.

Approvals

- All electrical components shall have UL and CSA Listing. All wiring shall be in compliance with NEC and CEC.
- Shall be rated and certified in accordance with the ULE certification program, which is based on ARI Standard 340/360-2000.

Equipment Warranty

- Compressors shall have a limited warranty for a full five years.
- All other covered components shall have a limited warranty for one year.
- Refer to the Lennox Equipment Limited Warranty certificate for details.

Refrigeration System

- The coils shall be non-ferrous construction with aluminum fins mechanically bonded to durable copper tubes. Coils shall be pressure leak tested.
- Outdoor coil shall be formed coil construction.
- Compressors shall be resiliently mounted and have overload protection.
- The refrigeration system shall have discharge, suction and liquid line service gauge ports, driers, freezestats, expansion valves, high pressure switches (072-090 only) and full refrigerant charge.
- Control options available shall consist of low ambient controls, timed-off control and thermostat.

Cabinet

- Shall be galvanized steel with a powdered enamel paint finish electrostatically bonded to the metal.
- Cabinet panels where conditioned air is handled shall be fully insulated to prevent sweating and minimize sound.
- Openings shall be provided for power connection entry. Optional bottom power entry shall be available
- Indoor coil condensate drain shall be provided and shall extend outside of cabinet.
- Lifting brackets shall be factory installed.

Economizer Wiring

- Economizer wiring harness shall be furnished and factory installed.

Service Access

- All components, wiring and inspection areas shall be completely accessible through removable panels.

Supply Air Blowers

- Centrifugal supply air blower shall have permanently lubricated ball bearings and adjustable belt drive. Motor mount base shall permit ease of motor changeover and belt tension adjustment.
- Blower wheel shall be statically and dynamically balanced.

Outdoor Coil Fan(s)

- Direct drive propeller type condenser fans shall discharge vertically.
- Fan motor shall have ball bearings and be permanently lubricated and inherently protected.
- Fans shall have a safety guard.

Air Filters

- Disposable 2 inch (51 mm) pleated MERV 7 rated filters (Minimum Efficiency Reporting Value based on ASHRAE 52.2) shall be furnished.

OPTIONAL ACCESSORIES

Bottom Power Entry Kit

- Optional kit shall provide power entry to the unit through the roof mounting frame.

Ceiling Diffusers

- Furnish and install a (flush or stepdown) optional combination ceiling supply and return air diffuser.

Ceiling Diffuser Supply and Return Air Transitions

- Supply and return transitions shall be available, for field installation in the roof mounting frame, to facilitate duct connection to the diffuser.

Coil Guards

- PVC (polyvinyl chloride) coil guards shall be available for field installation to protect outdoor coils from damage.

Control Systems

- Shall provide a selection of thermostats and related controls to automatically operate the mechanical equipment through the heating or cooling and ventilating cycles as required.

Economizer Dampers

- Furnish and install complete with recirculated air dampers, outside air dampers, air filters, damper actuator and controls.
- The assembly shall provide for the introduction of outside air for minimum ventilation and free cooling.
- Low leakage dampers shall ride in nylon bearings.
- Down-flow models shall include Gravity Exhaust Dampers.
- Horizontal models shall require optional Gravity Exhaust Dampers.
- Damper actuator shall be 24 volt, fully modulating spring return.
- Controls shall include electronic discharge air sensor, minimum position switch, and solid-state adjustable enthalpy control.
- Outdoor Air Hood shall be ordered separately
- Control option shall consist of differential enthalpy control (return air sensor).

Economizer Horizontal Gravity Exhaust Dampers

- Pressure operated dampers shall install in return air duct for horizontal applications with EMDH16 horizontal economizer dampers.
- Damper blades shall ride in nylon bearings and be gasketed for tight seal and quiet operation.

Electric Heaters

- Shall be available for field installation.
- Heating elements shall be nichrome bare wire exposed directly to the air stream.
- Time delays shall bring the elements on and off in sequence with a time delay between each element.
- Limit controls shall provide overload and short circuit protection.
- Optional fuse block shall be required on electric heaters.

Hail Guards

- Hail guards shall be available for field installation to protect outdoor coils from damage.

Horizontal Supply & Return Air Kit

- Optional kit shall provide necessary cabinet parts to field convert unit for side (horizontal) supply and return air duct connections.

Outdoor Air Damper Section

- Optional manual outdoor dampers shall be available to provide outdoor air requirements of up to 25%.
- Dampers shall be available for manual or automatic operation.
- Damper section field installs external to the unit.
- Outdoor Air Damper Panel Kit shall be required.
- Shall be equipped with outdoor air hood filter for extra air filtering and bird screen protection.

Roof Mounting Frame

- Mechanical contractor shall install a steel roof mounting frame for bottom discharge and return air duct connection.
- 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.
- Flashing shall be the responsibility of a roofing contractor.
- RMF16 frame shall be approved by US National Roofing Contractors Association.