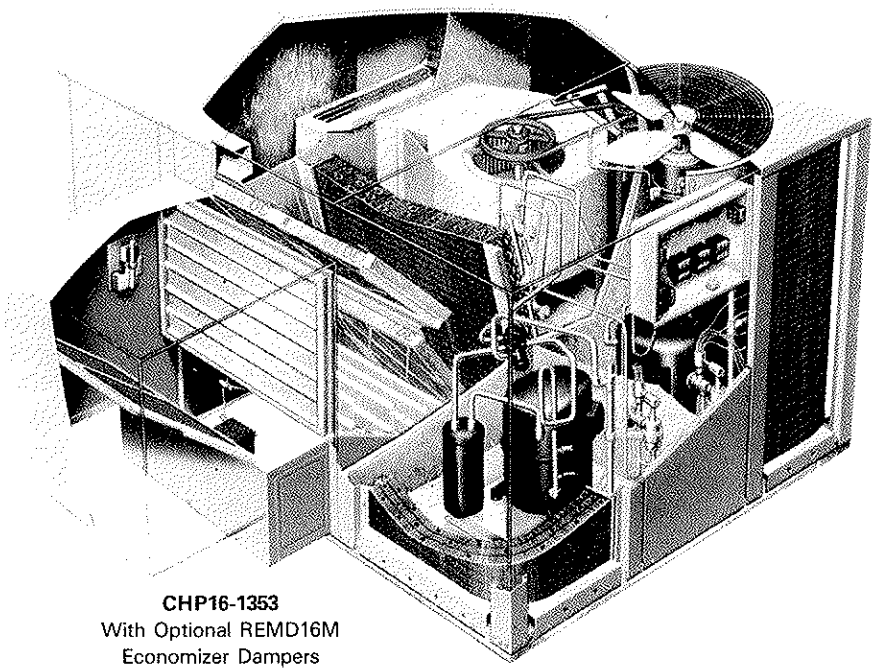
LENNOX

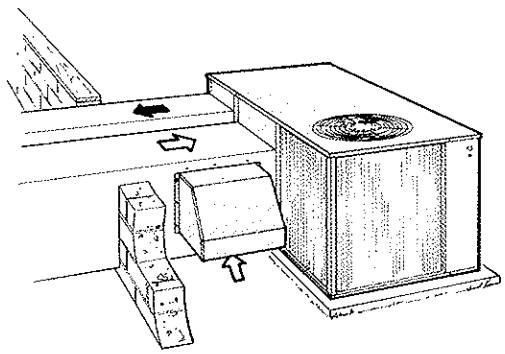
CHP16-953/1353 and 1853 - 50hz SINGLE PACKAGE AIR CONDITIONERS

23 to 50 kW (78,500 to 170,600 Btuh) Cooling Capacity
22 to 45.0 kW (75,000 to 153,500 Btuh) Heating Capacity
6.3 to 57.4 kW (21,400 to 195,900 Btuh) Optional Electric Heat

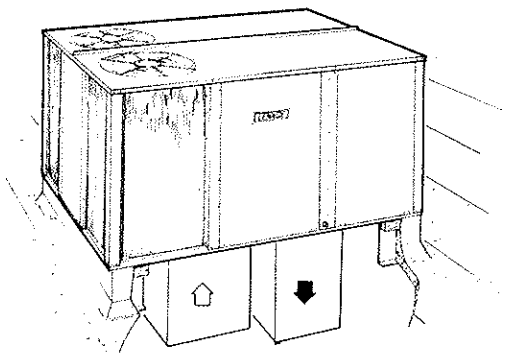
Contents



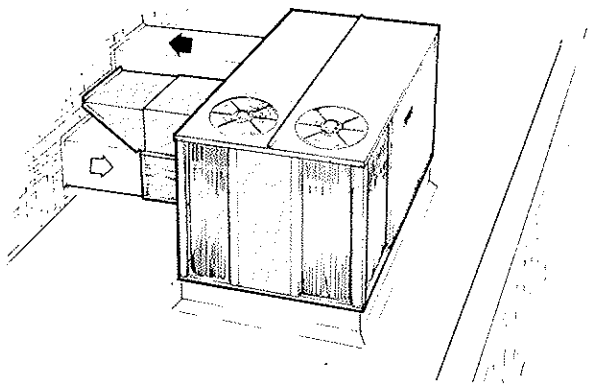
CHP16-1353
With Optional REMD16M
Economizer Dampers



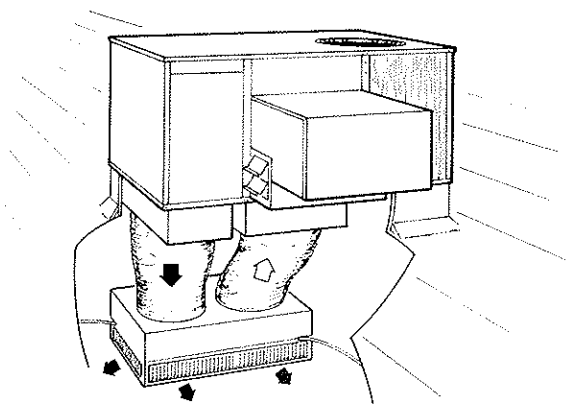
Horizontal (side) Supply and Return Air
Installation with OAD16 Outdoor Air Dampers.



Down-Flo Supply and Return Air Installation
with RMF16 Roof Mounting Frame.



Horizontal (side) Supply and Return Air Installation
with RMF16 Roof Mounting Frame and EMDH16M Economizer Dampers



Down-Flo Supply and Return Air Installation with
RMF16 Roof Mounting Frame, REMD16M Economizer Dampers
and RTD11 Ceiling Diffuser.

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

FEATURES

Application — Lennox CHP16 single package heat pump units are designed for bottom (down-flo) or side (horizontal) handling of supply and return air. A separate roof mounting frame mates to the unit base and when flashed into the roof permits weatherproof duct connections and entry into the conditioned area in down-flo applications. The units can also be installed at grade level with horizontal (side) duct connections. A choice of RTD11 step-down or FD11 flush ceiling diffusers are available for combination ceiling supply and return air distribution systems. Optional economizer dampers provide "free cooling" by using outdoor air in lieu of mechanical refrigeration. Units are available with supplemental electric heat. Thermostat and system controls are not furnished and must be ordered extra. Units are shipped factory assembled, piped and wired. Each unit is factory test operated insuring unit dependability.

Completely Tested — CHP16-953 and 1353 models have been rated in the Lennox Laboratory environmental test room in accordance with Air-Conditioning and Refrigeration Institute (ARI) Standard 240-81 test conditions. CHP16-1853 model has been rated in accordance with ARI Standard 340-86 test conditions. CHP16-953 and 1353 units have been rated in the Lennox sound test room in accordance with ARI Standard 270-84. Blower data is from unit tests in the Lennox air test chamber. Units and components within are bonded for grounding to meet safety standards for servicing required by Underwriter's Laboratories (U.L.) and the International Electrotechnical Commission (IEC).

Weather Resistant Cabinet — Rugged cabinet is constructed of heavy gauge galvanized steel. Cabinet is subject to a five station metal wash process resulting in a perfect bonding surface for a paint finish of powder enamel, electrostatically bonded to the metal. Large removable cabinet panels allow service access. CHP16-1853 filter access panel is hinged and equipped with quarter turn fasteners. Base section and cabinet panels exposed to conditioned air are lined with thick fiberglass insulation. Electrical inlets are provided in cabinet base and outdoor coil section cabinet panel for wiring entry. Control box with factory installed controls is conveniently located for service access. A low voltage terminal strip is provided in the control box for ease of field wiring connections. Lifting brackets are furnished for ease of handling and rigging. Indoor coil condensate drain connection extends outside of cabinet for ease of connection.

Copper Tube Indoor and Outdoor Coils — Extra large surface area and circuiting of coils provide maximum efficiency, excellent heat transfer and low air resistance. Coils are constructed of precisely spaced ripple-edged aluminum fins fitted to durable copper tubes. Fins are equipped with collars that grip tubing for maximum contact area. CHP16-953 and 1353 models have enhanced fin coils. Flared shoulder tubing connections and silver soldering provide tight, leakproof joints. Long life copper tubing is easy to field service. Coil is thoroughly factory tested under high pressure to insure leakproof construction. The indoor coil is face split with separate circuits. Each circuit has separate expansion valve, compressor and refrigerant charge.

Outdoor Coil Fan(s) — CHP16-953 is equipped with a single fan and the CHP16-1353 and 1853 have two. Direct drive fan(s) draw large air volumes uniformly through outdoor coils and discharges it vertically. Fan orifice design and low fan tip speed keeps operating sound level at a minimum. Uniform air flow through the coil results in high refrigerant cooling capacity. Permanently lubricated, overload protected fan motor is totally enclosed for maximum protection from rain, dust and corrosion. Motor is resiliently mounted. Corrosion resistant polyvinyl chloride (PVC) coated steel wire fan guard(s) are furnished.

Air Filters — Disposable frame type 51mm (two inch) thick filters are furnished as standard. Media is pleated non-woven cotton fabric for maximum efficiency. Filters are readily accessible for service. Filter rack is designed to accept 25mm (one inch) thick cleanable filters.

Powerful Supply Air Blower — Belt drive centrifugal blower delivers large air volume efficiently and with minimum power consumption. Blower wheel is heavy duty, with forward curved blades and double inlet. Wheel is statically and dynamically balanced to eliminate vibration and designed to give maximum air delivery. Bearings are heavy duty, self aligning, permanently sealed and lubricated. Design of motor mounting base permits quick and simple motor changeover, belt tension adjustment or belt changing. Adjustable motor pulley allows for variable speed adjustments. Motor is overload protected.

Dependable Dual Compressors — Reliable compressors are hermetically sealed. Suction cooled, overload protected, and equipped with internal pressure relief valve. Internally protected from excessive current and temperature. Immersible self-regulating type crankcase heater is temperature actuated to operate only when required and ensures proper lubrication at all times. The entire running gear is spring mounted within the sealed housing. In addition, the compressors are installed on resilient rubber mounts in the unit, assuring quiet and vibration free operation.

Refrigeration System — Factory sealed refrigerant system consists of compressors, outdoor coils and direct drive fans, indoor (dual circuits) coil and blower, check and expansion valves, high capacity driers, defrost control, high pressure switches, loss of charge switches, reversing valves, suction line accumulators, thermometer wells, refrigerant lines connected and a full operating charge of refrigerant. Dual independent refrigerant circuits provide staging control to fit varying cooling loads.

Defrost Control — A solid-state clock timer defrost control provides a defrost cycle, if needed, every 30 or 60 or 90 minutes (adjustable) of compressor "on" time at outdoor temperature below 7°C (45°F). A pressure switch mounted on the outdoor coil vapor line determines when the defrost cycle is required and also when to terminate a cycle.

Optional ECH16 Supplemental Electric Heat — Available factory or field installed in several kW sizes. Helix wound nichrome heating elements are exposed directly in the air stream resulting in instant heat transfer, lower coil temperatures and long service life. Elements are accurately located and insulated from the heavy gauge steel support frame by high quality insulators. Time delays bring the elements on and off the line in sequence and equal increments in response to demand with a time delay between each element. Elements are equipped with individual limit controls providing positive protection in case of overheating. Some heaters may be two stage controlled with each stage being energized only when required. An outdoor thermostat to control and match second stage heat to outdoor temperature setting should be ordered as an extra. Fuse block for ECH16 -135/160 and ECH16-185 electric heaters must be ordered extra, see specifications table. Factory installed heaters will have the fuse block factory installed. Fuse block must be field installed on field installed heaters. Wiring harness and mounting screws are provided with fuse block.

Optional Bottom Power Entry Kit (CHP16-953 and 1353 Units Only) - Factory or field installed kit (LB-55757BA) is provided for bottom power entry into the unit within the confines of the roof mounting frame. Bottom power entry is furnished with CHP16-1853 unit. Kit contains wiring junction box with cover 152mm x 203mm x 254mm (6 in. x 8 in. x 10 in.), 2.0m (78 in.) length of armored cable and necessary installing hardware. Galvanized steel junction box with prepunched mounting holes and electrical knockouts installs on electrical inlet openings located in the unit base. Kit must be ordered extra. See basic unit dimension drawing.

Optional Timed-Off Control - Timed-off control is available for field installation. Prevents compressor short-cycling. Automatic reset control provides a time delay between compressor shutoff and start-up. Kit (LB50709BA) includes two controls and must be ordered extra.

Optional Low Ambient Kit - Outdoor units will operate satisfactorily in the cooling mode down to 10° C (50°F) outdoor air temperature without any additional controls. For cases where operation of the unit is required at lower ambients, a Low Ambient Control Kit (LB-44961BB) can be added in the field, enabling it to operate properly down to minus 18°C (0°F). One kit is required for each stage.

Optional Fused Isolator Kit - Exterior fused isolator kits add to on-site safety and aid in unit maintenance and service. They should be ordered as an extra and can be factory fitted.

FEATURES

Optional REMD16M Economizer Dampers — REMD16M-95 and 135 are available for down-flo applications only. REMD16M-185 is used in down-flo or horizontal applications. The REMD16M economizer cabinet section consists of: recirculated air dampers, outdoor air dampers, damper motor and controls. Economizer section is factory assembled and wired for easy field electrical connection. Cabinet is constructed of heavy gauge galvanized steel with a powdered enamel paint finish electrostatically bonded to the metal. Completely insulated with thick fiberglass insulation. Formed low leakage (less than 3%) dampers rotate smoothly in nylon bearings. Outdoor air damper blades are equipped with stainless steel seals for minimum air leakage. The positioning of the dampers is accomplished with a 24 volt fully modulating spring return damper motor with adjustable minimum damper position switch. Damper motor is controlled by the room thermostat, mixed air controller and solid-state adjustable outdoor air enthalpy control. The enthalpy control allows for 0 to 100% outdoor air (first stage of cooling) to be used for "free cooling" when outdoor humidity and temperature are acceptable. Additionally, an integrated economizer cycle can be accomplished by allowing the outside air dampers to remain open, continuing to admit outside air, and cycling the compressors to provide dehumidification and additional cooling, as needed. The integrated economizer cycle uses only the amount of mechanical cooling necessary. Two cleanable polyurethane media frame filters are furnished for extra air filtering and bird screen protection. Economizer section field installs on the unit cabinet. See dimension drawing. Provisions have been made in the economizer cabinet for easy field installation of optional GED16 gravity exhaust dampers.

Optional PED16-185 Power Exhaust Fans (CHP16-1853 Units Only) — Fans field install on REMD16M-185 economizer in down-flo applications and must be ordered extra. Fans provide pressure relief and are interlocked to run when return air dampers are closed and supply air blowers are operating. Motors are overload protected. See dimension drawing.

Optional EMDH16M Horizontal Economizer Dampers (CHP16-953 and 1353 Units Only) — The EMDH16M horizontal economizer cabinet section contains recirculated air dampers, outdoor air dampers, damper motor and controls. Economizer section field installs on the unit cabinet. Outdoor air hood is shipped separately and is field installed. Economizer is factory assembled and wired for easy field connection. Cabinet is constructed of heavy gauge galvanized steel with a powdered enamel paint finish electrostatically bonded to the metal. Completely insulated with thick fiberglass insulation. Recirculated damper section of cabinet has flanged air openings for ease of duct connection. Formed low leakage (less than 3%) dampers rotate smoothly in nylon bearings. Outdoor air damper blades are equipped with stainless steel seals for minimum air leakage. The positioning of the dampers is accomplished with a 24 volt fully modulating spring return damper motor with adjustable minimum damper position switch. Damper motor is controlled by the room thermostat, mixed air controller and solid-state adjustable outdoor air enthalpy control. The enthalpy control allows for 0 to 100% outdoor air (first stage of cooling) to be used for "free cooling" when outdoor humidity and temperature are acceptable. Additionally, an integrated economizer cycle can be accomplished by allowing the outside air dampers to remain open, continuing to admit outside air, and cycling the compressors to provide dehumidification and additional cooling as needed. The integrated economizer cycle uses only the amount of mechanical cooling necessary. Two cleanable polyurethane media frame filters are furnished for extra air filtering and bird screen protection. See dimension drawing. Provisions have been made in the economizer cabinet for easy field installation of optional GED16 gravity exhaust dampers. Requires Optional Horizontal Supply and Return Air Kit for duct connection to unit. See Specifications table.

GED16 Gravity Exhaust Dampers — Optional for use with REMD16M and EMDH16M-95 and 135 economizer damper sections and must be ordered extra. Furnished as standard with REMD16M-185. Openings are provided in the economizer cabinet for easy field installation. See dimension drawing. Two exhaust dampers are furnished for installation on the economizer section. Neoprene coated fiberglass dampers prevent blow-back and outdoor air infiltration during off cycle. Bird screen is provided. Exhaust dampers are field installed on the return air duct adjacent to the unit in horizontal applications with REMD16M-185.

Optional Differential Enthalpy Control — A solid-state return air enthalpy sensor is available to be used in conjunction with the outdoor air enthalpy control to determine which air has the lowest enthalpy. The air with the lowest enthalpy will be selected. Return air enthalpy sensor (54G44) field installs in the return air section and must be ordered extra.

Optional OAD16 Outdoor Air Damper Section — Damper section with factory installed and linked dampers field installs external to the unit cabinet and must be ordered extra. Interchangeable unit cabinet panel with opening for installation is furnished with damper for down-flo air applications. See unit dimension drawing for location. Damper section field installs in return air duct for horizontal supply and return air applications. A cleanable polyurethane media frame type air filter is furnished and factory installed. Dampers allow a fixed amount of outdoor air into the system and can be adjusted for air quantities up to 25%. Damper section is available for manual or automatic operation. Manually operated dampers may be adjusted and locked in place for the amount of air desired. Automatic operation is available with the addition of a spring return 3 position damper actuator. Actuator only requires plug-in connection for operation. Automatic OAD16 Damper Kit (35G21) must be ordered extra.

Optional Horizontal Supply and Return Air Kit — Provides horizontal supply and return air duct connection to the side of the unit. Kit contains duct connection flanges for field installation on the supply and return air openings, screws for installing, two filler panels for supply and return air openings in the unit base not being used and a filter access panel to replace the existing cabinet panel above the return air opening. Kit must be ordered extra. See specification table.

Optional RMF16 Roof Mounting Frame — Sturdy mounting frame mates to the unit and provides an automatic weather sealed rooftop installation. Shipped knocked down for ease of shipping and handling it is easily field assembled. A nailer strip is secured to the frame sides to facilitate flashing. Approved by the U.S. National Roofing Contractors Association.

Optional RTD11 Combination Ceiling Supply and Return Diffuser Assembly — Step-down mount diffuser extends slightly below ceiling level and discharges conditioned air out through grilles on all four sides. Aluminum grilles are fitted with double deflection louvers for precise directional control of air flow. Return air enters through the large center grille. Assembly also includes insulated diffuser box with flanges for ease of duct connection, hanging rings for suspending and interior transition to insure low static and even air flow on all four sides. Transition is sealed internally to prevent recirculation. Diffuser assembly is completely factory assembled. Diffuser readily adapts to T-bar ceiling grids and plaster ceilings. Must be ordered extra, see Specifications Table.

Optional FD11 Combination Ceiling Supply and Return Diffuser Assembly — Flush mount diffuser installs almost flush with the ceiling level and discharges conditioned air out through fixed blade louvers on all four sides. Fixed blade louvers insure that air flow will be evenly distributed. Return air enters through large center grille. Assembly also includes insulated diffuser box with flanges for ease of duct connections, support hanger eyelets at the top corners for secure installation and interior transition to insure low static and even air flow on all four sides. Transition is sealed internally to prevent recirculation. Diffuser assembly is completely factory assembled. Diffuser readily adapts to T-bar ceiling grids and plaster ceilings. Must be ordered extra, see Specification Table.

Optional SRT16 Supply and Return Transitions — Transitions field install in the roof mounting frame and provide segregated and simple duct connections to supply and return diffuser. Completely insulated galvanized steel transitions have flanges for ease of duct connection. Duct from the transitions to the diffuser is not furnished and must be provided by installer. Transitions are completely factory assembled and easily field installed in the roof mounting frame with minimum costs and labor requirements. Must be ordered extra, see specification table. SRT16-95 transitions are used with the RMF16-95 roof mounting frame, SRT16-135 is used with the RMF16-135/160 and SRT16-185 is used with the RMF16-185 roof mounting frame.

CONTROL SYSTEM

Optional Electro-Mechanical Thermostat and Control System —The thermostat and related controls of this system must be ordered extra for field installation. Two stage heat and two stage cool thermostat (13F06) with dual temperature selector levers. Uses subbase (13F17) with manual system switch (Off-Heat-Auto-Cool) and fan switch (Auto-On) or emergency heat subbase and relay kit (49G09) with manual system switch (Off-Emergency Heat-Heat-Auto-Cool), fan switch (Auto-On) and red emergency heat indicator LED. Also available is a non-switching subbase (13F16). SP11 Remote Status Panel (12F83) or SSP11 Remote Switching Status Panel (12F84) is available for observing and controlling unit operation from the conditioned area. SSP11 Relay Kit (41G39) is required for switching functions of the Switching Status Panel. Kit must be ordered extra and field installed. For nite operation the following are available. Single stage heating thermostat (13F12) and non-switching subbase (13F16). For applications without the economizer a Nite Kit (39G74), containing a plug-in relay, is required to override the operation of day thermostat. Timed-Off Control (LB 50709BA) is required for system operation. Two time clocks are available for the system, both have a nickel cadmium battery to provide approximately 150 hours running reserve during periods of supply failure or disconnection. The 24-hour model (P-8-65726) can give minimum switching periods of 30 minutes and is normally supplied with 4 pairs of tappets. The 7-day model (P-8-65727) can provide a minimum switching period of 3 hours and is normally supplied with 9 pairs of tappets. Day omission is achieved on 7-day dial by omitting tappets. Also available is a Warm Up Kit (39G77) which holds the economizer outdoor air dampers closed during nite heat operation and morning warm up . See Flow Chart on page 5 .

Optional T7300 Thermostat and Control System — The thermostat and related controls of this system must be ordered extra for field installation. T7300 programmable thermostat (81G59) has internal or optional remote temperature sensing, touch sensitive keyboard, automatic switching from heat to cool, °F or °C temperature readout, no anticipator, droop/no droop selection, indicator LED's, hour/day programming, override capabilities, time readout, stage status indicators, operational mode readout and battery back-up. T7300 thermostat has a choice of subbases. Switching subbase (81G60) features selectable output staging up to two heat and two cool, indicator LED's, manual system switch (Heat-Off-Auto-Cool) and fan switch (Auto-On). Switching subbase (13H76) features selectable output staging up to three heat and two cool, indicator LED's, manual system switch (Auto-Cool-Off-Heat-Emergency Heat) (Heat Pump Only) and fan switch (Auto-On). Both subbases also features an auxiliary relay output which controls economizer operation during occupied and unoccupied periods. Also available is a Room Temperature Sensor (58C92) or Room Temperature Sensor with 3-hour override and setpoint adjustment (86G67) for installation in the conditioned area and a Return Air Temperature Sensor (27C40) for installation in the return air duct of the unit. SP11 Status Panel (12F83) is available for checking unit operation from within the conditioned area. See Flow Chart on page 5.

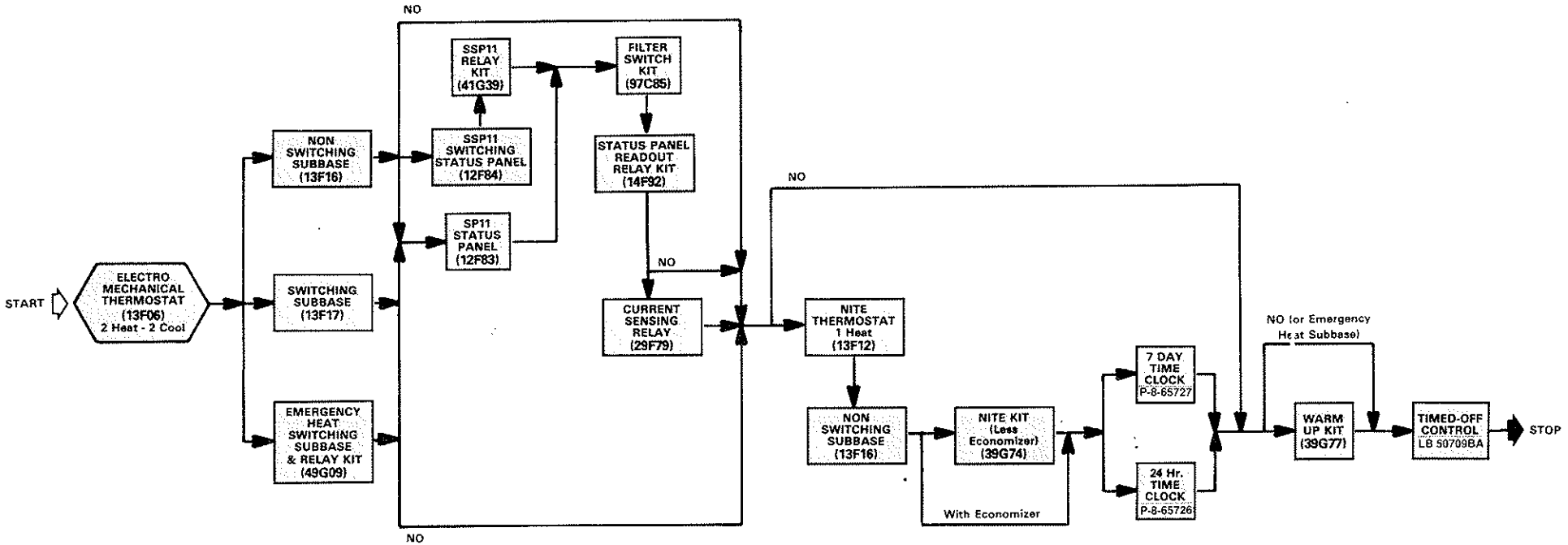
Optional SP11 Remote Status Panel — The operation of the unit can be checked at a glance on the Remote Status Panel (12F83) conveniently located within the conditioned area. Signal lights on the panel indicate "Cool Mode", "Heat Mode", "Compressor 1", "Compressor 2", "No Heat" and "Filter". The Cool Mode signal light is green when lit and indicates economizer damper operation or DX cooling operation for units without the economizer. Heat Mode light is green and reflects heating operation. Compressor 1 and Compressor 2 lights are green when operating and will turn red if there is an operational malfunction. The No Heat and Filter lights will show red and indicate a requirement for service. The following field installed controls are required for use with the status panel and must be ordered extra. Filter Switch Kit (97C85) is required for operation of the filter light. Current Sensing Relay (29F79) is required with electric heat for operation of the No Heat light. Status Panel Readout Relay Kit (14F92) is required to interface status panel with unit operation.

Optional SSP11 Remote Switching Status Panel — The operation of the unit can be controlled and observed on the Switching Status panel (12F84) conveniently located within the conditioned area. Signal lights on the panel indicate "Cool Mode", "Heat Mode", "Compressor 1", "Compressor 2", "No Heat" and "Filter". The Cool Mode signal light is green when lit and indicates economizer damper operation or DX cooling operation for units without the economizer. Heat Mode light is green and reflects heating operation. Compressor 1 and Compressor 2 lights are green when operating and will turn red if there is an operational malfunction. The No Heat and Filter lights will show red and indicates a requirement for service. Additionally, panel is equipped with a system selector switch (Off — Heat — Auto — Cool — Emergency Heat) (Heat Pump Only), fan switch (Auto — On) and after hours timer. Fan switch provides a choice of intermittent (Auto) or continuous (On) blower operation. Manually operated after hours timer (0 to 12 hours) overrides night setback controls providing normal operation for time period set. A momentary push button switch is used to initiate the timer period. The following field installed controls are required for use with the status panel and must be ordered extra. Filter Switch Kit (97C85) is required for operation of the filter light. Current Sensing Relay (29F79) is required with electric heat for operation of the No Heat light. Status Panel Readout Relay Kit (14F92) is required to interface status panel with unit operation.

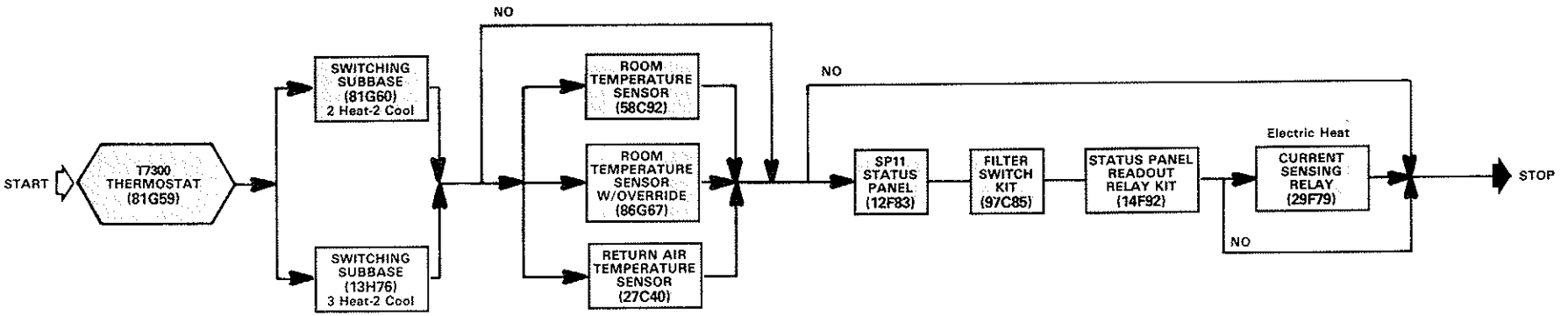
NOTE - Switching sub-base (13F17) is not applicable to SSP11 Remote Switch Service Panel.

TEMPERATURE CONTROL SELECTION FLOW CHART

OPTIONAL ELECTRO-MECHANICAL THERMOSTAT



OPTIONAL T7300 THERMOSTAT CONTROL SYSTEM



CHP16-953 AND CHP16-1353 SPECIFICATIONS

Model Number			CHP16-953	CHP16-1353
*ARI Standard 240 Test Conditions	Cooling Ratings	Cooling capacity — kW (Btuh)	23.5 (80 500)	31.7 (108 200)
		Total power input — kW	9.10	12.10
		Coefficient of Performance (Output/Input)	2.60	2.60
		Energy Efficiency Ratio (Btuh/Watts)	8.85	8.95
	High Temperature Heating Ratings	Total capacity — kW (Btuh)	22.3 (76 200)	30.5 (104 000)
		Total power input — kW	7.25	10.05
		Coefficient of Peformance (Output/Input)	3.10	3.05
	Low Temperature Heating Ratings	Total capacity — kW (Btuh)	10.9 (37 300)	16.4 (55 900)
		Total power input — kW	5.30	8.15
		Coefficient of Performance (Output/Input)	2.05	2.00
★ARI Standard 270 SRN (Bels)			8.4	8.6
Refrigerant (22) charge)		Stage 1	3.6 kg (8 lbs. 0 oz.)	5.7 kg (12 lbs. 10 oz.)
		Stage 2	3.6 kg (8 lbs. 0 oz.)	5.6 kg (12 lbs. 6 oz.)
Indoor Coil Blower	Blower wheel nominal diameter x width — mm (in.)		305 x 305 (12 x 12)	381 x 381 (15 x 15)
	Motor output — kW (hp) — (minimum-maximum)		1.5 — 1.7 (2 — 2.3)	1.5 — 1.7 (2 — 2.3)
Indoor Coil	Net face area — m^2 (sq. ft.)		0.72 (7.75)	0.88 (9.46)
	Tube outside diameter — mm (in.) — number of rows		9.5 (3/8) — 4	9.5 (3/8) — 5
	Fins per m (fins per inch)		551 (14)	551 (14)
Outdoor Coil	Net face area — m^2 (sq. ft.)		1.46 (15.67)	2.18 (23.45)
	Tube outside diameter — mm (in.) — number of rows		9.5 (3/8) — 3	9.5 (3/8) — 3
	Fins per m (fins per inch)		787 (20)	787 (20)
Outdoor Coil Fan(s)	Diameter — mm (in.) — number of blades		610 (24) — 4	(2) 559 (22) — 4
	Air volume — m^3/s (cfm)		1.98 (4200)	3.02 (6400) (total)
	Motor output — W (hp)		373 (1/2)	(2) 249 (1/3)
	Total motor input — W		320	520 (total)
Condensate drain size — male pipe thread — mm (in.)			19.1 (3/4)	19.1 (3/4)
Number and size of filters — mm (in.)			(4) 406 x 508 x 51 (16 x 20 x 2)	(4) 406 x 635 x 51 (16 x 25 x 2)
Net weight of basic unit — kg (lbs.) 1 Package			390 (860)	508 (1120)
Optional Electric Heat	Model No.		ECH16-95	ECH16-135/160
	†Fuse Block		----	72G11
Optional Roof Mounting Frame — (Net Weight)			RMF16-95 (47 kg) (107 lbs.)	RMF16-135/160 (54 kg) (119 lbs.)
Optional Economizer Dampers — (Net Weight)			REMD16M-95 (54 kg) (118 lbs.)	REMD16M-135 (57 kg) (125 lbs.)
Number and size of filters — mm (in.)			(2) 406 x 635 x 25 (16 x 25 x 1)	(2) 406 x 635 x 25 (16 x 25 x 1)
Optional Horizontal Economizer Dampers — (Net Weight)			EMDH16M-95 (54 kg) (120 lbs.)	EMDH16M-135 (62 kg) (137 lbs.)
Number and size of filters — mm (in.)			(2) 406 x 635 x 25 (16 x 25 x 1)	(2) 406 x 635 x 25 (16 x 25 x 1)
Optional Exhaust Dampers — (Net Weight)			GED16-95/135/160 (2 kg) (5 lbs.)	
Optional Horizontal Supply and Return Air Kit — (Net Weight)			LB-55756BA (14 kg) (30 lbs.)	LB-55756BB (16 kg) (35 lbs.)
Optional Bottom Power Entry Kit — (Net Weight)			LB-55757CA (5 kg) (12 lbs.)	LB-55757CA (5 kg) (12 lbs.)
Optional Ceiling Supply and Return Air Diffusers (Net Weight)		Step-down	RTD11-95 (40 kg) (88 lbs.)	RTD11-135 (57 kg) (125 lbs.)
		Flush	FD11-95 (34 kg) (75 lbs.)	FD11-135 (43 kg) (95 lbs.)
		Transition	SRT16-95 (13 kg) (29 lbs.)	SRT16-135 (17 kg) (38 lbs.)
Optional Outdoor Air Dampers — (Net Weight)			OAD16-95 (19 kg) (41 lbs.)	OAD16-135 (20 kg) (43 lbs.)
Number and size of filters — mm (in.)			(1) 406 x 508 x 25 (16 x 20 x 1)	(1) 406 x 508 x 25 (16 x 20 x 1)
Optional Automatic OAD16 Damper Kit — (Net Weight)			35G21 (3 kg) (7 lbs.)	35G21 (3 kg) (7 lbs.)

★Sound Rating Number in accordance with Air-Conditioning and Refrigeration Institute (ARI) Standard 270.

*Rated at Air-Conditioning and Refrigeration Institute (ARI) Standard 240 test conditions;
Cooling Ratings — 35°C (95°F) outdoor air temperature, 27°C (80°F) dry bulb and 19.4°C (67°F) wet bulb entering indoor coil air.
High Temperature Heating Ratings — 8°C (47°F) dry bulb and 6.1°C (43°F) wet bulb outdoor air temperature and 21°C (70°F) entering indoor coil air.
Low Temperature Heating Ratings — minus 8°C (17°F) dry bulb and minus 9.4°C (15°F) wet bulb outdoor air temperature and 21°C (70°F) entering indoor coil air.

†Must be ordered extra. Factory installed on factory installed electric heaters. Must be field installed on field installed electric heaters.

CHP16-1853 SPECIFICATIONS

Model Number			CHP16-1853
*ARI Standard 340 Test Conditions	Cooling Ratings	Cooling capacity — kW (Btuh)	49.6 (169 300)
		Total power input — kW	18.2
		Coefficient of Performance (Output/Input)	2.75
		Energy Efficiency Ratio (Btuh/Watts)	9.3
	High Temperature Heating Ratings	Total capacity — kW (Btuh)	45.0 (153 500)
		Total power input — kW	15.2
		Coefficient of Peformance (Output/Input)	2.95
	Low Temperature Heating Ratings	Total capacity — kW (Btuh)	25.6 (87 500)
		Total power input — kW	12.3
		Coefficient of Performance (Output/Input)	2.10
Refrigerant (22) charge)		Stage 1	7.3 kg (16 lbs. 2 oz.)
		Stage 2	7.3 kg (16 lbs. 2 oz.)
Indoor Coil Blower	Blower wheel nominal diameter x width — mm (in.)		457 x 457 (18 x 18)
	Motor output — kW (hp) — (minimum-maximum)		2.2 — 3.7 (3 — 5)
Indoor Coil	Net face area — m^2 (sq. ft.)		1.49 (16.0)
	Tube outside diameter — mm (in.) — number of rows		9.5 (3/8) — 3
	Fins per m (fins per inch)		512 (13)
Outdoor Coil	Net face area — m^2 (sq. ft.)		2.83 (30.5)
	Tube outside diameter — mm (in.) — number of rows		9.5 (3/8) — 2
	Fins per m (fins per inch)		787 (20)
Outdoor Coil Fan(s)	Diameter — mm (in.) — number of blades		(2) 660 (26) — 4
	Air volume — m^3/s (cfm)		4720 (10 000) Total
	Motor output — W (hp)		(2) 746 (1)
	Total motor input — W		1825
Condensate drain size — male pipe thread — mm (in.)			25 (1)
Number and size of filters — mm (in.)			(4) 610 x 610 x 51 (24 x 24 x 2)
Net weight of basic unit — kg (lbs.) 1 Package			717 (1581)
Optional Electric Heat	Model No.		ECH16-185
	†Fuse Block		29H31
Optional Roof Mounting Frame — (Net Weight)			RMF16-185 (58 kg) (127 lbs.)
Optional Economizer Dampers — (Net Weight)			REMD16M-185 (73 kg) (160 lbs.)
Number and size of filters — mm (in.)			(2) 635 x 635 x 25 (25 x 25 x 1)
Optional Power Exhaust Fans (Down-Flo Only)	Model Number — (Net weight)		PED16-185 (27 kg) (60 lbs.)
	Diameter — mm (in.) — Blades		406 (16) — 5
	Total air volume — m^3/s (cfm)		1650 (3500)
	Motor output — watts (hp)		(2) 187 (1/4)
	Total motor input — watts		415
Optional Horizontal Supply and Return Air Kit — (Net Weight)			LB-55756BD (24 kg) (52 lbs.)
Optional Ceiling Supply and Return Air Diffusers (Net Weight)		Step-down	RTD11-185 (178 kg) (392 lbs.)
		Flush	FD11-185 (131 kg) (289 lbs.)
		Transition	SRT16-185 (34 kg) (75 lbs.)
Optional Outdoor Air Dampers — (Net Weight)			OAD16-185 (54 kg) (120 lbs.)
Number and size of filters — mm (in.)			(1) 635 x 686 x 25 (25 x 27 x 1)
Optional Automatic OAD16 Damper Kit — (Net Weight)			35G21 (3 kg) (7 lbs.)

*Rated at Air-Conditioning and Refrigeration Institute (ARI) Standard 340 test conditions;
Cooling Ratings — 35°C (95°F) outdoor air temperature, 27°C (80°F) dry bulb and 19.4°C (67°F) wet bulb entering indoor coil air; minimum external duct static pressure.
High Temperature Heating Ratings — 8°C (47°F) dry bulb and 6.1°C (43°F) wet bulb outdoor air temperature and 21°C (70°F) entering indoor coil air.
Low Temperature Heating Ratings — minus 8°C (17°F) dry bulb and minus 9.4°C (15°F) wet bulb outdoor air temperature and 21°C (70°F) entering indoor coil air.
†Must be ordered extra. Factory installed on factory installed electric heaters. Must be field installed on field installed electric heaters.

COOLING AND HEATING RATINGS

NOTE - To determine sensible capacity, leaving wet bulb and dry bulb temperatures not shown in the tables, see Accessories Section, Correction Factor Data.

CHP16-953 COOLING CAPACITY (With One Compressor Only Operating)

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Temperature																					
			18°C (65°F)						24°C (75°F)						29°C (85°F)						35°C (95°F)			
			Total Cooling Capacity		Compressor Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Compressor Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Compressor Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Compressor Motor Input	Sensible To Total Ratio (S/T) Dry Bulb		
	m³/s	cfm	kW	Btuh	kW	24°C 75°F	27°C 80°F	29°C 85°F	kW	Btuh	kW	24°C 75°F	27°C 80°F	29°C 85°F	kW	Btuh	kW	24°C 75°F	27°C 80°F	29°C 85°F	kW	Btuh	kW	24°C 75°F	27°C 80°	29°C 85°F
17.2°C (63°F)	1.25	2700	13.7	46 800	2.91	.75	.90	1.00	13.0	44 300	3.14	.77	.93	1.00	12.3	41 800	3.36	.79	.96	1.00	11.5	39 400	3.57	.82	.99	1.00
	1.40	3000	14.0	47 700	2.93	.78	.94	1.00	13.2	45 200	3.16	.80	.96	1.00	12.5	42 700	3.39	.82	1.00	1.00	11.8	40 200	3.60	.85	1.00	1.00
	1.55	3300	14.2	48 500	2.94	.80	.97	1.00	13.5	46 000	3.18	.82	1.00	1.00	12.7	43 400	3.41	.85	1.00	1.00	12.1	41 200	3.64	.88	1.00	1.00
19.4°C (67°F)	1.25	2700	14.7	50 000	2.97	.58	.73	.86	13.9	47 400	3.22	.59	.74	.89	13.1	44 600	3.45	.61	.77	.92	12.3	41 900	3.66	.62	.79	.95
	1.40	3000	14.9	50 700	2.99	.60	.75	.90	14.1	48 100	3.23	.61	.77	.93	13.3	45 300	3.47	.62	.80	.96	12.5	42 500	3.69	.64	.82	.99
	1.55	3300	15.1	51 400	3.00	.61	.78	.94	14.2	48 600	3.25	.63	.80	.96	13.4	45 800	3.48	.64	.82	1.00	12.6	43 000	3.71	.66	.85	1.00
21.7°C (71°F)	1.25	2700	15.7	53 600	3.04	.43	.57	.70	14.9	50 800	3.30	.44	.58	.72	14.0	47 900	3.55	.44	.59	.74	13.2	45 000	3.77	.45	.61	.76
	1.40	3000	15.9	54 300	3.05	.44	.58	.73	15.1	51 400	3.31	.44	.60	.75	14.2	48 500	3.56	.45	.61	.77	13.4	45 600	3.79	.45	.63	.80
	1.55	3300	16.1	54 900	3.06	.44	.60	.75	15.2	52 000	3.33	.45	.61	.77	14.4	49 000	3.58	.46	.63	.80	13.5	46 000	3.81	.46	.65	.83

CHP16-953 COOLING CAPACITY (With Both Compressors Operating)

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Temperature																					
			29°C (85°F)						35°C (95°F)						41°C (105°F)						46°C (115°F)			
			Total Cooling Capacity		Compressor Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Compressor Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Compressor Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Compressor Motor Input	Sensible To Total Ratio (S/T) Dry Bulb		
	m³/s	cfm	kW	Btuh	kW	24°C 75°F	27°C 80°F	29°C 85°F	kW	Btuh	kW	24°C 75°F	27°C 80°F	29°C 85°F	kW	Btuh	kW	24°C 75°F	27°C 80°F	29°C 85°F	kW	Btuh	kW	24°C 75°F	27°C 80°	29°C 85°F
17.2°C (63°F)	1.25	2700	23.5	80 200	7.01	.79	.96	1.00	22.2	75 700	7.34	.82	.99	1.00	20.7	70 700	7.65	.85	1.00	1.00	19.5	66 500	7.92	.88	1.00	1.00
	1.40	3000	23.9	81 400	7.06	.83	1.00	1.00	22.6	77 000	7.43	.85	1.00	1.00	21.3	72 600	7.76	.89	1.00	1.00	20.0	68 200	8.04	.92	1.00	1.00
	1.55	3300	24.4	83 300	7.16	.86	1.00	1.00	23.1	78 800	7.53	.89	1.00	1.00	21.7	74 200	7.86	.92	1.00	1.00	20.4	69 700	8.13	.96	1.00	1.00
19.4°C (67°F)	1.25	2700	24.9	84 900	7.23	.61	.77	.93	23.3	79 600	7.57	.62	.80	.96	21.8	74 300	7.86	.64	.83	1.00	20.2	69 000	8.09	.66	.86	1.00
	1.40	3000	25.2	86 000	7.28	.63	.80	.97	23.6	80 600	7.63	.64	.83	1.00	22.0	75 200	7.92	.66	.86	1.00	20.5	69 900	8.15	.69	.90	1.00
	1.55	3300	25.5	87 000	7.33	.65	.83	1.00	23.9	81 500	7.67	.66	.87	1.00	22.3	76 100	7.97	.69	.90	1.00	20.7	70 700	8.20	.71	.94	1.00
21.7°C (71°F)	1.25	2700	26.5	90 500	7.49	.44	.59	.75	24.9	84 900	7.85	.45	.61	.77	23.2	79 200	8.15	.45	.63	.80	21.6	74 600	8.39	.46	.65	.84
	1.40	3000	26.8	91 500	7.54	.45	.61	.78	25.1	85 800	7.89	.45	.63	.81	23.4	80 000	8.20	.46	.65	.84	21.8	74 300	8.43	.47	.68	.88
	1.55	3300	27.1	92 300	7.58	.46	.64	.81	25.4	86 500	7.93	.46	.66	.84	23.6	80 600	8.23	.47	.68	.88	21.9	74 800	8.47	.48	.71	.92

CHP16-953 HEATING PERFORMANCE (With Both Compressors Operating)

Indoor Coil Air Volume at 21°C (70°F)		*Outdoor Temperature											
		18°C (65°F)		7°C (45°F)		minus 4°C (25°F)		minus 15°C (5°F)		minus 26°C (minus 15°F)	
		Total Heating Capacity	Compressor Motor Input	Total Heating Capacity	Compressor Motor Input	Total Heating Capacity	Compressor Motor Input	Total Heating Capacity	Compressor Motor Input	Total Heating Capacity	Compressor Motor Input
m³/s	cfm	kW	Btuh	kW	kW	Btuh	kW	kW	Btuh	kW	kW	Btuh	kW	kW	Btuh	kW
1.25	2700	28.9	98 700	7.09	21.0	71 700	5.77	13.4	45 800	4.46	7.9	26 900	3.43	3.8	12 800	2.60
1.40	3000	29.5	100 600	7.00	21.6	73 600	5.68	14.0	47 600	4.37	8.4	28 800	3.35	4.3	14 700	2.52
1.55	3300	30.0	102 300	6.92	22.1	75 300	5.60	14.5	49 400	4.29	8.9	30 500	3.27	4.8	16 400	2.44

*At 70% relative humidity.

NOTE — Heating performance includes the effect of defrost cycles in the temperature range where they occur.

COOLING AND HEATING RATINGS

NOTE - To determine sensible capacity, leaving wet bulb and dry bulb temperatures not shown in the tables, see Accessories Section, Correction Factor Data.

CHP16-1353 COOLING CAPACITY (With One Compressor Only Operating)

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Temperature																					
			18°C (65°F)						24°C (75°F)						29°C (85°F)						35°C (95°F)			
			Total Cooling Capacity		Compressor Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Compressor Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Compressor Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Compressor Motor Input	Sensible To Total Ratio (S/T) Dry Bulb		
	m³/s	cfm	kW	Btuh	kW	24°C 75°F	27°C 80°F	29°C 85°F	kW	Btuh	kW	24°C 75°F	27°C 80°F	29°C 85°F	kW	Btuh	kW	24°C 75°F	27°C 80°F	29°C 85°F	kW	Btuh	kW	24°C 75°F	27°C 80°	29°C 85°F
17.2°C (63°F)	1.70	3600	16.9	57 800	3.90	.77	.93	1.00	16.1	55 100	4.26	.79	.96	1.00	15.3	52 300	4.60	.81	.98	1.00	14.5	49 500	4.92	.84	1.00	1.00
	1.90	4050	17.3	59 000	3.93	.80	.97	1.00	16.4	55 800	4.29	.82	1.00	1.00	15.7	53 500	4.66	.85	1.00	1.00	14.9	50 900	5.00	.87	1.00	1.00
	2.10	4500	17.6	59 900	3.96	.83	1.00	1.00	16.9	57 500	4.34	.85	1.00	1.00	16.1	54 800	4.71	.88	1.00	1.00	15.3	52 100	5.05	.91	1.00	1.00
19.4°C (67°F)	1.70	3600	18.0	61 500	4.01	.59	.75	.89	17.2	58 600	4.38	.60	.76	.92	16.2	55 400	4.74	.62	.79	.95	15.3	52 300	5.06	.63	.81	.98
	1.90	4050	18.3	62 400	4.04	.61	.78	.94	17.4	59 400	4.41	.62	.80	.96	16.5	56 200	4.77	.64	.82	.99	15.5	53 000	5.10	.66	.85	1.00
	2.10	4500	18.5	63 200	4.06	.63	.81	.98	17.6	60 100	4.44	.64	.83	1.00	16.7	56 900	4.80	.66	.86	1.00	15.7	53 600	5.13	.68	.89	1.00
21.7°C (71°F)	1.70	3600	19.3	65 700	4.14	.44	.58	.72	18.3	62 500	4.52	.44	.59	.74	17.3	59 200	4.89	.44	.60	.76	16.4	55 800	5.23	.45	.62	.79
	1.90	4050	19.5	66 500	4.17	.44	.60	.75	18.6	63 300	4.55	.45	.61	.77	17.6	59 900	4.92	.45	.63	.80	16.6	56 500	5.26	.46	.64	.83
	2.10	4500	19.7	67 200	4.19	.45	.62	.79	18.7	63 900	4.57	.45	.63	.81	17.7	60 400	4.94	.46	.65	.83	16.7	57 000	5.28	.47	.67	.86

CHP16-1353 COOLING CAPACITY (With Both Compressors Operating)

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Temperature																					
			29°C (85°F)						35°C (95°F)						41°C (105°F)						46°C (115°F)			
			Total Cooling Capacity		Compressor Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Compressor Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Compressor Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Compressor Motor Input	Sensible To Total Ratio (S/T) Dry Bulb		
	m³/s	cfm	kW	Btuh	kW	24°C 75°F	27°C 80°F	29°C 85°F	kW	Btuh	kW	24°C 75°F	27°C 80°F	29°C 85°F	kW	Btuh	kW	24°C 75°F	27°C 80°F	29°C 85°F	kW	Btuh	kW	24°C 75°F	27°C 80°	29°C 85°F
17.2°C (63°F)	1.70	3600	31.3	106 900	9.15	.75	.91	1.00	29.5	100 800	9.83	.77	.93	1.00	28.0	95 600	10.48	.80	.93	1.00	26.5	90 300	11.06	.83	1.00	1.00
	1.90	4050	32.1	109 400	9.27	.79	.93	1.00	30.5	104 100	9.98	.81	.93	1.00	28.9	98 600	10.64	.84	.93	1.00	27.3	93 100	11.22	.88	1.00	1.00
	2.10	4500	32.9	112 400	9.39	.82	.93	1.00	31.3	106 900	10.11	.85	1.00	1.00	29.7	101 200	10.78	.88	1.00	1.00	27.9	95 300	11.37	.92	1.00	1.00
19.4°C (67°F)	1.70	3600	33.2	113 300	9.43	.57	.73	.88	31.3	106 900	10.11	.59	.75	.91	29.4	100 300	10.73	.60	.78	.93	27.5	93 700	11.27	.62	.81	1.00
	1.90	4050	33.7	115 000	9.50	.59	.76	.93	31.8	108 500	10.18	.61	.79	.93	29.8	101 800	10.81	.63	.82	1.00	27.9	95 100	11.35	.65	.85	1.00
	2.10	4500	34.1	116 500	9.56	.62	.80	.93	32.2	109 900	10.25	.63	.83	1.00	30.2	103 200	10.88	.65	.86	1.00	28.3	96 400	11.43	.68	.90	1.00
21.7°C (71°F)	1.70	3600	35.4	120 900	9.73	.41	.56	.70	33.5	114 200	10.44	.42	.57	.73	31.4	107 100	11.09	.42	.59	.75	29.3	100 000	11.64	.43	.61	.78
	1.90	4050	35.9	122 500	9.79	.42	.58	.74	33.9	115 600	10.50	.43	.60	.77	31.8	108 400	11.15	.43	.62	.80	29.7	101 200	11.71	.44	.64	.83
	2.10	4500	36.3	123 800	9.84	.43	.61	.78	34.2	116 700	10.56	.44	.62	.81	32.1	109 400	11.21	.45	.65	.84	29.9	102 100	11.76	.46	.67	.88

CHP16-1353 HEATING PERFORMANCE (With Both Compressors Operating)

Indoor Coil Air Volume at 21°C (70°F)		*Outdoor Temperature											
		18°C (65°F)		7°C (45°F)		minus 4°C (25°F)		minus 15°C (5°F)		minus 26°C (minus 15°F)	
		Total Heating Capacity	Compressor Motor Input	Total Heating Capacity	Compressor Motor Input	Total Heating Capacity	Compressor Motor Input	Total Heating Capacity	Compressor Motor Input	Total Heating Capacity	Compressor Motor Input
m³/s	cfm	kW	Btuh	kW	Btuh	kW	kW	Btuh	kW	kW	Btuh	kW	kW	Btuh	kW
1.70	3600	38.7	132 000	8.52	28.5	97 400	8.16	18.5	63 000	6.87	12.0	41 000	5.59	5.8	19 900	4.27
1.90	4050	39.3	134 200	8.27	29.2	99 500	7.92	19.1	65 100	6.63	12.7	43 200	5.35	6.4	22 000	4.02
2.10	4500	39.9	136 100	8.08	29.7	101 500	7.72	19.7	67 100	6.44	13.2	45 200	5.16	7.0	24 000	3.83

*At 70% relative humidity.

NOTE -- Heating performance includes the effect of defrost cycles in the temperature range where they occur.

COOLING AND HEATING RATINGS

NOTE - To determine sensible capacity, leaving wet bulb and dry bulb temperatures not shown in the tables, see Accessories Section, Correction Factor Data.

CHP16-1853 COOLING CAPACITY (With One Compressor Only Operating)

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Temperature																					
			18°C (65°F)						24°C (75°F)						29°C (85°F)						35°C (95°F)			
			Total Cooling Capacity		Compressor Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Compressor Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Compressor Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Compressor Motor Input	Sensible To Total Ratio (S/T) Dry Bulb		
	m³/s	cfm	kW	Btuh	kW	24°C 75°F	27°C 80°F	29°C 85°F	kW	Btuh	kW	24°C 75°F	27°C 80°F	29°C 85°F	kW	Btuh	kW	24°C 75°F	27°C 80°F	29°C 85°F	kW	Btuh	kW	24°C 75°F	27°C 80°F	29°C 85°F
17.2°C (63°F)	2.85	6000	26.8	91 600	4.87	.66	.85	1.00	25.7	87 600	5.41	.67	.89	1.00	24.4	83 200	5.97	.70	.92	1.00	22.9	78 300	6.52	.72	.95	1.00
	3.20	6750	27.3	93 100	4.90	.68	.90	1.00	26.2	89 400	5.44	.71	.94	1.00	24.8	84 700	6.01	.74	.97	1.00	23.6	80 500	6.58	.77	1.00	1.00
	3.55	7500	27.7	94 500	4.91	.72	.95	1.00	26.6	90 800	5.47	.74	.98	1.00	25.3	86 500	6.04	.78	1.00	1.00	24.2	82 700	6.65	.81	1.00	1.00
19.4°C (67°F)	2.85	6000	28.2	96 300	4.94	.52	.64	.80	27.1	92 500	5.50	.52	.65	.83	25.9	88 300	6.08	.53	.67	.87	24.6	83 900	6.68	.54	.69	.91
	3.20	6750	28.8	98 300	4.96	.53	.66	.85	27.7	94 400	5.53	.54	.68	.89	26.4	90 100	6.13	.55	.70	.93	25.1	85 500	6.74	.56	.73	.97
	3.55	7500	29.3	100 000	4.98	.54	.68	.90	28.1	96 000	5.56	.55	.71	.94	26.8	91 600	6.16	.56	.74	.97	25.5	86 900	6.77	.58	.78	1.00
21.7°C (71°F)	2.85	6000	29.6	101 100	5.00	.38	.50	.62	28.4	97 000	5.58	.39	.51	.63	27.2	92 900	6.19	.39	.52	.64	25.9	88 400	6.82	.39	.53	.66
	3.20	6750	30.2	103 100	5.02	.38	.51	.64	28.9	98 700	5.62	.39	.53	.65	27.7	94 600	6.23	.40	.54	.67	26.4	90 000	6.87	.40	.55	.70
	3.55	7500	30.6	104 600	5.05	.39	.53	.66	29.5	100 700	5.64	.39	.54	.68	28.2	96 100	6.26	.41	.55	.71	26.8	91 400	6.91	.41	.57	.75

CHP16-1853 COOLING CAPACITY (With Both Compressors Operating)

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Temperature																					
			29°C (85°F)						35°C (95°F)						41°C (105°F)						46°C (115°F)			
			Total Cooling Capacity		Compressor Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Compressor Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Compressor Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Compressor Motor Input	Sensible To Total Ratio (S/T) Dry Bulb		
	m³/s	cfm	kW	Btuh	kW	24°C 75°F	27°C 80°F	29°C 85°F	kW	Btuh	kW	24°C 75°F	27°C 80°F	29°C 85°F	kW	Btuh	kW	24°C 75°F	27°C 80°F	29°C 85°F	kW	Btuh	kW	24°C 75°F	27°C 80°F	29°C 85°F
17.2°C (63°F)	2.85	6000	48.3	164 800	11.93	.77	.94	1.00	45.4	155 000	13.04	.79	.98	1.00	43.5	148 300	14.23	.82	1.00	1.00	41.0	139 900	15.44	.85	1.00	1.00
	3.20	6750	49.2	167 800	12.01	.80	.98	1.00	46.7	159 400	13.17	.82	1.00	1.00	44.5	152 000	14.40	.85	1.00	1.00	42.2	144 000	15.65	.89	1.00	1.00
	3.55	7500	50.2	171 300	12.08	.83	1.00	1.00	48.0	163 800	13.30	.86	1.00	1.00	45.7	155 900	14.55	.89	1.00	1.00	43.3	147 700	15.83	.93	1.00	1.00
19.4°C (67°F)	2.85	6000	51.2	174 900	12.17	.59	.74	.90	48.7	166 100	13.37	.60	.76	.93	46.0	156 900	14.59	.62	.79	1.00	43.1	147 200	15.82	.64	.82	1.00
	3.20	6750	52.2	178 300	12.25	.61	.77	.94	49.6	169 300	13.47	.62	.80	.98	46.8	159 700	14.71	.64	.83	1.00	44.0	150 000	15.95	.66	.86	1.00
	3.55	7500	53.1	181 300	12.32	.63	.80	.98	50.4	172 100	13.55	.64	.83	1.00	47.6	162 500	14.80	.66	.87	1.00	44.2	150 900	16.04	.68	.91	1.00
21.7°C (71°F)	2.85	6000	53.9	183 800	12.38	.43	.58	.72	51.3	175 000	13.65	.44	.59	.74	48.5	165 600	14.95	.44	.61	.76	45.6	155 500	16.25	.45	.63	.79
	3.20	6750	54.9	187 300	12.46	.44	.60	.75	52.2	178 200	13.75	.45	.61	.77	49.3	168 400	15.07	.45	.63	.80	46.3	158 100	16.39	.45	.65	.84
	3.55	7500	55.7	190 200	12.53	.45	.62	.78	53.0	180 800	13.83	.45	.63	.80	50.1	170 900	15.16	.46	.65	.84	46.9	160 200	16.50	.47	.68	.88

CHP16-1853 HEATING PERFORMANCE (With Both Compressors Operating)

Indoor Coil Air Volume at 21°C (70°F)		*Outdoor Temperature											
		18°C (65°F)			7°C (45°F)			minus 4°C (25°F)			minus 15°C (5°F)			minus 26°C (minus 15°F)		
		Total Heating Capacity		Compressor Motor Input	Total Heating Capacity		Compressor Motor Input	Total Heating Capacity		Compressor Motor Input	Total Heating Capacity		Compressor Motor Input	Total Heating Capacity		Compressor Motor Input
m³/s	cfm	kW	Btuh	kW	kW	Btuh	kW	kW	Btuh	kW	kW	Btuh	kW	kW	Btuh	kW
2.85	6000	55.0	187 500	12.40	39.8	135 700	10.72	26.8	91 400	8.84	15.9	54 300	6.94	6.2	21 200	5.29
3.20	6750	58.8	200 800	12.08	43.7	149 000	10.40	30.7	104 700	8.52	19.8	67 600	6.62	10.1	34 500	4.97
3.55	7500	59.7	203 800	11.80	44.5	152 000	10.12	31.6	107 700	8.24	20.7	70 600	6.34	11.0	37 500	4.69

*At 70% relative humidity.
NOTE — Heating performance includes the effect of defrost cycles in the temperature range where they occur.

OPTIONAL ELECTRIC HEAT DATA

(ECH16-135/160 and ECH16-185 Heater Fuse Block Must Be Ordered Extra)

Unit Model Number	Electric Heat Model Number and Shipping Weight	Number of Elements	Number of Steps	Volts Input	Heating Capacity	
					kW	Btuh
CHP16-953	ECH16-95-10 17 kg (38 lbs.)	1	1	380	6.3	21 400
				400	6.9	23 700
				420	7.7	26 100
	ECH16-95-15 17 kg (38 lbs.)	1	1	380	9.4	32 100
				400	10.4	35 600
				420	11.5	39 200
	ECH16-95-20 19 kg (42 lbs.)	2	1	380	12.5	42 800
				400	13.9	47 400
				420	15.3	52 300
	ECH16-95-30 19 kg (42 lbs.)	2	1	380	18.8	64 200
				400	20.8	71 100
				420	23.0	78 400
	ECH16-95-40 24 kg (53 lbs.)	3	†2	380	26.1	85 500
				400	27.8	95 800
				420	30.6	104 500
CHP16-1353	ECH16-135/160-15 17 kg (38 lbs.)	1	1	380	9.4	32 100
				400	10.4	35 600
				420	11.5	39 200
	ECH16-135/160-20 19 kg (42 lbs.)	2	1	380	12.5	42 800
				400	13.9	47 400
				420	15.3	52 300
	ECH16-135/160-30 19 kg (42 lbs.)	2	1	380	18.8	64 200
				400	20.8	71 100
				420	23.0	78 400
	ECH16-135/160-40 24 kg (53 lbs.)	3	†2	380	26.1	85 500
				400	27.8	95 800
				420	30.6	104 500
	ECH16-135/160-50 26 kg (58 lbs.)	4	†2	380	31.3	106 900
				400	34.7	118 500
				420	38.3	130 600
CHP16-1853	ECH16-185-15 21 kg (47 lbs.)	1	1	380	9.4	32 100
				400	10.4	35 600
				420	11.5	39 200
	ECH16-185-30 23 kg (51 lbs.)	2	†2	380	18.8	64 200
				400	20.8	71 100
				420	23.0	78 400
	ECH16-185-45 28 kg (62 lbs.)	3	†2	380	28.2	96 300
				400	31.2	106 700
				420	34.4	117 600
	ECH16-185-60 30 kg (67 lbs.)	4	†2	380	37.6	128 400
				400	41.6	142 200
				420	45.9	156 800
	ECH16-185-75 40 kg (88 lbs.)	5	†2	380	47.0	160 000
				400	52.1	177 700
				420	57.4	195 900

NOTE — Refer to local electrical code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 75°C (167°F).

†May be used with two stage control.

NOTE — Fuse block for ECH16-135/160 and ECH16-185 heaters must be ordered extra. Factory installed heaters will have the fuse block factory installed. Fuse block must be field installed in field installed heaters. See specifications table.

BLOWER DATA

ACCESSORY AIR RESISTANCE

Model Number	Air Volume		Total Resistance — Pa (Inches Water Gauge)							
			Wet Evaporator Coil	†ECH16-185 Electric Heat	REMD16M Economizer	EMDH16M Horizontal Economizer	RTD11 Diffuser			FD11 Diffuser
							2 Ends Open	1 Side 2 Ends Open	All Ends and Sides Open	
	m^3/s	cfm								
CHP16-953	1.15	2400	30 (0.12)	----	7 (0.03)	7 (0.03)	52 (0.21)	45 (0.18)	37 (0.15)	34 (0.14)
	1.25	2600	32 (0.13)	----	10 (0.04)	10 (0.04)	60 (0.24)	52 (0.21)	45 (0.18)	42 (0.17)
	1.30	2800	35 (0.14)	----	10 (0.04)	10 (0.04)	67 (0.27)	60 (0.24)	52 (0.21)	50 (0.20)
	1.40	3000	40 (0.16)	----	12 (0.05)	12 (0.05)	80 (0.32)	72 (0.29)	62 (0.25)	62 (0.25)
	1.50	3200	45 (0.18)	----	12 (0.05)	12 (0.05)	102 (0.41)	92 (0.37)	80 (0.32)	77 (0.31)
	1.60	3400	47 (0.19)	----	15 (0.06)	15 (0.06)	124 (0.50)	112 (0.45)	97 (0.39)	92 (0.37)
	1.70	3600	52 (0.21)	----	15 (0.06)	15 (0.06)	152 (0.61)	134 (0.54)	119 (0.48)	109 (0.44)
	1.80	3800	57 (0.23)	----	17 (0.07)	17 (0.07)	182 (0.73)	157 (0.63)	142 (0.57)	127 (0.51)
CHP16-1353	1.70	3600	30 (0.12)	----	7 (0.03)	7 (0.03)	90 (0.36)	70 (0.28)	57 (0.23)	37 (0.15)
	1.80	3800	32 (0.13)	----	10 (0.04)	10 (0.04)	99 (0.40)	80 (0.32)	65 (0.26)	45 (0.18)
	1.90	4000	35 (0.14)	----	10 (0.04)	10 (0.04)	109 (0.44)	90 (0.36)	72 (0.29)	52 (0.21)
	2.00	4200	37 (0.15)	----	12 (0.05)	12 (0.05)	122 (0.49)	99 (0.40)	82 (0.33)	60 (0.24)
	2.10	4400	40 (0.16)	----	12 (0.05)	12 (0.05)	134 (0.54)	109 (0.44)	92 (0.37)	67 (0.27)
	2.15	4600	42 (0.17)	----	15 (0.06)	15 (0.06)	149 (0.60)	122 (0.49)	104 (0.42)	77 (0.31)
	2.25	4800	45 (0.18)	----	17 (0.07)	17 (0.07)	162 (0.65)	132 (0.53)	114 (0.46)	87 (0.35)
	2.35	5000	47 (0.19)	----	22 (0.09)	22 (0.09)	172 (0.69)	144 (0.58)	124 (0.50)	97 (0.39)
	2.45	5200	50 (0.20)	----	25 (0.10)	25 (0.10)	186 (0.75)	154 (0.62)	134 (0.54)	107 (0.43)
CHP16-1853	2.35	5000	17 (0.07)	37 (0.15)	27 (0.11)	----	127 (0.51)	109 (0.44)	97 (0.39)	67 (0.27)
	2.45	5200	20 (0.08)	40 (0.16)	30 (0.12)	----	139 (0.56)	119 (0.48)	104 (0.42)	75 (0.30)
	2.55	5400	22 (0.09)	42 (0.17)	32 (0.13)	----	152 (0.61)	129 (0.52)	112 (0.45)	82 (0.33)
	2.65	5600	25 (0.10)	47 (0.19)	35 (0.14)	----	164 (0.66)	139 (0.56)	119 (0.48)	90 (0.36)
	2.75	5800	27 (0.11)	52 (0.21)	37 (0.15)	----	177 (0.71)	147 (0.59)	127 (0.51)	97 (0.39)
	2.85	6000	30 (0.12)	57 (0.23)	40 (0.16)	----	189 (0.76)	157 (0.63)	137 (0.55)	104 (0.42)
	2.95	6200	32 (0.13)	62 (0.25)	42 (0.17)	----	199 (0.80)	169 (0.68)	147 (0.59)	114 (0.46)
	3.00	6400	35 (0.14)	67 (0.27)	45 (0.18)	----	214 (0.86)	179 (0.72)	157 (0.63)	124 (0.50)
	3.10	6600	37 (0.15)	72 (0.29)	50 (0.20)	----	229 (0.92)	191 (0.77)	167 (0.67)	134 (0.54)
	3.20	6800	40 (0.16)	77 (0.31)	55 (0.22)	----	246 (0.99)	206 (0.83)	179 (0.72)	144 (0.58)
	3.30	7000	42 (0.17)	80 (0.32)	57 (0.23)	----	256 (1.03)	216 (0.87)	189 (0.76)	154 (0.62)
	3.40	7200	45 (0.18)	85 (0.34)	60 (0.24)	----	271 (1.09)	229 (0.92)	199 (0.80)	164 (0.66)
	3.50	7400	47 (0.19)	90 (0.36)	62 (0.25)	----	286 (1.15)	241 (0.97)	209 (0.84)	174 (0.70)
	3.60	7600	50 (0.20)	94 (0.38)	65 (0.26)	----	301 (1.21)	254 (1.02)	219 (0.88)	184 (0.74)

†Electric heaters have no appreciable air resistance on CHP16-953/1353 units..

BLOWER DATA

CHP16-953 BLOWER PERFORMANCE

Air Volume	STATIC PRESSURE EXTERNAL TO UNIT — Pa (Inches Water Gauge)											
	50 (.20)	75 (.30)	100 (.40)	125 (.50)	150 (.60)	175 (.70)	200 (.80)	225 (.90)	250 (1.0)	275 (1.10)	300 (1.30)	325 (1.50)
m^3/s (cfm)	Rev/ Min. W (hp)	Rev/ Min. W (hp)	Rev/ Min. W (hp)	Rev/ Min. W (hp)	Rev/ Min. W (hp)	Rev/ Min. W (hp)	Rev/ Min. W (hp)	Rev/ Min. W (hp)	Rev/ Min. W (hp)	Rev/ Min. W (hp)	Rev/ Min. W (hp)	Rev/ Min. W (hp)
1.25 (2600)	750 775 (1.04)	795 835 (1.12)	840 890 (1.19)	875 920 (1.23)	905 955 (1.28)	940 1005 (1.35)	980 1095 (1.40)	1015 1120 (1.50)	1050 1215 (1.63)	1090 1345 (1.80)	1155 1530 (2.05)	1185 1650 (2.21)
1.30 (2800)	795 895 (1.20)	840 935 (1.25)	875 970 (1.30)	905 1005 (1.35)	940 1065 (1.43)	975 1110 (1.49)	1015 1180 (1.58)	1045 1270 (1.70)	1085 1375 (1.84)	1120 1490 (2.00)	1170 1665 (2.23)	---- ----
1.40 (3000)	840 1035 (1.39)	875 1035 (1.39)	905 1075 (1.44)	940 1120 (1.50)	980 1140 (1.53)	1015 1255 (1.68)	1045 1330 (1.78)	1085 1445 (1.94)	1115 1530 (2.05)	1145 1650 (2.21)	---- ----	---- ----
1.50 (3200)	875 1110 (1.49)	905 1155 (1.55)	940 1195 (1.60)	980 1255 (1.68)	1015 1330 (1.78)	1045 1400 (1.88)	1085 1520 (2.04)	1115 1605 (2.15)	1150 1715 (2.30)	---- ----	---- ----	---- ----
1.60 (3400)	910 1240 (1.66)	940 1305 (1.75)	985 1345 (1.80)	1015 1415 (1.90)	1050 1515 (2.03)	1085 1605 (2.15)	1120 1715 (2.30)	---- ----	---- ----	---- ----	---- ----	---- ----
1.70 (3600)	955 1305 (1.75)	995 1365 (1.83)	1025 1440 (1.93)	1060 1625 (2.18)	1090 1730 (2.32)	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----
1.80 (3800)	1005 1595 (2.14)	1030 1665 (2.23)	1065 1755 (2.35)	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----

NOTE — Data is measured external to the unit cabinet with dry coil and the air filter in place.
Legend — Rev/min = Blower speed required. W(hp) = Motor output required.

CHP16-1353 BLOWER PERFORMANCE

Air Volume	STATIC PRESSURE EXTERNAL TO UNIT — Pa (Inches Water Gauge)											
	50 (.20)	75 (.30)	100 (.40)	125 (.50)	150 (.60)	175 (.70)	200 (.80)	225 (.90)	250 (1.0)	275 (1.10)	300 (1.30)	325 (1.50)
m^3/s (cfm)	Rev/ Min. W (hp)	Rev/ Min. W (hp)	Rev/ Min. W (hp)	Rev/ Min. W (hp)	Rev/ Min. W (hp)	Rev/ Min. W (hp)	Rev/ Min. W (hp)	Rev/ Min. W (hp)	Rev/ Min. W (hp)	Rev/ Min. W (hp)	Rev/ Min. W (hp)	Rev/ Min. W (hp)
1.70 (3600)	645 8.20 (1.10)	685 935 (1.25)	720 1030 (1.38)	755 1140 (1.53)	785 1230 (1.65)	815 1330 (1.78)	840 1415 (1.90)	865 1515 (2.03)	890 1625 (2.18)	915 1700 (2.28)	970 1970 (2.64)	1025 2240 (3.00)
1.80 (3800)	670 935 (1.25)	710 1030 (1.38)	740 1140 (1.53)	775 1230 (1.65)	805 1330 (1.78)	830 1415 (1.90)	860 1515 (2.03)	885 1625 (2.18)	910 1700 (2.28)	935 1830 (2.45)	985 2090 (2.80)	1040 2370 (3.18)
1.90 (4000)	700 1030 (1.38)	735 1140 (1.53)	765 1230 (1.65)	795 1365 (1.83)	825 1455 (1.95)	855 1565 (2.10)	880 1665 (2.23)	905 1775 (2.38)	930 1890 (2.53)	955 2000 (2.68)	1010 2275 (3.05)	1055 2500 (3.35)
2.00 (4200)	730 1215 (1.63)	760 1305 (1.75)	790 1415 (1.90)	820 1515 (2.03)	850 1605 (2.15)	875 1715 (2.30)	900 1815 (2.43)	925 1940 (2.60)	950 2035 (2.73)	975 2165 (2.90)	1025 2425 (3.25)	---- ----
2.10 (4400)	755 1345 (1.80)	785 1440 (1.93)	815 1550 (2.08)	845 1665 (2.23)	870 1775 (2.38)	895 1865 (2.50)	920 1975 (2.65)	950 2110 (2.83)	970 2200 (2.95)	1000 2370 (3.18)	---- ----	---- ----
2.15 (4600)	780 1490 (2.00)	815 1625 (2.18)	840 1715 (2.30)	865 1815 (2.43)	890 1925 (2.58)	920 2035 (2.73)	945 2150 (2.88)	970 2240 (3.08)	995 2425 (3.25	1020 2535 (3.40)	---- ----	---- ----
2.25 (4800)	815 1700 (2.28)	840 1790 (2.40)	865 1885 (2.53)	885 1975 (2.65)	920 2125 (2.85)	945 2240 (3.00)	970 2350 (3.15)	995 2520 (3.38)	---- ----	---- ----	---- ----	---- ----
2.35 (5000)	840 1885 (2.53)	865 1975 (2.65)	885 2050 (2.75)	920 2200 (2.95)	945 2315 (3.10)	970 2460 (3.30)	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----
2.45 (5200)	865 2075 (2.78)	885 2165 (2.90)	920 2300 (3.08)	945 2425 (3.25)	970 2560 (3.43)	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----

NOTE — Data is measured external to the unit cabinet with dry coil and the air filter in place.
Legend — Rev/min = Blower speed required. W(hp) = Motor output required.

BLOWER DATA

CHP16-1853 BLOWER PERFORMANCE

Air Volume	STATIC PRESSURE EXTERNAL TO UNIT — Pa (Inches Water Gauge)																					
	50 (.20)		75 (.30)		100 (.40)		125 (.50)		150 (.60)		175 (.70)		200 (.80)		225 (.90)		250 (1.0)		275 (1.10)		300 (1.30)		325 (1.50)	
m³/s	Rev/	W	Rev/	W	Rev/	W	Rev/	W	Rev/	W	Rev/	W	Rev/	W	Rev/	W	Rev/	W	Rev/	W	Rev/	W	Rev/	W
(cfm)	Min	(HP)	Min	(HP)	Min	(HP)	Min	(HP)	Min	(HP)	Min	(HP)	Min	(HP)	Min	(HP)	Min	(HP)	Min	(HP)	Min	(HP)	Min	(HP)
2.35 (5000)	540	1120 (1.50)	570	1195 (1.60)	600	1270 (1.70)	640	1345 (1.80)	660	1455 (1.95)	690	1640 (2.20)	720	1680 (2.25)	740	1790 (2.40)	765	1940 (2.60)	785	2050 (2.75)	830	2240 (3.00)	870	2385 (3.20)
2.45 (5200)	555	1195 (1.60)	580	1270 (1.70)	615	1345 (1.80)	650	1565 (2.10)	670	1640 (2.20)	700	1715 (2.30)	730	1790 (2.40)	750	1865 (2.50)	775	2050 (2.75)	795	2090 (2.80)	840	2385 (3.20)	880	2610 (3.50)
2.55 (5400)	570	1270 (1.70)	590	1380 (1.85)	630	1490 (2.00)	660	1680 (2.25)	690	1715 (2.30)	710	1790 (2.40)	740	1865 (2.50)	760	2015 (2.70)	785	2090 (2.80)	810	2240 (3.00)	850	2460 (3.30)	890	2800 (3.75)
2.65 (5600)	580	1305 (1.75)	615	1530 (2.05)	640	1680 (2.25)	670	1715 (2.30)	700	1830 (2.45)	725	1900 (2.55)	750	2015 (2.70)	775	2125 (2.85)	795	2240 (3.00)	820	2385 (3.20)	860	2610 (3.50)	905	2945 (3.95)
2.75 (5800)	600	1490 (2.00)	630	1680 (2.25)	655	1755 (2.35)	685	1865 (2.50)	715	1975 (2.65)	740	2050 (2.75)	765	2165 (2.90)	785	2315 (3.10)	805	2425 (3.25)	830	2500 (3.35)	870	2760 (3.70)	915	3135 (4.20)
2.85 (6000)	615	1640 (2.20)	640	1755 (2.35)	670	1940 (2.60)	695	1975 (2.65)	725	2090 (2.80)	750	2200 (2.95)	775	2350 (3.15)	795	2460 (3.30)	820	2610 (3.50)	840	2725 (3.65)	880	3020 (4.05)	925	3320 (4.45)
2.95 (6200)	630	1790 (2.40)	660	1940 (2.60)	685	2050 (2.75)	715	2165 (2.90)	740	2240 (3.00)	765	2385 (3.20)	785	2535 (3.40)	810	2685 (3.60)	830	2835 (3.80)	850	2910 (3.90)	895	3210 (4.30)	935	3545 (4.75)
3.00 (6400)	645	1900 (2.55)	670	2050 (2.75)	700	2165 (2.90)	725	2275 (3.05)	750	2385 (3.20)	775	2535 (3.40)	800	2760 (3.70)	820	2800 (3.75)	845	2985 (4.00)	860	3170 (4.25)	905	3430 (4.60)	940	3730 (5.00)
3.10 (6600)	660	2090 (2.80)	690	2200 (2.95)	715	2350 (3.15)	740	2425 (3.25)	765	2535 (3.40)	790	2725 (3.65)	810	2910 (3.90)	835	3060 (4.10)	850	3135 (4.20)	875	3355 (4.50)	915	3580 (4.80)	955	3955 (5.30)
3.20 (6800)	670	2240 (3.00)	705	2425 (3.25)	730	2535 (3.40)	760	2650 (3.55)	780	2800 (3.75)	800	2945 (3.95)	825	3095 (4.15)	845	3280 (4.40)	865	3355 (4.50)	890	3655 (4.90)	930	3880 (5.20)	965	4180 (5.60)
3.30 (7000)	695	2460 (3.30)	720	2575 (3.45)	745	2685 (3.60)	770	2800 (3.75)	790	2985 (4.00)	815	3135 (4.20)	840	3355 (4.50)	860	3470 (4.65)	880	3655 (4.90)	900	3765 (5.05)	950	4180 (5.60)	----	----
3.40 (7200)	710	2650 (3.55)	740	2760 (3.70)	760	2870 (3.85)	785	3095 (4.15)	810	3280 (4.40)	830	3395 (4.55)	850	3505 (4.70)	870	3695 (4.95)	895	3955 (5.30)	915	4215 (5.65)	----	----	----	----
3.50 (7400)	730	2800 (3.75)	750	2910 (3.90)	775	3060 (4.10)	800	3280 (4.40)	820	3430 (4.60)	840	3505 (4.70)	860	3730 (5.00)	880	3915 (5.25)	900	4030 (5.40)	925	4250 (5.70)	----	----	----	----
3.55 (7500)	740	2910 (3.90)	765	3280 (4.40)	785	3245 (4.35)	810	3430 (4.60)	830	3505 (4.70)	850	3695 (4.95)	870	3840 (5.15)	890	4030 (5.40)	920	4180 (5.60)	----	----	----	----	----	----

NOTE — Data is measured external to the unit cabinet with dry coil and the air filter in place. Legend — Rev/Min = Blower speed required. W (HP) = Motor output required.

Note - Performance above stepped line from 3hp (2.2kW) drive kit. Performance below stepped line from 5hp (3.5kW) drive kit.

CEILING DIFFUSER AIR THROW DATA

Model Number	Air Volume		*Effective Throw Range — m (feet)	
			RTD11	FD11
	m³/s	cfm	Step Down	Flush
CHP16-953	1.40	3000	8.2 - 10.1 (27 - 33)	7.6 - 9.1 (25 - 30)
	1.60	3375	9.1 - 11.3 (30 - 37)	8.5 - 10.4 (28 - 34)
	1.75	3750	10.4 - 12.5 (34 - 41)	9.4 - 11.6 (31 - 38)
CHP16-1353	2.10	4400	10.4 - 12.8 (34 - 42)	9.8 - 12.2 (32 - 40)
	2.35	4950	11.6 - 14.3 (38 - 47)	11.0 - 13.7 (36 - 45)
	2.60	5500	13.1 - 15.8 (43 - 52)	12.2 - 15.2 (40 - 50)
CHP16-1853	2.85	6000	13.7 - 16.8 (45 - 55)	14.6 - 16.8 (48 - 55)
	3.20	6750	14.3 - 17.1 (47 - 56)	15.2 - 17.7 (50 - 58)
	3.55	7500	14.9 - 17.7 (49 - 58)	16.8 - 20.1 (55 - 66)

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

CHP16-1853 POWER EXHAUST FANS PERFORMANCE

Air Volume Exhausted		Return Air System Static Pressure	
m³/s	cfm	Pa	inches water gauge
1650	3500	0	0
1500	3150	12	.05
1375	2900	25	.10
1250	2650	37	.15
1050	2250	50	.20
875	1825	62	.25

ELECTRICAL DATA

Model Number		CHP16-953	CHP16-1353	CHP16-1853	
Line voltage (50 Hz — 3 phase with neutral)		380/420V	380/420V	380/420V	
Voltage range (minimum - maximum)		342-462V	342-462V	342 - 462V	
Compressor 1	Rated load (A)	7.4	9.2	14.2	
	Locked rotor (A)	46	63	91.1	
Compressor 2	Rated load (A)	7.4	9.2	14.2	
	Locked rotor (A)	46	63	91.1	
Outdoor Coil Fan Motors (1 Phase)	Full load (A) (total)	1.7	1.5/1.5 (3.0)	4.8	
	Locked rotor (A) (total)	3.7	3.4/3.4 (6.8)	12.0	
Indoor Coil Blower Motor	Output — kW (hp)	1.5 (2)	1.5 (2)	2.2 (3)	3.7 (5)
	Full load (A)	3.3	3.4	4.8	7.6
	Locked rotor (A)	20.4	20.4	26.8	45.6
Optional Exhaust Fan Motors (1 Phase)	Full load (A)	—	—	1.4	
	Locked rotor (A)	—	—	3.2	
Electric Heat — Per Element (A)		15.7	15.7	15.7	

NOTE — Refer to local electrical codes to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 75°C (167°F).

FIELD WIRING

ELECTRO-MECHANICAL THERMOSTAT CONTROL SYSTEM

A — Three phase with neutral (See Electrical Data Table)

B — Six wire 24V

— Five wire 24V — with SSP11 Switching Status Panel

— Eight wire 24V — with Emergency Heat Switching Subbase

C — Eleven wire 24V

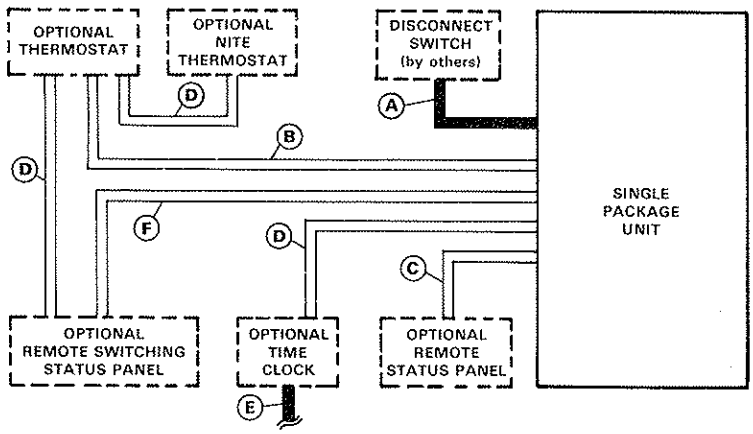
D — Two wire 24V

E — Two wire 24V

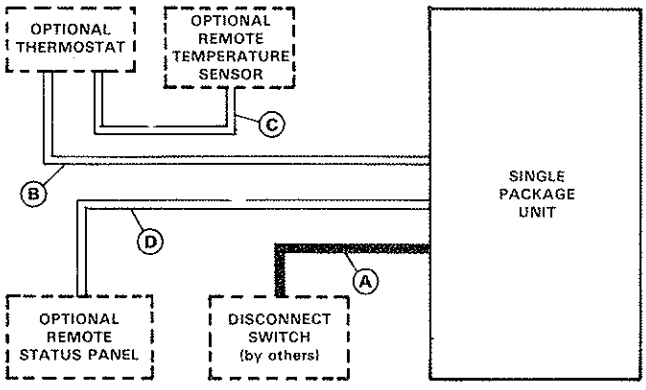
F — Eighteen wire 24V

— Field wiring not furnished —

NOTE — All wiring must conform to local electrical codes.



T7300 THERMOSTAT CONTROL SYSTEM



A — Three phase with neutral (See Electrical Data Table)

B — Nine wire 24V

C — Two wire 24V

D — Eleven wire 24V

— Field wiring not furnished —

NOTE — All wiring must conform to local electrical codes.

DIMENSIONS — mm (inches)

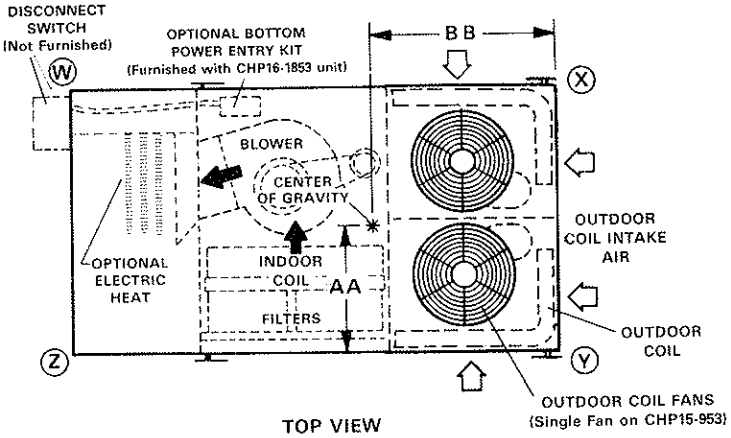
CHP16 BASIC UNIT

CORNER WEIGHTS

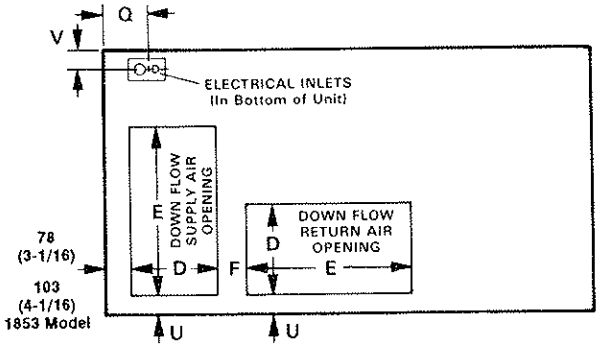
Model Number	W		X		Y		Z	
	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.
CHP16-953	90	198	144	317	94	208	58	128
CHP16-1353	98	215	174	383	150	330	84	185
CHP16-1853	143	315	243	535	215	475	127	280

CENTER OF GRAVITY

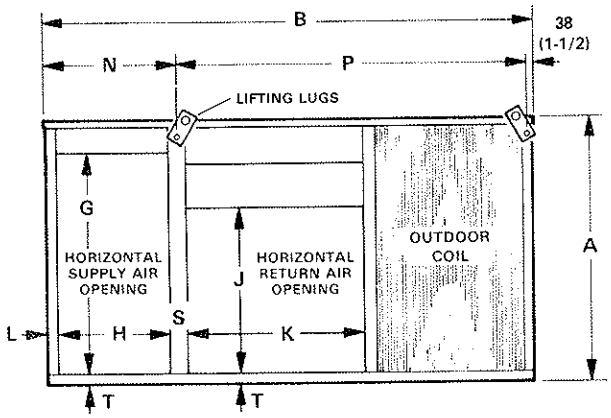
Model Number	AA		BB	
	mm	in.	mm	in.
CHP16-953	737	29	921	34
CHP16-1353	806	32-1/4	902	33-3/4
CHP16-1853	914	36	1092	43



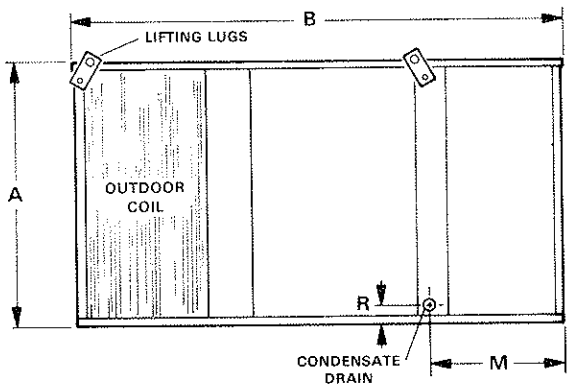
TOP VIEW



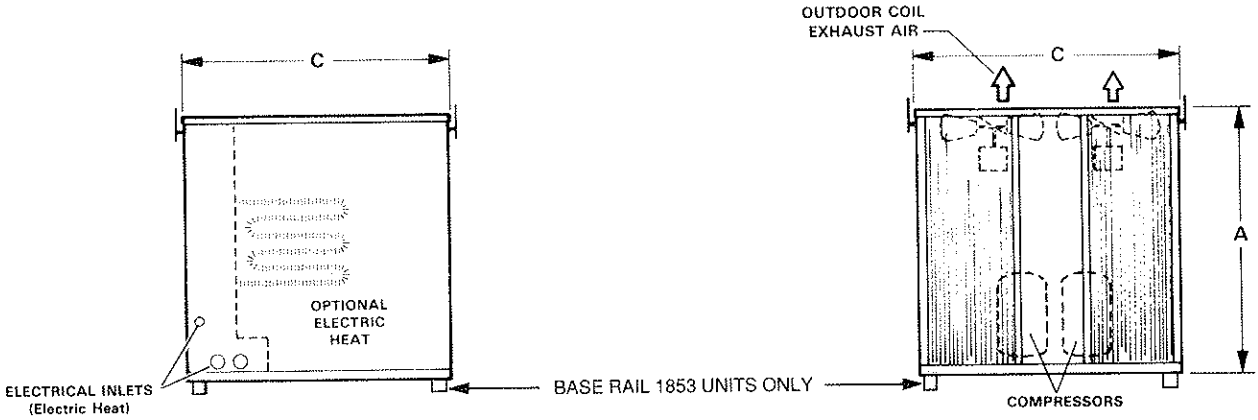
TOP VIEW BASE SECTION



BACK VIEW
With HORIZONTAL SUPPLY & RETURN AIR OPENINGS



FRONT VIEW



HEAT SECTION END VIEW

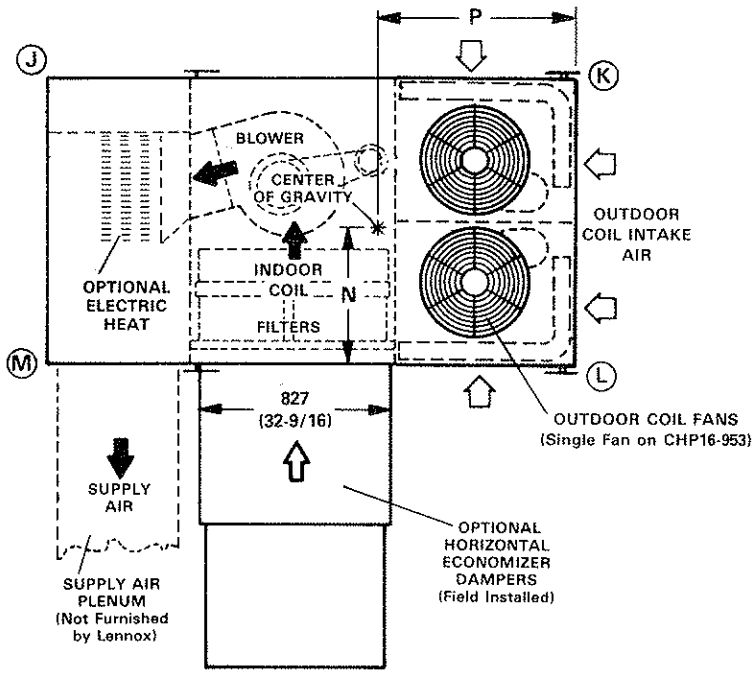
OUTDOOR COIL END VIEW

Model Number		A	B	C	D	E	F	G	H	J	K
CHP16-953	mm	991	2248	1219	419	772	143	816	494	625	838
	in.	39	88-1/2	48	16-1/2	30-3/8	5-5/8	32-1/8	19-7/16	24-5/8	33
CHP16-1353	mm	1168	2388	1524	610	772	113	994	641	803	838
	in.	46	94	60	24	30-3/8	4-7/16	39-1/8	25-1/4	31-5/8	33
CHP16-1853	mm	1308	2946	1727	622	1118	143	1054	654	832	1273
	in.	51-1/2	116	68	24-1/4	44	5-5/8	41-1/2	25-3/4	32-3/4	50-1/8

Model Number		L	M	N	P	Q	R	S	T	U	V
CHP16-953	mm	41	637	562	1648	127	60	70	38	78	106
	in.	1-5/8	25-1/16	22-1/8	64-7/8	5	2-3/8	2-3/4	1-1/2	3-1/16	4-3/16
CHP16-1353	mm	51	792	724	1626	127	60	70	38	78	106
	in.	2	31-3/16	28-1/2	64	5	2-3/8	2-3/4	1-1/2	3-1/16	4-3/16
CHP16-1853	mm	51	851	838	2070	127	102	108	76	127	183
	in.	2	33-1/2	33	81-1/2	5	4	4-1/4	3	5	7-1/4

DIMENSIONS — mm (inches)

CHP16-953 and -1353 UNITS WITH EMDH16M HORIZONTAL ECONOMIZER DAMPER SECTION



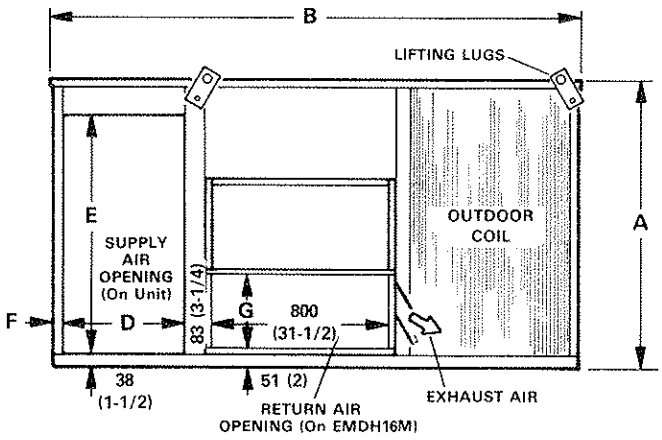
TOP VIEW

CORNER WEIGHTS

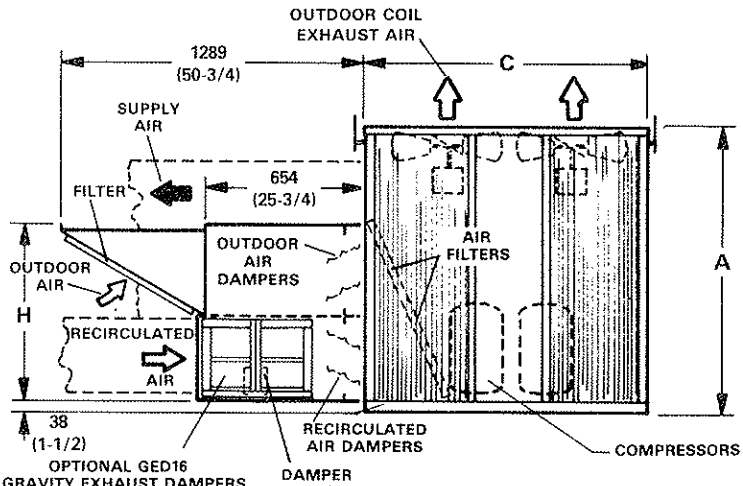
Model Number	J		K		L		M	
	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.
CHP16-953	91	200	135	298	121	266	121	178
CHP16-1353	97	213	166	367	184	406	107	236

CENTER OF GRAVITY

Model Number	N		P	
	mm	in.	mm	in.
CHP16-953	645	25-3/8	902	35-1/2
CHP16-1353	622	24-1/2	965	38



BACK VIEW

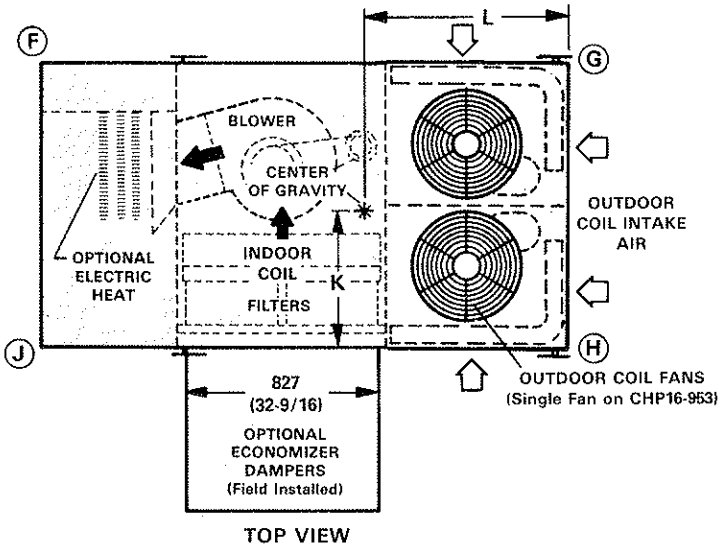


END VIEW

Model Number	A		B		C		D		E		F		G		H	
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
CHP16-953	991	39	2248	88-1/2	1219	48	494	19-7/16	816	32-1/8	41	1-5/8	337	13-1/4	730	28-3/4
CHP16-1353	1168	46	2388	94	1524	60	641	25-1/4	994	39-1/8	51	2	489	19-1/4	883	34-3/4

DIMENSIONS — mm (inches)

CHP16-953 and -1353 UNITS WITH REMD16M ECONOMIZER DAMPER SECTION AND RMF16 ROOF MOUNTING FRAME



TOP VIEW

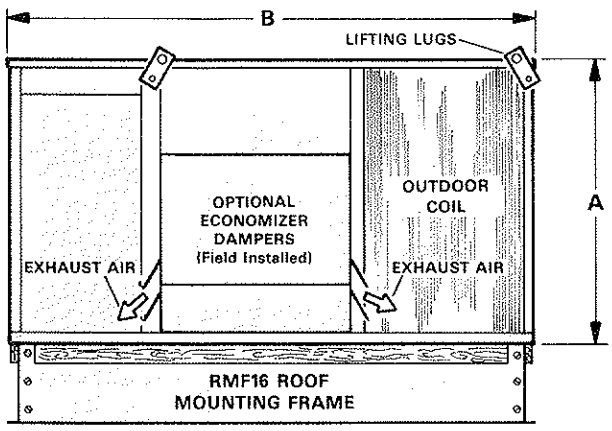
CORNER WEIGHTS

Model Number	F		G		H		J	
	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.
CHP16-953	91	200	135	298	121	266	81	178
CHP16-1353	97	213	166	367	184	406	107	236

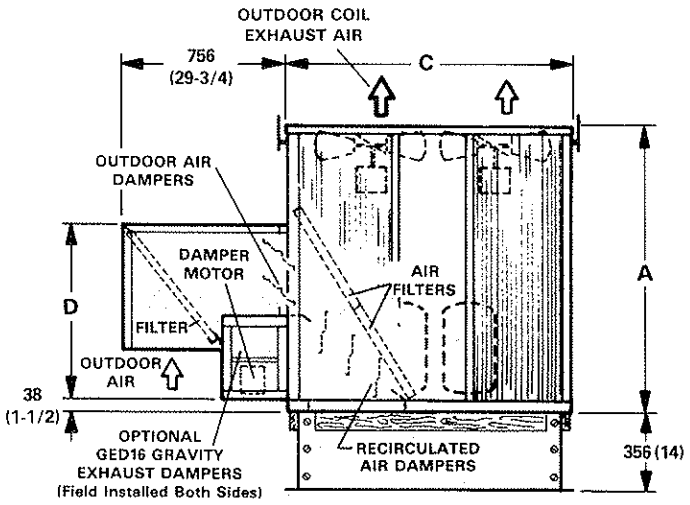
CENTER OF GRAVITY

Model Number	K		L	
	mm	in.	mm	in.
CHP16-953	645	25-3/8	902	35-1/2
CHP16-1353	622	24-1/2	965	38

Model Number	A		B		C		D	
	mm	in.	mm	in.	mm	in.	mm	in.
CHP16-953	991	39	2248	88-1/2	1219	48	725	28-9/16
CHP16-1353	1168	46	2388	94	1524	60	878	34-9/16



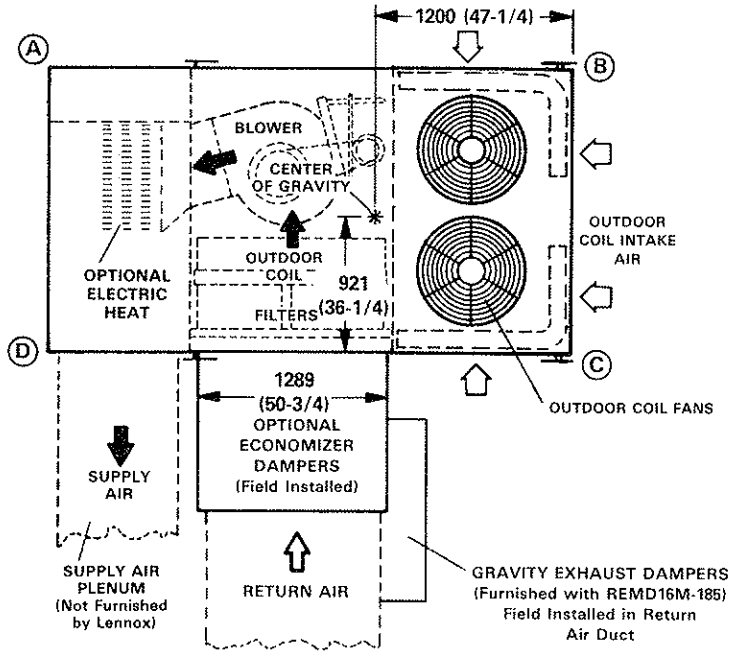
BACK VIEW



END VIEW

DIMENSIONS — mm (inches)

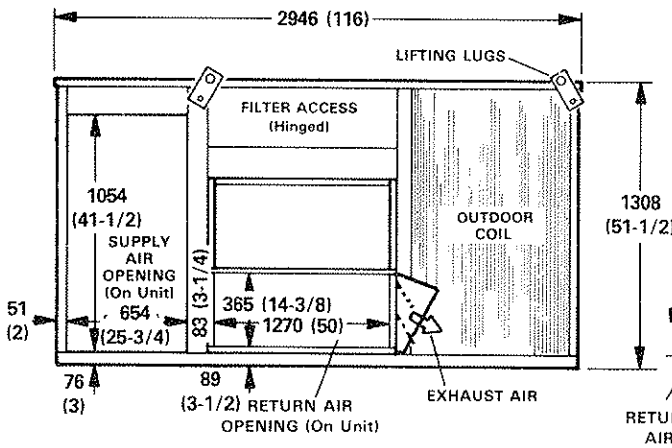
CHP16-1853 UNIT WITH REMD16M ECONOMIZER DAMPER SECTION (HORIZONTAL APPLICATION)



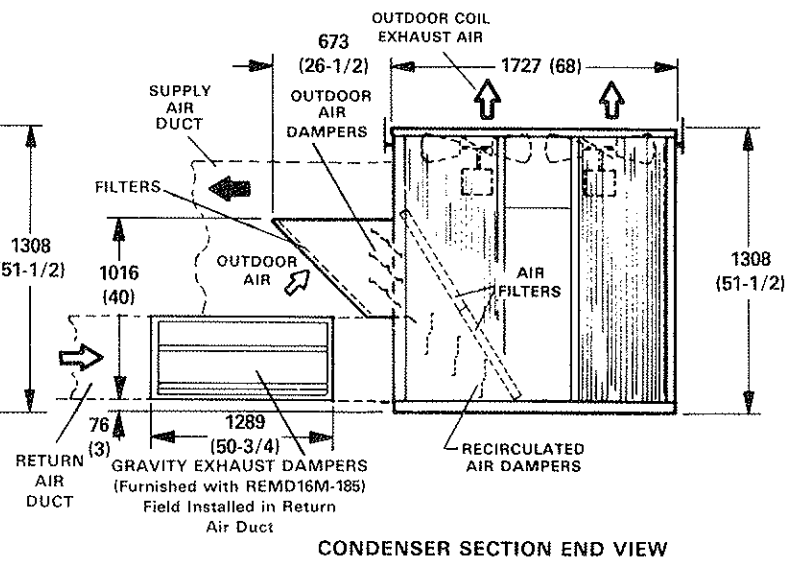
TOP VIEW

CORNER WEIGHTS

Model Number	A		B		C		D	
	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.
CHP16-1853	172	380	162	358	254	559	239	526



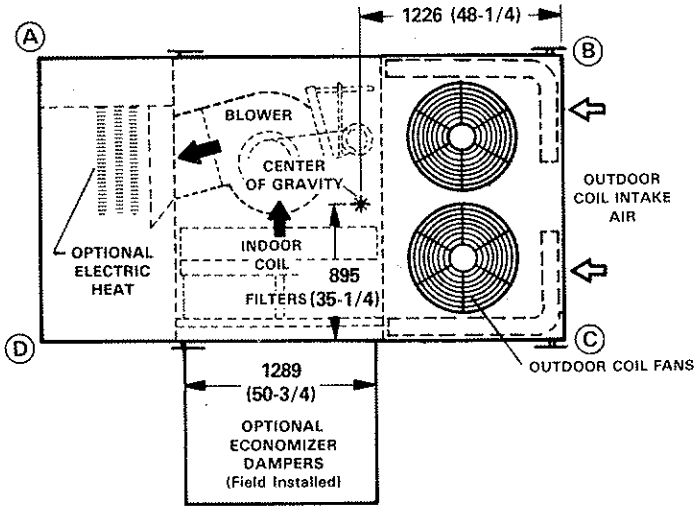
BACK VIEW



CONDENSER SECTION END VIEW

DIMENSIONS — mm (inches)

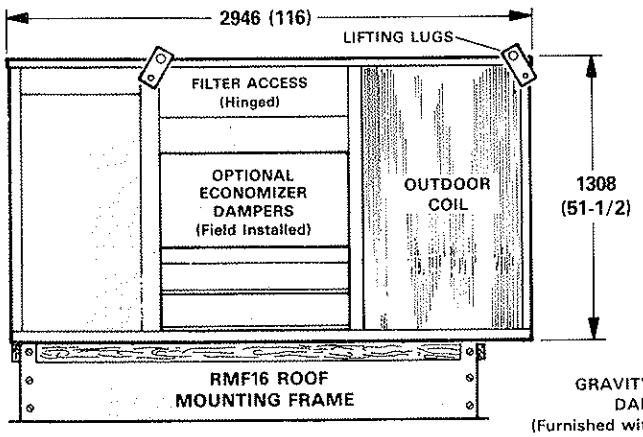
CHP16-1853 UNIT WITH REMD16M-185 ECONOMIZER DAMPER SECTION (DOWN-FLO APPLICATION) AND RMF16-185 ROOF MOUNTING FRAME



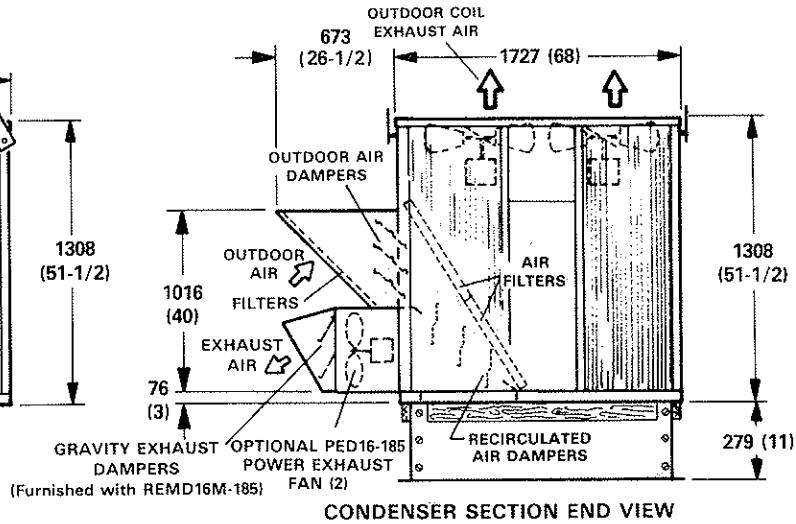
TOP VIEW

CORNER WEIGHTS

Model Number	A		B		C		D	
	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.
CHP16-1853	176	387	165	364	167	368	243	535



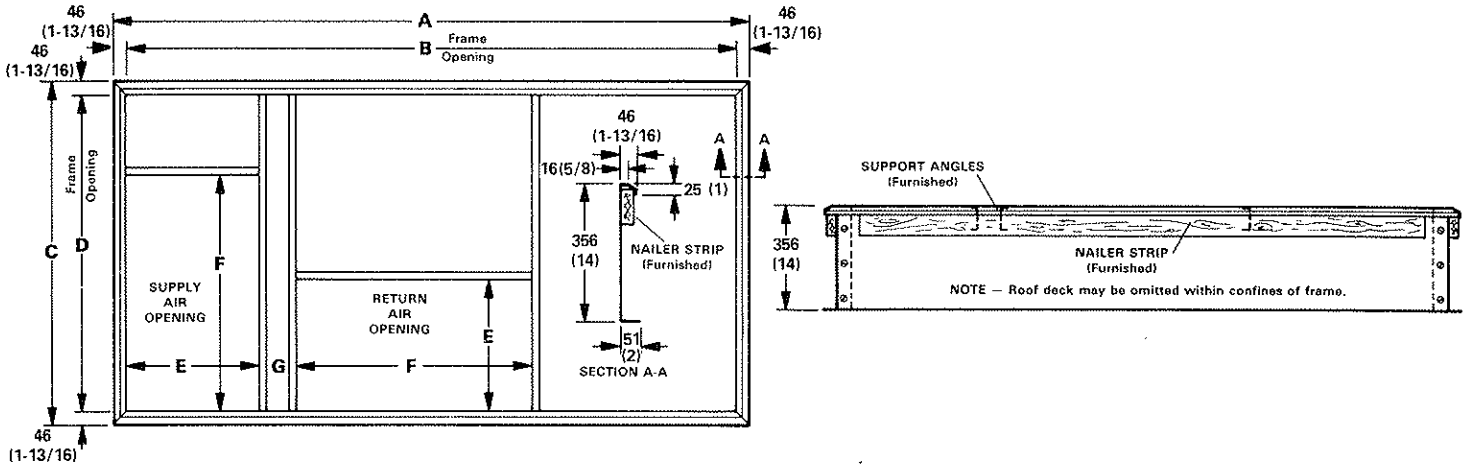
BACK VIEW



CONDENSER SECTION END VIEW

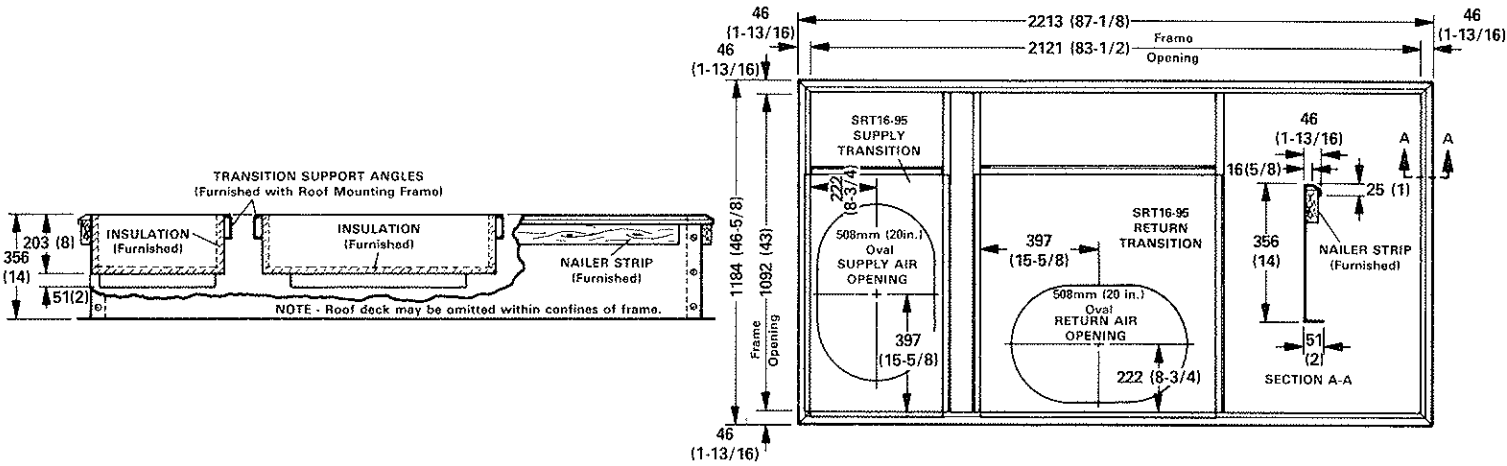
DIMENSIONS — mm (inches)

RMF16 SERIES ROOF MOUNTING FRAME WITH DOUBLE DUCT OPENING

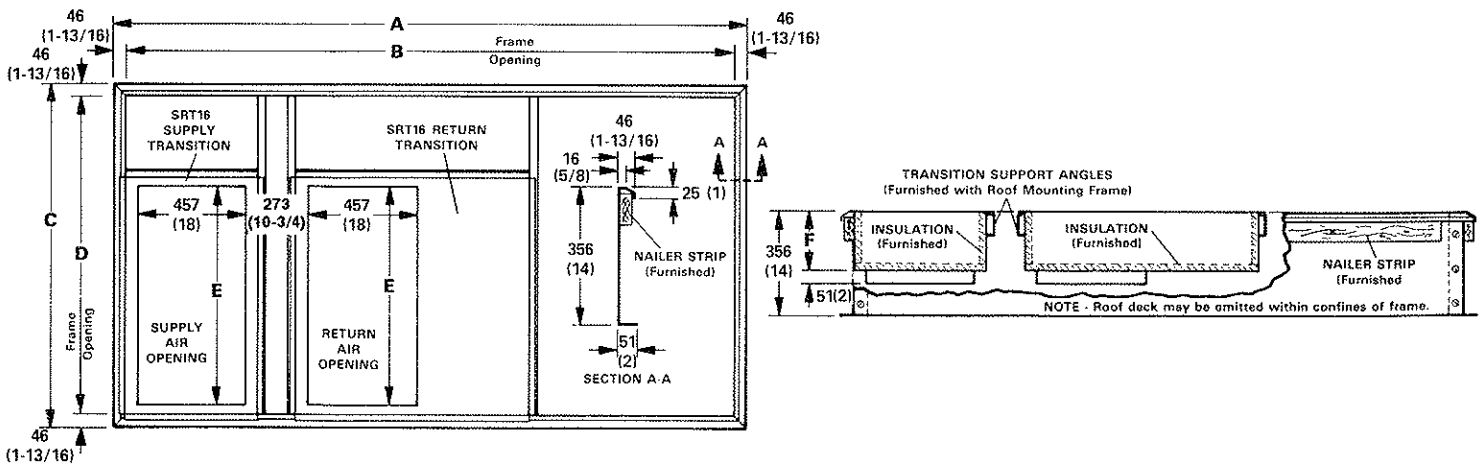


Model Number	A		B		C		D		E		F		G	
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
RMF16-95	2213	87-1/8	2121	83-1/2	1184	46-5/8	1092	43	456	17-15/16	800	31-1/2	102	4
RMF16-135/160	2350	92-1/2	2257	88-7/8	1486	58-1/2	1394	54-7/8	641	25-1/4	800	31-1/2	81	3-3/16
RMF16-185	2838	111-3/4	2746	108-1/8	1622	63-7/8	1530	60-1/4	660	26	1156	45-1/2	111	4-3/8

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



RMF16-135/160 AND RMF16-185 ROOF MOUNTING FRAMES WITH SUPPLY AND RETURN AIR TRANSITIONS FOR FD11-135 OR 185 AND RTD11-135 OR 185 CEILING DIFFUSERS



Model Number	A		B		C		D		E		F	
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
RMF16-135/160	2350	92-1/2	2257	88-7/8	1486	58-1/2	1394	54-7/8	711	28	203	8
RMF16-185	2838	111-3/4	2746	108-1/8	1622	63-7/8	1530	60-1/4	914	36	305	12

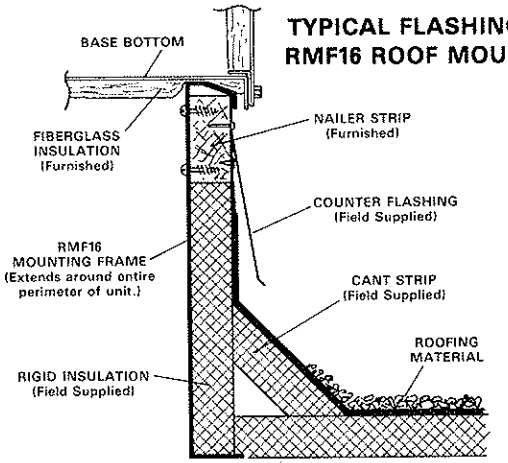
ROOF MOUNTING FRAME SPECIFICATIONS

Roof Mounting Frame is rigid enough to be spanned over its entire length or cantilevered if supported on either side of the center of gravity.

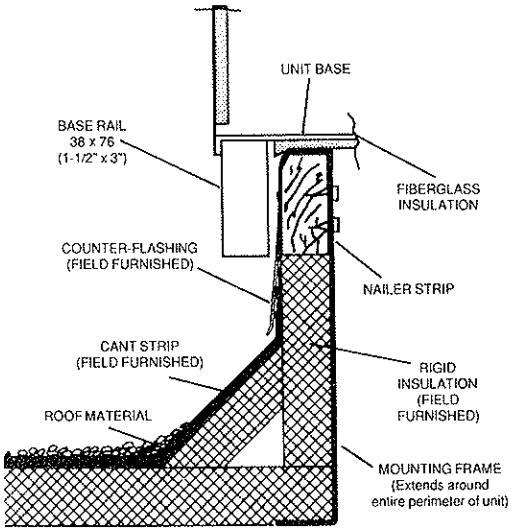
Roof Mounting Frame		RMF16-95	RMF16-135/160	RMF16-185
*Frame moment of Inertia (I)	mm^4	1.75×10^7	1.75×10^7	1.75×10^7
	$in.^4$	42	42	42
*Frame section modulus $\frac{I}{C}$	mm^3	9.5×10^3	9.5×10^3	9.5×10^3
	$in.^3$	5.8	5.8	5.8
Mounting frame weight	kg/m	8.2	8.2	8.2
	lb./ft.	5.5	5.5	5.5
Mounting frame design strength	MPa	138	138	138
	psi	20 000	20 000	20 000

*Includes both sides of frame.

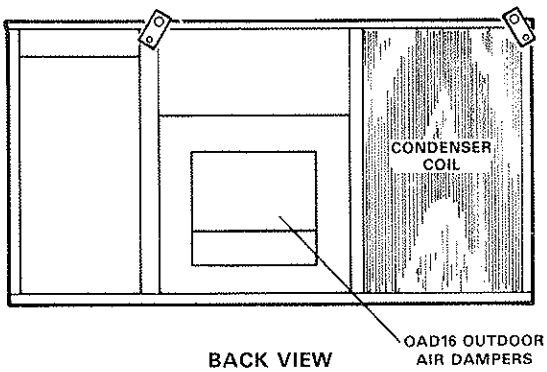
TYPICAL FLASHING DETAIL FOR RMF16 ROOF MOUNTING FRAME



ROOF MOUNTING FOR 953 AND 1353 MODELS



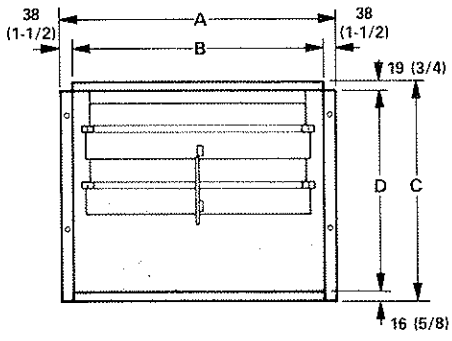
ROOF MOUNTING FOR 1853 MODELS



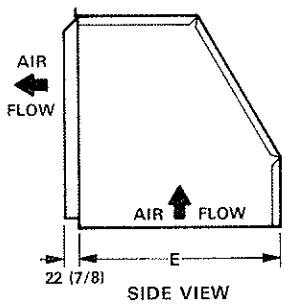
BACK VIEW

Model Number	A		B	
	mm	in.	mm	in.
OAD16-95 OAD16-135	451	17-3/4	435	17-1/8
OAD16-185	702	27-5/8	565	22-1/4

OAD16 OUTDOOR AIR DAMPER SECTION



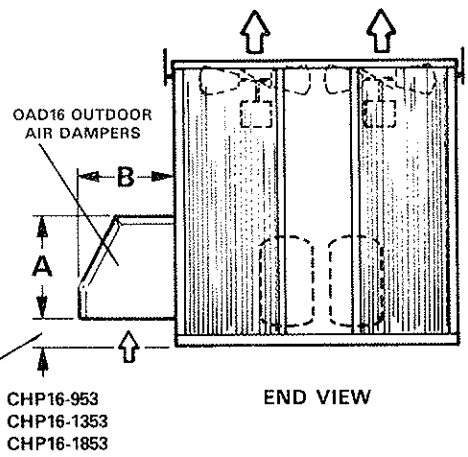
BACK VIEW



SIDE VIEW

Model Number	A		B		C		D		E	
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
OAD16-95 OAD16-135	610	24	533	21	470	18-1/2	435	17-1/8	435	17-1/8
OAD16-185	838	33	762	30	721	28-3/8	686	27	565	22-1/4

CHP16 UNIT WITH OAD16 OUTDOOR DAMPER SECTION DOWN-FLO SUPPLY AND RETURN AIR

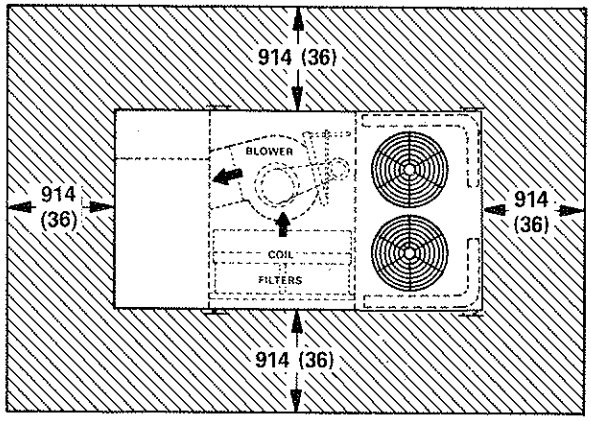


END VIEW

NOTE — For Horizontal (side) Supply and Return Air OAD16 Field Installs on Return Air Duct.

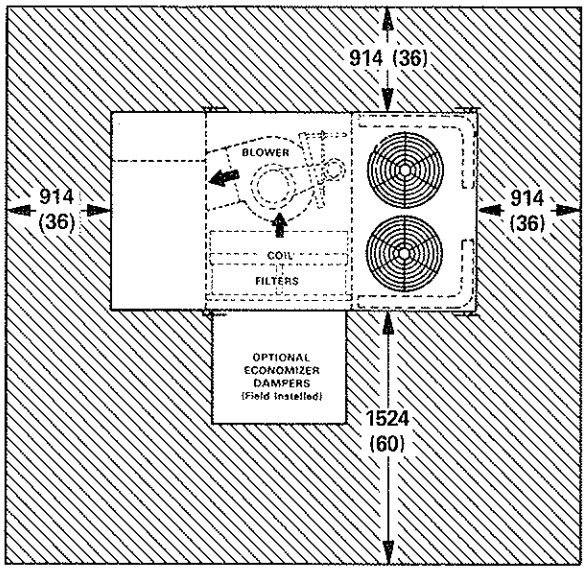
INSTALLATION CLEARANCES — mm (inches)

CHP16 BASIC UNIT



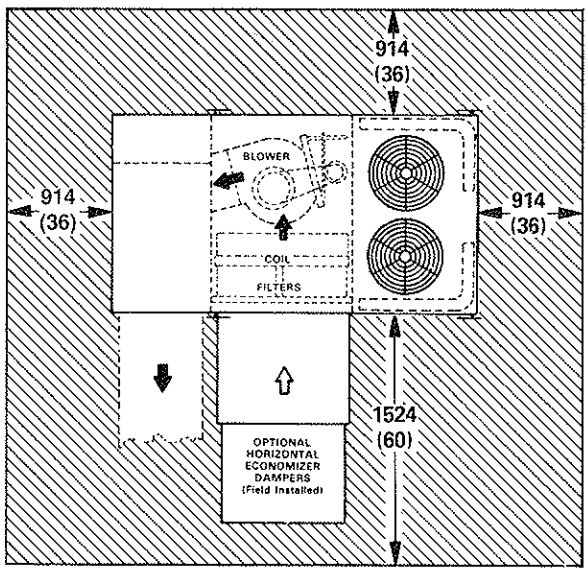
NOTE — Top Clearance Unobstructed.
NOTE — Entire perimeter of unit requires support when elevated above mounting surface.

CHP16 UNIT WITH REMD16M ECONOMIZER DAMPER SECTION



NOTE — Top Clearance Unobstructed.

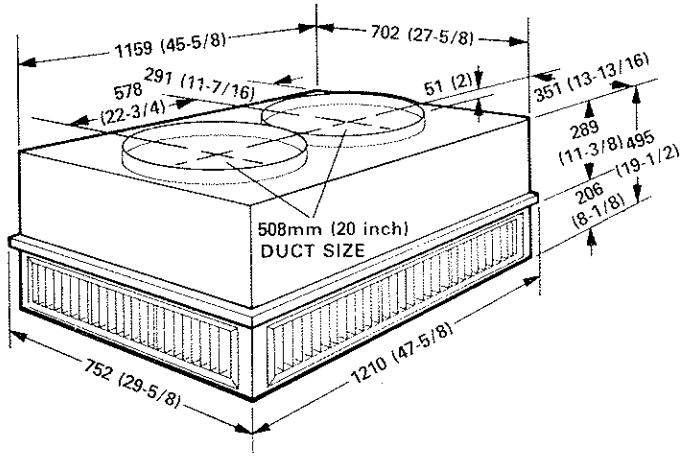
CHP16 UNIT WITH EMDH16M HORIZONTAL ECONOMIZER



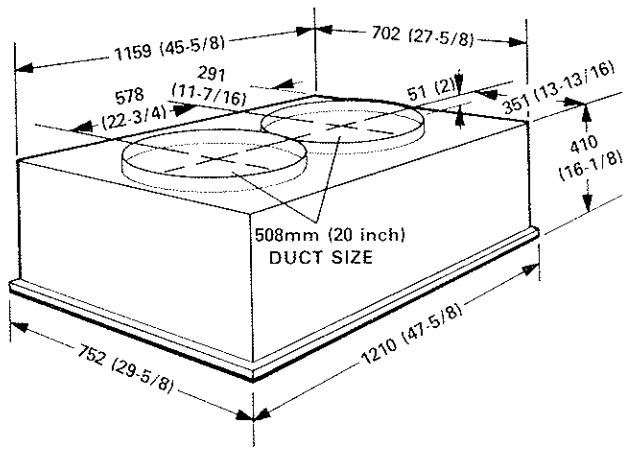
NOTE — Top Clearance Unobstructed.

COMBINATION CEILING SUPPLY AND RETURN AIR DIFFUSERS
DIMENSIONS — mm (inches)

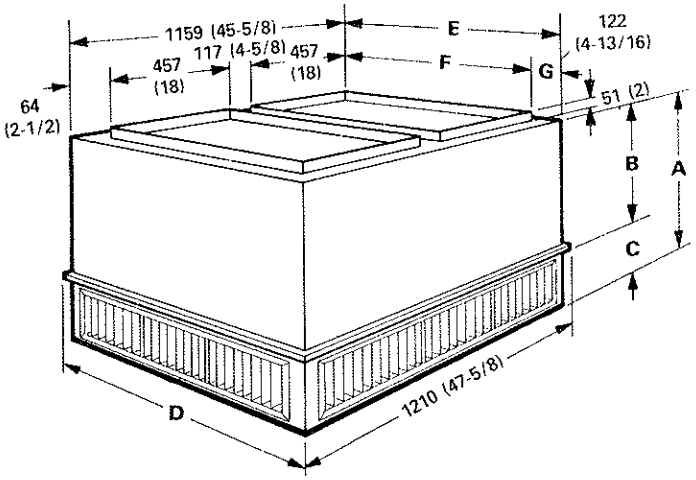
RTD11-95 STEP-DOWN CEILING DIFFUSER



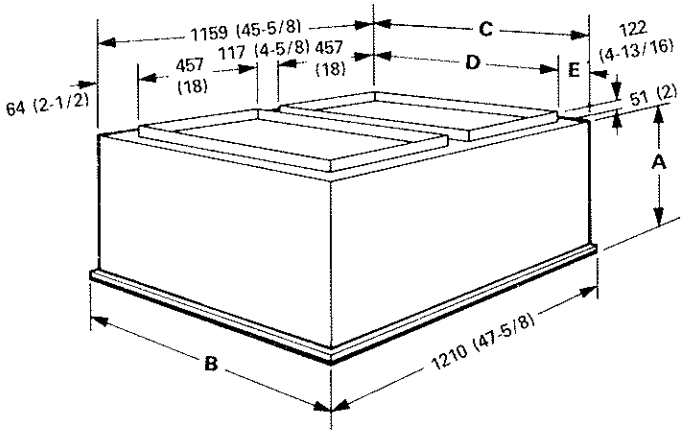
FD11-95 FLUSH CEILING DIFFUSER



RTD11-135 AND RTD11-185 STEP-DOWN CEILING DIFFUSERS



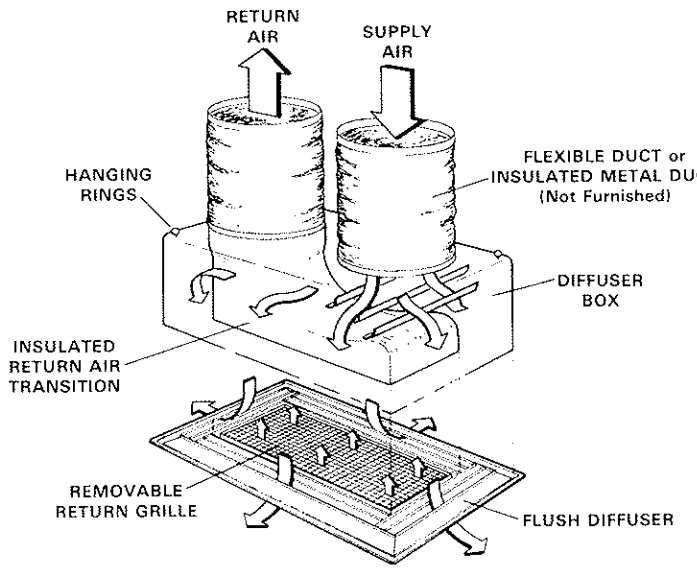
FD11-135 AND FD11-185 FLUSH CEILING DIFFUSERS



Model Number		A	B	C	D	E	F	G
RTD11-135	mm	711	479	232	905	854	711	71
	in.	28	18-7/8	9-1/8	35-5/8	33-5/8	28	2-13/16
RTD11-185	mm	864	606	257	1210	1159	914	122
	in.	34	23-7/8	10-1/8	47-5/8	45-5/8	36	4-13/16

Model Number		A	B	C	D	E
FD11-135	mm	613	905	854	711	71
	in.	24-1/8	35-5/8	33-5/8	28	2-13/16
FD11-185	mm	765	1210	1159	914	122
	in.	30-1/8	47-5/8	45-5/8	36	4-13/16

DIFFUSER AIR PATTERN



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