

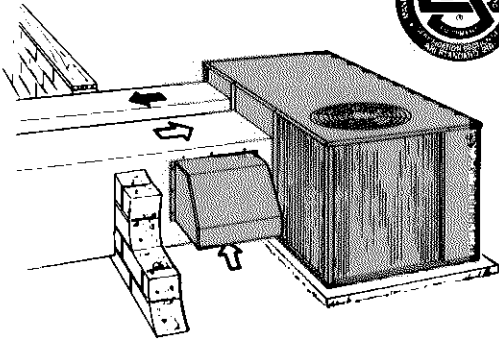
**CHA16-823 thru CHA16-3003  
PACKAGED UNITS  
COOLING & ELECTRIC HEAT**

**CHA16**  
**(6 to 25 Ton)**

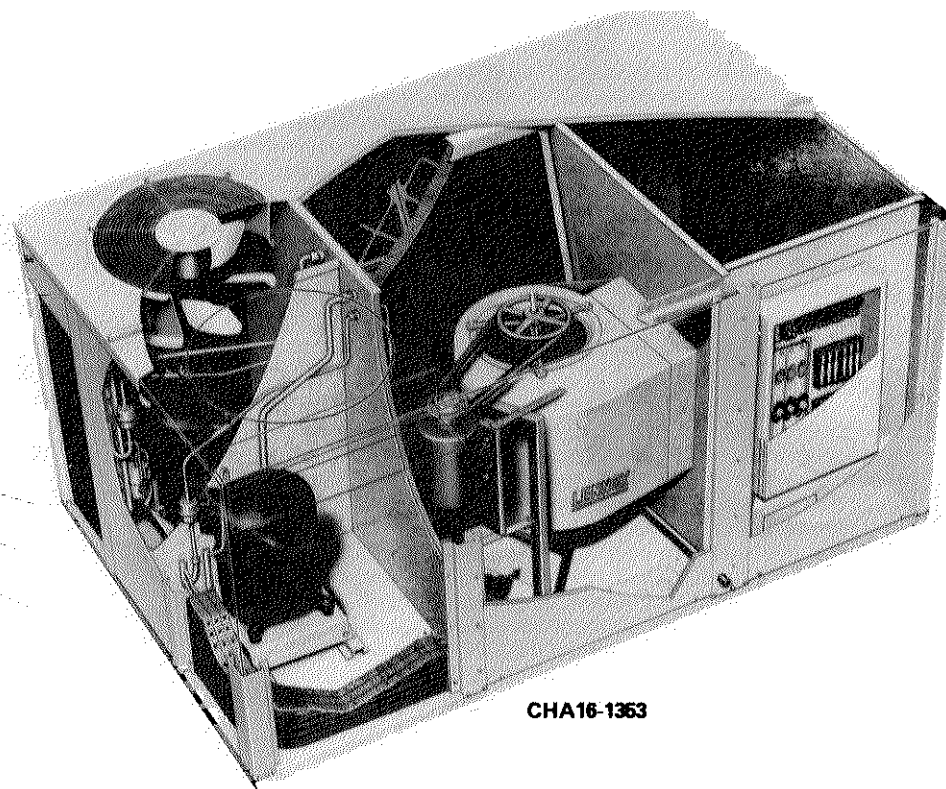
\*73,000 to 284,000 Btuh Cooling Capacity  
5,600 to 307,100 Btuh Optional Electric Heat

Bulletin No. 480045  
April 1993  
Supersedes July 1992

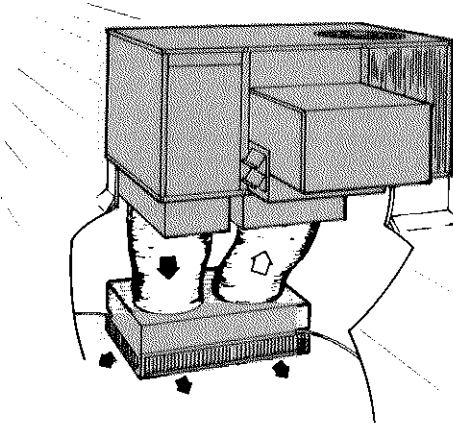
\*ARI Standard Ratings



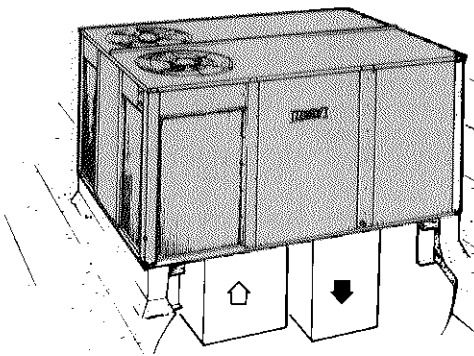
Horizontal (side) Supply and Return Air Installation with OAD16 Outdoor Air Dampers.



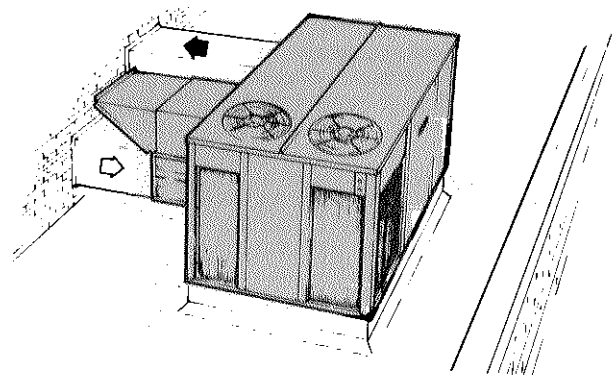
CHA16-1363



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



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

## FEATURES

**Application** — Lennox CHA16 single package air conditioning units are designed for bottom (down-flow) 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-flow 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 for cooling only or cooling with electric heat. Voltage options provide a choice for power supply requirements. Thermostat and system controls are not furnished and must be ordered extra. Available as options are W973 control system, W7400 control system, electro-mechanical, Pro-stat or T7300 thermostat control systems. Units are shipped factory assembled, piped and wired. Each unit is factory test operated insuring unit dependability.

**Approvals** — CHA16-823, 953 & 1353 models have been rated and certified in the Lennox Laboratory environmental test room in accordance with ARI Standard 210/240-89. CHA16-823, -953 & -1353 units have been sound rated and certified in the Lennox sound test room in accordance with ARI Standard 270-84. CHA16-1603, -1853, -2553 & -2753 models have been rated and certified in accordance with ARI Standard 360-86. CHA16-3003 models have been tested according to test conditions included in ARI Standard 360-86. Blower data is from unit tests in the Lennox air test chamber. Units are U.L. Listed and components within are bonded for grounding to meet safety standards for servicing required by U.L. and NEC.

**Equipment Warranty** — Compressors have a limited warranty for a full five years. All other components have a limited warranty for one year. Refer to Lennox Equipment Limited Warranty included with unit for details.

**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. CHA16-1853, -2553, -2753 & -3003 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 condenser 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. Evaporator coil condensate drain connection extends outside of cabinet for ease of connection.

**Refrigeration System** — Factory sealed refrigerant system consists of multiple compressors, condenser coil and direct drive fan(s), evaporator coil and belt drive blower, expansion valve, high capacity driers, thermometer wells, high pressure switch and loss of charge switch, refrigerant lines connected with a full operating charge of refrigerant. Factory installed freestat prevents evaporator coil freeze-up during low ambient operation. Independent refrigerant circuits provide staging control to fit varying cooling loads.

**Copper Tube Evaporator and Condenser Enhanced Fin Coils** — Extra large surface area and circuiting of coils provide maximum cooling 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. 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 evaporator coil is face split with separate circuits. Each circuit has its separate expansion valve, compressor and refrigerant charge.

**Condenser Fan(s)** — CHA16-823 and CHA16-953 are equipped with a single fan. CHA16-1353 thru -3003 have two. Direct drive fan(s) draw large air volumes uniformly through condenser 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. Fan motor is permanently lubricated and overload protected. Motor is resiliently mounted. Corrosion resistant PVC coated steel wire fan guard(s) are furnished.

**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. See specifications table for motors and drives available.

**Dependable Compressors** — Rugged and reliable compressors are hermetically sealed, suction cooled and overload protected. CHA16-823, -953, -1353, -1603 (2nd stage only) and -1853 units have internal pressure relief valve. Compressors are internally protected from excessive current and temperature. Crankcase heaters are furnished on all compressors. CHA16-823 thru -1603 and CHA16-2553 thru -3003 units have two compressors and CHA16-1853 unit has three. Compressor monitor (non-adjustable) prevents compressor operation when outdoor temperature is below 40°F. In addition, the compressors are installed on resilient rubber mounts in the unit, assuring quiet and vibration free operation.

**Air Filters** — Disposable frame type two inch thick commercial grade filters are furnished as standard. Filters are readily accessible for service. See dimension drawings. Filter rack is designed to accept one inch thick cleanable filters.

## OPTIONAL ACCESSORIES (Must Be Ordered Extra)

**Optional ECH16 Additive Electric Heat** — Available factory or field installed in 10kW through 90kW sizes. Heater design permits use of single point power supply. 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. Heaters may be two stage controlled with each stage being energized only when required. Fuse block for electric heaters must be ordered extra, see Optional Accessories tables. 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 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 (40G20) includes two LB-50709BA controls and must be ordered extra. Furnished as standard on CHA16-1853 thru -3003 models.

**Optional Bottom Power Entry Kit (CHA16-823, 953, 1353 & 1603 Models Only)** — Factory or field installed kit LB-55757CA (34G70) is provided for bottom power entry into the unit within the confines of the roof mounting frame. Kit contains wiring junction box with cover (6" x 8" x 10"), 78 inch 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. Furnished as standard on the CHA16-1853 thru -3003 model.

**Optional Low Ambient Control Kit** — System will operate satisfactorily down to 45°F outdoor air temperature without additional controls. If air conditioning operation is required at low ambients a field installed low ambient kit can be added enabling the unit to operate down to 30°F. Kits must be ordered extra. See Optional Accessories tables.

**Optional RMF16 Roof Mounting Frame** — Sturdy mounting frame mates to the single package 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 National Roofing Contractors Association.

## OPTIONAL ACCESSORIES (Must Be Ordered Extra)

**Optional REMD16M Economizer Dampers** — Economizer consists of: mechanically linked recirculated air dampers and outdoor air dampers, damper motor and controls. Economizers are shipped factory wired and only require plug-in connection. Formed low leakage (less than 3%) dampers rotate smoothly in nylon bearings. Outdoor air dampers 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.

REMD16M-95, 135 & 160 are available for down-flo applications only. Economizer cabinet is constructed of heavy gauge galvanized steel with a powder enamel paint finish electrostatically bonded to the metal and completely insulated with thick fiberglass insulation. Economizer cabinet field installs on the unit cabinet. Provisions have been made in the economizer cabinet for easy field installation of optional GED16 gravity exhaust dampers. See dimension drawings.

REMD16M-185 & 300 are available for down-flo or horizontal applications. Factory or field installed damper assembly slides in cavity provided in unit cabinet. Outdoor air hood field installs over outdoor air dampers external to the unit. Gravity exhaust dampers are also furnished for field installation. See dimension drawings. Horizontal applications require Optional Horizontal Supply and Return Air Kit for duct connection to unit. See Optional Accessories tables.

**Optional PED16 Power Exhaust Fans (CHA16-1853, -2553, -2753 & -3003 Units Only)** — Fans field install on REMD16M-185 & -300 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 (CHA16-823, 953, 1353 & 1603 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 and only requires field plug-in connection. Cabinet is constructed of heavy gauge galvanized steel with a powdered enamel 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 positioner. 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 Optional Accessories tables.

**Optional Differential Enthalpy Control** — A solid state return air enthalpy sensor is available to be used 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 GED16 Gravity Exhaust Dampers** — For use with REMD16M and EMD16M-95, 135 & 160 economizer damper sections and must be ordered extra. Furnished as standard with REMD16M-185 & -300. 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. Rainhoods are also furnished for field installation on the 95/135/160 model. 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 & -300.

**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. Two-piece cabinet panel allows access to controls. 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 & 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 Optional Accessories tables.

**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 Optional Accessories tables.

**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 Optional Accessories tables.

**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 Optional Accessories tables.

- SRT16-95 used with the RMF16-95 with CHA16 823 & 953.
- SRT16 135 used with the RMF16 135/160 with CHA16 1353.
- SRT16-160 used with the RMF16-135/160 with CHA16-1603.
- SRT16-185 used with the RMF16-185 with CHA16-1853.
- SRT16-300 used with the RMF16-300 with CHA16 2553 & CHA16 2753 & CHA16 3003 units.

## OPTIONAL TEMPERATURE CONTROL SYSTEMS

**Optional Electro-Mechanical Thermostat and Controls 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 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. A 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. Two time clocks are available for the system. Automatic 7 day time clock (43G98) programs a weekly schedule. Any day or days can be omitted. Each day of the week is clearly separated from every other day. Day and nite periods are distinctly marked. When the settings have been made the clock will turn the system on and off. Spaced in 2 hour increments and equipped with battery back-up in case of power outage. 24 hour nite setback time clock (43G99) automatically programs the system to keep conditioned area at a more conservative temperature level (nite setback thermostat setting) during a period of vacancy. Spaced in 15 minute increments and equipped with battery back-up in case of power outage. Also available is a Warm Up Kit (39G77) which holds the economizer outdoor air dampers closed during nite heat operation and morning warm up. Cycle Control (42H51) is required with CHA16-823 thru -1603 units. Furnished on CHA16-1853 thru -3003 units. Plug-in control provides timed-off delay to prevent compressor short-cycling. See Flow Chart on page 5.

**Optional PRO-STAT Thermostat and Control System** — The thermostat and related controls of this system must be ordered extra and field installed. Pro-stat Thermostat (36G67) has touch sensitive keyboard, automatic switching from heat to cool, no anticipator, zero droop, indicator lights, hour/day programming, override capabilities, time readout, stage status indicators, operational mode symbols and battery back-up. A Remote Temperature Sensor (36G68) can be adapted to thermostat for applications where it is desirable to locate the thermostat out of the conditioned area. SP11 Remote Status Panel (12F83) is available for checking unit operation from within the conditioned area. Also available is a Warm Up Kit (39G77) which holds the economizer outside air dampers closed during nite heat operation and morning warm up. See Flow Chart on page 6.

**Optional W973 Control System** — Control system must be ordered extra for field installation. Logic Panel (39G76) controls the operation of the economizer dampers and the stages of cooling and heating in response to a signal from the thermostat. To maintain stable temperatures the logic panel balances the conditioned space thermostat demand against the system output. System output is measured by a discharge sensor (furnished with the logic panel) located in the discharge air duct of the unit. The combined demand and output signals from the sensor determines economizer damper position and number of cooling or heating stages energized. The logic panel field installs in the unit or in a remote panel located within the conditioned space. W973 Plug-In Relay (furnished with the logic panel) is required to adapt the control system to the unit. Two thermostats are available for the system. Dual set point room thermostat (25C52) or transmitter (25C51) with a choice of remote sensors. Both have separate heating-cooling locking set points concealed under the cover and do not have indicating thermometer. The room thermostat has integral sensor and installs in the conditioned space. The transmitter installs outside the conditioned space with a Room Temperature Sensor (58C92) in the conditioned area or a Return Air Temperature Sensor (27C40) in the return air duct of the unit. Thermostat and transmitter are furnished with a wiring wallplate. Also available is switching subbase (58C93) with system selector switch (Heat-Auto-Cool-Off) and fan switch (Auto On). SP11 Remote Status Panel (12F83) or SSP11 Remote Switching Status Panel (12F84) is available for observing and controlling unit operation from the conditioned area. Two time clocks are available for the system. Automatic 7 day time clock (43G98) programs a weekly schedule. Any day or days can be omitted. Each day of the week is clearly separated from every other day. Day and nite periods are distinctly marked. When the settings have been made the clock will turn the system on and off. Spaced in 2 hour increments and equipped with battery back up in case of power outage. 24 hour nite setback time clock (43G99) automatically programs the system to keep the conditioned area at a more conservative temperature level (nite set back thermostat setting) during a period of vacancy. Spaced in 15 minute increments and equipped with battery back up in case of power outage. Also available is a Warm Up Kit (39G77) which holds the economizer outdoor air dampers closed during nite heat operation and warm up. See Flow Chart on page 5.

**Optional W7400 Control System** — Control system must be ordered extra for field installation. Control Module (74G11) controls the operation of the economizer dampers and the stages of heating and cooling. Controlling input signals are setpoint, space temperature sensor and time-of-day scheduling from the thermostat. The control module balances the space temperature signal against the number of stages operating for system output. System output is measured and updated by monitoring the actual space temperature deviation from set point, and the rate of change of the space temperature. The control module field installs in the unit or in a remote panel located within the conditioned area. Two thermostats are available for the system. A room thermostat (36G62) with integral sensor that installs in the conditioned space or a remote thermostat (36G64) that installs outside the conditioned space with a Room Temperature Sensor (58C92) in the conditioned area or a Return Air Temperature Sensor (27C40) in the return air duct of the unit. Both thermostats are equipped with touch sensitive keyboard, automatic switching from heat to cool, no anticipator, zero droop, indicator lights, hour/day programming, override capabilities, time readout, stage status indicators, battery back-up and wiring wallplate. W7400 Plug In Relay (furnished with the control module) provides separate set points for the economizer dampers and DX cooling. SP11 Remote Status Panel (12F83) is available for checking unit operation within the conditioned area. See Flow Chart on page 6.

**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 (86G67) with 3-hour override and setpoint adjustment 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 6.

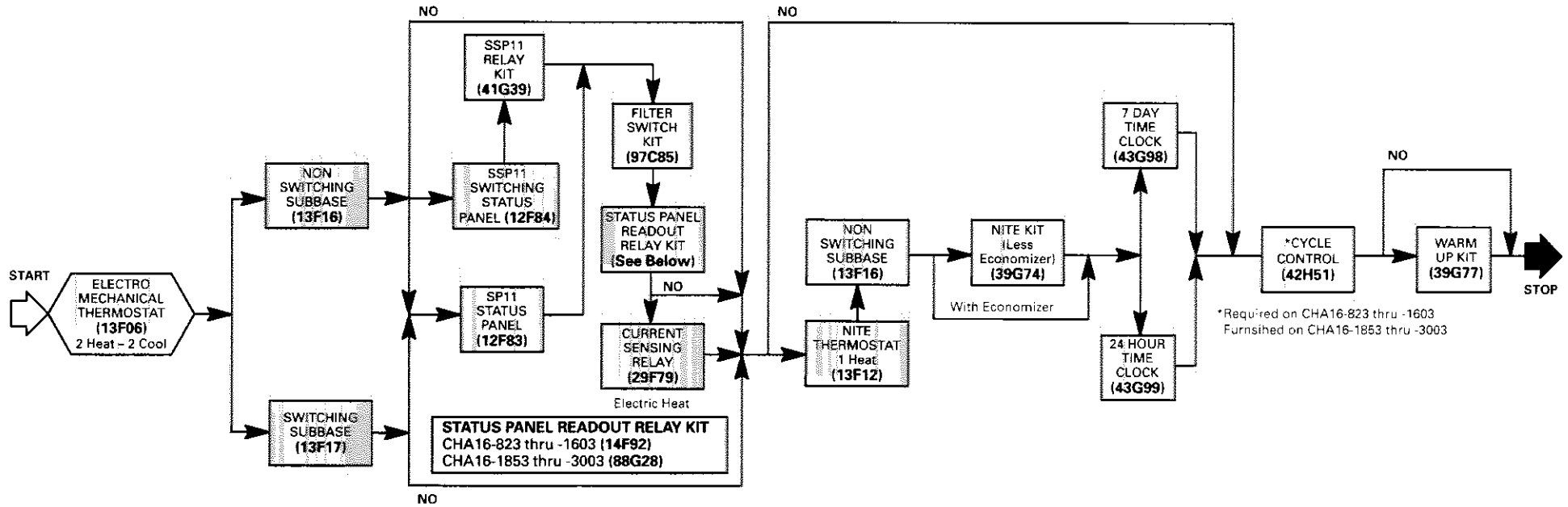
**Optional SP11 Remote Status Panel** — The operation of the unit can be checked at a glance on the Remote Status Panel (12F83) conveniently located within the conditioned area. Signal lights on the panel indicate "Cool Mode", "Heat Mode", "Compressor 1", "Compressor 2", "No Heat" and "Filter". The Cool 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. Status Panel Readout Relay Kit is required to interface status panel with unit operation. See flowcharts for selection. Current Sensing Relay (29F79) is required with electric heat for operation of the No Heat light.

**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

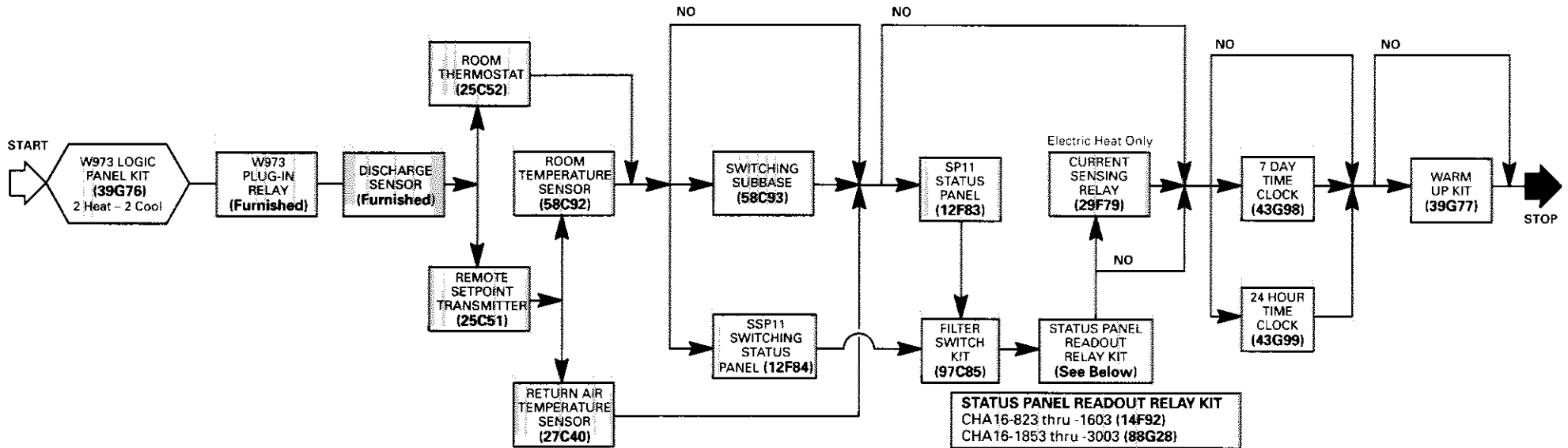
Emergency Heat) (Heat Pump Only), fan switch (Auto — On) and after hours timer. Fan switch provides a choice of intermittent (Auto) or continuous (On) blower operation. Manually operated after hours timer (0 to 12 hours) overrides night setback controls providing normal operation for time period set. 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. Status Panel Readout Relay Kit is required to interface status panel with unit operation. See flowcharts for selection. Current Sensing Relay (29F79) is required with electric heat for operation of the No Heat light.

# TEMPERATURE CONTROL SELECTION FLOWCHARTS

## OPTIONAL ELECTRO-MECHANICAL THERMOSTAT

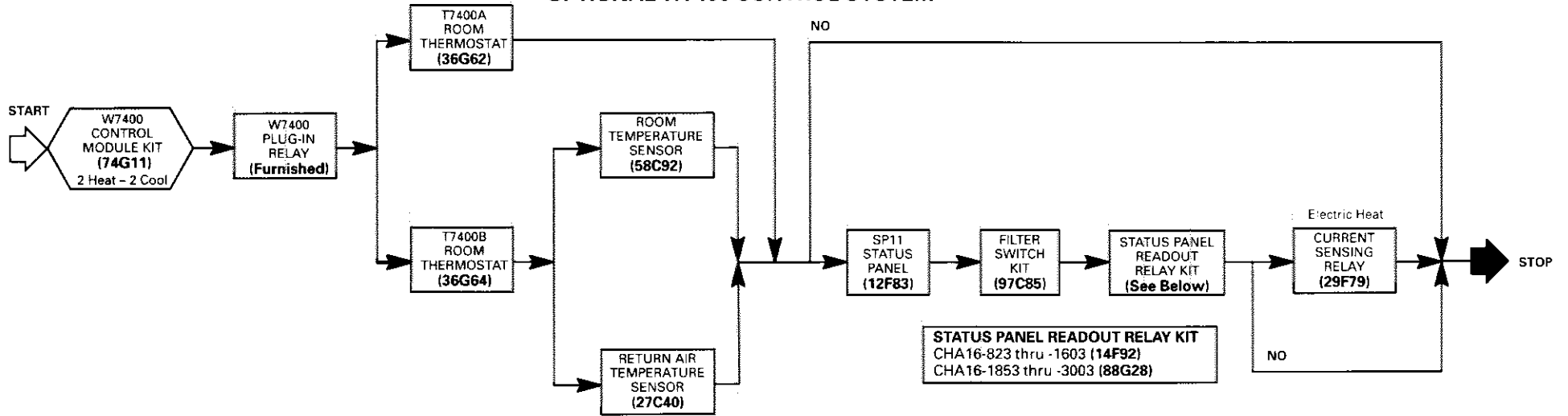


## OPTIONAL W973 CONTROL SYSTEM

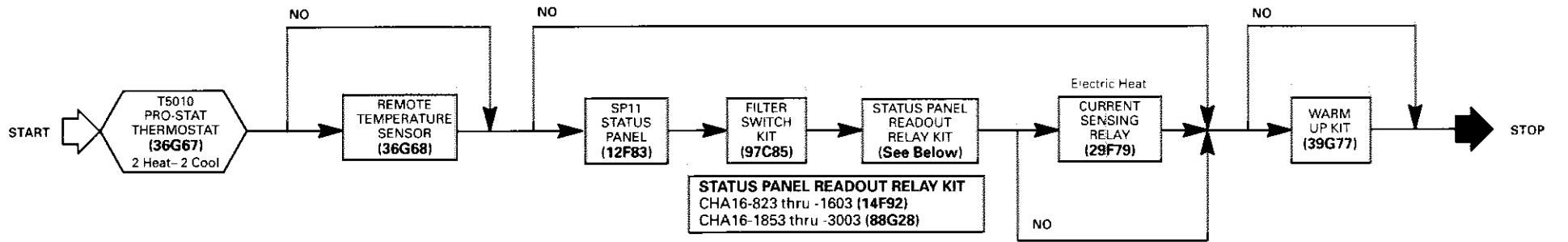


**TEMPERATURE CONTROL SELECTION FLOWCHARTS**

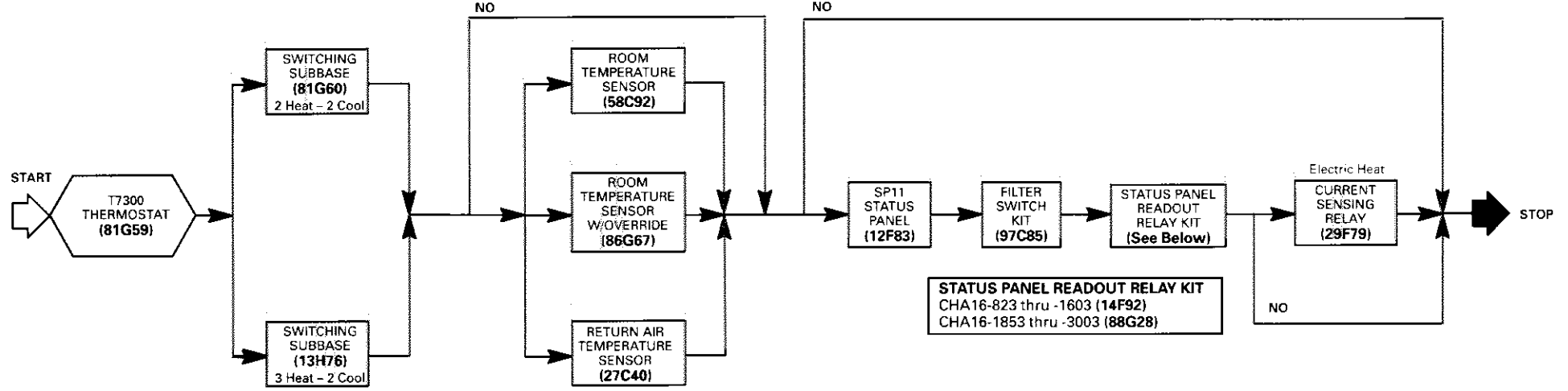
**OPTIONAL W7400 CONTROL SYSTEM**



**OPTIONAL PRO-STAT THERMOSTAT**



**OPTIONAL T7300 CONTROL SYSTEM**



**SPECIFICATIONS — CHA16-823 & CHA16-953**

Model No.		CHA16-823	CHA16-953
*ARI Standard 210/240 Ratings	Total cooling capacity (btuh)	73,000	88,000
	Total unit watts	8,110	9,780
	EER (Btuh/Watts)	9.0	9.0
*ARI Standard 270 SRN (Bels)		8.6	8.6
Refrigerant (22) Charge	Stage 1	5 lbs. 10 oz.	6 lbs. 4 oz.
	Stage 2	5 lbs. 2 oz.	5 lbs. 14 oz.
Evaporator Blower and Drive Selection	Blower wheel nominal diameter x width (in.)		12 x 12
	**Factory Installed Drives	Nominal motor horsepower	2
		Maximum usable horsepower	2.30
		Voltage & phase	208/230/460v-3ph
RPM range	740 — 1010	740 — 1010	
Evaporator Coil	Net face area (sq. ft.)		7.75
	Tube diameter (in.) & No. of rows		3/8 — 3
	Fins per inch		14
Condenser Coil	Net face area (sq. ft.)		15.67
	Tube diameter (in.) & No. of rows		3/8 — 2
	Fins per inch		20
Condenser Fan	Diameter (in.) & No. of blades		24 — 4
	Air volume (cfm)		4800
	Motor horsepower		1/2
	Motor watts		620
Condensate drain size mpt (in.)		3/4	3/4
No. & size of filters (in.)		(4) 16 x 20 x 2	(4) 16 x 20 x 2
Net weight of basic unit (lbs.) (1 Package)		765	765
Electrical characteristics		208/230v or 460v — 60 hertz — 3 phase	

\*Sound Rating Number in accordance with ARI Standard 270.

\*Rated in accordance with ARI Standard 210/240; 95° F outdoor air temperature and 80° F db/67° F wb entering evaporator air.

\*\*Using total air volume and system static pressure requirements determine from blower performance tables rpm and bhp required. Maximum usable hp of motors furnished by Lennox are shown. If motors of comparable hp are used be sure to keep within the service factor limitations outlined on the motor nameplate.

**OPTIONAL ACCESSORIES CHA16-823 & CHA16-953 (Must Be Ordered Extra)**

Unit Model No.		CHA16-823 & CHA16-953
Electric Heat	Model No.	ECH16-82/95
	Kw input range	10-15-20-30-40
	*Fuse Block	208/230 volt 460 volt
Roof Mounting Frame — (Net Weight)		RMF16-95 (107 lbs.) (32G90)
Economizer Dampers — (Net Weight) No. & size of filters (in.)		REMD16M-95 (118 lbs.) (74G22) (2) 16 x 25 x 1
Horizontal Economizer Dampers — (Net Weight) No. & size of filters (in.)		EMDH16M-95 (120 lbs.) (24H03) (2) 16 x 25 x 1
Exhaust Dampers — (Net Weight) (Net Face Area)		GED16-95/135/160 (5 lbs.) (0.43 sq. ft.) (34G80)
Differential Enthalpy Control		54G44
Horizontal Supply and Return Air Kit (LB-55756BA) — (Net Weight)		34G71 (30 lbs.)
Bottom Power Entry Kit (LB-55757CA) — (Net Weight)		34G70 (12 lbs.)
Ceiling Supply and Return Air Diffusers (Net Weight)	Step-Down	RTD11-95 (88 lbs.) (29G04)
	Flush	FD11-95 (75 lbs.) (29G05)
	Transition	SRT16-95 (29 lbs.) (33G96)
Outdoor Air Dampers — (Net Weight) No. & size of filters (in.)		OAD16-95 (41 lbs.) (35G26) (1) 16 x 20 x 1
Automatic OAD16 Damper Kit — (Net Weight)		35G21 (7 lbs.)
Low Ambient Control Kit (LB-57113BG)		15J80
Timed-Off Control (2) LB-50709BA		40G20

\*Must be ordered extra. Factory installed heaters will have fuse block installed. Fuse block must be field installed in field installed heaters.

**SPECIFICATIONS — CHA16-1353 & CHA16-1603**

Model No.		CHA16-1353	CHA16-1603	
*ARI Standard 210/240 Ratings or Standard ☆360 Ratings	Total cooling capacity (btuh)	119,000	☆142,000	
	Total unit watts	13,220	☆16,820	
	EER (Btuh/Watts)	9.0	☆8.50	
	Integrated Part Load Value	-----	☆8.8	
★ARI Standard 270 SRN (Bels)		8.8	-----	
Refrigerant (22) Charge	Stage 1	7 lbs. 4 oz.	10 lbs. 12 oz.	
	Stage 2	7 lbs. 4 oz.	7 lbs. 12 oz.	
Evaporator Blower and Drive Selection	Blower wheel nominal diameter x width (in.)		15 x 15	15 x 15
	**Factory Installed Drives	Nominal motor horsepower	2	3
		Maximum usable horsepower	2.30	3.45
		Voltage & phase	208/230/460v-3ph	208/230/460v 3ph
		RPM range	730 -- 950	730 — 950
	**Optional Factory Installed Drives	Nominal motor horsepower	3	-----
		Maximum usable horsepower	3.45	-----
		Voltage & phase	208/230/460v-3ph	-----
RPM range		730 — 950	-----	
Evaporator Coil	Net face area (sq. ft.)		9.46	11.90
	Tube diameter (in.) & No. of rows		3/8 — 4	3/8 — 3
	Fins per inch		12	12
Condenser Coil	Net face area (sq. ft.)		20.0	24.4
	Tube diameter (in.) & No. of rows		3/8 — 2	3/8 — 2
	Fins per inch		20	20
Condenser Fans	Diameter (in.) & No. of blades		(2) 20 -- 5	(2) 22 — 4
	Air volume (cfm)		6400 (total)	7700 (total)
	Motor horsepower		(2) 1/3	(2) 1/2
	Motor watts		875 (total)	1050 (total)
Condensate drain size mpt (in.)		3/4	3/4	
No. & size of filters (in.)		(4) 16 x 25 x 2	(4) 20 x 25 x 2	
Net weight of basic unit (lbs.) (1 Package)		1055	1140	
Electrical characteristics		208/230v or 460v -- 60 hertz — 3 phase		

★ Sound Rating Number in accordance with ARI Standard 270.

\* Rated in accordance with ARI Standard 210/240 or ☆360; 95° F outdoor air temperature and 80° F db/67° F wb entering evaporator air.

☆ Using total air volume and system static pressure requirements determine from blower performance tables rpm and bhp required. Maximum usable hp of motors furnished by Lennox are shown. If motors of comparable hp are used be sure to keep within the service factor limitations outlined on the motor nameplate.

**OPTIONAL ACCESSORIES — CHA16-1353 & CHA16-1603 (Must Be Ordered Extra)**

Unit Model No.		CHA16-1353	CHA16-1603	
Electric Heat	Model No.	ECH16-135/160	ECH16-135/160	
	Kw input range		15-20-30-40-50	
	*Fuse Block	208/230 volt	72G10	72G13
		460 volt	72G11	72G14
Roof Mounting Frame — (Net Weight)		RMF16-135/160 (119 lbs.) (32G91)		
Economizer Dampers — (Net Weight)		REMD16M-135 (125 lbs.)	REMD16M-160 (140 lbs.)	
No. & size of filters (in.)		(2) 16 x 25 x 1 (74G23)	(2) 20 x 25 x 1 (51G25)	
Horizontal Economizer Dampers — (Net Weight)		EMDH16M-135 (137 lbs.)	EMDH16M-160 (147 lbs.)	
No. & size of filters (in.)		(2) 16 x 25 x 1 (24H04)	(2) 20 x 25 x 1 (24H05)	
Exhaust Dampers — (Net Weight) (Net Face Area)		GED16-95/135/160 (5 lbs.) (0.43 sq. ft.) (34G80)		
Differential Enthalpy Control		54G44		
Horizontal Supply and Return Air Kit — (Net Weight)		LB-55756BB (35 lbs.) (35G42)	LB-55756BC (42 lbs.) (51G27)	
Bottom Power Entry Kit (LB-55757CA) -- (Net Weight)		34G70 (12 lbs.)		
Ceiling Supply and Return Air Diffusers (Net Weight)	Step-Down	RTD11-135 (125 lbs.) (29G05)	RTD11-185 (392 lbs.) (29G06)	
	Flush	FD11-135 (95 lbs.) (29G09)	FD11-185 (289 lbs.) (29G10)	
	Transition	SRT16-135 (38 lbs.) (97H10)	SRT16-160 (70 lbs.) (97H11)	
Outdoor Air Dampers — (Net Weight)		OAD16-135 (43 lbs.) (35G25)	OAD16-160 (45 lbs.) (51G30)	
No. & size of filters (in.)		(1) 16 x 20 x 1	(1) 16 x 20 x 1	
Automatic OAD16 Damper Kit — (Net Weight)		35G21 (7 lbs.)		
Low Ambient Control Kit		LB-57113BH (16J86)	LB-57113BJ (16J87)	
Timed-Off Control (2) LB-50709BA		40G20		

\* Must be ordered extra. Factory installed heaters will have fuse block installed. Fuse block must be field installed in field installed heaters.



**SPECIFICATIONS — CHA16-1853**

Model No.		CHA16-1853	
*ARI Standard 360 Ratings	Total cooling capacity (btuh)	178,000	
	Total unit watts	20,300	
	EER (Btuh/Watts)	8.8	
	Integrated Part Load Value	9.6	
Refrigerant (22) Charge	Stage 1	7 lbs. 9 oz.	
	Stage 2	7 lbs. 9 oz.	
	Stage 3	7 lbs. 9 oz.	
Evaporator Blower and Drive Selection	Blower wheel nominal diameter x width (in.)		18 x 18
	**Factory Installed Drives	Nominal motor horsepower	3
		Maximum usable horsepower	3.45
		Voltage & phase	208/230/460v-3ph
		RPM range	610 — 780
	**Optional Factory Installed Drives	Nominal motor horsepower	5
		Maximum usable horsepower	5.75
		Voltage & phase	208/230/460v-3ph
RPM range		770 — 980	
Evaporator Coil	Net face area (sq. ft.)		16.0
	Tube diameter (in.) & No. of rows		3/8 — 3
	Fins per inch		13
Condenser Coil	Net face area (sq. ft.)		30.5
	Tube diameter (in.) & No. of rows		3/8 — 2
	Fins per inch		20
Condenser Fans	Diameter (in.) & No. of blades		(2) 26 — 4
	Air volume (cfm)		12,000 (total)
	Motor horsepower		(2) 1
	Motor watts		2200 (total)
Condensate drain size mpt (in.)		1	
No. & size of filters (in.)		(4) 24 x 24 x 2	
Net weight of basic unit (lbs.) (1 Package)		1581	
Electrical characteristics		208/230v to 460v — 60 hertz — 3 phase	

\* Rated in accordance with ARI Standard 360; 95° F outdoor air temperature and 80° F db/67° F wb entering evaporator air; minimum external duct static pressure.  
 \*\*Using total air volume and system static pressure requirements determine from blower performance tables rpm and bhp required. Maximum usable hp of motors furnished by Lennox are shown. If motors of comparable hp are used be sure to keep within the service factor limitations outlined on the motor nameplate.

**OPTIONAL ACCESSORIES — CHA16-1853 (Must Be Ordered Extra)**

Unit Model No.		CHA16-1853		
Electric Heat	Model No.		ECH16-185/275	
	Kw input range		15-30-45-60-75	
	*Fuse Block	208/230 volt (with 3 hp motor)		29H26
		208/230 volt (with 5 hp motor)		29H27
460 volt		29H31		
Roof Mounting Frame — (Net Weight)		RMF16-185 (127 lbs.) (12H05)		
Economizer Dampers with Gravity Exhaust— (Net Weight)		REMD16M-185 (160 lbs.) (40H14)		
No. & size of filters (in.)		(2) 25 x 25 x 1		
Differential Enthalpy Control		54G44		
Power Exhaust Fans (Down-Flo Only)	Model No. (Net Weight)	208/230 volt	PED16-185 (60 lbs.) (12H16)	
		460 volt	PED16-185 (60 lbs.) (12H17)	
	Diameter (in.) & No. of Blades		(2) 16 — 5	
	Total air volume (cfm)		4200	
	Motor Horsepower		(2) 1/4	
	Watts Input (total)		500	
Horizontal Supply and Return Air Kit (LB-55756BD) — (Net Weight)		12H04 (52 lbs.)		
Ceiling Supply and Return Air Diffusers (Net Weight)	Step-Down		RTD11-185 (392 lbs.) (29G06)	
	Flush		FD11-185 (289 lbs.) (29G10)	
	Transition		SRT16-185 (75 lbs.) (97H12)	
Outdoor Air Dampers — (Net Weight)		OAD16-185 (120 lbs.) (12H03)		
No. & size of filters (in.)		(1) 25 x 27 x 1		
Automatic OAD16 Damper Kit — (Net Weight)		35G21 (7 lbs.)		
Low Ambient Control Kit (LB-57113BK)		16J88		

\*Must be ordered extra. Factory installed heaters will have fuse block installed. Fuse block must be field installed in field installed heaters.

**SPECIFICATIONS — CHA16-2553, -2753 & -3003**

Model No.		CHA16-2553	CHA16-2753	CHA16-3003	
*ARI Standard 360 Ratings	Total Cooling Capacity (btuh)	●210,000	†240,000	◆284,000	
	Total Unit Watts	21,400	26,700	◆33,400	
	EER (Btuh/Watts)	●9.8	†9.0	◆8.5	
	Integrated Part Load Value	10.4	9.7	◆9.1	
Refrigerant (22) Charge	Stage 1	18 lbs. 8 oz.	19 lbs. 0 oz.	20 lbs. 0 oz.	
	Stage 2	18 lbs. 8 oz.	19 lbs. 0 oz.	20 lbs. 0 oz.	
Evaporator Blower and Drive Selection	Blower wheel nominal diameter x width (in.)		20 x 18		
	Factory Installed **Drives	Nominal motor horsepower	5		7.5
		Maximum usable horsepower	5.75		8.6
		Voltage & phase	208/230v-3ph or 460v-3ph		
		RPM range	660 — 840		610 — 780
	Optional Factory Installed *Drives	Nominal motor horsepower	7.5		10
		Maximum usable horsepower	8.60		11.5
		Voltage & phase	208/230v-3ph or 460v-3ph		
RPM range		750 — 905		770 — 980	
Evaporator Coil	Net face area (sq. ft.)	21.0			
	Tube diameter (in.) & No. of rows	3/8 — 3			
	Fins per inch	13			
Condenser Coil	Net face area (sq. ft.)	48.5		48.5	
	Tube diameter (in.) & No. of rows	3/8 — 2		3/8 — 3	
	Fins per inch	20		16	
Condenser Fans	Diameter (in.) & No. of blades	(2) 26 — 4			
	Air volume (cfm)	14,000 (Total)		14,500 (Total)	
	Motor horsepower	(2) 1			
	Motor watts	2100 (Total)		2200 (Total)	
Condensate drain size mpt (in.)		(2) 1			
No. & size of filters (in.)		(6) 20 x 25 x 2			
Net weight of basic unit (lbs.) (1 Package)		2040	2040	2340	
Electrical characteristics		208/230v or 460v — 60 hertz — 3 phase			

◆ Rating test conditions are those included in ARI Standard 360.

\* Rated in accordance with ARI Standard 360; 95 °F outdoor air temperature and 80 °F db/67 °F wb entering evaporator air; minimum external duct static pressure.

\*\* Using total air volume and system static pressure requirements determine from blower performance tables rpm and bhp required. Maximum usable hp of motors furnished by Lennox are shown. If motors of comparable hp are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

●208,000 Btuh and 9.6 EER at 208 volts.

†238,000 Btuh and 8.9 EER at 208 volts.

**OPTIONAL ACCESSORIES — CHA16-2553, -2753 & -3003 (Must Be Ordered Extra)**

Unit Model No.		CHA16-2553, CHA16-2753 & CHA16-3003	
Electric Heat	Model No.	ECH16-185/275 & ECH16-275/300	
	Kw input range	30-45-60-75 (185/275) & -90 (275/300)	
	*Fuse Block	208/230 volt 460 volt	
Roof Mounting Frame — (Net Weight)		RMF16-300 (180 lbs.) (41H04)	
Economizer Dampers with Gravity Exhaust — (Net Weight)		REMD16M-300 (210 lbs.) (44H47)	
No. & size of filters (in.)		(3) 20 x 25 x 1	
Differential Enthalpy Control		54G44	
Power Exhaust Fans (Down-Flo Only)	Model No. (Net Weight)	208/230v	PED16-300 (91 lbs.) (44H79)
		460v	PED16-300 (91 lbs.) (44H80)
	Diameter (in.) & No. of Blades	(3) 16 — 5	
	Total air volume (cfm)	6300	
	Motor Horsepower	(3) 1/4	
	Watts Input (total)	750	
Horizontal Supply and Return Air Kit (LB-55756BE) — (Net Weight)		41H23 (60 lbs.)	
Ceiling Supply and Return Air Diffusers (Net Weight)	Step-Down	RTD11-275 (403 lbs.) (29G07)	
	Flush	FD11-275 (363 lbs.) (29G11)	
	Transition	SRT16-300 (120 lbs.) (97H13)	
Outdoor Air Dampers — (Net Weight) No. & size of filters (in.)		OAD16-300 (84 lbs.)(1) 26 x 31 x 1 (40H47)	
Automatic OAD16 Damper Kit — (Net Weight)		35G21 (7 lbs.)	
Low Ambient Control Kit (LB-57113BL)		16J89	

\*Must be ordered extra. Factory installed heaters will have fuse block installed. Fuse block must be field installed in field installed heaters.

**ELECTRICAL DATA — CHA16-823, -953, -1353 & -1603**

Model No.		CHA16-823		CHA16-953		CHA16-1353				CHA16-1603	
Line voltage data — 60 hz — 3 phase		208/230v	460v	208/230v	460v	208/230v	460v		208/230v	460v	
Compressors (2)	Rated load amps — each (total)	11.4/11.4 (22.8)	5.3/5.3 (10.6)	14.8/14.1 (28.9)	7.7/7.1 (14.8)	17.3/17.3 (34.6)	9.6/9.6 (19.2)		27.1/17.9 (45.0)	14.2/10.0 (24.2)	
	Locked rotor amps — each (total)	66/66 (132.0)	35/35 (70.0)	130/130 (260.0)	64/64 (128.0)	150/150 (300.0)	73/73 (146.0)		183/150 (333.0)	91/73 (164.0)	
Condenser Fan Motor(s)	Full load amps (total)	2.6	1.6	3.7	1.9	2.1/2.1 (4.2)	1.2/1.2 (2.4)		3.0/3.0 (6.0)	1.5/1.5 (3.0)	
	Locked rotor amps (total)	5.9	3.3	7.3	3.7	5.1/5.1 (10.2)	2.7/2.7 (5.4)		6.2/6.2 (12.4)	3.4/3.4 (6.8)	
Evaporator Blower Motor	Horsepower	2	2	2	2	2	3	2	3	3	3
	Full load amps	7.5	3.4	7.5	3.4	7.5	10.6	3.4	4.8	10.6	4.8
	Locked rotor amps	41.0	20.4	41.0	20.4	41.0	58.0	20.4	26.8	58.0	26.8
**Recommended max. fuse size (amps)		45	20	50	25	60	60	35	35	90	45
*Minimum Circuit Ampacity		36.0	17.0	44.0	23.0	51.0	54.0	28.0	29.0	69.0	36.0
Unit power factor		.88	.88	.88	.88	.88	.88	.88	.88	.88	.88

\*Refer to National Electrical Code manual to determine wire, fuse and disconnect size requirements.  
 \*\*Where current does not exceed 100 amps, HACR type circuit breaker may be used in place of fuse.  
 NOTE — Extremes of operating range are plus and minus 10% of line voltage.

**ELECTRICAL DATA — CHA16-1853, -2553 & -2753**

Model No.		CHA16-1853				CHA16-2553				CHA16-2753				CHA16-3003			
Line voltage data — 60 hz — 3 phase		208/230v		460v		208/230v		460v		208/230v		460v		208/230v		460v	
Compressors	Rated load amps	each	(3) 19.2	(3) 9.6	(2) 30.9	(2) 16.8	(2) 37.1	(2) 17.8	(2) 43.0	(2) 21.0							
		total	57.6	28.8	61.8	33.6	74.2	35.6	86.0	42.0							
	Locked rotor amps	each	(3) 124	(3) 62	(2) 205.0	(2) 104.0	(2) 239.0	(2) 120.0	(2) 269.0	(2) 135.0							
		total	372.0	186.0	410.0	208.0	478.0	240.0	538.0	270.0							
Condenser Fan Motors (2)	Full load amps (total)	9.6		4.8		9.6		4.8		9.6		4.8		9.6		4.8	
	Locked rotor amps (total)	24.0		12.0		46.0		23.0		46.0		23.0		46.0		23.0	
Evaporator Blower Motor	Horsepower	3	5	3	5	5	7-1/2	5	7-1/2	5	7-1/2	5	7-1/2	7-1/2	10	7-1/2	10
	Full load amps	10.6	16.7	4.8	7.6	16.7	24.2	7.6	11.0	16.7	24.2	7.6	11.0	24.2	30.8	11.0	14.0
	Locked rotor amps	58.0	91.0	26.8	45.6	105.0	152.0	45.6	66.0	105.0	152.0	45.6	66.0	152.0	193.0	66.0	84.0
Optional Exhaust Fan Motors	(No.) Horsepower	(2) — 1/4		(2) — 1/4		(3) — 1/4		(3) — 1/4		(3) — 1/4		(3) — 1/4		(3) — 1/4		(3) — 1/4	
	Full load amps (total)	2.8		1.4		4.2		2.2		4.2		2.2		4.2		2.2	
	Locked rotor amps (total)	6.5		3.3		8.7		3.9		8.7		3.9		8.7		3.9	
**Recommended maximum fuse size (amps)	Less Exhaust Fans	100	110	50	50	110	125	60	70	150	150	70	70	175	175	80	80
	With Exhaust Fans	100	110	50	50	125	125	70	70	150	150	70	70	175	175	80	80
Unit power factor	Less Exhaust Fans	.84	.84	.84	.84	.88	.88	.88	.88	.88	.88	.88	.88	.87	.87	.87	.87
	With Exhaust Fans	.84	.84	.84	.84	.88	.88	.88	.88	.88	.88	.88	.88	.87	.87	.87	.87
*Minimum Circuit Ampacity	Less Exhaust Fans	82.0	92.0	43.0	48.0	101.0	108.0	53.0	57.0	114.0	122.0	55.0	58.0	131.0	138.0	64.0	67.0
	With Exhaust Fans	85.0	95.0	45.0	50.0	110.0	117.0	56.0	59.0	118.0	126.0	57.0	61.0	135.0	142.0	66.0	69.0

\*Refer to National Electrical Code manual to determine wire, fuse and disconnect size requirements.  
 \*\*Where current does not exceed 100 amps, HACR type circuit breaker may be used in place of fuse.  
 NOTE — Extremes of operating range are plus and minus 10% of line voltage.

**OPTIONAL ELECTRIC HEAT DATA (Heater Fuse Block Must Be Ordered Extra)**

**CHA16-823 MODELS**

Electric Heat Model No. & Net Weight	No. of Steps	Volts Input	kw Input	Btuh Output	*Total Unit & Electric Heat Minimum Circuit Ampacity
ECH16-82/95-10 208/230v (61H68) 460v (61H73) (38 lbs.)	1	208	7.5	25,600	36.0
		220	8.4	28,700	39.0
		230	9.2	31,400	
		240	10.0	34,100	
	1	440	8.4	28,700	
		460	9.2	31,400	
480		10.0	34,100		
ECH16-82/95-15 208/230v (61H69) 460v (61H74) (38 lbs.)	1	208	11.3	38,600	49.0
		220	12.6	43,000	54.0
		230	13.5	46,100	
		240	15.0	51,200	
	1	440	12.6	43,000	
		460	13.8	46,100	
480		15.0	51,200		
ECH16-82/95-20 208/230v (61H70) 460v (61H75) (42 lbs.)	**2	208	15.0	51,200	62.0
		220	16.8	57,300	69.0
		230	18.4	62,800	
		240	20.0	68,300	
	1	440	16.8	57,300	
		460	18.4	62,800	
480		20.0	68,300		
ECH16-82/95-30 208/230v (61H71) 460v (61H76) (42 lbs.)	**2	208	22.5	76,800	88.0
		220	25.2	86,000	99.0
		230	27.5	93,900	
		240	30.0	102,400	
	1	440	25.2	86,000	
		460	27.6	93,900	
480		30.0	102,400		
ECH16-82/95-40 208/230v (61H72) 460v (61H77) (53 lbs.)	**3	208	30.0	102,400	114.0
		220	33.6	114,700	129.0
		230	36.8	125,600	
		240	40.0	136,500	
	**2	440	33.6	114,700	
		460	36.8	125,600	
480		40.0	136,500		

**CHA16-953 MODELS**

Electric Heat Model No. & Net Weight	No. of Steps	Volts Input	kw Input	Btuh Output	*Total Unit & Electric Heat Minimum Circuit Ampacity
ECH16-82/95-10 208/230v (61H68) 460v (61H73) (38 lbs.)	1	208	7.5	25,600	44.0
		220	8.4	28,700	44.0
		230	9.2	31,400	
		240	10.0	34,100	
	1	440	8.4	28,700	
		460	9.2	31,400	
480		10.0	34,100		
ECH16-82/95-15 208/230v (61H69) 460v (61H74) (38 lbs.)	1	208	11.3	38,600	49.0
		220	12.6	43,000	54.0
		230	13.5	46,100	
		240	15.0	51,200	
	1	440	12.6	43,000	
		460	13.8	46,100	
480		15.0	51,200		
ECH16-82/95-20 208/230v (61H70) 460v (61H75) (42 lbs.)	**2	208	15.0	51,200	62.0
		220	16.8	57,300	69.0
		230	18.4	62,800	
		240	20.0	68,300	
	1	440	16.8	57,300	
		460	18.4	62,800	
480		20.0	68,300		
ECH16-82/95-30 208/230v (61H71) 460v (61H76) (42 lbs.)	**2	208	22.5	76,800	88.0
		220	25.2	86,000	99.0
		230	27.5	93,900	
		240	30.0	102,400	
	1	440	25.2	86,000	
		460	27.6	93,900	
480		30.0	102,400		
ECH16-82/95-40 208/230v (61H72) 460v (61H77) (53 lbs.)	**3	208	30.0	102,400	114.0
		220	33.6	114,700	129.0
		230	36.8	125,600	
		240	40.0	136,500	
	**2	440	33.6	114,700	
		460	36.8	125,600	
480		40.0	136,500		

\*Refer to National Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

\*\*May be used with two stage control.

NOTE — Fuse block must be ordered extra. Factory installed heaters will have the fuse block factory installed. Fuse block must be installed in field installed heaters. See Optional Accessories tables.

\*Refer to National Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

\*\*May be used with two stage control.

NOTE — Fuse block must be ordered extra. Factory installed heaters will have the fuse block factory installed. Fuse block must be installed in field installed heaters. See Optional Accessories tables.

**OPTIONAL ELECTRIC HEAT DATA (Heater Fuse Block Must Be Ordered Extra)**

**CHA16-1353 MODELS**

Electric Heat Model No. & Net Weight	No. of Steps	Volts Input	kw Input	Btuh Output	*Total Unit & Electric Heat Minimum Circuit Ampacity	
					2 hp	3 hp
ECH16-135/160-15 208/230v (72G21) 460v (72G26) (38 lbs.)	1	208	11.3	38,600	51.0	54.0
		220	12.6	43,000	55.0	58.0
		230	13.5	46,100		
		240	15.0	51,200		
	1	440	12.6	43,000	28.0	29.0
		460	13.8	46,100		
480		15.0	51,200			
ECH16-135/160-20 208/230v (72G22) 460v (72G27) (42 lbs.)	**2	208	15.0	51,200	62.0	66.0
		220	16.8	57,300	69.0	73.0
		230	18.4	62,800		
		240	20.0	68,300		
	1	440	16.8	57,300	35.0	37.0
		460	18.4	62,800		
		480	20.0	68,300		
		440	16.8	57,300		
220	25.2	86,000				
230	27.5	93,900				
240	30.0	102,400				
1	440	25.2	86,000	50.0	52.0	
	460	27.6	93,900			
	480	30.0	102,400			
	208	30.0	102,400			114.0
ECH16-135/160-40 208/230v (72G24) 460v (72G29) (53 lbs.)	**3	220	33.6	114,700	129.0	133.0
		230	36.8	125,600		
		240	40.0	136,500		
		440	33.6	114,700		
	460	36.8	125,600			
	480	40.0	136,500			
	208	37.5	128,000	140.0	144.0	
	ECH16-135/160-50 208/230v (72G25) 460v (72G30) (58 lbs.)	**4	220	42.0	143,300	159.0
230			46.0	157,000		
240			50.0	170,600		
440			43.8	149,500	80.0	
460		46.0	157,000			
480		50.0	170,600			
208		37.5	128,000	140.0		144.0
ECH16-135/160-50 208/230v (72G25) 460v (72G30) (58 lbs.)		**4	220	42.0	143,300	159.0
	230		46.0	157,000		
	240		50.0	170,600		
	440		43.8	149,500	80.0	
	460	46.0	157,000			
	480	50.0	170,600			
	208	37.5	128,000	140.0		144.0

**CHA16-1603 MODELS**

Electric Heat Model No. & Net Weight	No. of Steps	Volts Input	kw Input	Btuh Output	*Total Unit & Electric Heat Minimum Circuit Ampacity	
					2 hp	3 hp
ECH16-135/160-15 208/230v (72G21) 460v (72G26) (38 lbs.)	1	208	11.3	38,600	51.0	54.0
		220	12.6	43,000	55.0	58.0
		230	13.5	46,100		
		240	15.0	51,200		
	1	440	12.6	43,000	28.0	29.0
		460	13.8	46,100		
480		15.0	51,200			
ECH16-135/160-20 208/230v (72G22) 460v (72G27) (42 lbs.)	**2	208	15.0	51,200	62.0	66.0
		220	16.8	57,300	69.0	73.0
		230	18.4	62,800		
		240	20.0	68,300		
	1	440	16.8	57,300	35.0	37.0
		460	18.4	62,800		
		480	20.0	68,300		
		208	22.5	76,800		
ECH16-135/160-30 208/230v (72G23) 460v (72G28) (42 lbs.)	**2	220	25.2	86,000	99.0	103.0
		230	27.5	93,900		
		240	30.0	102,400		
		440	25.2	86,000		
	460	27.6	93,900			
	480	30.0	102,400			
	208	22.5	76,800	88.0	92.0	
	ECH16-135/160-40 208/230v (72G24) 460v (72G29) (53 lbs.)	**3	220	33.6	114,700	129.0
230			36.8	125,600		
240			40.0	136,500		
440			33.6	114,700	65.0	
460		36.8	125,600			
480		40.0	136,500			
208		22.5	76,800	88.0		92.0
ECH16-135/160-50 208/230v (72G25) 460v (72G30) (58 lbs.)		**3	220	33.6	114,700	129.0
	230		36.8	125,600		
	240		40.0	136,500		
	440		33.6	114,700	65.0	
	460	36.8	125,600			
	480	40.0	136,500			
	208	22.5	76,800	88.0		92.0
	ECH16-135/160-50 208/230v (72G25) 460v (72G30) (58 lbs.)	**4	220	42.0	143,300	159.0
230			46.0	157,000		
240			50.0	170,600		
440			43.8	149,500	80.0	
460		46.0	157,000			
480		50.0	170,600			
208		22.5	76,800	88.0		92.0

\*Refer to National Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

\*\*May be used with two stage control.

NOTE - Fuse block must be ordered extra. Factory installed heaters will have the fuse block factory installed. Fuse block must be installed in field installed heaters. See Optional Accessories tables.

\*Refer to National Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

\*\*May be used with two stage control.

NOTE - Fuse block must be ordered extra. Factory installed heaters will have the fuse block factory installed. Fuse block must be installed in field installed heaters. See Optional Accessories tables.

**OPTIONAL ELECTRIC HEAT DATA (Heater Fuse Block Must Be Ordered Extra)**

**CHA16-1853 MODELS**

Electric Heat Model No. & Net Weight	No. of Steps	Volts Input	kw Input	Btuh Output	*Total Unit & Electric Heat Minimum Circuit Ampacity	
					3 hp	5 hp
ECH16-185-15 208/230v (24H27) 460v (24H32) (47 lbs.)	1	208	11.3	38,600	86.0	92.0
		220	12.6	43,000		
		230	13.5	46,100	86.0	92.0
		240	15.0	51,200		
	1	440	12.6	43,000		
		460	13.8	46,100	44.0	47.0
480		15.0	51,200			
ECH16-185/300-30 208/230v (24H28) 460v (24H33) (51 lbs.)	**2	208	22.5	76,800	92.0	99.0
		220	25.2	86,000		
		230	27.5	93,900	103.0	110.0
		240	30.0	120,400		
	1	440	25.2	86,000		
		460	27.5	93,900	52.0	55.0
480		30.0	102,400			
ECH16-185/300-45 208/230v (24H29) 460v (24H34) (62 lbs.)	**3	208	33.8	115,300	131.0	139.0
		220	37.8	129,000		
		230	41.3	141,000	148.0	155.0
		240	45.0	153,600		
	**2	440	37.8	129,000		
		460	41.3	141,000	74.0	78.0
480		45.0	153,600			
ECH16-185/300-60 208/230v (24H30) 460v (24H35) (67 lbs.)	**4	208	45.0	153,600	170.0	177.0
		220	50.4	172,000		
		230	55.1	188,000	193.0	200.0
		240	60.0	204,800		
	**2	440	50.4	172,000		
		460	55.1	188,000	97.0	100.0
480		60.0	204,800			
ECH16-185/300-75 460v (24H36) (88 lbs.)	**3	440	63.0	215,000		
		460	68.9	235,100	119.0	123.0
		480	75.0	255,900		

**CHA16-2553 MODELS**

Electric Heat Model No. & Net Weight	No. of Steps	Volts Input	kw Input	Btuh Output	*Total Unit & Electric Heat Minimum Circuit Ampacity	
					5 hp	7.5 hp
ECH16-185/300-30 208/230v (24H28) 460v (24H33) (51 lbs.)	**2	208	22.5	76,800	110.0	117.0
		220	25.2	86,000		
		230	27.5	93,900	110.0	118.0
		240	30.0	102,400		
	1	440	25.2	86,000		
		460	27.5	93,900	55.0	59.0
480		30.0	104,400			
ECH16-185/300-45 208/230v (24H29) 460v (24H34) (62 lbs.)	**3	208	33.8	115,300	139.0	148.0
		220	37.8	129,000		
		230	41.3	141,000	155.0	163.0
		240	45.0	153,600		
	**2	440	37.8	129,000		
		460	41.3	141,000	78.0	82.0
480		45.0	153,600			
ECH16-185/300-60 208/230v (24H30) 460v (24H35) (67 lbs.)	**4	208	45.0	153,600	178.0	187.0
		220	50.4	172,000		
		230	55.1	188,100	200.0	208.0
		240	60.0	204,800		
	**2	440	50.4	172,000		
		460	55.1	188,100	100.0	104.0
480		60.0	204,800			
ECH16-275/300-75 208/230v (24H31) ECH16-185/300-75 460v (24H36) (88 lbs.)	**5	208	56.3	192,200	217.0	226.0
		220	63.0	215,000		
		230	68.9	235,000	245.0	253.0
		240	75.0	255,900		
	**3	440	63.0	215,000		
		460	68.9	235,000	123.0	127.0
480		75.0	255,900			
ECH16-275/300-90 460v (24H37) (92 lbs.)	**3	440	75.6	258,000		
		460	82.7	282,000	145.0	150.0
		480	90.0	307,100		

\*Refer to National Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

\*\*May be used with two stage control.

NOTE - Fuse block must be ordered extra. Factory installed heaters will have the fuse block factory installed. Fuse block must be installed in field installed heaters. See Optional Accessories tables.

\*Refer to National Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

\*\*May be used with two stage control.

NOTE - Fuse block must be ordered extra. Factory installed heaters will have the fuse block factory installed. Fuse block must be installed in field installed heaters. See Optional Accessories tables.

**OPTIONAL ELECTRIC HEAT DATA (Heater Fuse Block Must Be Ordered Extra)**

**CHA16-2753 MODELS**

**CHA16-3003 MODELS**

Electric Heat Model No. & Net Weight	No. of Steps	Volts Input	kw Input	Btuh Output	*Total Unit & Electric Heat Minimum Circuit Ampacity	
					5 hp	7.5 hp
ECH16-185/300-30 208/230v (24H28) 460v (24H33) (51 lbs.)	**2	208	22.5	76,800	118.0	126.0
		220	25.2	86,000	117.0	124.0
		230	27.5	93,900		
		240	30.0	102,400		
	1	440	25.2	86,000	57.0	61.0
		460	27.5	93,900		
480		30.0	104,400			
ECH16-185/300-45 208/230v (24H29) 460v (24H34) (62 lbs.)	**3	208	33.8	115,300	139.0	148.0
		220	37.8	129,000	155.0	163.0
		230	41.3	141,000		
		240	45.0	153,600		
	**2	440	37.8	129,000	78.0	82.0
		460	41.3	141,000		
480		45.0	153,600			
ECH16-185/300-60 208/230v (24H30) 460v (24H35) (67 lbs.)	**4	208	45.0	153,600	178.0	187.0
		220	50.4	172,000	200.0	208.0
		230	55.1	188,100		
		240	60.0	204,800		
	**2	440	50.4	172,000	100.0	104.0
		460	55.1	188,100		
480		60.0	204,800			
ECH16-275/300-75 208/230v (24H31) ECH16-185/300-75 460v (24H36) (88 lbs.)	**5	208	56.3	192,200	217.0	226.0
		220	63.0	215,000	245.0	253.0
		230	68.9	235,000		
		240	75.0	255,900		
	**3	440	63.0	215,000	123.0	127.0
		460	68.9	235,000		
480		75.0	255,900			
ECH16-275/300-90 460v (24H37) (92 lbs.)	**3	440	75.6	258,000	145.0	150.0
		460	82.7	282,000		
		480	90.0	307,100		

Electric Heat Model No. & Net Weight	No. of Steps	Volts Input	kw Input	Btuh Output	*Total Unit & Electric Heat Minimum Circuit Ampacity	
					7.5 hp	10 hp
ECH16-185/300-30 208/230v (24H28) 460v (24H33) (51 lbs.)	**2	208	22.5	76,800	143.0	150.0
		220	25.2	86,000	141.0	147.0
		230	27.5	93,900		
		240	30.0	102,400		
	1	440	25.2	86,000	68.0	71.0
		460	27.5	93,900		
480		30.0	104,400			
ECH16-185/300-45 208/230v (24H29) 460v (24H34) (62 lbs.)	**3	208	33.8	115,300	148.0	156.0
		220	37.8	129,000	163.0	171.0
		230	41.3	141,000		
		240	45.0	153,600		
	**2	440	37.8	129,000	82.0	86.0
		460	41.3	141,000		
480		45.0	153,600			
ECH16-185/300-60 208/230v (24H30) 460v (24H35) (67 lbs.)	**4	208	45.0	153,600	187.0	195.0
		220	50.4	172,000	208.0	216.0
		230	55.1	188,100		
		240	60.0	204,800		
	**2	440	50.4	172,000	104.0	108.0
		460	55.1	188,100		
480		60.0	204,800			
ECH16-275/300-75 208/230v (24H31) ECH16-185/300-75 460v (24H36) (88 lbs.)	**5	208	56.3	192,200	226.0	234.0
		220	63.0	215,000	253.0	261.0
		230	68.9	235,000		
		240	75.0	255,900		
	**3	440	63.0	215,000	127.0	131.0
		460	68.9	235,000		
480		75.0	255,900			
ECH16-275/300-90 460v (24H37) (92 lbs.)	**3	440	75.6	258,000	150.0	153.0
		460	82.7	282,000		
		480	90.0	307,100		

\*Refer to National Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167° F.

\*\* May be used with two stage control.

NOTE — Fuse block must be ordered extra. Factory installed heaters will have the fuse block factory installed. Fuse block must be installed in field installed heaters. See Optional Accessories tables.

\*Refer to National Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167° F.

\*\* May be used with two stage control.

NOTE — Fuse block must be ordered extra. Factory installed heaters will have the fuse block factory installed. Fuse block must be installed in field installed heaters. See Optional Accessories tables.

**W973 CONTROL SYSTEM**

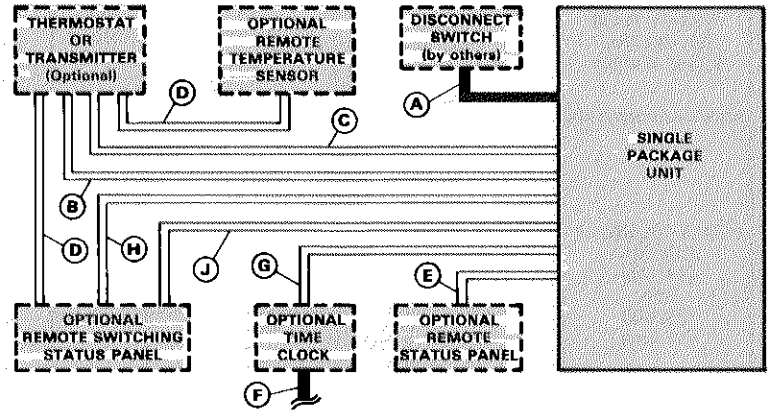
- A - Three wire power (See Electrical Data Table)
- B - Seven wire low voltage - DC only
- Five wire low voltage - DC only - with SSP11 Switching Status Panel
- Seven wire low voltage - DC only - with switching subbase
- C - Two wire low voltage - AC only - with switching subbase
- D - Two wire low voltage - DC only
- E - Nine wire low voltage - AC only
- F - Two wire low voltage - AC only
- G - Two wire low voltage - AC only
- H - Thirteen wire low voltage - AC only
- J - Two wire low voltage - DC only

AC - Alternating current  
DC - Direct current

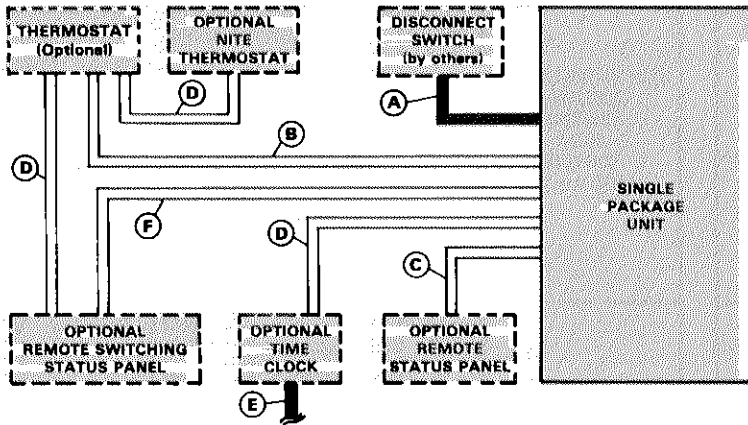
NOTE - Run separate harnesses for AC and DC.  
AC voltage interferes with DC signals.

- Field wiring not furnished -

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



**ELECTRO-MECHANICAL THERMOSTAT CONTROL SYSTEM**



A - Three wire power (See Electrical Data Table)

B - Six wire low voltage

- Five wire low voltage - with SSP11 Switching Status Panel

C - Nine wire low voltage

D - Two wire low voltage

E - Two wire low voltage

F - Sixteen wire low voltage

- Field wiring not furnished -

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

**W7400 CONTROL SYSTEM**

A - Three wire power (See Electrical Data Table)

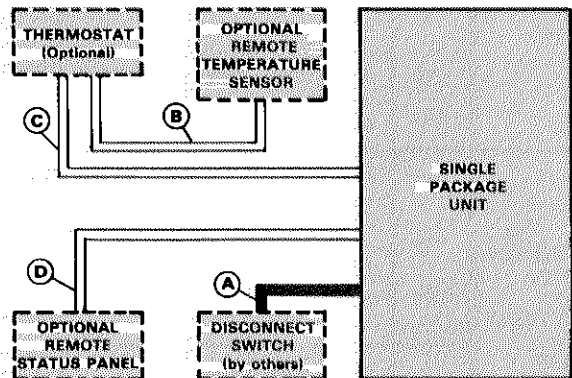
B - Two wire low voltage

C - Four Wire low voltage

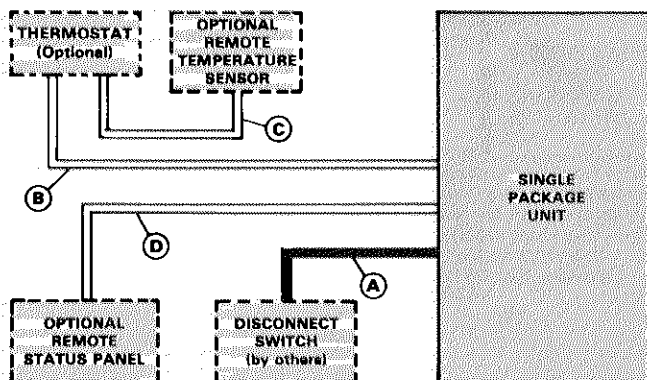
D - Nine wire low voltage

- Field wiring not furnished -

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



**PRO-STAT THERMOSTAT OR T7300 CONTROL SYSTEM**



A - Three wire power (See Electrical Data Table)

B - Seven wire low voltage (Pro-Stat)

- Nine wire low voltage (T7300)

C - Two wire low voltage

D - Nine wire low voltage

- Field wiring not furnished -

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



**RATINGS**

NOTE To determine Sensible Capacity, Leaving Wet and Dry Bulb temperatures not shown in the tables, see Miscellaneous Engineering Data section, page 9.

**CHA16-823 COOLING CAPACITY (With One Compressor Only Operating)**

Enter. Wet Bulb (°F)	Total Air Vol. (cfm)	Outdoor Air Temperature Entering Condenser Coil (°F)																			
		65			75			85			95										
		Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)	Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)	Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)	Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)								
														Dry Bulb (°F)							
63	2200	45,100	2710	.60	.75	.91	42,600	2850	.61	.77	.94	40,200	3020	.63	.81	.98	37,800	3210	.66	.84	1.00
	2600	47,100	2780	.63	.80	.97	44,600	2920	.65	.83	1.00	41,800	3090	.67	.87	1.00	39,100	3270	.70	.91	1.00
	3000	48,800	2830	.66	.85	1.00	45,700	2960	.68	.89	1.00	43,100	3130	.71	.93	1.00	40,200	3320	.75	.98	1.00
67	2200	47,800	2800	.48	.58	.70	45,400	2950	.48	.59	.72	42,800	3120	.49	.60	.75	40,200	3320	.50	.62	.79
	2600	49,800	2870	.49	.60	.75	47,200	3010	.50	.62	.78	44,400	3190	.51	.64	.82	41,700	3390	.52	.67	.86
	3000	51,400	2920	.51	.63	.80	48,600	3060	.52	.65	.84	45,800	3240	.53	.68	.88	42,800	3440	.54	.71	.93
71	2200	50,400	2890	.37	.46	.55	47,900	3040	.37	.47	.57	45,300	3220	.37	.48	.58	42,600	3420	.37	.49	.60
	2600	52,400	2950	.37	.48	.58	49,700	3100	.37	.49	.59	47,000	3280	.38	.50	.61	44,100	3490	.38	.51	.63
	3000	53,900	3000	.38	.49	.60	51,100	3150	.38	.50	.62	48,200	3330	.38	.51	.65	45,200	3530	.39	.53	.68

NOTE — All values are gross capacities and do not include evaporator coil blower motor heat deduction.

**CHA16-823 TOTAL COOLING CAPACITY (With Both Compressors Operating)**

Enter. Wet Bulb (°F)	Total Air Vol. (cfm)	Outdoor Air Temperature Entering Condenser Coil (°F)																			
		85			95			105			115										
		Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)	Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)	Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)	Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)								
														Dry Bulb (°F)							
63	2200	73,600	6230	.71	.85	.98	69,200	6640	.73	.88	1.00	63,900	7110	.75	.92	1.00	59,200	7670	.79	.96	1.00
	2600	76,600	6370	.74	.90	1.00	71,700	6760	.77	.94	1.00	66,200	7240	.80	.98	1.00	61,500	7810	.84	1.00	1.00
	3000	78,900	6460	.78	.95	1.00	73,700	6860	.80	.98	1.00	68,700	7360	.84	1.00	1.00	64,200	7960	.88	1.00	1.00
67	2200	78,400	6450	.56	.68	.81	73,700	6870	.57	.70	.84	68,700	7350	.58	.72	.87	63,500	7920	.60	.75	.92
	2600	81,400	6580	.58	.72	.86	76,400	7000	.59	.74	.89	71,100	7480	.61	.77	.93	65,600	8050	.63	.80	.98
	3000	84,000	6680	.60	.75	.91	78,400	7100	.61	.78	.95	73,000	7580	.63	.81	.98	67,500	8140	.65	.85	1.00
71	2200	83,000	6640	.42	.54	.66	78,000	7070	.42	.55	.67	72,900	7570	.43	.57	.70	67,500	8160	.44	.58	.72
	2600	86,000	6770	.43	.56	.69	80,800	7200	.43	.57	.71	75,300	7700	.44	.59	.74	69,700	8280	.45	.61	.77
	3000	88,300	6870	.43	.58	.72	82,800	7300	.44	.60	.75	77,200	7790	.45	.62	.78	71,400	8370	.46	.64	.82

NOTE — All values are gross capacities and do not include evaporator coil blower motor heat deduction.

**CHA16-953 COOLING CAPACITY (With One Compressor Only Operating)**

Enter. Wet Bulb (°F)	Total Air Vol. (cfm)	Outdoor Air Temperature Entering Condenser Coil (°F)																			
		65			75			85			95										
		Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)	Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)	Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)	Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)								
														Dry Bulb (°F)							
63	2500	56,100	2940	.68	.79	.90	54,100	3230	.69	.80	.92	51,900	3530	.70	.82	.94	49,800	3830	.71	.84	.96
	3000	58,900	2960	.71	.83	.95	56,700	3260	.72	.85	.97	54,300	3570	.73	.87	.98	52,200	3880	.75	.88	1.00
	3500	61,200	2980	.74	.87	.99	58,900	3290	.75	.89	1.00	56,100	3610	.76	.91	1.00	53,800	3930	.78	.93	1.00
67	2500	59,000	2960	.55	.65	.76	56,900	3270	.55	.66	.77	54,700	3580	.56	.67	.78	52,500	3900	.56	.68	.80
	3000	62,000	2990	.56	.68	.80	59,500	3300	.57	.69	.81	57,300	3630	.58	.71	.83	54,900	3950	.59	.72	.85
	3500	64,000	3010	.58	.71	.84	61,700	3330	.59	.72	.85	59,200	3660	.60	.74	.87	56,700	4000	.61	.75	.90
71	2500	61,900	2990	.43	.53	.63	59,700	3300	.43	.53	.64	57,600	3630	.43	.54	.65	55,200	3960	.43	.55	.66
	3000	64,600	3020	.43	.55	.66	62,300	3340	.43	.55	.67	59,900	3680	.44	.56	.68	57,500	4020	.44	.57	.69
	3500	66,900	3040	.43	.56	.69	64,400	3370	.44	.57	.70	61,900	3710	.44	.58	.71	59,300	4060	.44	.59	.73

NOTE — All values are gross capacities and do not include evaporator coil blower motor heat deduction.

**CHA16-953 TOTAL COOLING CAPACITY (With Both Compressors Operating)**

Enter. Wet Bulb (°F)	Total Air Vol. (cfm)	Outdoor Air Temperature Entering Condenser Coil (°F)																			
		85			95			105			115										
		Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)	Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)	Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)	Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)								
														Dry Bulb (°F)							
63	2500	88,200	7160	.72	.85	.97	84,500	7660	.73	.86	.99	80,700	8140	.75	.88	1.00	76,300	8590	.76	.91	1.00
	3000	91,900	7290	.75	.89	1.00	87,600	7790	.77	.92	1.00	83,400	8280	.78	.94	1.00	79,300	8760	.81	.97	1.00
	3500	94,500	7380	.78	.95	1.00	90,100	7890	.80	.96	1.00	85,800	8410	.82	.98	1.00	81,600	8890	.85	1.00	1.00
67	2500	92,700	7320	.57	.70	.81	88,900	7850	.58	.71	.83	84,900	8370	.59	.72	.85	80,900	8860	.60	.74	.87
	3000	96,300	7460	.60	.73	.86	92,300	8000	.60	.74	.88	88,100	8530	.61	.76	.91	83,900	9030	.62	.78	.93
	3500	99,200	7560	.62	.76	.91	94,900	8120	.63	.78	.93	90,600	8650	.64	.80	.96	86,000	9150	.65	.82	.98
71	2500	97,100	7490	.44	.56	.67	93,200	8040	.44	.56	.68	89,200	8580	.44	.57	.69	85,100	9100	.44	.58	.71
	3000	100,700	7620	.44	.58	.70	96,600	8190	.45	.59	.72	92,300	8740	.45	.60	.73	88,000	9270	.46	.61	.75
	3500	103,600	7730	.45	.60	.74	99,200	8310	.45	.61	.75	94,700	8860	.46	.62	.77	90,200	9390	.47	.64	.80

NOTE — All values are gross capacities and do not include evaporator coil blower motor heat deduction.

**RATINGS**

NOTE - To determine Sensible Capacity, Leaving Wet and Dry Bulb temperatures not shown in the tables, see Miscellaneous Engineering Data section, page 9.

**CHA16-1353 COOLING CAPACITY (With One Compressor Only Operating)**

Enter. Wet Bulb (°F)	Total Air Vol. (cfm)	Outdoor Air Temperature Entering Condenser Coil (°F)																			
		65			75			85			95										
		Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)	Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)	Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)	Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)								
														75	80	85	75	80	85	75	80
63	3500	71,500	4010	.70	.81	.93	68,700	4390	.71	.83	.95	66,000	4780	.72	.85	.97	63,300	5170	.73	.87	.99
	4250	74,700	4080	.74	.87	.99	71,700	4470	.74	.88	1.00	68,900	4860	.76	.90	1.00	65,800	5250	.77	.93	1.00
	5000	77,200	4120	.77	.91	1.00	73,900	4520	.78	.94	1.00	70,800	4910	.80	.96	1.00	67,600	5310	.81	.98	1.00
67	3500	75,400	4090	.56	.67	.78	72,700	4480	.56	.68	.79	69,900	4880	.57	.69	.81	67,000	5290	.57	.70	.83
	4250	78,800	4150	.58	.72	.83	75,700	4550	.58	.72	.85	72,700	4960	.59	.73	.87	69,500	5370	.60	.75	.89
	5000	80,900	4190	.59	.74	.88	77,900	4600	.61	.76	.90	74,800	5020	.63	.78	.92	71,500	5440	.63	.80	.95
71	3500	78,900	4160	.44	.54	.64	76,300	4570	.43	.54	.65	73,700	4980	.43	.55	.66	70,800	5410	.44	.56	.68
	4250	81,800	4210	.43	.56	.69	79,000	4630	.44	.57	.69	76,100	5060	.45	.58	.71	73,300	5490	.44	.58	.72
	5000	83,500	4240	.44	.58	.72	81,100	4670	.44	.59	.74	78,200	5110	.45	.61	.75	75,100	5550	.46	.63	.77

NOTE - All values are gross capacities and do not include evaporator coil blower motor heat deduction.

**CHA16-1353 TOTAL COOLING CAPACITY (With Both Compressors Operating)**

Enter. Wet Bulb (°F)	Total Air Vol. (cfm)	Outdoor Air Temperature Entering Condenser Coil (°F)																			
		85			95			105			115										
		Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)	Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)	Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)	Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)								
														75	80	85	75	80	85	75	80
63	3500	118,100	9770	.72	.86	.98	113,100	10,480	.74	.87	1.00	107,800	11,180	.75	.90	1.00	102,000	11,830	.77	.93	1.00
	4250	122,600	9930	.76	.91	1.00	117,400	10,650	.78	.93	1.00	111,000	11,350	.80	.96	1.00	105,300	12,040	.82	.99	1.00
	5000	126,100	10,040	.80	.96	1.00	120,300	10,760	.82	.99	1.00	114,300	11,500	.84	1.00	1.00	109,600	12,260	.87	1.00	1.00
67	3500	12,5000	10,000	.57	.70	.82	119,800	10,750	.58	.71	.84	114,400	11,490	.59	.73	.86	108,800	12,210	.60	.74	.89
	4250	129,600	10,170	.59	.74	.88	124,200	10,930	.60	.75	.90	118,400	11,690	.62	.77	.92	112,800	12,420	.63	.79	.95
	5000	133,300	10,280	.62	.77	.92	127,100	11,060	.63	.80	.95	121,300	11,830	.64	.82	.98	115,500	12,570	.66	.84	1.00
71	3500	131,800	10,230	.43	.55	.67	126,500	11,010	.44	.56	.68	120,900	11,790	.44	.57	.70	115,000	12,560	.44	.58	.72
	4250	136,200	10,390	.44	.58	.71	130,800	11,190	.45	.59	.73	125,100	11,990	.45	.60	.75	119,100	12,760	.45	.61	.77
	5000	139,300	10,500	.45	.60	.75	134,100	11,320	.46	.62	.77	127,900	12,130	.46	.63	.79	121,800	12,910	.47	.64	.82

NOTE - All values are gross capacities and do not include evaporator coil blower motor heat deduction.

**CHA16-1603 COOLING CAPACITY (With One Compressor Only Operating)**

Enter. Wet Bulb (°F)	Total Air Vol. (cfm)	Outdoor Air Temperature Entering Condenser Coil (°F)																			
		65			75			85			95										
		Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)	Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)	Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)	Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)								
														75	80	85	75	80	85	75	80
63	4200	96,700	6830	.68	.79	.90	92,700	7250	.69	.81	.92	88,600	7640	.70	.83	.94	84,300	8020	.72	.84	.96
	5000	100,500	6980	.71	.83	.94	96,300	7400	.72	.84	.96	92,000	7810	.73	.87	.98	87,400	8190	.75	.89	1.00
	5800	103,300	7080	.73	.86	.98	98,800	7520	.74	.88	1.00	94,300	7930	.76	.90	1.00	89,900	8320	.77	.92	1.00
67	4200	101,300	7010	.55	.66	.76	97,300	7440	.55	.67	.77	93,200	7870	.56	.68	.79	88,900	8270	.57	.69	.81
	5000	105,200	7160	.56	.68	.79	101,000	7610	.57	.69	.81	96,600	8020	.58	.70	.83	92,100	8440	.58	.72	.85
	5800	108,200	7280	.57	.70	.83	103,900	7720	.58	.72	.84	99,200	8160	.59	.73	.87	94,400	8580	.60	.75	.89
71	4200	105,800	7190	.42	.53	.63	101,900	7630	.42	.54	.64	97,700	8070	.43	.54	.65	93,300	8510	.43	.55	.66
	5000	109,800	7340	.43	.54	.66	105,600	7800	.43	.55	.67	101,100	8240	.43	.56	.68	96,400	8680	.44	.57	.69
	5800	112,700	7460	.43	.56	.68	108,400	7920	.44	.57	.69	103,600	8380	.45	.58	.71	98,700	8800	.45	.59	.72

NOTE - All values are gross capacities and do not include evaporator coil blower motor heat deduction.

**CHA16-1603 TOTAL COOLING CAPACITY (With Both Compressors Operating)**

Enter. Wet Bulb (°F)	Total Air Vol. (cfm)	Outdoor Air Temperature Entering Condenser Coil (°F)																			
		85			95			105			115										
		Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)	Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)	Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)	Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)								
														75	80	85	75	80	85	75	80
63	4200	142,600	12,310	.70	.83	.94	136,000	13,010	.72	.84	.96	129,300	13,660	.73	.87	.99	122,300	14,250	.75	.89	1.00
	5000	148,000	12,550	.73	.87	.97	141,000	13,250	.75	.89	.99	133,800	13,920	.76	.91	1.00	126,800	14,530	.78	.93	1.00
	5800	151,800	12,730	.76	.90	1.00	144,700	13,450	.77	.92	1.00	137,800	14,130	.79	.95	1.00	129,900	14,730	.81	.97	1.00
67	4200	150,100	12,650	.56	.68	.79	143,400	13,380	.57	.69	.81	136,500	14,080	.58	.71	.83	129,600	14,720	.59	.72	.85
	5000	155,600	12,880	.58	.70	.83	148,600	13,640	.58	.72	.85	141,300	14,340	.59	.74	.87	134,000	15,000	.61	.75	.90
	5800	159,800	13,070	.59	.73	.87	152,500	13,840	.60	.75	.89	145,000	14,550	.61	0.77	.91	137,500	15,210	.63	.79	.94
71	4200	157,400	12,950	.43	.54	.65	150,600	13,740	.43	.55	.66	143,700	14,480	.44	.56	.68	136,500	15,150	.44	.57	.69
	5000	163,000	13,200	.43	.56	.68	155,800	13,990	.44	.57	.69	148,400	14,740	.44	.58	.71	141,100	15,460	.45	.59	.73
	5800	167,200	13,390	.44	.58	.71	159,600	14,180	.45	.59	.72	152,100	14,960	.45	.60	.74	144,400	15,680	.45	.61	.76

NOTE - All values are gross capacities and do not include evaporator coil blower motor heat deduction.

**RATINGS**

NOTE - To determine Sensible Capacity, Leaving Wet and Dry Bulb temperatures not shown in the tables, see Miscellaneous Engineering Data section, page 9.

**CHA16-1853 COOLING CAPACITY (With Two Compressors Operating)**

Enter. Wet Bulb (°F)	Total Air Vol. (cfm)	Outdoor Air Temperature Entering Condenser Coil (°F)																			
		65					75					85					95				
		Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)			Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)			Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)			Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)		
				Dry Bulb (°F)					Dry Bulb (°F)					Dry Bulb (°F)					Dry Bulb (°F)		
		75	80	85			75	80	85			75	80	85			75	80	85		
63	5400	134,800	8080	.66	.79	.93	129,100	8580	.67	.82	.96	122,800	9190	.69	.84	.99	116,200	9940	.71	.87	1.00
	6400	139,900	8150	.69	.84	.98	133,900	8670	.70	.87	1.00	127,600	9310	.72	.90	1.00	120,600	10,100	.75	.94	1.00
	7400	144,000	8210	.72	.88	1.00	137,700	8750	.74	.92	1.00	129,900	9570	.76	.94	1.00	123,100	10,200	.79	.98	1.00
67	5400	142,100	8180	.52	.63	.75	136,400	8720	.53	.65	.77	130,200	9390	.54	.66	.80	123,600	10,220	.55	.68	.83
	6400	147,300	8260	.54	.66	.80	141,400	8820	.55	.67	.82	135,000	9520	.55	.69	.85	128,000	10,380	.57	.72	.89
	7400	151,300	8310	.56	.69	.84	145,300	8890	.56	.71	.87	138,600	9620	.57	.73	.91	131,500	10,510	.59	.76	.94
71	5400	149,000	8280	.40	.51	.61	143,500	8860	.40	.51	.62	137,500	9580	.40	.52	.63	130,900	10,490	.41	.53	.65
	6400	154,100	8340	.41	.52	.64	148,500	8950	.40	.53	.65	142,300	9710	.41	.54	.67	135,400	10,670	.41	.55	.69
	7400	158,200	8400	.41	.54	.66	152,400	9030	.41	.55	.68	146,000	9820	.41	.56	.70	139,000	10,810	.42	.57	.73

NOTE - All values are gross capacities and do not include evaporator coil blower motor heat deduction.

**CHA16-1853 TOTAL COOLING CAPACITY (With Three Compressors Operating)**

Enter. Wet Bulb (°F)	Total Air Vol. (cfm)	Outdoor Air Temperature Entering Condenser Coil (°F)																			
		85					95					105					115				
		Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)			Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)			Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)			Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)		
				Dry Bulb (°F)					Dry Bulb (°F)					Dry Bulb (°F)					Dry Bulb (°F)		
		75	80	85			75	80	85			75	80	85			75	80	85		
63	5400	181,000	14,290	.69	.84	.99	171,200	15,470	.71	.87	1.00	159,600	16,860	.73	.91	1.00	149,400	18,680	.76	.95	1.00
	6400	188,000	14,480	.72	.90	1.00	177,700	15,700	.75	.94	1.00	165,300	17,170	.78	.97	1.00	154,200	19,080	.81	1.00	1.00
	7400	194,000	14,620	.76	.94	1.00	181,400	15,870	.79	.98	1.00	170,600	17,470	.82	1.00	1.00	161,000	19,550	.86	1.00	1.00
67	5400	191,900	14,610	.54	.66	.80	182,100	15,900	.55	.68	.82	171,200	17,500	.56	.70	.86	160,300	19,490	.58	.72	.90
	6400	198,800	14,800	.55	.69	.85	188,600	16,150	.57	.72	.88	178,100	17,840	.59	.74	.93	165,900	19,960	.60	.78	.97
	7400	204,200	14,960	.57	.73	.91	193,700	16,360	.59	.76	.93	182,400	18,130	.61	.79	.98	170,400	20,310	.63	.83	1.00
71	5400	202,600	14,910	.40	.52	.63	192,800	16,320	.41	.53	.65	182,200	18,110	.42	.55	.67	170,700	20,360	.42	.56	.70
	6400	209,600	15,110	.41	.54	.67	199,500	16,600	.41	.55	.68	188,600	18,490	.42	.57	.71	176,500	20,860	.43	.59	.74
	7400	215,100	15,270	.42	.56	.70	204,800	16,820	.42	.57	.72	193,500	18,780	.43	.59	.75	182,100	21,240	.44	.61	.79

NOTE - All values are gross capacities and do not include evaporator coil blower motor heat deduction.

**CHA16-2553 COOLING CAPACITY (With One Compressor Only Operating)**

Enter. Wet Bulb (°F)	Total Air Vol. (cfm)	Outdoor Air Temperature Entering Condenser Coil (°F)																			
		65					75					85					95				
		Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)			Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)			Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)			Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)		
				Dry Bulb (°F)					Dry Bulb (°F)					Dry Bulb (°F)					Dry Bulb (°F)		
		75	80	85			75	80	85			75	80	85			75	80	85		
63	6000	113,700	6710	.59	.73	.85	110,000	7350	.60	.74	.86	105,700	8040	.61	.75	.88	101,300	8730	.62	.76	.90
	7500	121,100	6830	.63	.77	.92	116,800	7500	.64	.79	.94	112,300	8200	.65	.80	.97	107,500	8920	.66	.82	.99
	9000	126,800	6910	.67	.82	1.00	122,000	7610	.68	.84	1.00	117,000	8320	.70	.86	1.00	111,700	9060	.71	.88	1.00
67	6000	120,400	6810	.46	.59	.70	116,300	7500	.47	.60	.71	112,000	8200	.47	.60	.72	107,200	8930	.48	.61	.74
	7500	128,400	6930	.49	.61	.76	123,600	7640	.49	.62	.77	119,000	8370	.50	.63	.79	113,800	9120	.50	.65	.80
	9000	133,900	7030	.51	.65	.81	128,900	7750	.51	.66	.83	123,800	8490	.52	.67	.85	118,200	9270	.53	.69	.87
71	6000	127,300	6920	.35	.48	.58	122,800	7630	.35	.48	.58	118,200	8350	.35	.49	.59	113,500	9120	.35	.49	.60
	7500	135,100	7050	.36	.49	.61	130,400	7770	.36	.50	.62	125,500	8530	.36	.50	.63	120,100	9320	.36	.51	.64
	9000	140,700	7140	.37	.51	.65	135,600	7880	.37	.52	.66	130,200	8660	.37	.52	.68	124,500	9470	.37	.53	.69

NOTE - All values are gross capacities and do not include evaporator coil blower motor heat deduction.

**CHA16-2553 TOTAL COOLING CAPACITY (With Both Compressors Operating)**

Enter. Wet Bulb (°F)	Total Air Vol. (cfm)	Outdoor Air Temperature Entering Condenser Coil (°F)																			
		85					95					105					115				
		Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)			Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)			Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)			Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)		
				Dry Bulb (°F)					Dry Bulb (°F)					Dry Bulb (°F)					Dry Bulb (°F)		
		75	80	85			75	80	85			75	80	85			75	80	85		
63	6000	213,000	15,680	.68	.82	.95	204,300	17,030	.69	.84	.97	194,800	18,400	.70	.86	.99	184,800	19,750	.71	.89	1.00
	7500	224,100	15,960	.72	.89	1.00	214,100	17,340	.74	.91	1.00	203,800	18,750	.75	.94	1.00	192,800	20,130	.77	.96	1.00
	9000	231,500	16,170	.77	.95	1.00	219,400	17,520	.79	.98	1.00	210,000	18,970	.81	.99	1.00	198,800	20,460	.83	1.00	1.00
67	6000	225,400	16,000	.53	.67	.80	215,800	17,410	.54	.68	.81	206,100	18,850	.55	.69	.83	195,800	20,310	.56	.71	.85
	7500	236,800	16,300	.56	.71	.86	226,500	17,740	.57	.72	.88	215,700	19,220	.58	.74	.90	204,500	20,720	.59	.76	.92
	9000	244,300	16,510	.59	.75	.93	233,400	17,980	.60	.77	.95	222,100	19,490	.61	.79	.97	210,400	21,030	.62	.82	1.00
71	6000	237,400	16,330	.40	.53	.66	227,500	17,790	.40	.54	.67	217,300	19,300	.41	.54	.68	206,500	20,840	.41	.55	.70
	7500	248,700	16,620	.41	.56	.71	238,100	18,120	.42	.56	.72	227,000	19,680	.42	.58	.73	215,400	21,270	.42	.59	.75
	9000	256,400	16,830	.42	.58	.75	245,400	18,370	.43	.59	.77	233,500	19,960	.43	.61	.78	221,200	21,580	.44	.62	.80

NOTE - All values are gross capacities and do not include evaporator coil blower motor heat deduction.

**RATINGS**

NOTE — To determine Sensible Capacity, Leaving Wet and Dry Bulb temperatures not shown in the tables, see Miscellaneous Engineering Data section, page 9.

**CHA16-2753 COOLING CAPACITY (With One Compressor Only Operating)**

Enter. Wet Bulb (°F)	Total Air Vol. (cfm)	Outdoor Air Temperature Entering Condenser Coil (°F)																			
		65					75					85					95				
		Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)			Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)			Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)			Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)		
				Dry Bulb (°F)					Dry Bulb (°F)					Dry Bulb (°F)					Dry Bulb (°F)		
75	80	85	75	80	85	75	80	85	75	80	85	75	80	85							
63	7000	126,100	8270	.62	.75	.86	121,300	8970	.63	.76	.87	116,000	9740	.64	.77	.89	110,600	10,550	.65	.79	.91
	8500	133,500	8420	.65	.78	.92	128,300	9140	.66	.79	.93	122,300	9920	.68	.81	.96	116,800	10,770	.69	.83	.98
	10,000	139,200	8540	.69	.81	.97	133,200	9270	.70	.83	1.00	127,300	10,070	.71	.85	1.00	120,900	10,920	.73	.87	1.00
67	7000	133,500	8420	.49	.62	.73	127,900	9150	.49	.63	.74	122,600	9940	.50	.64	.75	117,400	10,800	.50	.64	.77
	8500	141,100	8570	.51	.64	.77	135,500	9320	.51	.65	.78	129,700	10,140	.52	.66	.80	123,900	11,010	.53	.67	.82
	10,000	146,700	8680	.53	.67	.82	140,800	9450	.53	.68	.83	134,600	10,280	.54	.69	.85	128,700	11,160	.55	.70	.87
71	7000	140,600	8560	.36	.51	.61	135,100	9320	.37	.51	.61	129,600	10,140	.37	.52	.62	123,900	11,010	.37	.52	.63
	8500	148,400	8700	.37	.52	.64	142,600	9490	.37	.52	.65	136,700	10,330	.38	.53	.66	130,800	11,220	.38	.54	.67
	10,000	154,100	8820	.38	.53	.67	148,000	9600	.38	.54	.68	141,900	10,470	.39	.55	.69	135,700	11,390	.39	.56	.71

NOTE — All values are gross capacities and do not include evaporator coil blower motor heat deduction.

**CHA16-2753 TOTAL COOLING CAPACITY (With Both Compressors Operating)**

Enter. Wet Bulb (°F)	Total Air Vol. (cfm)	Outdoor Air Temperature Entering Condenser Coil (°F)																			
		85					95					105					115				
		Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)			Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)			Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)			Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)		
				Dry Bulb (°F)					Dry Bulb (°F)					Dry Bulb (°F)					Dry Bulb (°F)		
75	80	85	75	80	85	75	80	85	75	80	85	75	80	85							
63	7000	243,200	19,930	.69	.83	.95	232,300	21,610	.70	.85	.97	221,800	23,390	.71	.87	.99	210,800	25,220	.73	.89	1.00
	8500	253,900	20,250	.73	.88	1.00	242,400	21,970	.74	.90	1.00	231,100	23,770	.76	.93	1.00	219,200	25,640	.77	.95	1.00
	10,000	261,500	20,490	.77	.93	1.00	249,500	22,220	.79	.96	1.00	235,800	23,970	.81	.98	1.00	224,800	25,900	.82	1.00	1.00
67	7000	256,800	20,350	.54	.68	.81	245,700	22,090	.55	.69	.82	234,800	23,940	.56	.70	.84	223,800	25,860	.56	.72	.85
	8500	267,900	20,660	.57	.71	.86	256,300	22,440	.57	.73	.88	245,000	24,310	.58	.74	.89	232,700	26,270	.59	.76	.92
	10,000	275,900	20,880	.59	.75	.91	263,700	22,690	.60	.77	.93	251,400	24,600	.61	.78	.96	239,300	26,580	.62	.81	.98
71	7000	270,300	20,730	.41	.54	.68	258,900	22,540	.41	.55	.69	247,600	24,450	.41	.56	.70	236,300	26,450	.42	.56	.71
	8500	281,400	21,020	.42	.56	.71	269,400	22,880	.42	.57	.73	257,600	24,820	.42	.58	.74	245,500	26,850	.43	.59	.75
	10,000	289,500	21,250	.43	.58	.75	277,000	23,110	.43	.60	.77	264,700	25,090	.43	.61	.78	252,200	27,150	.44	.62	.80

NOTE — All values are gross capacities and do not include evaporator coil blower motor heat deduction.

**CHA16-3003 COOLING CAPACITY (With One Compressor Only Operating)**

Enter. Wet Bulb (°F)	Total Air Vol. (cfm)	Outdoor Air Temperature Entering Condenser Coil (°F)																			
		65					75					85					95				
		Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)			Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)			Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)			Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)		
				Dry Bulb (°F)					Dry Bulb (°F)					Dry Bulb (°F)					Dry Bulb (°F)		
75	80	85	75	80	85	75	80	85	75	80	85	75	80	85							
63	8500	152,900	9740	.63	.76	.90	147,400	10,640	.64	.78	.92	141,900	11,570	.65	.80	.95	136,300	12,510	.66	.81	.97
	10,000	158,500	9880	.65	.81	.96	152,800	10,800	.67	.82	.98	146,900	11,730	.68	.84	1.00	140,900	12,700	.69	.87	1.00
	11,500	163,000	9980	.68	.85	1.00	156,900	10,910	.69	.87	1.00	150,800	11,860	.71	.89	1.00	144,600	12,840	.73	.92	1.00
67	8500	160,900	9930	.50	.61	.72	155,400	10,860	.50	.61	.74	149,700	11,830	.51	.62	.75	143,700	12,810	.51	.63	.77
	10,000	166,600	10,070	.51	.63	.77	160,900	11,020	.52	.64	.78	154,700	12,000	.52	.65	.80	148,500	13,000	.53	.67	.82
	11,500	171,000	10,170	.53	.65	.81	165,100	11,140	.53	.67	.83	158,700	12,130	.54	.68	.85	152,200	13,160	.55	.70	.88
71	8500	169,100	10,120	.38	.48	.58	163,500	11,090	.38	.49	.59	157,300	12,090	.38	.49	.60	151,100	13,110	.38	.50	.61
	10,000	174,800	10,260	.38	.50	.61	168,700	11,230	.38	.50	.62	162,400	12,250	.38	.51	.63	155,700	13,300	.39	.52	.64
	11,500	179,200	10,360	.38	.51	.63	172,900	11,350	.39	.52	.64	166,200	12,390	.39	.53	.66	159,400	13,450	.39	.54	.67

NOTE — All values are gross capacities and do not include evaporator coil blower motor heat deduction.

**CHA16-3003 TOTAL COOLING CAPACITY (With Both Compressors Operating)**

Enter. Wet Bulb (°F)	Total Air Vol. (cfm)	Outdoor Air Temperature Entering Condenser Coil (°F)																			
		85					95					105					115				
		Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)			Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)			Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)			Total Cool. Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T)		
				Dry Bulb (°F)					Dry Bulb (°F)					Dry Bulb (°F)					Dry Bulb (°F)		
75	80	85	75	80	85	75	80	85	75	80	85	75	80	85							
63	8500	293,400	24,500	.72	.85	.97	281,800	26,490	.73	.87	.99	269,300	28,490	.75	.89	1.00	256,200	30,450	.76	.91	1.00
	10,000	303,700	24,850	.75	.89	1.00	291,300	26,890	.76	.91	1.00	278,000	28,920	.78	.93	1.00	264,300	30,920	.80	.96	1.00
	11,500	311,700	25,120	.78	.93	1.00	298,900	27,190	.79	.95	1.00	283,300	29,170	.81	.98	1.00	268,300	31,100	.83	.99	1.00
67	8500	309,400	25,050	.57	.70	.82	297,100	27,130	.58	.71	.83	284,200	29,230	.58	.72	.85	270,600	31,330	.59	.74	.87
	10,000	319,800	25,410	.59	.72	.86	306,900	27,540	.59	.74	.87	293,100	29,690	.60	.75	.90	278,900	31,830	.61	.77	.92
	11,500	328,100	25,690	.60	.75	.90	314,600	27,860	.61	.77	.92	300,000	30,040	.62	.79	.94	285,300	32,220	.64	.81	.97
71	8500	325,200	25,590	.42	.55	.67	312,300	27,760	.43	.56	.68	298,800	29,970	.43	.57	.69	284,700	32,180	.43	.58	.71
	10,000	335,700	25,950	.43	.57	.70	321,900	28,170	.43	.58	.71	307,600	30,430	.44	.59	.73	292,600	32,690	.44	.60	.75
	11,500	343,500	26,230	.43	.59	.73	329,500	28,490	.44	.60	.74	314,500	30,790	.44	.61	.76	299,000	33,090	.45	.62	.78

NOTE — All values are gross capacities and do not include evaporator coil blower motor heat deduction.

# BLOWER DATA

## CHA16-823 BLOWER PERFORMANCE

Air Volume (cfm)	STATIC PRESSURE EXTERNAL TO UNIT — Inches Water Gauge																			
	.20		.40		.60		.70		.80		.90		1.00		1.10		1.30		1.50	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2200	----	----	----	----	740	0.65	785	0.75	825	0.80	865	0.90	905	0.95	945	1.05	1020	1.20	1090	1.40
2400	----	----	----	----	765	0.75	805	0.85	845	0.90	880	1.00	920	1.10	955	1.15	1025	1.35	1095	1.50
2600	----	----	----	----	790	0.90	825	0.95	865	1.05	900	1.15	935	1.20	970	1.30	1040	1.50	1105	1.70
2800	----	----	740	0.85	815	1.00	850	1.10	885	1.20	920	1.30	955	1.40	985	1.45	1055	1.65	1115	1.85
3000	----	----	770	1.00	840	1.15	875	1.25	910	1.35	940	1.45	975	1.55	1005	1.65	1070	1.85	1130	2.05
3200	735	1.00	805	1.15	870	1.35	905	1.45	935	1.55	965	1.65	1000	1.75	1030	1.85	1090	2.05	1150	2.25
3400	775	1.20	840	1.35	900	1.55	930	1.65	965	1.75	995	1.85	1020	1.95	1050	2.05	1110	2.25	----	----

NOTE — All data is measured external to the unit with dry coil and with the air filters in place. See Page 24 for Accessory Air Resistance data.

## CHA16-953 BLOWER PERFORMANCE

Air Volume (cfm)	STATIC PRESSURE EXTERNAL TO UNIT — Inches Water Gauge																	
	.20		.40		.60		.70		.80		.90		1.00		1.10		1.30	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2600	----	----	----	----	850	1.15	895	1.30	930	1.40	980	1.50	1020	1.65	1055	1.80	1155	2.05
2800	----	----	800	1.05	875	1.35	920	1.40	955	1.55	995	1.65	1030	1.80	1065	1.95	1145	2.25
3000	----	----	840	1.20	910	1.40	940	1.55	980	1.70	1015	1.90	1050	2.05	1085	2.20	----	----
3200	815	1.20	885	1.45	940	1.70	975	1.75	1005	1.90	1045	2.10	1080	2.20	----	----	----	----
*3400	860	1.45	920	1.65	975	1.85	1010	2.00	1045	2.15	1080	2.30	----	----	----	----	----	----
3600	900	1.70	960	1.90	1015	2.10	1045	2.25	----	----	----	----	----	----	----	----	----	----
3800	950	1.95	995	2.20	----	----	----	----	----	----	----	----	----	----	----	----	----	----

NOTE — All data is measured external to the unit with dry coil and air filters in place. See Page 24 for Accessory Air Resistance data.

\*Minimum air volume at .25 in. w. g. with electric heat.

## CHA16-1353 BLOWER PERFORMANCE

Air Volume (cfm)	STATIC PRESSURE EXTERNAL TO UNIT — Inches Water Gauge																			
	.20		.40		.60		.70		.80		.90		1.00		1.10		1.30		1.50	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3600	585	0.89	665	1.13	735	1.37	770	1.52	795	1.65	820	1.80	850	1.93	875	2.08	935	2.41	985	2.68
3800	605	1.00	685	1.25	750	1.52	785	1.67	805	1.80	830	1.94	860	2.08	890	2.26	940	2.56	995	2.85
4000	630	1.14	705	1.41	770	1.68	795	1.81	820	1.96	845	2.11	875	2.26	905	2.43	955	2.67	1000	3.01
4200	650	1.29	725	1.57	790	1.86	810	2.01	835	2.16	865	2.31	890	2.46	920	2.63	970	2.93	1005	3.15
4400	680	1.46	745	1.76	800	2.04	825	2.22	855	2.37	880	2.51	910	2.69	930	2.83	980	3.14	----	----
4600	705	1.65	770	1.95	820	2.27	845	2.43	870	2.58	900	2.75	925	2.92	950	3.06	995	3.33	----	----
4800	730	1.85	790	2.17	840	2.50	865	2.66	890	2.82	920	2.99	945	3.15	970	3.32	----	----	----	----
5000	755	2.07	810	2.42	860	2.75	885	2.91	910	3.07	935	3.24	960	3.41	----	----	----	----	----	----
5200	775	2.30	830	2.69	885	3.02	910	3.18	935	3.34	----	----	----	----	----	----	----	----	----	----

NOTE — All data is measured external to the unit with dry coil and with the air filters in place. See Page 24 for Accessory Air Resistance data.

NOTE — Data in shaded area denotes optional 3 hp drive kit.

# BLOWER DATA

## CHA16-1353 BLOWER PERFORMANCE

Air Volume (cfm)	STATIC PRESSURE EXTERNAL TO UNIT — Inches Water Gauge																			
	.20		.40		.60		.70		.80		.90		1.00		1.10		1.30		1.50	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3600	585	0.89	665	1.13	735	1.37	770	1.52	795	1.65	820	1.80	850	1.93	875	2.08	935	2.41	985	2.68
3800	605	1.00	685	1.25	750	1.52	785	1.67	805	1.80	830	1.94	860	2.08	890	2.26	940	2.56	995	2.85
4000	630	1.14	705	1.41	770	1.68	795	1.81	820	1.96	845	2.11	875	2.26	905	2.43	955	2.67	1000	3.01
4200	650	1.29	725	1.57	790	1.86	810	2.01	835	2.16	865	2.31	890	2.46	920	2.63	970	2.93	1005	3.15
4400	680	1.46	745	1.76	800	2.04	825	2.22	855	2.37	880	2.51	910	2.69	930	2.83	980	3.14	-----	-----
4600	705	1.65	770	1.95	820	2.27	845	2.43	870	2.58	900	2.75	925	2.92	950	3.06	995	3.33	-----	-----
4800	730	1.85	790	2.17	840	2.50	865	2.66	890	2.82	920	2.99	945	3.15	970	3.32	-----	-----	-----	-----
5000	755	2.07	810	2.42	860	2.75	885	2.91	910	3.07	935	3.24	960	3.41	-----	-----	-----	-----	-----	-----
5200	775	2.30	830	2.69	885	3.02	910	3.18	935	3.34	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

NOTE — All data is measured external to the unit with dry coil and with the air filters in place. See Page 24 for Accessory Air Resistance data.

NOTE — Data in shaded area denotes optional 3 hp drive kit.

## CHA16-1603 BLOWER PERFORMANCE

Air Volume (cfm)	STATIC PRESSURE EXTERNAL TO UNIT — Inches Water Gauge																			
	.20		.40		.60		.70		.80		.90		1.00		1.10		1.30		1.50	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4200	-----	-----	715	1.53	780	1.77	810	1.91	840	2.05	870	2.17	900	2.31	930	2.45	985	2.77	1035	3.06
4400	-----	-----	740	1.71	805	1.99	830	2.10	860	2.24	890	2.39	915	2.51	945	2.67	995	2.96	1050	3.31
4600	700	1.66	765	1.82	825	2.17	855	2.33	880	2.45	910	2.60	935	2.75	960	2.89	1015	3.21	1065	3.56
4800	730	1.85	790	2.14	850	2.43	875	2.54	905	2.70	930	2.85	955	3.01	980	3.26	1030	3.41	1080	3.81
5000	755	2.06	815	2.37	875	2.68	900	2.80	925	2.96	950	3.11	975	3.27	1000	3.41	1050	3.75	1095	4.06
5200	785	2.38	845	2.65	900	2.95	920	3.07	950	3.25	975	3.42	1000	3.56	1025	3.75	1070	4.06	1115	4.39
5400	810	2.61	870	2.95	920	3.24	950	3.41	970	3.55	995	3.70	1020	3.87	1045	4.09	1090	4.38	1135	4.74
5600	840	2.95	895	3.23	950	3.58	970	3.72	995	3.88	1020	4.05	1045	4.22	1065	4.37	1100	4.72	1155	5.08
5800	865	3.25	920	3.53	970	3.90	995	4.05	1020	4.25	1045	4.42	1065	4.57	1090	4.76	1130	5.08	1175	5.46

NOTE — All data is measured external to the unit with dry coil and with the air filters in place. See Page 24 for Accessory Air Resistance data.

NOTE — Data in shaded area denotes field furnished drive kit.

## CHA16-1853 BLOWER PERFORMANCE

Air Volume (cfm)	STATIC PRESSURE EXTERNAL TO UNIT — Inches Water Gauge																			
	.20		.40		.60		.70		.80		.90		1.00		1.10		1.30		1.50	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
5000	540	1.50	600	1.70	660	1.95	690	2.20	720	2.25	740	2.40	765	2.60	785	2.75	830	3.00	870	3.20
5200	555	1.60	615	1.80	670	2.20	700	2.30	730	2.40	750	2.50	775	2.75	795	2.80	840	3.20	880	3.50
5400	570	1.70	630	2.00	690	2.30	710	2.40	740	2.50	760	2.70	785	2.80	810	3.00	850	3.30	890	3.75
5600	580	1.75	640	2.25	700	2.45	725	2.55	750	2.70	775	2.85	795	3.00	820	3.20	860	3.50	905	3.95
5800	600	2.00	655	2.35	715	2.65	740	2.75	765	2.90	785	3.10	805	3.25	830	3.35	870	3.70	915	4.20
6000	615	2.20	670	2.60	725	2.80	750	2.95	775	3.15	795	3.30	820	3.50	840	3.65	880	4.05	925	4.45
6200	630	2.40	685	2.75	740	3.00	765	3.20	785	3.40	810	3.60	830	3.80	850	3.90	895	4.30	935	4.75
6400	645	2.55	700	2.90	750	3.20	775	3.40	800	3.70	820	3.75	845	4.00	860	4.25	905	4.60	940	5.00
6600	660	2.80	715	3.15	765	3.40	790	3.65	810	3.90	835	4.10	850	4.20	875	4.50	915	4.80	955	5.30
6800	670	3.00	730	3.40	780	3.75	800	3.95	825	4.15	845	4.40	865	4.50	890	4.90	930	5.20	965	5.60
7000	695	3.30	745	3.60	790	4.00	815	4.20	840	4.50	860	4.65	880	4.90	900	5.05	950	5.60	-----	-----
7200	710	3.55	760	3.85	810	4.40	830	4.55	850	4.70	870	4.95	895	5.30	915	5.65	-----	-----	-----	-----
7400	730	3.75	775	4.10	820	4.60	840	4.70	860	5.00	880	5.25	900	5.40	925	5.70	-----	-----	-----	-----
7600	740	3.90	785	4.35	830	4.70	850	4.95	870	5.15	890	5.40	920	5.60	-----	-----	-----	-----	-----	-----

NOTE — All data is measured external to the unit with dry coil and with the air filters in place. See Page 24 for Accessory Air Resistance data.

NOTE — Data in shaded area denotes optional 5 hp drive kit.

**BLOWER DATA**

**CHA16-2553, CHA16-2753 & CHA16-3003 BLOWER PERFORMANCE**

Air Volume (cfm)	STATIC PRESSURE EXTERNAL TO UNIT — Inches Water Gauge																	
	.30	.40	.50	.60	.70	.80	.90	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	2.00
	RPM BHP	RPM BHP	RPM BHP	RPM BHP	RPM BHP	RPM BHP	RPM BHP	RPM BHP	RPM BHP	RPM BHP	RPM BHP	RPM BHP	RPM BHP	RPM BHP	RPM BHP	RPM BHP	RPM BHP	RPM BHP
6000	465 1.60	495 1.80	520 1.95	545 2.15	565 2.30	590 2.45	610 2.65	635 2.85	655 3.00	675 3.20	695 3.40	710 3.55	730 3.75	750 4.00	765 4.15	785 4.40	800 4.60	815 4.75
6250	480 1.80	505 1.95	530 2.15	555 2.30	575 2.45	600 2.65	620 2.85	640 3.00	665 3.25	680 3.40	700 3.60	720 3.80	740 4.00	755 4.20	775 4.45	790 4.60	810 4.85	825 5.05
6500	490 1.95	515 2.15	540 2.30	565 2.50	585 2.65	610 2.85	630 3.05	650 3.25	670 3.45	690 3.65	710 3.85	730 4.05	745 4.25	765 4.45	780 4.65	800 4.90	815 5.10	830 5.30
6750	500 2.15	525 2.30	550 2.50	575 2.70	600 2.90	620 3.10	640 3.30	660 3.45	680 3.70	700 3.90	720 4.10	735 4.30	755 4.50	770 4.70	790 4.95	805 5.15	820 5.35	840 5.60
7000	515 2.35	540 2.55	565 2.75	585 2.90	610 3.15	630 3.35	650 3.50	670 3.70	690 3.95	710 4.15	730 4.40	745 4.55	765 4.80	780 5.00	800 5.25	815 5.45	830 5.65	845 5.90
7250	530 2.60	555 2.80	575 3.00	600 3.20	620 3.40	640 3.55	660 3.75	680 4.00	700 4.20	720 4.45	735 4.60	755 4.85	770 5.05	790 5.30	805 5.50	820 5.70	840 6.00	855 6.25
7500	540 2.80	565 3.00	590 3.25	610 3.45	630 3.60	650 3.85	670 4.05	690 4.25	710 4.50	730 4.75	745 4.90	765 5.15	780 5.35	800 5.65	815 5.85	830 6.05	845 6.30	860 6.50
7750	555 3.05	575 3.25	600 3.50	620 3.70	645 3.95	665 4.15	680 4.30	700 4.55	720 4.80	740 5.05	755 5.20	775 5.45	790 5.70	805 5.90	825 6.20	840 6.40	855 6.65	870 6.90
8000	570 3.35	590 3.55	610 3.75	635 4.00	655 4.20	675 4.45	695 4.65	710 4.85	730 5.10	750 5.35	765 5.55	785 5.80	800 6.05	815 6.25	830 6.50	850 6.80	865 7.00	880 7.25
8250	580 3.60	605 3.85	625 4.05	645 4.25	665 4.50	685 4.75	705 4.95	725 5.20	740 5.40	760 5.70	775 5.90	795 6.15	810 6.40	825 6.60	840 6.85	855 7.10	870 7.35	890 7.65
8500	595 3.90	615 4.10	635 4.35	660 4.60	675 4.80	695 5.05	715 5.30	735 5.55	750 5.75	770 6.05	785 6.25	805 6.55	820 6.75	835 7.00	850 7.25	865 7.50	880 7.75	895 8.00
8750	610 4.25	630 4.45	650 4.70	670 4.90	690 5.15	710 5.40	725 5.60	745 5.90	760 6.10	780 6.40	795 6.60	815 6.90	830 7.15	845 7.40	860 7.65	875 7.90	890 8.15	905 8.40
9000	620 4.50	645 4.80	665 5.05	685 5.30	700 5.50	720 5.75	740 6.05	755 6.25	775 6.55	790 6.75	805 7.00	825 7.30	840 7.55	855 7.80	870 8.05	885 8.30	900 8.60	915 8.90
9250	635 4.90	655 5.10	675 5.35	695 5.65	715 5.90	730 6.10	750 6.40	765 6.60	785 6.90	800 7.15	815 7.40	835 7.70	850 7.95	865 8.25	880 8.50	895 8.80	910 9.00	925 9.25
9500	650 5.25	670 5.50	690 5.80	710 6.05	725 6.25	745 6.55	760 6.75	780 7.10	795 7.30	810 7.55	830 7.90	845 8.15	860 8.40	875 8.65	890 9.00	905 9.15	920 9.35	935 9.60
9750	665 5.65	685 5.90	705 6.20	720 6.40	740 6.70	755 6.95	775 7.25	790 7.50	805 7.75	825 8.05	840 8.30	855 8.60	870 8.75	885 9.20	900 9.35	915 9.60	930 9.85	945 10.15
10,000	680 6.05	695 6.30	715 6.55	735 6.85	750 7.10	770 7.40	785 7.65	805 8.00	820 8.25	835 8.50	850 8.70	865 8.90	880 9.30	895 9.55	910 9.75	925 10.05	940 10.40	955 10.60
10,250	690 6.30	705 6.40	725 6.75	745 7.10	760 7.25	780 7.80	795 8.00	815 8.35	830 8.70	845 8.85	860 9.10	875 9.35	890 9.75	905 9.90	920 10.20	935 10.40	950 10.75	965 11.15
10,500	705 6.55	720 6.85	735 7.10	755 7.45	775 7.85	790 8.25	810 8.55	825 8.80	840 9.15	855 9.25	870 9.55	885 9.70	895 10.00	915 10.25	930 10.60	950 11.00	960 11.20	975 11.50
10,750	715 7.00	735 7.25	745 7.50	770 7.95	785 8.35	805 8.70	820 8.90	835 9.25	850 9.45	865 9.70	880 10.15	895 10.30	905 10.40	925 10.80	940 11.20	960 11.50	----	----
11,000	730 7.50	745 7.70	760 7.95	780 8.35	800 8.85	815 9.10	830 9.40	845 9.65	860 9.85	875 10.20	890 10.50	905 10.70	915 10.85	935 11.30	----	----	----	----
11,250	740 7.85	755 8.10	775 8.50	795 9.00	810 9.25	830 9.70	845 9.85	855 10.05	870 10.35	885 10.60	900 10.85	915 11.15	925 11.40	----	----	----	----	----
11,500	755 8.30	770 8.70	785 9.05	810 9.55	825 9.80	840 10.00	855 10.25	865 10.55	880 10.75	895 11.10	910 11.30	----	----	----	----	----	----	----
11,750	770 8.85	780 9.25	805 9.70	820 9.90	840 10.25	855 10.50	865 10.75	875 10.85	890 11.25	905 11.45	----	----	----	----	----	----	----	----
12,000	780 9.65	795 9.85	820 10.15	835 10.40	850 10.65	865 11.00	875 11.20	885 11.35	----	----	----	----	----	----	----	----	----	----
12,250	795 10.15	810 10.35	835 10.65	850 10.90	860 11.15	875 11.35	----	----	----	----	----	----	----	----	----	----	----	----
12,500	805 10.50	825 10.75	845 11.20	860 11.35	870 11.50	----	----	----	----	----	----	----	----	----	----	----	----	----

NOTE — All data is measured external to the unit with dry coil and air filters in place. See Page 24 for Accessory Air Resistance data.

NOTE — Maximum air volume for CHA16-2553 and CHA16-2753 is 10,000 cfm. Maximum air volume for CHA16-3003 is 12,500 cfm.

Light shaded area denotes optional 7-1/2 hp drive kit for CHA16-2553 and CHA16-2753 units.

Dark shaded area denotes optional 10 hp drive kit for CHA16-3003 units.

**BLOWER DATA**

**ACCESSORY AIR RESISTANCE**

Unit Model No.	Air Volume (cfm)	Total Resistance (inches water gauge)							
		Wet Evaporator Coil	*ECH16 Electric Heat	REMD16M Down-flo Economizer	EMDH16M Horizontal Economizer	RTD11 Step-Down Diffuser			FD11 Flush Diffuser
						2 Ends Open	1 Side 2 Ends Open	All Ends & Sides Open	
CHA16-823 CHA16-953	2400	.12	----	.03	.03	.21	.18	.15	.14
	2600	.13	----	.04	.04	.24	.21	.18	.17
	2800	.14	----	.04	.04	.27	.24	.21	.20
	3000	.16	----	.05	.05	.32	.29	.25	.25
	3200	.18	----	.05	.05	.41	.37	.32	.31
	3400	.19	----	.06	.06	.50	.45	.39	.37
	3600	.21	----	.06	.06	.61	.54	.48	.44
	3800	.23	----	.07	.07	.73	.63	.57	.51
CHA16-1353	3600	.12	----	.03	.03	.36	.28	.23	.15
	3800	.13	----	.04	.04	.40	.32	.26	.18
	4000	.14	----	.04	.04	.44	.36	.29	.21
	4200	.15	----	.05	.05	.49	.40	.33	.24
	4400	.16	----	.05	.05	.54	.44	.37	.27
	4600	.17	----	.06	.06	.60	.49	.42	.31
	4800	.18	----	.07	.07	.65	.53	.46	.35
	5000	.19	----	.09	.09	.69	.58	.50	.39
CHA16-1603	5200	.20	----	.10	.10	.75	.62	.54	.43
	4200	.10	----	.06	.06	.22	.19	.16	.10
	4400	.11	----	.07	.07	.28	.24	.20	.12
	4600	.12	----	.07	.07	.34	.29	.24	.15
	4800	.13	----	.08	.08	.40	.34	.29	.19
	5000	.14	----	.08	.08	.46	.39	.34	.23
	5200	.15	----	.09	.09	.52	.44	.39	.27
	5400	.16	----	.10	.10	.58	.49	.43	.31
CHA16-1853	5600	.17	----	.12	.12	.64	.54	.47	.35
	5800	.18	----	.13	.13	.70	.59	.51	.39
	5000	.07	.15	.11	----	.51	.44	.39	.27
	5200	.08	.16	.12	----	.56	.48	.42	.30
	5400	.09	.17	.13	----	.61	.52	.45	.33
	5600	.10	.19	.14	----	.66	.56	.48	.36
	5800	.11	.21	.15	----	.71	.59	.51	.39
	6000	.12	.23	.16	----	.76	.63	.55	.42
	6200	.13	.25	.17	----	.80	.68	.59	.46
	6400	.14	.27	.18	----	.86	.72	.63	.50
	6600	.15	.29	.20	----	.92	.77	.67	.54
	6800	.16	.31	.22	----	.99	.83	.72	.58
CHA16-2553 CHA16-2753 CHA16-3003	7000	.17	.32	.23	----	1.03	.87	.76	.62
	7200	.18	.34	.24	----	1.09	.92	.80	.66
	7400	.19	.36	.25	----	1.15	.97	.84	.70
	7600	.20	.38	.26	----	1.20	1.02	.88	.74
	6000	.06	.09	.01	----	.36	.31	.27	.29
	6500	.07	.10	.02	----	.42	.36	.31	.34
	7000	.08	.11	.02	----	.49	.41	.36	.40
	7500	.09	.12	.04	----	.51	.46	.41	.45
8000	.10	.13	.06	----	.59	.49	.43	.50	
8500	.11	.14	.08	----	.69	.58	.50	.57	
9000	.12	.15	.10	----	.79	.67	.58	.66	
9500	.13	.16	.12	----	.89	.75	.65	.74	
10,000	.15	.17	.14	----	1.00	.84	.73	.81	

\*Electric heaters for CHA16-823 thru CHA16-1603 units have no appreciable air resistance.



**PED16-185 & PED16-300  
POWER EXHAUST FANS PERFORMANCE**

Model No.	Air Volume (cfm Exhausted)	Return Air System Static Pressure (Inches Water Gauge)
PED16-185	4200	0
	3800	.05
	3500	.10
	3200	.15
	2700	.20
	2200	.25
PED16-300	6300	0
	5750	.05
	5200	.10
	4625	.15
	4050	.20

**CEILING DIFFUSER AIR THROW DATA**

Model No.	Air Volume (cfm)	*Effective Throw Range (feet)	
		RTD11 Step-Down	FD11 Flush
CHA16-823 CHA16-953	3000	27 — 33	25 — 30
	3375	30 — 37	28 — 34
	3750	34 — 41	31 — 38
CHA16-1353	4400	34 — 42	32 — 40
	4950	38 — 47	36 — 45
	5500	43 — 52	40 — 50
CHA16-1603	4200	39 — 46	40 — 48
	5000	41 — 50	43 — 52
	5800	43 — 52	45 — 54
CHA16-1853	6000	45 — 55	48 — 55
	6750	47 — 56	50 — 58
	7500	49 — 58	55 — 66
CHA16-2553 CHA16-2753 CHA16-3003	8000	39 — 44	53 — 62
	9000	47 — 56	55 — 64
	10,000	49 — 58	57 — 67

\*Throw is the horizontal or vertical distance an airstream travels on leaving the outlet or diffuser before the maximum velocity is reduced to 50 ft. per minute. Four sides open.

## GUIDE SPECIFICATIONS

**Prepared for the guidance of architects, consulting engineers and mechanical contractors.**

**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 United States.

The installed weight shall not be more than . . . . . lbs. Entire unit shall have a width of not more than . . . . . inches, a depth of not more than . . . . . inches and an overall height of not more than . . . . . inches. The equipment shall be shipped completely factory assembled, precharged, piped and wired internally ready for field connections. In addition, manufacturer shall test operate system at the factory before shipment.

**Air Distribution** — Equipment shall be capable of bottom (down-flo) or side (horizontal) handling of conditioned air. All air distribution ducts shall be fiberglass or . . . . . ga. galvanized steel insulated with . . . . . inch thick . . . . . lb. density fiberglass or equivalent.

**Approvals** — All electrical components shall have U.L. Listing. All wiring shall be in compliance with NEC.

**Equipment Warranty** — Compressors have a limited warranty for a full five years. All other components have a limited warranty for one year. Refer to the Lennox Equipment Limited Warranty certificate included with the unit for details.

**Cooling System** — The total certified cooling capacity shall not be less than . . . . . Btuh with an evaporator air volume of . . . . . cfm, an entering wet bulb air temperature of . . . . . °F, an entering dry bulb air temperature of . . . . . °F and a condenser entering temperature of . . . . . °F. The compressor power input shall not exceed . . . . . kW at these conditions.

The coils shall be non-ferrous construction with aluminum fins mechanically bonded to durable copper tubes. Coils shall be pressure leak tested. Coil face area shall be not less than . . . . . sq. ft. (evaporator) and . . . . . sq. ft. (condenser).

Multiple compressors shall be resiliently mounted, have overload protection, compressor monitor and crankcase heater. CHA16-823, -953, -1353, -1603 (2nd stage only) and -1853 units shall internal pressure relief. The refrigeration system shall have suction and liquid line service gauge ports, high pressure switches, loss of charge switches, thermometer well, driers, freestat and full refrigerant charge. CHA16-2553, -2753 & -3003 shall have suction and liquid line service valves. Control option available shall consist of low ambient control and timed-off control. Shall be rated in accordance with ARI Standard 210/240-89 or 360-86.

**Optional Additive Electric Heaters** — The certified total heating capacity output shall be . . . . . Btuh with . . . . . kW input at . . . . . volts power supply.

Electric heaters shall be available for factory or 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.

**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. Evaporator coil condensate drain extended outside cabinet shall be provided. Lifting brackets shall be provided for rigging.

**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. Blower shall be capable of delivering . . . . . cfm at an external static pressure of . . . . . inches water gauge requiring . . . . . bhp and . . . . . rpm.

**Condenser Fan(s)** — Direct drive propeller type condenser fan(s) shall discharge vertically and be direct driven by a . . . . . hp motor. Fan motor shall be permanently lubricated and inherently protected. Fan(s) shall have a safety guard.

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

## OPTIONAL ACCESSORIES

**Roof Mounting Frame** — Furnish and 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. Frame shall be approved by National Roofing Contractors Association.

**Economizer Damper Section** — Furnish and install complete with recirculated air dampers, outside air dampers, air filters, damper actuator and controls. Low leakage dampers shall ride in nylon bearings. The economizer section shall provide for the introduction of 100% outdoor air for minimum ventilation and free cooling. REMD16M-185 & 300 shall include gravity operated exhaust air dampers. Integrated economizer cycle shall allow compressors to cycle for dehumidification and additional cooling, as needed, with 100% outdoor air intake. Damper actuator shall be 24 volt, fully modulating spring return. Controls shall include fixed 55° F mixed air controller, damper actuator, adjustable minimum position switch and solid-state adjustable outdoor air enthalpy control. Cabinet shall be galvanized steel with a powdered enamel paint finish electrostatically bonded to the metal. Control option shall consist of differential enthalpy control (return air sensor).

**Gravity Exhaust Dampers** — Optional pressure operated dampers shall be available for field installation in economizer damper section. Neoprene coated fiberglass dampers shall prevent blow back and outdoor air infiltration during off cycle. Shall be equipped with rain-hoods and bird screen. Shall be furnished with REMD16M-185 & 300.

**Power Exhaust Fans** — Shall be available for CHA16 1853, -2553, -2753 & -3003 with REMD16M economizer installed in the down-flo position only. Direct drive propeller type fans shall exhaust air through exhaust dampers. Motors shall be overload protected. Fans shall install in-between the unit and exhaust dampers.

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

**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.

**Bottom Power Entry Kit** — Optional kit shall provide bottom power entry to the unit within the confines of the roof mounting frame.

**Ceiling Diffusers** — Furnish and install a (flush or stepdown) optional combination ceiling supply and return air diffuser. It shall be capable of not less than . . . . . ft. radius of effective throw. Supply and return transitions shall be available, for field installation in the roof mounting frame, to provide duct connection to the diffuser.

**Remote Status Panel** — Shall be available for installation within the conditioned area to observe equipment operation. The panel shall include signal lights for Cool Mode, Heat Mode, Compressor 1, Compressor 2, No Heat and Filter.

**Remote Switching Status Panel** — Shall be available for installation within the conditioned area to control and observe equipment operation. The panel shall include signal lights for Cool Mode, Heat Mode, Compressor 1, Compressor 2, No Heat and Filter. System selector switch and fan switch shall provide operational mode and blower operation. After hours timer switch shall override night setback controls and provide normal operation for time period set.

**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.

# UNIT DIMENSIONS (inches)

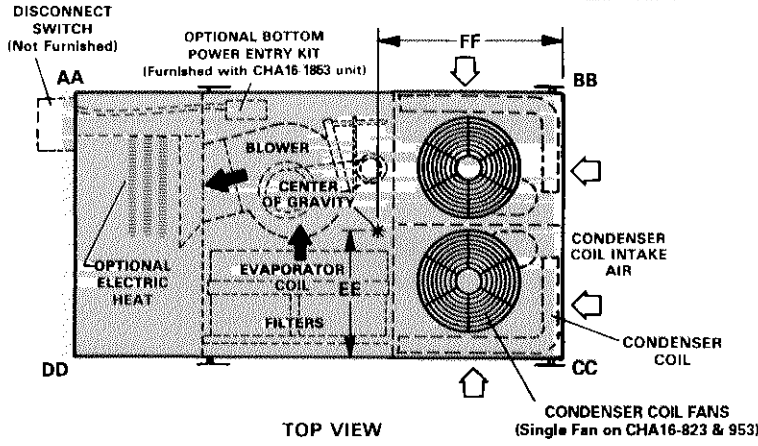
CHA16-823, -953, -1353, -1603 & -1853

## CORNER WEIGHTS (lbs.)

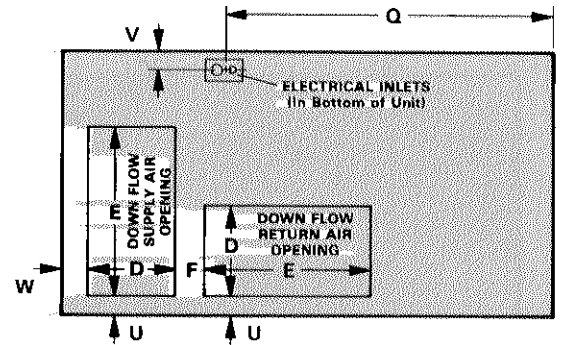
Model No.	AA	BB	CC	DD
CHA16-823	177	284	186	116
CHA16-953	210	346	308	187
CHA16-1353	227	399	327	186
CHA16-1853	325	524	452	280

## CENTER OF GRAVITY (in.)

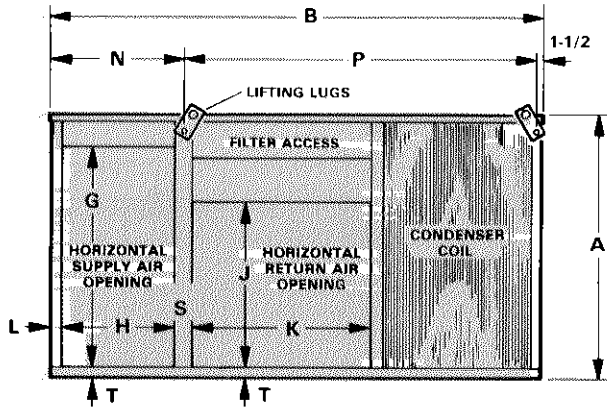
Model No.	EE	FF
CHA16-823	29	36-1/4
CHA16-953	31-3/4	35-1/2
CHA16-1353	33	37
CHA16-1853	36-1/2	44-3/8



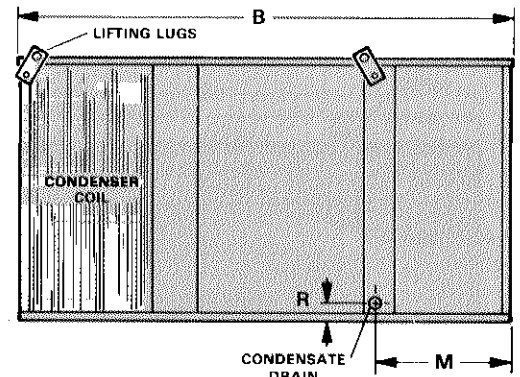
TOP VIEW



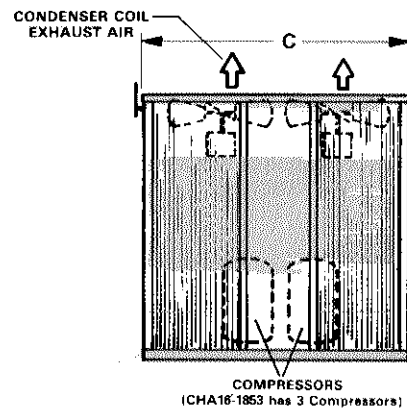
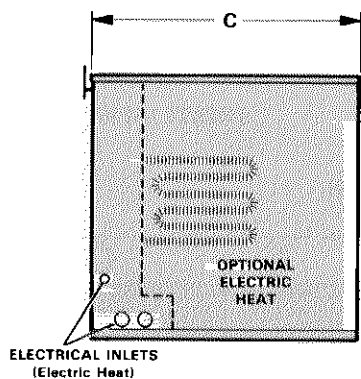
TOP VIEW BASE SECTION



BACK VIEW  
With HORIZONTAL SUPPLY & RETURN AIR OPENINGS



FRONT VIEW



Model No.	A	B	C	D	E	F	G	H	J	K	L
CHA16-823	39	88-1/2	48	16 1/2	30-3/8	5-5/8	32-1/8	19-7/16	24-5/8	33	1-5/8
CHA16-953	46	94	60	24	30-3/8	4-7/16	39-1/8	25-1/4	31-5/8	33	2
CHA16-1353	46	102	60	24	38	4-7/16	39-1/8	25-1/4	31-5/8	41	2
CHA16-1853	51-1/2	116	68	24-1/2	44	5-5/8	41-1/2	25-3/4	32-3/4	50-1/8	2

Model No.	M	N	P	Q	R	S	T	U	V	W
CHA16-823	25-1/16	22-1/8	64-7/8	54-1/2	2-3/8	2-3/4	1-1/2	3-1/16	4-3/16	3-1/16
CHA16-953	31-3/16	28-1/2	64	54-1/2	2-3/8	2-3/4	1-1/2	3-1/16	4-3/16	3-1/16
CHA16-1353	31-3/16	28-1/2	72	62-1/2	2-3/8	2-3/4	1-1/2	3-1/16	4-3/16	3-1/16
CHA16-1853	33-1/2	33	81-1/2	36	4	4-1/4	3	5	7-1/4	4-1/16

# UNIT DIMENSIONS (inches)

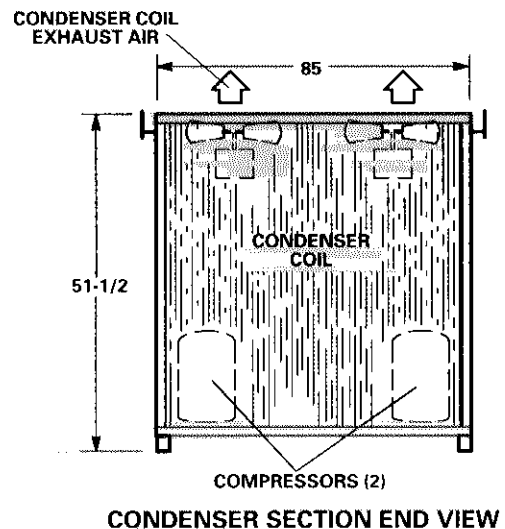
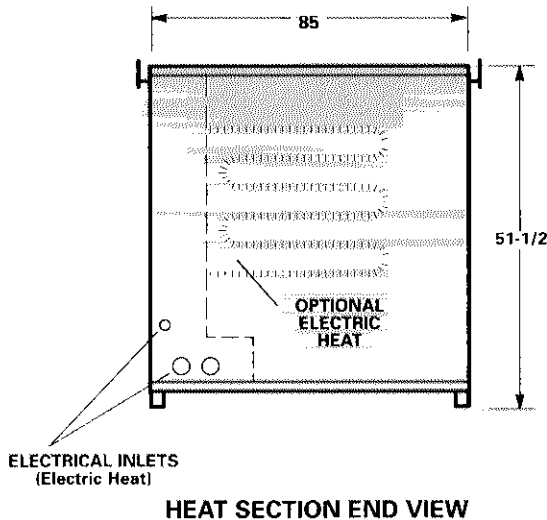
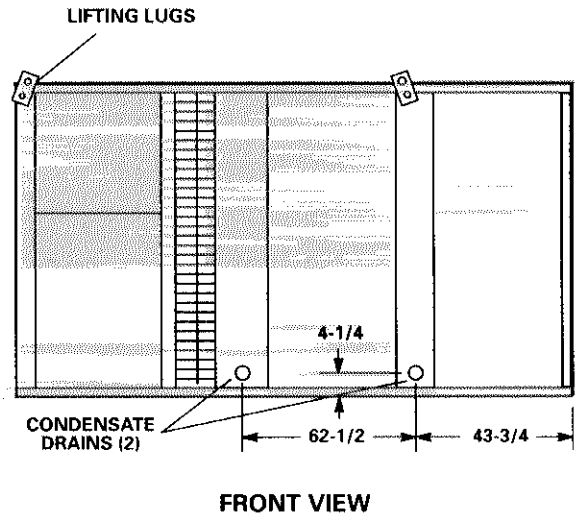
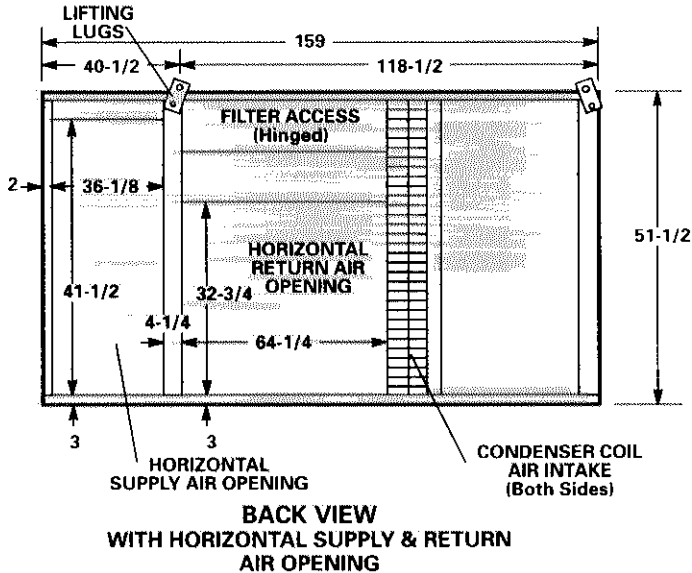
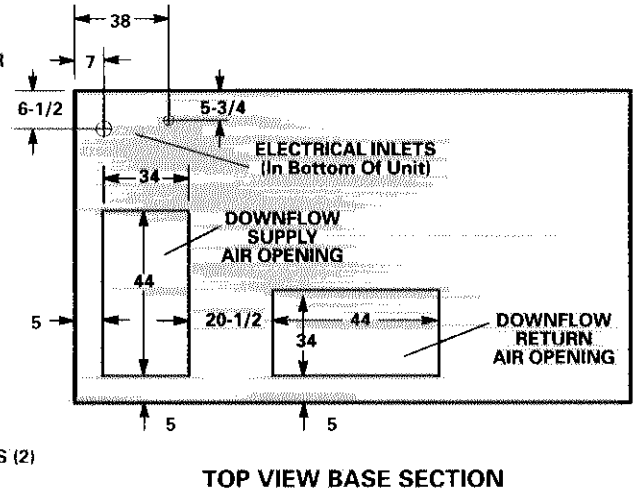
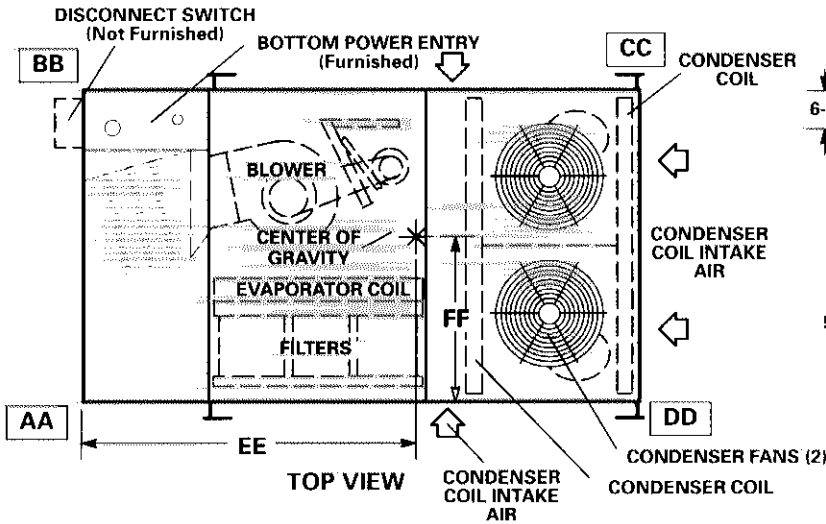
CHA16-2553, -2753 & -3003

## CORNER WEIGHTS (lbs.)

Model No.	AA	BB	CC	DD
CHA16-2553	390	460	644	546
CHA16-2753	390	460	644	546
CHA16-3003	442	533	747	618

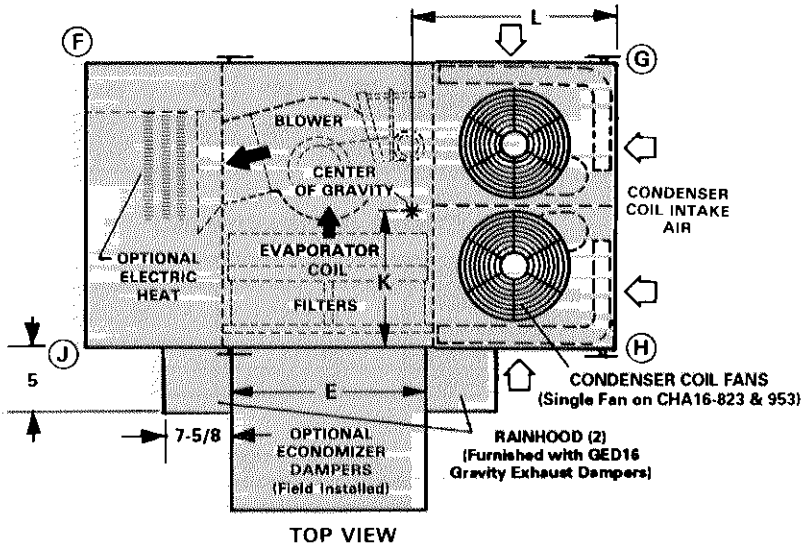
## CENTER OF GRAVITY (in.)

Model No.	EE	FF
CHA16-2553	92-3/4	46
CHA16-2753	92-3/4	46
CHA16-3003	92-3/4	46-1/2



**ACCESSORY DIMENSIONS (inches)**

**CHA16-823, -953, -1353 & -1603 UNITS WITH REMD16M ECONOMIZER DAMPER SECTION AND RMF16 ROOF MOUNTING FRAME**



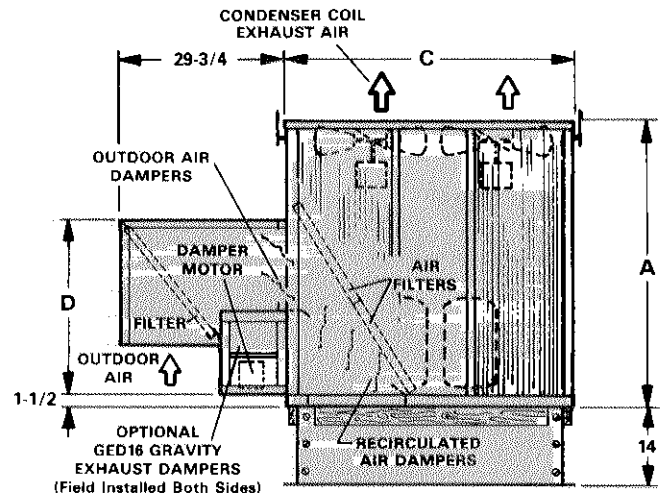
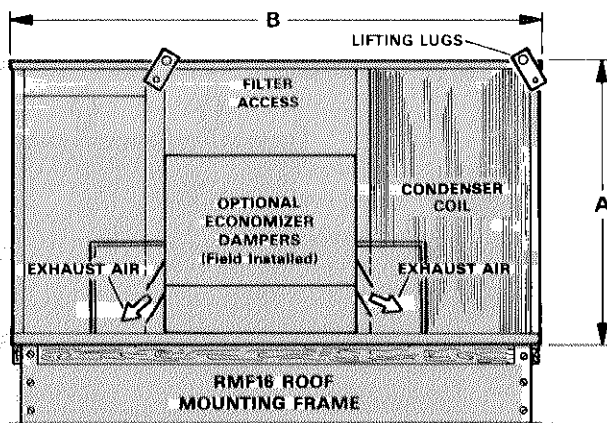
**CORNER WEIGHT (lbs.)**

Model No.	F	G	H	J
CHA16-823	189	251	241	181
CHA16-953	222	342	360	233
CHA16-1353	229	402	413	235

**CENTER OF GRAVITY (in.)**

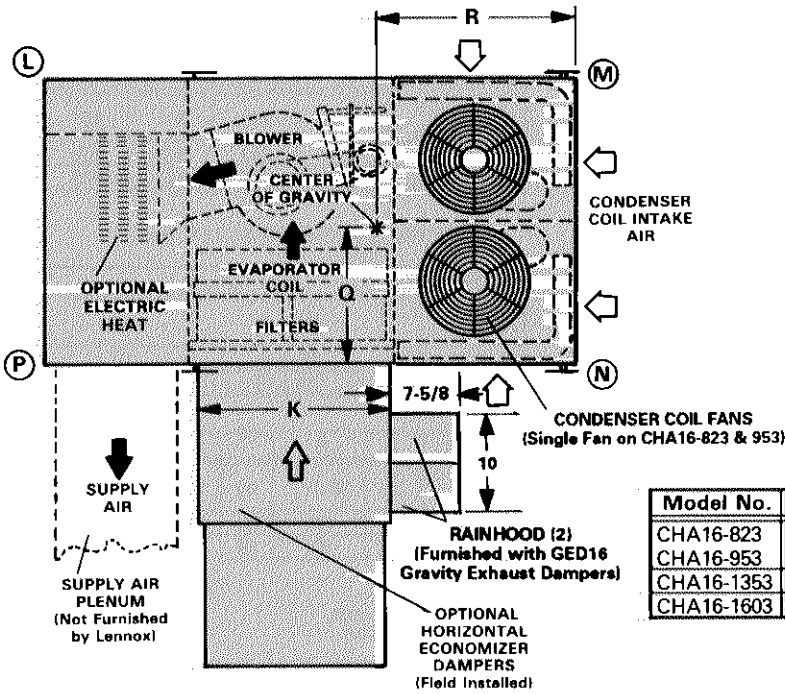
Model No.	K	L
CHA16-823	24-1/2	38
CHA16-953	29-1/4	37
CHA16-1353	29-5/8	37

Model No.	A	B	C	D	E
CHA16-823	39	88-1/2	48	28-9/16	32-9/16
CHA16-953	46	94	60	34-9/16	32-9/16
CHA16-1353	46	102	60	34-9/16	40-9/16



**ACCESSORY DIMENSIONS (inches)**

**CHA16-823, -953, -1353 & -1603 UNITS WITH  
EMDH16 HORIZONTAL ECONOMIZER DAMPER SECTION**



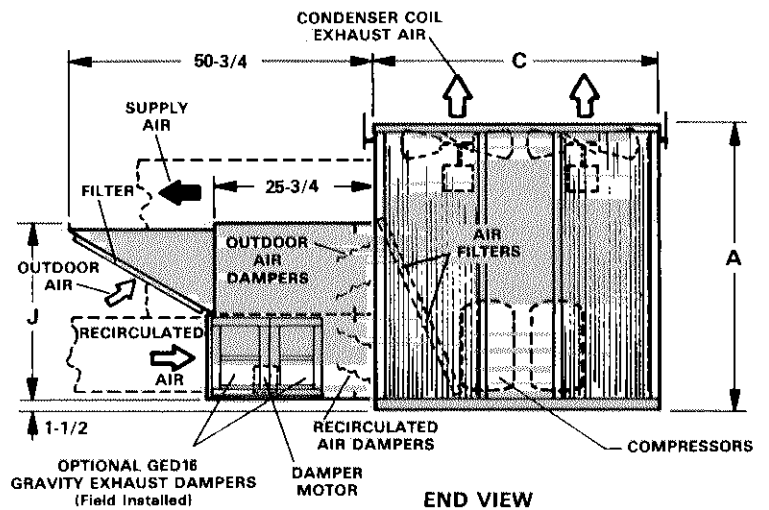
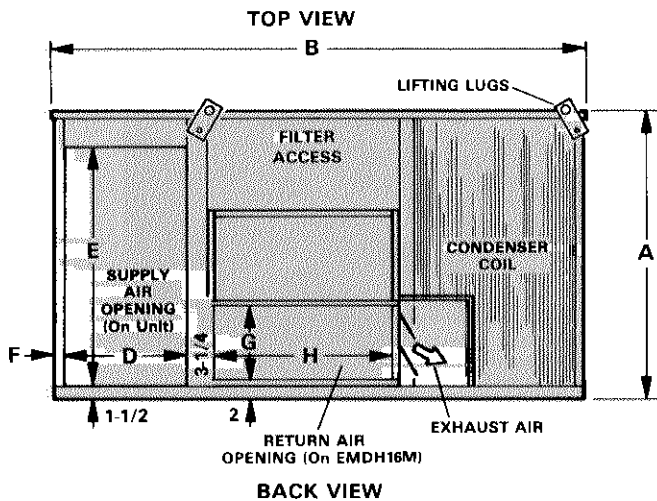
**CORNER WEIGHT (lbs.)**

Model No.	L	M	N	P
CHA16-823	189	251	241	181
CHA16-953	222	342	360	233
CHA16-1353	223	392	428	244

**CENTER OF GRAVITY (in.)**

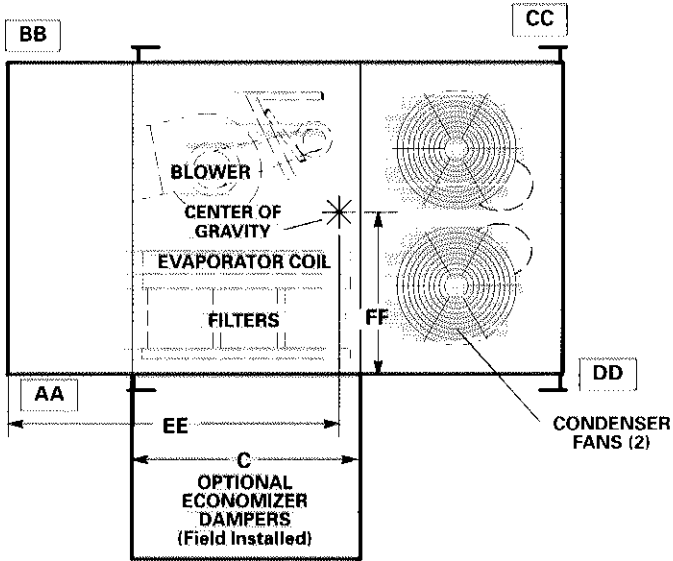
Model No.	Q	R
CHA16-823	24-1/2	38
CHA16-953	29-1/4	37
CHA16-1353	28-5/8	37

Model No.	A	B	C	D	E	F	G	H	J	K
CHA16-823	39	88-1/2	48	19-7/16	32-1/8	1-5/8	13-1/4	31-1/2	28-3/4	32-9/16
CHA16-953	46	94	60	25-1/4	39-1/8	2	19-1/4	31-1/2	34-3/4	32-9/16
CHA16-1353	46	102	60	25-1/4	39-1/8	2	19-1/4	39-1/2	34-3/4	40-9/16



**ACCESSORY DIMENSIONS (inches)**

**CHA16-1853, -2553, -2753 & -3003 UNIT  
WITH REMD16M ECONOMIZER DAMPER SECTION AND RMF16 ROOF MOUNTING FRAME  
(DOWN-FLOW APPLICATION)**



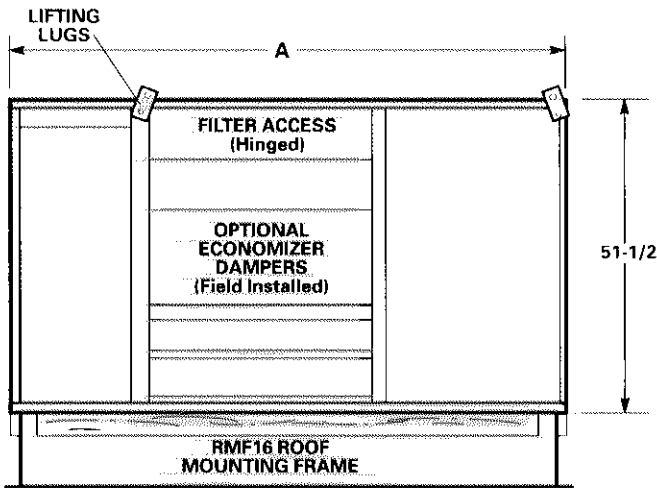
**TOP VIEW**

**CORNER WEIGHTS (lbs.)**

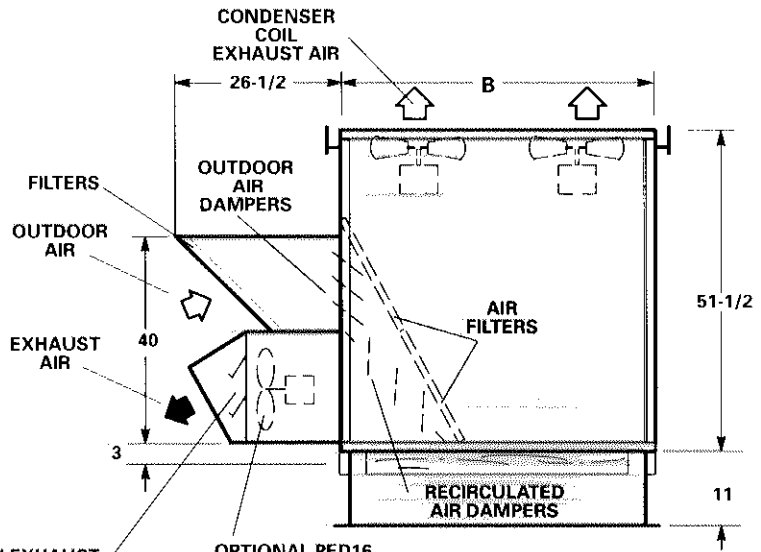
Model No.	AA	BB	CC	DD
CHA16-1853	331	378	550	482
CHA16-2553	535	517	677	701
CHA16-2753	535	517	677	701
CHA16-3003	594	587	770	779

**CENTER OF GRAVITY (in.)**

Model No.	EE	FF
CHA16-1853	67-3/4	35-1/4
CHA16-2553	90-3/16	41-3/4
CHA16-2753	90-3/16	41-3/4
CHA16-3003	90-3/16	42-1/4



**BACK VIEW**



**GRAVITY EXHAUST DAMPERS**  
(Furnished With REMD16M)  
(Net Face Area:  
-185 — 4.3 sq. ft.)  
-300 — 5.6 sq. ft.)

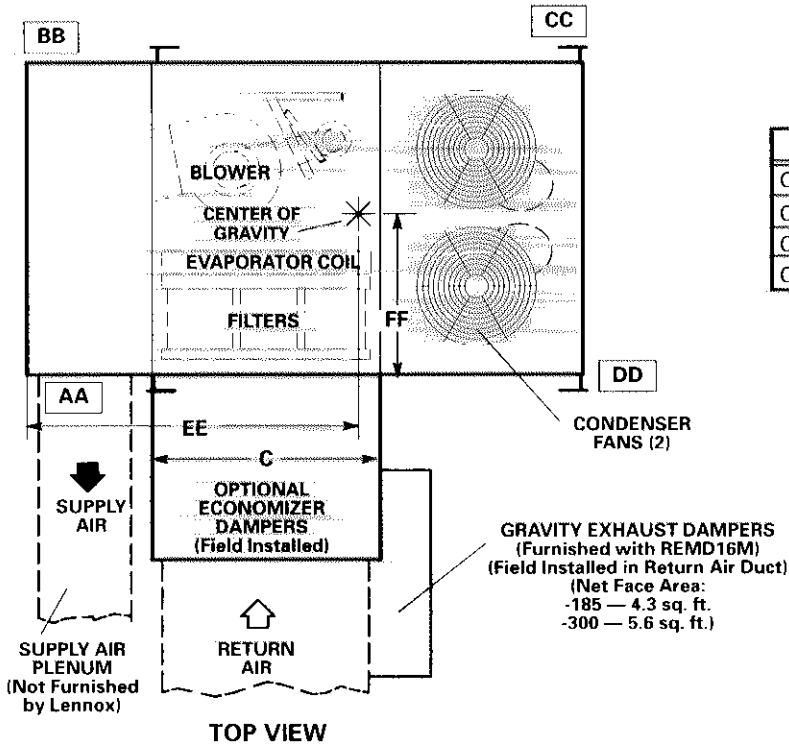
**OPTIONAL PED16 POWER EXHAUST FANS**  
(PED16-185 has two fans)  
(PED16-300 has three fans)

**CONDENSER SECTION END VIEW**

Model No.	A	B	C
CHA16-1853	116	68	50-3/4
CHA16-2553 CHA16-2753 CHA16-3003	159	85	64-1/2

**ACCESSORY DIMENSIONS (inches)**

**CHA16-1853, -2553, -2753 & -3003 UNIT  
WITH REMD16M ECONOMIZER DAMPER SECTION  
(HORIZONTAL APPLICATION)**

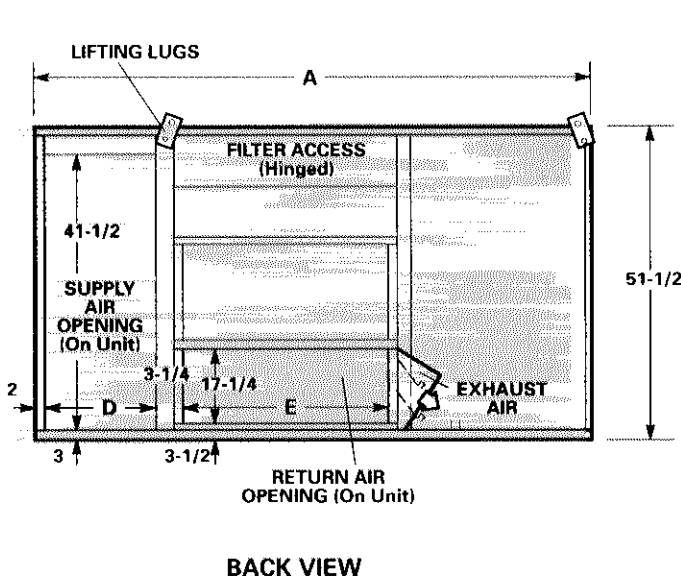


**CORNER WEIGHTS (lbs.)**

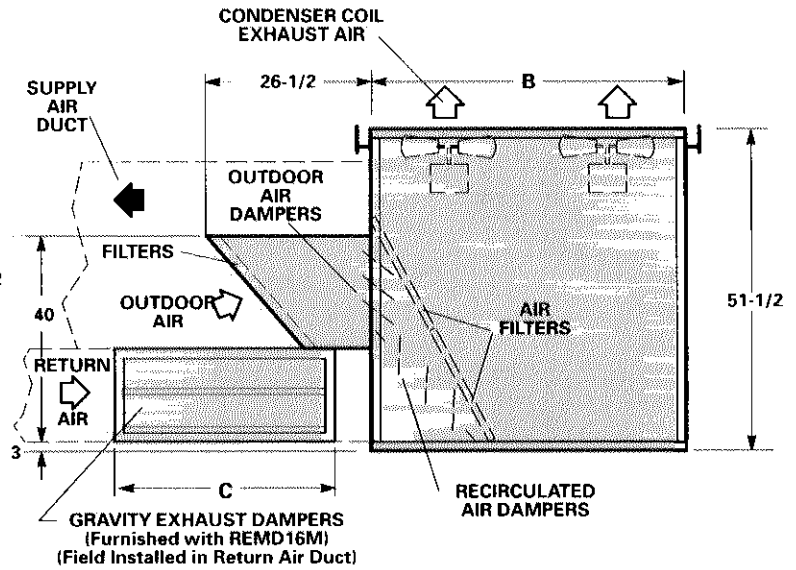
Model No.	AA	BB	CC	DD
CHA16-1853	359	387	505	543
CHA16-2553	490	472	632	656
CHA16-2753	490	472	632	656
CHA16-3003	548	542	726	734

**CENTER OF GRAVITY (in.)**

Model No.	EE	FF
CHA16-1853	68-3/4	36-1/4
CHA16-2553	91-1/16	41-3/4
CHA16-2753	91-1/16	41-3/4
CHA16-3003	91-1/16	42-1/4



**BACK VIEW**



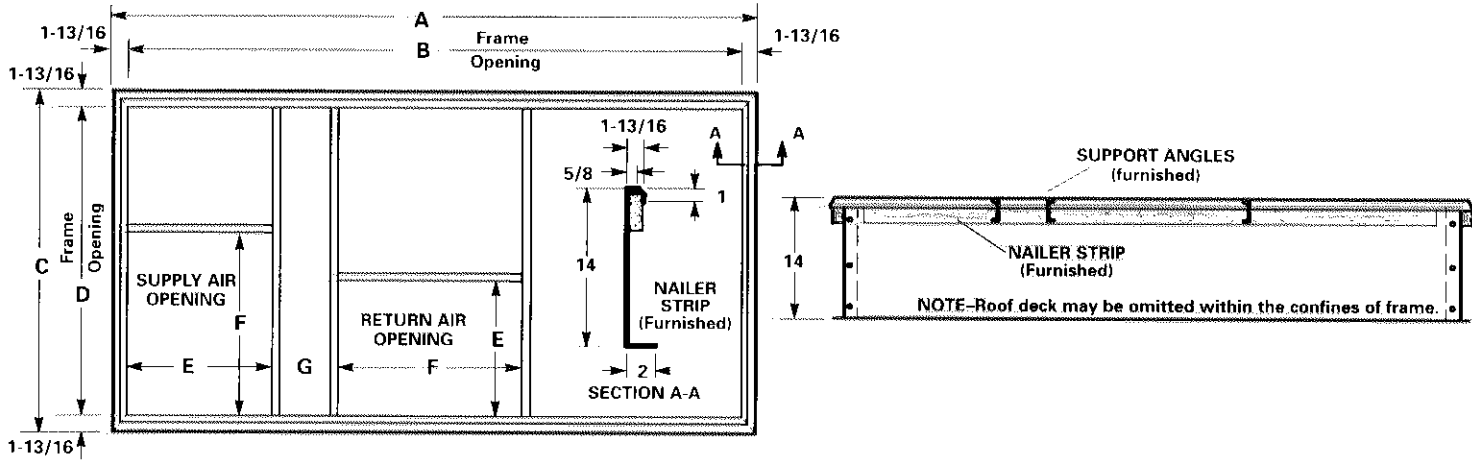
**CONDENSER SECTION END VIEW**

Model No.	A	B	C	D	E
CHA16-1853	116	68	50-3/4	25-3/4	50
CHA16-2553 CHA16-2753 CHA16-3003	159	85	64-1/2	36-1/8	64-1/4



**ACCESSORY DIMENSIONS (inches)**

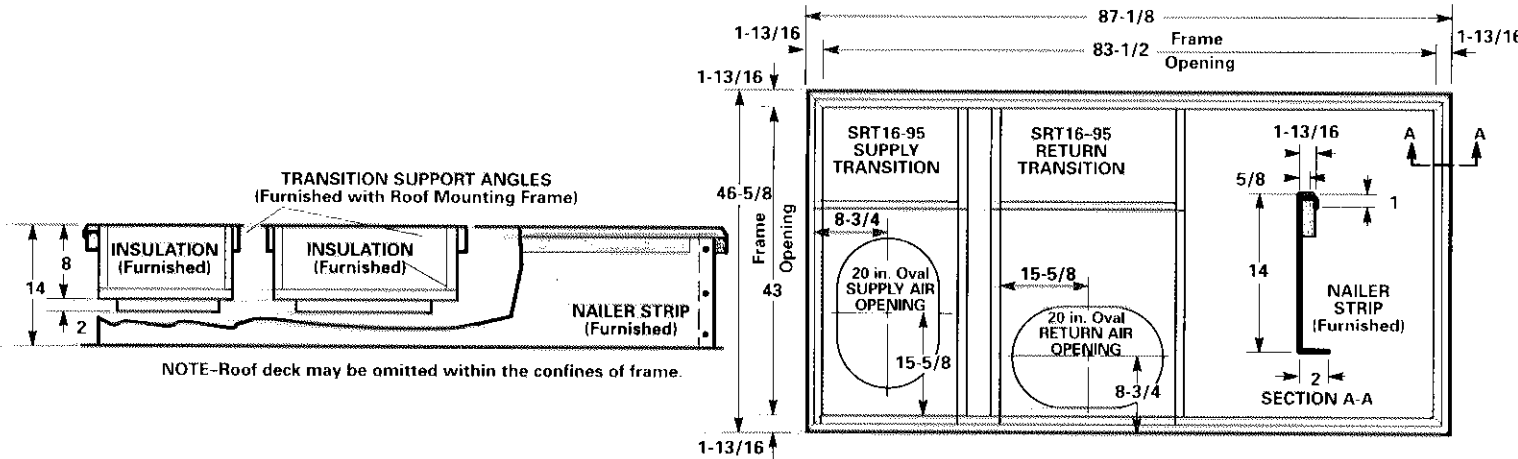
**RMF16 SERIES ROOF MOUNTING FRAME WITH DOUBLE DUCT OPENING**



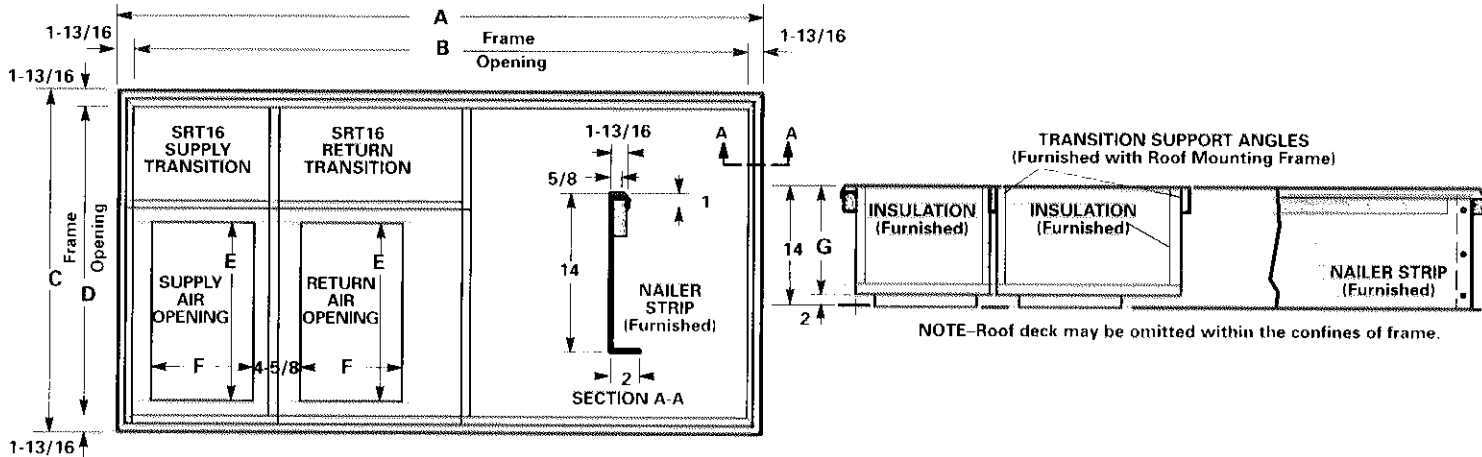
Model No.	A	B	C	D	E	F	G
RMF16-95	87-1/8	83-1/2	46-5/8	43	17-15/16	31-1/2	4
RMF16-135/160	92-1/2	88-7/8	58-1/2	54-7/8	25-1/4	*	3-3/16
RMF16-185	111-3/4	108-1/8	63-7/8	60-1/4	26	45-1/2	4-3/8
RMF16-300	156-5/16	152-11/16	80-7/8	77-1/4	36	46	18

\*31-1/2 inches for 1353 units. 39-1/2 inches for 1603 units.

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



**RMF16-135/160, -185 & -300 ROOF MOUNTING FRAMES WITH SRT16  
SUPPLY AND RETURN AIR TRANSITIONS FOR FD11 & RTD11 CEILING DIFFUSERS**

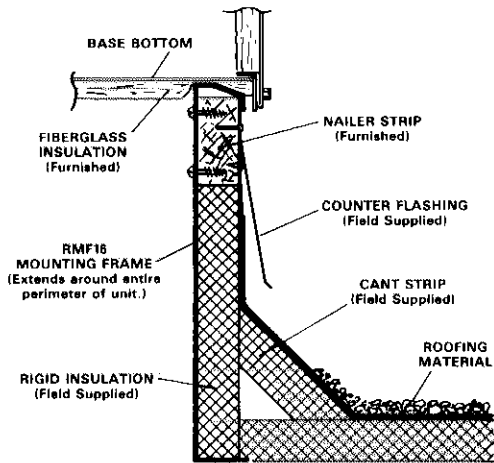


Model No.	A	B	C	D	E	F	G
RMF16-135/160	92-1/2	88-7/8	58-1/2	54-7/8	*	18	8
RMF16-185	111-3/4	108-1/8	63-7/8	60-1/4	36	18	12
RMF16-300	156-5/16	152-11/16	80-7/8	77-1/4	48	24	12

\*28 inches for SRT16-135 Transition. 36 inches for SRT16-160 Transition.

**ACCESSORY DIMENSIONS (inches)**

**TYPICAL FLASHING DETAIL FOR RMF16 ROOF MOUNTING FRAME**

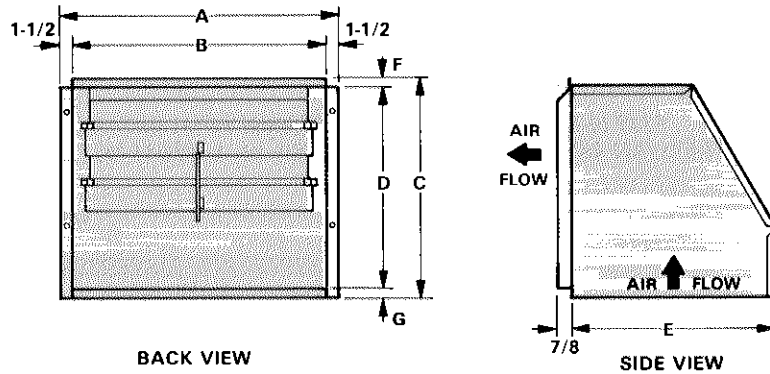


**ROOF MOUNTING FRAME SPECIFICATIONS**

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

Roof Mounting Frame	RMF16-95 thru -300
*Frame moment of inertia (I) (in. <sup>4</sup> )	42
*Frame section modulus $\frac{I}{C}$ (in. <sup>3</sup> )	5.8
Mounting frame weight (lb/foot of length)	5.5
Mounting frame design strength (psi)	20,000

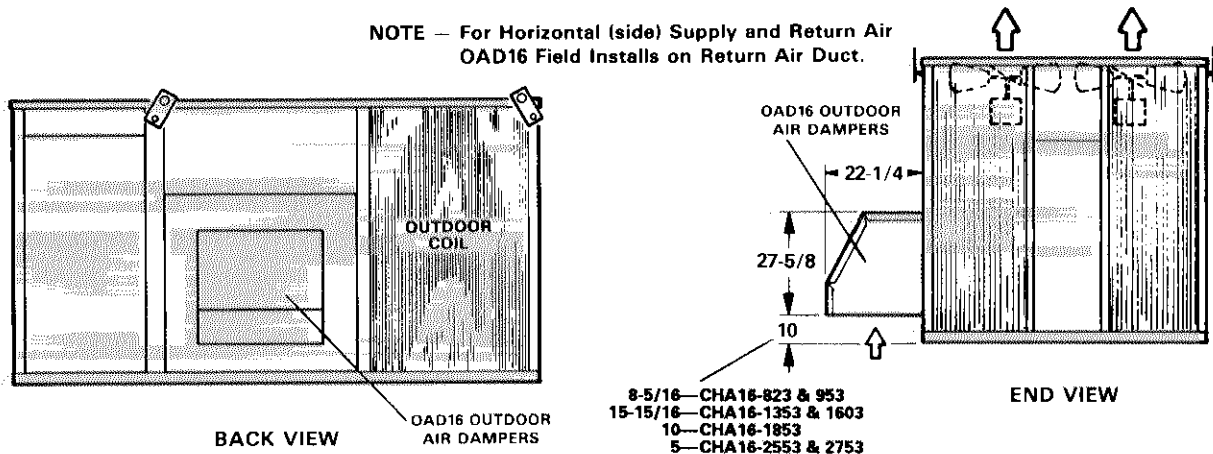
**OAD16 OUTDOOR AIR DAMPER SECTION**



Model No.	A	B	C	D	E	F	G
OAD16-95 OAD16-135 OAD16-160	24	21	18-1/2	17-1/8	17-1/8	3/4	5/8
OAD16-185	33	30	28-3/8	27	22-1/4	3/4	5/8
OAD16-300	33	30	34-5/8	33-1/4	24-1/4	1/2	1/2

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

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

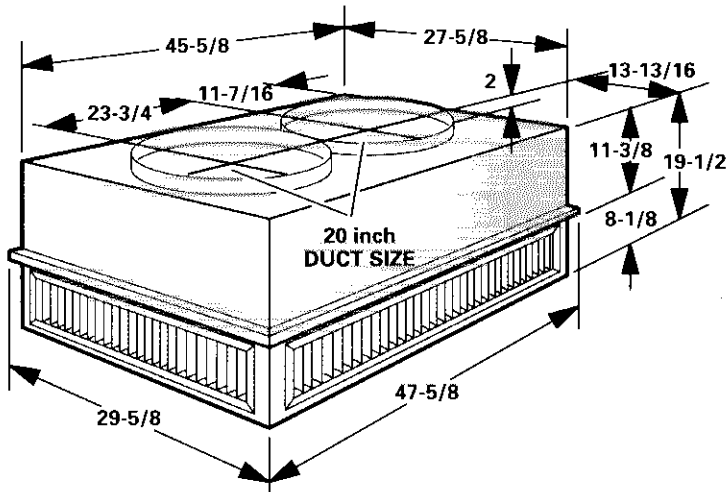


Model No.	A	B
OAD16-95 OAD16-135 OAD16-160	17-1/8	17-1/8
OAD16-185	27	22-1/4
OAD16-300	33	24-1/4

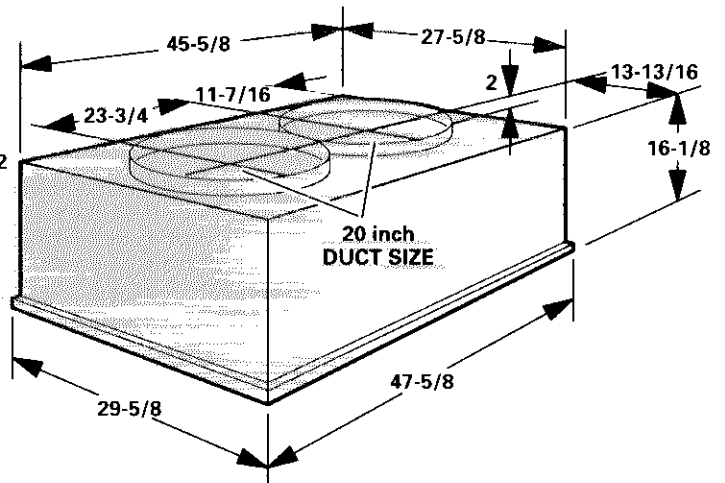
**ACCESSORY DIMENSIONS (inches)**

**COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS**

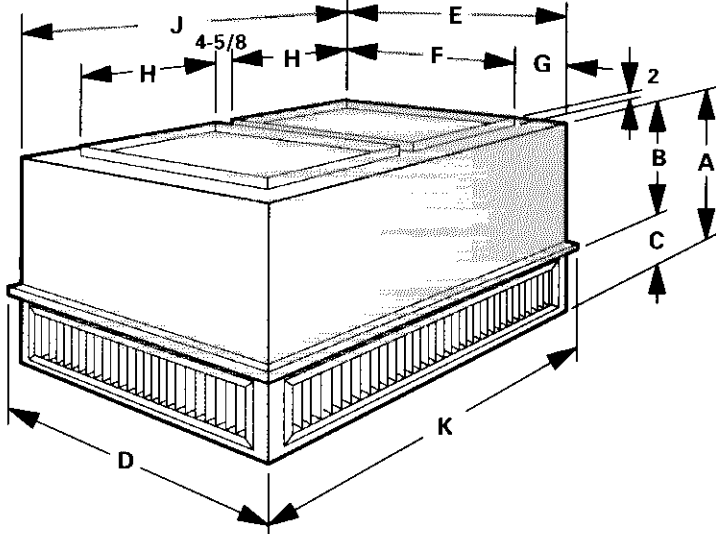
**RTD11-95 STEP-DOWN CEILING DIFFUSER**



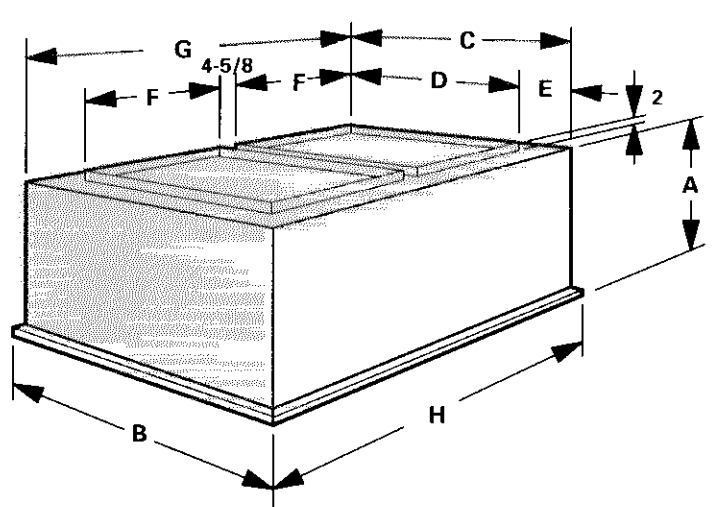
**FD11-95 FLUSH CEILING DIFFUSER**



**RTD11-135, RTD11-185 & RTD11-275 STEP-DOWN CEILING DIFFUSER**



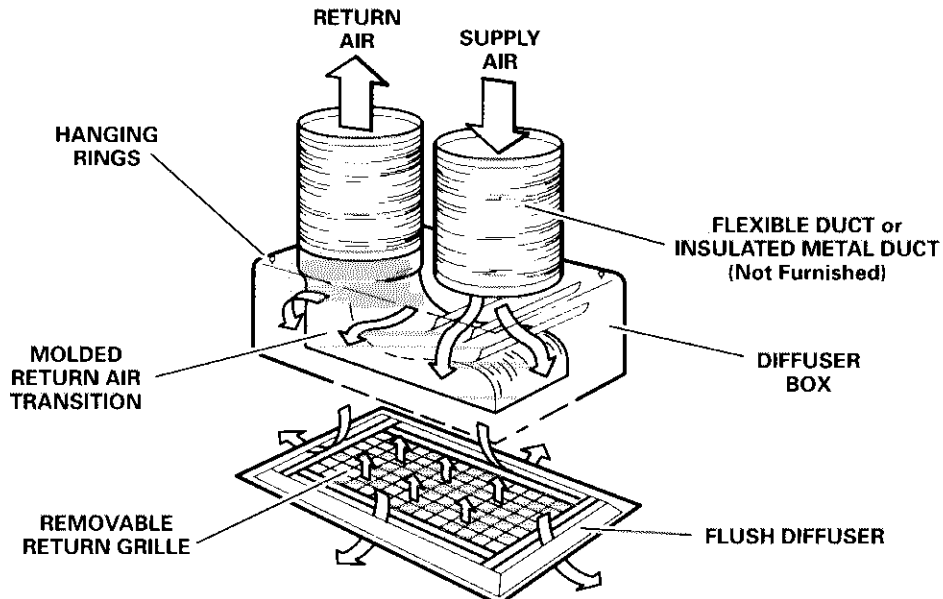
**FD11-135, FD11-185 & FD11-275 FLUSH CEILING DIFFUSER**



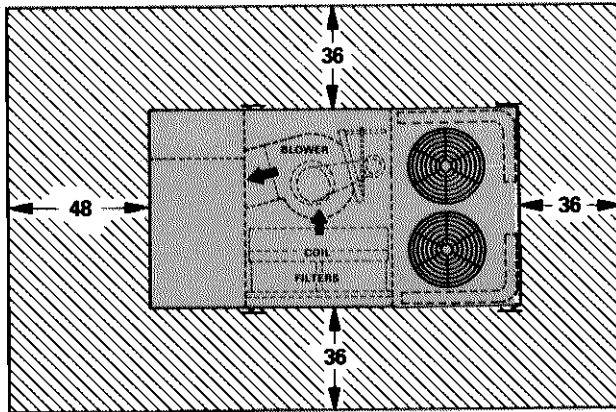
Model No.	A	B	C	D	E	F	G	H	J	K
RTD11 135	28	18 7/8	9 1/8	35-5/8	33-5/8	28	2-13/16	18	45-5/8	47-5/8
RTD11-185	34	23-7/8	10 1/8	47 5/8	45-5/8	36	4-13/16	18	45-5/8	47-5/8
RTD11-275	40	28-7/8	11 1/8	59 5/8	57 7/8	48	4 13/16	24	57 5/8	59 5/8

Model No.	A	B	C	D	E	F	G	H
FD11 135	24 1/8	35-5/8	33-5/8	28	2-13/16	18	45-5/8	47-5/8
FD11-185	30-1/8	47 5/8	45 5/8	36	4 13/16	18	45-5/8	47 5/8
FD11 275	36-1/8	59-5/8	57-5/8	48	4-13/16	24	57-5/8	59 5/8

**DIFFUSER AIR PATTERN**

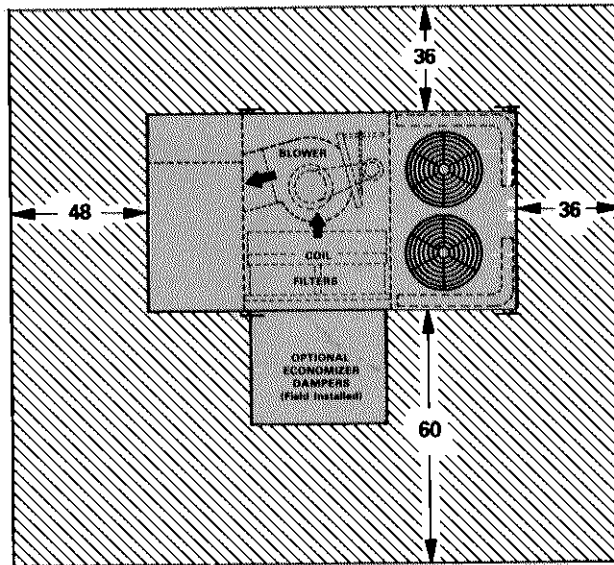


**CHA16 BASIC UNIT**

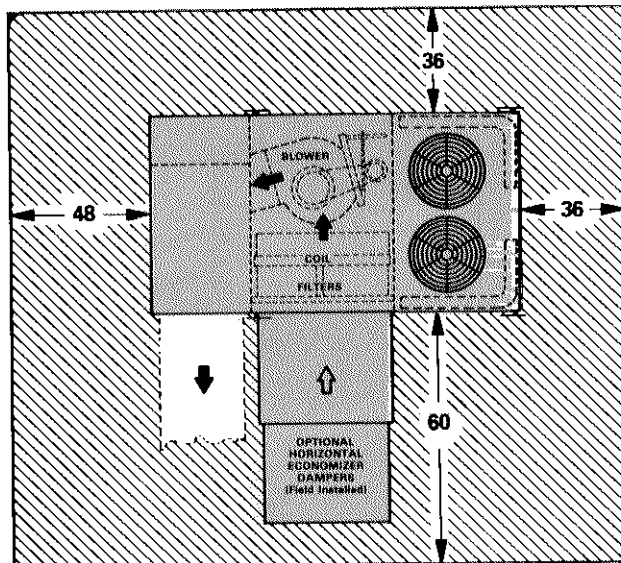


**NOTE – Top Clearance Unobstructed.**  
**NOTE – Entire perimeter of unit requires support when elevated above mounting surface.**

**CHA16 UNIT WITH REMD16M ECONOMIZER DAMPER SECTION**



**NOTE – Top Clearance Unobstructed.**  
**CHA16 UNIT WITH EMDH16M HORIZONTAL ECONOMIZER DAMPER SECTION**



**NOTE – Top Clearance Unobstructed.**