MARINE AIR SYSTEMS®

# 6K-16K condensing units

## Product Description

***Central System Condensing Units*** are available in capacities ranging from 6,000 to 16,000 BTUs, in both reverse cycle and cool only. Each model is available for 115 volt or 230 volt operation, at both 50 and 60 cycles. For larger capacities, see the Multi Ton condensing unit.

High efficiency compressors are incorporated to provide significant reductions in amperage draw. Each unit is hermetically sealed. Pressure switches and thermal overloads afford system protection.

Condenser coils are constructed of spiral, fluted cupronickel enclosed in a copper shell to provide high corrosion resistance for continual seawater flow. All surface components are constructed of, or coated with, materials resistant to fire and corrosion.

***Central System Condensing Units*** can be installed in any convenient location and are unaffected by vibration, moisture or ambient temperatures up to 140°F.

## Features

**Symmetrical Base Design**

- Provides optimum space efficiency with 13.13" square footprint.
- Allows ease in handling and installation.

**Electrical Box**

- Moisture resistant design.
- Internal components are fully serviceable.

**Integral Drain Pan**

- Allows for condensation removal.
- Provides for internal fastening of unit.
- Seam welded construction promotes structural integrity.
- Two sets of vibration isolators reduce vibration and ensure quiet operation.

**Quality Assurance**

- Each unit is pre-charged, test run in all operating modes and leak checked.
- Charge Guard ® protection provides sealed access ports ensuring environmental protection and system integrity.
- All units meet or exceed applicable ABYC and U.S. Coast Guard regulations, CE Directives and general Air Conditioning and Refrigeration Industry (ARI) standards.

## Specifications

| Model | CS*6K | CS*9K | CS*12K | CS*16K |
|---|---|---|---|---|
| **Capacity (BTU/H)** [1][2] | 6,000 | 9,000 | 12,000 | 16,000 |
| **Electrical Data:**[2] | | | | |
| Voltage (VAC) | 115 230 | 115 230 | 115 230 | 115 230 |
| Full Load Amps(FLA) cool | 7.0 3.7 | 6.4 3.2 | 8.4 4.4 | 12.2 5.7 |
| Full Load Amps(FLA)heat | 7.7 4.0 | 7.2 3.6 | 9.2 5.0 | 13.5 6.8 |
| Locked Rotor Amps | 34 20 | 40 20 | 50 31 | 75 36 |
| K.V.A. (Kilo-Volt-Amps) | 0.9 0.9 | 0.8 0.8 | 1.1 1.2 | 1.6 1.5 |
| Max. Circuit Breaker (Amps) | 20 10 | 20 10 | 30 15 | 40 20 |
| Min. Circuit Breaker (Amps) | 13 8 | 13 7 | 17 10 | 25 12 |
| **Physical Data:** | | | | |
| Unit Dimensions[3] | 13.13"/*33.34cm* W x 13.13"/*33.34cm* D x 15.50"/*39.4cm* H | | | |
| Water Inlet/Outlet | .....5/8"/*1.59cm* O.D..... | | | |
| Base Condensation Drain | .....5/8"/*1.59cm* O.D..... | | | |
| Base Valves (discharge x suction) | 1/4" x 3/8" | 1/4" x 3/8" | 1/4" x 3/8" | 1/4" x 1/2" |
| **Refrigerant R-22** (oz/*kg*) | 20/*0.57* | 21/*0.60* | 24/*0.68* | 24/*0.68* |
| **Weight** (lbs/*kg*) | | | | |
| Net | 56/*25.5* | 64/*29.1* | 66/*30.0* | 66/*30.0* |
| Ship | 63/*28.6* | 74/*33.6* | 75/*34.0* | 75/*34.0* |

[1] Ratings at 60 Hz. 50 Hz operation will be diminished by 17%. Fully rated 50Hz equipment is available for 220/240 VAC operation.

[2] 60Hz data given. BTU and electrical data based on a 45°F evaporator and 100°F condenser in cool mode, and a 45°F evaporator and 130°F condenser in heat mode..

[3] Unit Height is 12.6"/32.0cm without electrical box.

**'C' at the end of model number denotes cool only. Example: CSP9KC**
**'Z' at the end of model number denotes 230V. Example: CSP6KZ**

*** P = Passport II Control (CSP) M = Manual Control (CSM)**

# Installation Guidelines for 6K - 16K Condensing Units

When choosing the proper model ***Condensing Unit,*** primary consideration should be given to calculated BTU loads and available power supply. Special consideration should be given in determining the reverse cycle heating capacities under anticipated conditions. Reverse cycle operation is affected by the seawater temperature. As it decreases, the unit's heat transfer capacity also decreases and proportionately affects the output of warm air. It is not recommended that the unit be operated in the heat cycle with water temperatures below 40°F.

The location of the ***Condensing Unit*** should be dry and accessible for service, and provide the most direct routing of refrigerant line sets relative to the evaporator location(s). The vibration isolated condensing unit should be secured to a horizontal shelf that is designed for the weight of the unit and torsion loads from the vessel's movement.

Refrigerant-grade copper tubing should be properly sized for the specific application. Both the suction and liquid lines should be insulated separately with approved closed cell foam jackets (i.e., 1/4" wall thickness insulation). The refrigerant line ends should remain capped until the actual connections are made to prevent contamination. To prevent kinks in the tubing, which will adversely affect the performance and longevity of the system, tube benders are recommended.

When using multiple evaporators with one condensing unit, locate all unions and tee fittings properly in areas accessible for service. Use approved flaring techniques and refrigerant grade components for all connections.

Insulate fittings using insulation tape (only after system has been leak-checked). Wrap fittings sufficiently to equal R-value of tube insulation. Reinforced marine grade hose should be used for the seawater circuit. All hose fittings should be double clamped. The hose should be routed upward from the thru hull intake to the condensing unit to prevent air locking. The condensation drain should be connected and routed downward to a proper sump or overboard discharge.

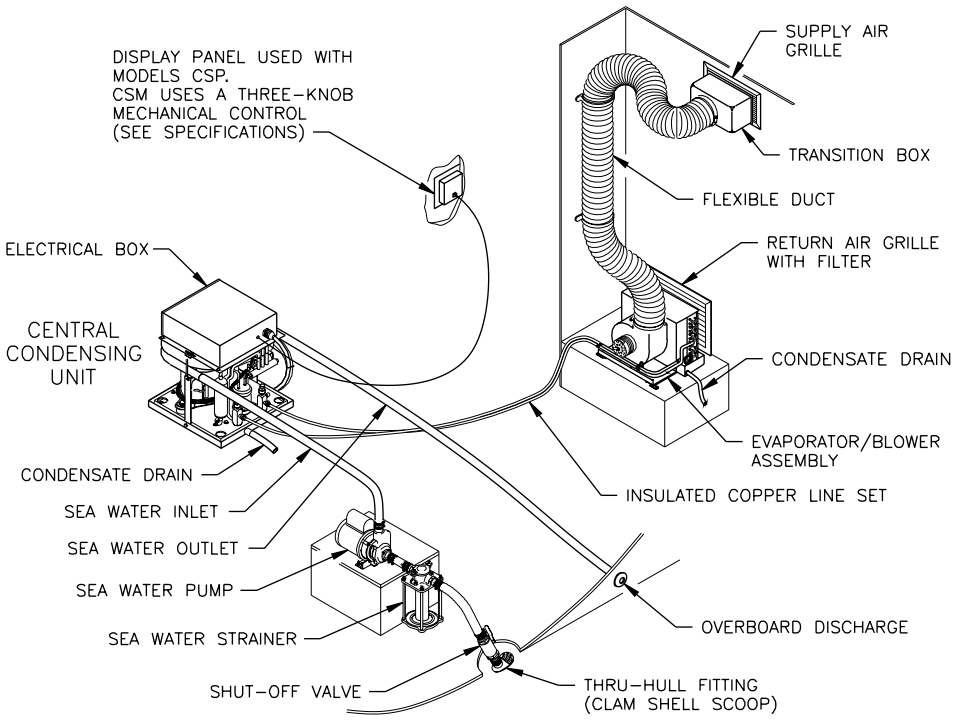
All circuit breakers and wire gauge must be sized according to marine design standards. Only stranded tinned copper wire should be used. All equipment must be properly grounded.

The installed line sets and evaporator(s) must be evacuated to remove air from these components and prevent moisture acidity formation. All connections should be properly leak-checked upon releasing the refrigerant charge from the condensing unit into the system. If the system is to be opened for any reason at this point or for future service, the refrigerant charge must be "pumped down" back into the condensing unit or recovered to prevent it from escaping into the atmosphere.

Refer to other individual component sheets for specifications and details of evaporators, controls and related parts.

In keeping with regulations set forth by the EPA, only certified technicians should perform service on, or make adjustments to, the refrigerant circuit.

Never install your air handler in bilge or engine room areas. Insure that the selected location is sealed from direct access to bilge and/or engine room vapors. Do not terminate condensate drain lines within three (3) feet of any outlet of engine or generator exhaust systems, nor in a compartment housing an engine or generator, nor in a bilge (vapors can travel up the drain line), unless the drain is connected properly to a sealed condensate or shower sump pump. Failure to comply may allow bilge or engine room vapors to mix with the air conditioners return air and contaminate living areas.






Sold and Serviced By:

Taylor Made ENVIRONMENTAL™

A Member of THE TAYLOR MADE GROUP

**Taylor Made Environmental, Inc.**

P.O. Box 15299 • Richmond, VA USA 23227-0699 • 804-746-7248 • Fax: 804-746-7248 • sales@tmenviro-va.com • www.cruisair.com

2000 N. Andrews Ave. Ext. • Pompano Beach, FL USA 33069-1497 • 954-973-2477 • Fax: 954-979-4414 • sales@tmenviro-fl.com • www.marineair.com

Fleets Industrial Estate • 26 WIllis Way • Poole, Dorset • England BH15 3SCU • 44 (0) 870 3306101 • Fax: 44 (0) 870 3306102 • sales@tmenviro-eu.com



Taylor Made Environmental, Inc. 8/01