

30 TON CHILLER SHOWN



WWW.FLAGSHIPMARINE.COM



 Manufacturer of marine air conditioning systems for the commercial, military and recreational industries, and supplier of marine heat exchangers, keel coolers and circulating pumps since 1995.

FOR MORE INFORMATION ON OUR PRODUCT LINE VISIT OUR WEBSITE AT **WWW.FLAGSHIPMARINE.COM**





 All Flagship Marine equipment is designed and manufactured at our <u>Stuart FL facility</u>.

•STILL made with pride in the USA!







THE FLAGSHIP DIFFERENCE

Flagship Marines emphasis on design is:

DURABILITY RELIABILITY EASE OF REPAIR SIMPLICITY OF DESIGN DOMESTIC METALS AND COMPONENTS



24/7 365 days/year since 2006

This is how long Flagship Marine chilled water systems have been on board the US Navy's Cyclone class patrol ships - the most extreme duty cruiser - the 176' Patrol Craft in our 5th Fleet stationed in the North Atlantic and Mid-East.



CHILLED WATER UNITS

which include the Control Box at no additional cost!



This 360,000 BTU dual compressor chiller has an incredible 31" x 52" footprint and is only 39" tall!



The evaporator refrigerant circuit is bufurcated with a single chilled water loop, so you have two completely isolated refrigerant circuits!

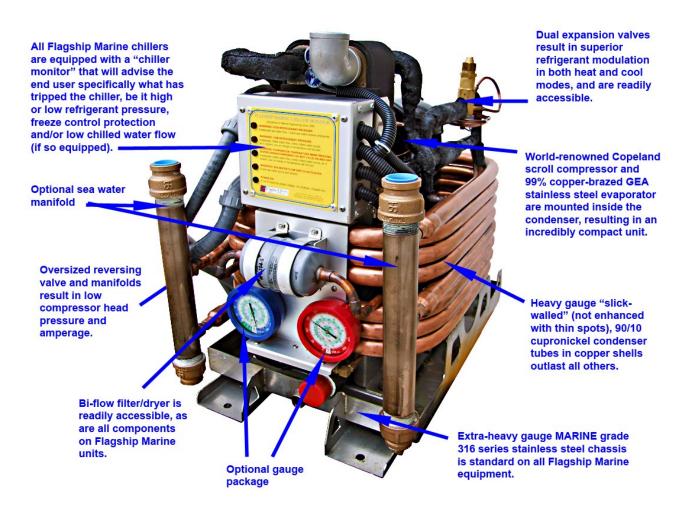


The control box has independent RANCO temperature controllers, transformers, circuit breakers and voltage/phase protection, and **everything is over the counter!**



Flagship Marine's Common Design Elements

Flagship Marine's extremely compact 5-ton (60,000 BTU) reverse-cycle heat pump chiller is only 16" (407mm) x 23" (584 mm) x 28" (711 mm) high!



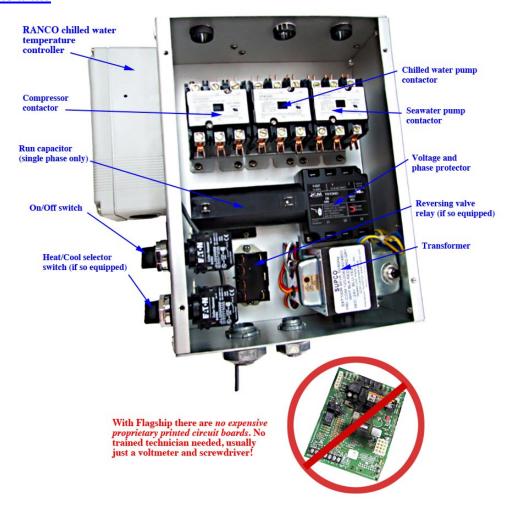
Flagship Marine incorporates only the highest quality components that are primarily manufactured in the States, and all the production takes place at our factory location in Stuart, FL.

Chiller evaporators - York, PA Self contained evaporators - Longview, TX Refrigerant components - Allenwood, NJ Expansion valves - Washington, MO



OUR ELECTRICAL CONTROLS

In keeping with our design principles Flagship Marine has one of the easiest electrical control systems in the industry. Some might even say dated, however all the components used are over the counter components from an electrical supply house, this means that you are not trapped into dealing with expensive proprietary printed circuit boards and a "MARINE" HVAC Technician. <u>A volt meter and a screwdriver is all you need to fix a Flagship Marine unit!</u>



In keeping with the KISS principle (Keep It Simple, Stupid!) Flagship Marine incorporates the same typical industry wiring and component configuration as the millions of residential and commercial units that have been in use for decades.

ANY RESIDENTIAL HVAC technician will have little trouble servicing Flagship Marine equipment. Our flush mounted digital control is attractive and very functional, however in a pinch you can go into any hardware store and purchase a standard four wire thermostat that will operate any Flagship Marine unit! It couldn't be more simple than that.

With Flagship Marine equipment, you are not married to anyone for unique, complicated, expensive and most importantly proprietary components, therefore many marine service technicians don't like Flagship equipment because they can't make as much money selling you a \$19.00 relay that takes ten minutes to install. They are used to an \$800.00 repair to "replace the board."



WHY FLAGSHIP MARINE UNITS NEVER

HAVE CONDENSER FAILURES!

The heart of every marine air conditioner is the condenser—the heat sink to the ocean and the only component the corrosive sea water touches is the inside of the inside tube. Failure of this tube is catastrophic for the entire system. Even extremely corrosive places like the very high salinity of the Red Sea are no problem for Flagship Marine condensers because we use an unusually thick walled 90/10 CuNi (copper nickel) tube with particular annealment, hardness and other characteristics as specified by Flagship Marine



We don't dramatically shorten our condensers to save money by enhancing this tube knurling or rifling for example. Our tube is "slick walled" with no thin spots that fester these failures.

Paper thin condenser tubes dissipate heat very quickly so

the condenser tube can be short and inexpensive. We don't cut corners by doing so. We have full length condensers! The shorter the condenser, the cheaper it is and the shorter it will last!

Flagship Marine has always prioritized durability and quality over cost savings and we NEVER cut corners. We also don't skimp on our brazing material—ALL refrigerant lines are brazed with a 15% silver alloy, not the 5% typical of other manufacturers. As a result, Flagship Marine is very proud to have had almost ZERO condenser failures in the last two decades!

CHOOSE FLAGSHIP MARINE FOR CONSISTENT QUALITY AND DURABILITY!



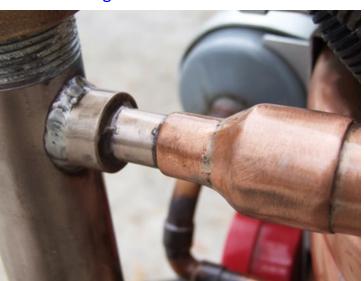


All condenser tube to manifold connections are made with precision machined 90/10 CuNi (Copper Nickel) socolets that are TIG welded to the schedule 80 90/10 CuNi nipple with a monel alloy and brazed to the condenser tubes to ensure many years of trouble free service.

This configuration meets all MilSpec and ABYC requirements. Naked connections aren't nearly as durable and fail to meet those standards.

For your convenience all manifolds are fitted with reducing couplers and a 3/4" drain plugs for winterizing.



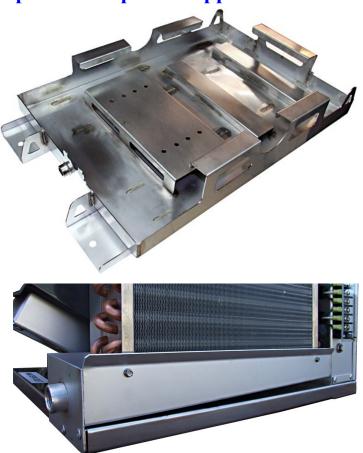


Flagship Marine takes no shortcuts with quality and design!



RUGGED CONSTRUCTION DESIGNED FOR ENDURANCE AND RELIABILITY

Our 14 gauge, 316 Series stainless steel, one-piece, precision laser cut, TIG welded chassis provides superior support for all the chiller components.



Flagship Marine Exclusive! **Dry Drain Pan!**

No more mold and mildew starting in your drain pan! We now manufacture sloped aluminum drain pans that are dry so the condensate water doesn't have a chance to grow mold and mildew!!!



Flagship Marine components fit together with aircraft quality precision.



All sheet metal components are laser cut with aircraft/military quality tolerances in the ten-thousandths of an inch range as depicted here with the skeleton of an air-cooled chiller. Note the PEM nut inserts and numerous stainless steel rivets that result in a very rigid, strong and exacting structure.





Built stateside with only domestic metal alloys—No Imported Metal Alloys!

- * All stainless components are 316 marine grade stainless steel!
 - * Evaporator housings, drain pans, electrical boxes, etc. are 5005 marine grade aluminum!
 - * Our condenser tubes are .035" 70600 copper nickle alloy!
 - * Our condenser shells are .050" C12200 copper alloy!





SPECIFICATIONS

Chiller Unit - Water Cooled

Approximate Specifications & prices which INCLUDE all necessary controls - all of the controllers are internal and are over-the-counter!

No expensive proprietary printed circuit boards or controllers!!!

FOR DETAILED DRAWINGS AND SPECIFICATIONS PLEASE VISIT OUR WEBSITE AT WWW.FLAGSHIPMARINE.COM

Model	BTUs of cooling	Length in inches/	Width in inches/ mm	Height in inches/	Amps (cool) 230v	Weight lbs/kg
FM24CW	24,000	25/635	15.5/394	23/585	11.4	110/50
FM36CW	36,000	25/635	15.5/394	23/585	16.4	121/55
FM48CW	48,000	25/635	15.5/394	23/585	22	179/81
FM60CW	60,000	25/635	15.5/394	23/585	28	210/95
FM96CW	96,000	32/813	19.5/496	23/585	24.3@230/3	340/154
FM120CW	120,000	32/813	19.5/496	24/610	33.3@230/3	490/222
<u>FM180CW</u>	180,000	32/813	19.5/496	29/737	19.6@460.3	625/283
FM240CW	240,000	47.5/1207	26/661	24.5/623	35.0@460/3	980/444
<u>FM360CW</u>	360,000	47.5/1207	26/661	31.75/807	39.2@460/3	1,147/520



FLAGSHIP MARINE UNITS ARE DESIGNED WITH



Our full time in house design staff uses the latest version of SolidWorks to insure that our designs and engineering are correct. This amazing design tool lets us bring to life your special projects quickly and accurately.







FLAGSHIP MARINE PRODUCTS

Chilled Water Systems (Water or Air Cooled)



Dual Compressor 30 Ton unit shown

Self-Contained Systems



Split System, Self-Contained & Explosion-Proof





FLAGSHIP'S EXCLUSIVE BULLET PROOF CONTROL SYSTEM USING <u>NO PROPRIETARY</u> COMPONENTS OR PRINTED CIRCUIT BOARDS





All Flagship Marine chillers have a low voltage control module with clearly labeled LEDs that will advise the end user specifically what has tripped the chiller, be it high or low refrigerant pressure, freeze control protection as well as low chilled water flow (if so equipped).

The time tested ICM modules are "over the counter" and inexpensive.



We manufacture a variety of different size Air Handling Units for both split systems and chilled water systems as well as low profile fan coils for overhead installation.



Self Contained Marine Air Conditioning by FLAGSHIP MARINE

Commercial/Military Quality

Water cooled self contained units



24/7 365 days/year since 1997- for 18 years and still in service.

This is how long Flagship Marine self-contained units have been on about 200 of the most severe duty US Coast Guard vessels from the Arctic to the Caribbean. The 47 MLB fleet - the self righting rescue vessel that takes a pounding.

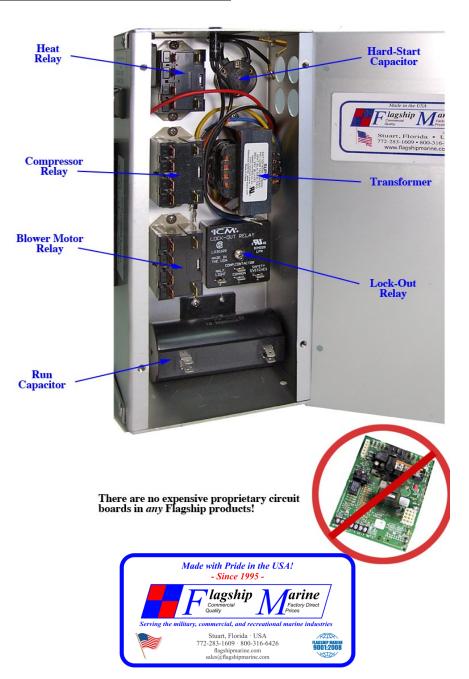


HIGHEST QUALITY PLUS SIMPLICITY OF DESIGN

What sets Flagship Marine apart from our competition is our belief in the KISS principle (Keep It Simple, Stupid). This has guided our component selection and design emphasis for many years. We brag that even a child can follow our schematics!

As you can see below, the Flagship Marine electric control box has the highest quality over-the-counter components, and it is extremely easy to diagnose and repair a problem.

The most expensive component in this box is less than \$28.00! No extremely expensive, proprietary printed circuit boards, and no need for a specifically trained technician! <u>Most problems can be diagnosed</u> and repaired with a voltmeter and a screwdriver!





All Flagship Marine condensers are hand-crafted from start to finish at our Stuart factory location to our exacting specifications.



Unbelievably quiet due to our unique mounting isolator bushings, insulated blower chamber and rotary or scroll compressors - many of our customers have actually mounted our units under their bunk!

The LG Rotary Compressors have been an industry leader for many years, and are renowned for being incredibly quiet. It's difficult to hear these compressors start, run or stop, even if you are standing right next to it!

Very easy to start - Soft start capacitors, stratified start up sequence and time delay compressor circuits in combination with our rotary or scroll compressors make our A/C units start effortlessly - our 16,500BTU unit should be on a 25 amp breaker!

Very low start up surge - The start up surge of these compressors is a fraction of the dinosaur like piston compressors! Millions of these compressors have been used for many years in window units - the piston compressors simply cannot meet the minimum energy efficiency standards.





Our exclusive 840 Incoloy clad tubular heating elements are almost identical to the heating element in your home electric oven, however we have coiled it into a tight coil and placed it in the discharge throat of the blower motor- it never gets red hot and therefore never "burns" the air.

Three temperature safety switches monitor this element. Dual controlling sensors as well as a blower post purge sensor which dissipates the remaining heat once the thermostat is satisfied makes this the safest and most reliable means of heating your boat.

Trouble free, safe and reliable electric heat works anywhere - <u>in or out of the water</u> - only one moving part!

We have thousands of these elements in service for many years - they have been standard equipment for the US and Canadian Coast Guard's 47' MLBs since 1996



Split System, Self-Contained & Explosion-Proof Systems



Flagship Marine Air-Cooled, Weather-Resistant, Roof-Mounted Systems

All components but the condenser blower are in the air-conditioner side of our units





Air Cooled: Self-Contained

Approximate Specifications

FOR DETAILED DRAWINGS AND SPECIFICATIONS PLEASE VISIT OUR WEBSITE AT WWW.FLAGSHIPMARINE.COM

Model	BTUs of cooling	KW of electric heat	Length in inches	Width in inches	Height in inches	Amps (cool) 23 0V	Wgt lbs.
FM24AC	24,000	4.0	42	44	28	14	240
FM36AC	36,000	4.0	40	26	24	19	280
FM48AC	48,000	8.0	42	53	28	28	325
FM60AC	60,000	12.0	57	40	28	32	375
FM96AC	96,000	12.0	78	40	48	32	425
FM120AC	120,000	16.0	112	81	55	32	475





Air Cooled: Chiller & Split System Condensing Units

(delete the evaporator and you have a split system condensing unit)

Approximate Specifications

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Model CWAC = Chiller Water air cooled SSAC = Split System air cooled (condensing unit only)	BTUs of cooling	Length in inches	Width in inches	Height in inches	Amps (cool)230V	Wgt lbs.
FM24CWAC	24,000	42	39	28		225
<u>FM60CWAC</u>	60,000	43	38	28	14	350
FM60SSAC	60,000	40	26	24	19	350
FM120CWAC-V	120,000	43	38	53	28	475
FM120SSAC-V	120,000	57	40	28	32	475
FM120CWAC-H	120,000	43	60	28	32	475
FM120SSAC-H	120,000	78	40	48	32	475
FM180CWAC	180,000	43	38	78		525
FM180SSAC	180,000					525
FM240CWAC	240,000	43	60	53		675
FM240SSAC	240,000					675
FM360CWAC	360,000	43	60	78		875
FM360SSAC	360,000					875



FLAGSHIP MARINE WARRANTY

Flagship Marine, Inc. warrants its products to the original purchaser against defects in material and workmanship for a period as follows:

Condenser, chassis, compressor, evaporator - five years parts and one year labor (commercial & military one year P&L)

Controls, pump, blower - one year parts and labor

The following conditions may void warranty;

Damage due to fire, flood, impact, abuse.

Attempted repairs not specifically authorized by Flagship Marine.

Any act of god such as lightening strike damage.

Any damage caused by improper, inadequate or inconsistent power supply.

Pump damage due to running dry.

Damage caused by improper installation or misuse.

Flagship Marine will not be liable for any consequential damages due to the use or installation of any of its products. If, after communicating with Flagship Marine a warranty repair is deemed necessary, owner, at owners sole expense will ship to Flagship Marine the defective product that will be repaired or replaced at Flagship Marines' option. Please save the original receipt and shipping carton in case a warranty repair is necessary.

If you use the services of an authorized Flagship Marine dealer, we will cover the parts and labor pursuant to this warranty as if the unit were "on the bench"- we will not cover the service call or any labor expense to access the unit. Charges to "remove and replace" the unit and travel time etc., are not covered expenses.

This warranty does not warrant the suitability of FLAGSHIP MARINE products to any application. FLAGSHIP MARINE does not warrant the installation of its products. Adequate cooling and/or heating capacity is the responsibility of the purchaser. FLAGSHIP MARINE takes no responsibility for component selection or sizing of units. This limited warranty does not cover:

- 1. Subsequent damage due to condensate leakage, electrolysis, refrigerant leaks, and/or water line leaks.
- 2. Damage caused by oversized circuit breakers or fuses, undersized or inadequate wiring, etc.
- 3. Component damage from improper (too high or too low) voltages.
- 4. Freeze damage of any kind to evaporators or condensers.
- 5. Inadequate efficiency due to improper duct system sizing and/or component location.
- 6. Damage caused by improper or incomplete winterizing of FLAGSHIP MARINE products.
- 7. Damage caused by lack of, or improper periodic maintenance.

All products shipped FOB Stuart, FL. Restocking fee for returned merchandise is 20%. No returns allowed on custom designed equipment.

Unless an authorized Flagship Marine dealer has been retained to handle a warranty issue, all warranty work must be performed by our personnel at our Stuart, Florida factory location. Before sending a warranty repair to our Stuart, FL location you must obtain an RMA (return merchandise authorization) - freight collect and CODs will not be accepted. All legal complaints must be addressed in Martin County, Florida.

