Flagship Marine
Commercial Quality
Factory Direct Prices

Chiller - Split - High Pressure & Self Contained Systems

Until the arrival of the remarkably quiet rotary and scroll compressors, the compressor noise of marine AC systems made it desirable to place the compressor in the bilge or engine room area, keeping this compressor noise away from the living quarters of the boat.

There are three typical systems for cooling a vessel with the compressor in a remote location:

Split Systems: The most typical installation of the recent past - the condensing unit is in the bilge and insulated refrigerant lines connect the condensing unit to the evaporator(s) in the cabin(s). The biggest disadvantage of this in today's market is the time and expense of having a licensed HVAC professional evacuate and charge the system with refrigerant when installed, and the necessity for the same HVAC licensed professional to evacuate and recover the refrigerant if a repair is required. These systems always seem to have leaking problems, and the condensing unit in the bilge has a greatly reduced service life being in the wet marine environment of the bilge.

Chiller Systems: The most expensive and complex system which is commonly found on larger yachts, consisting of the chiller unit itself, which is typically placed in the engine room or bilge area, and fan coils throughout the boat.

The chiller makes cold water that is constantly pumped in a closed loop throughout the numerous fan coils of the vessel. A rather complex plumbing system consisting of an expansion tank, circulating pump and usually hundreds of feet of insulated piping are required for the cooled water loop, and an additional pump and plumbing system for the raw water cooling is required. When a cabin requires cooling, the fan engages on that particular fan coil, thus cooling the air in that cabin. Several chiller units may be "stacked" in series so that differing numbers of units may be running at any given time to maintain a predetermined water temperature as dictated by the heat load on the system.

These systems are the quietest and take up the least amount of room in the cabin.

The disadvantages include the initial expense for the equipment and installation, and the necessity of a marine trained and licensed HVAC technician for maintenance.

Unless multiple chiller units are stacked in series, if the main chiller system fails, either all or a large section of the vessel is without air conditioning. Depending on size, we prefer to sell bifurcated units, whereby one chiller will have two compressors connected to separate internal condensers and evaporators. With this system, if there is a failure of almost any kind you will always have at least 50% capacity until repairs are made.

High Pressure Systems: Primarily for large vessels and ships - a powerful blower motor pressurizes the cooled/heated air and distributes this air throughout the vessel frequently through PVC piping that can be quite small in diameter because of the high pressure. This eliminates having the HVAC equipment in the living quarters of the vessel and eliminates the need for condensate and electric lines throughout the vessel.

The fourth type of system, the self contained a/c system, does not have remote components, and has rapidly become very popular for boats of all sizes, whether recreational, commercial or military use, for numerous and significant reasons:

Self Contained Systems: Because of the remarkably quiet rotary and scroll compressors, the never ending refrigerant regulations, the dramatic size reductions of these units and the cost savings of the equipment and installation, the self contained systems are the fastest growing part of the marine HVAC industry.

The complete units are only a few inches larger that the evaporators of the split systems and the fan coils of the chiller systems.

The typical self contained unit needs only a 5/8" non-insulated raw water supply for cooling the condenser - you will not need any insulated water lines or insulated refrigerant lines and you will never need a licensed HVAC technician to install or remove these units.

Because EVERYTHING is inside the air conditioned environment of the vessel, the component's service life is extended - nothing is exposed to the marine environment other than the raw water pump.

These units we sell are so quiet that many of our customers have actually mounted them under their bunks and sleep on top of them!

With multiple units on a vessel, if one unit should happen to fail, only that area is without air conditioning, and very little skill is needed to remove the unit for service.

Units from 6,500 BTUs to 120,000 BTUs are available, so whether you are air conditioning an 18 foot cuddy cabin or a several hundred foot ship you may reap the many benefits of individual self contained units.

For larger vessels, consider having the best of both worlds by fresh water cooling self-contained units with a Fernstrum™ keel cooler or a Sen-Dure® heat exchanger - check out http://www.flagshipmarine.com/heat exchanger.html

Flagship Marine, Inc., 2427 SE Dixie Hwy., Stuart, Florida 34996 - USA
Phone: 772-283-1609 Fax: 772-283-4611 Wats: 800-316-6426
sales@flagshipmarine.com ventas@flagshipmarine.com (Espanol)