

Staged Chilled Water (SCW)

Up to 5 Stages for Maximum Capacity



SCW 24-Ton

Staged Chilled Water Units are available in capacities ranging from 48,000 to 900,000 BTU/hr. SCWs are available in single phase or three phase, 50Hz or 60Hz, and all standard voltages (208, 230, 380, 460 VAC). Multiple compressors and refrigerant circuits are incorporated to provide minimal power consumption versus load demands, as well as redundancy throughout the unit. Each refrigerant circuit is hermetically sealed and factory pre-charged with R-22. Each condensing unit is monitored and protected with freeze controls, high limit switches, high and low aquastats, timers and on-board fuses or breakers.

All access ports to the refrigerant system are protected with Charge Guard®, a factory installed seal, ensuring system integrity from shipping through final installation.

Condenser coils are constructed with cupro-nickel to provide high corrosion resistance. Unique stainless steel evaporator plates are designed for maximum efficiency of heat transfer. SCWs can be built with circulation pump mounted in the chiller frame. Frames are welded with marine grade aluminum alloy, primed, then finished with a corrosion resistant epoxy.

These condensing units can be installed in any convenient location and are highly resistant to vibration, moisture or ambient temperatures up to 140°F/60°C. Units meet or exceed Coast Guard regulations.

Key Benefits

- Seawater side of condenser coils are made of cupronickel, and refrigerant shells are copper (NOT steel) for maximum efficiency and corrosion resistance.
- Compact copper brazed, stainless steel plate exchangers are designed for maximum efficiency in a confined space.
- Computer matched components provide maximum cooling/heating capacity.
- All chillers use thermal expansion valves (TXV). Unlike the capillary tubes, TXVs automatically adjust to changing load requirements to maintain optimum performance.
- Each stage is individually protected by a circuit breaker, flow switch, freeze protection, water temperature high limit, high pressure refrigerant switch, and low pressure refrigerant switch. These safeties are in addition to the compressor thermal overload.
- Compact base design provides flexibility in engine room layouts.
- Multiplexed modules offer precise BTU requirements for any application.

Technical Specifications for SCW Series

Capacity	8	9	10	12	12	15	16
Number of Stages	2	3	2	3	4	3	4
Cool (BTU/hr)/(Kcal/hr)	96,000/24,192	108,000/27,216	120,000/30,240	144,000/36,288	144,000/36,288	180,000/45,360	192,000/48,384
R.C. (BTU/hr)/(Kcal/hr)	105,600/26,611	118,000/29,736	132,000/33,2364	158,400/39,917	158,000/39,917	198,000/49,896	211,200/53,222
Est. Weight (lb/kg)	575/261	650/295	625/284	775/352	850/386	875/397	950/431
Capacity	20	25	24	30	15	22.5	30
Number of Stages	4	5	4	5	2	3	4
Cool (BTU/hr)/(Kcal/hr)	240,000/60,480	300,000/75,600	288,000/84,383	360,000/114,540	180,000/52,740	270,000/79,100	360,000/114,540
R.C. (BTU/hr)/(Kcal/hr)	264,000/116,528	330,000/83,160	316,800/92,820	396,000/116,030	198,000/58,000	297,000/87,000	369,000/116,030
Est. Weight (lb/kg)	1,200/544	1,450/658	1,160/527	1,450/658	780/355	1,140/518	1,520/691
Capacity	30	40	50	60	75		
Number of Stages	3	4	5	5	5		
Cool (BTU/hr)/(Kcal/hr)	360,000/114,550	480,000/140,600	600,000/175,800	720,000/210,900	900,000/263,625		
R.C. (BTU/hr)/(Kcal/hr)	369,000/116,030	528,000/154,700	660,000/193,400	792,000/231,990	990,000/289,990		
Est. Weight (lb/kg)	1,230/559	1,640/745	2,050/932	2,200/998	2,400/1,090		

Heating

Heating capabilities can be provided through a variety of choices, depending upon each vessel's requirements. Reverse cycle heating provides the best, most efficient heat, but requires seawater temperature $\geq 40^{\circ}\text{F}$ (5°C). Using the compressor circuits, heat is extracted from the seawater and transferred into the interior spaces with high efficiency. Reverse cycle is approximately four times more efficient than electric heat. Electric heating provides adequate capacities for vessels operating in all waters by high quality immersion heating elements in or out of the water. The circulation water is heated and the heat is then transferred, via the water, into the interior spaces. Electric heating capacities are limited by the power (amperage) available for operation. Auxiliary heating is available through the use of electric heating elements installed in air handlers throughout the vessel. Each of these elements provides 1-3 kW of heat that can be operated independently or in combination with the central heating circuit to provide heat and maintain temperatures inside the vessel.

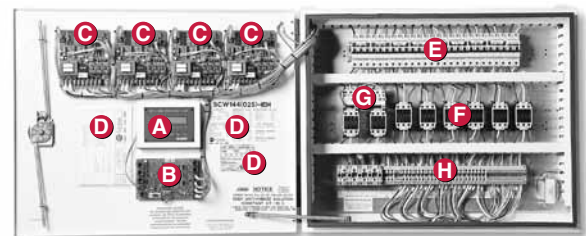
Recommended Heater kW & Stages for Electric Heat (EH) Chillers

Tons Per Stage	2 Stage	3 Stage	4 Stage	5 Stage
2	6kW/1 Stage	6kW/1 Stage	12kW/2 Stage	12kW/2 Stage
3	6kW/1 Stage	10kW/1 Stage	12kW/2 Stage	18kW/3 Stage
4	10kW/1 Stage	12kW/2 Stage	18kW/3 Stage	20kW/2 Stage
5	12kW/2 Stage	18kW/3 Stage	24kW/4 Stage	18kW/3 Stage
6	12kW/2 Stage	18kW/3 Stage	24kW/4 Stage	30kW/3 Stage
7.5	20kW/2 Stage	26kW/2 Stage	30kW/3 Stage	40kW/4 Stage
10	20kW/2 Stage	30kW/3 Stage	40kW/4 Stage	52kW/4 Stage
12.5	26kW/2 Stage	39kW/3 Stage	45kW/3 Stage	60kW/4 Stage
15	30kW/2 Stage	45kW/3 Stage	60kW/4 Stage	80kW/4 Stage

Electric Box

The drip-proof electric box is available with custom harness lengths to fit each application.

- A** Chilled Water Master Controller (CWMC) Display.
 - B** CWMC circuit board.
 - C** Digital Diagnostic Controller (DDC). Please reference the Chilled Water Master Controller specifications sheet for more details.
 - D** Data plates and wiring diagram.
- All compressors, pumps, and heaters are protected by individual circuit breakers **E**, controlled by contactors **F**, and three phase pumps **G** are also protected by overloads.
- H** All wiring from the electric box to the chiller components is connected via feed through terminals for easy troubleshooting.



Dealer:

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Key Benefits (Continued)

- Lightweight, aluminum construction enhances ease of installation while providing corrosion resistant durability.
- Complete control circuit provides multiple fail safes for system protection.
- Vertically mounted units are available.
- Redundant design assures cooling if one circuit malfunctions.
- All compressors accessed from front of condensing unit ensuring easy change out.
- Each unit is pre-charged, load tested and calibrated at the factory
- 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.

