

CH-500



CH Series Features & Benefits

- All components are designed for continuous operation.
- High performance shell and tube heat exchangers to ensure maximum heat transfer.
- Temperature controllers for precision temperature control.
- Unloading capacity up to 25% (CH-3000 and up).
- Refrigerant analyzer gauges.
- Water outlet temperature gauge.
- Water outlet pressure gauge.
- Low ambient fan cycle control (air-cooled models only).
- Compressor oil sight glass.
- Compressor crankcase heater.
- Heavy-duty industrial structural frame.
- ASME coded shell and tube evaporator.
- ASME coded water-cooled condenser with water regulating valve (water-cooled units).
- Refrigerant pressure safety relief valve.
- Vibration isolator pads.
- Built-in safety features for safer, more reliable operation.
- High-pressure switch protects the refrigeration system against excessive pressure caused by an insufficient cooling water supply (on water-cooled models).
- High-ampere draw switch shuts off the compressor and pump in case of an overload to the system.
- Freeze-control protection.

In many industrial applications cold water is used to keep the productivity of the machinery at a constant high level. The optimal temperature is often critical, as it ensures the correct operation and highest quality of the production process. Today, most processes require cooling water with much closer defined tolerances. Water chillers provide cooling in a controlled closed circuit. This means that the water used for your production processes is reliable, constant, and defined.

The **Aircel CH Series (25 - 3,600)** process water chillers guarantee a secure and repeatable production process, while saving you money and protecting the environment. Total process security at high efficiency levels makes the Aircel water chiller the optimum solution.

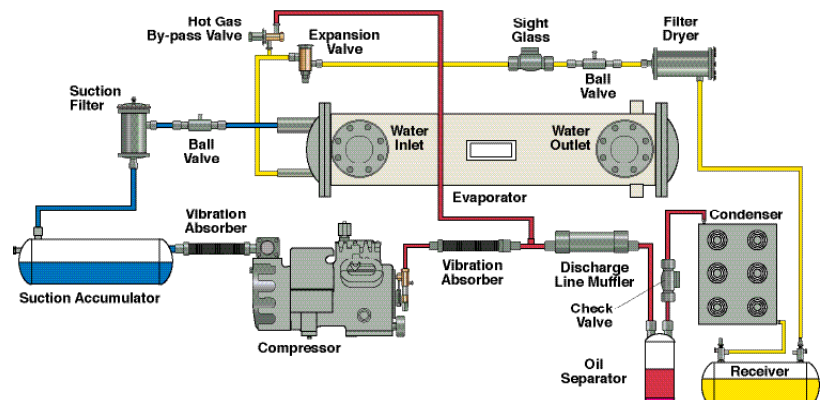
Easy operation and high reliability have been the cornerstones in the design of this high-efficiency process water chiller series. With years of expertise in building water chillers and cooling equipment, Aircel manufacturers a complete line of industrial process water chillers from 25 - 500 ton.

CH SERIES How it Works

Re-circulates clean coolant at a constant temperature and pressure to increase the stability and productivity of all water cooled machinery, compressors and instruments. The evaporators are offered with optional

clean-out and fill-port valves to prevent coolant expansion and fouling. An optional Aircel pumping station can be supplied to insure the correct flow and pressure requirements for each installation are met.

TYPICAL REFRIGERANT FLOW



CH SERIES TECHNICAL SPECIFICATIONS



CH SERIES Model Comparison

Model	Capacity ¹		Flow (gpm)	Voltage	Conn. in. (FNPT/ANSI)	Dimensions (in) (Air-Cooled)			Weight (lbs)	Condenser Fan ²
	Tons	BTU/Hr				W"	D"	H"		
CH-250	25	300,000	60	460/3/60	2	72	50	114	3,300	1 x 2
CH-300	30	360,000	72	460/3/60	2	72	50	162	3,960	1 x 3
CH-350	35	420,000	84	460/3/60	2	72	50	162	4,620	1 x 3
CH-400	40	480,000	96	460/3/60	2.5	72	98	116	5,280	2 x 2
CH-500	50	600,000	120	460/3/60	2.5	72	98	116	6,600	2 x 2
CH-600	60	720,000	144	460/3/60	3	72	98	162	7,920	2 x 3
CH-700	70	840,000	168	460/3/60	3	72	98	162	9,240	2 x 3
CH-800	80	960,000	192	460/3/60	3	72	98	162	10,560	2 x 3
CH-1000	100	1,200,000	240	460/3/60	4	72	130	210	13,200	2 x 4
CH-1200	120	1,440,000	288	460/3/60	4	72	130	258	15,840	2 x 5
CH-1500	150	1,800,000	360	460/3/60	6	72	130	306	19,800	2 x 6
CH-1700	170	CF*	CF*	CF*	CF*	CF*	CF*	CF*	CF*	CF*
CH-1800	180	CF*	CF*	CF*	CF*	CF*	CF*	CF*	CF*	CF*
CH-2000	200	CF*	CF*	CF*	CF*	CF*	CF*	CF*	CF*	CF*
CH-2400	240	CF*	CF*	CF*	CF*	CF*	CF*	CF*	CF*	CF*
CH-3000	300	CF*	CF*	CF*	CF*	CF*	CF*	CF*	CF*	CF*
CH-3600	360	CF*	CF*	CF*	CF*	CF*	CF*	CF*	CF*	CF*

¹Capacity based on 90°F ambient temperature and 10°F temperature rise for water outlet temperature of 50°F ²Condenser fan configuration: # fans length x # fans width
*Consult Factory
Due to a continuous program of product improvement, specification and dimensions are subject to change without notice.

CH SERIES Capacity Correction Factors

To Size the Chiller

$$\text{Total Heat Load} = (\text{GPM} \times 500 \times \text{Specific Heat} \times \Delta T) / \text{Correction Factor}$$

To calculate the capacity of a given dryer based on non-standard operating conditions, multiply the standard capacity by the appropriate correction factor(s).

EXAMPLE: Flow Rate: 120 GPM
Cooling Fluid: Water
Temperature Inlet: 60°F
Temperature Outlet: 50°F
Water Glycol: 20%

$$\text{Total Heat Load} = [120 \times 500 \times 1 \times (60-50)] \times 0.96$$

$$\text{Total Heat Load} = 576,000 \text{ Btu/Hr}$$

Selected Chiller Model: CH-600

Use the heat load calculation formula to determine the total heat load in BTU/Hr, and then select the CH Chiller model with that capacity.

$$\text{Total Heat Load Btu/Hr} = (\text{Rated Capacity}) \times (\text{Correction Factor}).$$

$$\text{Rated Capacity Btu/Hr} = \text{Flow rate (US gal/min)} \times 500 \times \text{specific heat of cooling fluid} \times \Delta T (^\circ\text{F}).$$

Flow Rate = Measure the flow rate by determining the length of time it takes to fill a container of known volume.

Specific Heat = Determine the specific heat of the cooling fluid. If water is the coolant, the specific heat is 1.

ΔT = (water inlet temperature) — (water outlet temperature) Obtain ΔT by measuring both the incoming and outgoing water temperature of your equipment. The difference is the ΔT .

% Glycol	0	10	20	30	40	50
Freezing Temperature	32°F	25°F	14°F	3°F	-14°F	-34°F
Factor	1.0	.98	.96	.94	.90	.87



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