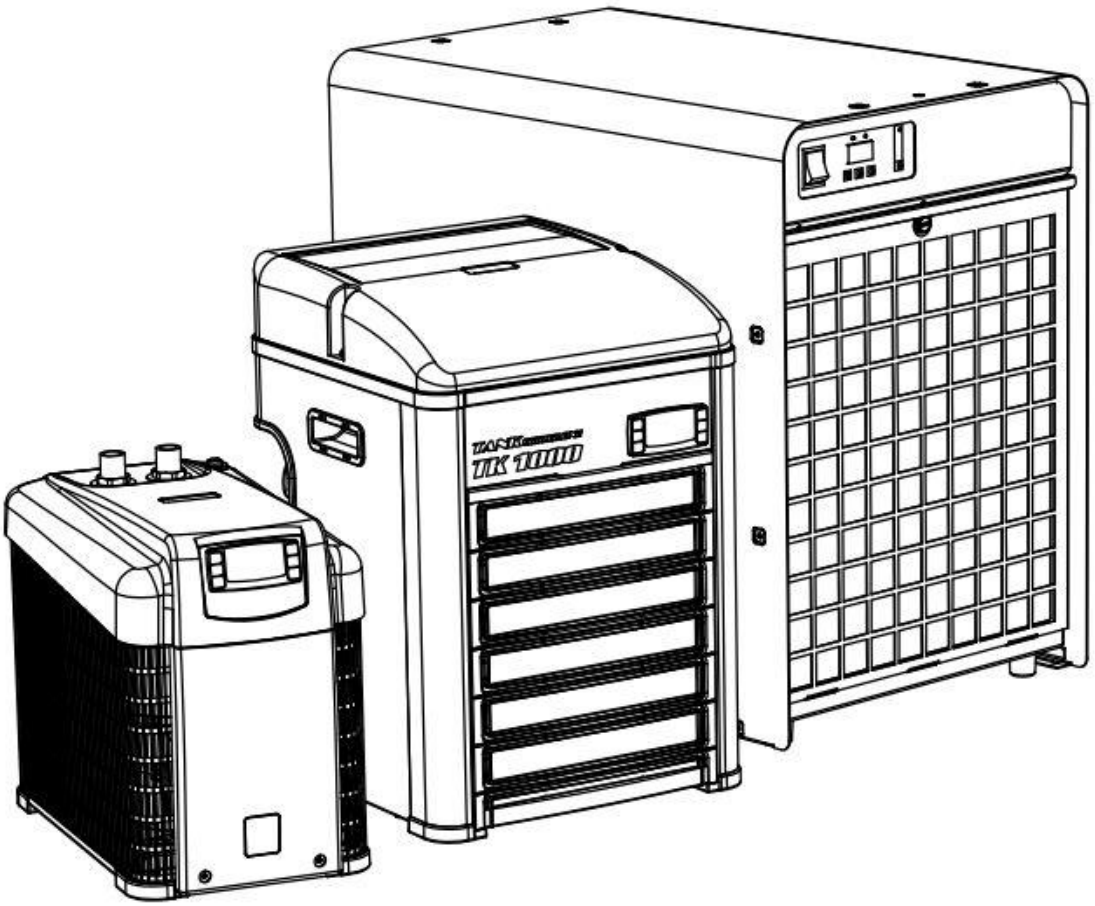
TANK
CHILLER LINE

AQUARIUM CHILLERS



TECO Green design

TECO
REFRIGERATION TECHNOLOGIES

TECO S.r.l.
Via A. Sansovino, 35 - 48124 Ravenna - Italy
www.tecoonline.com | www.tecous.com

C.O.P. - COEFFICIENT OF PERFORMANCE

A refrigeration cycle is a thermodynamic cycle that, by using a certain amount of electricity, is capable of transferring heat from one environment to another.

The chiller allows the heat transfer from the aquarium tank to the external environment through the ventilation of the chiller itself .

The coefficient of performance (COP) is used to describe the ratio between cooling power, that is the heat transfer from the tank to the environment, and energy consumption. It is obtained by dividing the energy output of the heat pump by the electrical energy consumption.

The following example shows how to calculate the COP value of the TK2000:

the real cooling power resulting from our lab test is 968 W and it refers to ambient temperature conditions of 30°C - 86°F and a water temperature of 25°C - 77°F (you can convert it into Kcal/h = 832 or in BTU/h = 3303 etc.)

- the power consumption is 440 W
- the COP is 968/440 = 2,2

Given a certain amount of electricity consumption, the COP directly correlates with the increase in cooling capacity. TECO has performed numerous tests on the chillers, calculating the COP under the following conditions:

- water temperature at 25°C

- ambient temperature at 30°C

The COP indicates the chiller efficiency and it is therefore a value that contains a set of useful information for the customer and it can be considered as a valid tool to compare different chillers with similar consumption and performance values.

ENERGY SAVING

Reducing power consumption and increasing energy saving is always been one of TECO's priorities throughout the design of the ***TANK chiller line***.

To achieve an increased level of operating energy efficiency performance

to achieve substantial energy savings

Teco chose high-quality and low power consumption electrical components in order to achieve outstanding performances and substantial energy savings: for example, the exclusive use of internationally recognized high performances compressors.

Thanks to the new design, the TK heat exchanger contains a greater amount of titanium than the old line TR, thus increasing the heat exchange surface. Moreover, compared to the TR line, the superior ventilation structure facilitates heat release.

WATER-FLOW VALUE FOR TECO CHILLERS

The water-flow in an aquarium is one of the various factors that affect the final performance of a chiller. It is necessary to consider that the final performance of the chiller increases with the increase of the water flow rate.

With a pump ensuring high water flow, there is a greater heat exchange between the titanium and the water, thereby influencing the evaporation temperature of the gas inside the refrigerant circuit and increasing the compressor performance. Moreover, the very low water temperatures allows to prevent ice formation inside the exchanger.

The nominal values of the water flow rate for TECO chillers are specified in the manual instructions inside the packaging.

N.B. the nominal flow rate has to be determined taking into account different head losses of the system (piping, filters, etc.).