INDUSTRIAL & PROFESSIONAL WATER CHILLERS
TRADITIONAL WATER CHILLERS

DIRECT CHILLERS WITH COIL INSIDE THE TANK

They cannot reach 36°F
The cooling process is very slow
The tank is difficult to clean
There is a sanitation risk being the tank normally over-dimensioned
The output flow for a water delivery is slow being the pump installed normally under-dimensioned
Normally they are controlled by a simple thermostat

INDIRECT CHILLERS WITH DOUBLE COIL INSIDE THE TANK

They can deliver water at 36°F only at the beginning, but soon after the temperature increases considerably
The output flow for a water delivery is very slow
The temperature is constantly kept at 36°F inside the tank

The temperature remains constant during the whole water delivery

After the end of each water delivery, the new incoming water is cooled again in few minutes therefore cool water will be available for the next batch

The evaporation process takes place inside a stainless steel plate heat exchanger. The high efficiency of this device speeds up the water cooling with the advantage of using not over-dimensioned tanks

The pump used for the water circulation through the heat exchanger is the same that is used to feed the doser-mixer with the result of a high rate flow

The STM chillers are controlled with an STM microprocessor control board with an LCD user interface
MACHINE CONCEPT

THERMODYNAMIC CIRCUIT
In the evaporator the refrigerant absorbs heat from the water to be cooled
The vapour coming out from the evaporator is compressed by the compressor increasing its temperature
The overheated vapour enters into the condenser where it transfers to the external ambient the heat absorbed from the evaporator and compressor
The liquid coming out from the condenser is laminated to low temperature by the thermostatic valve and returns to the evaporator

WATER CIRCUIT
Cooling phase: the pump circulates the tank water through the evaporator while the compressor is working
Delivery phase: the pump sends the water to the doser
Charging phase: at the end of a delivery, the charging valve opens till the tank is full. At the same time the cooling phase starts too.
Thermostating phase: an hysteresis parameter controls the start of the compressor to keep constant the tank temperature
TECHNICAL CHARACTERISTICS
OF THE MACHINE

Whole structure in AISI 304 stainless steel

AISI 316 stainless steel plate heat exchanger

Hermetic compressor for non polluting R404A gas in case of standard ambient conditions or R134a gas in case of high ambient temperatures

AISI 316 stainless steel pump for water recycling and delivering

Safety devices: double pressure switch and relief valve

High precision temperature probe

Overflow drain
CHARACTERISTICS OF THE MICROPROCESSOR ELECTRONICS

Alphanumeric LCD back-lighted display

Control of the machine’s normal function

Weekly program for automatic daily self switch-on, helping to save energy

Self-diagnosis

Automatic self-cleaning system, awarded with the Innovation Trophy at the Europain fair of Paris. During this process a detergent solution is circulated by the pump through the tank and the evaporator

Remote pump control from a water doser: the STM doser-mixer is the ideal coupling for the SCWR-D PRO water chiller
THE ELECTRONICS FUNCTIONS

To change the language

To choose between Metric or Imperial units

To set the water temperature

To program the weekly automatic self switch-on

To set the day, time and length of the self-cleaning processes

To manage the alarms and the cleaning process

To check the inputs and outputs
USER INTERFACE

LEDS
- Power supply
- Compressor
- Condenser fan
- Process water pump
- Process water tank full
- Delivery in progress
- Washing in progress

KEYBOARD
- To switch-on and switch-off manually the chiller
- To set the tank water temperature
- To increase and to decrease the values
- To program the weekly automatic switch-on of the machine
- To set the clock and to cancel the alarms
- To start a washing
The hourly production is referred to the following project and testing conditions:

- Ambient temperature = 77°F
- Inlet water temperature = 77°F
- Full tank emptying batch
- Cooling down to 36°F

Working limits:
- Max ambient temperature = 100°F
- Max inlet water temperature = 95°F
- Max ambient + inlet temperature sum = 140°F
SCWR-TR-D PRO SERIES

Tropical version with R134a gas for high ambient temperatures

The hourly production is referred to the following project and testing conditions:
- Ambient temperature = 95°F
- Inlet water temperature = 77°F
- Full tank emptying batch
- Cooling down to 36°F

Working limits:
- Max ambient temperature = 122°F
- Max inlet water temperature = 113°F
- Max ambient + inlet temperature sum = 185°F
SCWR-D & SCWR-TR-D SERIES
Industrial water chillers – standard R404A gas and tropical R134a gas versions

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What makes the STM water chiller better than others?

It supplies water at the desired temperature during all the working day, thanks to the high efficiency of its plate heat exchanger.

It allows to have the water at 36°F constantly.

The tank has just the capacity for each delivery.

It saves energy, thanks to the automatic switch-on weekly program.

STM electronics controls every phase of the process.

The automatic self-cleaning system.

It is produced in order to satisfy the customer requirements.

There is a model for each installation.

It is not more expensive, especially if the compressor power is compared to other machines.

It is perfectly bound together with the STM water doser-mixer, the most reliable on the market.