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Industry is our motto
Challenges are our way of life!!



SIRE wants relationships with customers to last. SIRE is interested in maintaining long term, loyal relationships. This perspective means the point in time that a customer purchases a chiller is the beginning of a relationship, not the end.

That's why SIRE wants to be forward in technology and chillers design, with a very high-quality performance.

Chance to customize;

SIRE equipments are designed with the end user's requirements in mind. New technologies are applied to each machine. The result is an incredible engineering achievement in chiller design and manufacturing.

our team creates and designs standardized chillers, based on a high level of durability and energy reduction concern a pioneer in the use of high-surface air condensers, with a long-term vision of reducing energy consumption, we are present, in various parts of the planet, and usually in areas of extreme heat, with results well above average, to energy consumption, and starting with the chillers, with temperatures sometimes adverse to its operation we understand that an equipment that serves Industry should be as reliable as possible

SIRE chillers are developed and designed second norms and standards of quality and carefully outlined restricted.

St. chillers with high efficiency, and built with excellent materials, which guarantee to our customers get the most of the equipment outlined in factory capacity, with high **COP** (s).

Energy efficiency

Energy is often dismissed as an operational cost over which the owner has little control. That perception results in missed opportunities for energy efficiency, and lower electrical bills.

Sire chiller plant automation intelligently sequences starting of chillers to optimize the overall chiller plant energy efficiency.

Our chillers have independent circuits, with compressors working independently.

Sophisticated software automatically determines the conditions to run in response to current conditions.

Unit Sizing

Our units are delivered completely assembled, with all power connections and control connections already wired, and refrigerant. They can be installed in roofs, on the ground or other place on a level base.

The equipments can be installed indoor since it is guaranteed good ventilation.

Our chillers are subject to a high in terms of quality control, testing, and durability.

Low noise

The compressors are mounted in vibration absorbers, reducing the vibrations and noise. Fans are statically and dynamically balanced and controlled and provide a low noise and efficient operation.

This assures a noiseless and efficient operation, as well as less maintenance due to vibrations.

Operation and easy handling

The chillers SIRE are easy to control, and are provided with protections mechanical electrical and electronic, with a microprocessor that controls and assistance throughout the service, from the start, control and alarms.

The unit are assembled with a set of safety features, and malfunctions controls, I.e. High pressure switch, low pressure switch.

Structure

The structure is built in galvanized steel (or stainless steel, by request), with different thickness (from 1,5 mm to 3 mm) according to final location in the equipment. The machine can be dismantled in its final location, once the parts assembled are tight with screws.

Paint is with polyurethane and epoxy resin.

The equipments are prepared to be placed without weather protection.

Compressors (with or without inverter)

Hermetic, alternatives, or screw compressors are carefully chosen by their income and durability.

They are mounted in a absorbing supports to avoid any kind of vibration. SIRE uses a low noise compressor with low vibration operation.

Condensers More than in most chillers, these condensers ensure a high degree of

transfer coefficient between the refrigerant and air.

Made of copper, with tubes mechanically expanded in aluminium, usually selected for tropical systems.

Water condensers

Extreme efficiency condensers type shell and tube at big capacities and plate for small capacities. Build in stain steel and cooper, or stainless steel and cooper or with tubes in CuNi.

Evaporator

Water to refrigerant heat exchanger Shell and tube type are used in Sire equipments. The heat exchanger got the shell in steel and the tubes are in copper, improving the efficiency of this equipment. A final cover of thermal insulation prevents condensation improves efficiency.

Condensers Fans ERP 21

The chillers are equipped with 3 phases fans, (6 poles) normally used in exterior, close type IP56 according to DIN 40050 with due protection electric indicated. The fans do not need any maintenance or intervention. Fans enjoy a perfect system designed for a perfect aerodynamic efficiency and a low noise. Each fan is covered with steel guards for protection against contact. The fans are controlled by discharge pressure our by a speed controller, and also (in the small chillers) by the start of the compressor, depending on the type of equipment chosen. The motor is protected by internal Thermal contacts according to VDE 0730.

Protection and devices

The chillers in any of the models, have basic protections for; high pressure and low-pressure devices, oil differential pressostat, anti ice device, phases control (in some models) delay operation relay for the start compressor, part wending start compressors, internal and external thermal protection, crankcase oil heater, and all type of liquid line protections and controls in the refrigeration circuits.

Electrical board

The electrical board is located inside of the unit and contains all the components necessary to control the unit. In this board is also located the unit protections and the electrical connections between the board and the compressors and fans. The client only have to make the main electrical connection (between electrical source and our unit), and the water connections (not included).

Microprocessor based controller

The control performs all operating, protection and alarm functions of the unit.

A large number of programmable parameters enable a precise configuration of the controller to meet the requirements of the unit.

It's used two main type of control architecture, the μ C System architecture and the PCO5 architecture.

The microprocessors are made up of parametric controllers, user interfaces and both local and remote, communication interfaces. The units with PCO5 architecture can be connected in pLAN, allowing communication of data and information.

Both microprocessors can have connected to external data acquisition systems and equipments.

Main functions:

- P+I control
- stepped control in each circuit
- control and warnings on component operating hours
- preventive operation when starting with high temperatures
- self-diagnostics
- automatic change over
- proportional water/air return and outlet control with timed logic
- etc

Devices controlled:

- condensers fans
- reversing valve
- antifreeze heater
- alarm signal device
- compressors



Series chiller

A series chiller arrangement is an energy saving strategy, which is possible with our equipments.

It is possible to operate a pair of chiller's more efficiently in a series chiller arrangement than in a parallel arrangement.

It is also possible to achieve higher entering-to-leaving chiller differentials, which may, in turn, provide the opportunity for lower chilled water design temperature, lower design flow, and resulting installation and operational cost savings.

SIRE provide to our customer the possibility of cooperation to building all kind of chiller situation by client design and by their demand.

Water Treatment

Dirt, scale, products of corrosion and other foreign material will adversely affect heat transfer between the water and system components. Foreign matter in the chilled water system can also increase pressure drop and consequently, reduce water flow. Proper water treatment must be determined

locally, depending on the type of system and local water characteristics. Inadequate water isn't recommended for use in our equipment's. Their use will lead to a shortened life to an indeterminable degree. We encourage the employment of a reputable water treatment specialist, familiar with local water conditions, to assist in this determination and in the establishment of a proper water treatment program.

2019

New challenge! zero GWP zero or very low ODP

Unit capacities are listed in the performance data section. Intentionally over-sizing a unit to assure adequate capacity is not recommended. Erratic system operation and excessive compressor cycling are often a direct result of an oversized chiller. In addition, an oversized unit is usually more expensive to purchase, install, and operate.



SIRE CHILLERS