Water-cooling towers series TAC

TAC TOWER

SCAM T.P.E.

The TAC series is dedicated to every industrial sector with a conception made to last for decades. These models are characterized by well-defined standards by SCAM and are supplied with a reinforced concrete structure (generally charged to the customer) and with variable dimensions. The ventilation units are designed for a long life and with components
of absolute quality and an extremely simple maintenance program. In this regard, special executions are available for ATEX environments ("EX" versions), for low temperature environments ("SN" versions), for low noise emissions ("LN" version) and with energy optimization systems ("VDI" version).

STRUCTURE / MONOLITHIC ENCLOSURE

The tower structure consists of reinforced concrete. The cladding and structure can withstand wind loads as required by local regulations and standards. It will also be able to withstand seismic loads based on the degree of seismicity of the site of the plant. The calculation of the structure will take into account the static and dynamic loads resulting from the refrigerant assembly during full operation. The concrete tank is excluded from our supply. It will have a height based on the customer's requests.

In the case of several cells, the tank can be a single basin or, thanks to dividing walls, divided in such a way as to obtain a basin for each cell.

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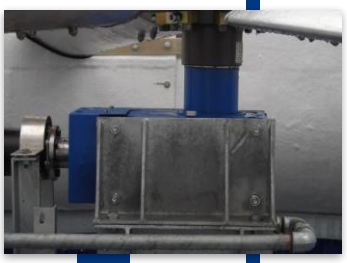

BOLTS are supplied as standard on this model in STAINLESS STEEL or even DUPLEX on request.

VENTILATION UNIT

For traditional execution TAC series, the choice regarding the type of fan is almost obliged. Electric motor is placed outside the saturated air flow, the carbon fiber gear shaft activates speed reducer with orthogonal axes, on which is placed the fiberglass or aluminium alloy impeller. Diffusers with or without dynamic pressure recovery and level and external lubrification plant are the main features. An indirect transmission is foreseen for each cell, except for small tower executions that use direct transmission like package ones:

- High efficiency SCAMAIR / ST axial fan with asymmetrical "NACA" type profile of aeronautical derivation, designed for maximum efficiency and durability in compliance with the strictest acoustic standards. The components are of absolute quality such as the hub in galvanized steel or aluminium and the blades in FRP or aluminium alloy. All blades use the variable pitch solution with the fan stopped to optimize the tower performance and electricity consumption;

- Self-supporting transmission shaft able to withstand small misalignments that may occur in service; to absorb "shock", vibrations and jolts. Joints are elastic type and reduce the time required for assembly and maintenance operations;

- Electric motor designed for severe conditions with continuous service type S1 IEC IE3 high efficiency as per new IEC 60034-30 standards. The motor is located outside the wet flow passing through the FRP diffuser and is self-ventilated. Supports of the electric motors are designed to transfer dynamic loads to the cooling tower structure, minimizing vibrations and allowing simple and intuitive maintenance;

- Gearbox with orthogonal axes with perfectly watertight stiffened housing and labyrinth seals;

- Abnormal vibration switch wired in an IP67 Junction box located outside the ventilation conduct only to be powered and electrically connected;

- Lubrication oil level line, replenishing and blowdown are on the gearbox which is also equipped with a pipe that reaches the outside of the fan stack.

WATER DISTRIBUTION SYSTEM

In TAC series, water distribution is made by a main pipe in concrete equipped with lateral branches with secondary pipes in Polyvinyl chloride (PVC). There is also the possibility of using plastic matrices for high operating temperatures.

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Adapters are installed on the pipes to which the dynamic type “SCAM / NZ-RT” spray nozzles or static type “SCAM / NZ” spray nozzles, both in PP, are screwed.or “SCAM / NZ” static spray nozzles, both in PP.
Our SCAM / NZ-RT rotating nozzles are highly efficient, work at low pressure 0,15 – 0,3 barg, and allow for significant energy and economic savings. They are anti-clogging, equipped with interchangeable internal inserts, allowing them to be adapted in the event of variations in flow rate, if you were to work with a work pattern other than the design one.

FAN STACK

All the mechanical groups in every cell of cooling tower have a reinforced fiberglass stack. Each stack has a circular and conic inlet junction; the outlet section is divergent to reduce pressure and at the same time to recover dynamic pressure with a consequent high efficiency of impeller. The stack sections are connected with joints able to optimize diameter facilitating assembly and to control GAP between the impeller diameter and the stack by maximizing the performances. The stacks are fixed to the structure through dedicated bolts by securing them to the tower planking level. Each stack is equipped with an inspection door to facilitate the fan group maintenance.

DRIFT ELIMINATORS

They are mainly used to retain water droplets dragged vertically in the flow of humid air exiting the evaporative tower. Our technology has achieved exceptional goals in separation efficiency, making available two different designs SCAM / DRF-CL (CELLULAR line) and SCAM / DRF-SH (SHELL line) in PP / PVC.

AIR INLET LOUVERS

They are placed in the intake air flow entering the cooling towers. They not only retain unwanted elements (such as foliage and debris), but also prevent water from splashing outside, which could cause ice formation during winter season. In addition, the windows are a barrier, limiting the sunlight entering the basin, thus hindering the growth of algae and microorganisms inside it. They are available in the SCAM / NET65 version in PP / PVC, customized in treated steel, or INOX / FRP, where the specifications require it.

FILLING (OR HEAT EXCHANGE PACK)

It is placed inside the tower body, and provides the heat exchange surface necessary to guarantee the heat exchange between the flow of hot water, properly atomized by our nozzles and the flow of cold air coming from the outside going up against the process water. Depending on the quality of circulating water, and therefore depending on the suspended solids present in the cooling circuit, the filling is available in different PP / PVC materials and FILM, HYBRID and SPLASH systems.

For further information on the products, please visit the *** section of the site.

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