JACIR
Cooling for life

KHF

Closed circuit cooling tower
Forced draft axial fan

Commercial Documentation

Range: flow rates from 70 to 660 m3/h

- *FREEFILM: industrial film*
- *Mechanical robustness*
- *Standard compliant*
- *Hygienic maintenance*
- *Reliability*

FABRIQUE EN FRANCE NF 38-424

La FRENCH FAB

COFINAIR GROUP

Forced draft axial closed circuit cooling tower: KHF series

Operation principle

Water cooling tower, closed-type, axial, forced-draft, designed for a glycol-free operation during winter. The KHF range is fully factory assembled on a single frame and composed for a dismountable and cleanable plate heat exchanger, a pump and a filter with all technical accessories grouped together inside a closed room that is accessible through a large door for its maintenance.

Casing structure

All the galvanized steel cooling tower panels casing have been twice or 4 times folded over the 4 sides, also proposed in X-STEEL stainless-steel in option (corrosion resistance superior to AISI 316). The water tightness between the panels is ensured by an especially designed high covering seal and stainless-steel rivets (uniform and high-capacity locking), located on external side of the casing. Panels' assembly is made without any bolting or welding for the parts in contact with water: unique strength and waterproof JACIR design. As a standard, two large doors in the same material as the cooling tower are provided on bottom and upper casings to allow quickly access or removal of the drift eliminators, nozzles, exchange surface and water distribution pipes.

Basin

The basin has been thought to consider the needs and inertia of the installation. In order to reduce bacteria growth, panel's assembly has been realised without any bolts or screws for the parts in contact with water. The sloped and flat basin is equipped with a drain and a POWER FLOW access, both located under the lower level of the basin, enabling a quick and complete drain of all sludge or other accumulated parts during cleaning maintenance. The basin is also equipped with access doors to ease maintenance.

Water distribution

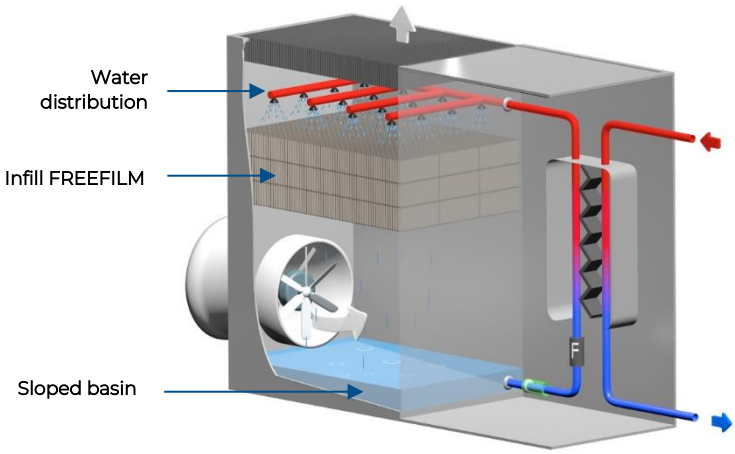
The water distribution is made of PP pipes through highly efficient water distributors. These nozzles are made of polypropylene and distribute water under low pressure (8kPA) uniformly over the whole exchange surface. This low pressure reduces drifts (0.8m WC) and bacteriological contamination risk. Indeed, low pressure creates heavier droplets, so less drifts out of the cooling tower. Furthermore, water nozzles are widely sized to avoid any clogging even in the case of high suspended solids contents.

Accessibility

As a standard, a large access door made of the same material than the tower allows an easy removal and cleaning of the drift eliminators, sprayers, heat exchange surface and water distribution. The POWER FLOW trapdoor, located under the low level of the slope basin makes the mater drain and cleaning easy.

Exchange surface: FREEFILM

Made of vacuum pressed PVC sheets for a standard use up to 58 °C as a standard; and up to 80 °C as option with PVC or ABS material. Thanks to its large vertical channels of 20mm, the FREEFILM is highly resistant to fouling and shows a very low pressure drop characteristics.



Heat exchanger room

The stainless-steel Plate Heat Exchanger is fully protected from the outdoor conditions thanks to a galvanized, 1,5 mm thick self-supporting casing (X-STEEL as an option) with a large access door to ease the maintenance.
The connection to the Heat Exchanger is made through flanges located outside the room: there are only 2 connections: inlet and outlet, placed on the tower's length.

Motor fan set

The JACIR design axial fan is adjustable stand still type. The number of blades and the material (aluminium, FRP option) are selected according to the thermal and sound requisition. Made of polyester, the inlet cones with calyx shape drastically improve the fan efficiency. A fan bearing lubrication line made of copper is extended on the fan stack and allows a simple and quick maintenance without any removal. All the mechanical components to be maintained are located at man chest, out of the wet air flow.

Options

Non-freezing plume suppression coil: JACIR Patent (hybrid KHIM* series)
30% to à 50% water savings / year.
Automatic inductive blow down, frequency drive device, two speed motors, electro valve driven by level switch, control panel, non-freezing fan blade device, EFFI-SILENT noise abatement for basin, high water capacity basin (BGC), collecting basin: water passing through (BR) all accessories in X-STEEL stainless-steel, on-site erection and / or supervision etc.

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