

## KHF

### Closed Circuit Cooling Tower Forced draft Axial Fan



Flow rates from 70 to 660 m<sup>3</sup>/h

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

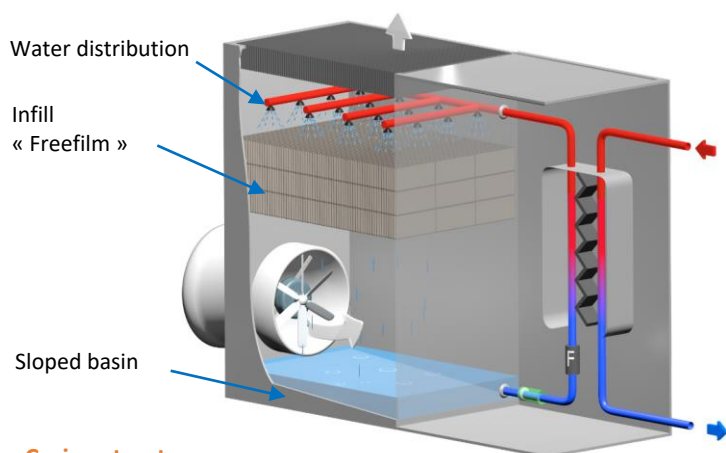
COMMERCIAL DOCUMENTATION

# FORCED DRAFT AXIAL CLOSED CIRCUIT COOLING TOWER KHF

## 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 of a dismantlable 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 a special 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 take into account 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 water drain and cleaning easy.

## 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.

## Exchange surface: FREEFILM

Made of vacuum pressed PVC sheets for a standard use up to 55 °C as a standard; and up to 80 °C as option with PP 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.

## 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...