

## KSF

Closed circuit cooling tower



Capacity 400 to 4 000kW

- ◆ *Glycol free*
- ◆ *No freezing risk*
- ◆ *Mechanical resistance*
- ◆ *Hygiene compliance*

Commercial Documentation

# Closed circuit cooling tower: KSF series

## Operating principle

Water cooling tower, closed-type, centrifugal, forced-draft, designed for a glycol-free operating during winter. The SF range is fully factory assembled on a single frame and composed of 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

As a standard, the rigid self-supporting panels are made of galvanized steel, 2mm thick plates, folded twice or 4 times on the 4 sides of the panel (JACIR design) allowing a complete noise insulation of the tower's casing.

All the folds of the plates are outwards, and assembled by stainless steel sealed rivets (powerful and uniform tightening) and the panels are assembled without welding and without any bolt in contact with the water. SILVER-STEEL casing or X-STEEL stainless steel is available as an option (corrosion resistance superior to 316L).

## Basin

The basin is sloped for a complete drain, with an access door. It includes an easily adjustable float valve, an overflow, a water heater, and an anti-cavitation strainer made of stainless steel and PEHD. It is also equipped with a POWER FLOW trap door, enabling to evacuate all sludge and other accumulated parts quickly and completely in the bottom of the casing using simple water spray and a centrifugal FRC filter (JACIR patent):

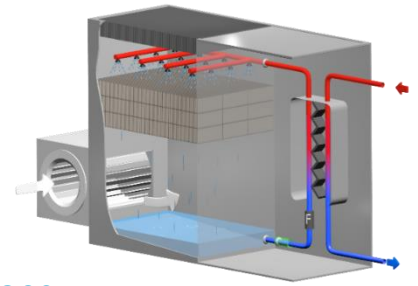
- ∞ 100 % of the tower's water volume is continuously filtered every 1.2 minutes, with a 60 µm efficiency,
- ∞ Automatic cleaning managed by the opening of the drain circuit (with DAI, inductive blow-down option).

Therefore, the entire evaporative loop remains clean and decreases the risk of legionella proliferation.

## Accessibility

As a standard, 3 large access doors are supplied in the same material as the tower casing. Each access allows an easy and quickly removing of the drift eliminators, the nozzles, the infill, and the water distribution pipes.

A POWER FLOW access, located under the low level of the slope basin, allows an easy cleaning during complete drain.



## Exchange surface

The FREEFILM infill is made of vacuum pressed PVC sheets, offering a large free surface and high resistance to fouling. Its large section vertical channels, also avoids from fouling and reduces pressure drop.

## Non-freezing plate heat exchanger room

Especially designed for an easy access and maintenance, the stainless-steel plate heat exchanger is totally protected from weather conditions thanks to its self-supporting stiff panels made of 15/10e galvanized steel (X-STEEL stainless-steel option), and equipped with lockers access door (2100 x 600mm). Customer connection is directly fixed outside the room to facilitate connection with primary circuit.

## Water distribution

Water distribution is made of PP pipes through highly efficient water distributors operating under low pressure (8 kPa) to reduce drifts: 0.8 m WC. This conception considerably reduces the risk of bacteriological contamination: low pressure creates heavier droplets, avoiding drifts out the cooling tower. The water nozzles are widely sized to avoid any clogging, even in the case of high suspended solids content.

## Motor fan set

The fans especially designed and manufactured by JACIR, have continuously been perfected over the years. The impeller is a double side air inlet type. Polyester air inlet ducts are profiled to optimise air suction, allowing low pressure and slow rotation speeds. This leads to a very low power consumption of the fan motors. Located in the air flow and outside the tower's basin, motor fan set is easily accessible for maintenance.

## Options

Non-freezing plume suppression coil (Hybrid KSFIM range), Automatic Inductive blow-down and frequency drive on the pump, IB, ICV, ICVK or special soundproofing, electro-valve driven by level switch, EFFI-SILENT sound attenuation, on site erection, all accessories in stainless-steel, etc.