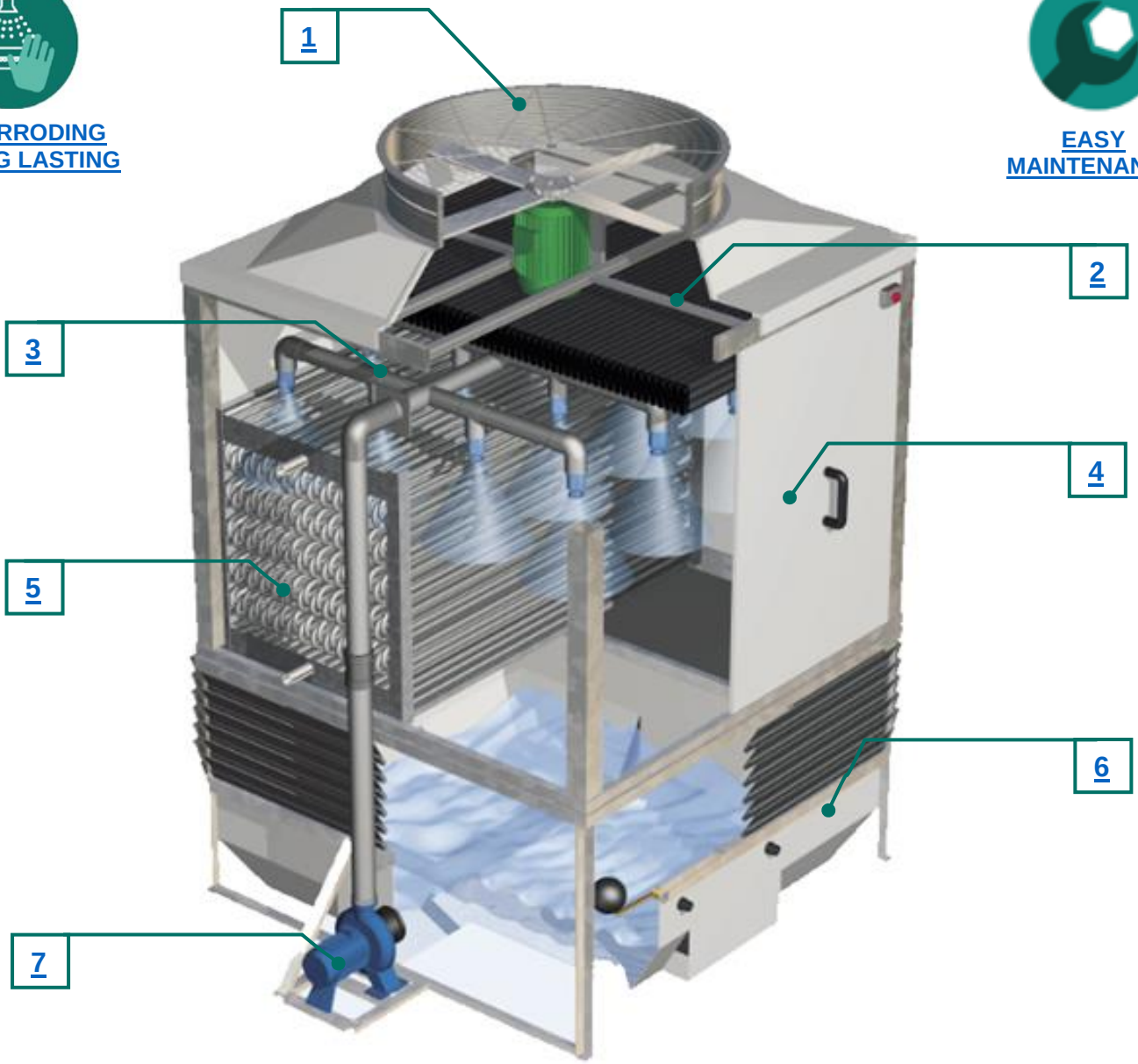
EVAPORATIVE CONDENSER
Design Features

INDUSTRIAL PROCESS | HVAC

MCE SERIES

NON-CORRODING AND LONG LASTING

EASY MAINTENANCE



Evaporative condenser	
Factory Assembled - Modular Compact Design	
1	**IP56** Motor(s) **directly coupled** to low energy and high efficiency fan
2	**EUROVENT Certified** High Efficiency DRIFT ELIMINATORS
3	Water distribution system with **non-clogging** tangential Polypropylene (PP) nozzles for a full cone water distribution. Flanged water inlet connection
4	Fibreglass reinforced polyester (**FRP**) sandwich casing panels and hot dip galvanised steel (HDGS) **after fabrication** perimeter frame
5	**Cooling coil(s):** high quality steel smooth tubes, **CE 1115**, **PED 2014/68/UE**
6	Fibreglass reinforced polyester (FRP) water collection basin with **sloping base and smooth internal finish** with rounded corners for easy cleaning
7	Circulating pump
8	**Factory assembled** cooling tower, very easy on-site **installation** operation

MITA cooling technologies

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1. MOTOR FAN GROUP

UPPER SECTION(S) consist of smooth faced air entry fan cylinder(s) entirely made of fibreglass reinforced polyester (**FRP**) with gel-coat for UV-protection.

High efficiency directly coupled axial fan motor(s) assembly, designed to efficiently convey discharge air.

AXIAL FAN SYSTEM with the following features**:**

- hot-dip galvanised steel after fabrication support(s)
- one or more propeller fan(s) in aluminum or plastic, with blades connected to central aluminium hub directly coupled to the motor
- **IP56** sealed execution fan motor(s) (special version for MITA cooling towers)
- **multi-voltage** (400/690/3/50), (50/60 Hertz), Class F insulation
- protection of the motor-fan set(s) is provided by a grid(s) in stainless steel **AISI 304**.
- electric motor(s) suitable for operation with **frequency converter**.

Optional: **ELECTRICAL ISOLATOR (lockable)** with electrical wiring connection to fan motor(s) fixed to cooling tower's body to minimise site electrical connections; IP65 isolating switch (lockable).

SILENCED: several solutions to reduce noise levels:

- higher poles motors (12 or 16 poles) to reduce fan speed and blades with special airfoil
- Water attenuators
- Air inlet dampers

IMPORTANT SUGGESTION (***expecially in case of 12 poles motors***): it is recommended to start the motor/s by means of a "soft-starter" or with frequency converter.

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2. DRIFT ELIMINATORS

EUROVENT Certified High Efficiency DRIFT ELIMINATORS made of polypropylene (PP) sheets, thermoformed under vacuum and welded together to form panels of such shape and size as to guarantee maximum efficiency of droplet separation from the airflow induced by the fan, substantially reducing drift water.

3. WATER DISTRIBUTION SYSTEM

WATER DISTRIBUTION SYSTEM connected to the water recirculation pump, is entirely mede in PVC. Consisting of a main header with flanged water inlet according to UNI-EN-1092-1- PN 10 and side branches where static type, non-clogging, axial, spray nozzles are fixed.

Such system guarantees optimal water spraying over the whole coil surface.

Spray nozzles are in polypropylene, with full-cone spraying angle of 120°.

4. STRUCTURE AND CASING

CASING walls consisting of 22 mm thick polyester resin sandwich panels reinforced with fibreglass and coloured with paste gel-coat for UV-protection. Seal between the load bearing structure and the panels is guaranteed by a special bituminous sealing gasket.

NUTS AND BOLTS in stainless steel **AISI 304**

Optional: **Man-sized access door(s)** (each 720x520mm) in FRP sandwich panel in a HDGS (after fabrication) frame to allow easy inspection or access to the inside of the tower.

Optional: **Totally removable side-wall(s)**, to faciltate and simplify routine maintenance operations to the tower internals

Optional: **STAINLESS STEEL METAL STRUCTURE**: structure metal parts can be made in AISI 304 or AISI 316, for superior resistance aggressive water or environment

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5. COOLING COIL(S)

CONDENSING COIL(S) consisting of high quality steel smooth tubes, supported by a frame made of HDGS profiles: the whole assembly is hot-dip galvanised after fabrication.

During manufacturing process, every circuit is carefully checked and air-pressure tested under water. A final pressure test is performed on the entire coil, after manufacturing.

Coil geometry is designed to ensure complete wetting of the heat exchange surface and to optimize external air-water contact, to maximize the thermal cooling capacity.
Moreover tube sloping ensures fluid's complete water discharge through the outlet connections, placed in line with the bottom of the outlet header to avoid "dead zones".

The coils are marked CE 1115, Pressure Equipment Directive PED 2014/68/UE

6. WATER COLLECTION BASIN AND LOWER STRUCTURE

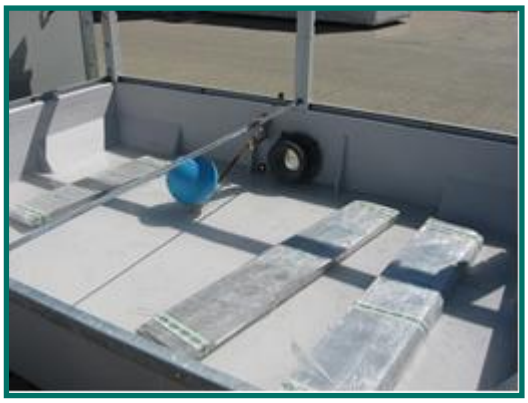
WATER COLLECTION BASIN is entirely made of fibreglass reinforced polyester (FRP)

SLOPING BASE with **ROUNDED CORNERS** for easy cleaning operations and reduced risk of biological growth. Supplied with **drain**, **make-up** and **overflow connections**.

WATER COLLECTION BASIN is shipped separately from the cooling tower body and it is fixed to a hot-dip galvanised steel after fabrication frame.

Easily removable FRP air inlet louvers.

Optional item: Honeycomb louvers in PP, to limit the basin's exposure to sunlight and dirt, thus reducing the risk of biological proliferation.



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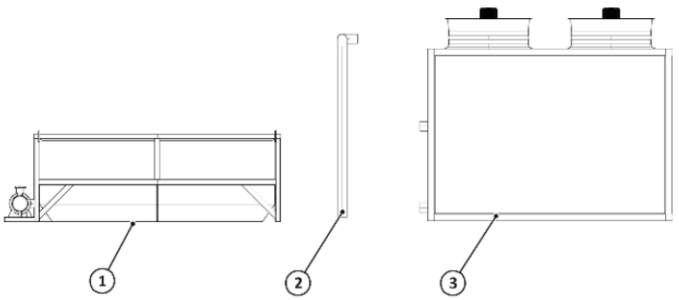
7. CIRCULATING PUMP

WATER CIRCULATING PUMP for the secondary spray-water circuit, connected to the water distribution system, external to the coils. The pump is fixed to the cooling tower suppport structure and is equipped with PVC piping.

8. TRANSPORT & INSTALLATION

MCE is a **factory assembled** cooling tower, designed to be transported with standard trucks in two pieces:

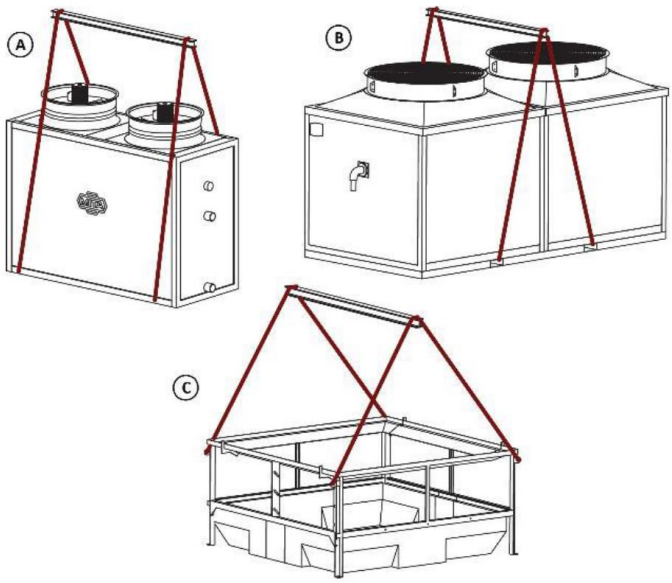
- Basin and lower structure (1)
- Connection pipe (2)
- Body (3)



The cooling tower is designed for the easiest possible on-site installation operations, consisting in positioning and fixing body on top of the structure.

Water connections can be threaded or flanged, and the electric connection are limited to the electrical junction box or switch box (optional), positioned on the side wall of the unit.

A. Tower body from MCE A to MCE I
B. Tower body from MCE N to MCE S
C. Basin and lower structure



The secondary water recirculation circuit must be closed by installing the pipe, supplied separately, between the spraying pump and the connection to the water distribution piping.The connections between tank, water distribution and pump are made using reinforced rubber pipe and hose clamps.

Supply of the tower is limited to the parts listed above. Building and electrical works, pumps, collectors external to the tower, valves, hoisting gear and any scaffolding and labour are therefore excluded. Accessories and/or constructional variants are available on request.
MITA Cooling Technologies S.r.l.. may carry out constructional improvements without notice. Images for illustration purposes only.

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