

Naturally corrosion-free

A complete range of solutions
for the evaporative cooling





The Company

Founded in Milan in 1960, MITA designs, produces and sells open and closed circuit cooling towers for civil and industrial water, evaporative condensers, adiabatic coolers and condensers and complete systems for industrial cooling.

MITA offers its customers technical competence and know-how acquired in more than 50 years experience of water cooling and thanks to over 25.000 installed units all over Europe.

Beyond the choice among different standard units, MITA provides customised solutions and it is constantly engaged in the study and design of technologically innovative models and solutions, focusing on the customer's demands, the energy saving and the respect for the environment.

Cooling towers: theory and operation

Exploiting a simple, natural physical principle, thanks to which the forced evaporation of a minimal quantity of water produces a lowering of the temperature of the main mass of water, evaporative cooling towers still today represent the most widely employed system of cooling in civil and industrial applications.

The minimum outlet temperature theoretically obtainable from an evaporative cooling tower is that of the wet bulb temperature of the atmospheric air measured in the area in which the unit is installed: this value is always lower than the dry bulb temperature (unless, of course, the air is already saturated).

In practice, due to the effects of performance factors related to air saturation, an adequately sized cooling tower manages to cool the circulating water down to a temperature 2-3 °C above the wet bulb temperature.

It is on this basis that many designers and equipment manufacturers size their cooling circuits and heat exchangers, already planning, from the first design stage, the use of cooling tower water ensuring optimum plant efficiency.



Main fields of application:

- ❖ Steelworks, production and processing of metals in general
- ❖ Power plants, production of energy
- ❖ Chemical and pharmaceutical plants
- ❖ Food industry
- ❖ Air conditioning installations (shopping centres, hospitals, trade fair centres, etc.)
- ❖ Technical gases production plants
- ❖ Engines test-beds
- ❖ Air compressors
- ❖ Vapour condensers
- ❖ Dye works
- ❖ Tanneries
- ❖ Paper mills
- ❖ Plastic materials processing plants
- ❖ Artificial snow making plants





The corrosion-free MITA range



The wide use of corrosion-free components is the distinguishing feature of MITA cooling towers.

The result of this choice is a very high quality product which is light-weight, non-corroding, exceptionally long lasting, and which minimises tower maintenance works.

The product range covers:

Open circuit cooling towers

- ❖ PMS-D, PME-E, PMM series (axial fans)
- ❖ MCT, M-GEL series (centrifugal fans)

Closed circuit cooling towers

- ❖ MCC series (axial fans)

Evaporative condensers

- ❖ MCE series (axial fans)

Adiabatic coolers /condensers

- ❖ PAD series (axial fans)

MITA range covers capacities from 18 kW* to 14 MW*

A plurality of constructive options, designed for specific requirements are available.

A large number of optional items makes MITA range extremely flexible and suitable for solving any industrial or civil cooling problem.

MITA produces and sells also high quality non-clogging polypropylene spray nozzles with a special designed internal shape such as to grant a full-cone and even water spray.

* Indicative values referred to one unit, 5 °C temperature range



Distinguishing features



High quality materials

- ❖ Wide use of corrosion-free plastic materials such as: FRP, PVC, PP, PE
- ❖ Collecting water basin, casing and tops entirely made of FRP
- ❖ Metal frames in steel, hot dip galvanized after fabrication (galvanization process in accordance with UNI EN ISO 1461-99 regulation, thickness not inferior to 80 micron)
- ❖ Non-clogging PP spray nozzles
- ❖ Certified PP drift eliminators (entrainment 0,01%)
- ❖ Siemens motors with IP56 protection

Low power consumption

- ❖ Directly coupled axial motor-fan group/s. Low installed power, optimization of power consumption thanks to frequency converter operation

Attention to sound emissions

- ❖ Several technical solutions to reduce the noise, levels measured and calculated in accordance with ISO 3744 and EN 13487 regulations

Plant optimization

- ❖ Pre-assembled modular solutions, made of more cells. The modular design ensures maximum operation flexibility to optimise the system in accordance with different production loads and/or environmental conditions

Accessibility

- ❖ Several solutions to allow a fast, safe and total access to the internal components of the unit: inspection hatches, man-sized access doors, totally removable side-walls and louvers

Minimised maintenance

- ❖ The construction materials are corrosion-free by nature and long lasting; the different solutions to simplify the access to the internal components make the maintenance operations easy, fast, safe and inexpensive

Easy handling and installation

- ❖ Totally (PMS-D, PME-E, MCC, MCE, PAD, MCT, M-GEL series) or partially (PMM series) pre-assembled units, transportable by standard trucks and sea-containers

Customised solutions

- ❖ Beyond the standard MITA range, many constructive variants can be studied and developed together with the end-user

Know-How

- ❖ We deal since more than 50 years with evaporative cooling. With more than 25.000 installed units we have always been a reference point in the cooling of civil and industrial water

Certifications

- ❖ ISO 9001 - PED 97/23/EC
- ❖ In progress: ISO14001 - OHSAS 18001



PMS-D series

Open circuit cooling tower – with axial fans

PMS-D series is suggested in small size plants. All models are totally pre-assembled in our workshop.

- ❖ Directly coupled axial motor-fan group/s, low installed power, low noise levels, IP56 Siemens motors
- ❖ Casing and basin entirely made of FRP (fibre-glass reinforced polyester resin), corrosion-free material
- ❖ Water distribution system in PVC, PP or PE equipped with non-clogging PP spray nozzles
- ❖ Fill pack with different kinds of air/water channels, suitable for the use with different water types
- ❖ Certified PP drift eliminators (entrainment 0,01%)
- ❖ Basin with sloping base entirely made of FRP
- ❖ Capacity: from 18 to 860 kW (indicative values referred to one unit, 5 °C temperature range)



PME-E series

Open circuit cooling tower – with axial fans

PME-E series is suggested in medium/big size plants. All models are totally pre-assembled in our workshop.

- ❖ Directly coupled axial motor-fan group/s, low installed power, low noise levels, IP56 Siemens motors. Lockable isolating switch pre-wired to the motor-fan group/s to facilitate the final installation
- ❖ Casing made of FRP sandwich panels, thickness 22 mm
- ❖ Metal frame in hot dip galvanized steel after fabrication (galvanization process in accordance with UNI EN ISO 1461-99 regulation, thickness not inferior to 80 micron)
- ❖ Water distribution system in PVC, PP or PE equipped with non-clogging PP spray nozzles
- ❖ Fill pack with different kinds of air/water channels, suitable for the use with different water types
- ❖ Certified PP drift eliminators (entrainment 0,01%)
- ❖ Basin with sloping base entirely made of FRP
- ❖ Each unit is equipped with one or more man-sized access door/s (520x720 mm) or with one or more totally removable walls (1800x2150 mm) for an easy access to the internal components
- ❖ Capacity: from 860 kW to 2,6 MW (indicative values referred to one unit, 5 °C temperature range)



PMM series

Open circuit cooling tower – with axial fan with gearbox reducer

PMM series is suggested in big size plants. Every unit is designed according to the technical data of the relevant project. All models are made of factory pre-assembled modules and components. The particular design of PMM series grants a quick and inexpensive installation, besides the possibility of adjusting/designing the unit to fit the existing basins or structures.

- ❖ Motor-fan (axial) group with gearbox reducer, low installed power, possibility of low noise levels, IP 56 Siemens motors
- ❖ Casing made of FRP sandwich panels, thickness 22 mm
- ❖ Metal frame in hot dip galvanized steel after fabrication (galvanization process in accordance with UNI EN ISO 1461-99 regulation, thickness not inferior to 80 micron)
- ❖ Water distribution system in PVC, PP or PE equipped with non-clogging PP spray nozzles
- ❖ Fill pack with different kinds of air/water channels, suitable for the use with different water types
- ❖ Certified PP drift eliminators (entrainment 0,01%)
- ❖ Each unit is equipped with 2 big man-sized access doors for an easy access to the internal components
- ❖ For every order a static and dynamic structural analysis is carried out, considering seismic factors, wind thrust, snow load, etc.
- ❖ Capacity: from 2,6 to 14 MW (indicative values referred to one unit, 5 °C temperature range)



MCC – MCE series

Closed circuit cooling tower, evaporative condenser – with axial fans

MCC series is suggested in plants in which the quality of the fluid to be cooled is a basic requisite (no contact with air allowed). MCE series is suggested in plants in which refrigerant gases shall be condensed. All models are totally pre-assembled in our workshop.

- ❖ Directly coupled axial motor-fan group/s, low installed power, low noise levels, IP56 Siemens motors. Lockable isolating switch pre-wired to the motor-fan group/s to facilitate the final installation
- ❖ Casing made of FRP sandwich panels, thickness 22 mm
- ❖ Metal frame in hot dip galvanized steel after fabrication (galvanization process in accordance with UNI EN ISO 1461-99 regulation, thickness not inferior to 80 micron)
- ❖ Water distribution system in PVC equipped with non-clogging PP spray nozzles
- ❖ Certified PP drift eliminators (entrainment 0,01%)
- ❖ Heat exchanger coils made of smooth tubes in hot dip galvanized steel after fabrication (for MCC series: stainless steel is available optionally)
- ❖ The evaporative condensers' coils are PED certified
- ❖ Basin with sloping base entirely made of FRP
- ❖ Each unit can be equipped with two or more totally removable walls for an easy access to the internal components, and above all to the coils.
- ❖ Capacity: from 80 kW to 1,7 MW (indicative values referred to one unit, 5 °C temperature range for MCC)



PAD series

Adiabatic cooler, condenser

It can be considered as a dry cooler implemented with an adiabatic air pre-cooling system which increases the unit performance.

This machine is suggested in plants in which the attention is particularly focused to the water and energy consumption.

- ❖ All models are totally pre-assembled in our workshop and supplied with electrical control panel
- ❖ Basin, body and fan beds made of FRP, lightweight, non-corroding, maintenance-free material
- ❖ Water distribution system and air inlet louvers in plastic material
- ❖ Metal frame in hot dip galvanized steel after fabrication (galvanization process in accordance with UNI EN ISO 1461-99 regulation, thickness not inferior to 80 micron)
- ❖ Humidifier pack with high water retaining capacity made of flocked PVC with wide air/water channels (low pressure drops and sensible efficiency increase)
- ❖ Finned coil in copper and aluminium
- ❖ Capacity: from 100 kW to 1 MW (indicative values referred to one unit)



MCT series

Open circuit cooling tower – with centrifugal fans

MCT series is suggested in small/medium size plants also, indoor installations and where the noise levels must be particularly low. All models are totally pre-assembled in our workshop.

- ❖ Casing and basin entirely made of FRP, corrosion-free material
- ❖ Fill pack in PVC / PP with high heat exchange surface
- ❖ Certified PP droplets separators (entrainment 0, 01%)
- ❖ Water distribution system in PVC, PP or PE equipped with non-clogging PP spray nozzles
- ❖ Centrifugal motor-fan with transmission belt, low noise levels
- ❖ Air Inlet and outlet silencers available
- ❖ Capacity: from 28 kW to 1,5 MW (indicative values referred to one unit, 5 °C temperature range)



M-Gel series

Open circuit cooling tower – with centrifugal fan

M-GEL is a cooling tower designed and produced by MITA with the purpose of reuse, in a closed cycle, the water utilised in the circuits of ice cream workshops (with machines such as batch freezers, pasteurizers, display cases, etc.). The unit is compact and small, almost entirely made of plastic material (FRP), with centrifugal fan system, water recirculation pump and electrical control panel.

- ❖ Casing equipped with inspection hatch, pump and fan protective cover, FRP top (for the indoor version), entirely made of gel-coated FRP, shiny finish
- ❖ Supporting frame in hot dip galvanized steel, with wheels for the indoor version or with metal anchoring feet for outdoor version
- ❖ Fill pack in PVC / PP with high heat exchange surface
- ❖ Centrifugal motor-fan, low noise levels
- ❖ Capacity: 29 kW and 52 kW (indicative values referred to one unit, 5 °C temperature range)



Location	Italy
Application field	Energy
Capacity, MW	29
Type	PMM 30



Location	Italy
Application field	HVAC
Capacity, MW	10,4
Type	PME 2854/3 E Super Silent



Location	Poland
Application field	Cogeneration
Capacity, MW	1
Type	MCC Q2-D



Location	UK
Application field	Petrochemical
Capacity, MW	7,5
Type	Aggreko



Location	Italy
Application field	Cogeneration
Capacity, MW	3,7
Type	PME 3354 E Super Silent



Location	Italy
Application field	Metallurgic
Capacity, MW	2,8
Type	MCC P1-D



Location	Greece
Application field	HVAC
Capacity, MW	1,2
Type	MCE Q2 Silent



Location	Poland
Application field	Chemical
Capacity, MW	5,8
Type	PMM 30



Location	France
Application field	Metal process
Capacity, MW	300
Type	PAD 8/4



Location	Sweden
Application field	Automotive
Capacity, MW	26
Type	PMM A33



Location	Italy
Application field	Technical gases
Capacity, MW	19
Type	PMM A43



Location	Italy
Application field	Plastic process
Capacity, MW	240
Type	PAD 4/6



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