

MB CONVEYORS SOLUTIONS



*HIGH TEMPERATURE
PRODUCT CONVEYORS*



mbconveyors.com





HIGH TEMPERATURE PRODUCT CONVEYORS

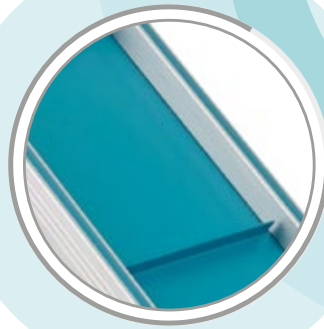
MISSION:

- *Creating conveyors with high temperature resistant belts*
 - *Installing devices on the conveyors able to effectively reduce the temperature of the product*
-

MB is able to propose various different conveying solutions, depending on the temperature of the product as it leaves the mould:

Conveyor with
standard **PU belt**

from **-10°C**
to **+ 90°C**



Conveyor with
HYTREL BELT
for high
temperatures

from **-10°C**
to **+ 110°C**



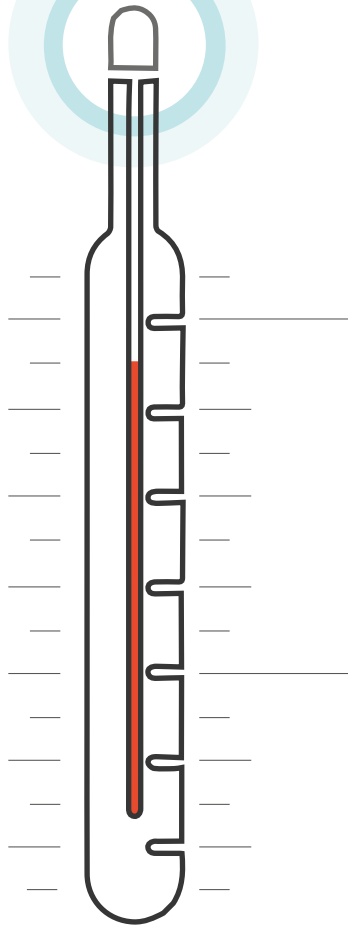
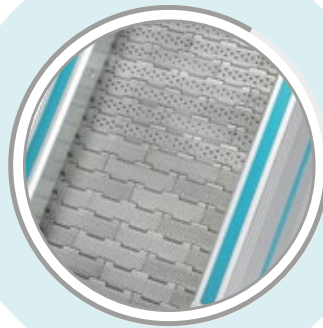
Conveyor with
plastic belt

from **-10°C**
to **+ 130°C**



Conveyor with
plastic belt

from **-10°C**
to **+ 250°C**



NOTE MOMENTARY CONTACT TEMPERATURE

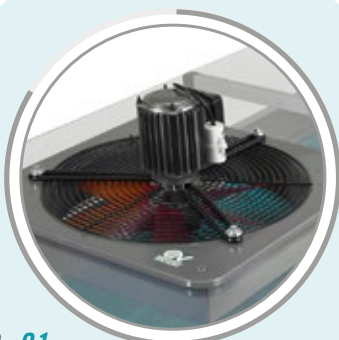
means the surface temperature of the product the moment it leaves the mould: this temperature tends to drop to lower values within a short time

OPERATING TEMPERATURE

means the real temperature of the product when the momentary temperature has dropped. For MB, it is the continuous temperature that prevails when choosing the most suitable belt

**CONVEYORS COMPLETE WITH
COOLING TUNNELS**
WHEN:

- The surfaces / products that need to be cooled are large in size, a consistent mass of air must remove the heat within the shortest possible time.


PHOTO .01

Helicoid electric fan
installed in the tunnel


PHOTO .02

Helicoid electric fan installed outside
the tunnel

OPERATION

The electric fan blower (1400 rpm) draws in air from the outside at ambient temperature and channels it onto the product that needs to be cooled

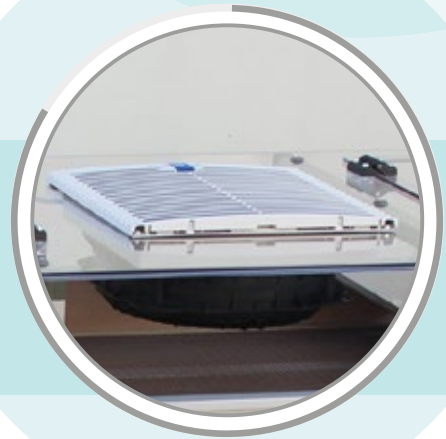
RECOMMENDED OPTIONALS

MB recommends installation of a mod. Speed Control panel so as to vary the speed of rotation of the blower, thereby modulating the air flow

CONVEYOR MOD. PA 110 COMPLETE WITH COOLING TUNNEL AND HELICOID ELECTRIC FANS EQUIPPED WITH FILTER CELLS

WHEN:

- When impurities must be removed from the air drawn from the outside environment before being conveyed onto the product
- choice of the type of filter cells is established according to the case in question, as required



ELECTRIC FANS WITH FILTER CELLS

Available types:

- Cells with filters for coarse dust
- Cells with filters for fine dust
- Cells with filters for clean rooms
- Cells with EPA absolute filters

NOTE: filters lower the pressure and flow rate of the air, thus the choice of model to install must be carefully evaluated.



CONVEYOR MOD. CPS TP COMPLETE WITH COOLING TUNNEL

- The photo illustrates electric fans with filter cells installed on a sloping conveyor

This particular conveyor is used for collecting, conveying and cooling plastic caps for mineral water bottles.

Specifications:

- Mould with 72 cavities
- Cycle time: 3.8 sec
- Temperature of cap upon leaving mould: 52-60°C
- Temperature of cap after conveying: 24-28°C
- Total length of route covered by caps on conveyor: 4200 mm
- Speed of conveyor: 6.5 m/min

CONVEYOR MOD. PA TP COMPLETE WITH COOLING TUNNEL

WHEN:

- When the products to be cooled are small in size and cooling must be achieved within the shortest possible time
- The standard application for this cooling system is used in the **caps & closures industry**



- In the standard applications, the radiator is connected to the cooling fluid from the IMM mould (13-17°C)

.01

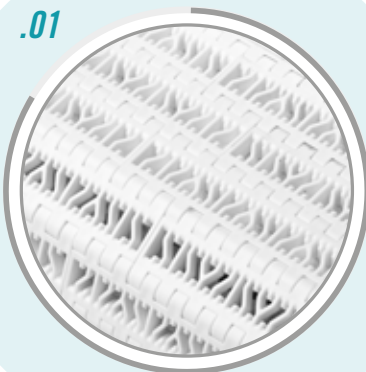


PHOTO .01

- Detail of perforated plastic belt
- This solution allows the air to flow away after having cooled the product

.02

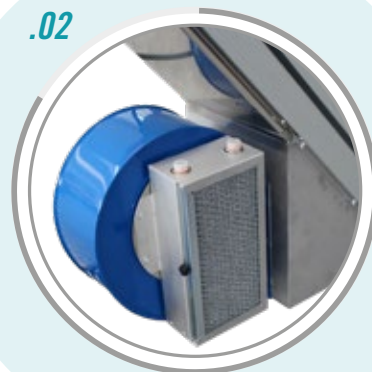
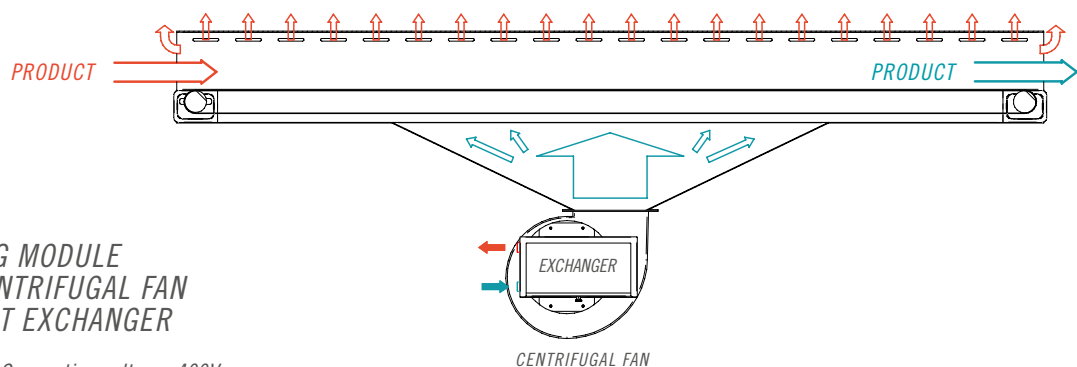


PHOTO .02

- Detail of the centrifugal electric fan complete with radiator and metal gauze filter
- The flat metal gauze filter cell prevents impurities from being aspirated from the outside environment

OPERATING LAYOUT



COOLING MODULE WITH CENTRIFUGAL FAN AND HEAT EXCHANGER

- Connection voltage: 400V
- Electric fan power rating: 1.1 kW
- Power input: 5.2 Amperes
- Max rpm: 4000
- Max water flow rate: 2000 l/h
- Std fluid temperature: - 10°C/+60°C
- Indicative thermal efficiency: 18 kW
- Connection: F3/ 4" union

OPERATING LAYOUT



CP TP SERIES CONVEYOR COMPLETE WITH COOLING TUNNEL

- The tunnel installation illustrated in the photo is complete with centrifugal electric fan, air conditioning radiator and electromechanical control panel



COOLING MODULE INSTALLED ON A MOD. PA 110 FLAT CONVEYOR

THE SYSTEM INCLUDES:

- A modular tunnel in 4 mm thick DIBOND insulating panels.
- An air/water exchanger to connect to the cooling system of the IMM

COOLING MODULE

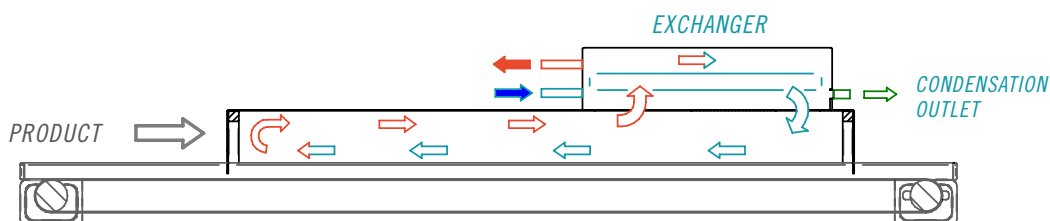
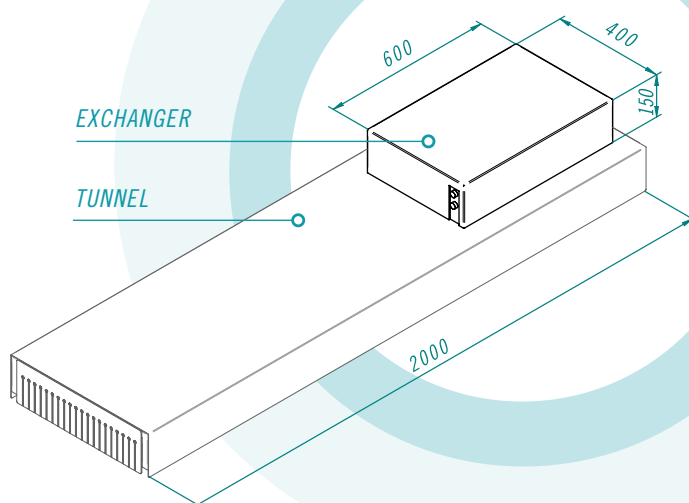
- Connection voltage 230 V
- Power input: 0.4 A
- Maximum operating pressure 10 bars
- 2150 W cooling capacity at 400 l/h
- Water delivery temperature: min 1°C max 35°C
- Air flow rate: 500 m³/h/500 m³
- Protection class IP55



OPERATING LAYOUT

- ← Water arriving from the IMM (temperature 13-15°C)
- Water returning to the IMM

- The system does not draw in air from the surrounding environment but uses the air already in the tunnel: this principle limits the possibility of the product being contaminated by external sources in an exponential way



NOTE: Cooling modules with exchangers and functional in tunnels 2000 mm in length.
If one module is considered insufficient, others must be added.

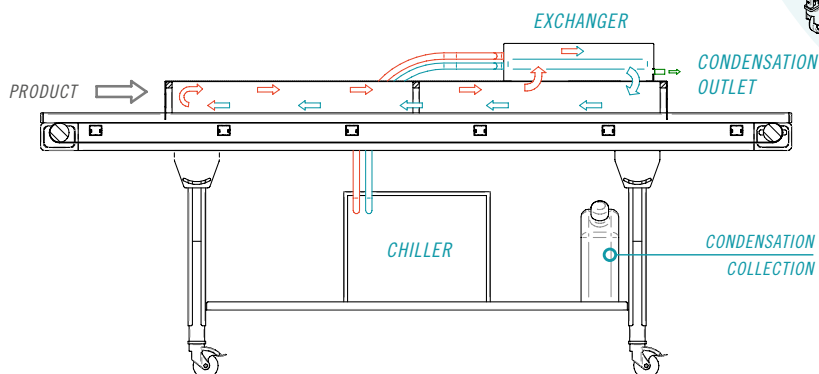
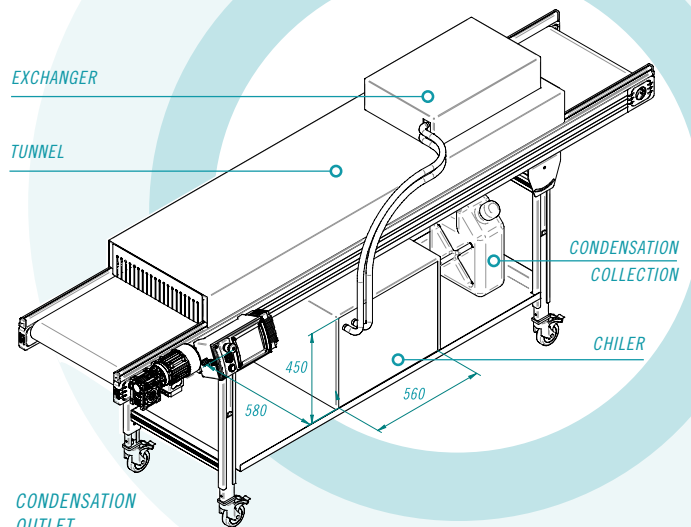
**CONVEYOR MOD. PA 110 COMPLETE WITH COOLING TUNNEL,
HEAT EXCHANGER AND CHILLER**

- This is a fully stand-alone system since it is equipped with an independent chiller.
- Independent cooling module.
The chiller has its own control panel, allowing the max. and min. temperatures within which the system activates to be regulated

NOTE: The system has a circuit for recovering the condensation and draining it outside the tunnel

**COOLING MODULE**

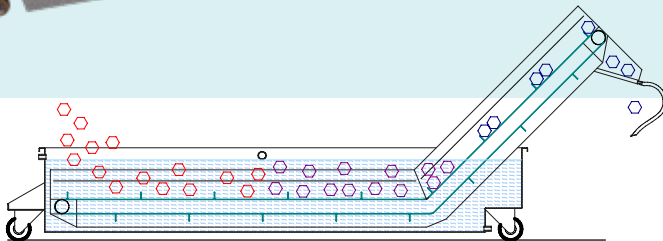
- Connection voltage 230 V
- Power input: 1.8/2.12 kW
- Cooling capacity 2.4 kW
- Adjustment range (fluid outlet temp.):
min 10°C max 35°C
- Factory setting: 18°C
- Air volume: 1000 m3/h
- Protection class IP20



NOTE: The capacity of the chiller proposed is suitable for installation in conjunction with the proposed exchanger. A higher powered chiller must be used if several exchangers are installed.



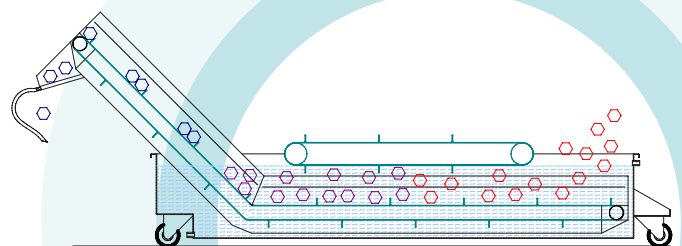
**MOD. RA FOR
NON FLOATING PRODUCTS**



MOD. RA / RAT COOLING TANKS

- The cooling medium in these systems is water, instead of air: the product is conveyed immersed in water along the entire length of the tank in the lower level section. At the end of the travel, the product continues along the upward section of the CP conveyor and is carried outside the tank.
- The tank dimensions, length and width of the conveyors depend on the characteristics of the product and its temperature when it leaves the mould.

**MOD. RAT FOR FLOATING AND
NON FLOATING PRODUCTS**



- All the metal parts of the tanks are made of AISI 304 stainless steel
- Tanks complete with MB mod. Top Control panel for speed adjustment from 0.5 to 4 m/min or timed and adjustable step-by-step advancement

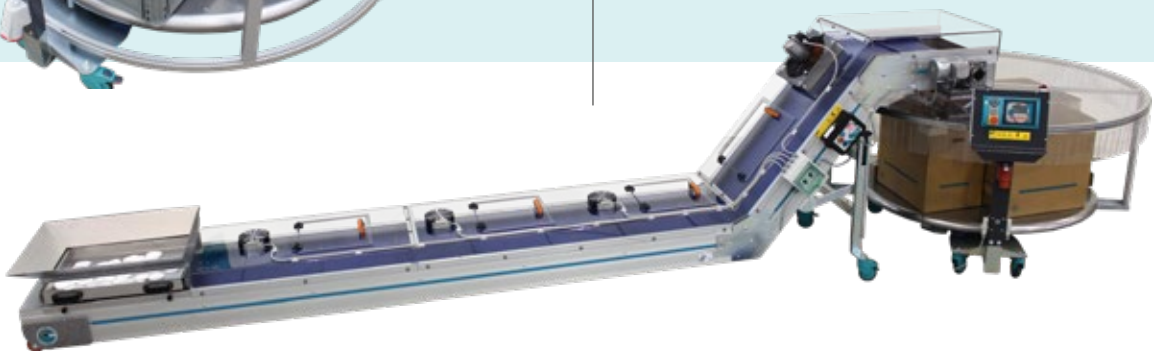
TVC WITH HELICOID FANS

Rotating table complete with Polycarbonate cover to protect from the dust, fitted with two helicoid electric fans able to rapidly exhaust the air that rises from the boxes full of product



FILLING SYSTEM ON BOARD THE IMM

The sloping section is fitted with a helicoid fan to exhaust the heated air from inside the tunnel



CAP CONVEYING SYSTEM WITH CENTRIFUGAL FAN

Cap conveying system with centrifugal fan which collects the product from the IMM and cools it as it is conveyed into the dedicated container. Both conveyors are equipped with a forced cooling system comprising a centrifugal fan in conjunction with a heat exchanger, which uses the cooling fluid of the chiller to reduce the air temperature before conveying it onto the product.



M B C O N V E Y O R S S O L U T I O N S



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