PAD-V
Sustainable adiabatic system for liquid cooling and gas condensing

MITA
cooling technologies

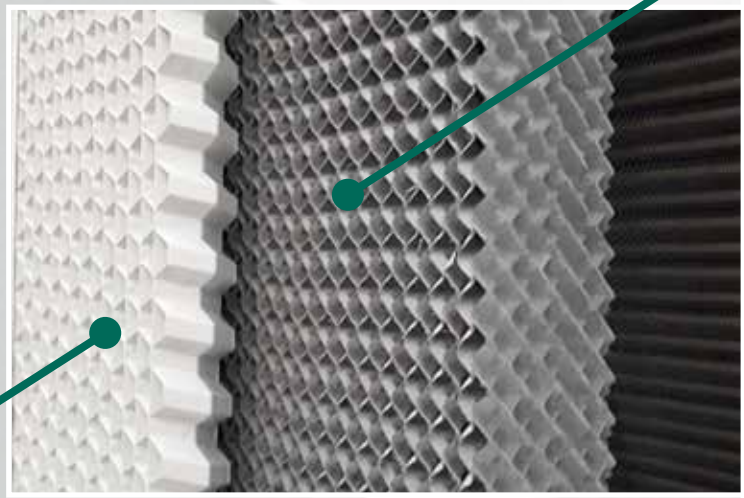
STRENGTHENED... AND PATENTED:
ADIABATIC ACCORDING TO MITA

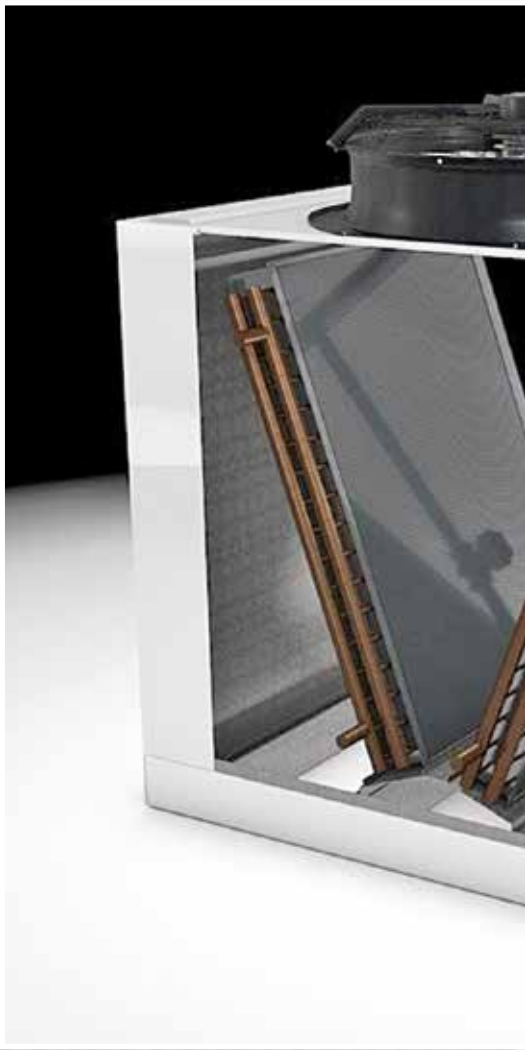
European patent
No 2 206 980 B1

LIKE VELVET TO RETAIN WATER

The ***humidifying pack*** for adiabatic operation stays damp for a long time, due to the “velvet effect” of the flocked PVC

- **Very short non-continuous wetting cycles:** just a few seconds every 10-20 minutes instead of a constant “waterfall”
- **Real water savings**, also thanks to recovery and recycling.
- PVC pack and **rayon fibre** flocking (not organic-based) instead of the more common cellulose **to prevent bacterial proliferation.**

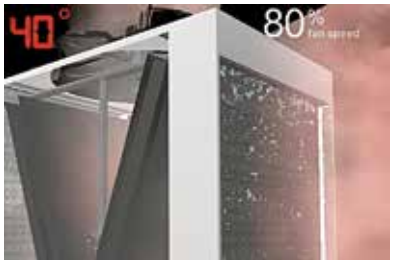




AIR INTAKE GRILLE

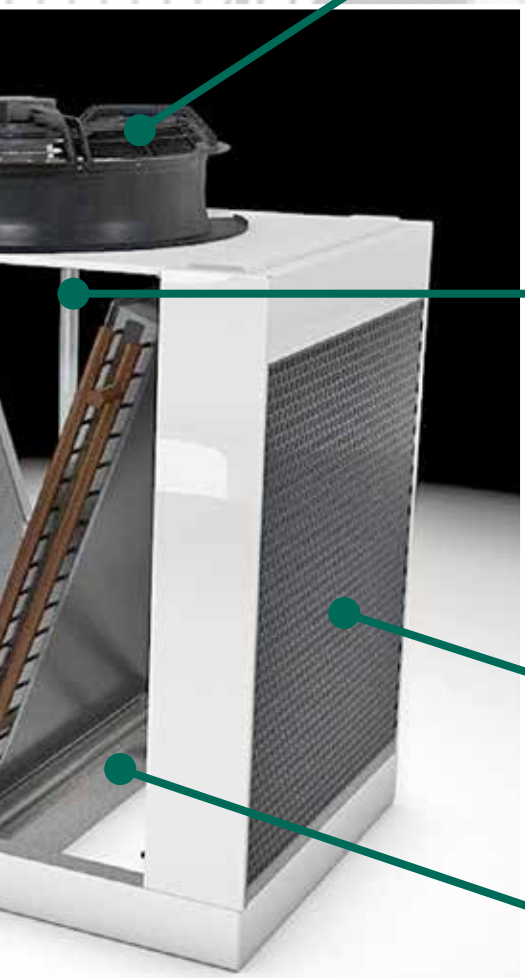
- Filters the air, but **protects the adiabatic pack** from light and foreign matter.
- Prevents water leaks, **ensuring a clean environment** around the machine.

Adiabatic operation in hot periods ...



- The external air passes through the **humidifier pack**.
- The adiabatically cooled air is conveyed to the finned coils: the **efficiency increases**.
- Capable of working **at lower ambient temperatures**.
- **No direct contact** between water and finned coils.

A SAFE, DURABLE AND **SUSTAINABLE** SYSTEM



SMART FAN ADJUSTMENT

- The inverter on the motors **adjusts the speed of the fans** according to ambient temperature and thermal load.
- In adiabatic mode, the motors slow down during the wetting cycles; **this prevents** drops of water being dragged outside.
- The result: **electricity savings and a healthy environment**.

MAXIMUM FLEXIBILITY

- **A completely parameter controlled** system.
- Depending on thermal load needs, external temperatures, and water and energy consumption objectives, **the system automatically adjusts** fan rotation speed, wetting cycles and adiabatic/dry modes.
- **Very low water and electricity consumption.**

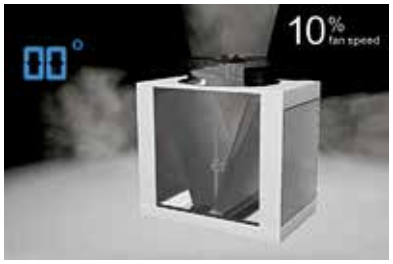
FLOCKED PVC ADIABATIC PACK

- Material **does not deteriorate over time.**
- **Self-extinguishing.**
- **Recyclable** at end of life.

NO NEED FOR TREATED WATER

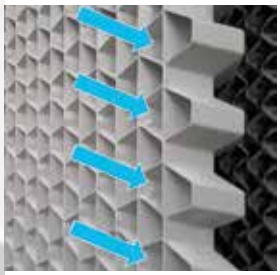
- **Programmed daily change** of wetting water.
- Parts in contact with water are made of material that does **not corrode** and is easy to clean.
- The coils **are not in contact** with the wetting water.

*... **Dry operation** in cold weather*



- The external air is **aspirated and conveyed directly** to the coils.
- **Humidification is deactivated**: no water in the circuit.
- **Fan speed modulated** according to temperature.
- Guaranteed **water and energy savings**.

OPTIMIZED HEAT EXCHANGE



AIR INTAKE GRILLE

It improves air distribution on the humidifier pack and avoids water leaks: **greater efficiency, less energy** consumed by the fans, **less water** for humidifying the air.

WETTING

Very short cycles to humidify air in hot weather: **water consumption tailored to** actual current need.

AIR DISTRIBUTION

Geometry and configuration of the V-shaped coils and central fans ensure **optimum performance with low load loss**.

COIL CHARACTERISTICS

Tube diameter, fin pitch, geometry and materials selected for **top performance**.

EC FANS

Electronic control fans compliant with the ErP 2011 “Eco- design” standard **for enhanced energy efficiency** with low noise levels.

MITA’s secret for slashing consumption

European patent No 2 206 980 B1

Saving 1: the flocked PVC adiabatic pack is wetted to humidify the air **only when needed** and at intervals **from 10 to 20 minutes** (not continuously as occurs in other adiabatic packs).

Saving 2: once wet, the adiabatic pack **releases only the water necessary** to obtain an air temperature that will ensure the thermal performance (cooling) of the finned coil system. With other adiabatic packs, the quantity of water distributed on the pack is constant and independent of the condition of the air to be cooled.

Saving 3: the flocked PVC adiabatic pack just needs to be wet with non-pressurized water for a short time (about 15 seconds). In the most “extreme” wetting condition, with a wetting cycle every 10 minutes, the pump runs for just one and a half minutes every hour. A pump with 2 kW electric power thus consumes about 50 W/h: **the equivalent of a low-power light bulb!**

PERFORMANCE AND CONSUMPTION **UNDER CONTROL**

INDUSTRY 4.0

Temperature probes for the adiabatic section and the temperature of the process fluid.

A PLC controls and automates the machine's operation.

The data can be sent to a remote control panel.

OPTIMIZED EFFICIENCY

Obtained thanks to the electronically controlled fans that **modulate speed** according to various parameters.

WATER MANAGEMENT

Purging and replenishment are managed by a PLC.

MITA CONNECT

The data collected by the PLC can be sent to the MITA Connect platform **for remote monitoring, record analysis and preventive maintenance**.

MAINTENANCE HAS NEVER BEEN SO SIMPLE

The air intake grilles and adiabatic pack **are easy to remove**.

The outer doors make it **easy to inspect** the inner components.

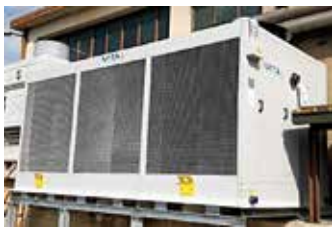
Further, **to minimize** maintenance, the parts in contact with water are uncorrodable: **AISI 304** stainless steel or **PVC**.

THE ADVANTAGES OF ADIABATIC COOLING **WITH MITA'S EXPERIENCE**

Examples of application of PAD-V

- PRODUCTION OF PLASTIC
- TRIGENERATION / COGENERATION
- DATACENTERS
- HVAC
- INDUSTRIAL REFRIGERATION
- FOOD & BEVERAGE
- HEAT TREATMENT

The experience of MITA Cooling Technologies with PAD-V and the other adiabatic systems ...



In plastic moulding systems

In power plants

For trigeneration and cogeneration

In dairies

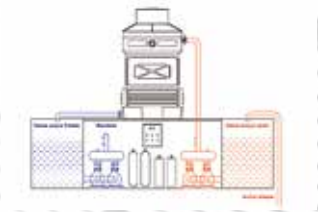
In the power generation sector

Metal treatments

MITA COOLING TECHNOLOGIES
YOUR PROCESS COOLING ADVISOR

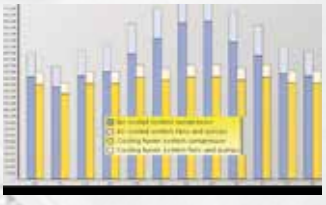
You can always be sure to select the right product for your system thanks to a consultancy approach: the PAD-V adiabatic system complements the vast range of MITA Cooling Technologies coolers.

Maximum adaptation to customer needs: customization possible for complex environments.



You can be sure of reducing complexity and nasty surprises: **integrated Plug & Play solutions.**

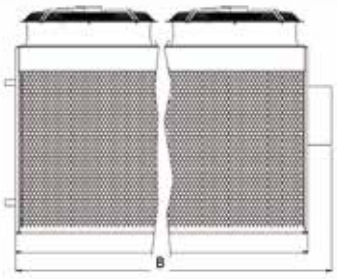
Optimized ROI thanks to **water and energy** saving in real operating conditions.

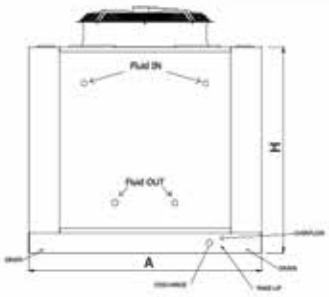


A choice that respects the environment: We look for solutions to reduce noise and consumption constantly throughout the life of the product. Pending certifications: ISO 14001 (environmental management) and EN 45001 (health and safety).

Since 1960, we have been **a serious and reliable partner**.

DIMENSIONS
WEIGHT
FANS AND
WETTING PUMP





Model	Dimensions (mm)			Weight (kg)		EC Fans			
	A	B	H	Shipping	Operating	Number	Single fan installed power (kW)	PWL* single fan (dbA)	Wetting pump (kW)
PAD-VS 1/4 T	2400	1600	2737	1100	1340	1	6,5	90,5	0,25
PAD-VS 1/5 T	2400	1600	2737	1180	1460	1	6,5	90,9	0,25
PAD-VS 1/6 T	2400	1600	2737	1220	1530	1	6,5	91,2	0,25
PAD-VS 2/4 T	2400	3200	2737	1810	2190	2	6,5	90,2	0,25
PAD-VS 2/5 T	2400	3200	2737	1940	2380	2	6,5	90,5	0,25
PAD-VS 2/6 T	2400	3200	2737	2030	2510	2	6,5	90,7	0,25
PAD-VS 3/4 T	2400	4800	2737	2570	3080	3	6,5	90,2	0,37
PAD-VS 3/5 T	2400	4800	2737	2780	3380	3	6,5	90,5	0,37
PAD-VS 3/6 T	2400	4800	2737	2920	3570	3	6,5	90,6	0,37
PAD-VS 4/4 T	2400	6400	2737	3360	4010	4	6,5	90,1	0,37
PAD-VS 4/5 T	2400	6400	2737	3590	4350	4	6,5	90,4	0,37
PAD-VS 4/6 T	2400	6400	2737	3820	4660	4	6,5	90,5	0,37
PAD-VS 1/4 Q	2400	1600	2737	1180	1470	1	6,5	90,7	0,25
PAD-VS 1/5 Q	2400	1600	2737	1250	1560	1	6,5	91,2	0,25
PAD-VS 1/6 Q	2400	1600	2737	1360	1730	1	6,5	91,6	0,25
PAD-VS 2/4 Q	2400	3200	2737	1950	2400	2	6,5	90,3	0,25
PAD-VS 2/5 Q	2400	3200	2737	2070	2570	2	6,5	90,7	0,25
PAD-VS 2/6 Q	2400	3200	2737	2290	2870	2	6,5	91,1	0,25
PAD-VS 3/4 Q	2400	4800	2737	2800	3400	3	6,5	90,2	0,37
PAD-VS 3/5 Q	2400	4800	2737	3010	3690	3	6,5	90,6	0,37
PAD-VS 3/6 Q	2400	4800	2737	3270	4060	3	6,5	91,0	0,37
PAD-VS 4/4 Q	2400	6400	2737	3620	4380	4	6,5	90,2	0,37
PAD-VS 4/5 Q	2400	6400	2737	3870	4740	4	6,5	90,5	0,37
PAD-VS 4/6 Q	2400	6400	2737	4180	5190	4	6,5	90,8	0,37
PAD-VH 1/4 T	2400	1600	2850	1180	1460	1	6,5	88,5	0,25
PAD-VH 1/5 T	2400	1600	2850	1230	1530	1	6,5	88,8	0,25
PAD-VH 1/6 T	2400	1600	2850	1270	1600	1	6,5	89,0	0,25
PAD-VH 2/4 T	2400	3200	2850	1930	2360	2	6,5	88,4	0,25
PAD-VH 2/5 T	2400	3200	2850	2030	2510	2	6,5	88,5	0,25
PAD-VH 2/6 T	2400	3200	2850	2130	2660	2	6,5	88,6	0,25
PAD-VH 3/4 T	2400	4800	2850	2760	3330	3	6,5	88,5	0,37
PAD-VH 3/5 T	2400	4800	2850	2930	3580	3	6,5	88,7	0,37
PAD-VH 3/6 T	2400	4800	2850	3110	3820	3	6,5	88,8	0,37
PAD-VH 4/4 T	2400	6400	2850	3610	4340	4	6,5	88,2	0,37
PAD-VH 4/5 T	2400	6400	2850	3820	4640	4	6,5	88,6	0,37
PAD-VH 4/6 T	2400	6400	2850	4020	4930	4	6,5	88,6	0,37
PAD-VH 1/4 Q	2400	1600	2850	1230	1540	1	6,5	88,7	0,25
PAD-VH 1/5 Q	2400	1600	2850	1350	1730	1	6,5	89,1	0,25
PAD-VH 1/6 Q	2400	1600	2850	1430	1830	1	6,5	89,5	0,25
PAD-VH 2/4 Q	2400	3200	2850	2040	2530	2	6,5	88,4	0,25
PAD-VH 2/5 Q	2400	3200	2850	2280	2860	2	6,5	88,6	0,25
PAD-VH 2/6 Q	2400	3200	2850	2420	3060	2	6,5	88,8	0,25
PAD-VH 3/4 Q	2400	4800	2850	2950	3600	3	6,5	88,6	0,37
PAD-VH 3/5 Q	2400	4800	2850	3260	4040	3	6,5	88,8	0,37
PAD-VH 3/6 Q	2400	4800	2850	3470	4340	3	6,5	89,0	0,37
PAD-VH 4/4 Q	2400	6400	2850	3840	4680	4	6,5	88,4	0,37
PAD-VH 4/5 Q	2400	6400	2850	4220	5210	4	6,5	88,6	0,37
PAD-VH 4/6 Q	2400	6400	2850	4500	5600	4	6,5	88,7	0,37

* Calculated according to ISO 3744

bsi ISO 9001 Quality Management Systems CERTIFIED | ISO 14001 Environmental Management CERTIFIED | ISO 45001 Occupational Health and Safety Management CERTIFIED

MITA cooling technologies

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