ThermoKey®

Heat Exchange Solutions

V-Type Gas Cooler
JVCH/L/Q/R

Lower environmental impact

WHY THERMOKEY?

In order to best meet the needs of energy efficiency and lower environmental impact, in industrial refrigeration and air conditioning systems, ThermoKey promotes the use of low consumption solutions through Gas Coolers, i.e. air cooled units that use as refrigerant the CO_2 .

WHY CO_2?

The GWP (Global Warming Potential) of CO_2 is the lowest of the refrigerants and when compared to HFCs, thousands of times less. In addition, CO_2 does not present specific problems of toxicity and flammability that many other refrigerants have and does not affect the ozone layer.

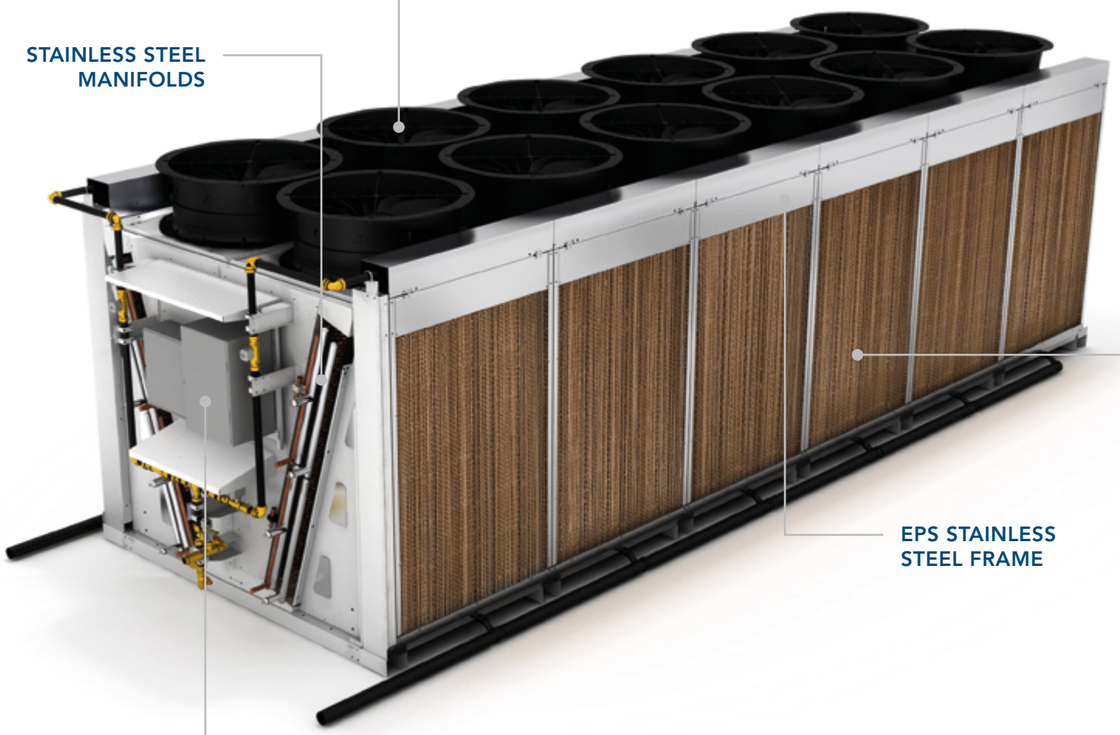
Reduced consumption

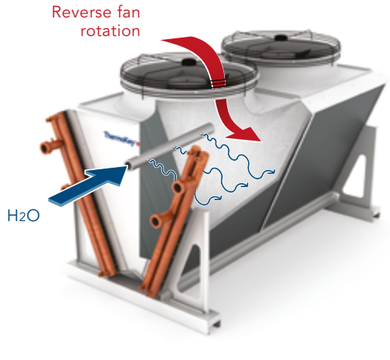
The use of CO_2 as an alternative to traditional refrigerants is now known and appreciated for its peculiar thermophysical properties. Through proper design and the use of this extraordinary gas you can achieve the maximization of the heat exchange, the minimization of the energy spent on air circulation, the minimization of the exchange surface area or the overall dimensions of the exchanger. The Gas Cooler ThermoKey range exploits and incorporates all the effectiveness allowed by this refrigerant: the particular geometry used in the exchangers allows optimized solutions by combining the possible construction and operating requirements of the product.
The air -side independent module design allows easy maintenance and partializable use.

V-type Gas Coolers applications

The Gas Cooler V-type units of the Power-J series have been developed specifically for the commercial and industrial refrigeration market. Sustainability, compact dimensions, high capacities and constructive modularity have been the design drivers of this product that follows the power ranges of the reference compressors.

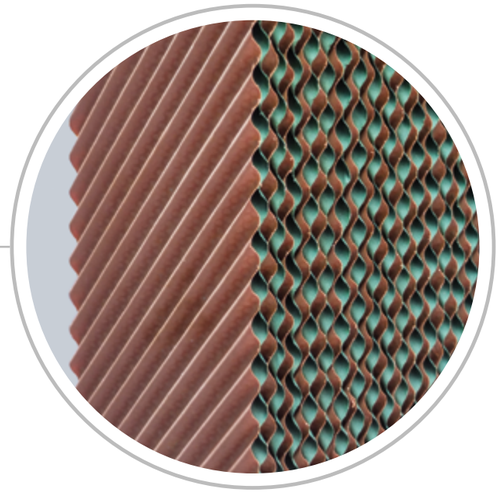
The high efficiency heat exchangers with 5/16 copper pipe and auxiliary evaporative rows for heat recovery allow energy optimization.





CLEANING SYSTEM (OPTIONAL)

On all V-type units the cleaning system is available on request: a dedicated piping with a ramp per each fan row equipped with specific nozzles for pressure washing the heat exchanger. The system allows to wash the dirt accumulated on the finned surface from the inside to the outside of the finned pack, keeping the exchanger at the maximum efficiency.



Adiabatic system EPS: Evaporative Panel System

EPS

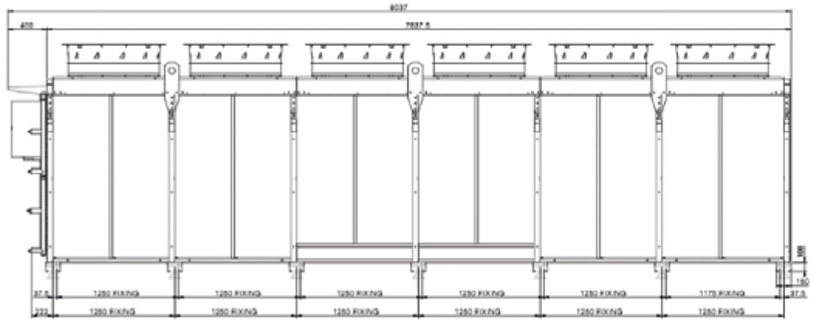
ADIABATIC SYSTEM EVAPORATIVE PANEL SYSTEM

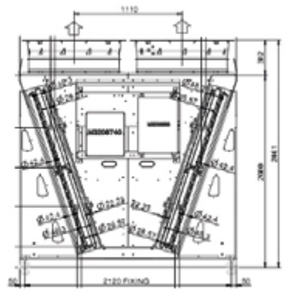
The combination with the EPS adiabatic panel system completes the offer. The system with evaporative panels increases the capacity and the efficiency of CO_2 transcritical systems. The characteristic V-shaped structure of the Gas Cooler Thermokey allows you to take the most of the adiabatic system and reduce the overall dimensions of installation.

These units with the option of adiabatic air cooling allow an effective operation even in regions where the ambient temperature could exceed 40 ° C, reducing the possibility of blocking the refrigeration systems, commercial refrigeration (supermarkets) and industrial refrigeration (production, packaging and distribution). The control panel developed to manage the adiabatic system continuously regulates the flow rate and consequently minimizes the water consumption based on the load demand of the heat exchanger, adapting to the different operating conditions and plant requirements (water saving / energy saving).

Unit dimensions and performances

AVAILABLE DIMENSIONS





Model (*)		2290	2390	2490	2590	2690
Nominal length	mm	2500	3750	5000	6250	7500
Total length	mm	3040	4290	5540	6790	8040

UNIT PERFORMANCES

Model (**)	Capacity	R744 mass flow	R744 inlet temp.	R744 outlet temp.	Pressure	Air flow	Sound level	Inlet air temp.
	kW	kg/h	°C	°C	bar	mc/h	dB(A) 10m	°C
JVCH2290CN EC	350	5560	110	35	90	87310	54	30
JVCH2290FN EC	424	6740	110	35	90	83935	54	30
JVCH2390CN EC	520	8240	110	35	90	130965	56	30
JVCH2390FN EC	628	10000	110	35	90	125805	56	30
JVCH2490CN EC	686	10900	110	35	90	174620	57	30
JVCH2490FN EC	834	13260	110	35	90	167870	57	30
JVCH2590CN EC	856	13600	110	35	90	218270	57	30
JVCH2590FN EC	1040	16500	110	35	90	209835	58	30
JVCH2690CN EC	1024	16260	110	35	90	261925	58	30
JVCH2690FN EC	1246	19800	110	35	90	251805	59	30

(*) Suitable for container shipment (with loose EPS system)
(**) TUV Reference conditions

Model (**)	Capacity	R744 mass flow	R744 inlet temp.	R744 outlet temp.	Pressure	Air flow	Sound level	Inlet air temp.
	kW	kg/h	°C	°C	bar	mc/h	dB(A) 10m	°C
JVCL2290CN EC	302	4800	110	35	90	76635	50	30
JVCL2290FN EC	366	5800	110	35	90	73495	51	30
JVCL2390CN EC	448	7120	110	35	90	114955	52	30
JVCL2390FN EC	542	8600	110	35	90	110245	53	30
JVCL2490CN EC	594	9440	110	35	90	153270	53	30
JVCL2490FN EC	718	11400	110	35	90	146990	54	30
JVCL2590CN EC	744	11800	110	35	90	191585	54	30
JVCL2590FN EC	896	14200	110	35	90	183735	55	30
JVCL2690CN EC	888	14100	110	35	90	229905	55	30
JVCL2690FN EC	1072	17000	110	35	90	220485	56	30
JVCQ2290CN EC	284	4500	110	35	90	68590	48	30
JVCQ2290FN EC	340	5400	110	35	90	65575	49	30
JVCQ2390CN EC	422	6700	110	35	90	102885	50	30
JVCQ2390FN EC	504	8000	110	35	90	98360	51	30
JVCQ2490CN EC	558	8840	110	35	90	137175	51	30
JVCQ2490FN EC	670	10640	110	35	90	131145	52	30
JVCQ2590CN EC	700	11100	110	35	90	171470	52	30
JVCQ2590FN EC	840	13340	110	35	90	163930	53	30
JVCQ2690CN EC	832	13200	110	35	90	205765	53	30
JVCQ2690FN EC	1002	15900	110	35	90	196715	54	30
JVCR2290CN EC	180	2840	110	35	90	36905	37	30
JVCR2290FN EC	202	3200	110	35	90	35180	38	30
JVCR2390CN EC	268	4240	110	35	90	55355	39	30
JVCR2390FN EC	300	4760	110	35	90	52765	40	30
JVCR2490CN EC	354	5600	110	35	90	73805	40	30
JVCR2490FN EC	398	6300	110	35	90	70355	41	30
JVCR2590CN EC	442	7000	110	35	90	92255	41	30
JVCR2590FN EC	498	7900	110	35	90	87945	42	30
JVCR2690CN EC	528	8400	110	35	90	110705	42	30
JVCR2690FN EC	596	9460	110	35	90	105530	43	30

Product features

EXCHANGERS

The heat exchangers of the ThermoKey Gas Cooler, built with 5/16 copper pipes and stainless steel manifolds, guarantee operating pressures PS of 120 bar and allow reduced pressure drops on the refrigerant side even in large units, maximizing heat exchange.

The fins with pyramidal corrugation offer surface and exchange coefficient constant over time, less sensitive to fouling. On request, exchangers with pre-painted fins or painted by cataphoresis can be produced.

Optional evaporating rows can be requested for systems that provide for heat recovery.

All the exchangers are produced with structural magnesium aluminum alloy sides to protect the copper tube from the effects of thermal expansion.

FANS

The range is equipped with 3 ~ 400V high efficiency AC or EC motor fans (Erp compliant) with a nominal diameter of 800 mm or 910 mm, mounted on full bell mouth Erp compliant fan cowlings.

Many options are available for energy efficiency and noise reduction and protections for particularly aggressive environements.

FRAME

The standard frames have a high structural rigidity, built in galvanized metal sheet to guarantee resistance and durability in the most severe environmental conditions.
All exposed galvanized metal sheets are painted with RAL7035 epoxy polyester powders after mechanical operations, to ensure the maximum possible protection against corrosion.

To ensure maximum safety in handling and installation operations, for the entire life of the product, lifting and fixing supports are made in hot-dip galvanized structural steel and epoxy-polyester powder coating.

The internal reinforcement brackets are in stainless steel as well as all the fastening elements (screws, nuts and rivets). Special materials and treatments can be provided on request for both frames and heat exchangers with different combinations for maximum protection for particularly aggressive environments.

Reference

REFRIGERATION

Commercial refrigeration

Refrigeration system of a supermarket in Belgium.

NEED Dissipated power of 570 kW in condensation and 114 kW in evaporation.
SOLUTION **V-type Gas Cooler** equipped with an evaporative panel system.
ADDED VALUE Heat exchangers with auxiliary evaporative rows for heat recovery (energy saving). Heat exchanger treated with cataphoresis paint + UV Top Coat for installation in a coastal environment.

Direction
Acrobatik
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DC0922EN

We design customized products to meet every need

We at ThermoKey know that specific environments require specific solutions, we are happy to help you to identify the best solution to your needs.

Our technicians assist the customer in the choice

Our technical staff is at your complete disposal to identify the best heat exchanger for you. We individually analyze your specific needs and the environment in which the heat exchanger will be installed for your needs.

After sales

ThermoKey stays at your side throughout the product life cycle for spare parts replacement and technical assistance

ThermoKey®

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