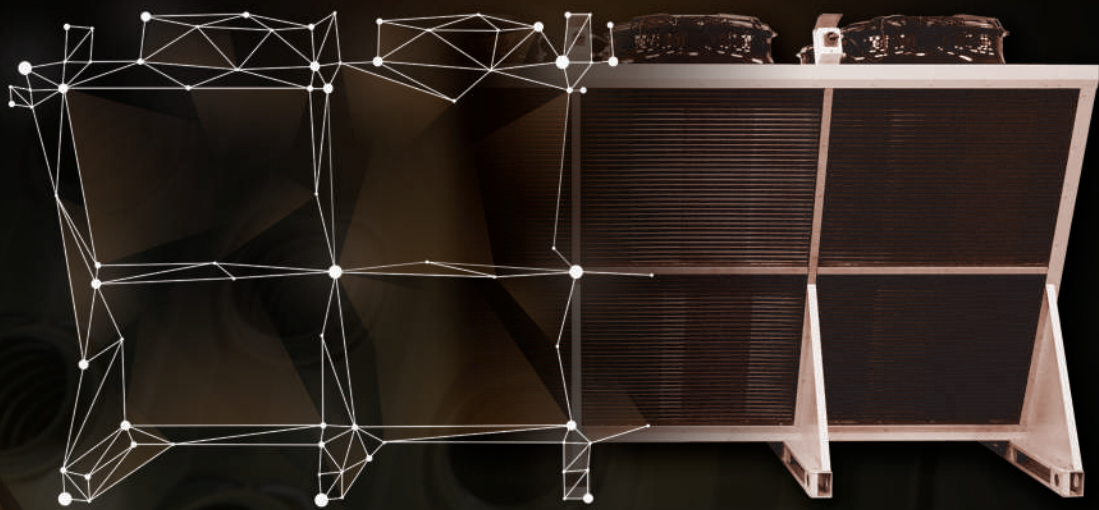


Refra[®]

Air Heat Exchangers



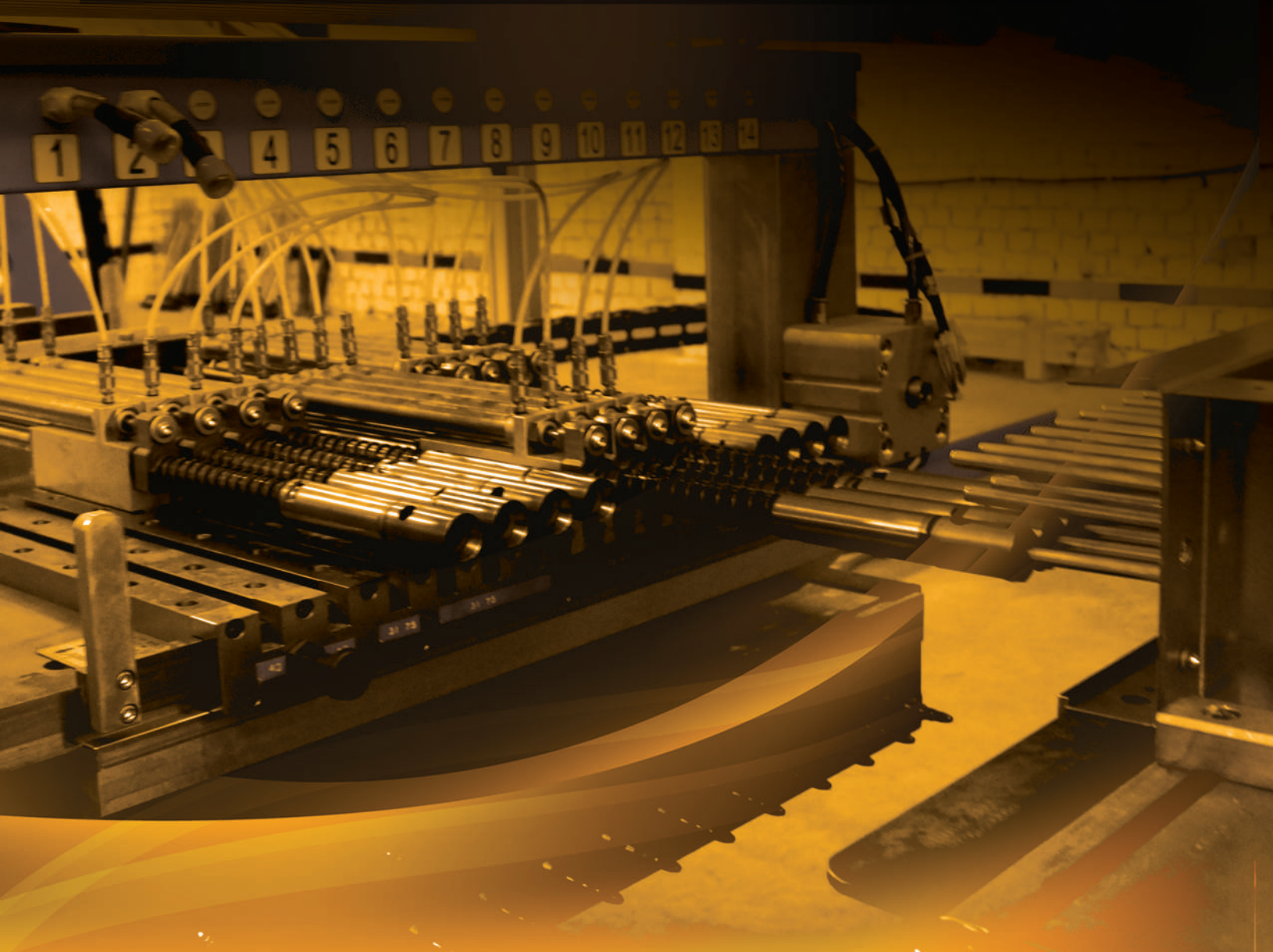
www.refra.eu

Refra air heat exchangers

Refra has developed full brand new production line of different purpose heat exchangers – from simple finned pack coil to various heat exchange units such as condensers, drycoolers, gascoolers and other. Modern technology and tools allows us to perfectly meet customer needs and offer competitive products with reasonable prices and production time.

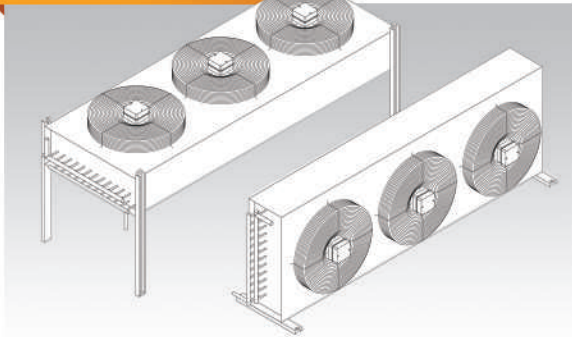
Key features:

- Copper tubes with smooth or inner-grooved surfaces. Standard diameters: 5,0 mm; 7,9 mm; 9,5 mm; 12,7 mm with operating pressure up to 120 bar (for CO2 transcritical applications).
- Aluminum fins, louvered surface. Epoxy-coated aluminum, hydrophilic aluminum and copper fins also available. Fin spacing 2,1 mm and 2,5 mm as standard and up to 6,5 mm available.
- Axial fans with AC and EC motors and medium pressure light-weight impellers. ErP 2015 compliant.
- Galvanized steel powder painted frames with rigid, reliable construction. Stainless steel and aluminum is available.



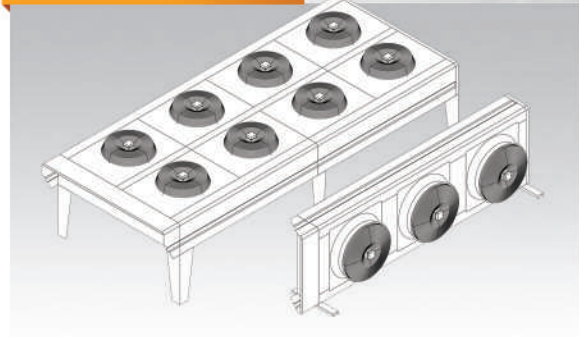
Air Cooled Condensers | Main Series

CMBS



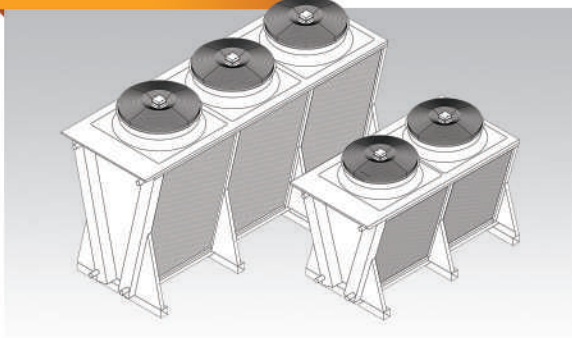
Small capacity range air cooled condenser series. Available heat capacity – up to 100 kW upon nominal conditions. Flat shaped simple construction compact units. Finned pack heat exchanger with inner grooved copper tubes and aluminum fins. AC and EC fan motor technology. Powder painted galvanized steel case.

CMHS/LS/HD/LD



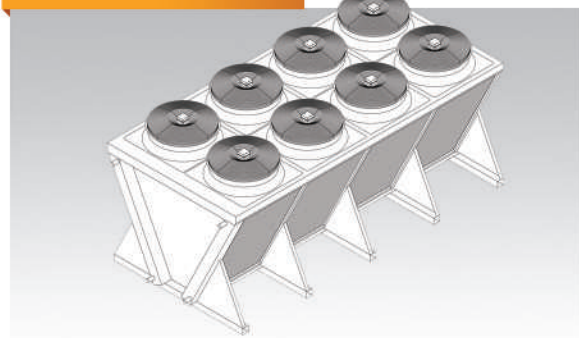
Wide capacity range air cooled condenser series. Available heat capacity – up to 800 kW upon nominal conditions. Flat shaped various size units. Finned pack heat exchanger with inner grooved copper tubes and aluminum fins. AC and EC fan motor technology. Powder painted galvanized steel case.

CVHS



Wide capacity range air cooled condenser series. Available heat capacity range – up to 800 kW upon nominal conditions. V shaped various size units. Double heat exchanger and single fan row provides large heat capacity within limited placement area and higher energy class in comparison with flat units. Finned pack heat exchanger with inner grooved copper tubes and aluminum fins. AC and EC fan motor technology. Powder painted galvanized steel frame.

CVHD

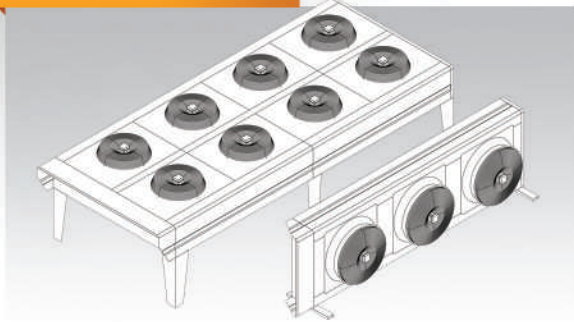


Large capacity range air cooled condenser series for refrigeration applications. Available heat capacity range – over 1 MW upon nominal conditions. V shaped large units. Double heat exchanger and double fan row provides large heat capacity within limited placement area. Finned pack heat exchanger with inner grooved copper tubes and aluminum fins. AC and EC fan motor technology. Powder painted galvanized steel frame.



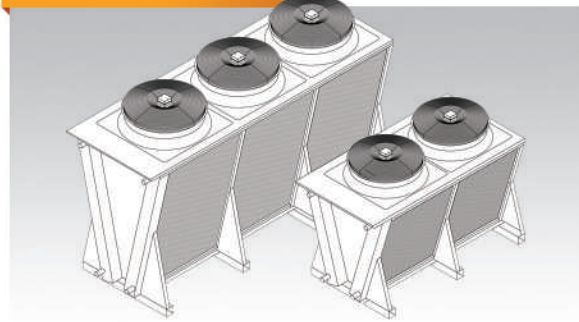
Drycoolers | Main Series

DMHS/LS/HD/LD



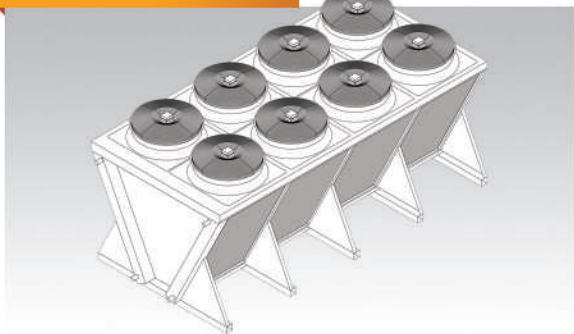
Wide capacity range drycooler series. Flat shaped various size units. Finned pack heat exchanger with tubes and aluminum fins. AC and EC fan motor technology. Powder painted galvanized steel case.

DVHS



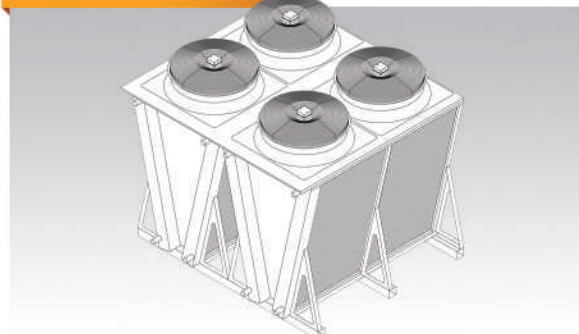
Wide capacity range drycooler series. V shaped various size construction. Double heat exchanger and single fan row provides large heat capacity within limited area and higher energy class in comparison with flat units. Finned pack heat exchanger with copper tubes and aluminum fins. AC and EC fan motor technology. Powder painted galvanized steel frame.

DVHD



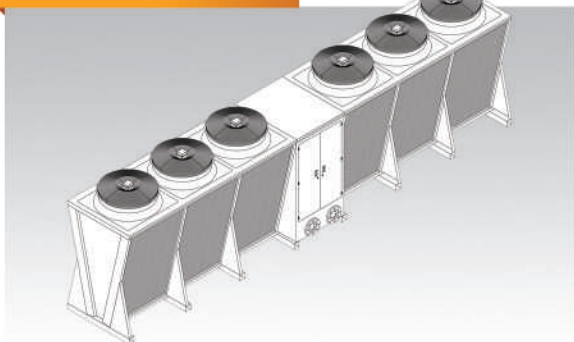
Large capacity range drycooler series. V shaped large units. Double heat exchanger and double fan row provides large heat capacity within limited area. Finned pack heat exchanger with copper tubes and aluminum fins. AC and EC fan motor technology. Powder painted galvanized steel frame.

DWHM



Modular drycooler with multiple heat exchangers which allows to break system into separate independent circuits. Units are based on modular structure frame, which allows to extend unit to large capacities. W shaped large units. Provides large heat capacity within limited area and higher energy class in comparison with flat units. Finned pack heat exchanger with copper tubes and aluminum fins. AC and EC fan motor technology. Powder painted galvanized steel frame.

DVHT



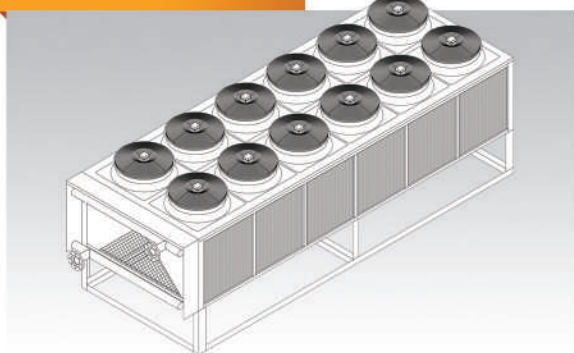
Paired DVHS drycoolers with common manifold and cabinet for control panel and/or circulation pumps.

DVHQ



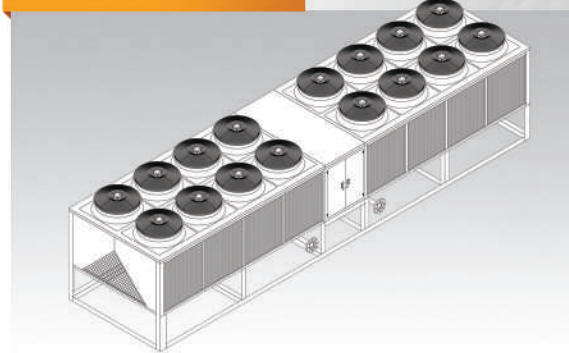
Paired DVHD drycoolers with common manifold and cabinet for control panel and circulation pumps

DFHD



Large capacity range drycooler series. Flipped M shape construction with 4 heat exchangers provides even larger heat capacity within limited area. Finned pack heat exchanger with copper tubes and aluminum fins. AC and EC fan motor technology. Powder painted galvanized steel frame.

DFHQ



Paired DFHD drycoolers with common manifold and cabinet for control panel and/or circulation pumps.

Gascoolers

Gascooler series are designed on the same frame as condensers, but with 7,94x54 mm tubes suited for high pressures in CO2 transcritical systems – up to 120 bar. EC fans and epoxy-coated aluminum fins offered as standard.

Evaporators, air coolers and other air heat exchangers

Refra can offer other heat exchangers on customer request. Evaporating units (min -15 °C), air coolers, air heaters, fluid coolers/heaters and other hot or cold heat exchange products are available on request.

Additional features:



All standard units are designed to fit into freight container, which is easy for transportation. Flat units are shipped in vertical position by default to save space.



Each unit is pressure tested and shipped filled with nitrogen.



All drycoolers by default are supplied with thread (smaller than DN50) or flange (DN50 and larger) connections as standard.



Units can be supplied partially assembled on request for further completion by customer.



Variety of electric options is available: terminal wiring box, repair switches, switchboard and full control cabinet with fan speed control or inverter drives.



Condenser selection software is available for download free.



Additional KSM coating for full coil anti-corrosion protection.



Auxiliary adiabatic cooling for condensers, drycoolers and gascoolers, provided by open water spray system.



Various non-standard products and solutions are possible. Individual design, material selection and specific application to suit customer requirements.

Product code encryption

C	M	L	S	6	4	D	4	Z	2	4	3	H
1	2	3	4	5	6	7	8	9	10		11	

1	Unit purpose: C – condenser, D – drycooler, G – gascooler
2	Frame shape: M – flat, V – shape, W – modular shape, F – flipped M shape
3	Series: L (larger coil area per fan), H (smaller coil area per fan)
4	Single fan row, D – double fan row
5	Fan size: 5 – 500 mm, 6 – 630 mm, 8 – 800 mm, 9 – 910 mm
6	Fan quantity in single row
7	AC fan wiring type: D – triangle, Y – star, S – single phase or E – EC fan
8	Number of poles in AC fan motor or EC fan motor model
9	Fan variation
10	Heat exchanger size and configuration
11	Heat exchanger position: H – horizontal manifolds, V – vertical or diagonal manifolds



Finned pack OEM coils

On customer request, Refra can design and manufacture finned pack coils for various applications (refrigeration equipment, heat pumps, air conditioning, AHU and other). Almost any type of coil is possible with individual design according to customer requirements – either based on new thermodynamic task or an existing product.



Quality

Refra coil production line is completed with modern automatic machinery and tools, responsible personnel and management system. This combination allows us to achieve high quality production process with minimum deviations from designed result. We use only certified high quality tubes and aluminum or copper sheets for coil production to achieve maximum reliability. Each coil is tested with high pressure and fit PED (Pressure Equipment Directive) – 2014/68/EU.

Customer service

Refra is located in Lithuania, which is in northern eastern European part, but we work with customers from all over the world. Our main priority is to establish close contact with every customer to meet their requests and fulfill all tasks on time. Our flexibility allows us to find different solutions in various situations for every customer and ensure high production quality with aftersales support.



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