HYFRA Alpha

Circulating chillers for process cooling with water, oil or emulsions

Customized. Cooling. Solutions.

HYFRA
A LENNOX INTERNATIONAL COMPANY

Reliable.
Efficient.
Stand-alone.

Our HYFRA Alpha series can be customized to satisfy specific customer requirements thanks to a variety of technological options. With cooling capacity of 5 to 80 kW (1 - 23 Tons), HYFRA Alpha models provide broad coverage for the machine tooling sector – particularly for filtration technology.

HYFRA Alpha circulating chillers

The HYFRA Alpha series was developed as a stand-alone solution for process cooling with water, oil and emulsions. It is mainly used in filtration technology.

These circulating chillers are equipped with high-power pumps featuring flow monitoring. At an adequate input pressure level, they keep the refrigerant in circulation. These chillers can be set up within a generous radius around the machine to be cooled.

70 % refrigerant savings with microchannel

Thanks to sector-leading HYFRA microchannel technology, machines in the HYFRA Alpha series use up to 70 % less refrigerant. Power levels of up to 28 kW (8 Tons) are possible on a footprint of only 0.5 m² (5.39 sq.ft) – due to their compact design.

This results in significant flexibility advantages when planning production area layouts and boosts productivity as well.

FleXX technology for demand-based operation

Depending on the performance class, easy-to-clean plate heat exchangers or solid shell & tube heat exchangers are installed in the HYFRA Alpha series. HYFRA Alpha models are also available with the innovative HYFRA FleXX technology that ensures energy-efficient, extremely precise operation with demand-based controls. The attached control cabinet is equipped with an ST120 controller that reliably monitors compression pressure and temperature.

Key data: HYFRA Alpha circulating chillers

Power range:
5 – 80 kW
(1 - 23 Tons)

Medium:
Water, oil and emulsion

Footprint:
5 – 28 kW on footprint of 0.5 m²;
(1 - 8 Tons on 5.4 sq.ft.)
Up to 80 kW power in only 1 m²
(up to 23 Tons on 10.8 sq.ft.)

Optimized:
Equipped with HYFRA FleXX technology and various control options

Application:
Mainly filtration

HYFRA Alpha c circulating chillers

Our HYFRA Alpha c series for cooling water, oil and emulsions offers reliable cooling power of up to 16 kW (5 Tons) in a compact design. They are up to 40 % lower than the standard models in the HYFRA Alpha series. An entry-level model, it also uses our energy-efficient HYFRA microchannel technology, thanks to which the refrigerant used can be reduced by up to 70 %. The frame and plate heat exchangers are made of durable stainless steel.

Otherwise, the HYFRA Alpha c series is equipped only with essential components, making it the cost-optimized alternative. The new, continuously variable pressure transducer keeps the system from freezing. HYFRA Alpha c devices can be modified with a FreeSmart controller. Further equipment options are available upon request.

Up to 40 % height reduction for improved integration into various plant layouts.

Key data: HYFRA Alpha c circulating chillers

Power range:
5 – 16 kW
(1 - 5 Tons)

Medium:
Water, oil and emulsion

Footprint:
5 – 28 kW on footprint of 0.5 m²
(1 - 8 Tons on 5.4 sq.ft)

Optimized:
Up to 40 % height reduction

Application:
Mainly filtration

Filtration in machine tooling

When filtering cutting fluid, reliable foreign body removal is not the only factor. Lubricant cooling is a key prerequisite for optimal process performance.

Improved flexibility through intelligent controls

HYFRA FleXX technology

With its FleXX technology, HYFRA is reacting to the various market requirements of machine manufacturers and operators.

Thanks to its high level of flexibility and adaptability, the technology ensures a decisive competitive advantage. Due to the demand-based operation of various components, chillers with FleXX technology are not only highly energy-efficient, economical, and quiet; they also operate with very little wear, greatly reducing life cycle costs.

Optional controllers

The chillers in the HYFRA Alpha series are equipped with FreeSmart controllers – and as of cooling capacity of 210 kW (60 Tons), they come with FreeEvolution controllers. The two variants are freely programmable and have both analog and digital inputs and outputs, an external display (FreeEvolution) and an FDO (fast digital output) interface for quickly reading out operating data.

FreeEvolution is available in three design variants: basic, professional and expert. They offer menu navigation in multiple languages or remote maintenance linkup, for example. Of course we can flexibly integrate special customer requirements into each of the variants.

HYFRA chillers in comparison

		HYFRA Alpha  Circulating chiller	HYFRA Gamma  Immersion chiller	HYFRA Sigma  Recooling systems	HYFRA eChilly  Recooling systems
Reduced footprint		✓	✓	✓	
Compact version		✓		✓	
FleXX technology		✓	✓	✓	
Medium	Water	✓	✓	✓	✓
	Oil	✓	✓		
	Emulsion	✓	✓		
Cooling capacity		5 – 80 kW / 1 - 23 Tons	5 – 160 kW / 1 - 45 Tons	5 – 320 kW / 1 - 91 Tons	1 – 6 kW / 0.3 - 2 Tons

With over 35 years of experience in process cooling, highly qualified employees and our own production facilities in Krunkel, we provide premium quality "Made in Germany."

Technical data: HYFRA Alpha

HYFRA Alpha			5	13	22	34	52	80
Performance Data								
Ambient °C / °F	Medium, °C		**Cooling capacity kW / Tons**					
	Emulsion	Oil						
32 / 90	15 / 59	20 / 68	3.9 / 1.1	10.6 / 3.0	17.9 / 5.1	26.8 / 7.6	43.4 / 12.3	64.8 / 18.4
	20 / 68	25 / 77	4.7 / 1.3	13.1 / 3.7	22.2 / 6.3	32.5 / 9.2	49.8 / 14.1	74.1 / 21.1
Technical Data								
Refrigerant			R134A	R410A	R410A	R410A	R410A	R410A
Power consumption max. (emulsion)	kW		4.1 / 5.1	7.0 / 6.4	10.3 / 7.0	14.2 / 9.0	21.0 / 10.2	30.8 / 10.2
Power consumption max. (oil)	kW		4.5 / 4.5	7.4 / 7.4	11.4 / 11.4	15.3 / 15.3	23.9 / 23.9	32.0 / 32.0
Air volume flow max.	m^3/h / cfm		4950 / 2913	4950 / 2913	4950 / 2913	7480 / 4403	11880 / 6992	17050 / 10035
Dimensions and weight								
Length	mm / in		715 / 28.1	715 / 28.1	715 / 28.1	1000 / 39.4	1000 / 39.4	1000 / 39.4
Width	mm / in		715 / 28.1	715 / 28.1	715 / 28.1	1000 / 39.4	1000 / 39.4	1000 / 39.4
Height	mm / in		1554 / 61.2	1554 / 61.2	1554 / 61.2	2055 / 80.9	2055 / 80.9	2055 / 80.9
Empty weight (emlusion)	kg / lbs		160 / 353	190 / 419	250 / 551	310 / 683	370 / 816	480 / 1058
Empty weight (oil)	kg / lbs		165/ 364	195 / 430	255 / 562	315 / 694	375 / 827	485 / 1069

*Please note: These are values for 60 HZ. For 50 HZ, please contact your HYFRA representative.

For detailed technical data, see: www.hyfra.com
All values listed are rounded approximations.

Technical data: HYFRA Alpha c

HYFRA Alpha c			c5	c7	c9	c13	c16
Performance Data							
Ambient °C / °F	Medium, °C		**Cooling capacity kW / Tons**				
	Emulsion	Oil					
32 / 90	15 / 59	20 / 68	3.8 / 1.1	5.7 / 1.6	7.1 / 2.0	10.4 / 3.0	12.6 / 3.6
	20 / 68	25 / 77	4.6 / 1.3	6.9 / 2.0	8.4 / 2.4	13.0 / 3.7	14.4 / 4.1

Technical Data						
Refrigerant		R134A	R134A	R410A	R410A	R410A
Power consumption max. (emulsion)	kW	3.8 / 5.1	4.8 / 6.4	5.2 / 7.0	6.7 / 9.0	7.6 / 10.2
Power consumption max. (oil)	kW	4.1 / 4.1	5.1 / 5.1	5.5 / 5.5	7.0 / 7.0	8.0 / 8.0
Air volume flow max.	m^3/h / cfm	3190 / 1878	3190 / 1878	3190 / 1878	3190 / 1878	4950 / 2913

Dimensions and weight						
Length	mm / in	720 / 28.3	720 / 28.3	720 / 28.3	720 / 28.3	720 / 28.3
Width	mm / in	835 / 32.9	835 / 32.9	835 / 32.9	835 / 32.9	835 / 32.9
Height	mm / in	930 / 36.6	930 / 36.6	930 / 36.6	930 / 36.6	930 / 36.6
Empty weight (emlusion)	kg / lbs	119 / 262	119 / 262	119 / 262	125 / 276	125 / 276
Empty weight (oil)	kg / lbs	124/ 273	124 / 273	124 / 273	130 / 287	130 / 287

*Please note: These are values for 60 HZ. For 50 HZ, please contact your HYFRA representative.

For detailed technical data, see: www.hyfra.com
All values listed are rounded approximations.

We are HYFRA

HYFRA is your partner for customized process cooling. Our program ranges from plug & play compact devices to customized systems with extensive service options.

The name HYFRA stands for long-term, sustainable partnership. We want to offer our customers the best solutions for process cooling. With each consultation, with each action, with each system we deliver and commission, and with our 24/7 service promise, we support our customers' efforts to be successful for the long term.

Made in Germany since 1981

Our highly efficient cooling systems and air heat exchangers are key for reliably safeguarding processes. With over 35 years of experience, highly qualified employees and our own production facilities at our location in Krunkel, Rhineland-Palatinate, HYFRA systems provide premium quality "Made in Germany."

Worldwide service availability

Whether its remote diagnostics via data transmission or on-site repairs, HYFRA Service is available worldwide and always finds the solution to malfunctions quickly. In addition, we provide customer support for regular maintenance and repair. Qualified service teams will install the entire HYFRA cooling system if necessary.

Customized service solutions for all requirements

Turnkey Solutions

Depend on reliability and leave the project management to our experienced experts – from system planning to acceptance. We will take on the responsibility for material procurement for system construction and carry out all of the installation work with our technicians. With our help, you will have an operational cooling system from a single source.

Repair & Maintenance

HYFRA Service is available worldwide so we can guarantee 100% system availability as soon as possible if a malfunction occurs. In case of failure, our own service team and our local partner's experienced cooling system technician will find a quick solution. We will provide you with transparent information on the costs and duration of service measures at any time.

Training

Optimal operation and maintenance enable a cooling system to develop its full potential and work perfectly at all times. We provide customized training for your operating personnel and maintenance technicians. We will thoroughly train them to use our systems properly so that your company reaps the long-term benefits of perfect production results.

Modification & Customization

We can customize HYFRA standard models to satisfy your detailed requirements. A variety of equipment and control options are available. As required, we will also provide a modification kit if your conditions change.

Maintenance & Service

In order to deliver top performance continuously, cooling systems must be serviced regularly. This also helps effectively avoid expensive repairs and unexpected production downtime. And maintenance measures can significantly extend your system's life cycle. At HYFRA, you can select one of several service packages with one-year terms. They include maintenance and services such as start up and training sessions as well.

The HYFRA Service promise

☑ **Expert**
Our service team and the employees of our local partners are thoroughly qualified and regularly attend training sessions.

☑ **Efficient**
We carry out orders quickly in order to facilitate fast system availability.

☑ **Reliable**
We meet deadlines and are reliable. We deliver what we promise.

Customized. Cooling. Solutions.

HYFRA is one of the most experienced suppliers of customized process cooling solutions. We cover the entire range of industrial process cooling solutions from plug & play compact machines to individually developed systems with extensive services. Our highly efficient, reliable machines are the key to our customers' success.

As a LENNOX International company, we help mechanical engineers in more than 50 countries to continually set new standards of performance.

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