



# HYFRA Sigma

Efficient and reliable cooling water recooling systems

Customized. Cooling. Solutions.

 **HYFRA**

# Trouble-free. Flexible. Efficient.

The HYFRA Sigma series can be optimally adapted to specific customer requirements thanks to numerous equipment options. With a cooling capacity of 5 - 320 kW (1-91 Tons), HYFRA Sigma models are also up to the challenges of laser and machine tools.

# Cooling water recooling HYFRA Sigma

The tried-and-tested HYFRA Sigma series for cooling water recooling is equipped with highly efficient plate heat exchangers. Combined with the industry-leading HYFRA Microchannel technology, this reduces refrigerant use by up to 70% compared to conventional units. Due to the low use of refrigerant, units with a cooling capacity of up to 30 kW (9 Tons), the obligation for an annual leak test is also eliminated, which leads to a significant reduction in maintenance costs.

*Leak-test-free up to 30 kW (9 Tons) and up to 70 % less refrigerant use due to microchannel technology*

Energy costs are noticeably reduced when HYFRA Sigma drycoolers are used. Because the compressors always run at optimum efficiency, the plate heat exchangers are extremely energy-efficient. Fault safety is ensured during operation, among other things, by a 2-point pressure

monitor, which constantly monitors the system pressure and warns of leaks at an early stage.

*FleXX technology for demand-based operation*

HYFRA Sigma models are also offered with the innovative HYFRA FleXX technology, which ensures demand-controlled, energy-efficient and extremely precise operation.



## Key data HYFRA Sigma

- ✓ **Power range:**  
5 – 320 kW / (1 - 91 Tons)
- ✓ **Medium:**  
Water
- ✓ **Footprint:**  
5 – 28 kW on footprint of 0.5 m<sup>2</sup>;  
(1 - 8 Tons on 5.4 sq.ft)  
Up to 160 kW power in only 1 m<sup>2</sup>;  
(up to 45 Tons on 10.8 sq.ft)  
Up to 320 kW power in only 2 m<sup>2</sup>  
(up to 91 Tons on 21.5 sq.ft)
- ✓ **Optimized:**  
Equipped with HYFRA FleXX technology  
and various control options
- ✓ **Application:**  
Machine tool applications

# Cooling water recooling system

## HYFRA Sigma c

Our Sigma c chillers for water offer reliable cooling capacities up to 16 kW (5 Tons) in a compact form. They are designed to save space and are up to 40% lower than standard models of the HYFRA Sigma series. An entry-level recooling model, it also uses our energy-efficient HYFRA microchannel technology, which uses up to 70 % less refrigerant. Its frame is made of durable stainless steel.

The attached control cabinet is equipped with an ST120 controller, which reliably monitors the refrigerant pressure and temperature. Further equipment options are available on request, for example reinforced pumps, other supply voltages or frequencies.

*Leak-test-free up to 30 kW  
(9 Tons) and up to 70 %  
less refrigerant use due to  
microchannel technology*

### Key data HYFRA Sigma c

- ✓ **Power range:**  
5 – 16kW / (1 - 4.2 Tons)
- ✓ **Medium:**  
Water
- ✓ **Footprint:**  
5 – 16 kW on footprint of 0.5 m<sup>2</sup>;  
(1 – 4,2 Tons on 5.4 sq.ft)
- ✓ **Application:**  
Machine tool applications





## Machine tools applications at operating temperature

*Machine tool applications require constant precision in the  $\mu$  range and maximum tool life. HYFRA Sigma chillers ensure the necessary operating temperatures precisely and reliably.*

# More flexibility through intelligent control

## HYFRA FleXX technology

With the FleXX technology, HYFRA is responding to the different market requirements of machine manufacturers and operators.

Thanks to its high degree of flexibility and adaptability it provides a decisive competitive advantage. Chillers with FleXX technology are not only extremely energy-efficient, economical and quiet due to the demand-dependent operation of various components, they also run with very little wear and tear and significantly reduce life cycle costs.

## Optional controllers

The chillers of the HYFRA Sigma series are available with Free- Smart or, from 210 kW (60 Tons) cooling capacity, with FreeAdvance controllers. Both versions are freely programmable and have analogue and digital inputs and outputs, an external display (FreeAdvance) and an FDO interface (Fast Digital Output) for controlling pulsed valves or heaters (PWM).

FreeAdvance offers multilingual menu navigation and remote maintenance connection. Special customer requests can also be realised.

## HYFRA chillers in comparison

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

\* Emulsion/Oil 5-160kW / 1-45 Tons

*With over 40 years of experience in the construction of cooling systems, highly trained employees and our own production facilities in Krunkel, Rhineland-Palatinate, we guarantee the highest quality «Made in Germany».*



# Technical data: HYFRA Sigma

HYFRA Sigma model no. (kW)	5	13	18	34	80	160
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## 400V/50Hz

### Performance data

Ambient in °C / °F	Refrigerant °C / °F	Cooling capacity kW / Tons					
	Water						
32 / 90	15 / 59	4.0 / 1.1	11.5 / 3.2	16.6 / 4.7	29.9 / 8.5	71.3 / 20.3	142.6 / 40.5
	20 / 68	4.5 / 1.3	12.6 / 3.5	18.3 / 5.2	33.5 / 9.5	79.8 / 22.7	159.6 / 45.4

### Technical Data

Refrigerant		R134A	R410A				
Power consumption max.	kW	3.4	7.1	8.2	13.4	32.3	64.0
Air volume flow max.	m <sup>3</sup> /h / cfm	4500 / 2647		5500 / 3237	6800 / 4002	15500 / 9123	31000 / 18246

## 460V/60Hz

### Performance data

Ambient °C / °F	Refrigerant °C / °F	Cooling capacity kW / Tons					
	Water						
32 / 90	15 / 59	4.0 / 1.1	10.9 / 3.1	16.6 / 4.7	27.6 / 7.8	66.8 / 19.0	133.6 / 38.0
	20 / 68	4.8 / 1.4	13.5 / 3.8	19.1 / 5.4	33.5 / 9.4	76.4 / 21.7	152.8 / 43.4

### Technical Data

Refrigerant		R134A	R410A				
Max. power consumption	kW	4.1	7.2	9.2	14.1	31.9	65.0
Max. airflow rate	m <sup>3</sup> /h / cfm	4950 / 2913			7480 / 4403	17050 / 10035	34100 / 20071

### Dimensions and weight

Length	mm / in	715 / 28.1			1000 / 39.4		2000 / 78.7
Width	mm / in	715 / 28.1			1000 / 39.4		
Height	mm / in	1554 / 61.2			2055 / 80.9		1998 / 78.7
Empty weight	kg / lbs	170 / 375	190 / 419	200 / 441	340 / 750	440 / 970	880 / 1940

For detailed technical data, see: [www.hyfra.com](http://www.hyfra.com)

# Technical data: HYFRA Sigma

HYFRA Sigma c model no. (kW)	c 5	c 7	c 9	c 13	c 16
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## 400V/50Hz

### Performance data

Ambient in °C / °F	Refrigerant °C / °F	Cooling capacity kW / Tons				
	Water					
32 / 90	15 / 59	4.4 / 1.3	6.4 / 1.8	7.4 / 2.1	10.7 / 3.0	12.7 / 3.6
	20 / 68	5.3 / 1.5	7.3 / 2.1	8.7 / 2.5	12.7 / 3.6	14.7 / 4.2

### Technical Data

Refrigerant		R134A	R410A			
Power consumption max.	kW	3.1	4.2	4.9	6.6	8.0
Air volume flow max.	m <sup>3</sup> /h / cfm	2900 / 1705				4500 / 2647

## 460V/60Hz

### Performance data

Ambient °C / °F	Refrigerant °C / °F	Cooling capacity kW / Tons				
	Water					
32 / 90	15 / 59	3.8 / 1.1	5.7 / 1.6	7.1 / 2.0	10.4 / 3.0	12.6 / 3.6
	20 / 68	4.6 / 1.3	6.9 / 2.0	8.4 / 2.4	13.0 / 3.7	14.4 / 4.1

### Technical Data

Refrigerant		R134A			R410A	
Max. power consumption	kW	3.7	4.7	5.3	6.8	8.4
Max. airflow rate	m <sup>3</sup> /h / cfm	3190 / 1878				4950 / 2913

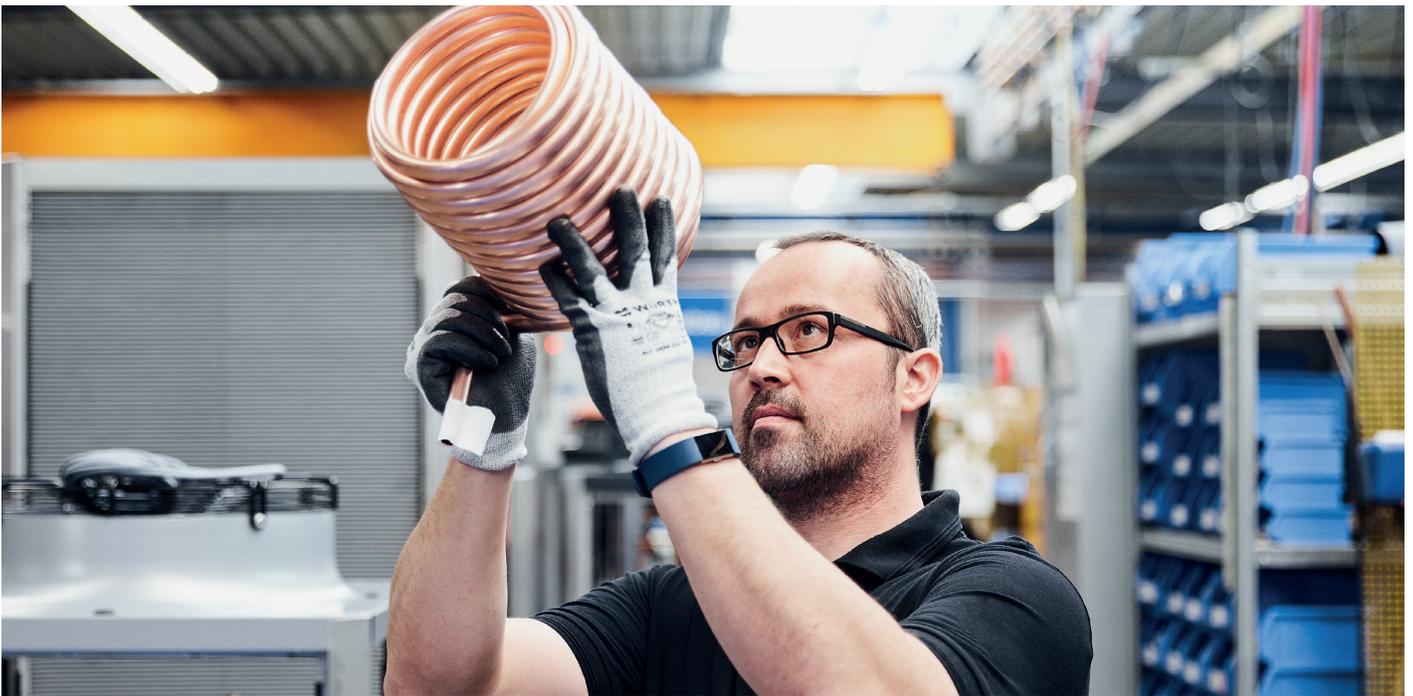
### Dimensions and weight

Length	mm / in	720 / 28.3				
Width	mm / in	835 / 32.9				
Height	mm / in	930 / 36.6				
Empty weight	kg / lbs	114 / 251	117 / 258	119 / 262	130 / 287	

For detailed technical data, see: [www.hyfra.com](http://www.hyfra.com)

# We are HYFRA

- ✔ *HYFRA is your partner for individual process cooling. Our range extends from ready-to-connect compact units to customised systems with comprehensive services.*



The name HYFRA stands for long-term and sustainable partnership. We aim to always offer our customers the best solutions for process cooling. With every consultation, with every move, with every system delivered and commissioned, and with our service available at all times, we support our customers in achieving lasting success.

## *Made in Germany since 1981*

Our highly efficient chillers and air heat exchangers are decisive for the reliable protection of processes. With over 40 years of experience, highly trained employees and our own production at our production in Krunkel, Rhineland-Palatinate, we guarantee the highest quality „Made in Germany“ for all HYFRA systems.

## *Worldwide service availability*

Whether remote diagnosis via data transmission or on-site repair: The HYFRA service is available worldwide and always finds a quick solution in case of malfunctions. In addition, we support our customers with regular maintenance and servicing. Qualified service teams take over the complete installation of our refrigeration systems, if required.

# Customized service solutions for all requirements



## Turnkey Solutions

Rely on security and leave the entire project management to our experienced experts - from plant planning to acceptance. We take care of the material supply for you during plant construction and carry out the complete installation with our technicians. With our help, you will receive an operational cooling system from a single source in the shortest possible time.



## Training

In order for a cooling system to develop its full potential and operate trouble-free at all times, it must be optimally operated and maintained. We offer customised training for your operating personnel and maintenance technicians. We train you thoroughly in the use of our systems so that your company benefits from perfect production results in the long term.



## Maintenance & Service

In order to deliver the best performance over the long term, cooling systems need to be maintained regularly. This effectively avoids costly repairs and unexpected production downtimes. The life cycle of the system can also be significantly extended through maintenance measures. At HYFRA you can choose between various service packages with a one-year term, which in addition to maintenance also include services such as commissioning and training.



## Repair & Maintenance

To ensure that we can guarantee 100% system availability again as quickly as possible in the event of malfunctions, HYFRA Service is there for you worldwide. Our own service team and experienced refrigeration technicians from our local partners provide a quick solution in case of breakdowns. We inform you transparently about the costs and duration of the maintenance measures at any time.



## Modification & Customization

HYFRA standard models can be individually adapted to your specific needs. A wide range of equipment and control options are available for this purpose. On request, we can also put together modification kits for changed operating conditions.

### The HYFRA Service promise

**Competent**

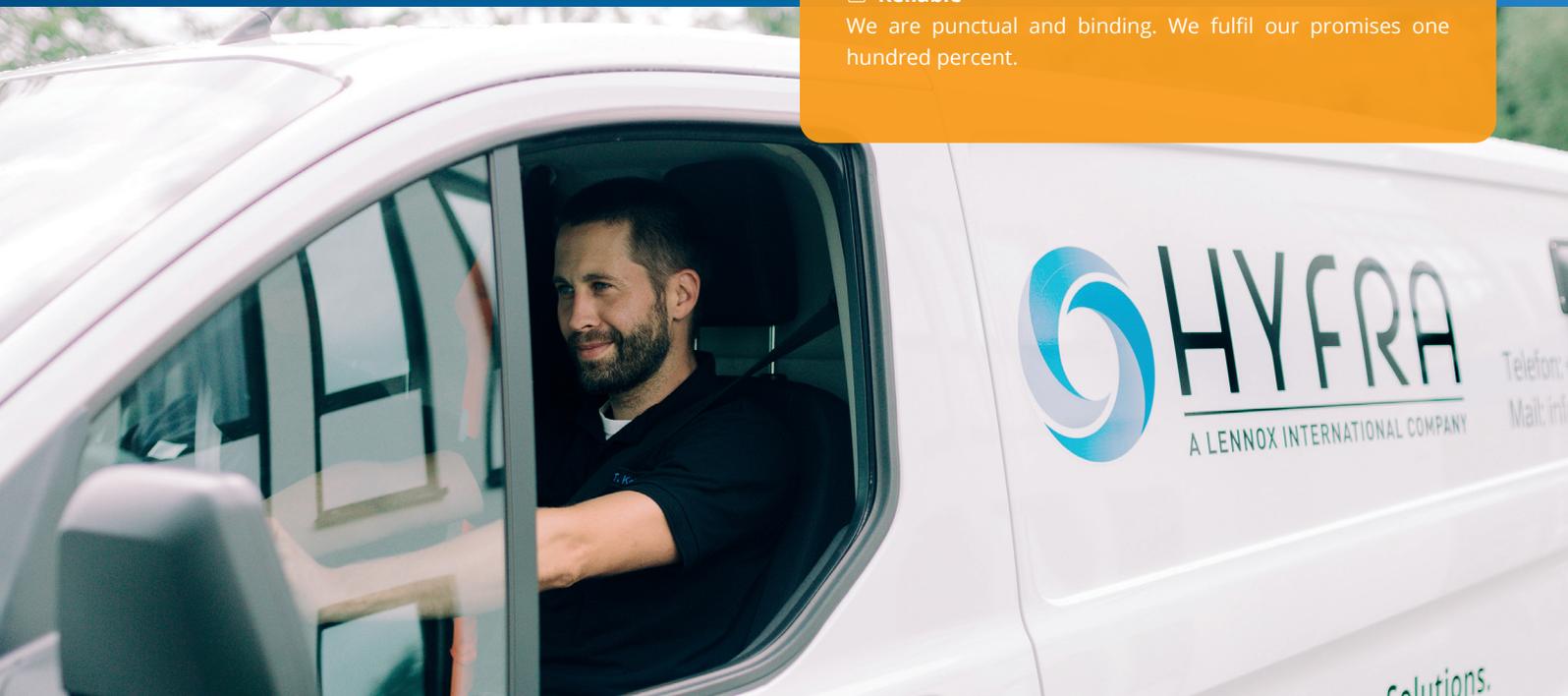
Our service team and the staff of our local partners are highly trained and regularly attend training courses.

**Economical**

Commissioned work is carried out quickly to enable the fastest possible system availability.

**Reliable**

We are punctual and binding. We fulfil our promises one hundred percent.



Customized. Cooling. Solutions.

HYFRA is one of the most experienced suppliers of individual refrigeration solutions. We cover the entire range of industrial process cooling: from the ready-to-connect unit to the customised system with comprehensive services. Our highly efficient and reliable machines are crucial for the success of our customers.

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