



**HYFRA – Individual process cooling for reliable performance. German Quality since 1981.**


Customized. Cooling. Solutions.





## Made in Germany

- Established in 1981 – over 35 years of experience
- Headquarters in Krunkel (between Frankfurt & Cologne)
- US presence in Chicago (IL)
- More than 230 employees
- Entire value chain at the Krunkel location including R&D, production, quality, marketing, sales and service



## **HYFRA is part of LENNOX International Inc.**

LENNOX is a leading global supplier of solutions for the heating, air conditioning and refrigeration market.

- Established in 1895
- Listed on the NYSE
- Headquarters in Dallas (USA)
- Locations worldwide
- Revenue 2018 of \$3.8 billion
- Over 11,000 employees

# Customized. Cooling. Solutions.

HYFRA cooling systems are tailored to your individual requirements.

Our core competence: HYFRA ensures reliable and efficient process cooling – since 1981.

HYFRA finds the perfect solution for your needs – from customized chillers to complete product service bundles.



## Our Business

- Process chillers are refrigeration systems using refrigerants that provide cooling for a process or industrial application
- Industrial applications are e.g. machine tooling, filtration, laser and additive manufacturing industry

# High-efficiency standard chillers and customized refrigeration solutions

- Over 35 years of experience in refrigeration
- Reliable standard series with cooling capacity of up to 320 kW
- Temperature precision of up to +/- 0.1 K
- Innovation leader cooling machine tools, laser applications, filtration units as well as other applications



## Customized. Cooling. Solutions.

HYFRA has been the right partner for completely new cooling system designs for years. Our Development Department will engineer the perfect solution for you according to your specifications.



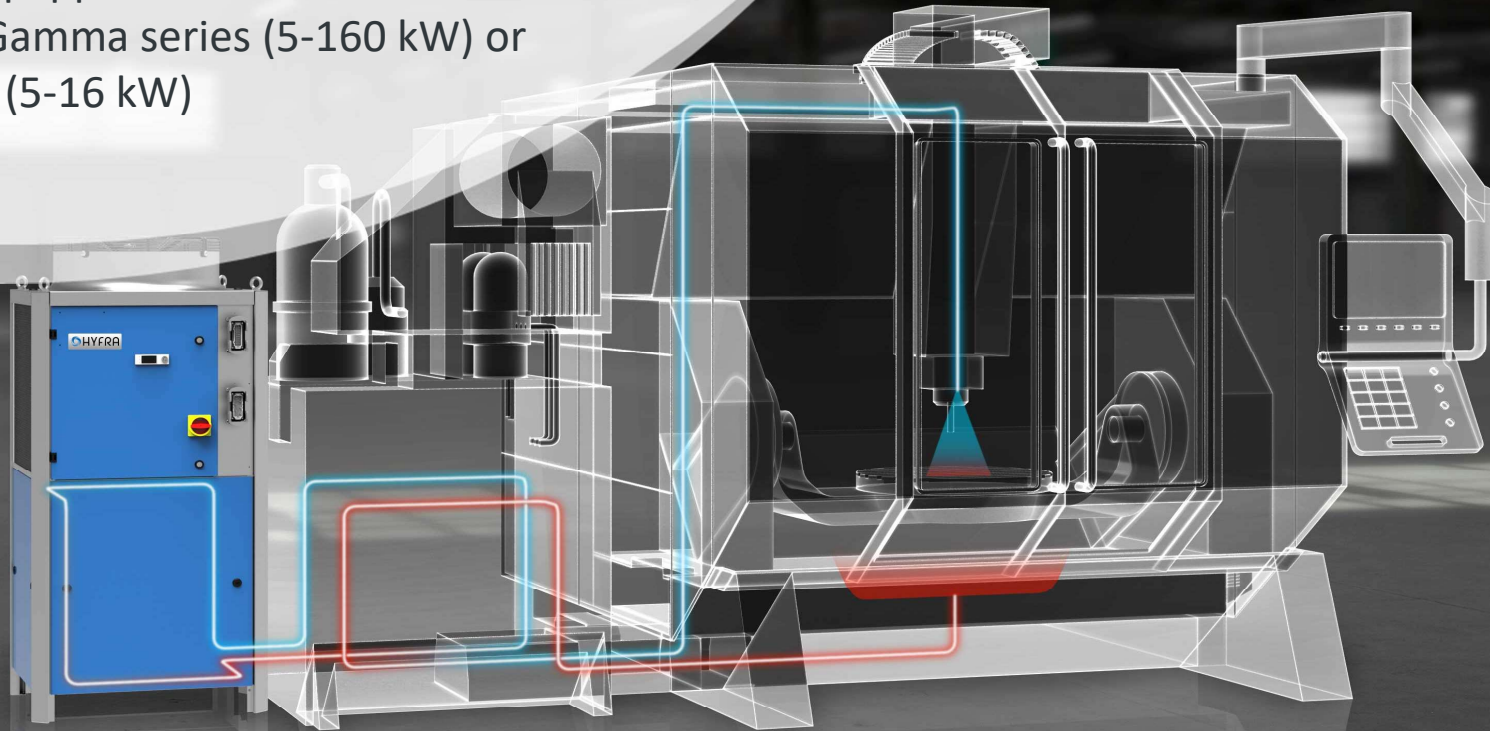


# HYFRA innovations create decisive advantages

- 70% less refrigerant with microchannel technology
- 30% energy saving resulting from needs-based operation with HYFRA FleXX technology
- Industry 4.0-compatible control units
- Most chillers already compliant with the EcoDesign values of 2021

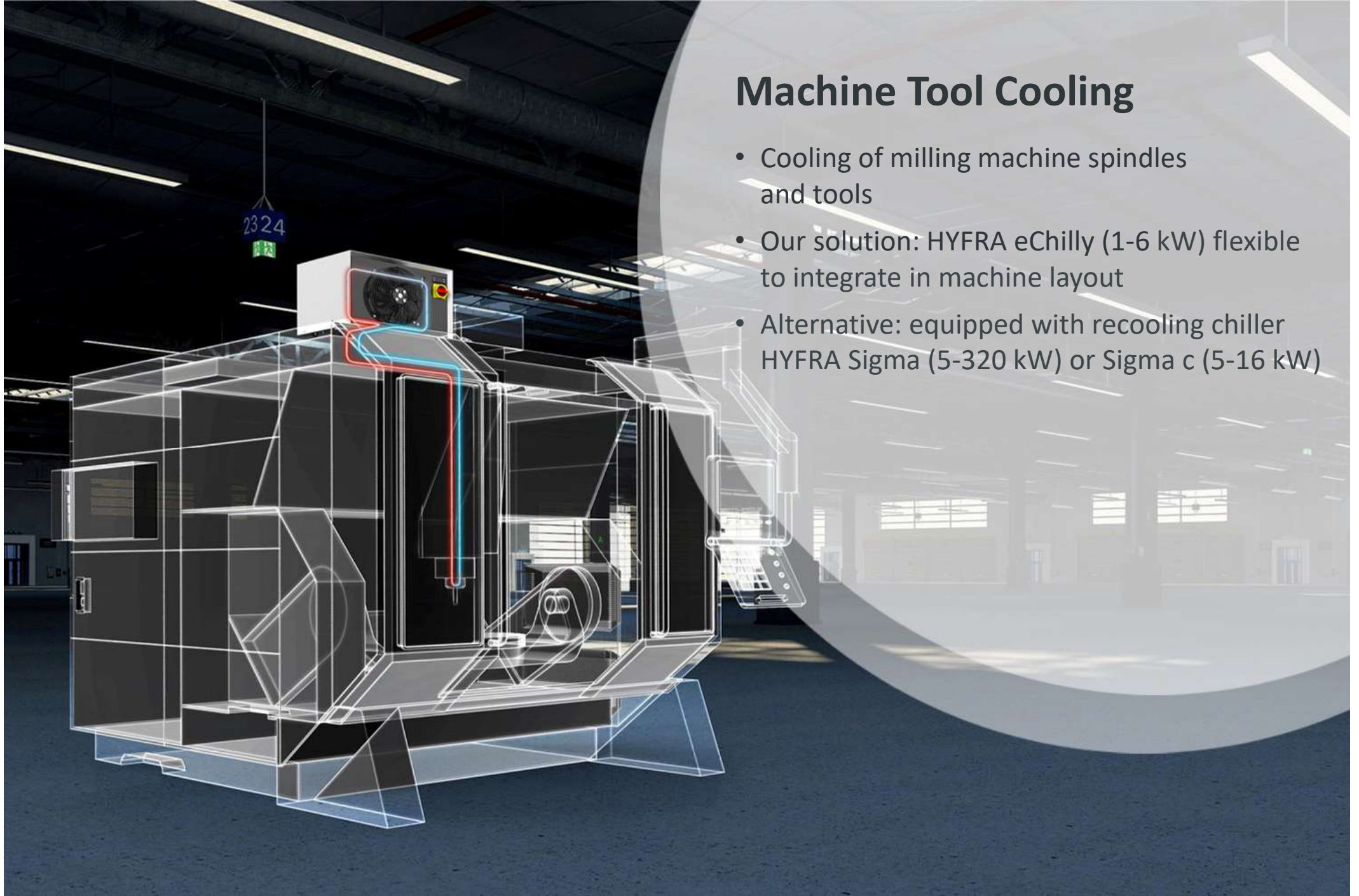
# Filtration Cooling

- When high precision is required, reliable cutting fluid temperatures play a key role for the workpiece's dimensional tolerance and surface quality.
- Both the workpiece and the tool are cooled.
- Our solution: compact stand-alone circulating chiller HYFRA Alpha (5-80 kW)
- Alternative: equipped with immersion chiller in the Gamma series (5-160 kW) or Alpha c series (5-16 kW)



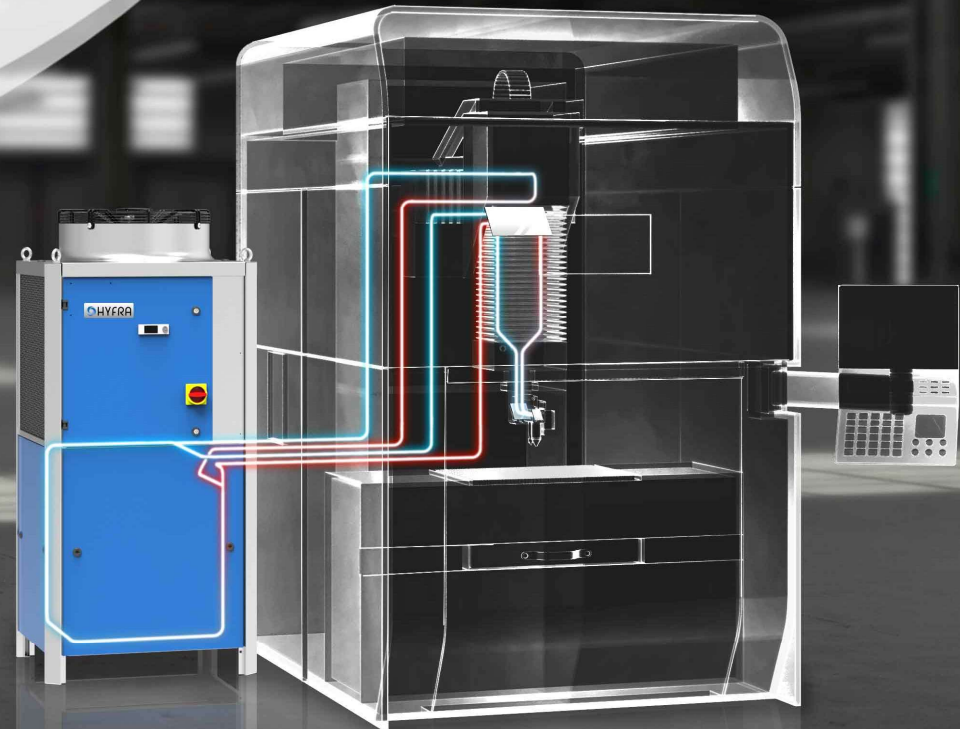
# Machine Tool Cooling

- Cooling of milling machine spindles and tools
- Our solution: HYFRA eChilly (1-6 kW) flexible to integrate in machine layout
- Alternative: equipped with recooling chiller HYFRA Sigma (5-320 kW) or Sigma c (5-16 kW)



# Laser Cooling

- Cooling the resonators (laser source)
- Cooling the optics for directing laser beams
- Our solution: stand-alone chiller of the Sigma series (5-320 kW) and the Sigma c series (5-16 kW)












# HYFRA FleXX Technology –

**Highly energy-efficient. Economical. Quiet.**

- Efficiency thanks to speed control
- High operational reliability through PLC control
- Flexible power supply for global use
- Low operating and life-cycle costs
- Operating data monitoring and evaluation
- Temperature precision of up to  $\pm 0.1$  K



# HYFRA Product Portfolio

		 HYFRA Alpha Circulating chiller	 HYFRA Gamma Immersion chiller	 HYFRA Sigma Recooling systems	 HYFRA eChilly Recooling systems
	Reduced footprint	✓	✓	✓	
	Compact version	✓		✓	
	FleXX technology	✓	✓	✓	
	Water	✓	✓	✓	✓
	Oil	✓	✓		
	Emulsion	✓	✓		
	Cooling capacity	5 – 80 kW	5 – 160 kW	5 – 320 kW	1 – 6 kW



HYFRA chillers are used worldwide  
– many have run for over 30 years.

Customized. Cooling. Solutions.



A man with a beard, wearing a black polo shirt, is sitting in the driver's seat of a white van. The van has 'HYFRA' and 'A LENNOX INTERNATIONAL COMPANY' printed on its side. The background is a blurred outdoor setting.

## HYFRA Services

**Expert. Efficient. Reliable.**

- Turnkey Solutions
- Training Courses
- Maintenance & Service
- Modification & Customization
- Repair & Maintenance

Customized. Cooling. Solutions.



# HYFRA Services

- Maintenance and service by HYFRA technicians
- Worldwide network of service technicians
- 24/7 hotline
- Custom service packages
- Spare parts supply via the myHYFRA online shop



# **HYFRA – Customized. Cooling. Solutions.**

Customized. Cooling. Solutions.

