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managing flexibility

HEAT EXCHANGER

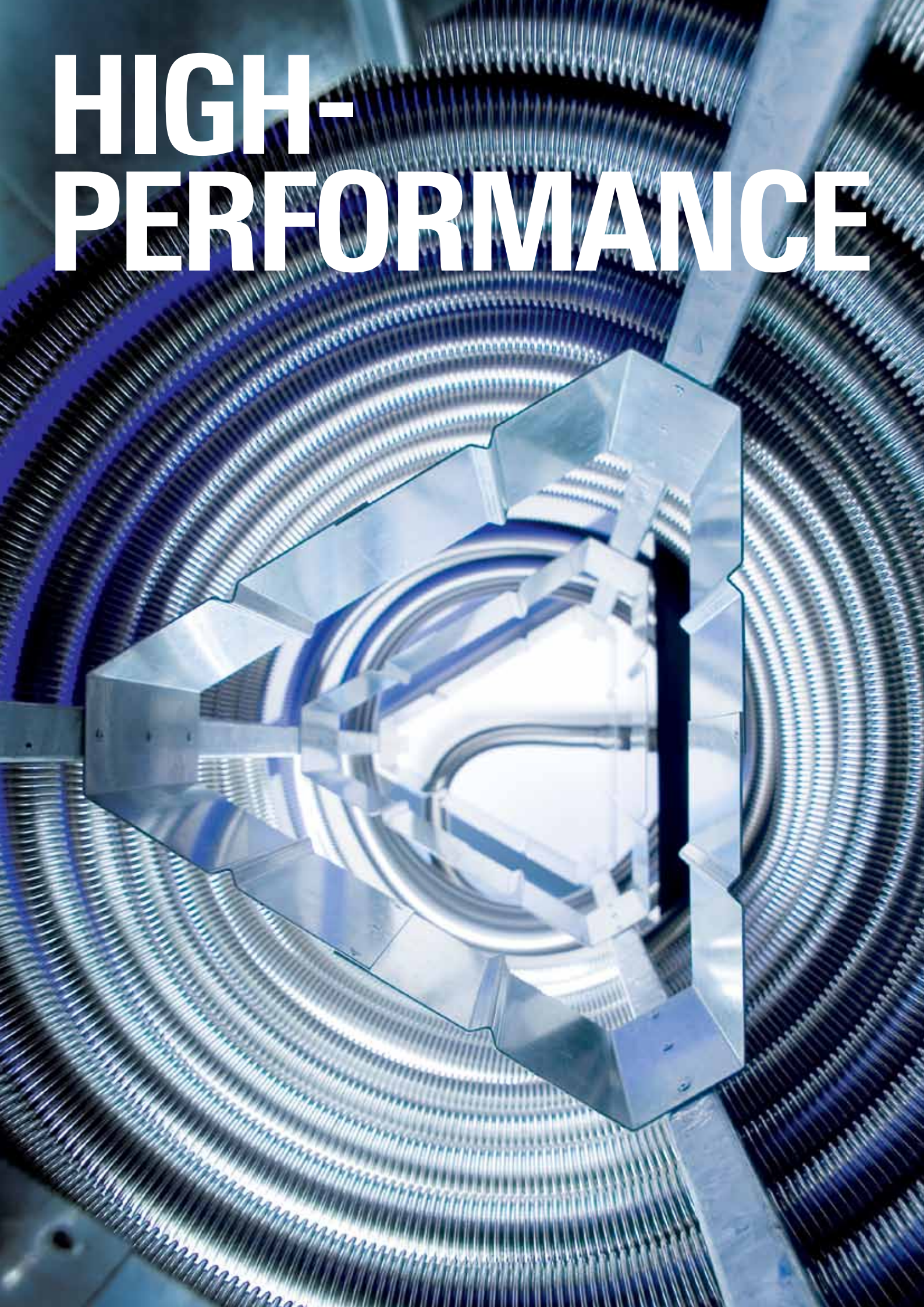
For technical building equipment

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HIGH-PERFORMANCE



HYDRA® Heat exchangers with corrugated stainless steel tubing have advantages in terms of performance, operating efficiency, installation and service life

Witzenmann, the market leader in the area of flexible, metallic elements also offers innovative solutions for heat exchangers. The flexible metal hose already ensures high heat exchange performance by virtue of its design. The thin-walled and semi-flexible hoses are extremely sturdy and offer an enlarged surface for the heat exchange due to their corrugation profile.

More performance in less space

Compared to conventional, flat-surface designed models, the corrugated hoses offer a significantly enlarged surface with up to 50 % more performance and corresponding high efficiency. Such high-performance, compact and light exchangers can be installed even in very confined spaces.

Temperature transfer due to optimised flow

The corrugations cause a turbulent flow inside the hose, which has an intensifying effect on the heat transfer. In contrast to laminar flow, a mixing of the temperature layers takes place and the flow speed decreases in the middle of the hose. Both effects increase the heat exchange performance significantly.

Targeted turbulences for preventing deposits

Targeted turbulences result from the corrugated profile, which evenly mixes the flowing medium. As a result, calcium deposits are prevented, which enables constant performance throughout the entire service life.

Client-specific designs

As a manufacturer, Witzenmann is able to design and manufacture coiled hoses and housings as a system. The systems are customised to meet the most varied customer requirements and applications. The heat exchangers are scalable in length and can be fitted with metal or plastic housings as well as with the most varied connections.

HYDRA® COMPACT SWIMMING POOL HEAT EXCHANGER

Type WT for use in saltwater and freshwater

Cutaway Model



The heat exchanger consists of a compact, spiraled stainless steel corrugated hose in a high-quality plastic housing. On the heating-side, two or four threaded nipples are embedded in the housing. The pool water pipework connection is via a PVC-glued joint. In addition, all housings have a thermowell for incorporating an electrical temperature sensor.

Version

	Type A freshwater version	Type B saltwater version
Housing Material	Technical thermoplastic based on CO polyamide PA6/X	
Material internal coil	1.4404	2.4605
Chloride concentration	up to 400 mg/l	up to 5000 mg/l
Chlorine concentration	up to 0.8 mg/l (short term: 1.2 mg/l)	up to 1.0 mg/l (short term: 1.2 mg/l)

Connections

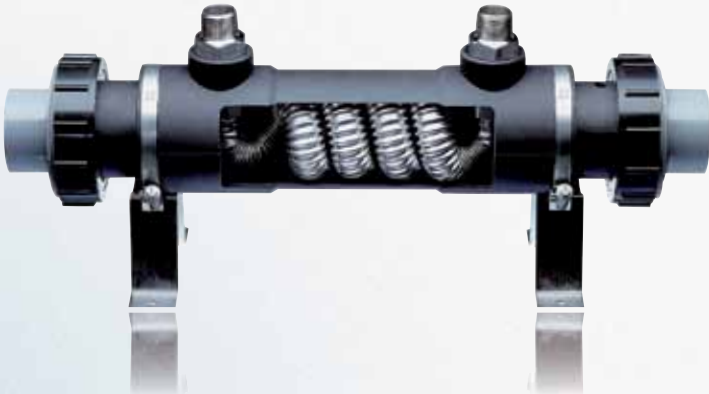
- On the heating side (primary side): R ¾" stainless steel threaded nipple transverse to the housing axis
- On the pool water side (secondary side): PVC flange, inside diameter 50 mm, flat sealing collar pipe for plastic union nut

Output

- Maximum operating temperature: 90 °C
- Pressure load: primary side max. 6 bar, secondary side max. 2.5 bar

Service

Delivered as assembly-ready complete package including the necessary accessories: Mountings and brackets made of stainless steel, PVC threaded connexions for the bathwater pipework and assembly instructions.



HYDRA® COMPACT SWIMMING POOL HEAT EXCHANGER

Standard series

Type SWT40kW



Universal Model

- For the vast majority of applications
- Housing, coil and technical features in standard design
- High exchange performance due to compact interior coil

Output

- At 90 °C flow temperature 1 x 47.5 kW
- At 45 °C flow temperature 1 x 20 kW

Type NWT40kW



Low Temperature Heat Exchanger

The type of construction is specially designed for the low temperature range and thus ensures correspondingly efficient thermal energy production and double output.

Output

- At 90 °C flow temperature 80 kW
- At 45 °C flow temperature 40 kW

Distinctive Feature

- For efficient use of low flow temperatures
- For connecting to solar equipment, heat pumps or low-temperature heating systems

Type HWT 2x40kW



Hybrid Heat Exchanger

With two compactly installed coiled hoses that can absorb two hot water circuits in parallel.

Versions

- Housing, coil and technical features like standard model
- Compact design
- Primary side connections (twice inlet and twice outlet) transverse to the housing axis

Output

- At 90 °C flow temperature 2 x 47.5 kW
- At 45 °C flow temperature 2 x 20 kW

Distinctive feature

- For the absorption of 2 hot water circuits (for example solar equipment and heating systems)

SPECIAL MODELS

For flue gas cooling and water cooling

Product Example



HYDRA® Heat Exchanger with Hose-Bundle

- Several encased hose strands running in parallel
- Optional with stainless steel housing
- Individually scaleable for each specific purpose by changing the length and number of strands

Special Features

- For flue gas and water
- Low pressure loss
- Variable heat exchanger output by using different hose strands

Product Example



Flue Gas Heat Exchanger for Gas Cooling

Special Features

- Extremely high exchange performance
- Extremely compact design
- Manufactured entirely from stainless steel
- Condensation possibility of the coil
- Connections on one side

COMPONENTS FOR HEAT EXCHANGERS

High exchange performance, scaleable customisation

Detailed View



The HYDRA® stainless steel hose design, wide-corrugated, type RS 341 und RS 349, are fitted with a specially developed corrugation profile and can be adapted to the appropriate exchange performance required under operating conditions for drinking water.

Designs for own Assembly in the Tank

- Corrugated stainless steel hose made of 1.4404
- By means of orbitally welded stainless steel nozzles of 1.4404/1.4571 with optional welded steel sleeve

Standard Fittings (in stock)

- For DN 25 or DN 32
- Stainless steel nozzles 1.4404/1.4571 (from 80 – 160 mm)
- Optional welded steel sleeve
- Internal or external thread
- Connections: Rp1, R1, R1 ¼, G1 ¼, G1

Ready to Use Module with Frame Mounting

- Hose assembly as above
- Metal frame with plastic support bracket, wound in an axis
- All connections according to customer's specifications
- Mounting can be adapted to the tank specified by the customer.

Standard frame

External dimensions	Availability	Height	Length	Recommended cylinder volume
mm	–	mm	mm	l
402	Standard ex stock	1450	18440	500
	Free preassembly upon request	1000 – 2000	15000 – 20000	
542	Standard ex stock	1470	25600	800
	Free preassembly upon request	1000 – 2000	15000 – 30000	
582	Standard ex stock	1650	34740	1000
	Free preassembly upon request	1000 – 2000	20000 – 40000	
707	Standard ex stock	1900	53750	1500
	Free preassembly upon request	1000 – 2000	30000 – 60000	

Characteristics

- Meets requirements for drinking water with pressure pulsation (more than 100,000 stress cycles)
- Compact form with high heat exchange performance
- Self-cleaning effect due to flow turbulences
- High level of product integrity & safety through WIG welding process
- Free of gaps, burrs and discoloration

Areas of use

- Storage for pellet heating systems, BHKW, heat pumps, solar (all heating systems)
- For heating drinking water, circuit water and swimming-pool water