

**ERIKS**

ERIKS hydrogen offerings

# Empowering a hydrogen future



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# Empowering a hydrogen future

ERIKS is a specialised industrial service provider. We help our customers develop machines for the hydrogen and derivatives transition, execute projects effectively, and enhance their production lines. At ERIKS, we drive the clean energy economy forward with smart, reliable, and safe solutions for the hydrogen industry. Our unmatched expertise in product and application know-how, combined with comprehensive supply chain services and a dedicated team of specialists, ensures efficiency and sustainability across the entire hydrogen value chain.

Our solutions are tailored to meet the evolving demands of the hydrogen industry. We are not just a supplier but a partner in innovation and sustainability.

## **Innovative hydrogen excellence**

### **Proven specialism**

ERIKS offers a comprehensive range of hydrogen-safe components and custom engineering solutions to optimise performance. Each offering is carefully crafted to ensure safety and reliability throughout the hydrogen value chain. Products in our portfolio include both own brands and leading A brands, ensuring diverse options to meet your specific needs.

### **Team of specialists**

Our dedicated team of specialists brings unparalleled expertise in hydrogen technology. Beyond offering standard solutions, we excel in engineering and customising products to meet your specific needs. With our state-of-the-art rubber laboratory and advanced engineering facilities, we can develop and refine components tailored precisely to your operational requirements.

### **Efficient delivery**

By utilising advanced digital tools and supply chain solutions, we make sure you get the right products at the right time and place to keep your operations running smoothly.

# Top-quality gaskets for hydrogen applications

## Core strengths

### Durability

Our gaskets are engineered to withstand extreme conditions, ensuring long-lasting performance and reducing maintenance needs.

### High performance

Designed for reliable sealing, our gaskets excel in demanding hydrogen applications, minimising the risk of leaks and failures.

### Cost-efficiency

By extending equipment life and reducing downtime, our gaskets contribute to lower total cost of ownership.



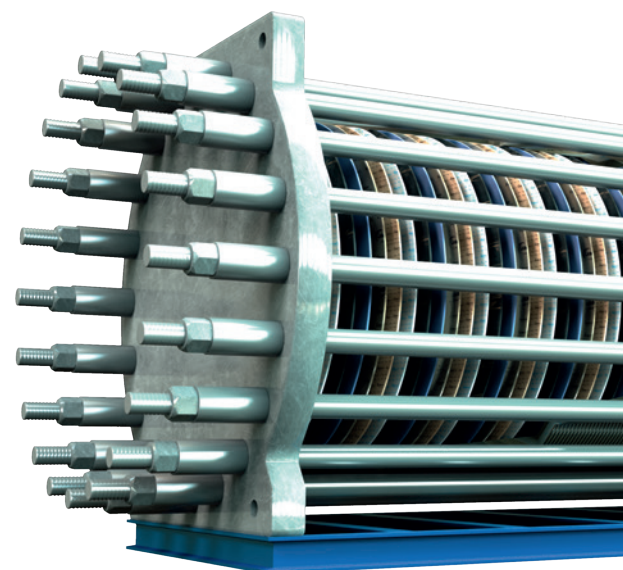
## Our offerings

ERIKS Flange Gaskets Division provides a range of products designed for use in hydrogen systems. Our offering includes everything from standard flanges to custom designs tailored for electrolysers, fuel cells, vessels, and heat exchangers.

Each gasket is selected based on rigorous analysis to ensure hydrogen compatibility and optimal performance.

## Tailored services to meet your needs

Our oxygen cleaning services ensure that gaskets are thoroughly cleaned and free of contaminants, ensuring safety and reliability.



# Application temperature and pressure advice

To ensure optimal performance and longevity of gaskets in hydrogen applications, it's crucial to consider the operating temperature and pressure. Our application temperature and pressure advice table provides a quick reference for selecting the appropriate gasket style or material.

Gasket style or material	Temperature (up till)	Pressure (up till)
Rubber (steel) EPDM/CR/NBR depending on media	150°C	10 bar*
Fibre sheet Novapress® 880 NBR bonded (gas-tight, high stability)	200°C	100 bar*
Fibre sheet Novaone® BLUE EPDM bonded (alkali acid resistance)*	250°C	60 bar*
Modified Leader PTFE Clipperlon series (highest chemical resistance)*	260°C	85 bar*
Frenzelit Novaphit® reinforced graphite	450°C	100 bar*
SGL Sigraflex HD reinforced graphite	450°C	100 bar*
Spiral Wound Leader SRI (high-pressure blowout-safe)	500°C	350 bar*
Kammprofile Leader KAM (high-pressure blowout-safe)	500°C	400 bar*
LeaderTHERM NXT modified phlogopite	1000°C	100 bar*
Full metal RTJ or (plated) metal C and o-rings	500°C	>400 bar*

Note: While this table offers general recommendations, always consult our chemical resistance chart and construction guidelines for specific applications. For personalised advice, our Application Engineers are available to help you choose the best gasket for your needs.

# High-performance flow control solutions



## Core strengths

### Reliable performance

ERIKS products are built to withstand extreme conditions, ensuring durability and safety.

### Innovative solutions

Our valve-automation and engineering teams create custom solutions for demanding market needs.

### Comprehensive support

We provide both standard and custom products, delivering the right solutions for your hydrogen applications.





## Our offerings

ERIKS provides a comprehensive range of valves and instrumentation products tailored for hydrogen and utility applications. Our selection includes:

**Safety valves:** Essential for maintaining system safety and integrity.

**Control valves:** Available in globe, sliding gate, and v-port ball valves for various applications.

**Pressure reducing valves:** Ensure stable pressure levels in your systems. [Automated]

**Ball valves:** Designed for hydrogen applications, including high-pressure environments.

**Globe valves:** Suitable for precise flow control.

**Temperature and pressure gauges & transmitters:** Monitor critical system parameters accurately.

**Flow meters:** Measure flow rates to optimise system performance.

## Our services

- We offer bespoke valves, co-engineered manifolds, and larger skids tailored to your specific requirements.
- Our technical specialists work closely with you to find the optimal solutions for your unique needs.



# Siekmann Econosto: ERIKS' valve specialist for project business (EPC)



**SIEKMANN ECONOSTO**  
An ERIKS Company

## Core strengths

### Comprehensive solutions

We provide one-stop valve packages and custom consulting for seamless project execution.

### Rapid response capability

With 50,000 valves in stock for immediate MRO needs, we ensure quick access to the right products.

### Technical excellence

Our in-house modification, automation, and testing services deliver expert engineering support and specialised upgrades.



Siekmann Econosto is an internationally recognised supplier of high-quality valves and related products for over 65 years. We deliver solutions to leading engineering companies and plant operators worldwide, across industries such as oil and gas, power, petrochemical, hydrogen, and clean energy. Siekmann Econosto represents engineering excellence, quality, safety, reliability, and a commitment to serving international markets.

## Our product portfolio

- Gate valves
- Globe valves
- Check valves
- Ball valves
- Butterfly valves
- Safety valves
- Control valves
- Special valves
- Electrical, pneumatic, and hydraulic actuators

## Available in multiple specifications

- Various design codes (DIN, AD 2000, ASME, API, etc.)
- Materials: carbon steel, stainless steel, high alloy steel
- Nominal size: DN 15-2400 / NPS ½"-96"
- Pressure class: PN 10-640 / CL 150-4500
- Various end connections
- Different certifications and industrial standards

## Our services

- Comprehensive, one-stop valve packages
- Expert consulting and customised solutions
- Project and contract management
- Global sourcing and supply chain management
- Full technical documentation
- In-house valve modification, automation, and testing
- In-house upgrades for oxygen service
- Spare parts and dedicated after-sales support
- 50,000 valves in stock for immediate MRO needs

## Key global projects

**Lingen:** Electrolysis, PEM, advanced green hydrogen (Germany)

**Haru Oni:** Electrolysis, green hydrogen, and synthetic fuels (Chile)

**Oberhausen Trailblazer:** Electrolysis and green hydrogen (Germany)

**Neom:** Electrolysis and green hydrogen (Saudi Arabia)

**Brevik Norcem:** Carbon capture and storage facility (Norway)

**Nederland H2:** Blue hydrogen, SMR process, and carbon capture (U.S. Gulf Coast)

**Sluiskil:** CO<sub>2</sub> liquefaction and carbon capture & storage (The Netherlands)

For more information, email [info@siekmann-econosto.de](mailto:info@siekmann-econosto.de)



# Specialised sealing and polymer solutions



## Core strengths

### Optimised performance

Our materials are specifically developed and rigorously tested to ensure optimal performance in hydrogen applications while minimising the risk of hydrogen permeation. Both development and testing take place in the ERIKS-owned rubber laboratory – Elastomer Research Testing [ERT] in Deventer, The Netherlands.

### Versatile applications

Our products cater to both high- and low-pressure hydrogen environments, including specific solutions for electrolyser sealing.

### Standards compliance

All materials meet stringent industry standards, ensuring reliability and safety in critical hydrogen applications. ERIKS is developing non-PFAS sealing solutions that are suitable for hydrogen applications.

## Our offerings

At ERIKS Sealing & Polymer, our skilled engineers focus on selecting and developing high-performance materials. We design and manufacture seals that meet the highest quality standards. As one of the world's largest stockholders of sealing and polymer products, we ensure that the essential parts you need to keep your operations running smoothly are always in stock and ready for you.

### Low-pressure applications (appliances)

Designed for use in gas installations, gas equipment, and appliances, our solutions effectively limit hydrogen permeation through sealing materials. All products are tested in accordance with DVGW ZP5101 standards.

- O-rings
- Rubber custom [drawing] parts

ERIKS compound #	Material
366296	NBR 60
514774	FKM 75
900742	VAMAC 60
886264	HNBR 60

## High-pressure applications

Our products are suitable for compressed hydrogen storage in tanks operating at 350 bar and 700 bar, as well as compressors for mobile hydrogen storage in vehicles.

- O-rings
- Multi-piece double acting compact piston/rod seals

### ERIKS compound #

### Material

866506

HNBR 70

886245

HNBR 90

514940

FKM 90

559037

EPDM 90

## Electrolysers

Our solutions are designed for electrolysers where a combination of gas tightness, effective sealing properties, dielectric performance, and a wide temperature range is essential for sealing stack cells.

- Extruded rubber profiles
- O-rings
- Rubber custom [drawing] parts

### ERIKS compound #

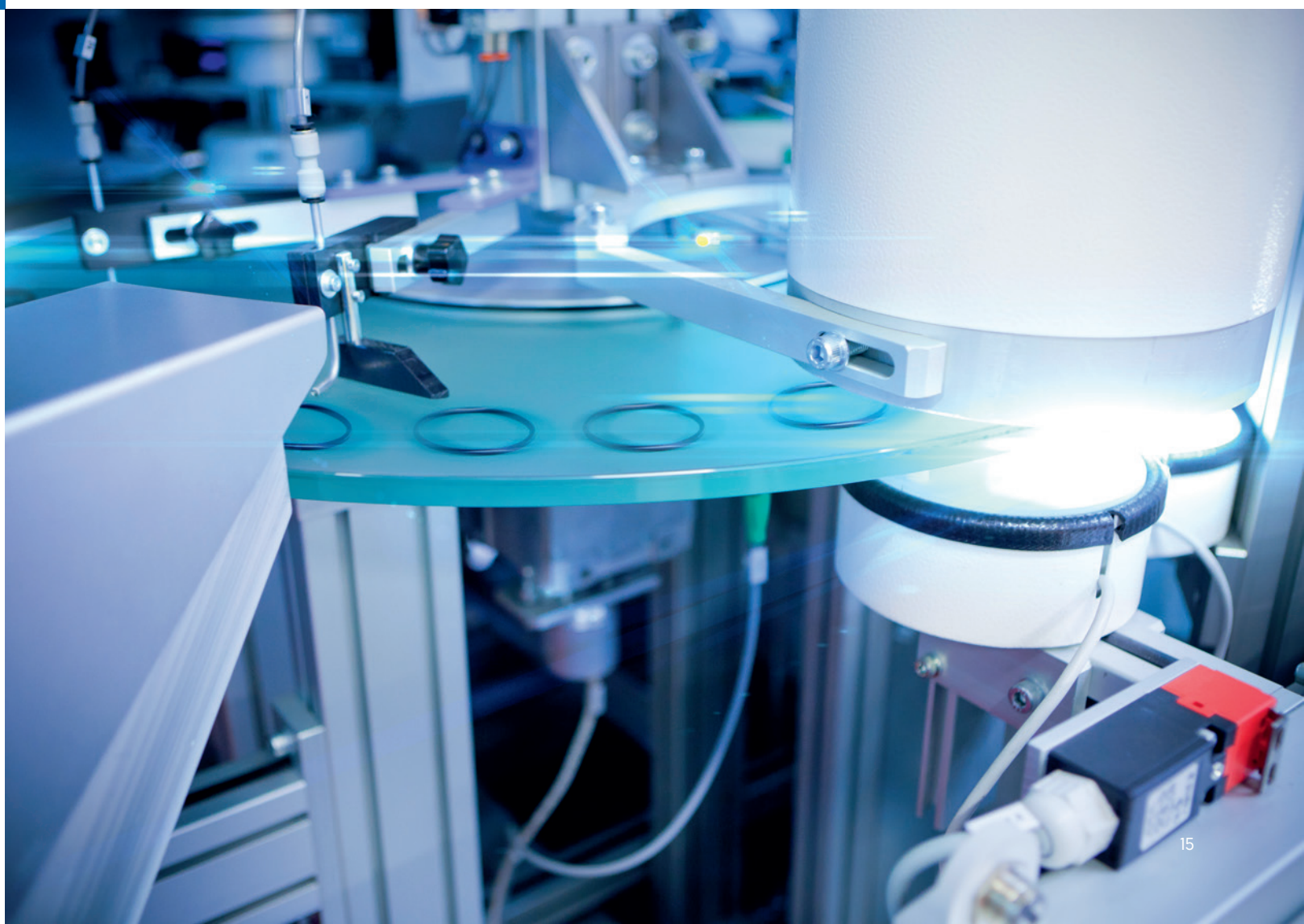
### Material

559748/559756

EPDM 80

559777

EPDM 70



# Engineered plastics for hydrogen solutions

## Core strengths

### Wide range of materials

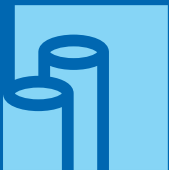
High-performance materials such as PEEK, PSU, and PPS for hydrogen applications.

### Versatile manufacturing

Advanced CNC milling, turning, and 3D printing.

### Engineering support

Our engineering teams are ready to help realise your projects. Together, we look at built-in application possibilities.



## Our offerings

As a leading and innovative supplier, we offer a comprehensive range of products, including plates, foils, round bars, tubes, and profiles. With our state-of-the-art machinery, extensive assortment, quality control, and years of application experience, we ensure top-quality products and services. Whether you need prototypes, small series, or large quantities, we have the expertise and experience to meet your needs effectively.

## Our manufacturing capabilities

- CNC milling
- CNC turning
- Sheet working
- 3D printing
- High-end quality control
- Gluing and welding
- Advice on manufacturability and co-engineering

## High-performance materials

Our relevant materials for hydrogen applications include:

- PEEK
- PSU
- PPS



# High-quality hoses and connectors

## Core strengths

### Reliable performance

ERIKS hose assemblies are engineered to withstand extreme conditions, ensuring safety and durability for hydrogen applications.

### Versatile manufacturing

Every hose is rigorously tested and inspected before leaving our production facilities, guaranteeing the highest quality and reliability.

### Dedicated engineering support

Our expert teams collaborate with you to explore application possibilities and provide tailored solutions for your projects.



## Our offerings

We specialise in producing components tailored to your specific applications, offering a wide range of parts designed for complex hydrogen hose assemblies.

### High-pressure hose assemblies

#### Thermoplastic hose assemblies

- Capable of handling pressures up to 875 bar
- Sizes available from DN6 to DN16
- Designed with a low permeation rate for enhanced performance

#### GOODALL high-pressure metal hose assemblies

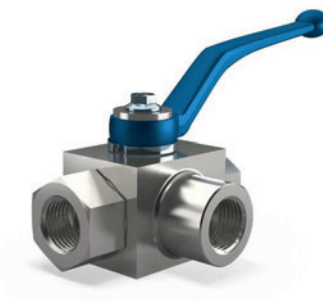
- Constructed from stainless steel AISI 316L
- Rated for pressures up to 850 bar
- Compliant with EN ISO 10380
- No permeation
- Test certificates as per Directive 2014/68/EU (PED)





## High-pressure connectors

- Gas-tight connectors for high-pressure steel tubing
- High-pressure quick release couplings
- Hose and tube clamping solutions (Stauff)
- High-pressure ball valves specifically for hydrogen (MHA Zentgraf)



## Our services

Our comprehensive hose management platform offers:

- Detailed traceability of hose assemblies
- Certificate management for compliance
- Supports legislative compliance
- Reduced failure risks
- Lower total cost of ownership (TCO) for your operations



# Reliable hydraulic systems

## Core strengths

### All in one solution

Complete design, assembly, testing, and logistics for hydraulic systems and manifolds.

### Efficient process

Accelerated time to market with full ERIKS service and support.

### Advance in execution

ERIKS delivers cutting-edge technology and recommends the best solutions for your needs.



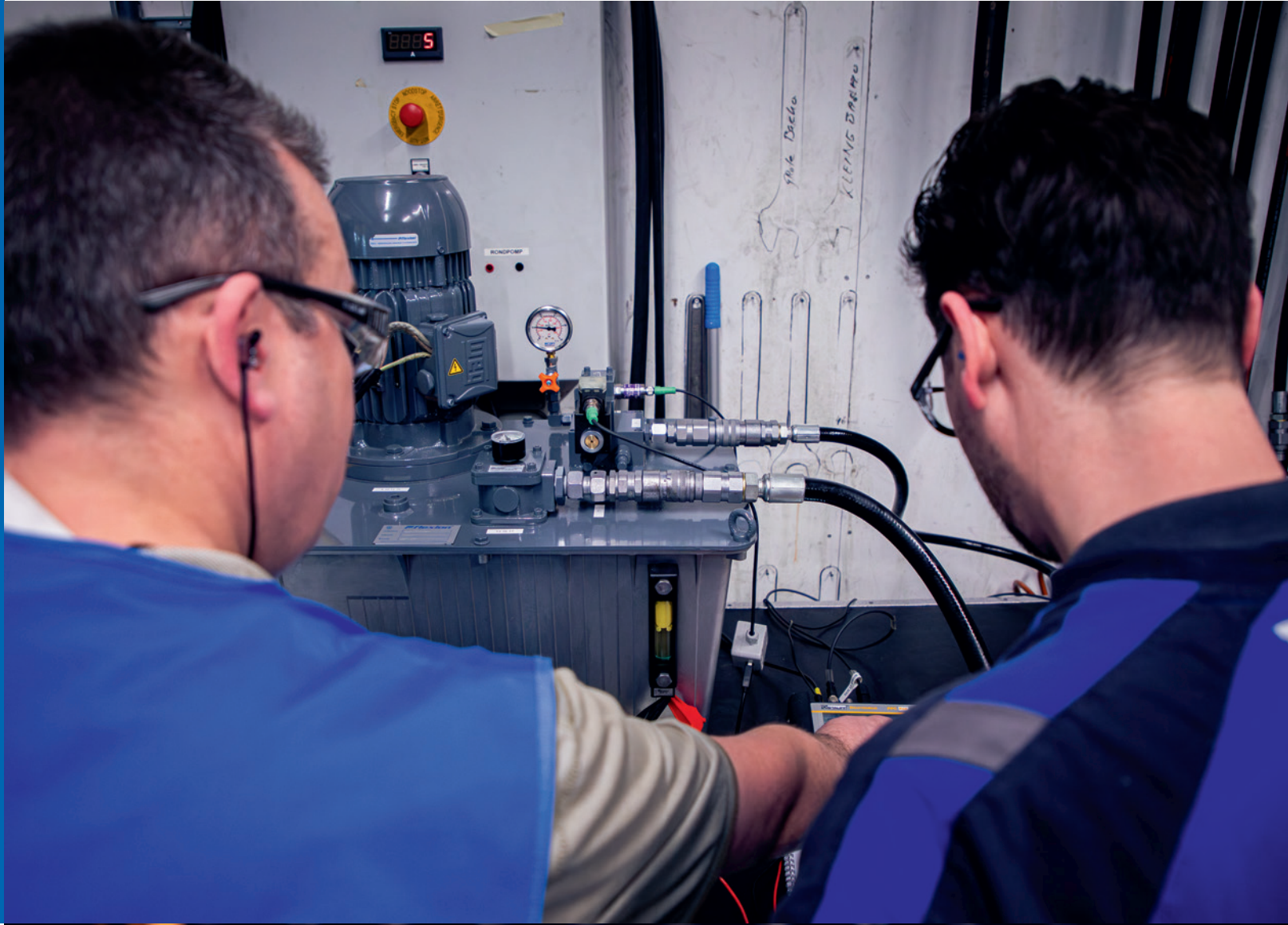
## Our offerings

At ERIKS, we design, build, and test complete hydraulic and electro-hydraulic systems and power packs tailored to the unique needs of our customers. We supply a broad range of hydraulic products and components, backed by strategic partnerships with leading quality brands for comprehensive support.

- Hydraulic valves and manifolds for hydrogen compression control
- Large-bore hydraulic cylinders and actuators
- Hydraulic pumps and power packs for hydrogen compression

## Our services

We provide customised, co-engineered solutions, including hydraulic control manifolds and power units, ensuring precision and reliability for your applications.

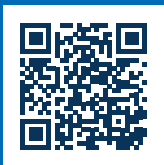


ERIKS Industrial Services Ltd.

UK & Ireland Head Office:  
Seven Stars Road,  
Oldbury,  
West Midlands,  
B69 4JR

T : +44 (0) 121 508 6000  
E : enquiries@eriks.co.uk

[eriks.co.uk](http://eriks.co.uk)  
[eriks.ie](http://eriks.ie)



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