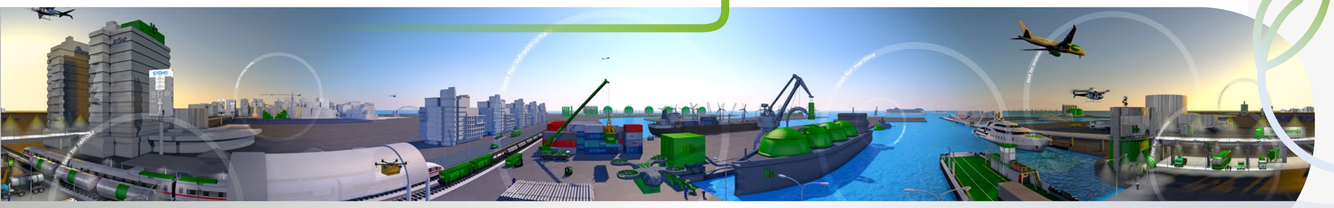

STÖHR H2
VALVES FOR EXTREMES
Part of WINKELMANN FLOWFORMING
best for LH2
production
transportation
storage
filling
usage
best for infrastructure
best for maritime
best for aviation
best for automotive
best for railroad
best for energy
best for Hydrogen
A WORLD WITH GREEN ENERGY



STÖHR ARMATUREN

Fittings for the future Hydrogen value chain

The industry today

Today, hydrogen represents a modest fraction of the global, European and national energy mix. What's more, hydrogen is still largely produced from fossil fuels – usually natural gas or coal – which results in the release of millions of tonnes of carbon dioxide (CO_2) each year. If hydrogen is to contribute to climate neutrality, it will need to achieve a far greater reach and its production must become fully decarbonised.
Interest in hydrogen has peaked at various times in the past, but its sustained use has never really taken off. Today, technological developments, the rapid decline in the cost of renewable energy and an urgent need to dramatically reduce greenhouse gas emissions all combine to open up new possibilities for hydrogen use.

Green energy and future needs

Hydrogen is enjoying a renewed rapid growth in attention, both in Europe and around the globe. With the ability to be used as feedstock, fuel and for energy carriage and storage, the gas has many possible applications throughout industry, transport and power sectors. Most importantly, hydrogen emits no carbon dioxide and almost no air pollution in use – making it an effective solution when it comes to decarbonising industrial processes and economic sectors where carbon reduction is both urgent and hard to achieve.
It's clear that hydrogen has an essential part to play in supporting international commitments to reach carbon neutrality by 2050 and in the global effort to implement the Paris Agreement while working towards zero pollution.

Our mission

STÖHR is committed to having a positive impact on the environment and offers solutions for both stationary and mobile hydrogen-based applications. Our components meet the requirements at all medium temperatures, valve sizes and pressure levels.
Whether you're working on stationary applications for infrastructure, filling stations, or decentralised energy supply systems or perhaps mobile applications for aviation, maritime, automotive, aeronautics or railroad, we're open to your challenge! Get in touch to discuss your design concept and we'll work with you to design, prototype and manufacture the fittings and installations you need for mass production.

STÖHR
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Part of WINKELMANN FLOWFORMING

best for hydrogen

let's go for it!

STÖHR ARMATUREN stand for

- Fittings for gases since 1938
- Experienced in cryogenics since the 1960s
- Quality system based on ISO 9001:2015
- High product safety in operation
- High reliability, low maintenance
- Long durability
- Designed and Made in Germany
- High leak tightness to the environment
- Lowest heat loads to the medium
- Highest pressure levels
- From cryogenic to ambient and even hot medium temperatures
- For all environmental and service conditions
- Upstream, midstream and downstream applications

meet the Extremes

STÖHR
VALVES FOR EXTREMES
Part of WINKELMANN FLOWFORMING

Our markets of hydrogen applications, today and tormorrow

Applications equipped with fittings from STÖHR ARMATUREN

4 | INFRASTRUCTURE

5 | AUTOMOTIVE

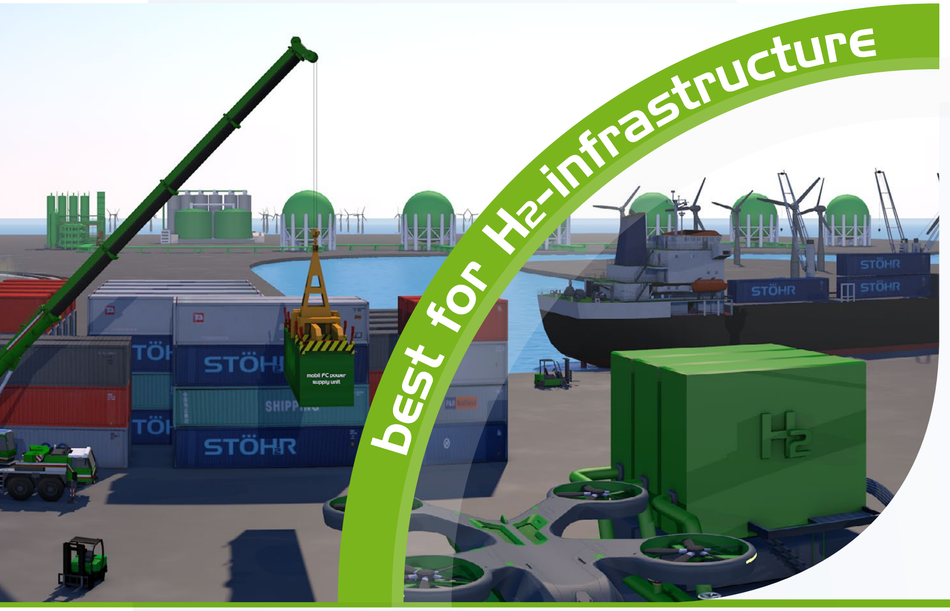
6 | RAILROAD TECHNOLOGY

7 | SHIP, YACHT, FERRY, NAVAL

8 | AVIATION

9 | AERONAUTICS

best for: production | transportation | storage | filling | usage



Hydrogen Infrastructure Applications

Storage and distribution:
LH_2/GH_2 shut-off valves, check valves and filters for gas storage and distribution centers.

Transport:
Mobile tank trailers for H_2-transportation
Hydrogen truck trailers.

Filling stations:
H_2 fuel station for high or low pressure gas storage.

Intermediate Hydrogen storage
Buffer storage for green energy.

www.hydrogen-infrastructure.de

let's have a call
+49.8231.349047

STÖHR
VALVES FOR HYDROGEN
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figure: sizes not in scale, valves exemplary

360 bar H_2 globe valve

900 bar LH_2 check valve

900 bar LH_2/GH_2 globe valve hydraulic

LH_2 manual globe valve

Balanš 7100

Univerš 1200

best for: production | transportation | storage | filling | usage

Hydrogen Automotive Applications

Onboard hydrogen powered fuel cell systems:
Supply line from LH_2 tank to fuel cell.
Mobile tank shut-off valves with TPED certificate actuated by handwheel, electric or pneumatic drive.

Hydrogen filling stations
Stationary tank shut-off with electric, pneumatic or hydraulic actuation and check valves.

www.hydrogen-automotive.de

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STÖHR H2R
VALVES FOR HYDROGEN
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figure: sizes not in scale, valves exemplary

Cryogenic pneumatic globe valve

Cryogenic pneumaitc globe valve with integrated check function

Cryogenic filter

Sticks 900

best for: production | transportation | storage | filling | usage

Hydrogen Rail Applications

Onboard hydrogen gas supply:
Tank shut-off valve.
LH_2 and GH_2 shut-off, control, check valves and filters for fuel cell application.

Stationary filling station equipment:
Tank shut-off valve.
LH_2 and GH_2 shut-off, control, check valves and filters.

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STÖHR H_2R
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figure: sizes not in scale, valves exemplary

LH_2 globe valve

Balans 7100

LH_2 upside-down globe valve

Frees 1200

LH_2 manual globe valve

Univers 1600

best for: production | transportation | storage | filling | usage

Hydrogen Maritime Applications

Onboard hydrogen gas supply:
LH_2 and GH_2 from tank to fuel cell, also applicable for Ammonia and Methanol.

Onboard gas supply for submarines:
GH_2 and LO_X supply from tank to fuel cell
Cabin oxygen supply

Hydrogen harbor equipment:
Use of valves mounted on mobile filling crane.
Stationary LH_2, Ammonia or Methanol loading facilities for tankers, yachts, ferries and submarines.

www.hydrogen-maritime.de

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STÖHR H_2
VALVES FOR HYDROGEN
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figure: sizes not in scale, valves exemplary

Manual cryogenic globe valve with DNV approval and stamp, available nominal sizes from DN 10 to 100

Univers 1200

Frees 1200

LH_2 upside-down globe valve with hydraulic drive

Ellips 1700

LH_2 globe valve

best for: production | transportation | storage | filling | usage

Hydrogen Aviation Applications

Onboard hydrogen powered fuel cell systems:
Tank valves.
Globe valves after tank.
Supply line from LH_2 tank to fuel cell.

Hydrogen powered gas engines:
Use of LH_2 for direct combustion in adapted engines.
Supply line from LH_2 tank to the engine.

Airport hydrogen supply:
Hydrogen storage tanks valves.
Distribution to the aircraft.
Supply for other airport vehicles.

www.hydrogen-aviation.de

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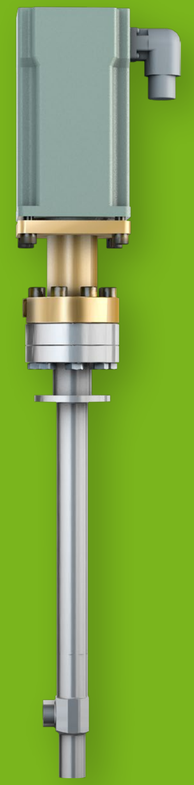
figure: sizes not in scale, valves exemplary

Cryogenic control valve with electric actuator

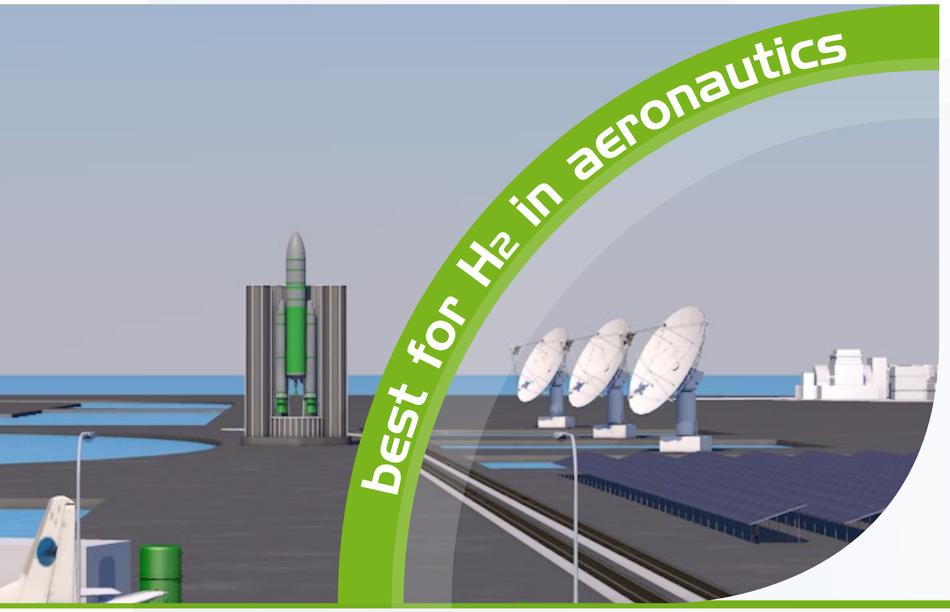


Cryogenic globe valve for vacuum-jacketing

Cryogenic globe valve in upside-down execution

Sticks 900

best for: production | transportation | storage | filling | usage



Hydrogen Aeronautic Applications

Ground based infrastructure:
Rocket engine test benches.
Storage farms.
Transport lines.
Fuel filling for launchers.
Mobile tank globe valves.

www.hydrogen-aerospace.de

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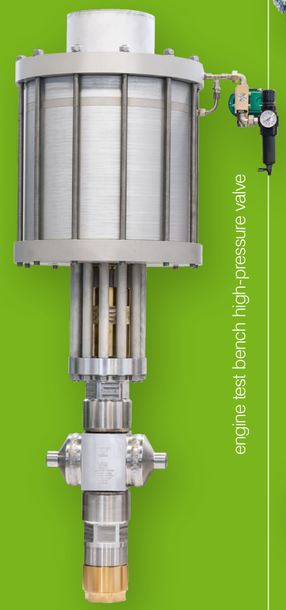
figure: sizes not in scale, valves exemplary

tank shut-off valve

Locks



engine test bench high-pressure valve

Balans
7100

globe valve for storage tank and transport lines

globe valve for launcher filling

Univers
1600

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STÖHR technology in brief

Fittings	Globe valves and control valves, all bellow sealed with 2nd sealing to the environment, Check valves, Filters, Blow-off valves, Valve blocks
Media	Hydrogen and other gases or liquids such as He, O_2, CH_4, NH_3, CH_3OH
Sizes	Nominal diameters ranging from DN 2 (<1/8“) to DN 300 (12“)
Temperatures	Cryogenic: 2 K to 243 K (-271 °C to -30 °C) Ambient: 243 K to 323 K (-30°C to + 50° C) Hot: up to 676 K (+400 °C)
Pressure	All pressure levels up to ultra-high pressure of 1,000 bar (100 MPa / 15.000 psi)
Tightness	To environment: He leak tightness of 10E-8 mbar*liter/s At seat: He leak tightness of 10E-6 mbar*liter/s
Materials	Full stainless steel material, 316L family or special steel
Certifications	STÖHR ARMATUREN QM based on ISO 9001:2015, Pressure Vessel Regulation and AD2000-W2 H0, Explosion proof for flammable media with ATEX certificate

STÖHR
VALVES FOR HYDROGEN

Univers
800 - 1600

Sticks
900

Frees
1200

Ellips
1700

Magros
1500

Balans
7100

Axius
1400

Locks

Specials

Our products for green energy and for your project

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STÖHR
VALVES FOR EXTREMES

FOR A WORLD WITH GREEN ENERGY

FREES 1200TD, LH2 upside-down globe valve

WE TURN EVERYTHING UPSIDE DOWN

Thank you for your interest

More to see on: www.stoehr-hydrogen.de