海德利森
HYDROSYS

HYDROSYS

Hydrogen Energy Equipment

HIGH PRESSURE SPECIALIST

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01 COMPANY PROFILE

TARGET & COMMITMENT

Leading position of high-pressure technology in global market.

Supplier of competitive safe and reliable hydrogen compression and refueling system.

Chris Gong
Chairman of Hydrosys

COMPANY PROFILE

Hydrosys (Beijing) Technology Co., Ltd, founded in 2001, specializes in high-pressure and ultra-high-pressure systems, focusing on R&D, production, sales, and service. We provide customized hydrogen refueling station equipment, gas booster systems, and high-pressure testing systems.

Hydrosys is constructing an industrial park in Daxing, Beijing, covering a total area of 38,000 square meters. The company has established four major manufacturing bases in Beijing, Tianjin, Shanxi, and Shenyang, and set up a hydrogen refueling demonstration station in Guangdong. The total construction area amounts to 72,000 square meters.

We excel in high-pressure fluid applications, offering safe and reliable products and solutions from 22 MPa to 90 MPa, tailored to various hydrogen refueling needs. Our solutions include both portable and stationary options.

Driven by innovation, Hydrosys has contributed to 16 national hydrogen standards and holds over 100 intellectual property rights. We are recognized as national high-tech enterprise, and have received the national scientific and technological progress award.

With 24 years of experience, Hydrosys aims to be a global leader in hydrogen refueling solutions, advancing clean energy.

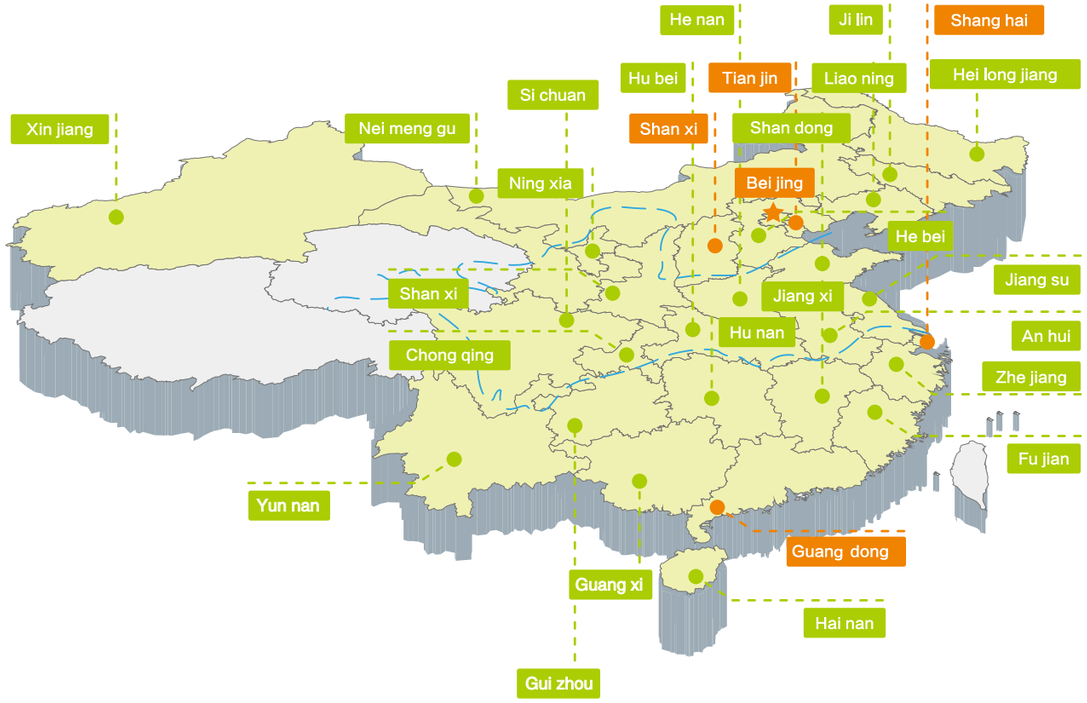
COMPANY
HONOR

02 HYDROGEN EQUIPMENT COVERAGE AREA

At present, Hydrosys has successfully developed over 170 hydrogen refueling stations and hydrogen testing centers for clients worldwide, spanning regions such as Asia-Pacific, the Middle East, Europe, South America, and Southeast Asia. Our global network of specialized service and technical teams is dedicated to delivering safe and reliable products, coupled with comprehensive after-sales support. We are committed to enhancing the international hydrogen energy sector with high-quality, stable solutions, driven by the excellence of Chinese manufacturing.

Implemented projects for Global Market

Planned Projects for Global Market



Completed Projects (160+ in China)

03 CORPORATE MILESTONES

Hydrosys provides hydrogen refueling station services to leading clients in steel, petrochemical, power, and new energy sectors. With over 160 stations built, the company is a key player in hydrogen station construction. Hydrosys pioneered the modular hydrogen gas booster system in China and introduced the liquid-driven piston compressor boosting mode internationally. From the first hydrogen station at the 2010 Shanghai Expo to supporting hydrogen applications at the 2022 Beijing Winter Olympics and building ENOC's first hydrogen station in Dubai in 2023, Hydrosys delivers high-quality, reliable services to drive global clean energy initiatives.

2001

Hydrosys was established and focus on high-pressure fluid application

2003

The "200MPa Gas Sealing System" was independently developed for oilfield equip+ment

2005

The "Large-Diameter Steel Pipe Burst System" was inde-pendently developed for the steel pipe bursting industry.

2006

Established the first domestic manufacturing plant of Hydrosys.

2007

The "Breathing Air Supply System" was awarded the Third Prize for Science and Technology Progress.

2008

The Yongfeng Hydrogen Refueling Station in Beijing, supported the 2008 Beijing Olympics.

2010

The first skid-mounted 70MPa hydrogen refueling equipment was used for the Shanghai World Expo.

2014

The "AP1000 High-Pressure Hydrogen Supply System" was used in the Sanmen Nuclear Power Station.

2017

Toyota's first hydrogen refueling station in China, and the only one in the coun-try fully compliant with the SAE J2601 standard for 70MPa hydrogen refueling.

2018

The Chuangba Hydrogen Refueling Station, built in 2018, served the 2022 Winter Olympics.

2021

The SPIC Jidian Integrated Hydrogen Production and Refueling Station is China's first PEM-based integrated hydrogen production and refueling station.

2022

The Puyang Integrated Energy Station, which includes oil, hydrogen, gas, and electricity, is the first in Henan Province to have both 35MPa and 70MPa hydrogen refueling capabilities.

2023

The Dubai first Hydrogen Refueling Integrated Station was served the COP 28

2024

The first oil and hydrogen refueling station in Shen-yang, was developed in collaboration with BMW and China Petroleum

04 HYDROGEN ENERGYEQUIPMENT

HYDROGEN ENERGYEQUIPMENT

PIONEERING EXPERIENCE:

With 24 years of high-pressure application experience in high-pressure gas and inspection industries, Hydrosys has pioneered oil-less hydrogen pressurization and advanced hydrogen refueling station equipment design and integration.

CORE EQUIPMENT:

- Hydrogen compressors
- Hydrogen dispensers

ANCILLARY EQUIPMENT:

- Unloading columns
- Nitrogen valve boxes
- Sequence control valve boxes

COMPLETE STATION SOLUTIONS:

Hydrosys provides turn-key hydrogen station solution, including hydrogen storage containers, cooling systems, and station control systems for hydrogen refueling stations.

01 COMPRESSOR

Hydrogen Compressor for Integrated Hydrogen Production and Refueling Station

Hydrogen Sourcing: Electrolysis or other industrial processes.
Pressurization: From 10-30 bar to 350-500 bar.
Refueling: Dispenses hydrogen to tube trailers and commercial vehicles via refueling panels and dispensers.
Standards Compliance: Designed to meet ISO 19880, SAE J2601, and other international standards.

Key Features:

- Energy efficiency
- High performance
- Fast refueling speed
- High automation
- Advanced integration

45 MPa — 90 MPa Off-station or pipeline hydrogen pressurization range

Hydrogen Compressor for Stationary Hydrogen Refueling Station (3-stage)

For tube trailer or site tank filling or directly vehicle refueling

Key Features:

- Long lifespan of the piston seal
- Enhancing the longevity of both the piston and cylinder.
- Isolated oil cylinder design
- Multiple seals for cylinder piston rod, with hydrogen leakage monitoring
- oil level/volume control
- Higher efficiency

Hydrogen Compressors for Stationary Hydrogen Refueling Station (2-stage)

Hydrogen Sourcing: Sources hydrogen from tube trailers or pipelines.
Hydrogen Storage: Stores hydrogen in medium and high-pressure tanks at 450 bar and 900 bar
Refueling: Refueling for both passenger and commercial vehicles simultaneously.
Standards Compliance: Designed to meet ISO 19880, SAE J2601, and other international standards.

Key Features:

- Energy efficiency
- Automatic pressure and flow adjustment
- Fast refueling speed
- High safety and reliability

02 FILLING EQUIPMENT

Loading Panel

Loading panel is a special equipment integrating control, metering and billing functions, specialized in providing hydrogen filling service for tube trailers, and meets the design of single and double stations for tube trailers. Characterized by beautiful appearance, easy operation and compact structure.

Functional Characteristics

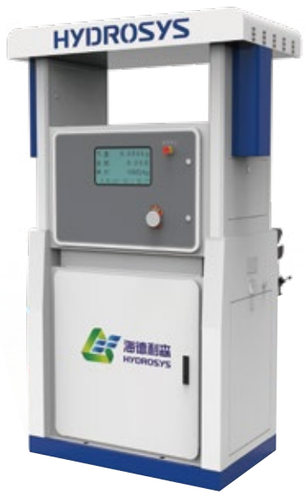
- Intelligent display and convenient keyboard operation.
- Single and dual outputs are available to meet the different conditions of hydrogen charging in trailers.
- Explosion-proof grade Ex IIC T4 or above.
- Equipped with sampling port to detect gas quality as required.
- Equipped with safety valve, pull-off valve and emergency shut-off valve, more safe and reliable use.
- Equipped with high-precision flow meter, measuring accuracy of 0.5%.
- Equipped with electric control system, which can realize the functions of quantitative filling, power-down data protection, etc., and cooperate with the station control system.
- With IC card charge management system, it can realize efficient and accurate measurement and pricing management.

Hydrogen Dispenser

The hydrogen dispenser is a specialized equipment integrating control, metering and billing functions to provide hydrogen filling service for hydrogen fuel cell vehicles. It is designed with explosion-proof structure to meet the requirements of hydrogen refueling station for explosive environment use, while the computerized control part can still maintain high stability under harsh environment.

Functional Characteristics

- The electronic control system adopts the form of microprocessor control board, with IC card charging management system, supporting the synergy with the station control system, which is convenient for operation and management.
- The filling rate is controllable to meet the requirements of standards and filling protocols to ensure the safety of hydrogen refueling.
- Flow meter metering accuracy: 0.5%.
- Built-in PCHE heat exchanger, easy to install, small footprint, reduce engineering construction costs.
- Protection grade: IP55 or above.
- Ambient temperature: -40℃ to +50℃.
- Equipped with full-opening safety valve, pull-off valve and emergency shut-off valve, more safe and reliable to use.



03 HYDROGEN UNLOADING EQUIPMENT

Unloading Column (Manual Version)

The unloading column is a special equipment for hydrogen refueling station, which filters hydrogen from the tube trailer and transports it to the hydrogen compressor.

The unloading column is divided into single and double unloading columns, which can be selected according to the needs of the hydrogen refueling station.

Functional Characteristics

- Manual operation, valve instrument panel mounting, easy to operate.
- Single and dual inputs are available to meet the different conditions of hydrogen unloading applications in tube trailers.
- Exd IICT6; Exd IICT6 for electrical parts and instruments.
- Over-pressure safety valve, over-pressure alarm shutdown function.
- Configuration of sampling port, according to the need to detect the gas quality.
- Configuration of pull-off valve, pull-off in case of emergency, gas source and system sealed at the same time at both ends.
- The pipeline valve parts are all made of 316/316L, and the main parts are imported brands.

Unloading Column (Intelligent Version)

Functional Characteristics

- Intelligent display and convenient operation with keypad.
- Single input and dual inputs are available to meet the different conditions of hydrogen unloading applications in tube trailers.
- Ex IIC T4 or above.
- Equipped with sampling port, according to the need to detect the gas quality.
- Equipped with safety valve, pull-off valve and emergency shut-off valve, more safe and reliable use.
- Equipped with high-precision flow meter, measuring accuracy of 0.5%.
- Equipped with electric control system, which can realize the functions of quantitative filling, power-down data protection, etc., and cooperate with the station control system.
- With IC card charge management system, it can realize efficient measurement and pricing management.

05 PROJECT CASE

FIXED H2 STATIONS

Shenyang's first oil hydrogen joint construction station

Operator: PetroChina & BMW

Capacity: >1000kg/12h

Fuelling Option: 350bar & 700 bar

Dubai First Filling & Refueling Station

Operator: ENOC

Capacity:

1000kg/12h for trailer filling;

260kg/12h for vehicle refueling

Fuelling Option: 200bar & 350bar & 700 bar

SKID-MOUNTED STATIONS

GAC Toyota Nanhai hydrogen station

Operator: GAC Toyota & Hydrosys

Capacity: 260kg/12h

Fuelling Option: 700 bar

Meijin Energy - Shanxi Taiyuan hydrogen station

Operator: Meijing Energy

Capacity: 500kg/12h

Fuelling Option: 350 bar

Hydrogen Station for AC40 America's Cup

Operator: McConaghy & Hydrosys

Capacity: 500kg/12h

Fuelling Option: 350 bar

06 PROJECT CASE

"Extreme"HRS in China

High-altitude

Location: Shangri-La

Altitude:>3300 m

Anbient Temp: -10°c~20°c

Capabity: 500kg/12h

Extremely Cold

Location: Yakeshi City

Latitude:50°52'N

Ambient Temp: -52℃~-20℃

Capabity: 2000kg/12h

*Special high-toughness and cryogenic-resistant alloy materials

Extremely Hot

Location: Hainan

Latitude: 18°14'N

Ambient Temp: 25℃~35℃

Capabity: 500kg/12h

Best Practice in Innovation

State Power Integrated Hydrogen Production and Refueling Station

Highlight: Green Hydrogen, PEM system integration

Operator: Jilin Electric Power Co., Ltd.

Capacity: 500kg/12h

Fueling Option: 350bar & 700bar

Hydrosys Foshan (Demonstration) Hydrogen Refueling Station

Highlight: high capacity 4 tons/day, Self-constructed

Operator: Hydrosys

Capacity: 4000kg/12h

Fueling Option: 350bar & 700bar

Shuanghai New Energy Hydrogen Refueling Station

Highlight: Replace refueling with cylinders swapping

Operator: Shuanghai New Energy

Capacity: 1000kg/12h

Fueling Option: 350bar

Sinopec Qingdao Hydrogen Refueling Station

Highlight: High efficiency 3 stage compressor

Operator: Sinopec Qingdao Refining & Chemical Company

Capacity: 2000kg/12h

Fueling Option: 350bar