



UCT FLUID SOLUTIONS IN THE WORLD OF H₂ HYDROGEN



We Offer

HEADQUARTERS
Hayward, California, USA

STOCK
UCTT (Nasdaq)

FOUNDED
1991

REVENUE (2021)
\$2.1B

EMPLOYEES
~6,000



Process Instrumentation & Control

- Innovative control systems for critical applications
- One stop solution for petrochemical and chemical industries



Custom Design & Manufacturing Partner

- High quality, global manufacturing expertise
- Propriety and state of the art production systems (IP, R&D)
- Global outsource manufacturing capabilities



Component Cleaning Services & Analytics

- High-precision cleaning and coating capabilities
- ChemTrace analysis for trace contaminants in industrial & semiconductor applications



UCT Fluid Solutions Overview

We develop, innovate and manufacture, state-of-the-art components and systems for gas delivery and process instrumentation

25%
Growth in 3 Years

5
Manufacturing Sites

300
Worldwide
Distribution Networks



Extensive
Experience



Broad Product
Portfolio

Over **80** Countries Served

Industry Focused

One-stop-shop for gas delivery and process instrumentation across industries
Leading Industry 4.0 deployment across industries



Semiconductor



Oil & Gas



Analytical



Hydrogen



Industrial Gases



Power



Automotive

Website: <https://www.uct.com/products/fluid-solutions/default.aspx>

Leading in Innovation



Let-Lab
Startup Incubator



Advanced
Manufacturing Hub



R&D & Industry 4.0
Labs



Diverse Startup
Ecosystem



Strategic
Guidance



Custom
Solutions

Innovation Awards

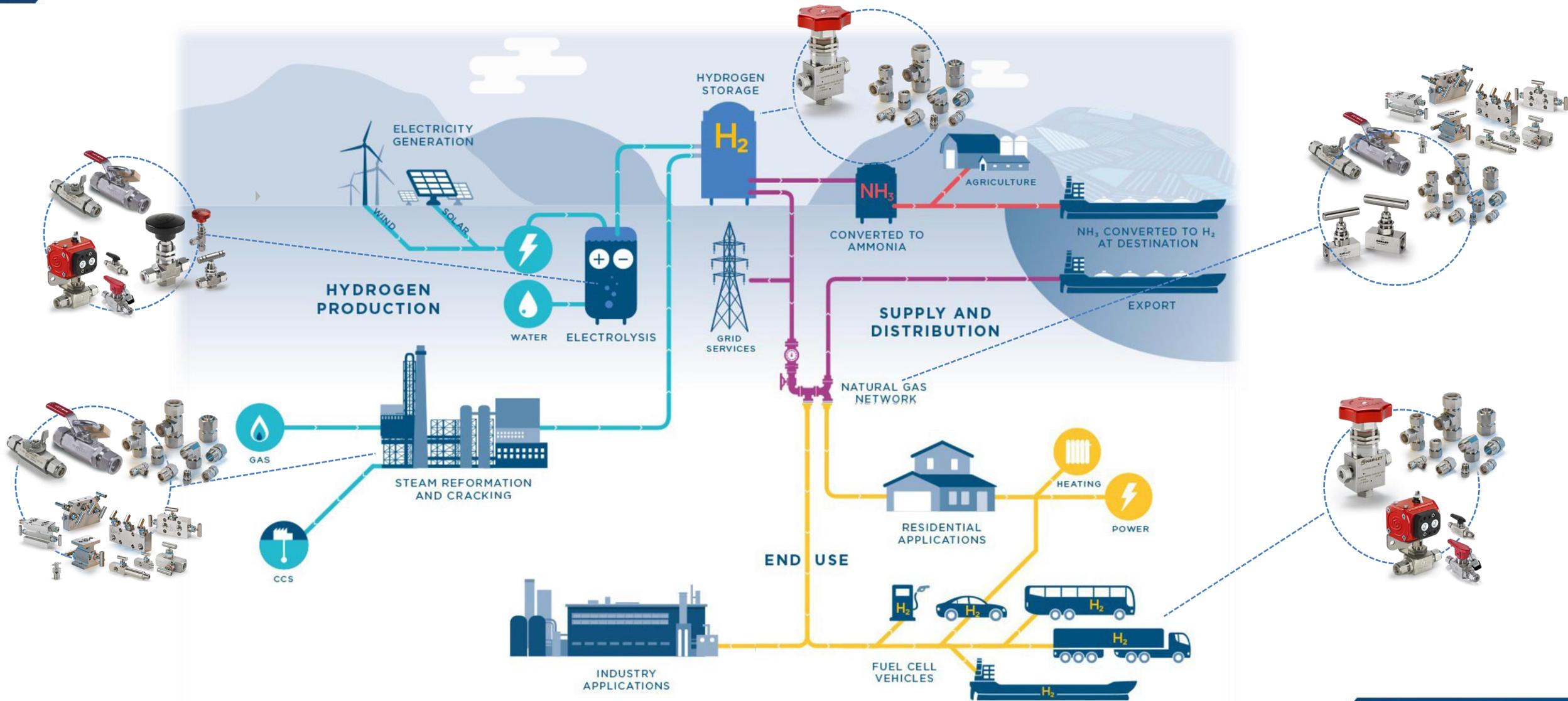
EIC Technology
Regional
2022

EIC Services &
Solutions
2021

Flow Control
Magazine Innovation
2019

Industry of
Things –
Best Product
2019

EFFECTIVE SOLUTIONS ACROSS THE HYDROGEN WORLD



Private and confidential

Connectors



PRODUCT PORTFOLIO



LET-LOK®
Compression Tube Fittings
Sizes: 1/16" to 2" 3mm to 50 mm
Pressure: Up to 12,000 psi



ONE-LOK®
Single Ferrule Fittings
Sizes: 1/16" to 1" 3mm to 25 mm
Pressure: Up to 12,000 psi



PIPELINE
Instrument Weld Fittings
Sizes: 1/16" to 2" 3mm to 25 mm
Pressure: Up to 11,000 psi



FLANGS
Ham-Let Flanges Adapter
Flange Connectors for Let-Lok & NPT
Male/Female fittings up to 2"



WELD LINE
37° Flare Fittings
Sizes: 1/8" to 2"
Pressure: Up to 5,000 psi



Our Tube and Pipe fittings are EC79 certified for onboard vehicles and undergo annual rigorous helium testing by a 3rd party lab to ensure our customers that we keep meeting the highest industry standards.



Instrumentation Valves & Actuators



Fugitive Emissions Free – EF Series
MAWP: 2500 psi (206 bar)
MAWT: 140°F (60°C)



High Pressure Trunnion Ball Valves – TBV Series
MAWP: 10000 psi (689 bar)
MAWT: 446°F (230°C)



High Performance Ball Valves – H-6800 Series
MAWP: 6000 psi (413 bar)
MAWT: 500°F (260°C)



Heavy Duty Ball Valves– H-1700 Series
MAWP: 6000 psi (413 bar)
MAWT: 500°F (260°C)



3 Piece Ball Valves– H-500 Series
MAWP: 3000 psi (206 bar)
MAWT: 450°F (323°C)



Compact One Piece Ball Valves H800 Series
MAWP: 3000 psi (206 bar)
MAWT: 300°F (149°C)



Ball Valves with Locking Device H-700 Series
MAWP: 2000 psi (137 bar)
MAWT: 400°F (204°C)



Metering Ball Valves MBV Series
MAWP: 2,000 psi (137 bar)
MAWT: 300°F (150°C)



High Pressure Needle Valves H-99 Series
MAWP: 10000 psi (690 bar)
MAWT: 1200°F (648°C)



Integral Bonnets Needle Valves H-300U Series
MAWP: 5000 psi (345 bar)
MAWT: 446°F (230°C)



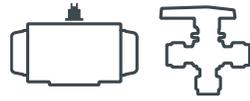
Metering Valves H-1300 Series
MAWP: 2000 psi (137 bar)
MAWT: 400°F (204°C)



Our Ball valves and Needle valves series are certified to ISO 15848-1, ensuring the lowest fugitive emissions rates and maximum safety for hydrogen handling.



Instrumentation Valves & Actuators



PRODUCT PORTFOLIO



Check Valves H-400 Series

MAWP: 6000 psi (413 bar)
MAWT: 400°F 204°C)



Relief Valves – H-900 & H-900HP Series

MAWP: 6000 psi (413 bar)
MAWT: 300°F (148°C)



Filter H-600 Series

MAWP: 6000 psi (413 bar)
MAWT: 248°F (120°C)



QCLOK Quick Connector

MAWP: 1500 psi (103 bar)
MAWT: 140°F (60°C)



Media Header HMH Series

MAWP: 1000 psi (69 bar)



Excess Flow Valves H-911 series

MAWP: 6,000 psi (413 bar)
MAWT: 400°F (204°C)

Pneumatic Actuators

Pneumatic Rack and Pinion Actuators



High Pressure

Pressure Range: up to 60,000 psi



High Pressure Fittings

HHP Series

MAWP: 60000 psi (4136 bar)



High Pressure Valves

HHP Series

MAWP: 60000 psi (4136 bar)

MAWT: 140°F (60°C)



High Pressure Check Valves

HHP Series

MAWP: 60000 psi (4136 bar)



High Pressure Filter

HHP Series

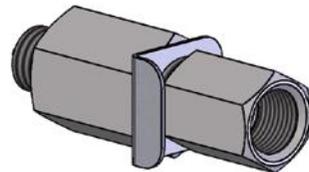
MAWP: 30000 psi (2068 bar)



High Pressure Quick connectors

HHP Series

MAWP: 36000 psi (2482 bar)



High Pressure Rupture Disc

HHP Series

MAWP: 60000 psi (4136 bar)



Nipples & Tubes

HHP Series

MAWP: 60000 psi (4136 bar)



Tool accessories



We use high-grade austenitic stainless steel-highly suitable for hydrogen use

Smart Flow Control



PRODUCT PORTFOLIO



IoT 900
RELIEF VALVE



IoT H-800 WLS
ACTUATED BALL VALVE



IoT GATEWAY



IoT H-800 WLS
WIRELESS BALL VALVE



IoT H-800 ETH
BALL VALVE



Manifolds



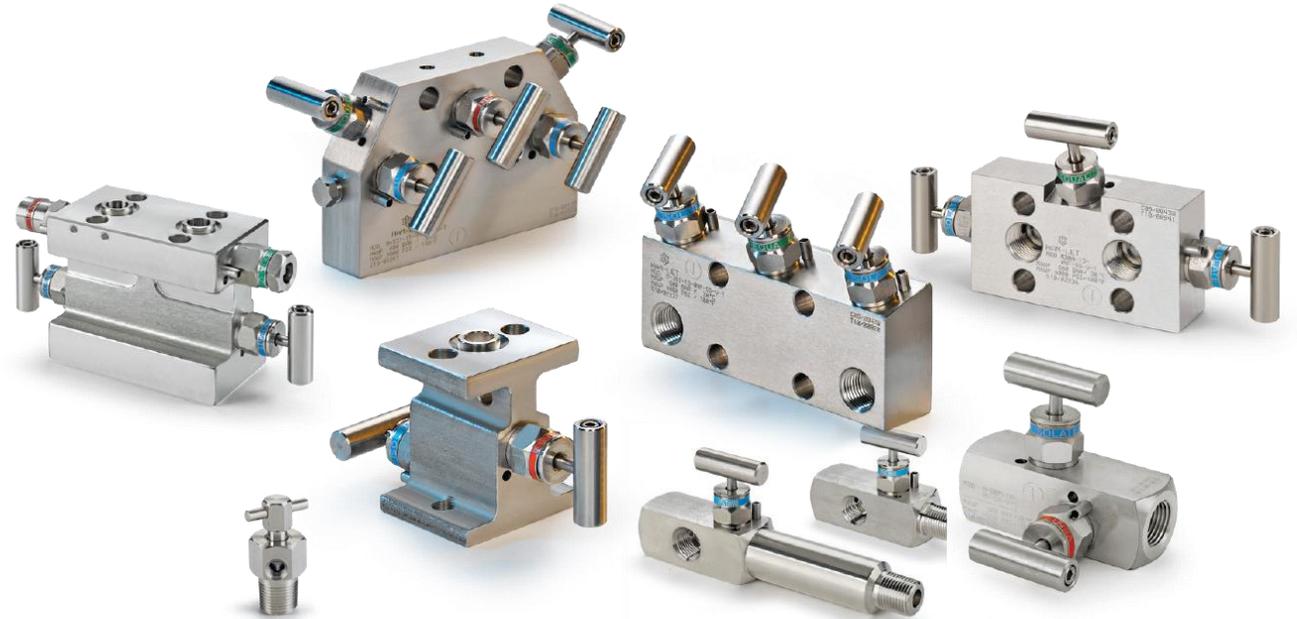
MANIFOLDS INSTRUMENT ENCLOSURES

UCT Fluid Solutions offers a broad line of 1,2,3,4,5 instrument manifolds, all available in a wide range of materials that are fully compatible with the requirements of the Oil & Gas, Petro-Chemical and Chemical industries.

In addition to this standard range of products, UCT has over 3,500 different types of valves and manifolds available.

1|2|3|4|5

WAY MANIFOLDS



Our Solutions in the world of **Hydrogen**



Electrolysis



LET-LOK FITTINGS

- Pattern – Union, Elbow, and Tee
- Size – 3/4" and 1"



PROCESS VALVES

- Series - H-700, H6800, H-300U
- Pattern – Straight and Angle
- Size range 3/4", and 1"



Storage

Hydrogen Storage



For 350 bar

Let-Lok fittings | H6800 series

Hydrogen Gas Station



Above 750 bar

HHP C&T fittings | HHP Needle valves

Hydrogen Powered Vehicles



Let-Lok and PIPELINE fittings

With EC79 certification



Refueling Station



>350 bar

- Products – Tee, Elbow, Union, Cross, Adapters, Plug valve and check valve
- Connections – Compressor fittings and PIPELINE
- Size – the most common 3/8"

>900 bar

- Products – Tee, Elbow, Union, Cross, Adapters, Nipples, DBB and Needle valve
- Connections –C&T
- Size – 1/4", 3/8", 9/16", 3/4" and 1"



Supporting Industry Challenges

SAFETY & RELIABILITY

REGULATORY REQUIREMENTS

HIGH PRESSURE GAS HANDLING



Challenge:

Safety & Reliability

- Meet stringent validation and verification requirements
- Maintain lifecycle of consistent, stable performance
- Reduce reliability failures
- Reduce environmental footprint



Solution: In-house Testing

- ✔ Helium leak test
- ✔ Make/ remake tests including interchangeability
- ✔ Thermal shock test
- ✔ Vibration test
- ✔ Hydraulic pressure and burst test



Solution: ISO 15848-1 Certified

Our Ball valves, Needle valves, and Manifold series are certified to **ISO 15848-1**. Ensuring the lowest fugitive emissions rates and maximum safety for hydrogen handling.



**HIGH PERFORMANCE
BALL VALVES H-6800**



**COMPACT ONE PIECE
BALL VALVES H-800**



**THREE-PIECE
BALL VALVES H-500**



**TWO-PIECE
BALL VALVES H-700**



**INTEGRAL-BONNET
NEEDLE VALVES
H-300U**



Solution: Ham-Let EF Series

FUGITIVE EMISSIONS FREE SHUT-OFF VALVE

- ✓ Encapsulated design
- ✓ Reduces maintenance costs
- ✓ Eliminates hazardous releases
- ✓ ISO-15848 certified for low fugitive emissions



Challenge: Regulatory Requirements

As a path forward to a hydrogen future, efforts are made to accommodate stringent global regulations

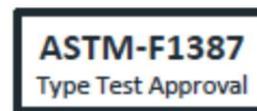
- Increase in industry demands, EC-79
- Optimize performance
- Reduce environmental footprints



Solution: Performance Commitment

High-performance solutions that meet international regulations for the hydrogen industry

- ✓ Tube and Pipe fittings are EC79 certified for onboard vehicles
- ✓ 100% Factory testing
- ✓ High-grade austenitic stainless steel-media compatibility and hydrogen embrittlement aspects
- ✓ Material traceability
- ✓ Certifications

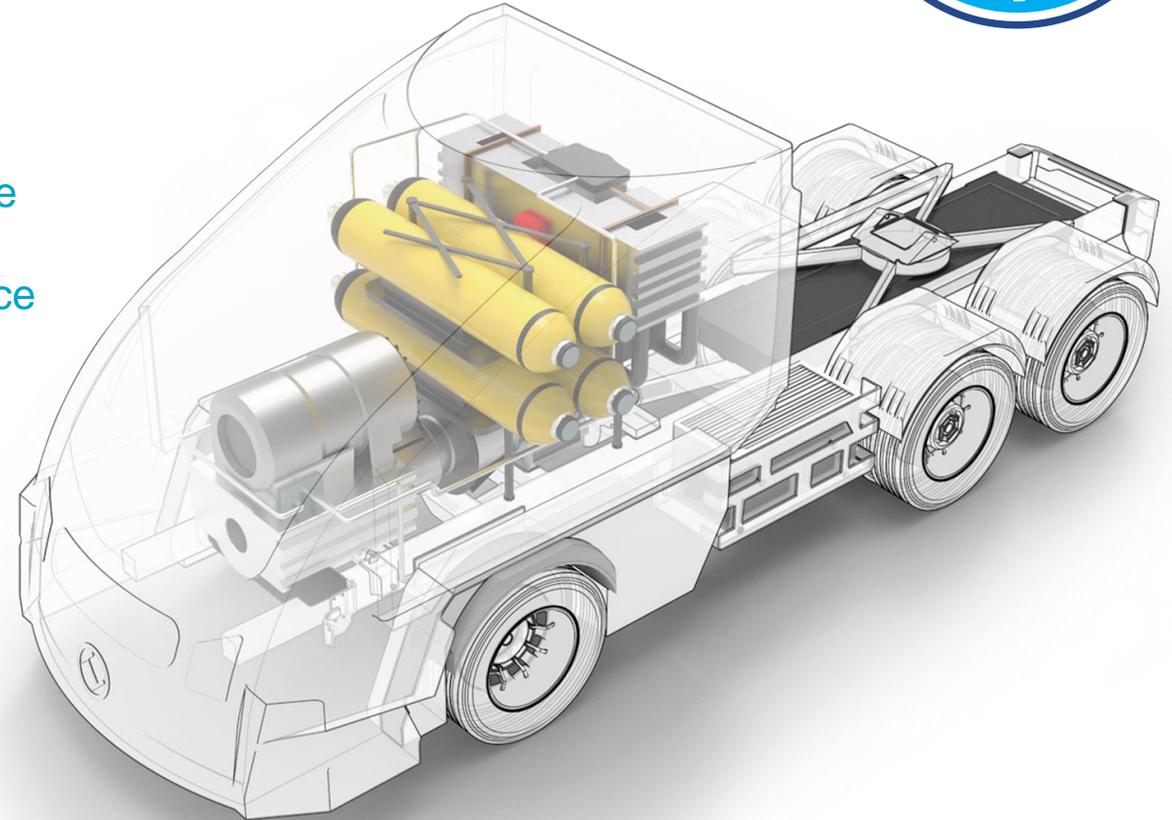


Solution: EC-79 Certified

A major objective of the global trend to reduce carbon emissions is to commercialize hydrogen fuel cells for vehicles.

To ensure the safety of hydrogen powered mobility systems, European regulation EC-79 was enacted for components and systems intended for installation on hydrogen-powered vehicles.

- ✓ We offer dedicated tube and pipe fittings that are EC79 certified.
- ✓ Our products undergo rigorous tests to ensure hydrogen compatibility and corrosion resistance



Challenge:

High Pressure Gas Handling

Hydrogen is an ultra-light gas that occupies a substantial volume under standard conditions of pressure. In order to store and transport hydrogen efficiently, this volume must be significantly reduced

- Increase hydrogen volume in a given space
- Reduce fueling time



Solution: High Pressure Product Line

- ✓ Low maintenance
- ✓ High life cycle
- ✓ High durability
- ✓ High flow rate value
- ✓ Smooth operation and lower torque
- ✓ 100% factory tested
- ✓ Internal stem-lifting barrier prevents stem blowout



HHP



**UCT Fluid Solutions
Geared to support your
business!**

**What's your
next
challenge?**

- ✓ Global presence
- ✓ Quality you can trust
- ✓ One-stop-shop
- ✓ Leading by innovation
- ✓ Custom solutions
- ✓ Complete product portfolio





Thank You

