

JC
VALVES

A new horizon
for industrial valves

H₂ JC Hydrogen Valve
SEAL



Global Supply Line are sole JC agents for Australia, New Zealand & Papua New Guinea. www.globalsupplyline.com.au

We Make Valves Since 1968

H2SEAL is a brand new product range of JC Fabrica de Válvulas S.A.U. Established in 1968, JC is a multinational company specialised in the manufacture and sale of high quality industrial valves.

The expertise and know how acquired over the years coupled with the continued investments in the design of valves, has made JC a world renowned company in the field of valve applications.

TTV-JC World Wide

TTV-JC provides world wide coverage thanks to the strategic locations of its factories and offices in Spain (Headquarters), Canada, Middle East, Singapore, China, Russia, India, Brazil, Mexico and South Africa.

Quality Assurance

JC Valves are designed and produced to meet the major international standards and we take great care and put a lot of emphasis on QUALITY, which provides our customers with a total guarantee and trouble free operation of their process.

And in addition, we take great care to make our facilities and our products Environment friendly.

Global Services

JC Fabrica de Válvulas S.A.U offers its customers a world wide service, from technical advice to the right valve selection up to the design and manufacture of custom built valves to meet special service requirements.

Our R+D department is always ready to find solutions for severe applications and our global distribution network offers quick availability of JC valves and an efficient after sales service.

Market Sectors

JC develops and designs valves for all applications, but the main focus is in Oil & Gas, Chemical, Petrochemical, Pulp & Paper and Energy sectors.



Oil & Gas



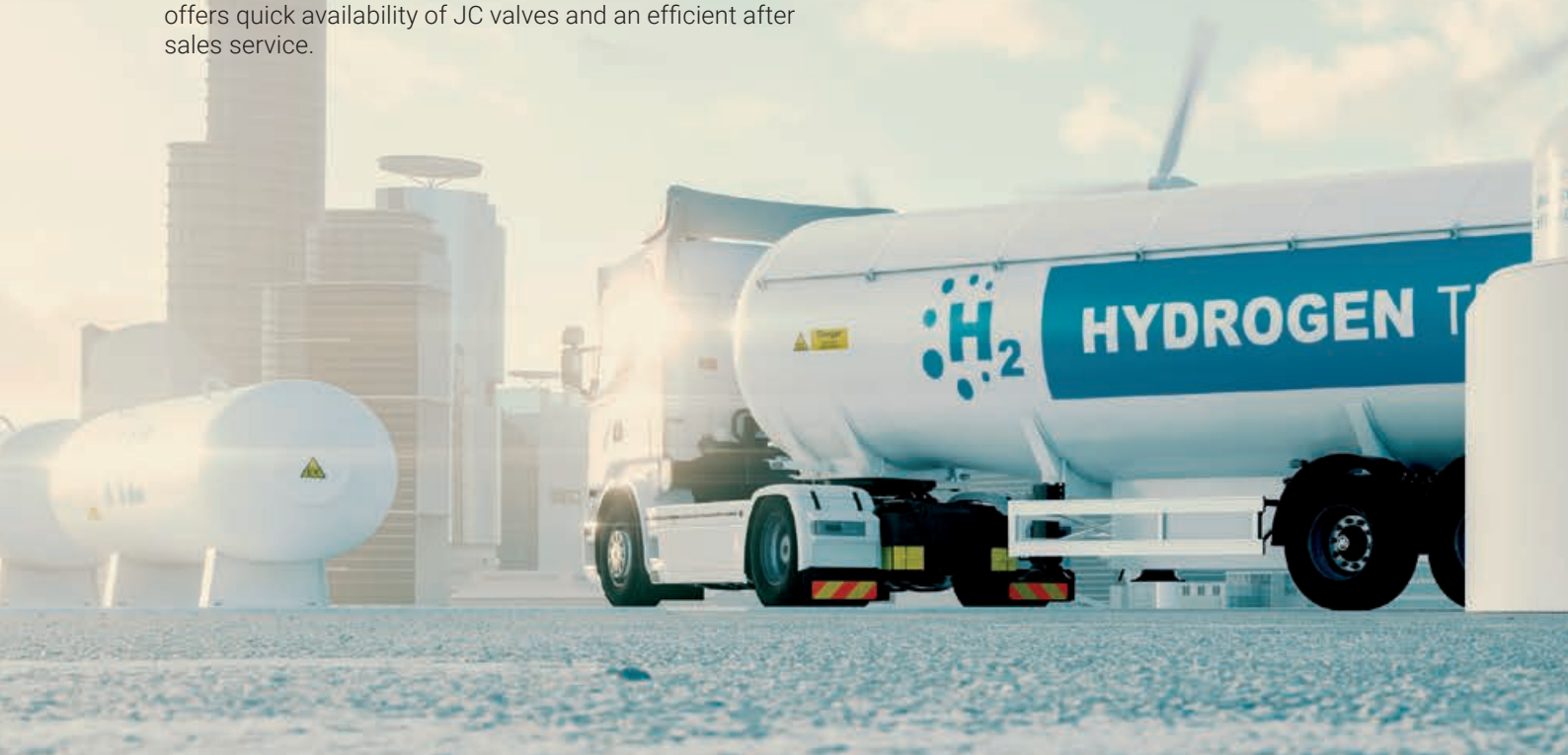
Chemical
& Petrochemical



Pulp & Paper



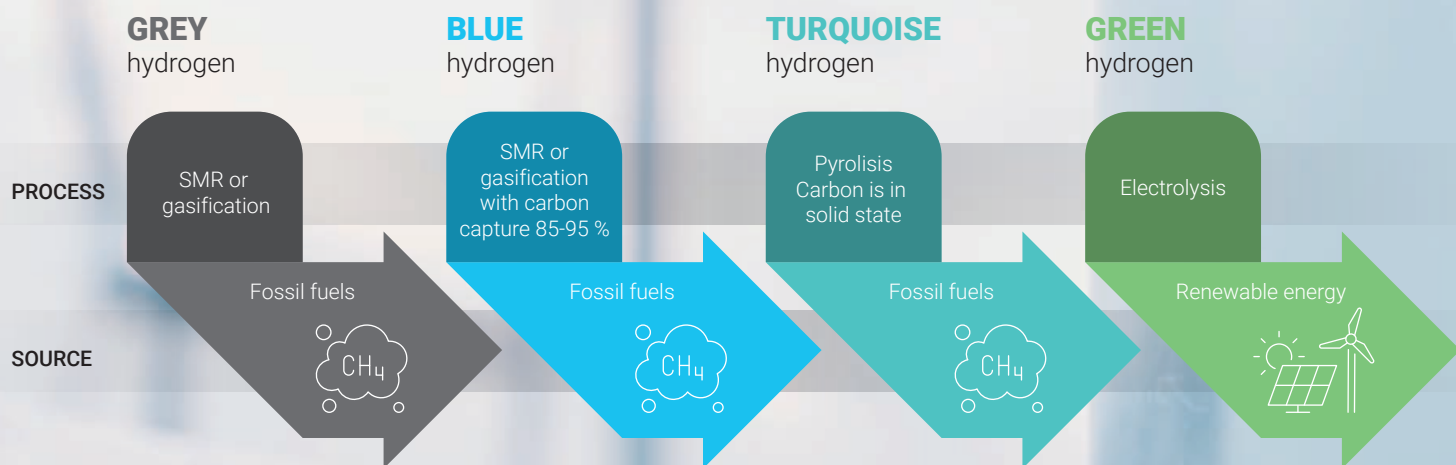
Energy



Ball valves for hydrogen industry and energy

There is a growing international consensus that clean hydrogen will play a key role in the transition to a sustainable energy future and JC is part of this transition leading the ball valve market in the new Hydrogen applications.

The expertise gathered for over 50 years supplying ball valves for the production of Hydrogen from non-renewable sources, give us the knowledge and capacity to develop the most dedicated and specific range in the ball valve market for the New Hydrogen Era: **H2SEAL JC Hydrogen Valve.**



SMR = Steam Methane Reforming.

Types of hydrogen production

Until very recently, almost all hydrogen gas was produced from non-renewable sources emitting high amounts of CO₂. This is called Grey or Black Hydrogen. To make this production more sustainable, there are currently some technologies that allow the carbon emissions to be captured, stored, and reused still using fossil fuels. These applications

are known as Blue Hydrogen. In Turquoise Hydrogen, even using Methane as feedstock, the carbon output is in solid form, not as CO₂ that can be emitted to the atmosphere. Yet we believe the future will be Green Hydrogen, where Hydrogen is basically produced through Electrolysis from Renewable energy being fully carbon neutral.

Product features

H₂ SEAL

JC Hydrogen Valve

Safety is crucial due to the explosion potential in such high-pressure conditions and the emissions must be eliminated.

In JC we are committed to support the industries to overcome current challenges and to adopt as soon as possible the new and more demanding technologies for Hydrogen, focusing on Blue, Turquoise and Green applications.

Following this objective, we have developed the H2SEAL Hydrogen Valve. This is a brand new product range and a revolutionary concept, adapting all the requirements from the most demanding hydrogen applications regarding the design, materials, production and testing.

We have a specific design covering from ½" to 24" valves, from low pressure up to 500barg.



Technical Features

- H2Seal Double Sealing packing to minimize emissions and maintenance
- Design pressure up to 500barg
- Gas tight
- Flanged and Screwed Ends
- Split Body or Monoblock construction
- Soft and Metal Seated
- Special internal machining to avoid Hydrogen Blistering or Embrittlement
- Tested with Hydrogen

Approvals

- Fugitive Emission Class A as per ISO 15848-1
- Marine DNV Type Approval
- Fire Safe API 607, ISO 10497, API 6FA
- ATEX 2014/34/EU- (II2GD)
- PED 2014/68/EU - CE marking



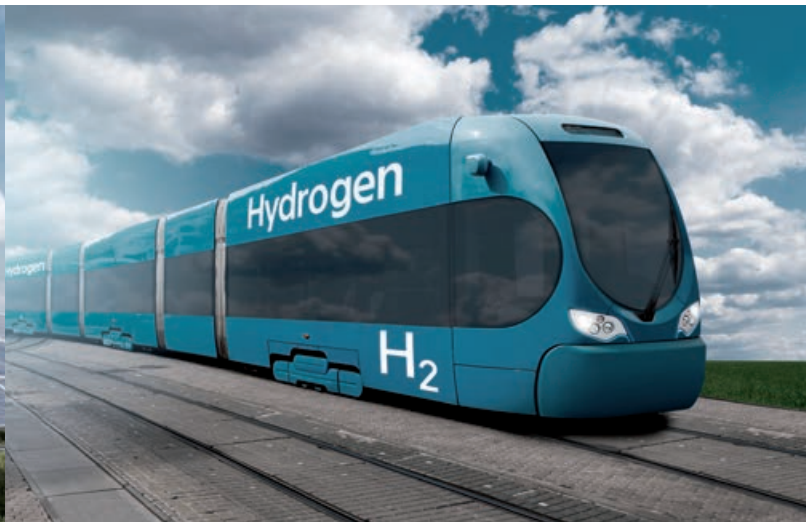
Applications

According to the Hydrogen Roadmap issued by the European Union, Hydrogen is the best choice for at-scale decarbonization of the gas grid, some mobility applications and industries that can burn hydrogen to produce high-grade heat. At JC, based on our experience,

our R+D strategy is focused on the industrial and gas grid applications. Once the Hydrogen is produced with different processes depending on the colour of Hydrogen, it should be transformed, transported and stored before the End Use.



Hydrogen end uses covered with H2Seal range.



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www.jc-valves.com

Member of: **AeH₂**
ASOCIACION ESPAÑOLA
DEL HERRIZADO

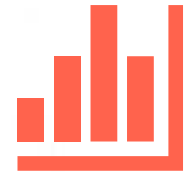
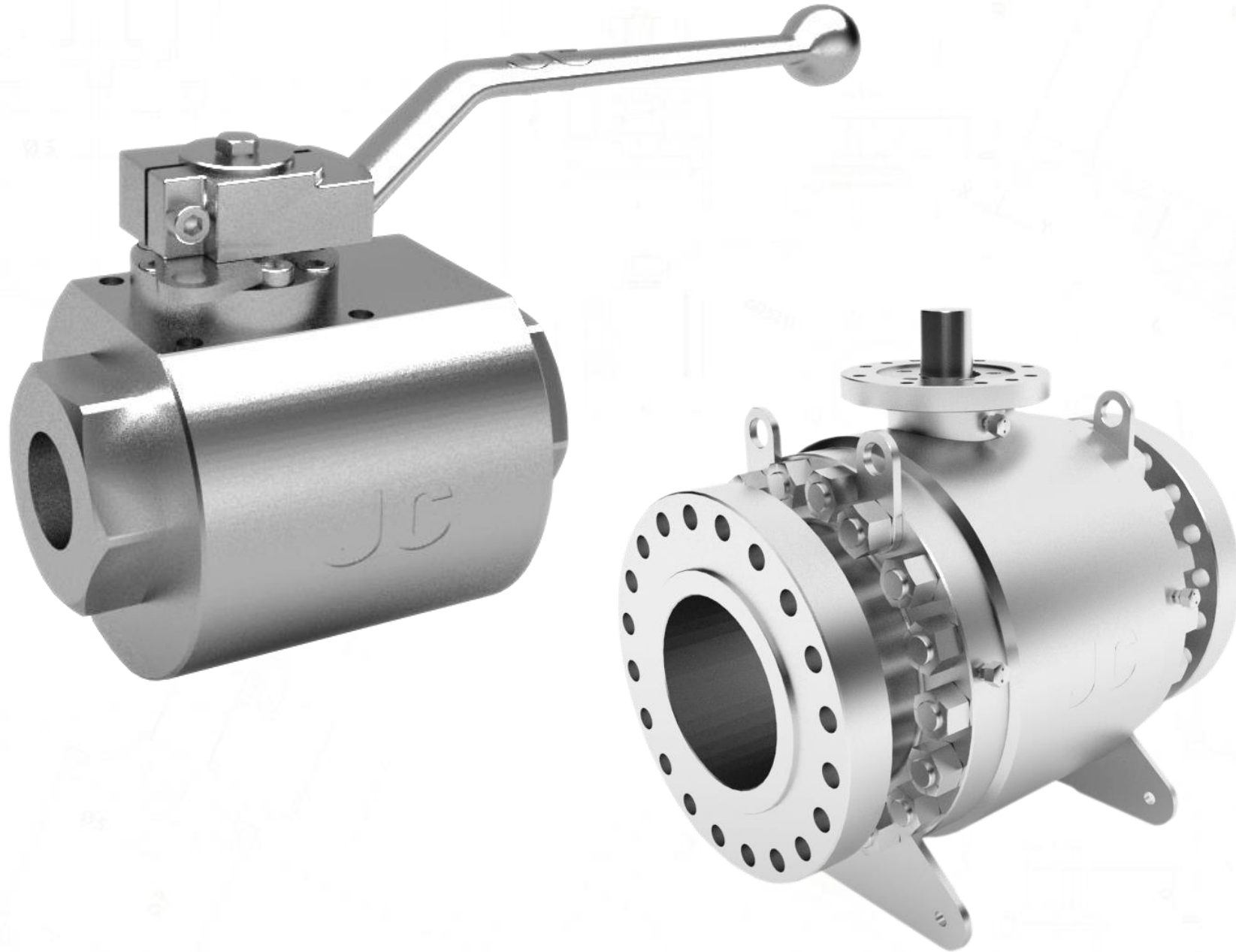
H2SEAL is a trademark of JC VALVES.



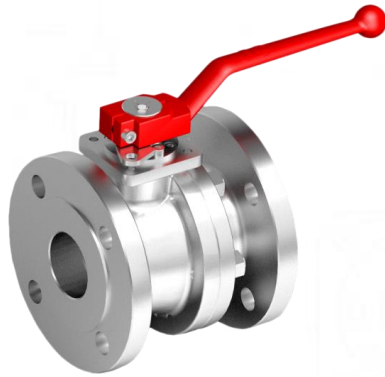
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H2SEAL PRESENTATION

H₂SEAL JC Hydrogen Valve



Low Pressure



Up to 300#

Medium Pressure



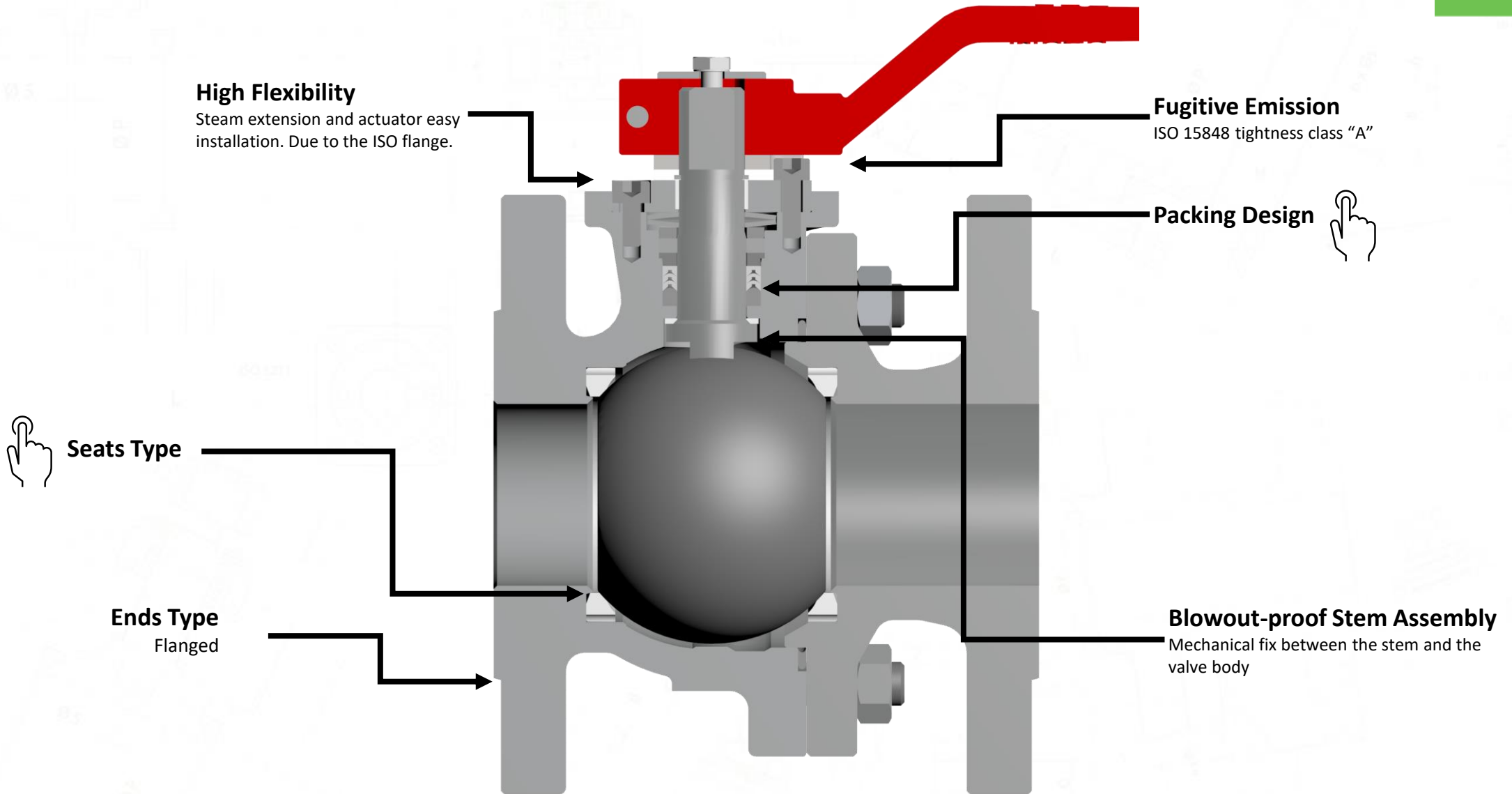
From 600# to 900#

High Pressure

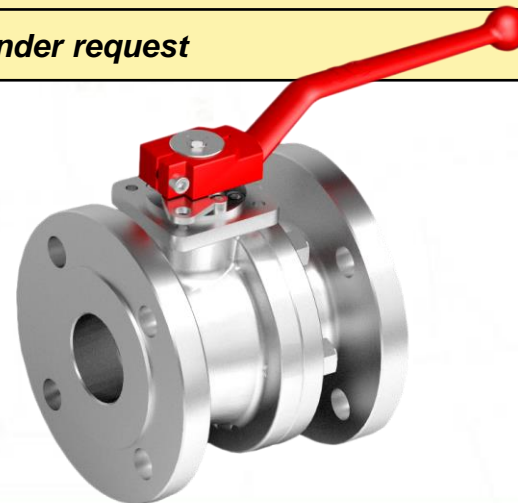


From 1500# to 2500#

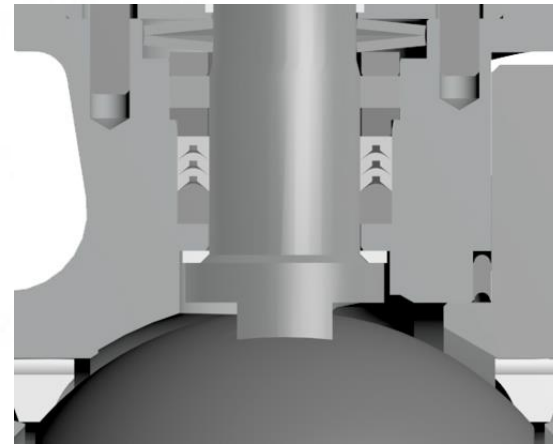
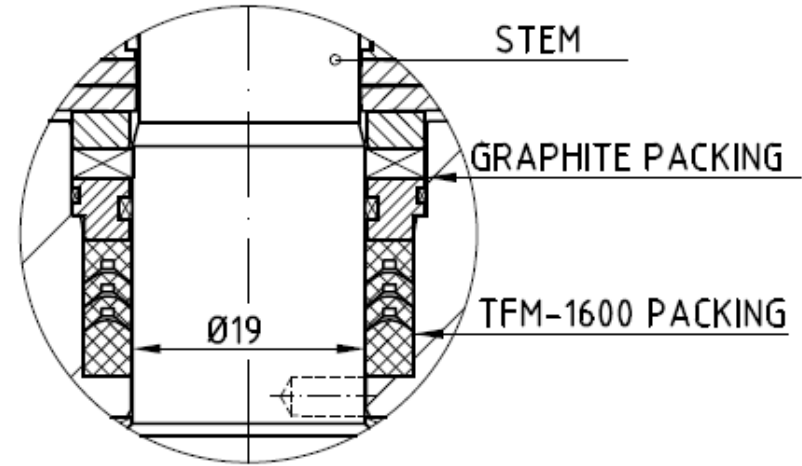
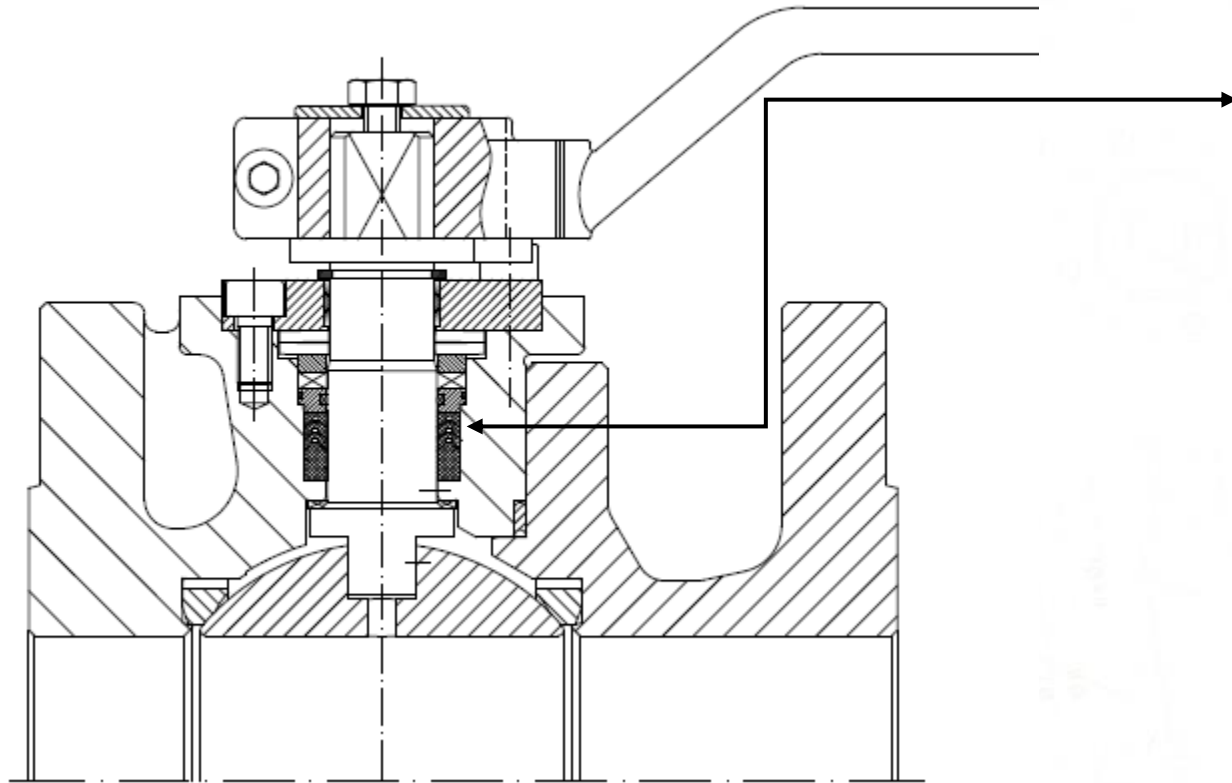




Low Pressure	1/2"	3/4"	1	1 1/2"	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
Class 150/PN16	Split Body Flanged Design									Trunnion 3PC Flanged Design						
Class 300/PN40																
	Delivery 10 – 12 weeks										Delivery 20 – 22 weeks					
Carbon Steel & Stainless Steel construction																
Full Bore & Reduced Bore																
Metal Seated up to 24"																
Other constructions and materials under request																



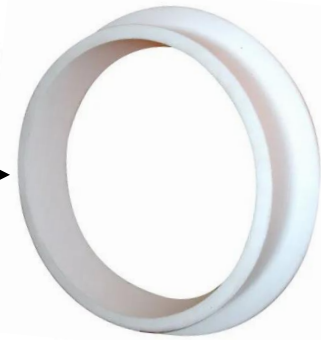
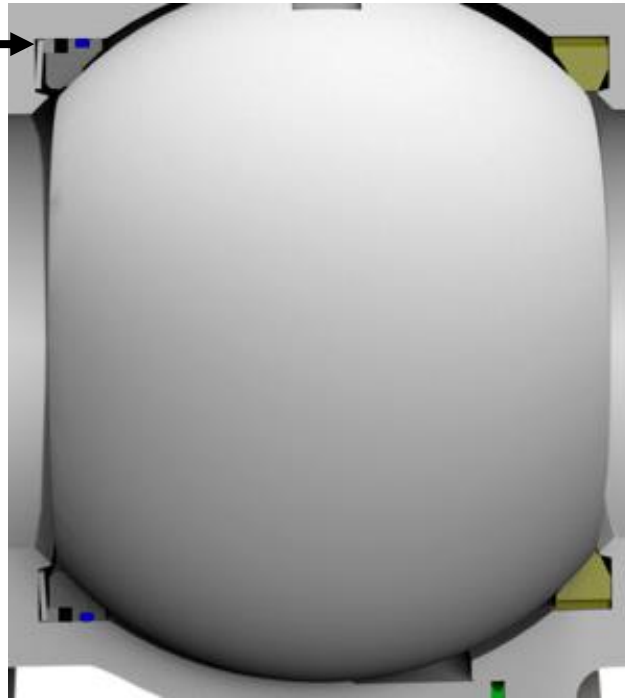
TFM Packing + Graphite: Low pressure





Metal seated

- From 260°C
- Abrasive media
- Leakage rate A.
- TCC as standard CCC under request



TFM 1600

- Up to 230°C
- High heat and chemical resistance
- Reduce cold flow, porosity, permeability.
- Smooth surfaces
- Reduce torque.
- Viton® and HNBR are rated A which is safe to use with hydrogen





Seats Type

Ends Type

High Flexibility

Steam extension and actuator easy installation. Due to the ISO flange.

Packing Design

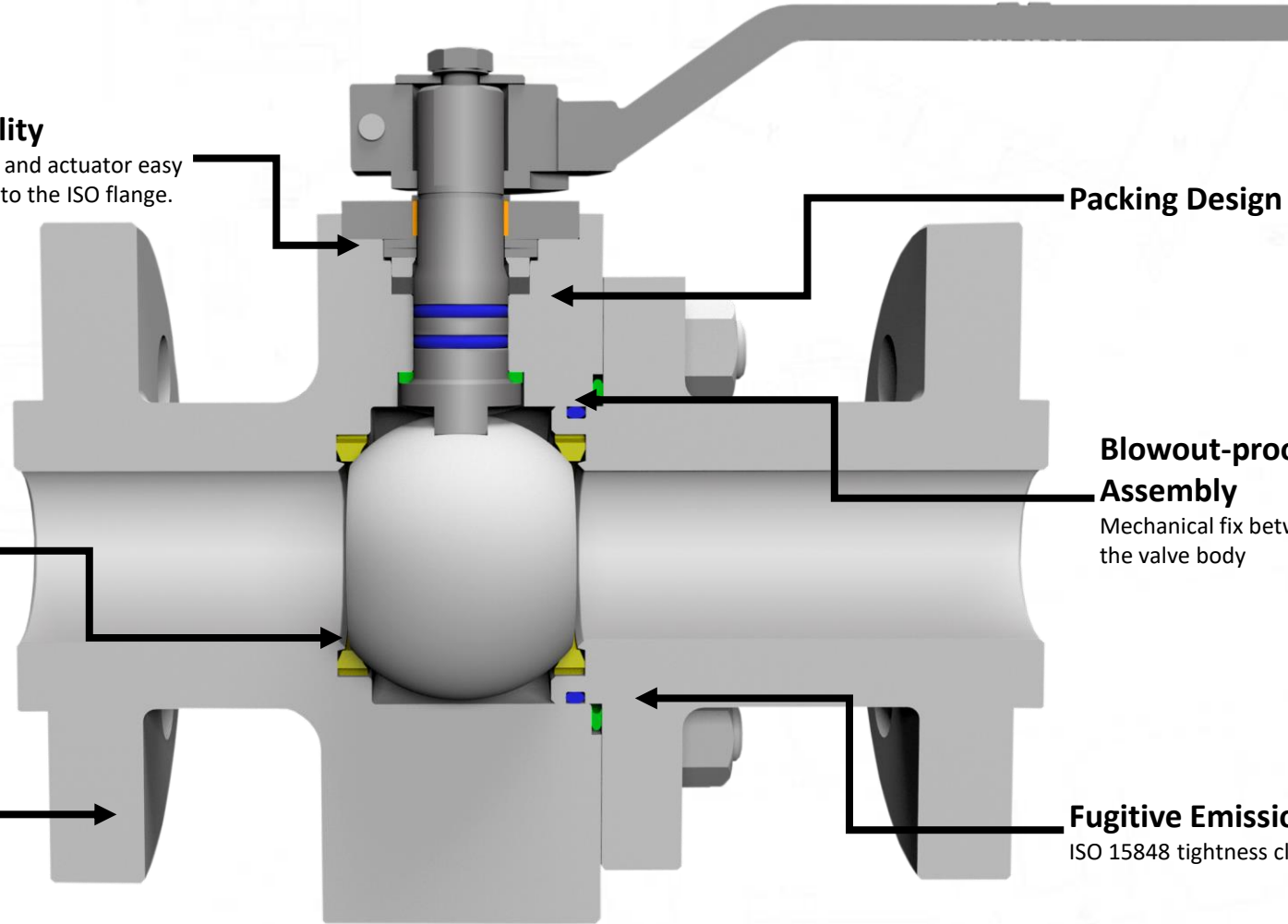


Blowout-proof Stem Assembly

Mechanical fix between the stem and the valve body

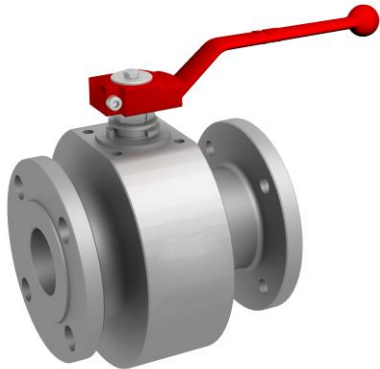
Fugitive Emission

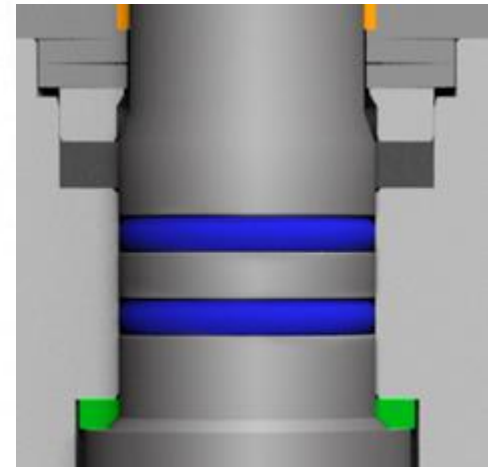
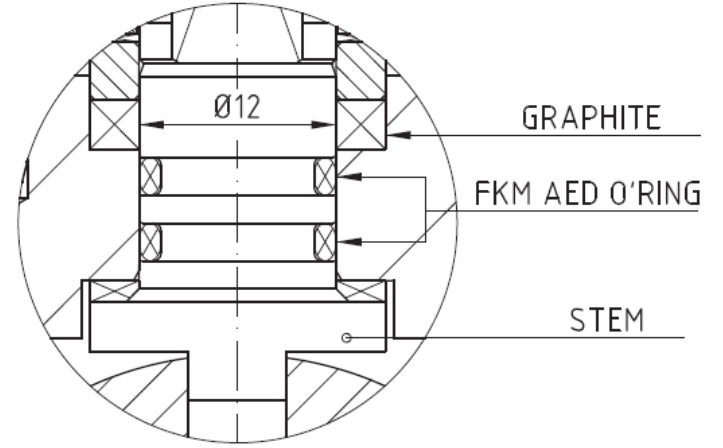
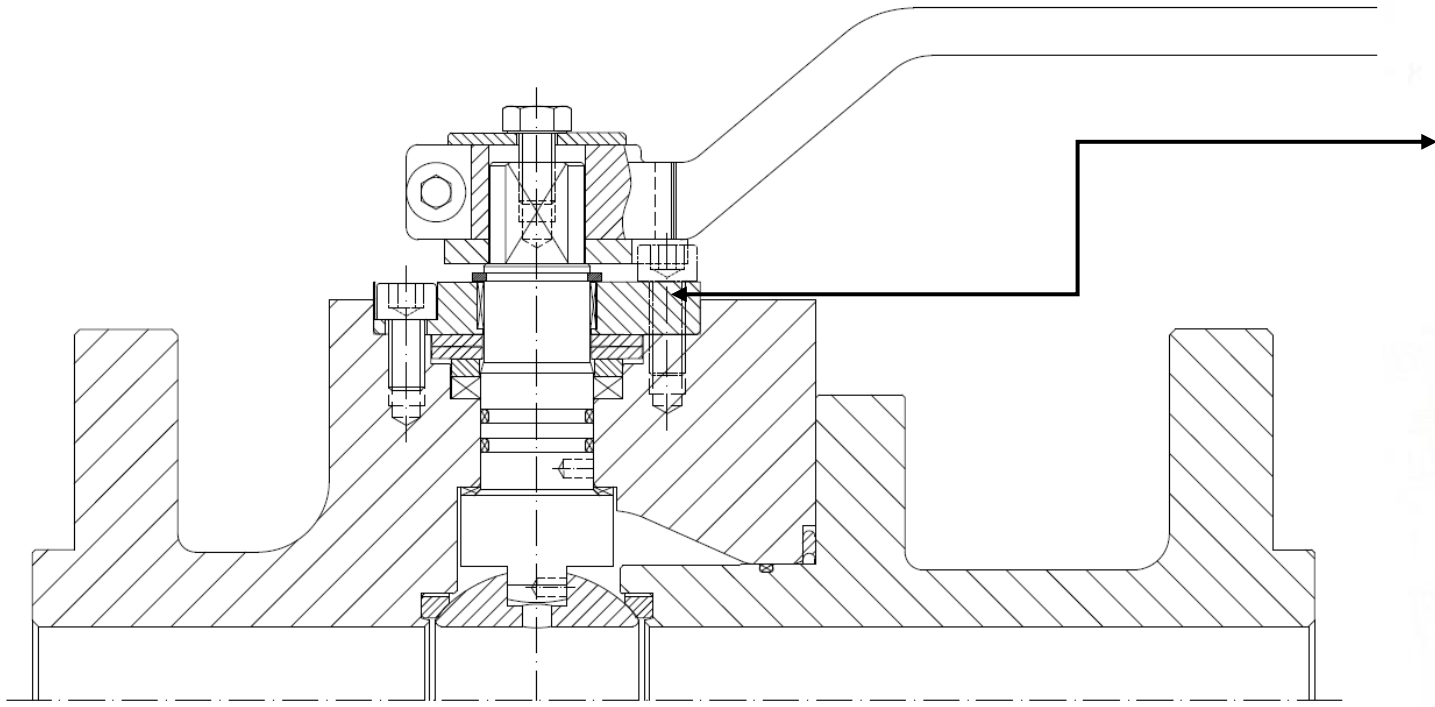
ISO 15848 tightness class "A"





Medium Pressure	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
Class 600	Forged Split Body Flanged Design					Trunnion 3 PC Flanged Design											
Class 800	Monoblock – Threated/Welded Design																
Class 900	Forged Split Body Flanged Design					Trunnion 3 PC Flanged Design											
	Delivery 10 – 12 weeks						[Hatched Area]			Delivery 20 – 22 weeks							
<i>Carbon Steel & Stainless Steel construction</i>																	
<i>Full Bore & Reduced Bore</i>																	
<i>Metal Seated up to 24"</i>																	
<i>Other constructions and materials under request</i>																	

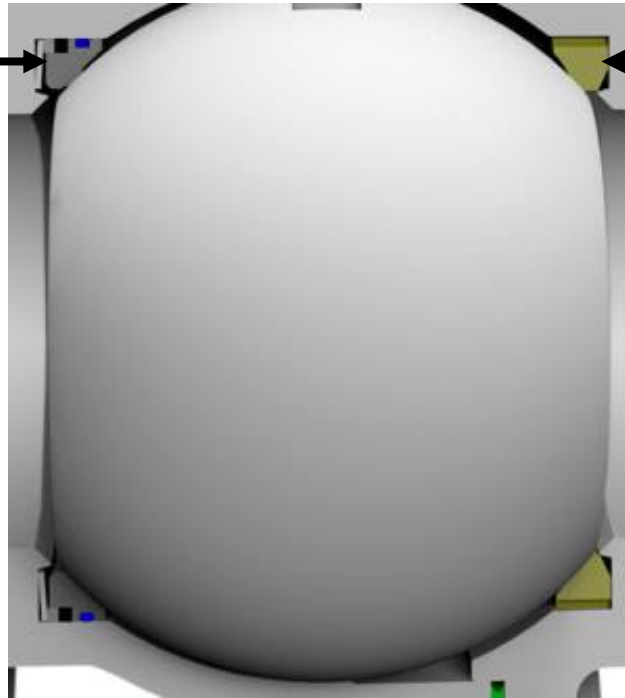






Metal seated

- From 260°C
- Abrasive media
- Leakage rate A.
- TCC as standard CCC under request



RPTFE/DEVLON

- Up to 250°C/120°C
- High heat and chemical resistance.
- Low porosity and permeability.
- Smooth surfaces





High Flexibility

Steam extension and actuator easy installation. Due to the ISO flange.



Seats Type

Ends Type

Packing Design



Blowout-proof Stem Assembly

Mechanical fix between the stem and the valve body

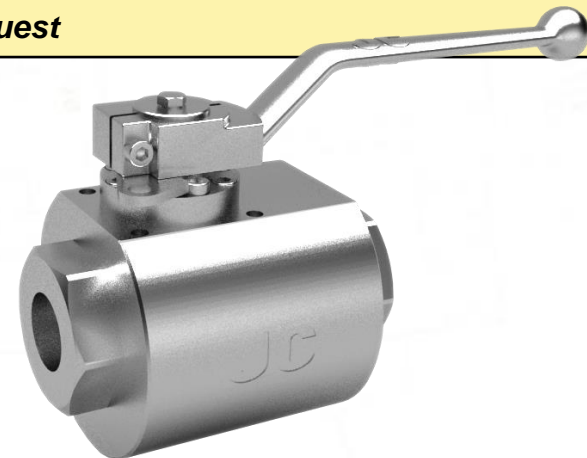
Fugitive Emission

ISO 15848 tightness class "A"

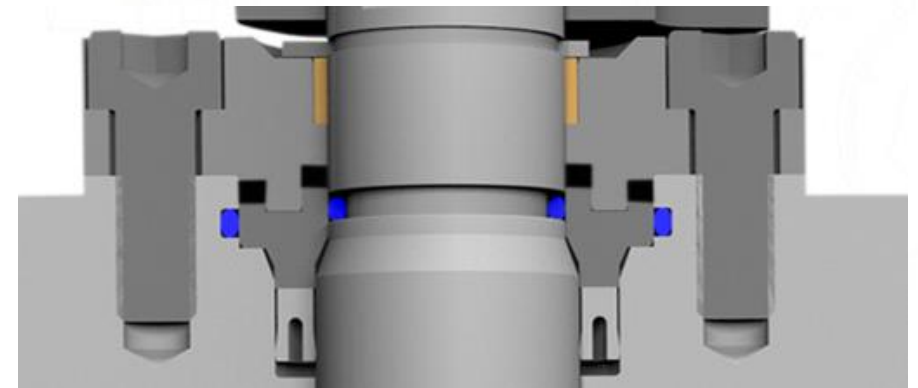
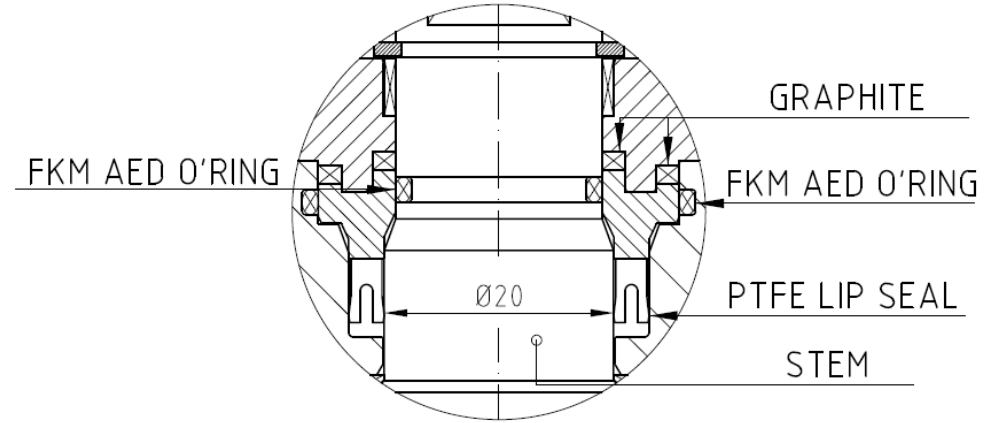
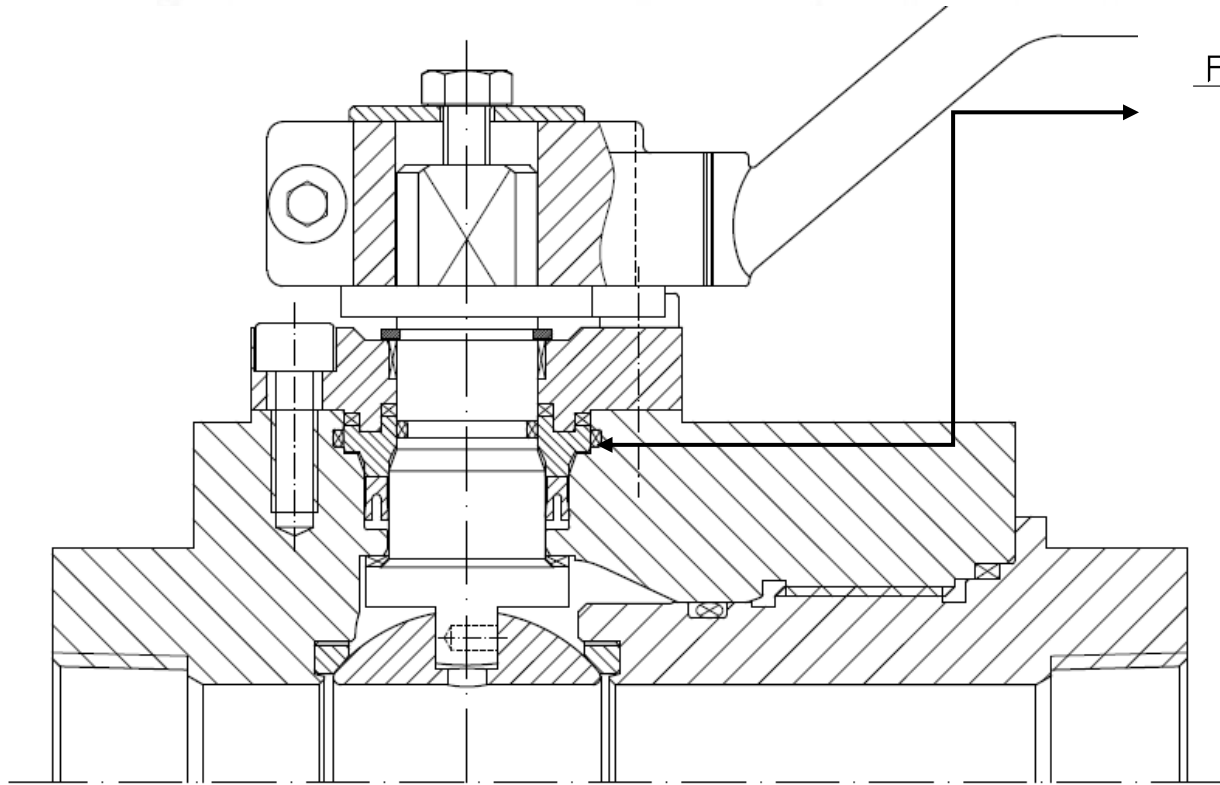


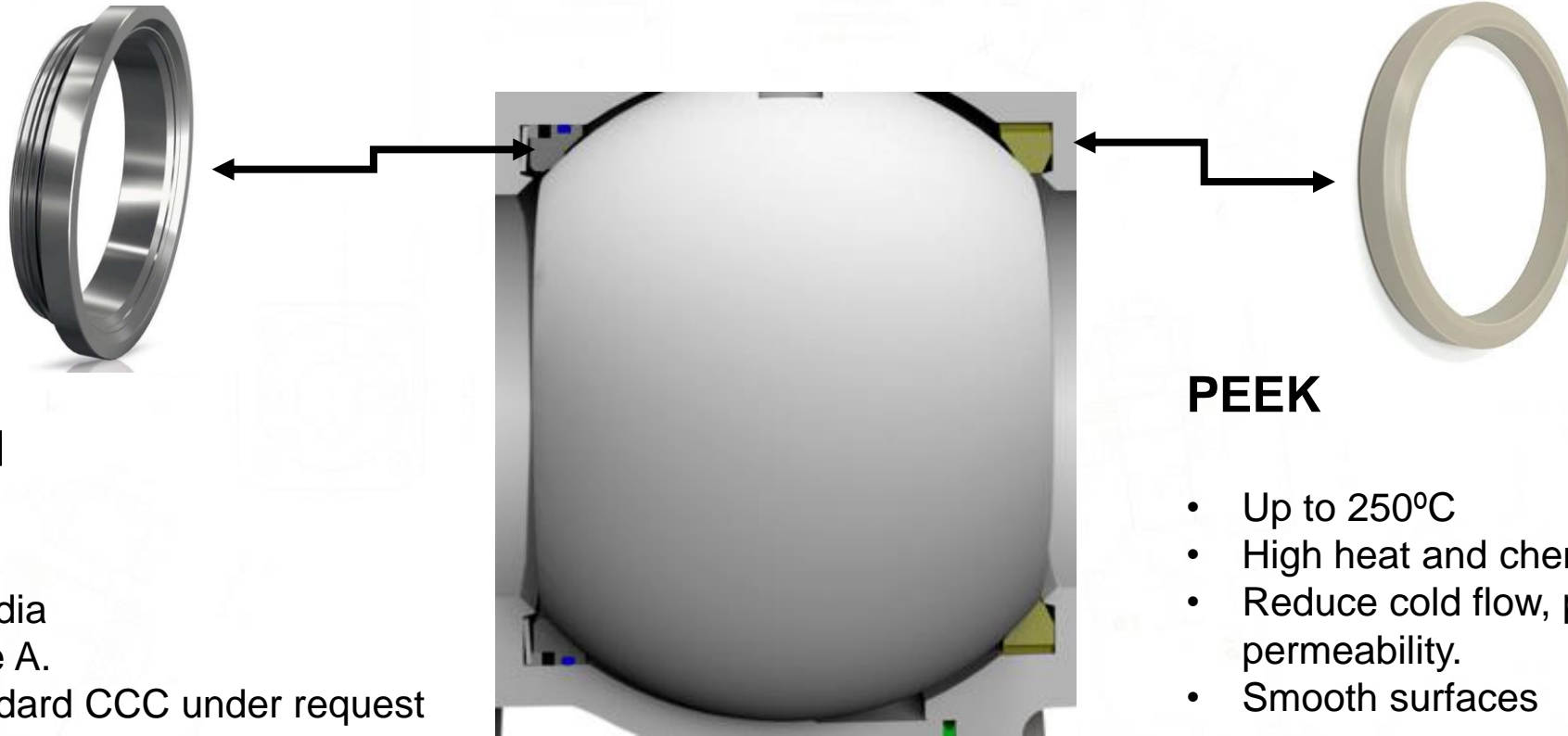


High Pressure	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	3"	4"	6"	8"	10"	12"
Class 1500	Monoblock – Threated/Welded Design Split body - Flanged					Trunnion 3 PC Flanged Design						
Class 2500 (500 bar)												
	Delivery 10 – 12 weeks											
<i>Stainless Steel Construction</i>												
<i>Full Bore & Reduced Bore</i>												
<i>Metal Seated up to 12"</i>												
<i>Other constructions and materials under request</i>												



Lipseal Packing + O'ring





Metal seated

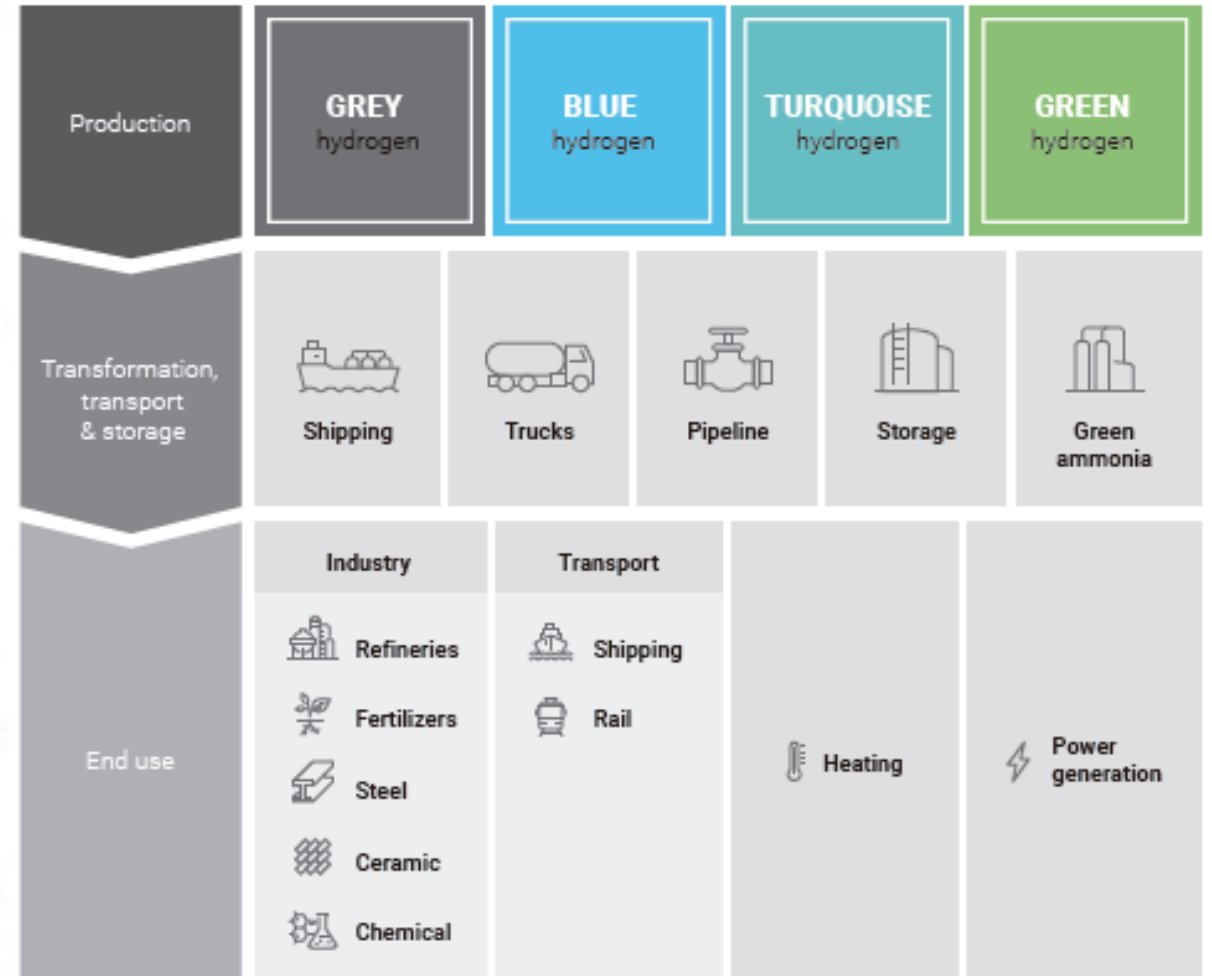
- From 260°C
- Abrasive media
- Leakage rate A.
- TCC as standard CCC under request

PEEK

- Up to 250°C
- High heat and chemical resistance
- Reduce cold flow, porosity, permeability.
- Smooth surfaces

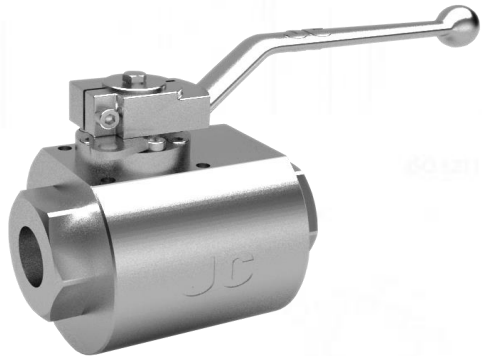


A revolution in the energy and industrial sector to reduce emissions and bring our societies closer to a more sustainable future



Hydrogen end uses covered with H2Seal range.





ATEX
2014/34/EU-
(II2GD)

PED 2014/68/EU -
CE marking

H2Seal packing
to minimize
emissions and
maintenance

Design pressure
up to 420barg /
500barg*

Fugitive
Emission Class
A as per ISO
15848-1 (for the
whole range)*

Fire Safe API
607, ISO 10497,
API 6FA

Tested with
Hydrogen
(Prototypes will
be sent to a
specialized
laboratory*)

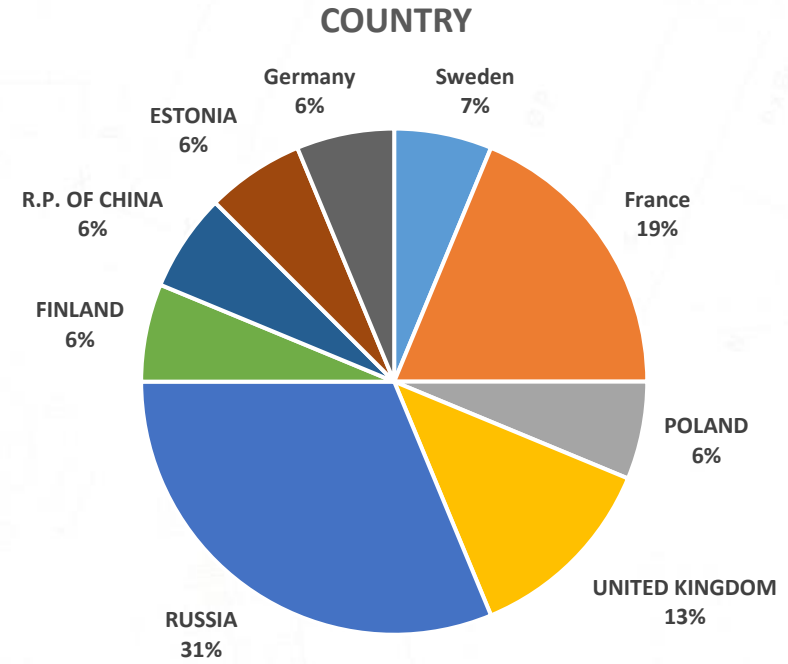
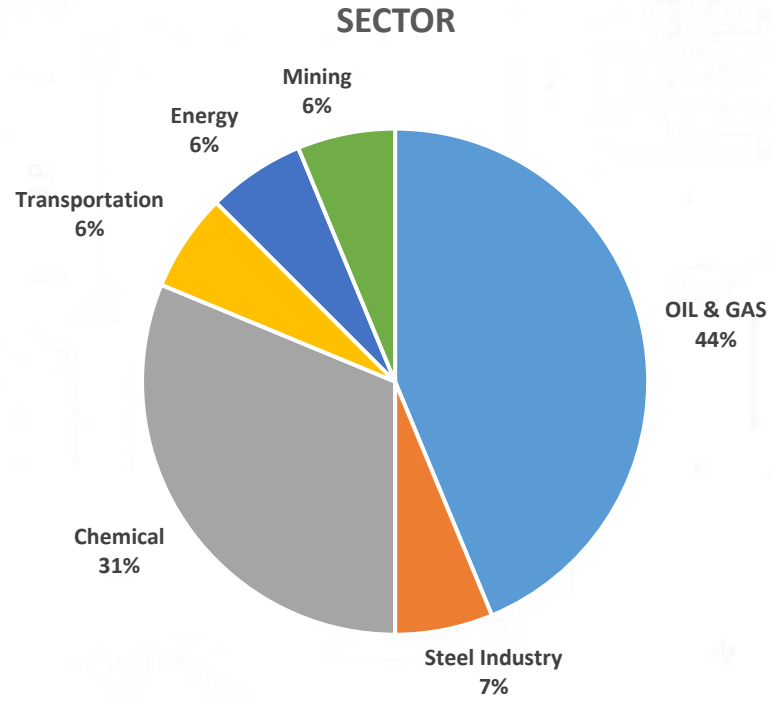
Special internal
machining to
avoid Hydrogen
Blistering or
Embrittlement

Flanged,
Threaded or
Welded Ends /
Split Body or
Monoblock / Soft
and Metal Seated

Gas tight

H²SEAL JC Hydrogen Valve





AeH₂

ASOCIACIÓN ESPAÑOLA
DEL HIDRÓGENO

<https://www.aeh2.org/en/socios/jc-fabrica-de-valvulas-s-a-u/>



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ASOCIACIÓN ESPAÑOLA DEL HIDRÓGENO

JC FÁBRICA DE VÁLVULAS, S.A.U

SMEs with more than 50 employees

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Descripción de la compañía

JC Fábrica de Válvulas S.A.U is a multinational company specialized in the manufacture and sale of high quality industrial valves under the name of JC VALVES, with own presence in 7 countries. Since 1968, we have grown and evolved to become part of a large group: TTV-JC VALVE GROUP. The experience we have gathered for over 50 years designing, developing and producing valves mainly for the Oil & Gas, Petrochemical, Chemical and Energy sectors, give us the knowledge and strength to continue innovating and investing in new products. Aware of the current scenario and its importance, our efforts and R+D strategy is focused on the new Hydrogen applications. In JC VALVES we want to support the industries to overcome current challenges and to adopt as soon as possible the new and more demanding technologies for Hydrogen. For this reason, we have developed the first dedicated range of ball valves for this market.

Principales líneas de negocio de la entidad

- Design, development and manufacture of industrial valves.



PROJECTS FOR HYDROGEN APPLICATIONS (2018-2023)

YEAR	PROJECT NAME	EPC	END USER	COUNTRY	SECTOR	OPERATOR	FLUID
2018	NH3 TERMINAL	PROTON VENTURES	EUROCHEM	ESTONIA	CHEMICAL	Actuated	Ammonia
2019	Catalytic Systems	***	GAZPROMNEFT ONPZ	RUSSIA	OIL & GAS	Actuated	Ammonia, gas, nitric acid, etc...
2019	Hydrotreatment and deparaffination of diesel fuel	***	GAZPROMNEFT OMSK REFINERY	RUSSIA	OIL & GAS	Actuated	Hydrogen
2019	Catalytic Systems	***	GAZPROMNEFT	RUSSIA	OIL & GAS	Actuated	Ammonia, water, air, ammonium nitrate
2019	NPG Expansion, n° 17021	***	BASF-YPC	R.P. OF CHINA	OIL & GAS	Manual	hydrogen, oxygen
2019	NiSu PROJECT	SWECO	TERRAFAME	FINLAND	Mining	Actuated	Ammonia, oxygen, water, cobalt, nickel
2020	Hydrotreatment and deparaffination of diesel fuel	***	GAZPROMNEFT OMSK REFINERY	RUSSIA	OIL & GAS	Manual	GAS WITH HC, H2O, HS, HYDROGEN
2020	OMSK REFINERY	***	Gazpromneft ONPZ	RUSSIA	OIL & GAS	Actuated	Hydrocarbon, hydrogen, fuel gas
2020	Rotterdam Plant	***	EMERALD KALAMA CHEMICAL LIMITED	UNITED KINGDOM / NETHERLANDS	CHEMICAL	Manual	Hydrogen
2020	La Mède biorefinery	AIR LIQUIDE	ENGIE	FRANCE	CHEMICAL	Manual	Hydrogen
2020	Project HYPE (Paris Taxis)	AIR LIQUIDE	HysetCo	FRANCE	TRANSPORTATION	Actuated	Hydrogen
2021	CO2 Capture, Concentration, Purification & Liquefaction Plant	LINDE	BOC North Tees Hydrogen	UNITED KINGDOM	CHEMICAL	Manual	CO2 / Hydrogen
2021	Black Point	***	SIEMENS	GERMANY / HONG KONG	ENERGY	Manual	Hydrogen
2021	Liquid CO2 Production - Wroclawek	***	LINDE	POLAND	CHEMICAL	Manual	CO2 / Hydrogen
2021	Hydrogen Pipe Lille (Pilot)	***	AIR LIQUIDE	FRANCE	OIL & GAS	Manual	Hydrogen
2022	Nortegas H2	***	***	SPAIN	OIL & GAS	Manual	Hydrogen
2022	HPU multiplhy Project	***	NESTE	AUSTRIA	ENERGY	Actuated	Hydrogen
2023	H2O burner	***	Ovako AB, Hofors	SWEDEN	STEEL INDUSTRY	Actuated	Hydrogen



Project References

Neste 2022 NESTE OIL

Product Type:

- 25u Floating Ball Valves
- 8u Trunnion Ball Valves

Country

- Austria

Medium

- Hydrogen 99%

Extra information

- Floating Ball Valves
- Trunnion Ball Valves
- Low pressure



Black Point Power Station 2022

Product Type:

- 2u Floating Ball Valves
class 1500/BW ends

Country

- China

Medium

- Hydrogen 99%

Extra information

- Test valves for a
future H2 Plant



Project References

Ovako 2023

OVAKO

Product Type:

- 34u Floating Ball Valves

Country

- Sweden

Medium

- Hydrogen 99%
- Steel Plant

Extra information

- BW ends
- PN63 – PN40
- TFM1600 Seats



GRACIAS

THANKS

GRACIES

MERCI

DANK U WEL

감사합니다

謝謝

धन्यवाद

спасибо