valvospain group

General Catalogue

LAZARO ITUARTE VALVES

FLUVAL

MTS Valves & Technology

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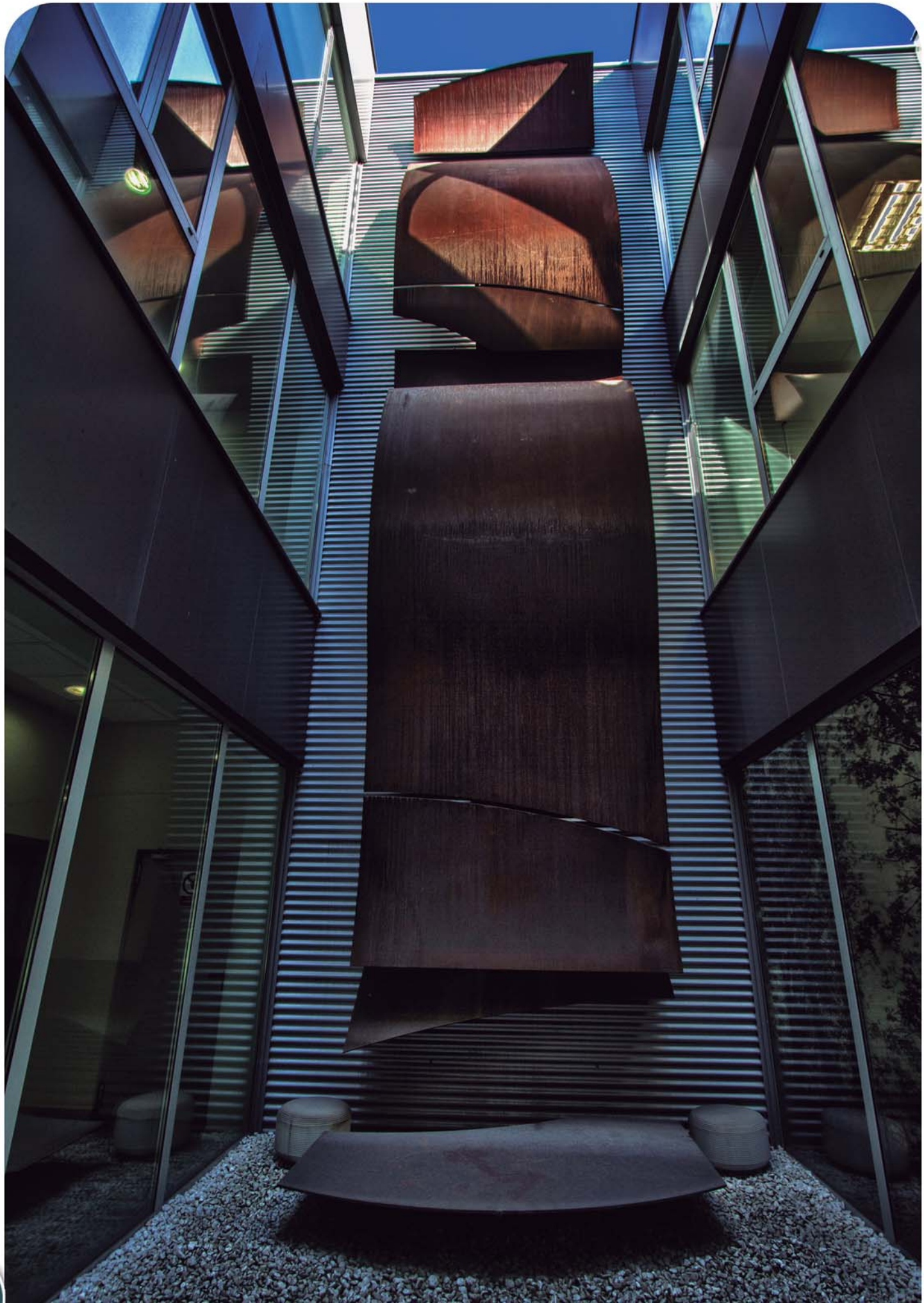

Introduction

Dear Sirs,

It is a great pleasure for us to be able to present you this catalogue where we show you our current manufacturing program: a complete range of industrial valves which represents the culmination of many years of strategic planning, diligent research, experience and hard work.

Since it was set up in year 2006 the VALVOSPAIN Group has dedicated all its efforts in the continuous improvement and international expansion of the three (3) manufacturers that are integrated into it: LAZARO ITUARTE, FLUVAL and MTS.

Three manufacturers that have always look for the quality as a priority goal, providing to our products the highest guarantees, in order to meet with the most stringent specifications and to withstand the most severe working conditions.

Behind our branches there is a team of highly qualified committed people, used to work with methodology in the management of projects, in cross-functional teams, with orientation to the achievement of goals and with the aim of service to customers.

Our continuous search for improvement and the desire to reply to the increasing needs of our customers, leads us to the applied technological innovation, developing new products and implementing solutions able to reply to the most extreme working conditions.

All above is made in an ethic and socially responsible way, caring the Health and Safety of our workers, and promoting their personal and professional development. And in a respectful way with the environment, caring the environment and contributing to the generation of renewable energy and to the sustainable development.

We want to offer you our product and services and we place ourselves at your entire disposal for any inquiry that you would like to make us, convinced that you will be satisfied.

This is our company: your company. A company which has been built thanks to the customers that have rely on us, and which is put to your disposal with the conviction that you will keep relying on us, in order to grow together.

Yours Faithfully,

VALVOSPAIN Group

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Company and Values

MISSION

To design, manufacture, and supply high added value valve products, managing the projects in an honest way for our customers, people and environment

VISION

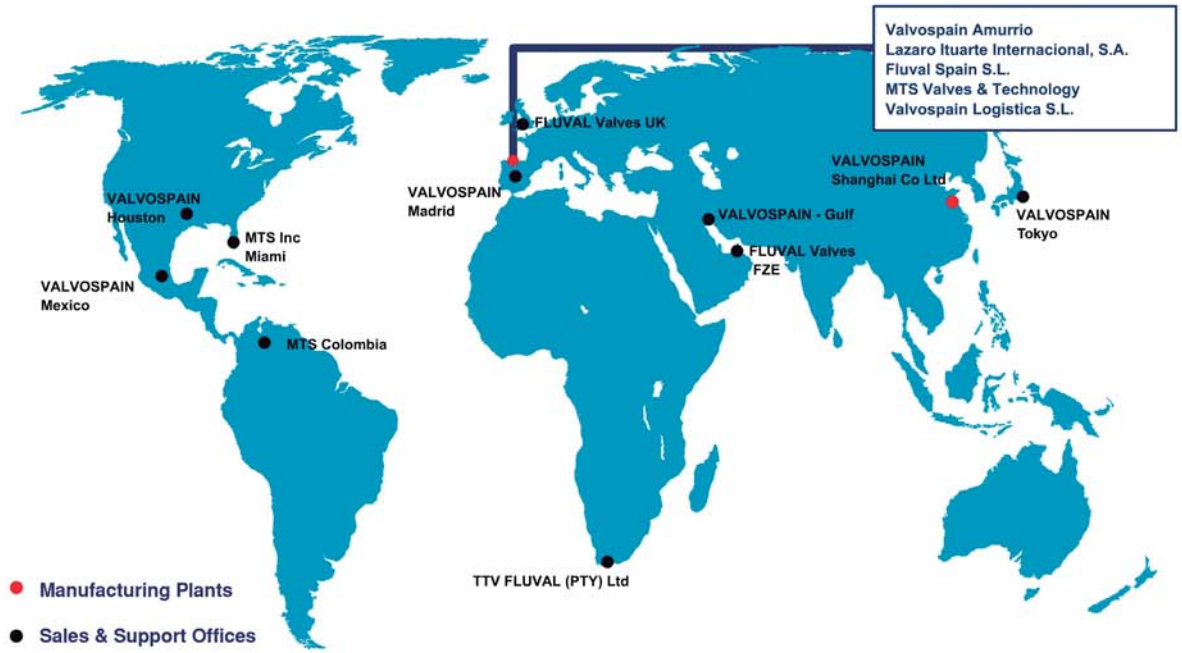
To become the first option in choice for our customers, suppliers, people and environment, being recognized by the fulfillment of our commitments by means of our values.

VALUES

- Customer Oriented.
- Results and People Oriented.
- Work in Cross-functional Teams.
- Continuous improvement.

The Group and the companies

VALVOSPAIN in the world



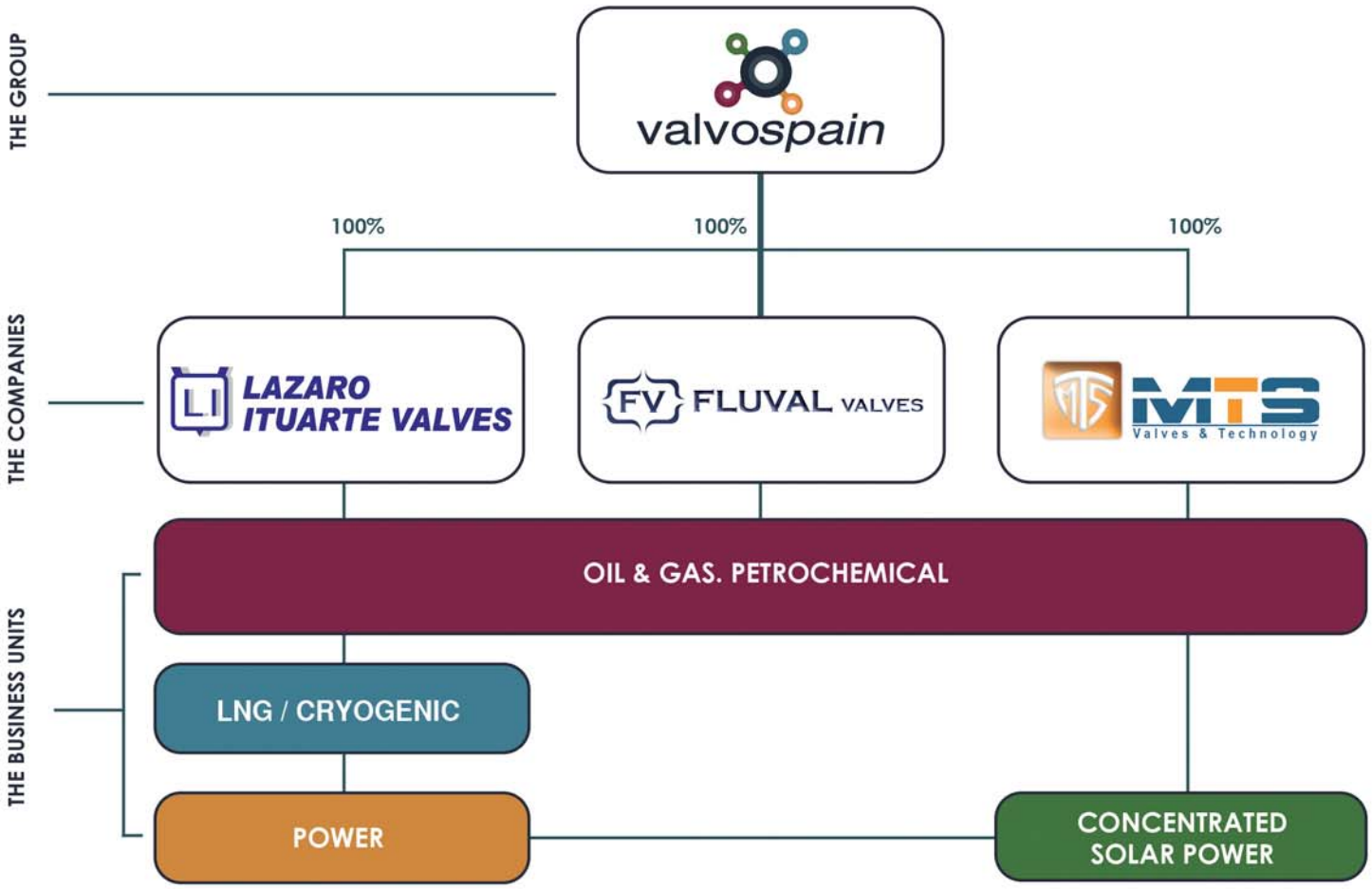
Management Basics

Quality, Service, Innnovation, Sustainable Development

The Group: Who we are

VALVOSPAIN is a group of Spanish valve manufacturers united in year 2006 with the purpose of growing and giving better value (competitive prices, service, quality, innovation and on time deliveries) to our customers.

The companies are:
- **LAZARO ITUARTE INTERNACIONAL, S.A.**
- **FLUVAL SPAIN, S.L.**
- **MTS VALVES AND TECHNOLOGY, S.L.**



The group is based on the knowledge and the experience of the companies: LAZARO ITUARTE, FLUVAL and MTS, together with the incorporation of professionals coming from other manufacturers, which contribute with knowledge, years of experience in the valve industry, and modern management techniques.

The companies of the VALVOSPAIN group do manufacture and supply a wide range of Gate, Globe, Check, Ball, Plug, Butterfly, and other specialty valves, with expertise both in the design of the valves as well as in the manufacturing process.

The valves are used in diverse applications such as Oil, Gas, LNG, Chemical, Petrochemical, Power Generation, On-Shore facilities, Off-Shore Platforms, Mining and many other industries offering world class solutions for fluid handling

We are customer oriented. We aim to provide quality, service, innovation and sustainable development. In addition to the manufacturing, we have a big experience in the Project Management.

Due to the wide manufacturing range, our big manufacturing capacity and project management ability, we are an ideal partner for the engineering companies for the successful performance on big projects.

The Companies

LAZARO ITUARTE VALVES

LAZARO ITUARTE

LAZARO ITUARTE, was founded in 1.928 and it became part of the VALVOSPAIN group in 2006. It is a world leader in the design and manufacturing of industrial valves and in the supply of the same for projects.

LAZARO ITUARTE is specialized in the manufacturing of gate, globe and check valves, including the "Pressure Seal", and "Cryogenic" designs.

We manufacture according to the ANSI, ASME, ASTM, API, BS, and other standards in a wide variety of cast Steel and forged Steel materials such as: carbon Steel, alloy steel, stainless steel and other special alloys (duplex, alloy 20, Inconel, hastelloy, monel, etc…)

The LAZARO ITUARTE valves are used in the Oil, Gas, Petrochemical, Off-Shore, Power Generation, Liquefied Natural Gas chain, and, in general, in all kind of appllications where high levels of integrity and reliability are required.

FLUVAL VALVES

FLUVAL

FLUVAL was founded in 1.969 and it became part of the VALVOSPAIN group in 2006. Following the strategy and goals established by the VALVOSPAIN Group, FLUVAL specialized in the design & manufacturing of Ball valves, becoming one of the world leading manufacturers for Ball Valves for Oil & Gas sector.

Our manufacturing range covers a wide range of Ball valves according to API, ASME, BS, ANSI and other standards, in a wide variety of cast Steel and forged Steel materials such as carbon Steel, alloy steel, stainless steel and other special alloys (duplex, alloy 20, Inconel, hastelloy, monel, etc…)

FLUVAL has a wide expertise and experience in the manufacturing of Ball Valves for Sour Services, and for gases with a high content of H2S, manufacturing valves in Inconel material, in both options: Integral, as well as with Inconel overlay.

MTS Valves & Technology

MTS

MTS was founded in the middle seventies and it became part of the VALVOSPAIN Group in year 2006. I is a world leader in the design and manufacturing of industrial valves and in the supply of the same for projects.

MTS is specialized in the manufacturing of Plug and Triple Offset Butterfly valves. In addition, we also have a wide experience in the manufacturing of Control Valves, Below Seal Globe valves, and Dual Plate Wafer Check valves.

We manufacture according to the ANSI, ASME, ASTM, API, BS, and other standards, in a wide variety of cast Steel and forged Steel materials such as carbon Steel, alloy steel, stainless steel and other special alloys (duplex, alloy 20, Inconel, hastelloy, monel, etc…).

The MTS valves are used in the, Concentrated Solar Power, Oil, Gas, Petrochemical sectors, and, in general, in all kind of applications where high levels of integrity and reliability are required.

VALVOSPAIN in the world: a global company

LAZARO ITUARTE VALVES

FLUVAL VALVES

MTS Valves & Technology

VALVOSPAIN is present around the world, with three (3) manufacturing plants in Spain, and one (1) in China, and Sales & Support offices in the five (5) continents, with the goal to be near our customers.

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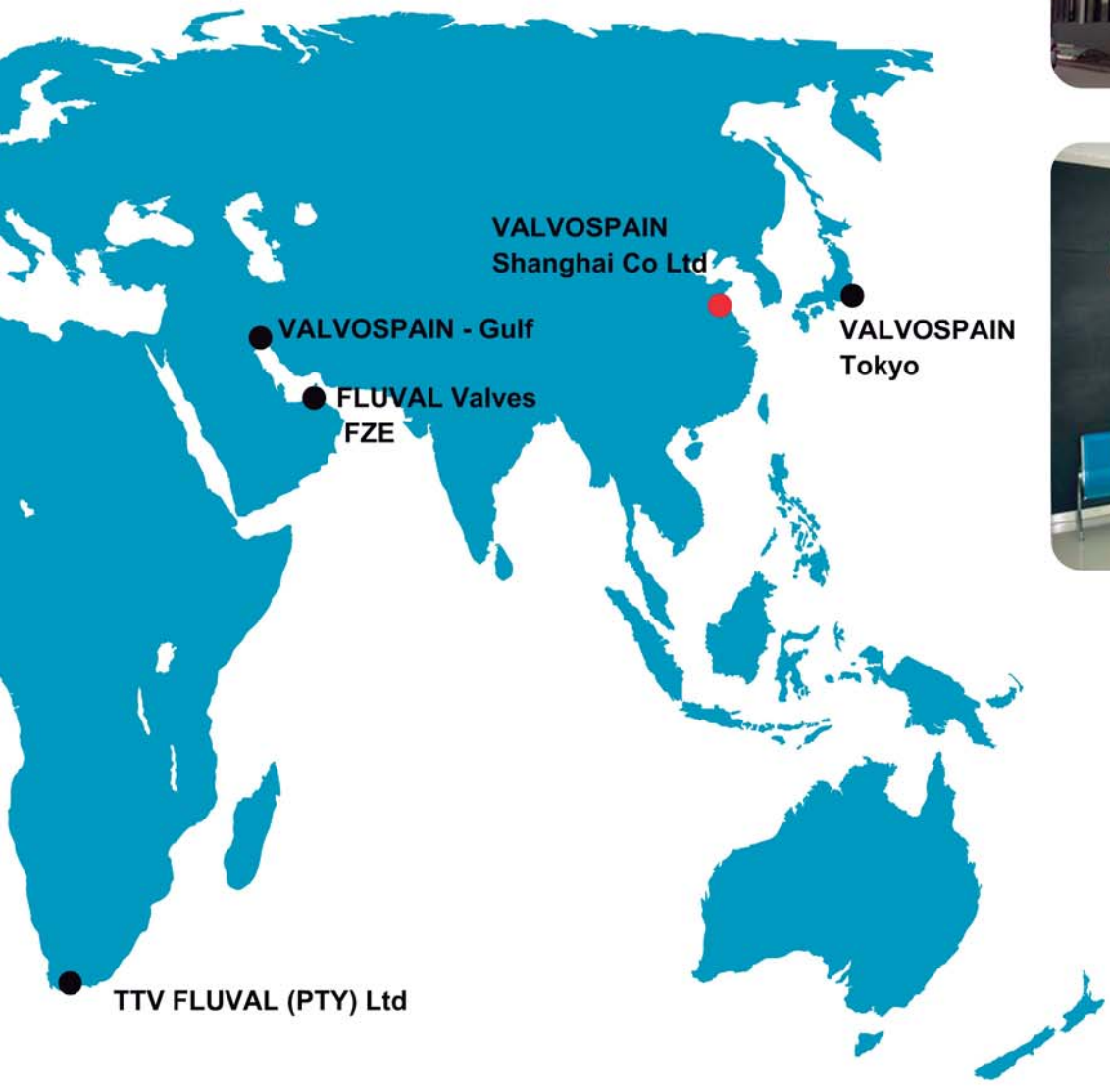
Lazaro Ituarte Internacional, S.A.
Fluval Spain S.L.
MTS Valves & Technology
Valvospain Logistica S.L.



VALVOSPAIN Shanghai

Quality

The Quality of our products as well as of our process is one of the most important targets of the VALVOSPAIN Group.

The Quality Assurance System of the companies which conforms the VALVOSPAIN Group is qualified by the following certificates:

- **ISO 9001**
- **API 6D**
- **CE certificate, according to the EC PED 97/23/EC**
- **ATEX certificate**

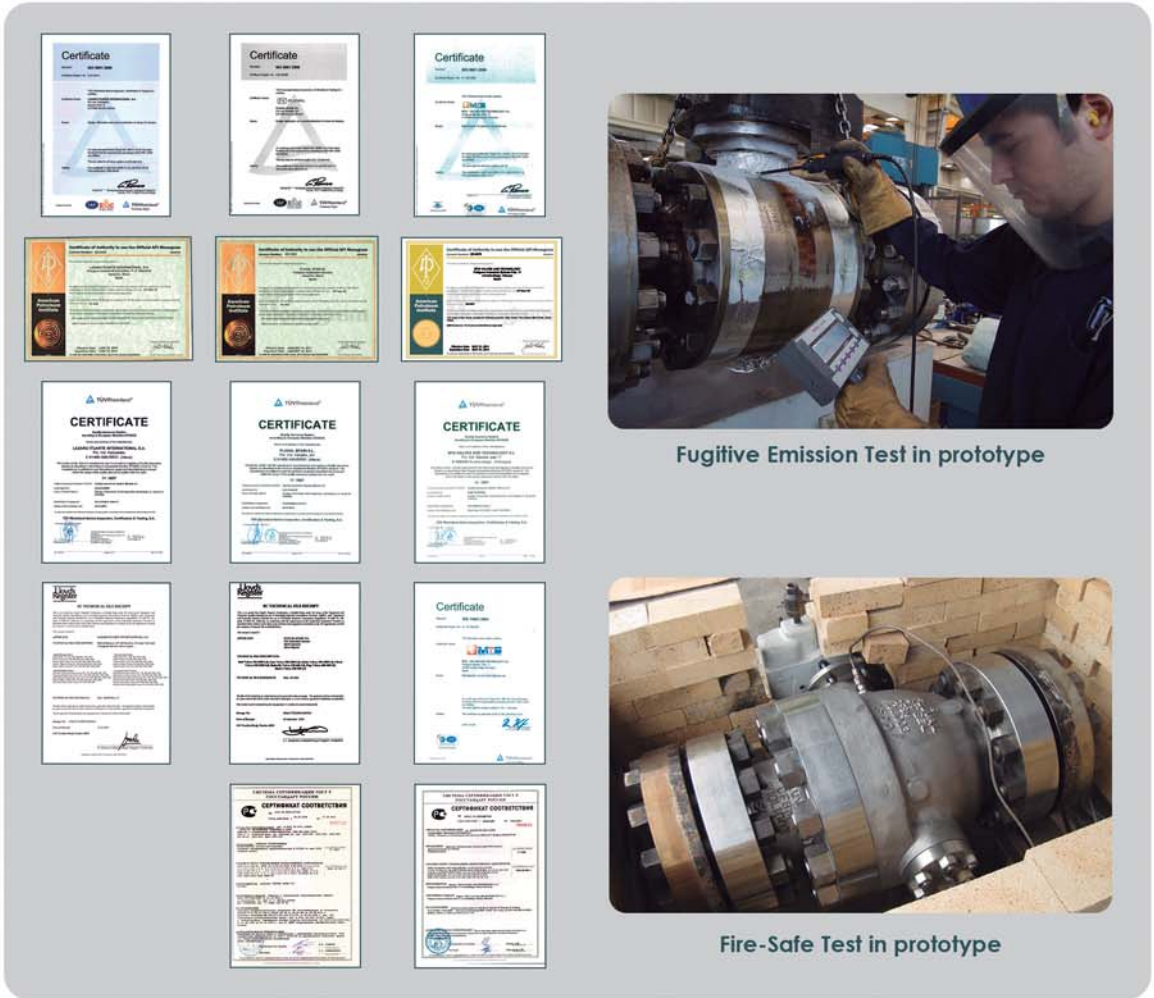
Some of the companies are also certified by:

- **ISO 14001**
- **SIL3**
- **GOST R**
- **ROSTECHNAZDOR 1**

In addition, the manufactured valves are qualified by following prototypes test:
- Fire-Safe Certificate according API 607 and/or API 6FA
- Fugitive Emission Certificate according ISO 15848-1

We also hold the approval of many Third Party Companies, EPC engineering companies and End Users around the World.

Furthermore, thanks to our constant eagerness for the well done job and the spirit of improvement, we are continuously achieving more homologations.



Fugitive Emission Test in prototype

Fire-Safe Test in prototype

Service

The VALVOSPAIN Group and the companies which conform it are customer oriented and aim to provide quality service during all the process of relationship with the customer: from the quotation preparation (or even before inquiry is issued) to the product supply, through all the phases, from the Purchase Order receipt through all the manufacturing process.

Moreover, we keep supporting our customers after the supply of the valves, during all the life cycle of the valves by means of our services of On Site Technical Assistance, Spares supply and Training.

On Site Technical Assistance Service

The companies of the VALVOSPAIN Group do offer a On Site Technical Assistance Service and On Site Site Engineering for the maintenance and repair of the valves manufactured by the companies of the Group.

Our team of engineers and technicians has a big experience in the solving of problems at site.

Our capacities include:

- **Assembly supervision**
- **Comissioning**
- **Repair of breakdowns**
- **Analysis and Reseach of breakdowns**
- **Actuator regulation and settings**
- **Preventive maintenance**
- **Corrective maintenance**

Supply of Original Spares

The companies of the VALVOSPAIN Group do guarantee the supply of original spare parts for the valves manufactured and supplied by group companies.

Training

VALVOSPAIN Group do offer Training Courses and Seminars in Valves for our customers.

Innovation

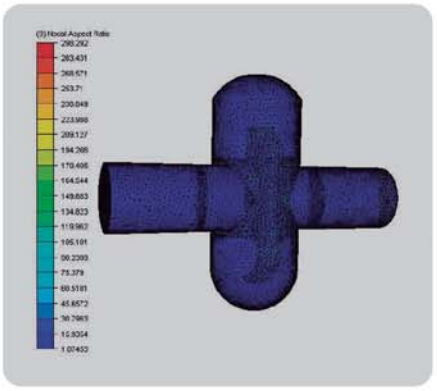
The VALVOSPAIN Group has a own RESEARCH+DEVELOPMENT+INNOVATION (R+D+i) team, with specialist in each range of products and services, which work in the improvement of the valves for specific services.

The main research lines are focused on the improvement of the performance of the valves in the following services:

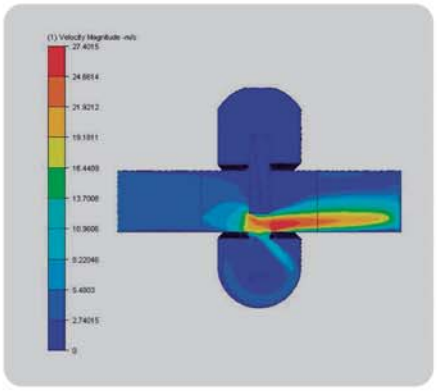
- **High Pressure (775 bar – Class 4500).**
- **High Temperature (> 550°C).**
- **Cryogenic Temperature (-196°C).**
- **Corrosive services with high H2S content (Sour Service).**
- **Corrosive services with high content in chlorides (Marine Water).**
- **Corrosive services with Heat Carrying Fluids at high temperature (Molten Salts).**
- **Control of fluids under High Differential Pressures (cavitation and flashing problems).**

Some of the developments carried out are:

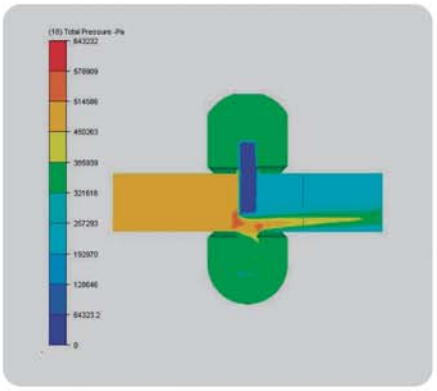
- **Improvement of Ball valves for Sour Service (internal overlay by welding).**
- **Improvement of Ball valves for Cryogenic Service in LNG plants.**
- **Improvement of Control Globe valves for handling Molten Salts at high temperature, at Central Receiver Concentrated Solar Power Plants.**
- **Improvement of Plug valves in Control functions.**

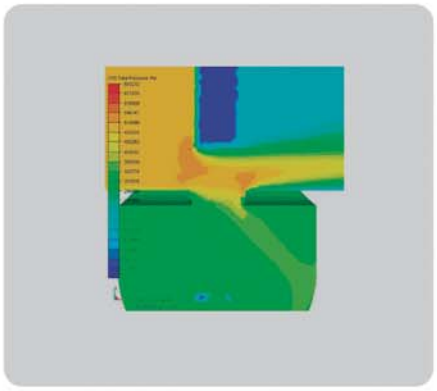


Finite Element Analysis



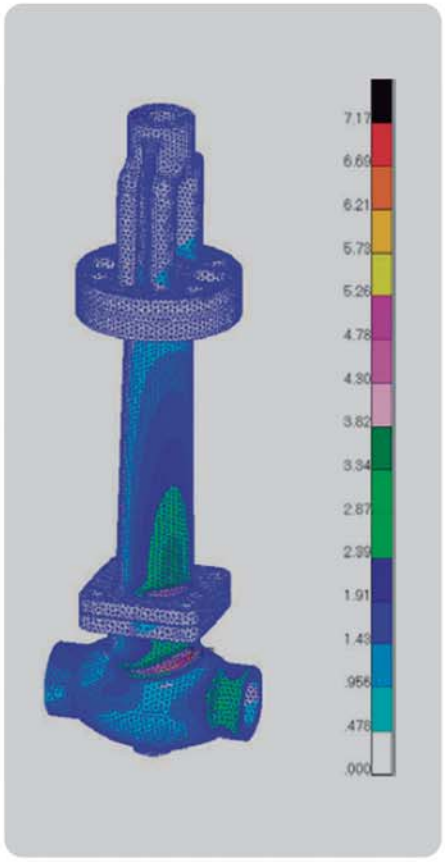
Distribution of the Fluid Velocity during the closing operation





Distribution of the Dynamic Pressure during the closing operation

FLUID SIMULATION



SEISMIC CALCULATIONS

Sustainable Development

With the aim to promote the continuous improvement the working conditions, and the health of our workers, as well as to establish a company culture towards the protection the health and safety of our employees, the VALVOSPAIN Group has a Health & Safety Management System implemented in all the companies.

In the VALVOSPAIN Group, the Health and Safety is approached in a preventive and pro-active way, where its management execution is hierarchically integrated in all the Jobs of the organization, and functionally in all the departments of the company.

The Health and Safety in the VALVOSPAIN Group relies on the value and the importance of the people, in the continuous improvement and in the Prevention Plan as key instrument of its management.

In addition to protect the health and safety of our employees, we mind the workers of the End Users, offering reliable, safe and easy to operate valves and the society in general, taking care of the Environment and by means of a full commitment with the renewable energies.

1.- We take care of the manufacturing processes managing the waste, and minimizing the enviromental impact.

2.- We manufacture valves with better finishing and special packings for low fugitive emissions, in compliance to the ISO 15.848 standard, and customer specific standard such as SHELL 77/312 standard.

3.- We design and manufacture valves for environmental projects and renewable energies:

- valves for solar power generation
- valves for power generation by hydroelectric/wind combined plant projects

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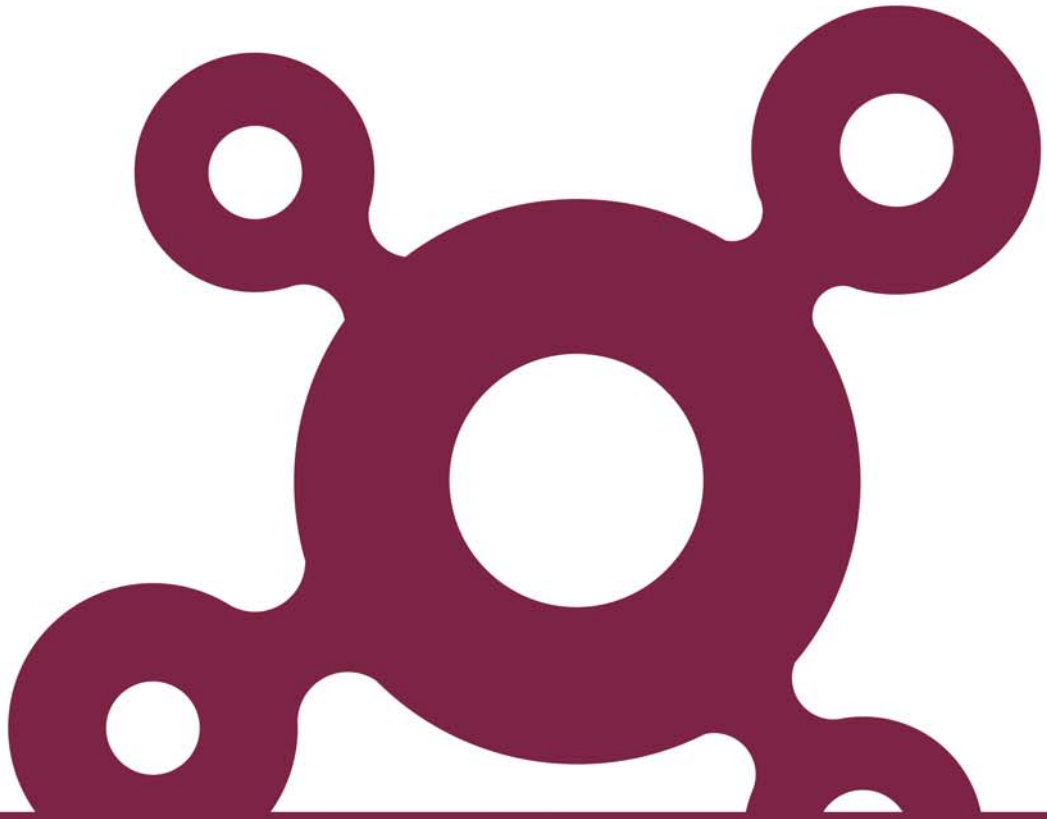
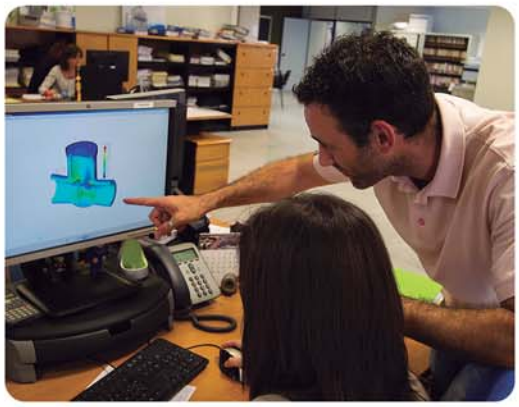
Human Team
Equipment
Manufacturing Process



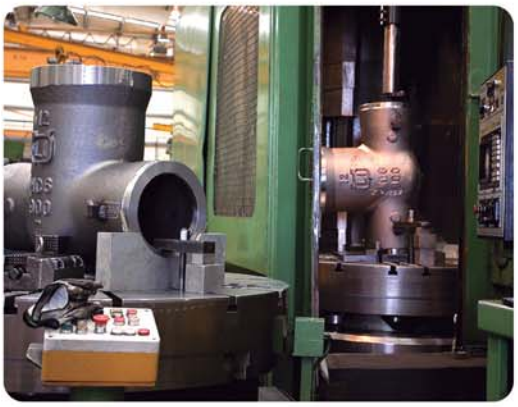
The VALVOSPAIN group and the companies which conforms it, is formed by a team of professionals with a wide experience in the design and manufacturing of valves for projects.

We have modern installations full equipped with state of the art manufacturing machineries such as lathes, CNC Machining Centers, Welding & Overlay Welding Machines, Cranes and Assembly tables, Non Destructive Examination equipment, Pressure Test Benches, Painting Facility with painting cabin and drying oven, packing facilities and loading dock.

All the processes are managed by professionals, which are expert and experienced in their respective areas, working in coordination with each other in cross functional teams, and supported by an advanced information technology system, which centralizes the information management and allows the online access to all the updated information from all the working stations.



Scheduling, Design and Engineering



Machining

Welding

Non Destructive Examination

Assembly

Pressure Testing

Painting

Packing and Shipping

The Human Team: Project Management

The VALVOSPAIN group and the companies which conforms it, is formed by a team of high knowledge skilled professionals with a wide experience in the design and manufacturing of valves for projects.

The knowledge, know-how, experience, good practices and procedures are rooted in all the levels of the company from the shareholders, management, design, project scheduling, quality, engineering, manufacturing and shop workers, working in cross-functional teams.

The projects are managed integrally from the inquiry/quotation stage, to the supply, going through the Contract Review, the Order Acceptance, Kick-Off Meeting, drawing and documentation submittal and approval process, the expediting of the milestones of the manufacturing process, the inspection notices, the inspections, and other intermediate processes, assuring the supply of the valves and documentation in strict compliance with the specification and requirement of the purchase order in regards to the technical, quality, commercial and delivery requirements.

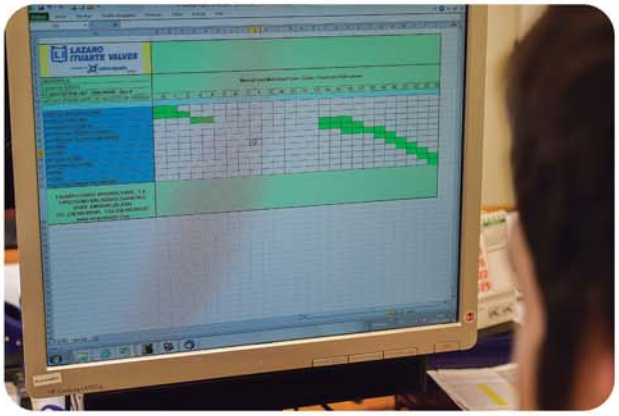
GESTIÓN DE PROYECTOS		
Request For Quotation	Quotation	Purchase Order
Scope of Supply	Commercial Quotation (Price, Delivery, Commercial Conditions)	Customer Purchase Order Receipt
Specifications	Technical Quotation (Proposed valves, preliminary drawings, preliminary ITP, actuator sizing (for motor operated valves))	Contract Review
Data Sheets	Technical-Commercial Clarification process	Purchase Order Acceptance & Acknowledgement
Technical Requirements		Project Manager and Project Team
Quality Requirements		Documentation delivery (Drawings, ITP, Procedures, Documentation,...)
Documentation Requirements		Kick-Off Meeting (Review of Scope of supply, applicable specifications, documentation requirements, communication chanel, project manager, project team, critical path)
Commercial Conditions		

Contract Review, Planning and Documentation Management

When the order is received at VALVOSPAIN, we make a Contract Review to verify that the Purchase Order match with the quotation made by us, and we ensure that all the scope of supply and all the technical, quality and documentation requirements and all the applicable specifications are included into the Contract Review.

After the Contract Review, we make the planning and scheduling of all the milestones of the management, and of all the processes of manufacturing as well as design, engineering, purchasing and documentation.

An internal Project Manager is named, who is the single person of contact with the customer, and in charge to control and distribute all the flow of communication and information between the factory and the customer (documentation control, information, project status, and, in general, all kind of communications).



GESTIÓN DE PROYECTOS		
Manufacturing	**Delivery**	**Commissioning**
Following up and expediting the documentation approval process	Testing	Assembly supervision
Expediting and following up the manufacturing	Final inspection: painting, packing & shipping, and documentation	Commissioning
Progress Report	Shipment Release & Shipping Instructions	Start-Up
Expediting meetings	Packing List	Technical Assistance
Intermediate inspections	Invoice	Training
	Shipment Authorization	Supply of original spares

Design and Engineering

The command of the design and the own technology are a key identity signal of the VALVOSPAIN Group. We have our own designs. Moreover, with a philosophy of customer orientation, we offer a great capacity of adapt our designs to the needs and particular problems of our customers.
In order to make it, we have the advanced design tools as:

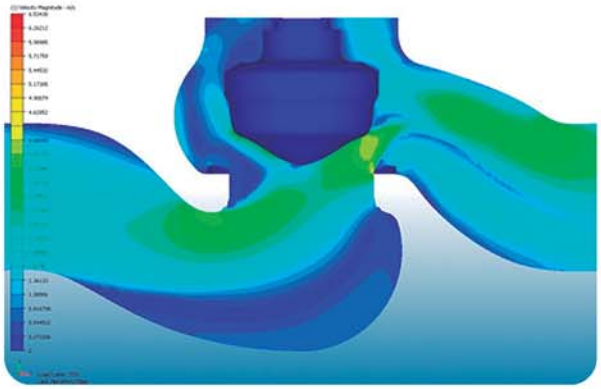
- **Design Software 2D y 3D (Solidworks, CreoElements Drafting, CreoElements Modeling, Autodesk AutoCad)**
- **Finite Elements for structural calculation(Solidworks)**
- **Finite Elements for Fluid Simulation (Autodesk CFDesign)**

Our engineers and designers have a big experience in the design of Gate, Globe, Check, Ball, Plug and Butterfly valves for general as well as special services, empowering the Valvospain Group the capacity to supply integral projects. Some of the special types of valves are:

- **Ball valves with overlay for sour service (gas with high content of H_2S)**
- **Cryogenic Ball valves, Split Body & Top Entry**
- **"Pressure Seal" Bonnet Gate, Globe and Check valves**
- **Below Seal Valves**
- **Control Globe valves**
- **Triple Offset High Performance Butterfly valves**
- **"Dual Expanding Double Block & Bleed" Plug Valves**

Some provisions available for our customers:

- **Seismic calculations**
- **Structural calculations against win loads and other external demand loads**
- **Cv calculations, velocity profiles and fluid pressure profiles, recirculating áreas and pressure drop**
- **Customized engineered solutions (Manouvre columns, extensions, multi-hole plates…)**
- **Technical Assistance in the selection of the type of valve more suitable for each service**



Equipment and manufacturing process

VALVOSPAIN counts with a high manufacturing capacity and manufacturing equipment and facilities such as:

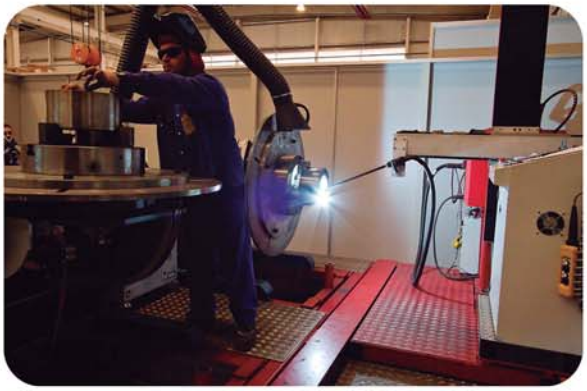
- **Machining of components in CNC machines**
- **Welding and overlay welding of bodies, adaptors, seat pockets and balls with own procedures**
- **Non Destructive Examination**
- **Assembly**
- **Testing**
- **Painting, Packing and Shipping**

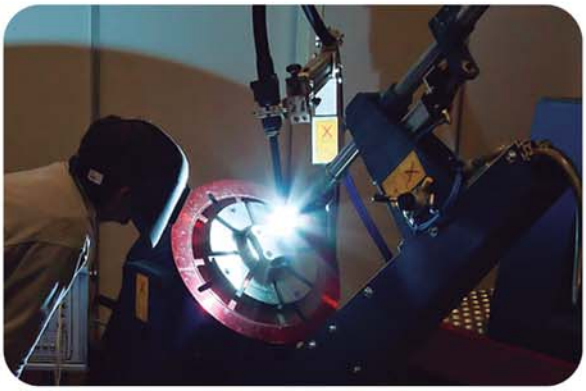
Manufacturing: Machining

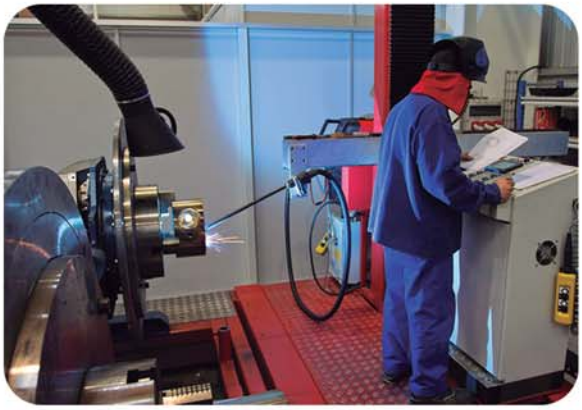
The companies of the VALVOSPAIN Group counts with modern manufacturing technology and great machining capacity wich includes CNC centers, CNC horizontal and vertical lathes, milling, grinding and drilling machines.

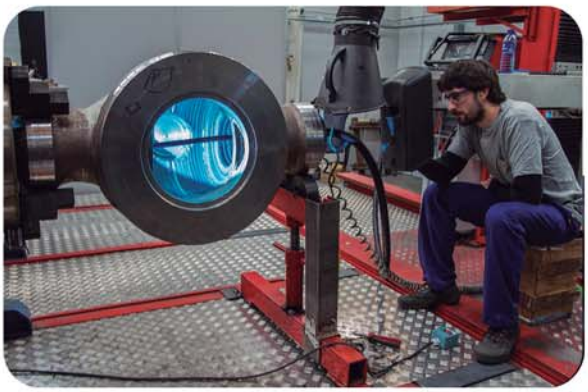
Manufacturing: Welding and Overlay

VALVOSPAIN counts with state of the art automatic welding machines and experienced welders for the welding process.









Type of welding processes

- TIG (Gas Tungsten Arc welding - GTAW)
- MIG/MAG (Gas Metal Arc Welding - GMAW). Semi-automatic and automatic process
- Wire (Shielded Metal Arc Welding - SMAW)

Some of the materials more usually welded:
Stellite, 13% Cr.(410), Ultimet, Stainless Steel (304L, 316L), Duplex (22%Cr., F51), Inconel 625, Incoloy 825, Hastelloy B, Monel.

Corrosion Resistant Alloy (CRA) Welding Overlays

We make overlay of Corrosion Resistant Alloys by welding, such as welding overlay of Inconel 625 for Sour Service Ball Valves (with high content of H2S). The welding overlay is a key process which, according to our experience, it is strongly recommendable to be performed and controlled in-house in order to provide the most advanced quality product within the required timeframes.

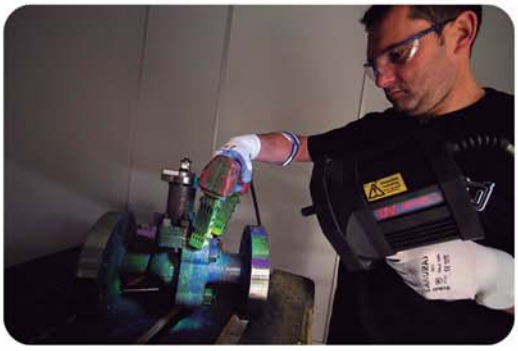
For this purpose, we perform this process in-house by means of state of the art welding machines to weld Corrosion Resistant Alloys, and our highly skilled and experienced welding team led by an International Welding Engineer. All the process is carried out according to the established procedures, monitoring and supervising strictly the key parameters through the process, in order to ensure the quality and reliability of the welding. Prior, during and after welding we perform all the subsequent test and quality checks in order to ensure the good quality of the overlaid valves.

Non Destructive Testing

VALVOSPAIN counts with a full availability of Non Destructive Testing equipment, in order to guarantee the quality and reliability of our products.

Positive Material Identification

Dye Penetrant Examination



Magnetic Particles

Radiography

Ultrasonic Examination

Assembly

The companies of the VALVOSPAIN Group count with a experienced team of assemblers assuring the correct assembly of the valves according to the drawings and established procedures.

Pressure Testing

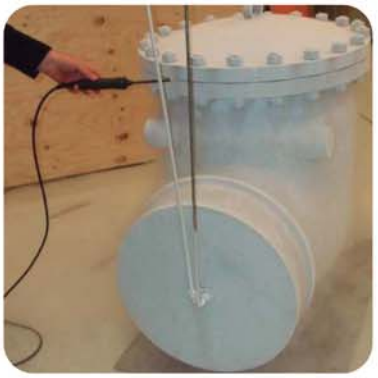
In VALVOSPAIN we can perform in-house a wide variety of test in state of the art test benches, which guarantee the accuracy of the results, safety of the operation and speed in the rotation

- **Hydrostatic and/or pneumatic pressure test**
- **Functional test of motorized valves**
- **Cryogenic test**
- **Vacuum test**
- **Helium test**

Functional testing

Cryogenic test

Computer operated pressure test bench



Fugitive emission test

Painting, Packing and Shipping

VALVOSPAIN counts with own in-house facilities for painting and packing, such as painting cabin, drying oven, marking, and packing, and with employees expert in the performance of these tasks.

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Manufacturing Range

Bolted Bonnet Gate, Globe and Check valves

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Pressure Seal Gate, Globe & Check valves

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Floating Ball Valves

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Trunnion Ball Valves

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Lubricated Plug Valves

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Double Block & Bleed Plug Valves

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Double Disc Wafer Type Check Valves

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Forged Valves

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Cryogenic Gate, Globe & Check valves

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API 6D Through Conduit Gate Valves and API 6D Full Bore Swing Check Valves

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Cryogenic Ball Valves

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Non Lubricated Plug Valves (Self Lubricated)

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Triple Offset Butterfly Valves

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Below Seal Valves

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Motorized Valves (MOV) and Actuated Valves (ON/OFF)

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Control Valves

pag. 34

valvospain

Manufacturing Range: Gate, Globe and Check valves

Bolted Bonnet Gate, Globe and Check valves

Standards: API, BS, MSS, ASME, ASTM

Manufacturing standards:

Design: API 600, ASME B16.34
Face to Face dimension: ASME B16.10
Flanged Ends: ASME B16.5 (up to 24")
ASME B16.47 (above 26")
Butt Weld ends: ASME B16.25
Pressure Test: API 598

Product Range:

Ratings: From 150 Lbs. up to 2.500 Lbs.
Sizes: 2" up to 60"

Characteristics:

Construction: Bolted Bonnet
Gate: API 600, ASME B16.34
OS&Y, Rising Stem
Flexible Wedge or Parallel Slide
Globe: BS1873, ASME B16.34
Rising Handwheel
Body in "T" or "Y" shape
Option: Globe, Stop-Check
Option: Angle globe
Check: BS1868, ASME B16.34
Swing Check or Piston Check
Swing Check: Disc with Internal Pin
Optional outside lever and counter-weight
Ends: Flanged (RF, FF, RTJ) or Butt Weld (BW)

Operation: Manual (handwheel or gearbox)
Actuated (Electric, pneumatic or hydraulic)

Materials:

See Materials section

Pressure Seal Gate, Globe & Check valves

Manufacturing Standards:

Design: ASME B16.34, API 600
Face to Face dimension: ASME B16.10
Flanged Ends: ASME B16.5 (up to 24")
ASME B16.47 (above 26")
Butt Weld Ends: ASME B16.25
Pressure Test: API 598

Manufacturing Range

Ratings: From 600 Lbs. up to 4.500 Lbs.
Sizes: 2" up to 36"

Characteristics:

Construction: Pressure Seal Bonnet
Gate: ASME B16.34, API 600
OS&Y, Rising Stem
Flexible Wedge or Parallel Slide
Globe: BS1873, ASME B16.34
Rising handwheel
Body in "T" or "Y" shape
Option: Globe, Stop-Check
Check: BS1868, ASME B16.34
Swing Check, Piston Check, Tilting Disc
Swing Check: Disc with Internal Pin
Optional outside lever and counter-weight

Ends: Flanged (RF, FF, RTJ) or Butt Weld (BW)
Operation: Manual (handwheel or gearbox)
Actuated (Electric, pneumatic or hydraulic)

Materials:

See Materials section

Cryogenic Gate, Globe & Check valves

Manufacturing Standards:

Design:	API 600, ASME B16.34, BS 6364
Face to face dimension:	ASME B16.10
Flanged Ends:	ASME B16.5 (up to 24") ASME B16.47 (above 26")
Butt Weld Ends:	ASME B16.25
Pressure Test:	API 598
Cryogenic Test:	BS6364 (-196°C)

Manufacturing Range:

Ratings:	From 150 Lbs. up to 2.500 Lbs.
Sizes:	2" up to 60"

Characteristics:

Construction:	Extended Bolted Bonnet
Gate:	API 600, ASME B16.34, BS 6364 Rising Stem Flexible Wedge
Globe:	BS1873, ASME B16.34, BS 6364 Rising Handwheel Body in"T" or "Y" shape Option: Globe, Stop-Check
Check:	BS1868, ASME B16.34 Swing Check or Piston Check Swing Check: Disc with Internal Pin Optional outside lever and counter-weight
Ends:	Flanged (RF, FF, RTJ) or Butt Weld (BW)
Operation:	Manual (handwheel or gearbox) Actuated (Electric, pneumatic or hydraulic)

Materials:

See Materials section

API 6D Through Conduit Gate Valves and API 6D Full Bore Swing Check Valves

Manufacturing standards:

Design:	API 6D
Face to face dimension:	ASME B16.10
Flanged Ends:	ASME B16.5 (up to 24") ASME B16.47 (above 26")
Butt Weld Ends:	ASME B16.25
Pressure Test:	API 6D

Manufacturing Range:

Ratings:	From 150 Lbs. up to 2.500 Lbs.
Sizes:	Gate: 4" up to 60" Swing Check: 2" up to 60"

Characteristics:

Construction:	Bolted Bonnet
Gate:	Slab Gate o Expanding Gate
Swing Check:	Full Bore Optional outside lever and counter-weight Optional Hydraulic Damper
Ends:	Flanged (RF, FF, RTJ) or Butt Weld (BW)
Operation:	Manual (handwheel or gearbox) Actuated (Electric, pneumatic or hydraulic)

Materials:

See Materials section

Manufacturing Range: Quarter Turn valves: Ball, Plug and Butterfly

Floating Ball Valves

Manufacturing Standards:

Design: API 6D, ISO 14313, ASME B16.34, ISO 17292
Face to face dimension: ASME B16.10
Flanged Ends: ASME B16.5 (up to 24") ASME B16.47 (above 26")
Butt Weld Ends: ASME B16.25
Pressure Test: API 598, API 6D

Manufacturing Range:

Ratings: From 150 Lbs. up to 1.500 Lbs.
Sizes: 1/2" up to 10"

Characteristics:

Construction:
- One Piece Body End Entry (Reduced Bore)
- One Piece Body Top Entry
- Two (2) bolted bodies Side Entry
- Three (3) bodies Side Entry

Floating Ball
Soft Seats/Metal-to-Metal seats
Full Bore / Reduced Bore

Ends: Flanged (RF, FF, RTJ) or Butt Weld (BW)

Operation: Manual (Lever or gearbox)
Actuated (Electric, pneumatic or hydraulic)

Materials:

See Materials section

Trunnion Ball Valves

Manufacturing Standards:

Design: API 6D, ISO 14313, ASME B16.34, ISO 17292
Face to face dimension: ASME B16.10
Flanged Ends: ASME B16.5 (up to 24") ASME B16.47 (above 26")
Butt Weld Ends: ASME B16.25
Pressure Test: API 598, API 6D

Manufacturing Range:

Ratings: From 150 Lbs. up to 2.500 Lbs.
Sizes: 2" up to 60"

Characteristics:

Construction:
- One Piece Body End Entry (Reduced Bore)
- One Piece Body Top Entry
- Two (2) bolted bodies Side Entry
- Three (3) bodies Side Entry

Trunnion Mounted Ball
Soft Seats/Metal-to-Metal seats
Full Bore / Reduced Bore

Ends: Flanged (RF, FF, RTJ) or Butt Weld (BW)

Operation: Manual (Lever or gearbox)
Actuated (Electric, pneumatic or hydraulic)

Special applications: With internal Inconel overlay (at wetted areas) for Sour Service

Materials:

See Materials section

Cryogenic Ball Valves

Manufacturing Standards:

Design: API 6D, ISO 14313, BS 6364, ASME B16.34, ISO 17292
Face to face dimension: ASME B16.10
Flanged Ends: ASME B16.5 (up to 24") ASME B16.47 (above 26")
Butt Weld Ends: ASME B16.25
Pressure Test: API 598
Cryogenic Test: BS 6364 (-196°C)

Manufacturing Range:

Ratings: From 150 Lbs. up to 2.500 Lbs.
Sizes: 1/2" up to 48"

Characteristics:

Construction:
- One Piece Body End Entry (Floating Ball, Reduced Bore)
- One Piece Body Top Entry
- Two (2) bolted bodies Side Entry
- Three (3) bodies Side Entry
Extended Bolted Bonnet
Floating Ball / Trunnion Mounted Ball
Soft Seats/Metal-to-Metal seats
Full Bore / Reduced Bore

Ends: Flanged (RF, FF, RTJ) or Butt Weld (BW)

Operation: Manual (Lever or gearbox)
Actuated (Electric, pneumatic or hydraulic)

Materials:

See Materials section

Non Lubricated Plug Valves (Self Lubricated)

Manufacturing Standards:

Design: API 599, API 6D, API 607, ASME B16.34
Face to face dimension: ASME B16.10
Flanged Ends: ASME B16.5
Butt Weld Ends: ASME B16.25
Pressure Test: API 598, API 6D

Manufacturing Range:

Ratings: From 150 Lbs. up to 2.500 Lbs.
Sizes: 1" up to 24"

Characteristics:

Construction: Top Entry, PTFE Sleeve
Bore: Reduced & Regular

Ends: Flanged (RF, FF, RTJ) or Butt Weld (BW)

Operation: Manual (handwheel or gearbox)
Actuated (Electric, pneumatic or hydraulic)

Materials:

See Materials section

Lubricated Plug Valves

Manufacturing Standards:

Design: API 599, API 6D, API 607, ASME B16.34
Face to face dimension: ASME B16.10
Flanged Ends: ASME B16.5
Butt Weld Ends: ASME B16.25
Pressure Test: API 598, API 6D

Manufacturing Range:

Ratings: From 150 Lbs. up to 2.500 Lbs.
Sizes: 1" up to 24"

Characteristics:

Construction: Inverted balanced plug
Metal to Metal seat

Bore: Reduced, Regular, Total and Cylindical total

Ends: Flanged (RF, FF, RTJ) or Butt Weld (BW)

Operation: Manual (handwheel or gearbox)
Actuated (Electric, pneumatic or hydraulic)

Materials:

See Materials section

Double Block & Bleed Plug Valves

Manufacturing Standards:

Design: API 599, API 607, ASME B16.34
Face to face dimension: ASME B16.10
Flanged Ends: ASME B16.5
Butt Weld Ends: ASME B16.25
Pressure Test: API 598, API 6D

Manufacturing Range:

Ratings: From 150 Lbs. up to 600 Lbs.
Sizes: 1" up to 24"

Characteristics:

Construction: Doble Block and Bleed, Dual Expanding, Lower Trunnion

Ends: Flanged (RF, FF, RTJ) or Butt Weld (BW)

Operation: Manual (handwheel or gearbox)
Actuated (Electric, pneumatic or hydraulic)

Special applications: Manual or automatic bleed
Cavity thermal relief

Materials:

See Materials section

Other types of valves

Triple Offset Butterfly Valves

Manufacturing Standards:

Design:	API 609, ASME B16.34
Face to face dimension:	ASME B16.10
Flanged Ends:	ASME B16.5 (up to 24") ASME B16.47 (above 26")
Butt Weld Ends:	ASME B16.25
Pressure Test:	API 598, API 6D

Manufacturing Range:

Ratings:	From 150 Lbs. up to 1.500 Lbs.
Sizes:	2" up to 30"

Characteristics:

Construction:	Metal to metal seats Triple Offset
Ends:	Flanged (RF, FF, RTJ) or Butt Weld (BW) Butt Weld (BW), Wafer, Wafer Lug
Operation:	Manual (handwheel or gearbox) Actuated (Electric, pneumatic or hydraulic)

Special applications: Cryogenic
High Temperature

Materials:
See Materials section

Below Seal Valves

Manufacturing Standards:

Design:	API 600, BS 1873, ASME B16.34
Face to face dimension:	ASME B16.10
Flanged Ends:	ASME B16.5 (up to 24")
Butt Weld Ends:	ASME B16.25
Pressure Test:	API 598, API 6D

Manufacturing Range:

Ratings:	From 150 Lbs. up to 600 Lbs.
Sizes:	½" up to 16"

Characteristics:

Construction:	Below Seal
Ends:	Flanged (RF, FF, RTJ) or Butt Weld (BW)
Operation:	Manual (handwheel or gearbox) Actuated (Electric, pneumatic or hydraulic)

Materials:
See Materials section

Dual Plate Wafer Type Check Valves

Manufacturing Standards:

Design: API 594
Face to face dimension: ASME B16.10
Flanged Ends: ASME B16.5 (up to 24")
ASME B16.47 (above 26")
Butt Weld Ends: ASME B16.25
Pressure Test: API 598, API 6D

Manufacturing Range:

Ratings: From 150 Lbs. up to 2.500 Lbs.
Sizes: 2" up to 36"

Characteristics:

Construction: Metal to metal seat or Soft Seat
Internal Pin or External Pin

Ends: Flanged (RF, FF, RTJ) or Butt Weld (BW)
Flanged, Wafer, Lug

Special applications: Cryogenic

Materials:

See Materials section

Forged Valves

Manufacturing Standards:

Design: API 602
Face to face dimension: ASME B16.10
Flanged Ends: ASME B16.5
Butt Weld Ends: ASME B16.25
Pressure Test: API 598

Manufacturing Range:

Ratings: From 150 Lbs. up to 4.500 Lbs.
Sizes: ½" up to 2"

Characteristics:

Construction: Bolted Bonnet or Pressure Seal Bonnet
Gate
Globe
Check
Ball

Ends: Flanged (RF, FF, RTJ) or Butt Weld (BW)
Flanged, Wafer, Lug

Operation: Manual (handwheel or gearbox)
Actuated (Electric, pneumatic or hydraulic)

Materials:

See Materials section

Manufacturing Range: Motorized valves and Control valves

Motorized Valves (MOV) and Actuated Valves (ON/OFF)

Motorized Valves (MOV) and Actuated Valves (ON/OFF)

The valves manufactured by the companies of the VALVOSPAIN group can be supplied with all type of actuators:

- Electric Actuators for Motor Operated Valves (MOV).
- Pneumatic Actuators (Linear, Single Effect, Double Effect, Rotative,...), EDSV, Gas over Oil
- Hydraulic Actuators (Liner, Rotative,...), and Electro-Hydraulic

The actuators can be supplied with all kind of accessories: Limit Switches, Control Panels, Bateries and Acumulators, Air Storage Tanks, Hydraulic Power-packs, etc...

We can supply our valves equipped with any actuator Brand as per required by the customer and / or the specification.

The actuators are sized, assembled, regulated and functional tested by us, assuring a correct performance of the valve + actuator complet set.

Control Valves

Manufacturing Standards:

Design: ASME B16.34, ISA 75.08.01 to 75.08.06
Face to face dimension: ISA 75.03
Flanged Ends: ASME B16.5
Butt Weld Ends: ASME B16.25
Pressure Test: IEC 60534-4, Clase IV (others on request)

Manufacturing Range:

Ratings: From 150 Lbs. up to 2.500 Lbs.
Sizes: ½" up to 16"

Characteristics:

Construction: Trim options:
- Contoured disc
- Contoured body
- Anti-cavitation trims

Inherent Trim Characteristics:
- Equal percentaje
- Modified Equal percentage
- Linear

Available options: Angle valve
Below Seal valve
Manual Adjusting valve

Ends: Flanged (RF, FF, RTJ) or Butt Weld (BW)

Operation: Control

Service: Liquids

Materials:

See Materials section

Materials

We manufacture the valves in all type of cast and forged steels.

Materials		Cast ASTM Denomination	Forged ASTM Denomination	AISI	UNS	Service
Carbon Steel		A216 WCB	A105	1025	J03002	General Service
		A216 WCC	A105N	1020	J02503	
Low Temperature Carbon Steel		A352 LCB	A350 LF2		J03003	Low Temperature
		A352 LCC			J02505	
Alloy Steel	1-1/4 Cr. - 1/2 Mo.	A217 WC6	A182 F11 Cl. 2	4118 Mod.	J12072	High Temperature
	2-1/4 Cr. - 1 Mo.	A217 WC9	A182 F22 Cl. 3	4115 Mod.	J21890	
	5 Cr. - 1/2 Mo.	A217 C5	A182 F5a		J42045	
	9 Cr. - 1 Mo.	A217 C12	A182 F9		J82090	
	9 Cr. - 1 Mo.-1 V	A217 C12A	A182 F91		J84090	
Martensitic and ferritic-martensitic steels	13% Cr.	A217 CA15	A182 F6a	410	J91150	General Service
	12,5% Cr.-4 Ni.-Mo.	A352 CA6MN		410 Mod. (415)	J91540	
Austenitic stainless steel	18 Cr.-8 Ni.	A351 CF8	A182 F304	304	J92600	General Service, High and Low temperature, Corrosion resistant
	16 Cr.-12 Ni.-2 Mo	A351 CF8M	A182 F316	316	J92900	
	18 Cr.-10 Ni.-Cb	A351 CF8C	A182 F321 (347)	321 (347)	J92710	
	18 Cr.-8 Ni.	A351 CF3	A182 F304L	304L	J92500	
		A351 CF3M	A182 F316L	316L	J92800	
		A351 CF3C	A182 F321L	321L		
	19 Cr.-10 Ni.-3 Mo.	A351 CG8M	(A182 F317)	317	J93000	
Superaustenitic high alloys	Alloy 20	CN7M		Alloy 20	N08007	Corrosion resistant
		CK3MCuN	A182 F44	254 SMO	J93254	
		254 SMO				
		654 SMO				
Duplex Alloys	25%Cr.-5Ni.-Mo.-Cu.	A890 Gr. 1A (CD4MCu)			J93370	
	22%Cr.-5Ni.-Mo.-N.	A890 Gr. 4A (CD3MN)			J92205	
	25%Cr.-7Ni.-Mo.-N.	A890 Gr. 5A (CE3MN)			J93404	
	25%Cr.-7Ni.-Mo.-N.	A890 Gr. 6A (CD3MWCuN)			J93380	
Nickel base Alloys	Inconel 625	A494 CW-6MC			N06625	
	Incoloy 825	A494 CU5MCuC			N08825	
	Monel 400	A494 M-35-1			N04400	
	Ni.-Mo.-(Hastelloy B)	A494 N-12MV			N30012	
	Ni.-Mo.-Cr.- (Hastelloy C)	A494 CW-12MW			N30002	

Non Destructive Examination and Testing

The examinations and test that are most usually performed to the valves are as follows:

Main Examination and Testings available			
	Type of Examination / Test	Applicable standards	Scope
Examinations	Visual and Dimensional	MSS SP55 and Manufacturing Drawings	100% of castings & valves. Sample of raw components and machined components.
	Liquid Penetrant	ASME V & ASME VIII / ASME B16.34 / ASTM E165	100% of stellite. Others according to customer requirement. Usually, external surface of body.
	Magnetic Particles	ASME V & ASME VIII / ASME B16.34 / ASTM E709	According to customer requirement. Usually, external surface of body.
	Radiography / Gamma rays	ASME V & ASME VIII / ASME B16.34 ASTM E446 - E186 - E280	According to customer requirement. Usually, butt welding ends and critical areas of body.
	Ultrasound	ASME V & ASME VIII / ASME B16.34 / ASTM A609	According to customer requirement. Usually, butt welding ends or 100% of body surface.
	Positive Material Identification	ASTM A781	According customer requirement.
	Hardness	NACE – MR.01.75 / ISO 15156	According customer requirement.
	Corrosion Test	ASTM A262 / ASTM G28 / ASTM G48	According customer requirement.
Testing	Hidrostatic & Pneumatic Test	API 598/ API 6D/EN 12266/ ASME B16.34	100% of the valves.
	Functional Test	API 598/ API 6D/EN 12266/ ASME B16.34	100% of the motor operated valves.
	Fugitive Emission Test	ISO 15848 - 1/2	According customer requirement.
	Cryogenic Test	BS6364 Customer Specification	According customer requirement.
	Helium Test	Manufacturer procedure	Hydrogen service valves. According customer requirement
	Vacuum Test	Manufacturer procedure	Hydrogen service valves. According customer requirement

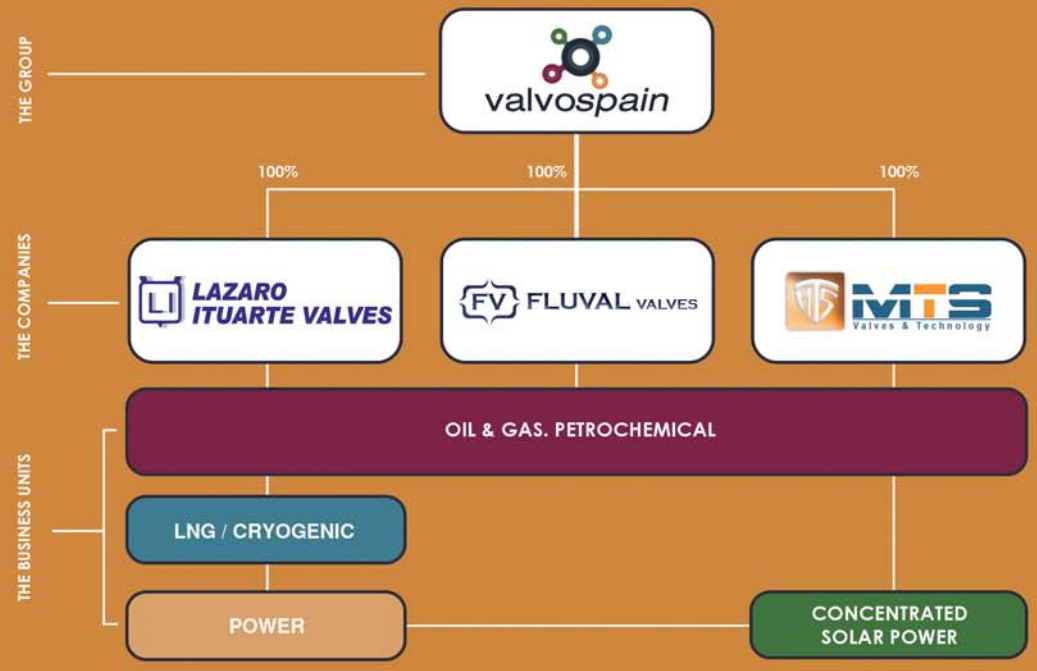
REMARK: This table is a sample of the main examinations and tests available, presented with informative purpose only. It dos not representr any contractual commitment. The examinations and tests which will be carried out for a particular purchase order will depend on the contractual requirements of the specific purchase order.

Aplications: Industries and Sectors

The companies of the VALVOSPAIN Group manufacture valves for several industries and sectors.

In order to give proper reply to the specific characteristics and needs of each industry and sector, VALVOSPAIN companies are organized in Business Units, each one is specifically dedicated to each industry and sector.

Each Business Unit is focused in their industry, offering to our customers a high degree of specialization and service.



LAZARO ITUARTE - FLUVAL - MTS

LAZARO ITUARTE

LAZARO ITUARTE

MTS - LAZARO ITUARTE

Oil & Gas. Petrochemical

Oil & Gas

The VALVOSPAIN Group manufactures a wide range of gate, globe, check, ball, plug and butterfly valves for the Oil & Gas industry and Petrochemical plant, having supplied thousands of valves, including for the most critical applications.

OIL

Handling and treatment of crude oil and refined products in the following process:

- Transportation: Oil pipelines and pumping stations.
- Tank farms
- Refineries: topping, vacuum distillation, gas plant, hydrotreatment of naphtha, hydrotreatment of craqued naphtha, hydrotreatment of diesel, hydrodesulphuration of querosene and gasoil, catalytic reforming, hydrocracking, high pressure hydro-cracking, FCC Fluid Catalytic Cracking, Visbreaking, Isomerization, Alkylation, Steam cracking, asphalt blowing, Coking, Hydrogen unit, Sulphur recovery unit, Amine regeneration unit, and other units.

PETROCHEMICAL PLANTS

Petrochemical plants for the production of:

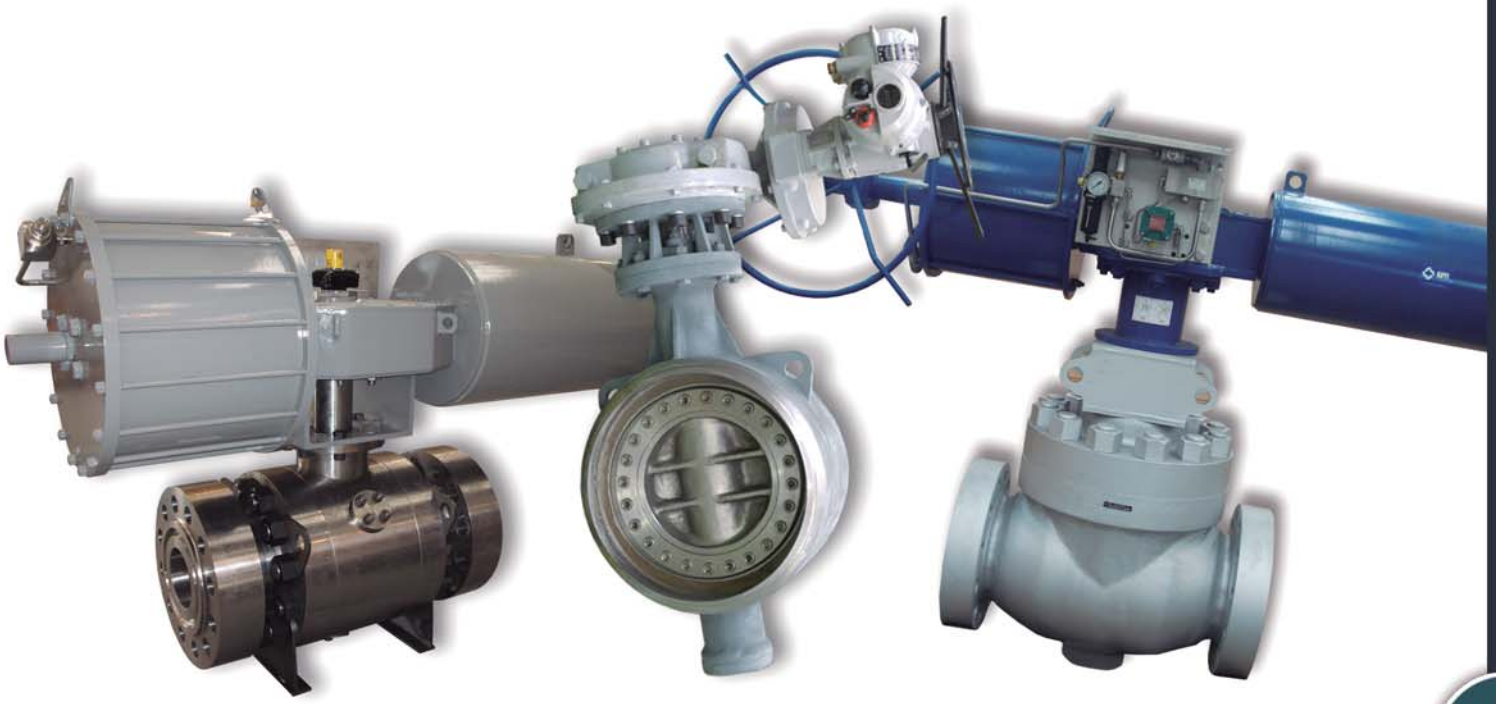
- Ethylene
- Methanol
- Aromatics
- Olefins
- Ammonia/Urea
- Fertilizers

GAS

- Transportation: gas gathering systems, gas pipelines, compression and pumping stations
- Gas Storage Tanks
- Process plants: Gas Sweetening, Acid Gas Removal unit, Sulphur Recovery unit

OFF-SHORE

- Valves for Off-Shore platforms
- Floating Production Storage Offshore (FPSO) tanker



valvospain

Liquefied Natural Gas (LNG) and Cryogenic Services

LAZARO ITUARTE designs, manufactures and supplies a wide range of cryogenic valves: gate, globe, check and ball in stainless Steel material for all the chain of the Liquefied Natural Gas and other Liquiefied gases

- Cryogenic Gate, Globe and Check valves
- Cryogenic Ball valves (Split Body, End Entry y Top Entry)

All the manufacturing process of these valves (from the design to the final testings) is made taking into account the specific characteristics of the cryogenic design. Among our facilities, we have our own cryogenic test bench to test the valves at -196ºC according to BS6364 and other specific customer/project requirements.

The design and the quality of our cryogenic valves is validated by the stringent homologation processes that we have pass.

ENAGAS, for cryogenic top entry ball, globe and check valves, including both Factory test, as well as on site test at LNG Receiving Terminal.

and SHELL for gate, globe, check, ball Split body (trunnion) and ball end entry (floating) , including cycle testing according to the stringent SHELL TAT TAMAP approval process.

Applications for Liquefied Natural Gas (LNG) and other types of Liquified Gases

Production, storage and transportation of:

- Liquefied Naturas Gas:
  - LNG Liquefaction trains
  - LNG Regasification Terminals
  - LNG carriers
  - LNG Storage Tanks
  - "Peak Saving" facilities
  - LNG Loading Arms

- Other type of Liquefied Gases:
  - Propilene (-48°)
  - Ethylene (-104°C)
  - Liquefied Petroleum Gas (LPG)
  - Methane (CH4)


Photo: Enagás

Photo: Golar


Photo: Repsol

Photo: Enagás

Power Generation

The companies of the VALVOSPAIN Group manufacture a wide range of gate, globe, check, butterfly and ball valves for the power generating sector.

Power generation by fossil fuels

LAZARO ITUARTE has a big experience in the manufacturing and supply of gate, globe and check valves for power generation plants (thermal power station, combined cycle gas turbine power plants, and others). Moreover, we are specialist in the manufacturing of "Pressure Seal" gate, globe and check valves, which are proper for the high pressure high temperature steam service.

Applications for the valves for Power Generation:

- Combined Cycle Gas Turbine power plants
- Coal fueled power plants
- Thermal power plants
- Concentrated Solar power plants. Block of Potence
- Boilers
- Steam processes. Steam facilities

Some of the main locations of the valves are as follows:

- Gas Turbine
- HRSG (Heat Recovery Steam Generator)
- Steam Turbine
- Steam System (by-pass, HP, LP, cold/hot reheat, extraction,...)
- HP feed water system
- Pressure System (economizer, draining & venting,...)
- HP Steam turbine (main piping, drainage & venting...)
- Chemicals supply
- BOP

Concentrated Solar Power

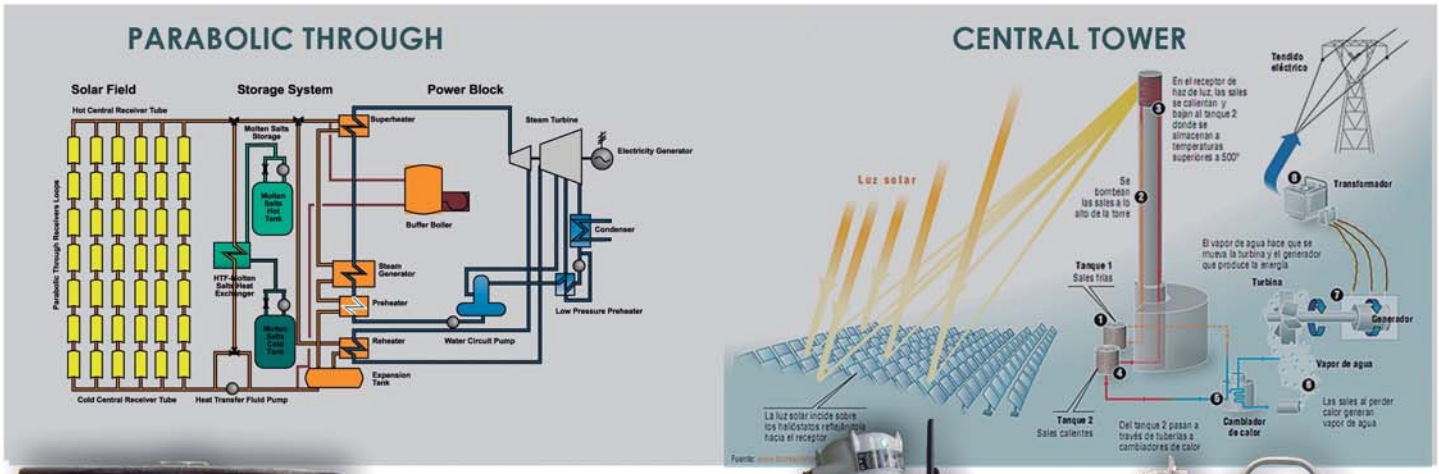
MTS Valves & Technology is a world leader in the manufacturing of valves for the solar field, HTF conductions and molten salts storage systems, including Triple Offset High Performance (Metal to Metal) Butterfly valves, Below Seal Globe valves (both on/off and control) and metal seated ball valves

LAZARO ITUARTE manufactures high pressure Gate, Globe and Check valves for the Power Block.

Between both of us, we have supplied more than 20.000 valves to 38 concentrated solar power plants in various countries such as Spain, Algeria and United States, with a total installed power capacity of more than 2000 MW, contributing to the development of this technology and to the generation of clean renewable energy.

Concentrated Solar Power technologies

- Parabolic through
- Central Tower
- Fresnel



Expression of Gratitude to Customers

VALVOSPAIN wants to express our appreciation and gratitude to all our customers for having relied on when choosing us as suppliers and partners for their projects.

Oil & Gas. Petrochemical.

Energy

IBERDROLA | endesa | gasNatural | EDF | edp
ALSTOM POWER | GE | METKA | GAMA | CFE Comisión Federal de Electricidad
cmi ENERGY | CERREY | NOOTER/ERIKSEN | NEM OUR ENERGY, YOUR POWER | Deltak WHERE ACADEMICS AND INNOVATION CONVERGE
中国国电集团公司 CHINA GUODIAN CORPORATION | CALIK ENERJi | BALCKE DÜRR | Vogt Power International | BabcockPower Hitachi Power Europe GmbH
EDISON | AB LIETUVOS ELEKTRINĖ | Latvenergo | SOHAR POWER | Gorona del Viento El Hierro

Concentrated Solar Power

Torresol Energy reinventing solar power | Gemasolar | Arcosol | Termesol | Solar Millennium
GENESIS | NEXTera ENERGY | Hyperion | FLAGSOL | SIEMENS
ABENGOA SOLAR | ITOCHU | TSK GRUPO | FCC ENERGÍA | MITSUI & CO., LTD.
acciona Energía | elecnor | OHL | renovables SAMCA | Valoriza Energía

EPC Engineering Companies

TECNICAS REUNIDAS

TECNICAS REUNIDAS
Initec Plantas Industriales S.A.U.

FOSTER WHEELER

FLUOR

Technip

Petrofac

BECHTEL

CB&I

AkerSolutions

eni saipem

Toyo Engineering Corporation

JGC

KBR

Explore the Engineering Edge
IHI

Kawasaki
Kawasaki Heavy Industries, Ltd.

MITSUBISHI HEAVY INDUSTRIES, LTD.

EXTERRAN BELLELI ENERGY

SNC·LAVALIN
Intecsa-Inarsa

SENER

cobra

DAELIM

DOOSAN
Doosan Heavy Industries & Construction

SK

中国寰球工程公司

ICA

Dodsal

HEISCO

TEAM TOLEDO

duro felguera

INITEC Energía

Asprofos engineering

AD ATTİLA DOĞAN İNŞAAT VE TESİSAT ANONİM ŞİRKETİ
44.YIL

Enppi

TEKFEN
TEKFEN CONSTRUCTION

vetcoaibel

ACS

intecsa industrial

ISOLUX CORSÁN

Iberese

Dragados Offshore

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*We, VALVOSPAIN, want to express our gratitude to all our customers, and we hope that because of space reasons we can only mention some of them.


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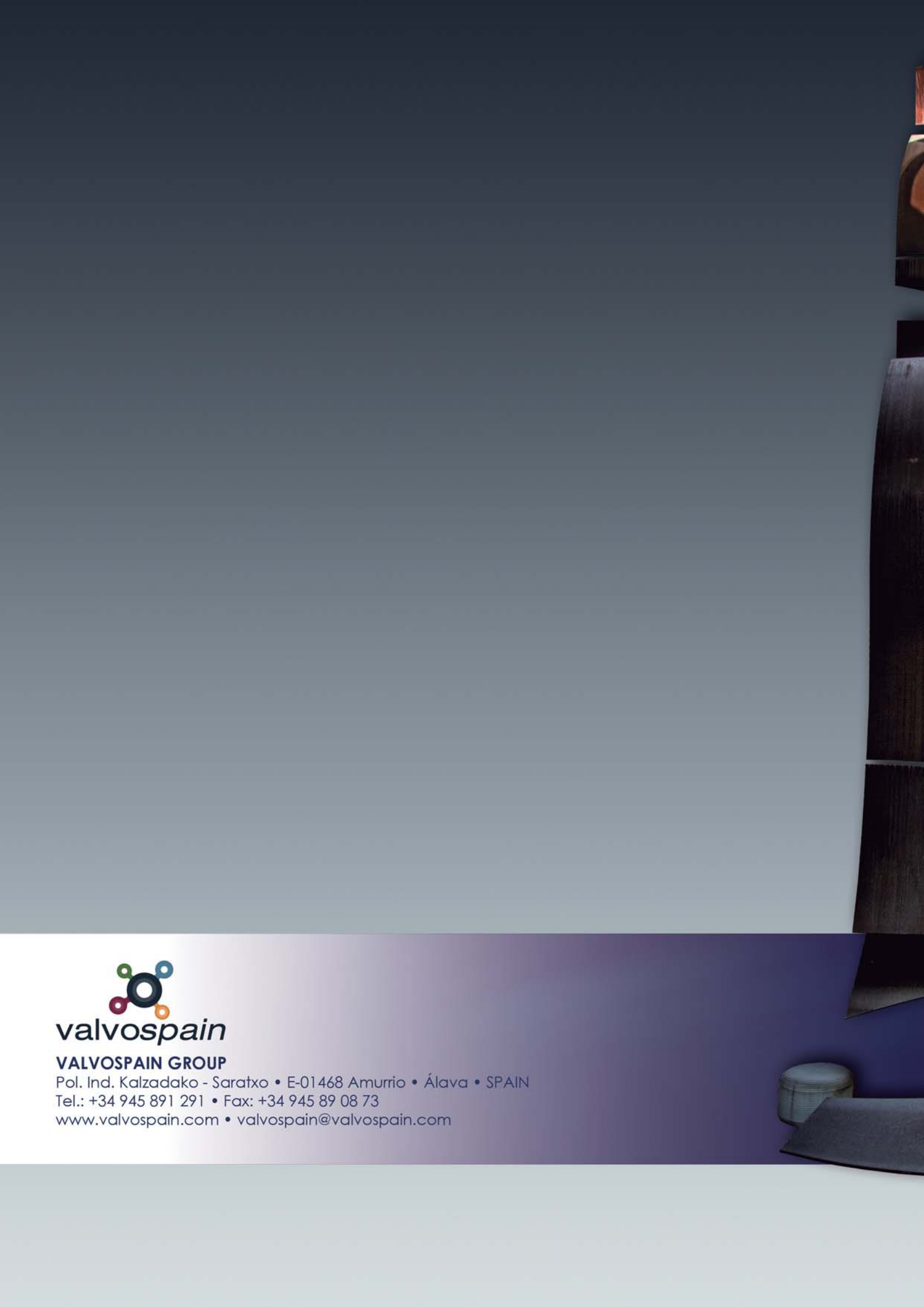

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