

**PRESSURE VESSEL MANUFACTURERS**

*Filtration Specialist*





# HOW DO WE WORK?

## ABOUT US

- ▶ **Since 1996** we have specialized in the sole distribution of strainers, filtration equipment, industrial valves, and specific fluid control products from the best manufacturers on the market.
- ▶ We pride ourselves on our **customized solutions**, flexibility, and close communication with the customer. These qualities help us deal with our customers' enquiries with maximum commitment and find the right solution to fit their business.
- ▶ This long journey has now also allowed us to be **manufacturers of filters and pressure vessels**. Our company is therefore orientated towards supplying equipment for turnkey projects.
- ▶ With sales offices in Madrid and in Barcelona, we design and manufacture customized equipment, made with all the customer's needs in mind, including all the documentation in each one of the delivery phases.



"BEING ATTENTIVE, FLEXIBLE AND CAPABLE OF REINVENTING YOURSELF IS JUST AS CRUCIAL AS TALENT AND DETERMINATION. SUCCESS LIES IN CONTINUITY."

-LUIS ZANUY · CEO UNITECNO-





## TECHNICAL DEPARTMENT

► We are focused on meeting your specific needs, a quality which can be summed up in two words:

### FLEXIBILITY AND ADAPTABILITY.

► **Our engineers' work is fundamentally grounded in technical competency and diligent supervision of the manufacturing process.**

The best guarantee for the work we carry out in our technical department is the efficiency of our staff, who are equipped to implement a variety of engineering applications:

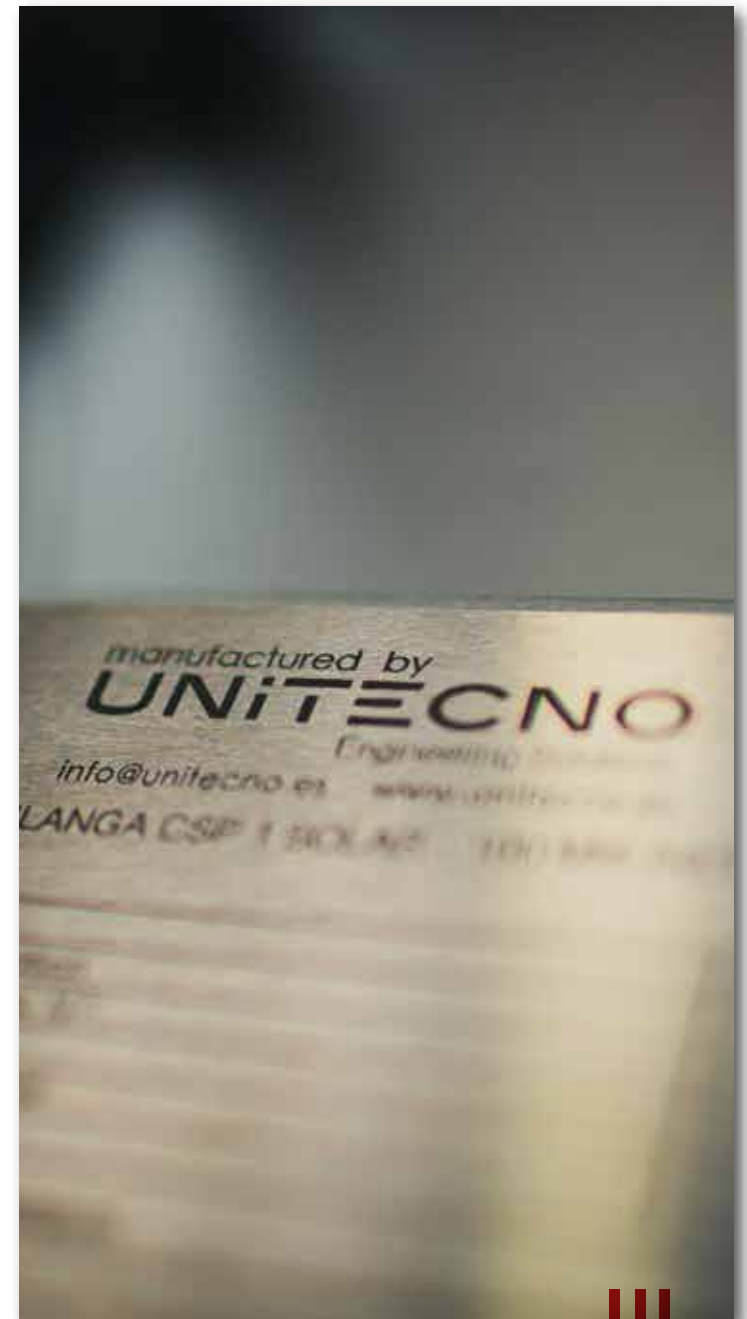
- PREPARATION AND SUPERVISION OF METALWORKS
- MECHANICAL DESIGN, CONSTRUCTION PLANS FOR FILTERS AND PRESSURE VESSELS
- DESIGNING MECHANICAL PARTS
- ENGINEERING DESIGN FOR INDUSTRIAL PLANT COMPLEXES
- DESIGNING CONTROL AND AUTOMATION PANELS

► Technical software, design and validation



► Furthermore, we are familiar with specific documentation web applications for the following contractors:

SENET | SHAREFILE | THINKPROJECT | EA GROUPWARE | DF GESTIÓN DOCUMENTAL | ENOVIA PLATFORM | ACHILLES DOCUMENTUM | SIE



# MANUFACTURING

- ▶ Our factory is located in the Berguedà region (Catalonia), close to the Llobregat river, an **area with a long industrial history** where the first textile communities in the province of Barcelona were born. It is an area that continues to stand out for its innovative mindset and its exposure to the world, which it has achieved by benefitting from the location's unique characteristics.
- ▶ We are approved by **ISO standard 9001:2015** and we are CE marked according to PED. Any stage of the manufacturing process is open to inspection.
- ▶ We are very flexible and have a great capacity **to adapt to delivery deadlines** and customer needs as we control each and every production phase.
- ▶ Our **production zones** are clearly divided for better use of materials: Reception, mechanical and milling, certified welding (ASME), weld heat treatment, tests and quality control (NDTs), blasting and painting, and packing.
- ▶ The construction materials routinely used for our metalworking jobs are: carbon steel and alloyed carbon steel, stainless steel, ferritic steel, duplex steel, and GRP (polyester reinforced with fibreglass).



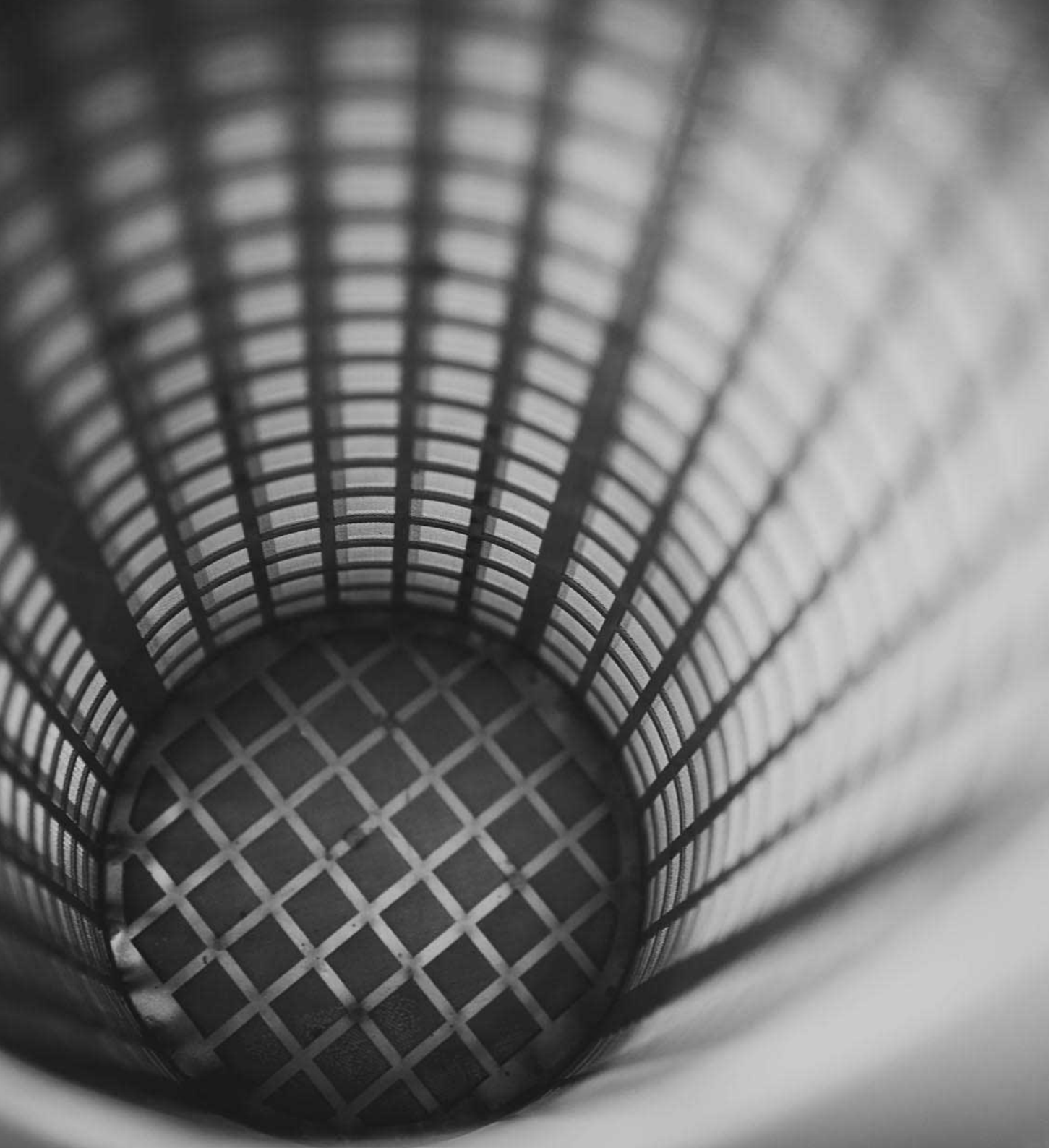


# QUALITY

- ▶ We make sure we comply with quality standards for the manufacturing process of filters and pressure vessels which are developed in line with ISO Standard 9001:2015, from the proposal to delivery and the guarantee.
- ▶ The quality control activities are demonstrated in the Inspection Point Programme (Quality Plan) coordinated with the customer. The customer, or their representative, are invited to attend trials and tests of our equipment.
- ▶ Our welders are qualified in the procedures they carry out in every job, in compliance with ASME IX.
- ▶ The NDT operators and inspectors hold the respective certification for testing on: dye penetrant, magnetic particles, radiography, and ultrasonic tests.
- ▶ Our quality assessment staff have the required experience to carry out manufacturing controls such as: Visual inspection, hardness tests, dimensional control, hydraulic tests, and documentation control.

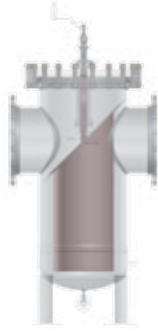
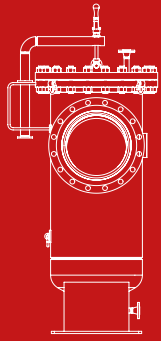
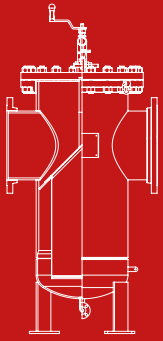
CERTIFICATIONS	MANUFACTURING IN ACCORDANCE WITH:
ISO 9001:2015 por SGS Repro Achilles UNE 73401:1995. Suministro a CCNN españolas	EN 13445 PED. Mercado CE ASME U Stamp National Board Ghost





## PRODUCT RANGE

- ▶ Main equipment protection.
- ▶ Quality in the pipeline process.



## BASKET FILTER

- ▶ **Basket filters** offer a **higher filtration capacity** compared to Y and temporary filters. Allow for easier cleaning, especially in sizes greater than 12" (DN 300).
- ▶ High capacity with reduced pressure loss in gas and liquid filtration, increasing intervals between maintenance.
- ▶ We provide high mechanical quality internals (baskets).
- ▶ Optimized bodies, designed to withstand high flow and low pressure drop. With optional quick-open mechanism.
- ▶ Cast and/or custom steel-welded according to specifications.

### SIZES

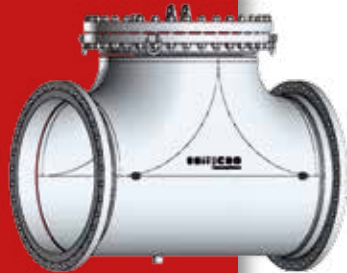
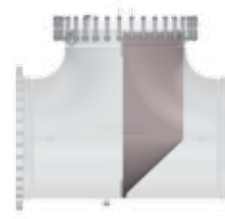
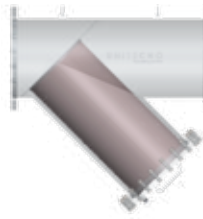
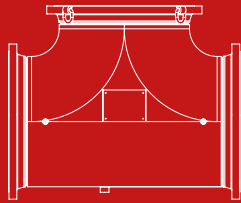
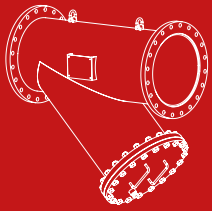
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FROM 1/2" TO 36"  
(DN 15 TO DN 900)

### RATING

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FROM 150# TO 2500#  
(PN 6 TO PN 420)



# Y, TEE and CONICAL STRAINERS

## Y STRAINER

- ▶ They are the most common and economical strainers for permanent filtering of liquids, steam and gases.
- ▶ Ideal for applications where the fluid does not have large concentrations of solid particles.
- ▶ Full range of Y strainers in stock and manufacturing to order.
- ▶ To avoid problems derived from pressure drop generated in existing low-cost Y strainers, our Y strainers have wider bodies and greater filtration surface.

## TEMPORARY STRAINER (CONE AND TEE STRAINERS)

- ▶ Cone and Tee strainers are **temporary strainers to eliminate large solids during short periods of operation**, such as during set-up and maintenance procedures.
- ▶ Although other more appropriate options are preferable, by request we do custom manufacturing with replacements for:
  - Permanent service use.
  - Increasing resistance to differential pressure due to silting.
  - Bidirectional services.
- ▶ Full range of temporary strainers. Strainers in stock and manufacturing to order.

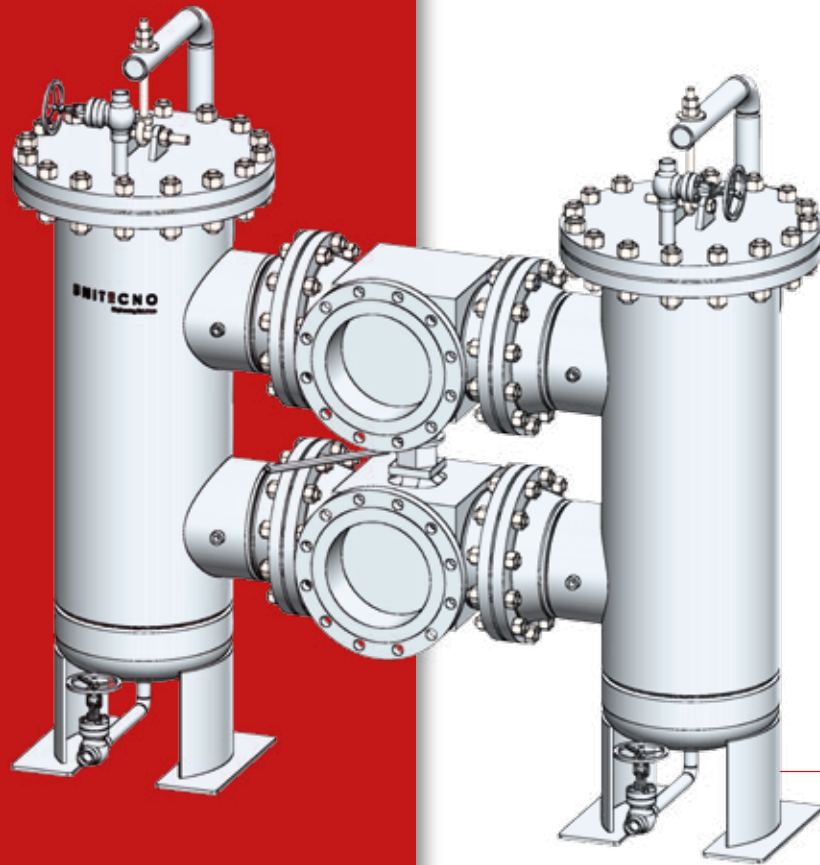
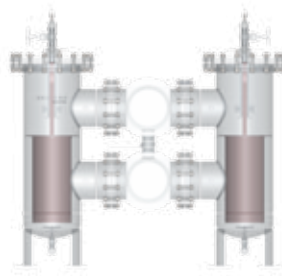
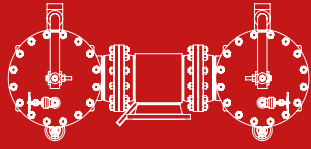
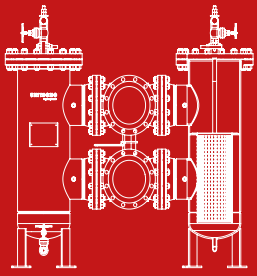
### SIZES

FROM 1/2" TO 48"  
(DN 15 TO DN 1200)

### RATING

FROM 150# TO 2500#  
(PN 6 TO PN 420)





## DUPLEX STRAINER

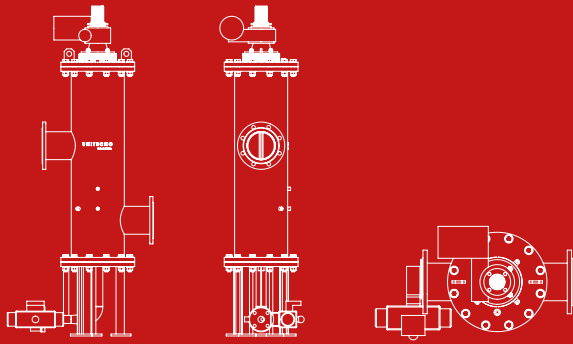
- ▶ **Duplex strainers** consist of a compact, **two-chambered filtration** system. Via a lever-controlled change system one of the chambers continues filtering at 100% while the other is isolated and the basket may be cleaned.
- ▶ The main advantage of duplex strainers as compared to Y, basket or temporary strainers is that they **allow for continuous operation during maintenance and cleaning.**
- ▶ Competitive solution for continuous liquid and gas filtration. Multiple installation options.
- ▶ Cast and/or custom steel-welded according to specifications.

### SIZES

FROM 1/2" TO 24"  
(DN 15 TO DN 600)

### RATING

FROM 150# TO 300#  
(PN 6 TO PN 64)



## SELF-CLEANING FILTERS



► Automatic filtration appropriate for demanding applications: **high temperatures, filtration grades up to 25 microns, viscous products, tar, paper pulp, etc.** Backflushing type

► The recipient contains various cartridges that filter from inside out. An electric motor operates a rotating arm that successively connects each cartridge with the backflush line, generating counterpressure in the cartridge from outside in. Particles are dragged out and flushed through the backflush line. While this is occurring in one cartridge, the rest continue filtering.

► Continuous filtration, even during cleaning.

► Filtration grade from 5 mm up to 25 microns (0.025 mm).

► Continuously operating rotating arm if required by application: The backflush valve stays open during the entire cycle: ex. seawater filtration.

► Or phase-operated rotating arm: The backflush valve does not open until the rotating arm is positioned below the corresponding cartridge: ex. combustible liquids, chemicals, etc.

► Control via a dedicated PLC that communicates with the plant's DCS (Distributed Communication System) for start-up, shut-down and process control. Time-programmable cleaning, according to the contaminant concentration.

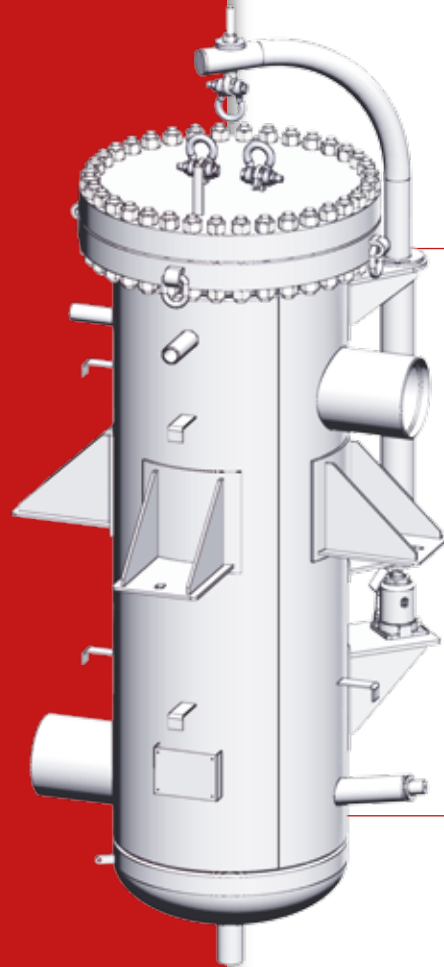
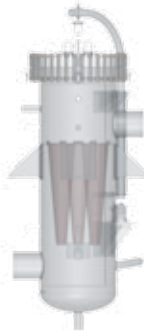
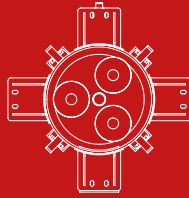
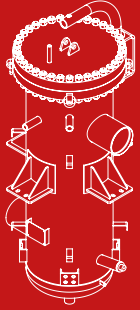
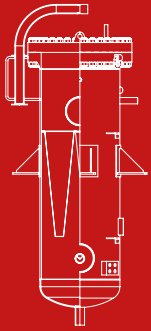
► Materials appropriate for fluid type.

### SIZES

FROM 1/2" TO 24"  
(DN 15 TO DN 600)

### RATING

FROM 150# TO 300#  
(PN 6 TO PN 64)



## CARTRIDGE FILTERS (LIQUIDS AND GASES)

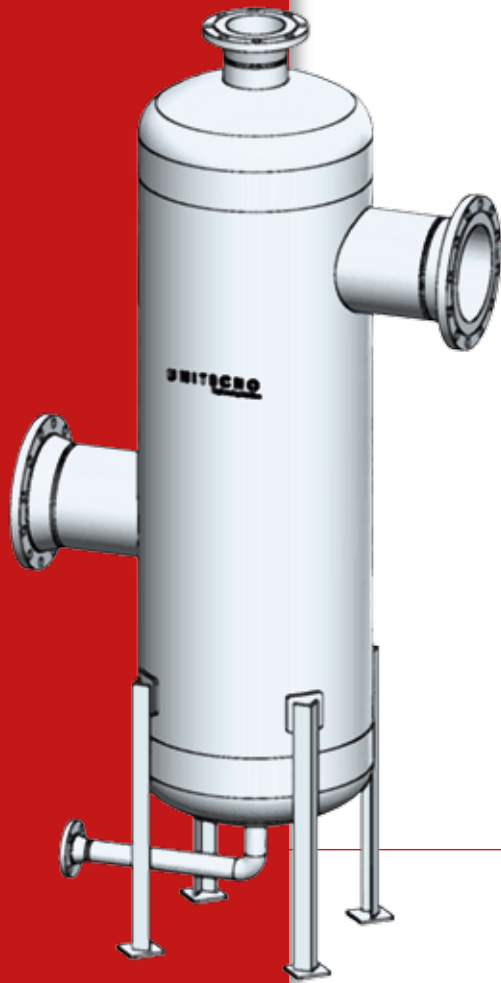
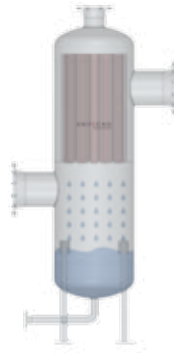
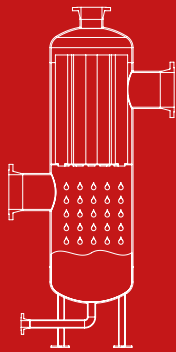
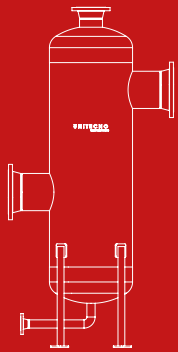
- ▶ **Cartridge filters** are used to remove small solid particles from gases and liquids. Filtration grades from 1 micron (0,001 mm) and 99.9% removal efficiency.
- ▶ Custom designs according to requirements for flow, load of solids in suspension, pressure loss, etc. with backwashing solutions as an option.
- ▶ **Safety interlock opening** option for dangerous fluids or high pressure services.
- ▶ Reusable, long-lasting ceramic or metallic filtration elements; or disposable ones such as bag, membrane, cellulose, etc.
- ▶ Liquids: Fuel oil, mineral oil, diesel, water, chemical product suspensions, etc.
- ▶ Gases: Ethylene, propylene, natural gas, hydrogen, other gases.

### SIZES

FROM 1/2" TO 24"  
(DN 15 TO DN 600)

### RATING

FROM 150# TO 2500#  
(PN 6 TO PN 420)



## COALESCERS

- ▶ Consist of **Liquid-Liquid and Liquid-Gas phase separators**: The fluid passes over a bed with graduated porosity to coalesce the particles from their initial microscopic size until they form droplets that detach due to gravity.
- ▶ If the density of the fluid to be separated is greater than the carrier medium, the collector is located in the lower part of the filter body. If not, the collection chamber is located in the upper part of the body.
- ▶ Their excellent performance in separation and filtration (99.9%) and their flow-adaptable capacity make coalescers ideal for many applications, for separation of free or emulsified water in:
  - Mineral oils, diesel, gasoline, thermal oil, solvents, aromatic compounds, etc.
  - They are also used in phase separation of intermediate or finished products: (HC) C3-C9, benzene, toluene, butane, hexane, etc.
- ▶ They have special applications for protecting gas turbines.

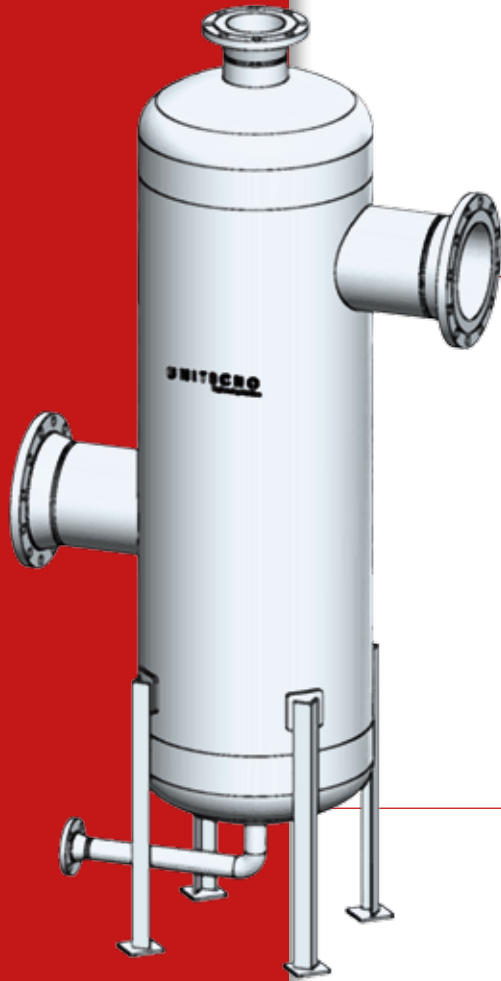
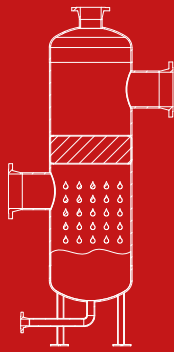
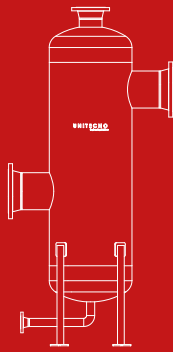
### SIZES

FROM 1/2" TO 24"  
(DN 15 TO DN 600)

### RATING

FROM 150# TO 1500#  
(PN 6 TO PN 250)





## DEMISTER (SEPARATOR)

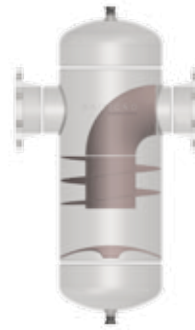
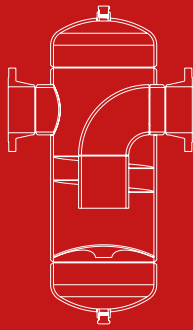
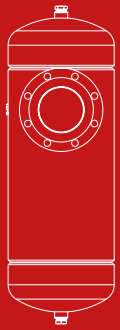
- ▶ Demisters consist of a collection of meshes of woven threads that form a dense body designed to **separate liquids in the form of small particles contained in steams and gases.**
- ▶ **They prevent emission of waste contaminants** such as sulphur compounds, salt water, sand, hydrocarbons, etc. into protected interior spaces or out into the atmosphere.
- ▶ When gas is passed through the demister, existing liquid particles in the gas hit the demister threads, build up due to molecular attraction, increase in size until they detach due to gravity and flow toward the drain.
- ▶ Demisters are basic pieces of equipment in **desulphurisation plants, for incineration, combustion gas treatment, mould, odour, bacteria, and corrosion removal due to condensation, etc.**

### SIZES

FROM 1/2" TO 24"  
(DN 15 TO DN 600)

### RATING

FROM 150# TO 1500#  
(PN 6 TO PN 250)



## CENTRIFUGAL SEPARATOR

- ▶ The **cyclonic centrifugal separator eliminates water droplets in the air or vapor flow.**
- ▶ As a result of the centrifugal force, the effects of the impact and the vortex separate the heaviest particles such as water, oil, suspended humidity or dirt.
- ▶ With steam flows, it prevents the deterioration of equipment and increases the heat transfer efficiency.
- ▶ In air circuits, it eliminates water droplets which can erode the internal parts of the actuators/pneumatic cylinders, or of the products that come into contact with the air.

### SIZES

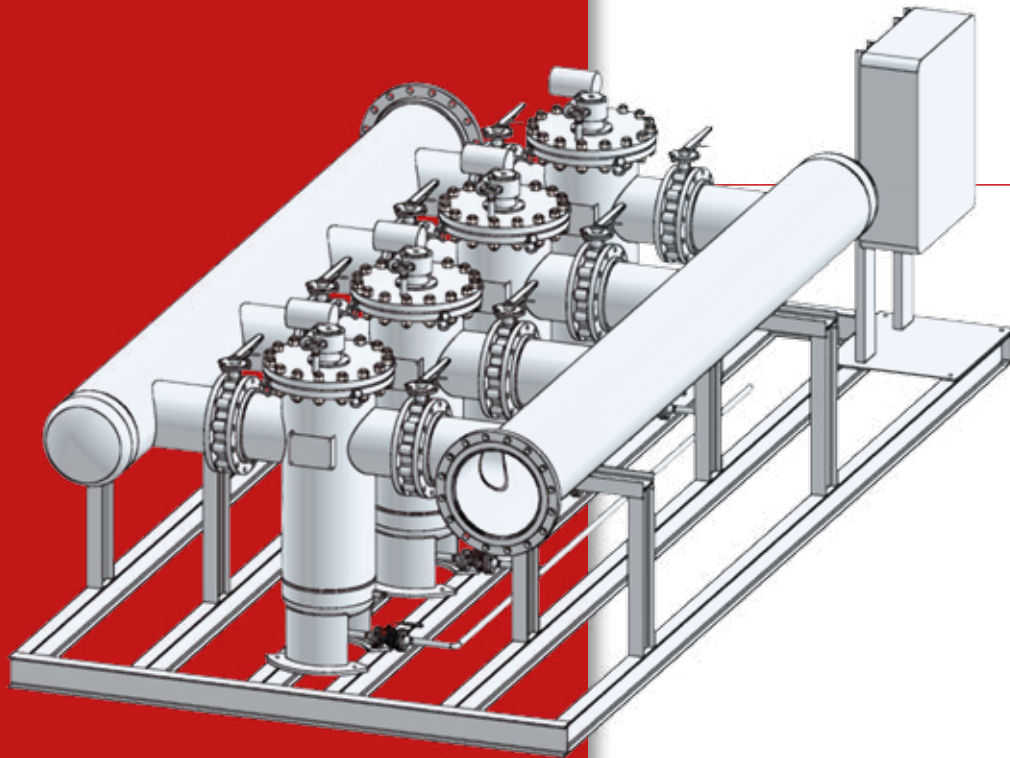
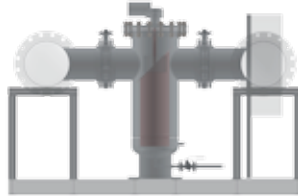
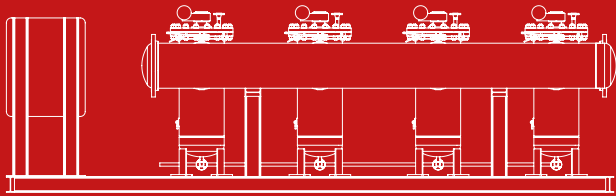
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FROM 1/2" TO 24"  
(DN 15 TO DN 600)

### RATING

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FROM 150# TO 1500#  
(PN 6 TO PN 250)



#### SIZES

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FROM 1/2" TO 24"  
(DN 15 TO DN 1200)

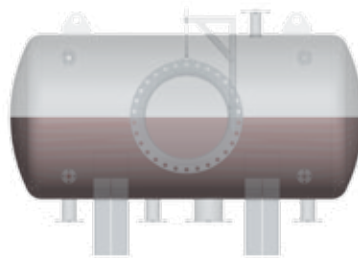
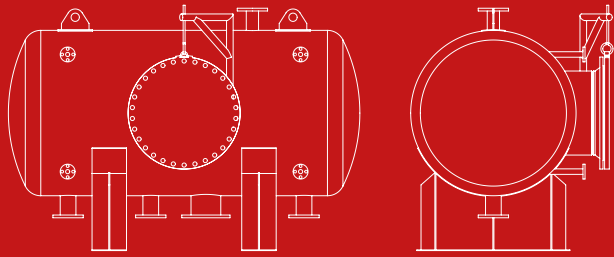
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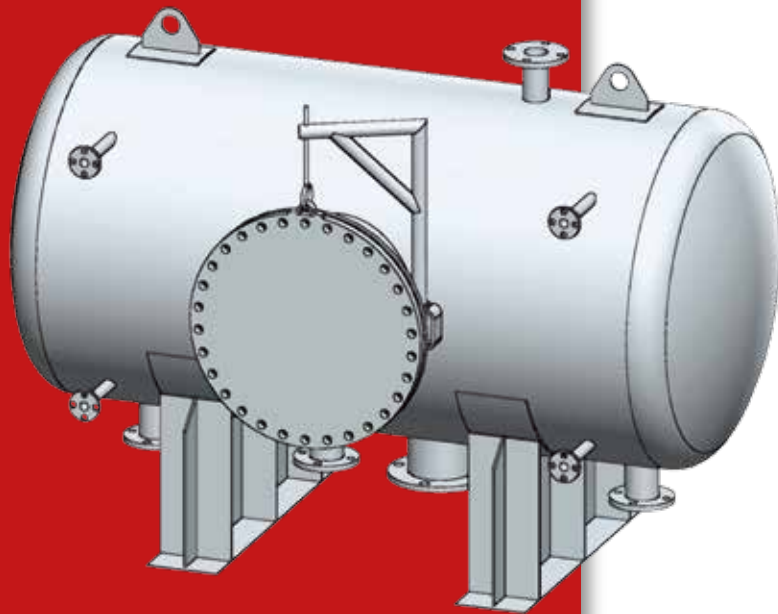
FROM 150# TO 1500#  
(PN 6 TO PN 250)

## FILTERING STATIONS

- ▶ Filtration trains consist of a structure with various vessels supplied with a filtering element in every vessel. The vessels are installed in parallel with each other and in a sufficient number for the flow needing to be filtered. The group has valves and control features to operate it.
- ▶ The “backwashing” process is completely automatic and is carried out sequentially from vessel to vessel. The backwash is produced in a small part of the filtration bank’s total area.
- ▶ With filtration grades of up to 3 microns (0.003 mm), they are an **alternative solution to sand filters**, considerably reducing the size of the system and of the backwashing flow to be used as well as facilitating maintenance.
- ▶ Operation of the modular system valves through standard components: pneumatic actuators, limit switches, and solenoid valves.
- ▶ **Backwashing with independent fluid, external fluid or even combining the independent fluid with a supporting gas.**



## TANKS AND OTHER PRESSURE VESSELS



► **Customized metalworks and pressure vessel manufacturing:** storage tanks, basins, hoppers, atmospheric deposits, collectors, distillation columns, condensate pots, etc.

► Applications for the storage of process fluids such as fuel, chemical products etc.

► Distillation columns for the production of reactions and dilutions, batch production.

► Designs and materials in accordance with the following regulations:

PED 2014/68/EU

87/404/CE PED

Regulations for oil installations and ITC-MI-IP 03/04 (Spanish regulation)

ASME VIII Div. 1 Code

ASME VIII Code with ASME U Stamp

AD Merkblätter

API 650 - DIN 4119 - DIN 6608

SIZES

CUSTOMISED



# APPLICATIONS

- ▶ Chemical and petrochemical industries
- ▶ Refineries, oil and gas
- ▶ Energy
- ▶ Steel industry
- ▶ Paper industry
- ▶ Water treatment

# REFERENCES

We have also worked with customers who can attest to our commitment and effort in every project, which we carry out while always being orientated towards satisfying each customer's specific needs.

## PROJECTS:

**KATHU THERMOSOLAR PLANT**  
SENER AND ACCIONA

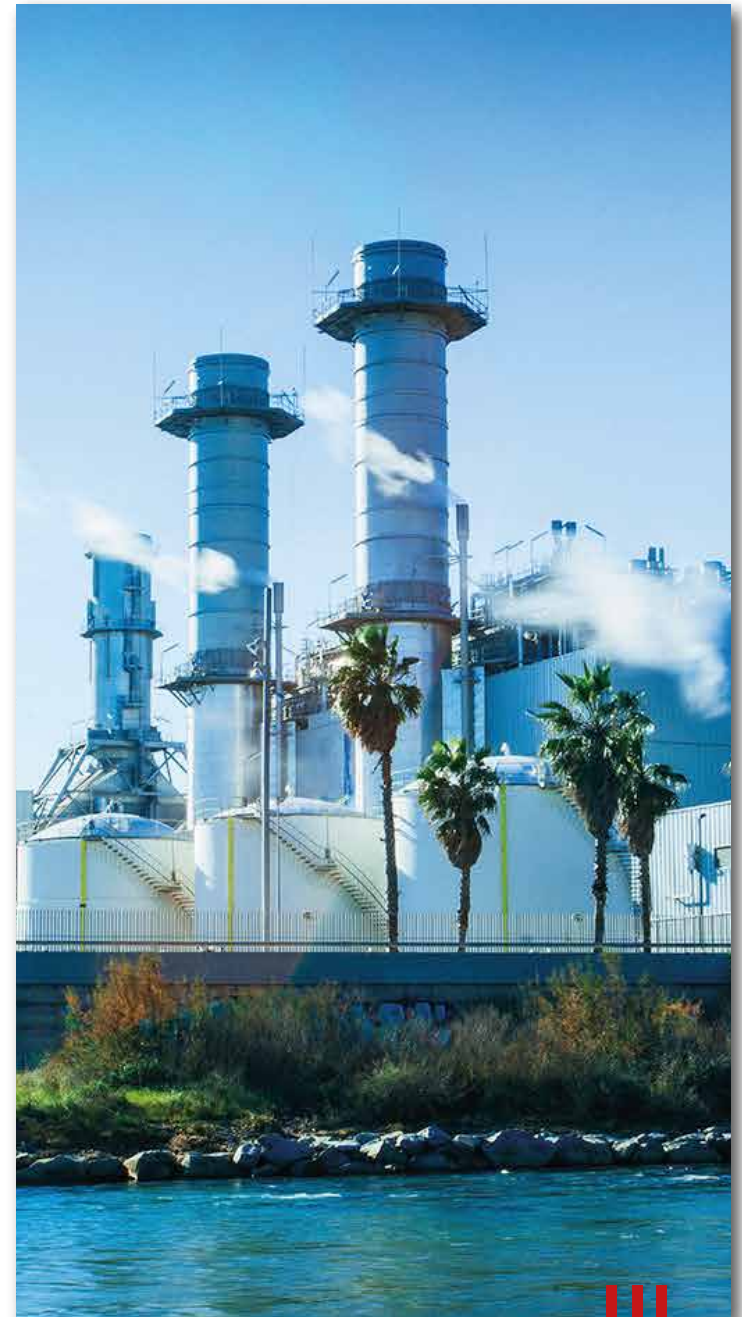
**ILANGA THERMOSOLAR PLANT**  
SENER AND COBRA

**DUBA THERMOSOLAR/COMBINED CYCLE HYBRID PLANT**  
INITEC

**SHAGAYA THERMOSOLAR PLANT**  
TSK

**LOS MINA COMBINED CYCLE PLANT**  
TÉCNICAS REUNIDAS

**CASTELLÓN BP OIL REFINERY**  
AMEC FOSTER WHEELER



# SOME OF OUR CUSTOMERS

## END USERS

EON, BASF, DOW, BP OIL, REPSOL, CEPSA, IBERDROLA, ENDESA, NATURGY, EDP, STORAENSO, ARCELORMITTAL, ASCO, COFRENTES AND ALMARAZ NUCLEAR POWER PLANTS.

## OEM

SIEMENS, ALSTOM, FLOWSERVE PUMPS, SULZER, KSB, JOHNSON CONTROLS.

## CONTRACTORS

TECNICAS REUNIDAS, WOOD (AMEC FOSTER WHEELER), ACCIONA, SENER, INTECSA, COBRA, INITEC, TSK.



**SIEMENS**



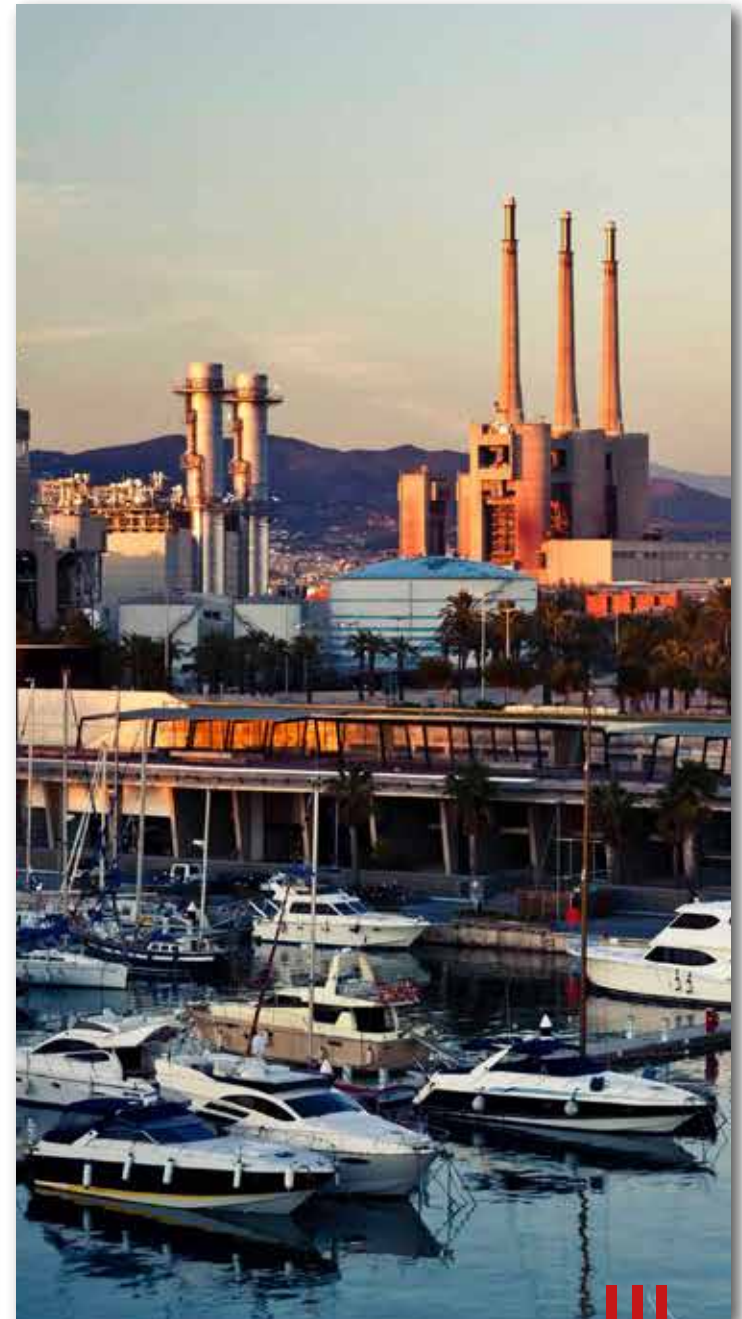
**FLOWSERVE**

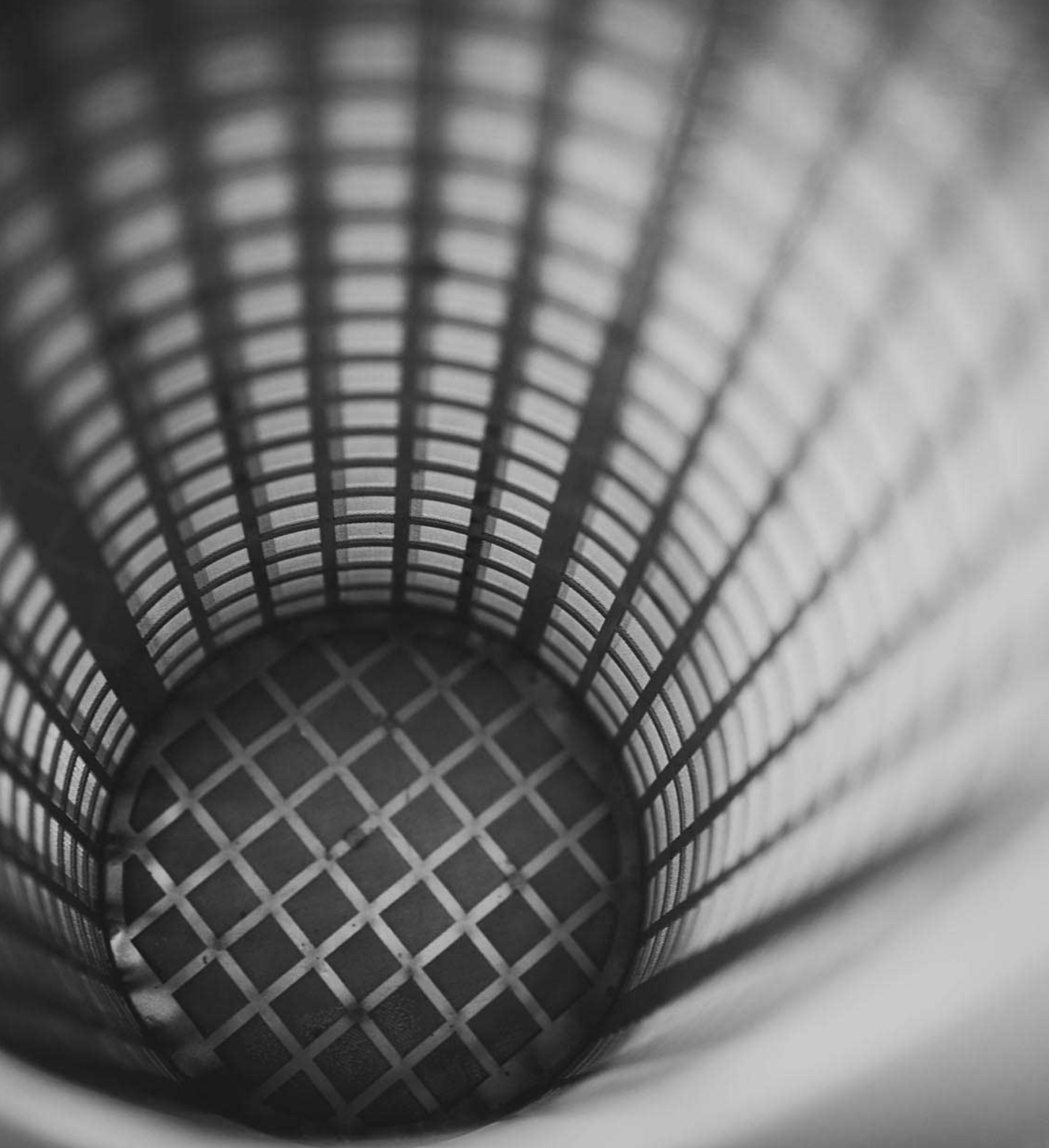


**ALSTOM**



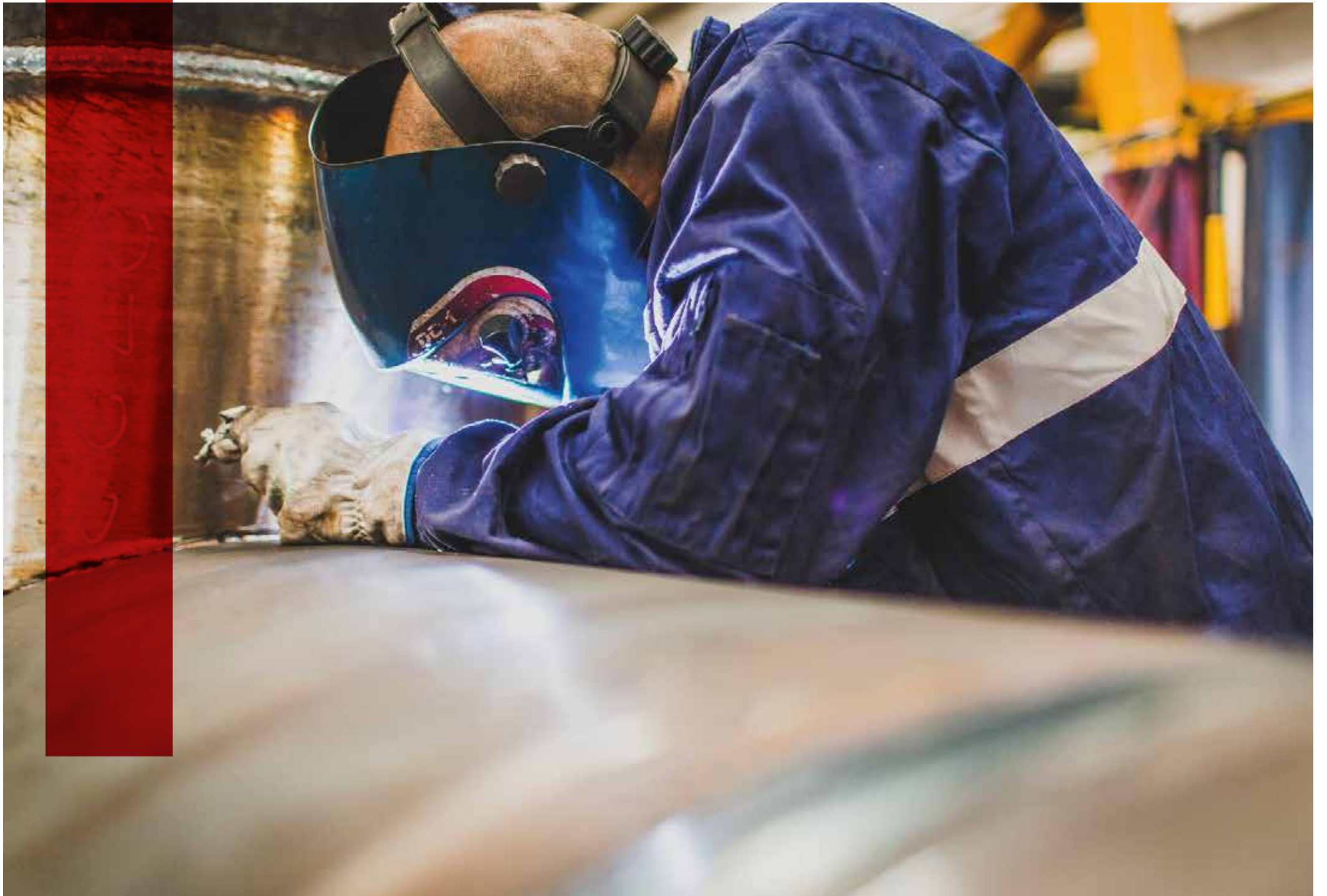
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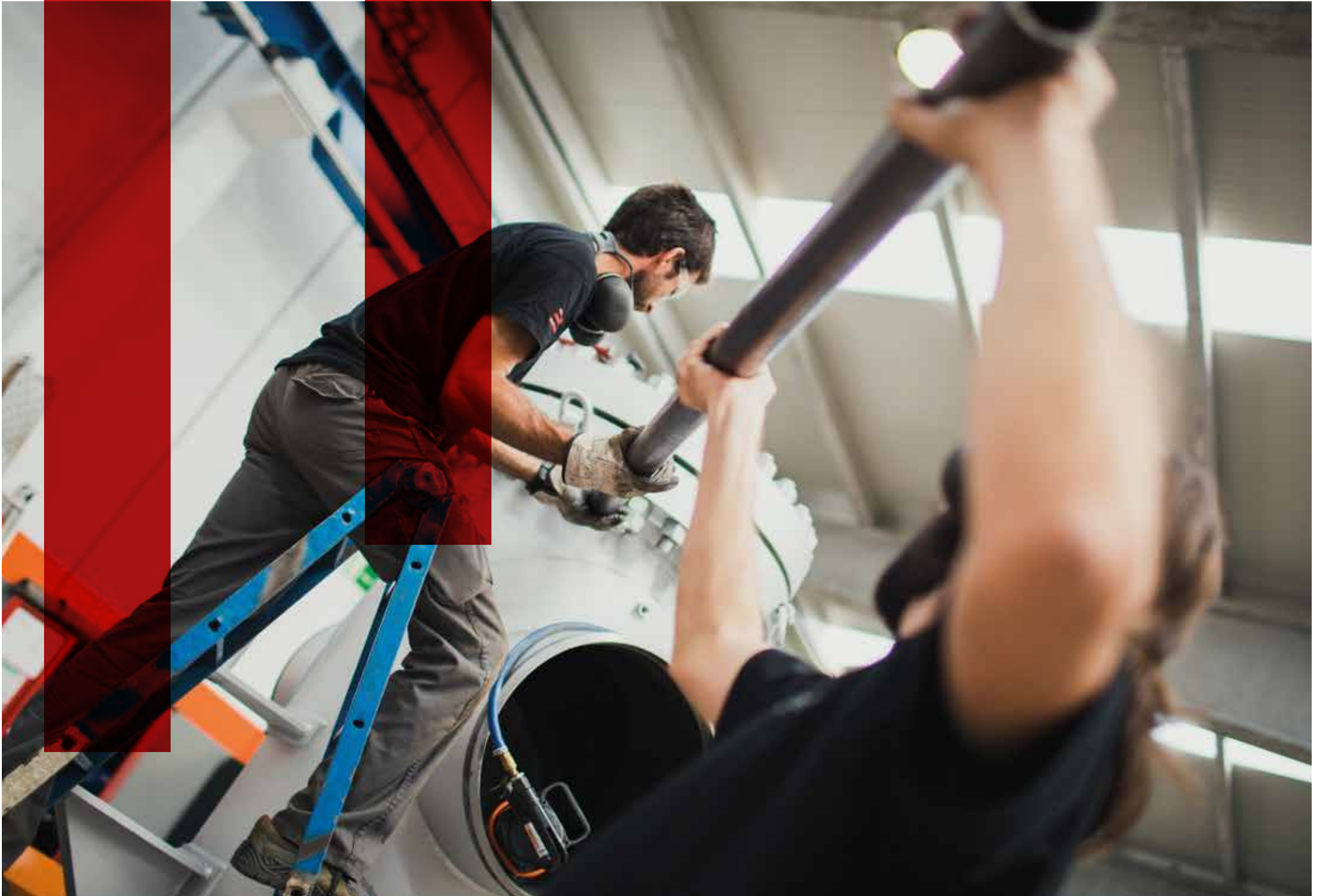


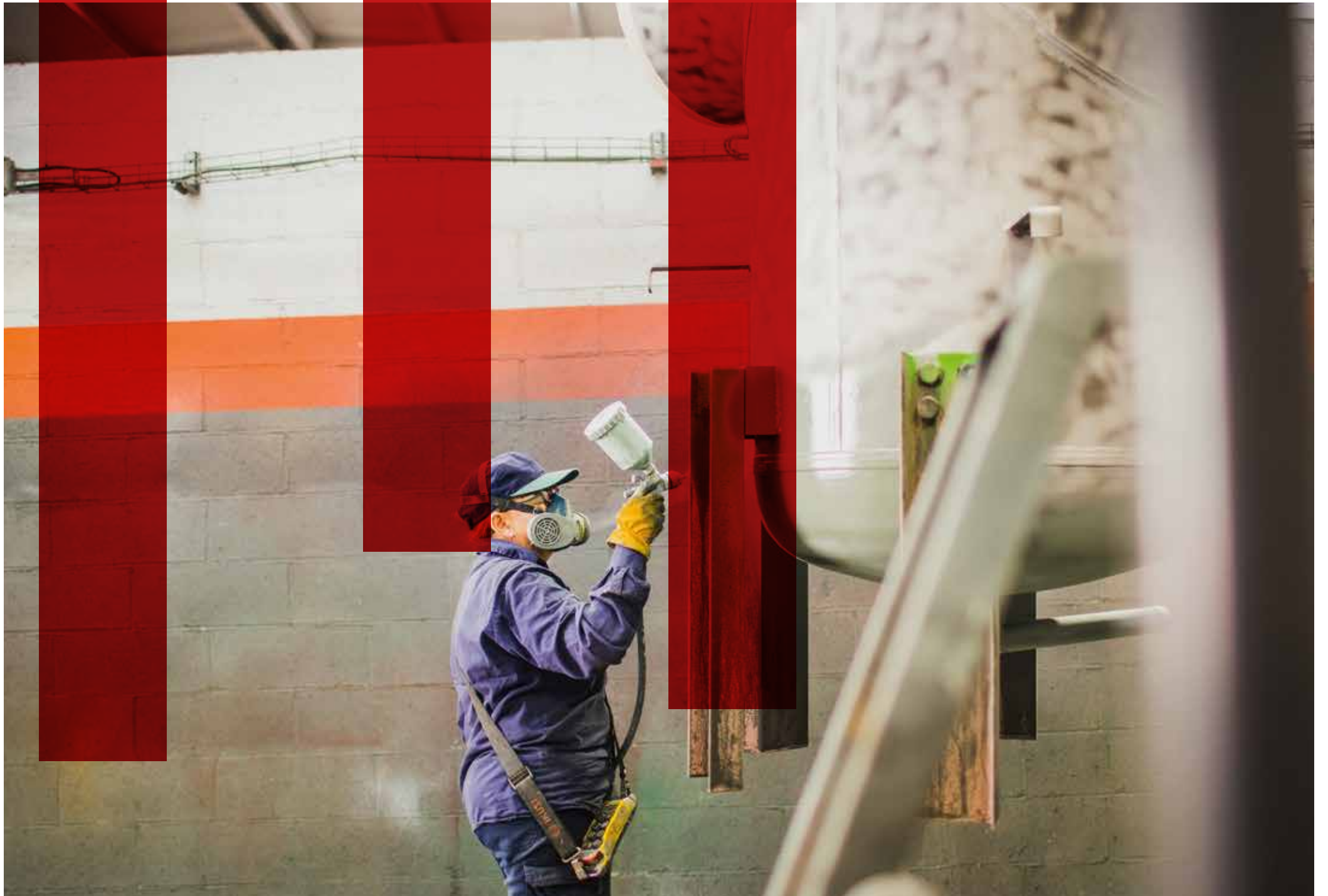
OUR  
OWN  
DESIGN































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Engineering Solutions

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