SOCIÉTÉ PYRÉNÉENNE
DE MÉTALLURGIE

Satisfying your requirements
through our professional performance

www.spm-sa.com

KEY FIGURES

EXPERIENCE
60 years

ACTIVE CLIENTS
160

EXPORT SHARE
30 %

WORKSHOP SURFACE
3,000 m^2

TRAINING BUDGET
7 % of payroll

WHO ARE WE?

A team providing expertise and solutions

SPM draws on more than 60 years of experience in metallurgy to design and manufacture high-performance, certified industrial equipment.

What makes us stand out from the crowd is the complete in-sourcing of the production cycle of our products and our expertise in mastering all the specialties involved in their manufacture. This organization allows us to provide comprehensive and customized solutions, while ensuring high responsiveness both in France and worldwide.

SPM is at your side at all times, committed to quality and continuous improvement.

Multi-sector solutions

We share our know-how and offer concrete industrial solutions in the following sectors:

Oil & gas

Nuclear

Geothermal

Energy

Other sectors:
Chemical, Aeronautics, Agro-food, General Mechanics

OUR KNOW-HOW

Meeting your requirements through our professional skills

Since the creation of our company, our strength has always been comprehensive skills in all the activities involved in the design and manufacture of complex equipment (engineering, machining, metalwork, inspections & testing, surface and thermal treatment). Full integration of this wide range of activities also gives us high responsiveness both in the manufacturing cycle of your industrial equipment and in our technical support.

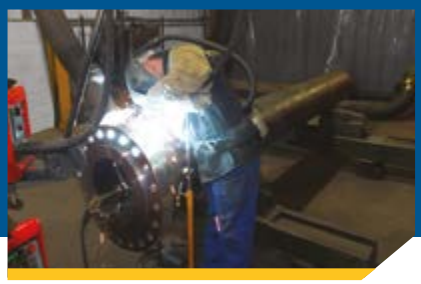
Thanks to the extensive skills of all our staff, combined with the latest cutting-edge equipment, we offer high quality services in the following business lines:

ENGINEERING

- Project management
- Process calculations
- Pressure strength calculations
- Finite-element analysis
- CAD

MACHINING

- CAD-CAM
- Turning
- Milling
- Cutting



METALWORK

- Mechanical welding
- Piping
- Welding

INSPECTIONS & TESTING

- Metrology
- PMI testing
- Dye-penetrant inspection
- Magnetic particle inspection
- Hydrostatic testing

SURFACE TREATMENT & HEAT TREATMENT

- Pickling / passivation of stainless steels
- Manganese phosphating
- Heat treatment

OUR CERTIFICATIONS, APPROVALS & CUSTOMERS QUALIFICATIONS

System and product certifications

- API 6A-0200
- API 5CT-0011
- API 7-1-0945
- ISO 9001 : 2015
- VAM® Services

VAM® is a registered trademark of Vallourec Oil and Gas France.

Professional certifications

- Dye-penetrant inspection, Cofrend Level 2
- Magnetic particle inspection, Cofrend Level 2
- PCR Level 2
- IWT

Customers approvals or qualifications

- EDF
- AREVA NP
- TOTAL

YOUR CLIENT REQUIREMENTS

Our commitment is to assist you
Our priority is to satisfy you

60 years of metallurgical know-how at your service, in the field of industrial equipment design and manufacturing, centered on 6 major product families:

FLOW MEASUREMENT & RESTRICTION

- Diaphragms / Orifice plates
- Nozzles
- Venturi tubes
- Flow restrictors

PRESSURE EQUIPMENT

- Vessels
- Condensing, degassing, decanting pots
- Piping elements
- Other equipment

HIGH PRESSURE / HIGH TEMPERATURE SEALING

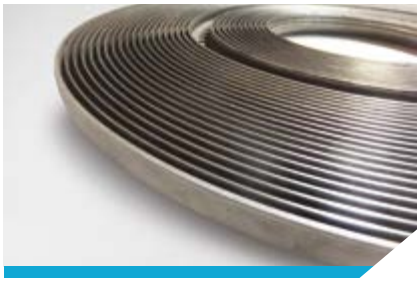
- Standard RTJ gaskets
- Custom gaskets

WELLHEAD EQUIPMENT

- Casing & Tubing Heads
- Casing & Tubing Hangers
- Crosses & Tees
- Adapter Flanges
- Tools
- Top Connector Bodies

COMPLETION EQUIPMENT

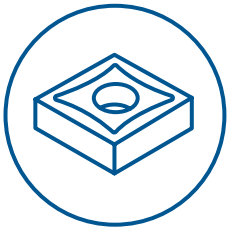
- Landing and other Nipples
- Pup Joints & Crossovers
- Mandrels
- Plugs
- Expansion Adapters
- Cable Cutter Guides

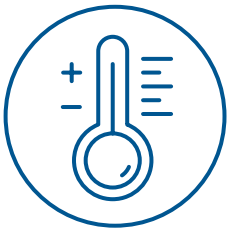


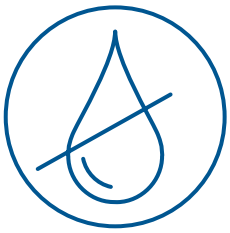
OTHER CUSTOMIZED SOLUTIONS

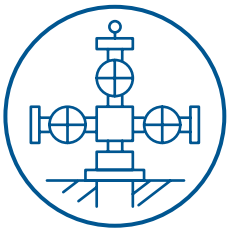
- Machining
- Mechanical welding

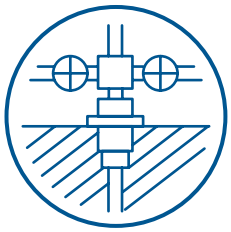
Summary











OUR KNOW-HOW

ENGINEERING

The engineers and technicians of our design office have extensive skills and knowledge in process and mechanical equipment design, manufacturing processes (machining, welding, heat treatment, surface treatment) and inspections (NDT, proof pressure test, bench test) in addition to thorough mastery of construction codes, standards and regulations.

Thanks to the capacity of our design office to work independently and the feedback we have acquired (in-house design and manufacture), we can assist you throughout the project and even right from the call for tender in adapting the requirements applicable to the product with respect to function / performance / cost / quality / lead time.

As a manufacturer, SPM carries out the conformity assessment using the European Pressure Equipment Directive 2014/68/UE (PED) and the conformity assessment (as manufacturer or as support for the manufacturer) with the French decree of December 30, 2015 on nuclear pressure equipment (ESPN).

- **Project management**
- **Process calculations**
- **Pressure strength calculations**
- **Finite-element analysis**
- **CAD**

Project management

The versatility of our project managers as well as the structure of SPM ensure proactive management of your project to meet your evolving needs in terms of requirements and deadlines.

In addition to the project schedule defined according to MS Project, SPM creates and follows an in-house dynamic and visual schedule that is periodically updated with all the departments, to optimize the allocation of resources, efficiently coordinate all activities, and make sure that your requirements are totally fulfilled.

Documentation regarding the product and its manufacturing process is entirely produced by SPM, and has been checked and validated by competent persons to ensure compliance with the applicable requirements.

Process calculations

SPM has developed in-house process sizing calculation tools to define the dimensional characteristics of the product:

- Flow measurement equipment as per standards NF EN ISO 5167-1 to -4, ISO/TR 15377, ASME MFC-14M, ASME MFC-3M, ASME PTC 19.5, ASME PTC 6, chosen according to the type of fluid, installation constraints, expected measuring accuracy and maximum allowable pressure drop
- Flow limitation equipment (simple orifice or multi-orifices) according to a sizing method specific to SPM with determination of the cavitation level and number of stages

Depending on the expected accuracy, test bench validation of equipment performance is carried out in a certified test laboratory to refine the discharge or pressure loss coefficient.

Pressure strength calculations

Equipment pressure strength is tested using SPM's own calculation tools to validate the geometry, thickness and material grade of each component.

Analytical calculations are made as per the requirements of the construction codes used (RCC-M, NF EN 13480, ASME B31.1, ASME B31.3, CODAP, CODETI) and supplemented, if necessary, by finite-element calculations depending on the complexity of the geometry.

SPM also checks the pressure resistance of the tools used when proof testing the equipment.

Finite-element analysis

When the analytical calculation does not ensure a complete validation of the pressure resistance, a finite-element calculation is carried out by SPM with CASTOR CONCEPT.

If the finite-element model becomes too big or when other specific constraints need to be taken into account, SPM entrusts this calculation to an external service provider qualified in the relevant sector of activity, in line with the specifications drafted by SPM.

CAD

The 3D model of the geometry of each piece of equipment is created with Topsolid CAD software, and is then used by our methods department for CAD/CAM programming and, if necessary, for the different assembly phases.

Drawings are issued to ensure the manufacture (detail drawings), (assembly drawings), execution of the proof pressure test (tooling drawings), performance test (instrument line drawings) and installation on site (assembly and interface drawings).

MACHINING

Our highly qualified programmers and manufacturing operators draw on all their skills to perform the most complex machining operations.

Our highly efficient and constantly evolving equipment allows us to carry out many types of machining operations. All our parts produced reach an optimal level of quality, while meeting safety, cost and time constraints.

Main equipment available and characteristics:

- CAD-CAM - Turning - Milling - Drilling- Boring - Cutting
- Production equipment steered by highly qualified technicians
- Capacities available for large dimensions and high accuracy
- Organization on a human scale, contributing to high responsiveness

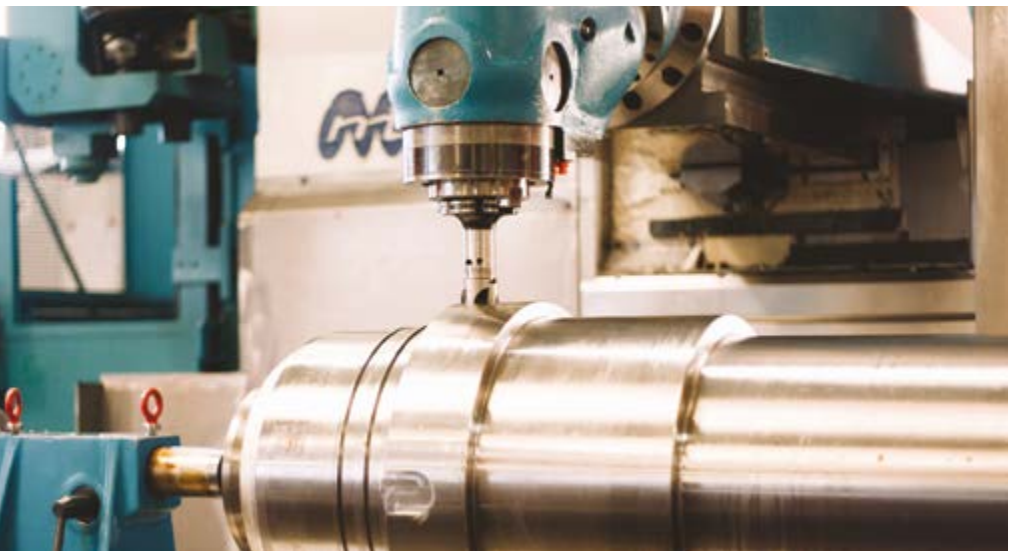
- **CAD-CAM**
- **Milling**
- **Turning**
- **Cutting**

CAD-CAM / Methods

Our experienced technicians use our integrated CAD-CAM tools.

These tools help us optimize our production lead times and our machining cycles, secure our programs and define specific tools.

The key focus of this department is the constant search for the best cutting conditions and increasingly efficient tools.



Turning / milling / cutting

Our highly qualified personnel use a range of different machining processes, such as:

- **CNC and conventional lathes** (horizontal, vertical, dual-spindle, with C and Y-axis milling capacities).
- **5-axis CNC and conventional milling**
- **CNC band saw for large diameters**

Large capacities:

CNC vertical turning	Diameter: 2 m; length: 1 m
CNC horizontal turning	Diameter: 850 mm; length: 3.2 m
Parallel turning	Diameter: 900 mm; length: 5.5 m
CNC turning	3.2 m x 1.25 m x 1.2 m
Cutting	Diameter: 530 mm; 4 tons

METALWORK

Our Metalwork department covers a wide range of core activities in the history of SPM. We have a complete and constantly improved transformation workshop that satisfies the requirements of applicable standards and of our customers.

Our qualified engineers and technicians are ready to take up any challenge and manufacture new parts or open new markets.

We offer a wide range of processed materials: carbon steels, low-alloy steels, austenitic stainless steels, austeno-ferritic steels, duplex.

- Mechanical welding
- Piping
- Welding

Mechanical welding

Complete execution of the sheet metal working, welding and steel working phases, as well as the finishing, preparation and adjustment of parts. We can offer a wide range of mechanically-welded products.

Main equipment:

- Welding positioners and rotators
- Gas cutting equipment
- Sheet metal brake, 110 tons, max. length 2 m
- Other vertical and horizontal metal brakes, 100 tons
- An extensive range of handling equipment with a maximum capacity of 6 tons

Piping

Complete execution of the cutting, chamfer preparation, docking, grinding and finishing phases.

Our recognized experience allows us to produce medium and high-pressure piping equipment in sectors with high quality requirements.

Capacities covering diameters from 1" to 32", up to 48 mm thickness.

Welding

Welding using TIG, MIG, MAG, coated electrode and butt welding.

Material grades and groups as per FD CEN ISO/TR 15608:

Carbon steels	Groups 1.1; 1.2; 1.3; 11.1
Low alloy steels	Groups 4.2; 5.1; 5.2; 6.4
Austenitic stainless steels; austeno-ferritic steels	Groups 8.1; 8.2; 10.2

Main characteristics:

Thicknesses	2 mm to 48 mm
Type of part	All types of parts

The WPQR are performed in compliance with:

- NF EN ISO 15614-1
- ASME section IX
- RCC-M Section IV

Regular audits of our welding activities as per NF EN ISO 3834-2 by our prime contractors.

Our welders are qualified as per the standards:

- NF EN 287-1
- NF EN ISO 9606-1
- ASME section IX

Our welding coordinators hold degrees in IWT (International Welding Technologies).

INSPECTIONS & TESTING

The qualified inspectors of our Quality Control department guarantee the compliance of our products by completing the following inspections:

- Visual and dimensional inspections
- PMI testing (Positive Material Identification)
- Dye-penetrant inspection
- Magnetic particle inspection
- Hydrostatic testing
- Hardness testing

All our inspection equipment is quality controlled at the frequencies required by the main policy standards applicable to the verification of inspection equipment.

- **Metrology**
- **PMI testing**
- **Dye-penetrant inspection**
- **Magnetic particle inspection**
- **Hydrostatic testing**

Metrology

All our machined and mechanically-welded products undergo various dimensional quality controls, in addition to systematic visual inspection, using a comprehensive range of equipment:

- FARO mobile arm for 3D inspections
- Calipers with a measuring range of up to 2,000 mm
- Profile projector, 600 mm in diameter, 10/20/50 magnification
- Outside and inside micrometers with a measuring range of up to 500 mm
- Drift detection as per API and VAM®
- Gagemaker equipment
- Thread inspection gauges for ISO, API and other threads
- Digital roughness tester and touchscreen display.
- Other types of metrology equipment.
- Hardness testing

VAM® is a registered trademark of Vallourec Oil and Gas France.

PMI testing

PMI (Positive Material Identification) testing, performed under the supervision of our in-house Radio-protection Safety Officer, allows us to identify the main chemical compositions of our materials and thus complete our raw material verification process.

This inspection is carried out on all our incoming raw material flows and on samples of our production flows.

Dye-penetrant inspection

Controllers are certified COFREND[1] Level 2 in compliance with NF EN 9712 and have taken an annual visual acuity test.

Our in-house procedures, applicable to dye-penetrant inspections in accordance with the main construction codes (RCC-M, CODAP, NF EN 13480, CODETI, ASME), have all obtained COFREND Level 3 validation.

Compliance with PMUC[2] requirements

Checks are performed on our products at different manufacturing stages (on machined parts, during welding, after welding).

Dye-penetrant inspections of welds can be supplemented by other NDT.

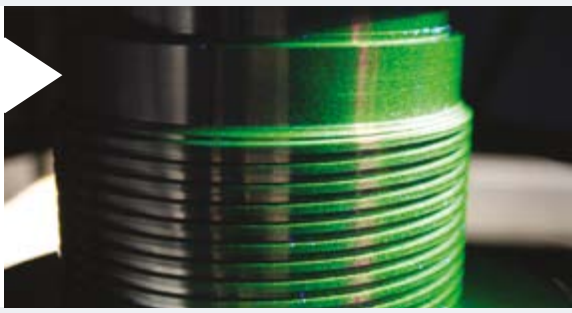
[1]COFREND: French Confederation for Non Destructive Testing
[2]PMUC: French accreditation of Products and Materials used in NUCLEAR POWER PLANTS

Magnetic particle inspection

Controllers are certified COFREND[1] Level 2 in accordance with NF EN 9712 and have taken an annual visual acuity test.

Our in-house procedures, applicable to magnetic particle inspection in accordance with the main policy standards (API, ASME), have all obtained COFREND Level 3 validation.

[1]COFREND: French Confederation for Non Destructive Testing



Hydrostatic testing

Hydrostatic testing is used to check the structural integrity of pressure equipment. It involves filling the equipment with water and increasing pressure to a level that exceeds its normal operating pressure. This test ensures that the equipment has no defects.

Available resources:

- Maximum pressure up to 14,500 psi and manometers with class 0.5 accuracy
- Possibility of recording the cycles using special software
- Dedicated testing area
- A large number of testing tools available *(blind flanges, threaded rods, gaskets)*
- Tests monitored by clients or notified bodies
- Testing pit for special equipment
- In-house sizing and manufacturing of testing tools
- Periodic verification of water quality

SURFACE TREATMENT & HEAT TREATMENT

SPM has chosen to propose and master this wide range of processes in-house to ensure a greater responsiveness and make a complete offer to its customers.

SPM uses, in particular, special surface treatment processes for pickling passivation of stainless steels, phosphating and annealing heat treatment of unalloyed or low alloy steels.

We also perform all the degreasing and corrosion protection operations on carbon steels.

- **Pickling / passivation of stainless steels**
- **Manganese phosphating**
- **Heat treatment**

Pickling / passivation of stainless steels

Integrated chain for austenitic stainless steel pickling and passivation.

The main property of stainless steels is their resistance to corrosion; this property is obtained by applying a chromium oxide film.

Means available:

- Four 900 x 900 x 900 mm baths
- A dedicated storage room to keep products clean

Manganese phosphating

Integrated manganese phosphating chain for non-alloy and low alloy steel parts.

This treatment is used more particularly to improve:

- Sliding properties and limit the risk of seizing
- The adhesion of additional surface treatments

Means available:

- Two 1,000 x 1,000 x 650 mm baths

Heat treatment

Integrated furnace for annealing non-alloy and low alloy steels in neutral atmospheres.

Vessels:

- 1,200 mm diameter
- 1,200 mm height
- 500 kg load capacity
- Maximum heat treatment temperature of 950°C

OUR CLIENTS REQUIREMENTS

FLOW MEASUREMENT & RESTRICTION

Our flow measurement equipment are based on the principle of differential pressure measurement. It consists in modifying the fluid flow section, generating a static pressure difference, which is measured to calculate the flow-rate.

Differential pressure flow meters are the oldest used devices for measuring flow-rate. They were introduced in Roman times to bill the water distributed by the aqueducts. The first scientific studies on the subject were carried out at the beginning of the 17th century by Castelli and Torricelli, then by Bernoulli in 1738, who established his famous equation of energy conservation. The first standardized devices such as orifice plates appeared at the beginning of the 20th century in the oil industry in the United States and the first nozzles in Germany around 1930.

Construction codes	NF EN 13480, RCC-M, ASME, CODETI
Regulations	DESP 2014/68/EU, ESPN

- **Diaphragms / Orifice plates**
- **Nozzles**
- **Venturi tubes**
- **Flow restrictors**

Diaphragms / Orifice plates

Very good measuring accuracy for a wide range of flow regimes.

Delivery with calibrated upstream and downstream pipes to ensure the best flow measurement accuracy.

Different types of orifice plates depending on the application.

Requires the use of suitable straight pipe lengths, upstream and downstream.

Easy maintenance if installed between flanges.

Sizing standards	NF EN ISO 5167-1 and -2, ISO/TR 15377, ASME MFC-3M, ASME MFC-14M, ASME PTC 19.5
Dimensions	Pipe internal diameter: 6 mm to 1,000 mm or more depending on your requirements

Nozzles

Good compromise between an orifice plate and a Venturi tube in terms of accuracy and pressure loss.

Longer service life than an orifice plate due to its inlet shape.

More suited to measuring fluid flow with a high Reynolds number.

Sizing standards	NF EN ISO 5167-1 and -3, ISO/TR 15377, ASME MFC-3M, ASME PTC 19.5, ASME PTC 6
Dimensions	Pipe internal diameter: 50 mm to 630 mm or more depending on your requirements

Venturi tubes

Low unrecoverable pressure loss.

Longer service life than other types of flow measurement elements.

Different types of Venturi tubes are available (machined or welded sheet).

Easy to install due to the shorter upstream/downstream straight lengths required.

Sizing standards	NF EN ISO 5167-1 and -4, ASME MFC-3M, ASME PTC 19.5
Dimensions	Pipe internal diameter: 50 mm to 1,200 mm or more depending on your requirements

Flow restrictors

A flow restrictor (or restriction orifice) is a piece of equipment installed on a pipeline, which by modifying the fluid flow section creates a specific pressure drop and serves to regulate the flow. The pressure drop is caused by the singularities in the design of one or more of its stage(s) and by the assembly of plates with one or more bore hole(s).

Multi-stage flow restrictors achieve the required pressure drop while preventing cavitation risks. Each stage is sized to cause a pressure decrease lower than the critical pressure drop. In addition, multi-holes plates reduce noise and prevent cavitation.

Sizing standards	NF EN ISO 5167-2, Calculation methods specific to SPM
SPM capacity	DN15 to DN400 or more as required

PRESSURE EQUIPMENT

Pressure equipment contains a fluid at a pressure higher than atmospheric pressure and is used for a wide variety of applications.

To cover the risk factors related to the use of pressure equipment, design, manufacture and control are performed by SPM in accordance with the standards, regulations and construction codes applicable to its use.

Construction codes	RCC-M, NF EN 13480, CODETI, ASME, NF EN 13445, CODAP
Regulations	DESP 2014/68/EU, ESPN

- **Vessels**
- **Condensing, degassing, decanting pots**
- **Piping elements**
- **Other equipment**

Vessels

A vessel is a piece of equipment used for fluid storage, level measurement or other applications, depending on the requirements of the facility.

Volumes: under 1 L up to 280 L or more as required.

Condensing, degassing, decanting pots

A pot is a piece of equipment which, by creating a given volume, is used -as required- to condensate a fluid, degas a fluid or decant the suspended parts in the fluid.

Dimensions: DN25 to DN150 or more as required.

Piping elements

A piping element consists either of a set of elements and accessories assembled together (tubes, flanges, elbows, tees, reductions, valves, etc.) or of a single element that allows fluid to flow between two pieces of equipment.

The piping element can also be instrumented to perform a pressure and temperature measurement.

Dimensions: DN15 to DN700 or more as required.

Other equipment

In addition to the equipment presented and depending on the business lines available in house, SPM can produce any other type of pressure equipment for various applications, either leaving customers responsible for the design, or sharing responsibility with them.

Dimensions: as required.

HIGH PRESSURES
HIGH TEMPERATURES SEALING

SPM masters the complete manufacturing of a wide range of gaskets for applications that can combine high pressure, high temperature and corrosive fluids.

Our Ring Type Joint (RTJ) gaskets comply with standards API 6A, ASME B16-20, NF EN 12560-5, ISO 10423, and are qualified and approved by major international customers.

Each material batch is supplied as per ISO 9001 / 1PI 6A standards with systematic control by PMI (Positive Material Identification).

A wide range of special gaskets and raw materials are available.

French manufacturing, raw materials of European origin.

- **Standard RTJ gaskets**
- **Special gaskets**

Dimensions and cross-sections

Our most common Ring Type Joints have oval (JOV) or octagonal (JOC) cross-sections of the R type. Types RX, BX and IX are also offered.

Our large inventory of standard gaskets in the most common materials allows us to deliver within 24 hours depending on the destination.

We also manufacture all types of special gaskets on request within short lead times.

Standard RTJ gaskets

TYPE	R OVAL	R OCTAGONAL	RX	BX
Cross-section				
Pressure (psi)	150 - 2,500		2,000 - 5,000	2,000 - 20,000
SPM code	**JOV**	**JOC**	**JRX**	**JBX**

Special gaskets

TYPE	R OVAL	R OCTAGONAL	HALF RING	BICONICAL	LENTICULAR	AUTOCLAVE	NORSOK IX
Cross-section							
Pressure (psi)	as per customer drawing						
SPM code	**JSP**			**JBC**	**JLT**	**JAC**	**BIX**

Raw materials

A wide choice of raw materials available:

Non-alloy, low and high alloy steels, austenitic stainless steels, other stainless steels, nickel alloys.

MATERIAL GROUP	STANDARD NAME	PROCUREMENT STANDARDS			MAX. HARDNESS (BRINELL HB)
		ASTM(3)	NUMERICAL DESIGNATION	EUROPEAN STANDARDS	
Non-alloy steels	Soft iron (D)				90
	Low Carbon Steel (S)				120
	LF2	A350 Grade LF2	1.0481	IEC 10273: P295GH	140
Low or high alloy steels	F1	A182 Grade F1	1.5421	20MnMo3-5	160
	F11	A182 Grade F11	1.7335	13CrMo4-5	140
	F22	A182 Grade F22	1.7380	12CrMo9-10	140
	F5(2)	A182 Grade F5(2)	1.7362	X12CrMo5	130
Austenitic stainless steels	304 L	A182 Grade F304L	1.4307	EN 10222-5: X2CrNi18-9	135(1) / 160
	310	A182 Grade F310	-	-	160
	316 L	A182 Grade F316L	1.4404	EN 10222-5: X2CrNiMo17-12	135(1) / 160
	321	A182 Grade F321	1.4541	EN 10222-5: X6CrNiTi18-10	135(1) / 160
	347	A182 Grade F347	1.4550	EN 10222-5: X6CrNiNb18-10	160
	Super Austenitic 6Mo / F44	A182 Grade F44	-	-	220
Other stainless steels	Duplex F51	A182 Grade F51	1.4462	EN 10222-5: X2CrNiMoN22-5-3	235
	Super Duplex F53	A182 Grade F53	1.4410	EN 10222-5: X2CrNiMoN25-7-4	(1) > 235HB
	Super Duplex F55	A182 Grade F55	-	-	(1) > 235HB
Nickel alloys	Monel 400	B564 Grade N04400	≈ 2.4360	-	160
	Inconel 600	B564 Grade N06600	≈ 2.4816	-	200
	Inconel 625	B564 Grade N06625	≈ 2.4856	-	180(1) / 220
	Hastelloy C276	B564 Grade N10276	≈ 2.4819	-	(1) > 235HB
	Inconel 800	B564 Grade N08800	≈ 1.4876	-	200
	Inconel 825	B564 Grade N08825	≈ 2.4858	-	200
	904L (Uranus 6B)	A182 Grade F904L	1.4539	EN 10088-3: X1NiCrMoCu25-20-5	200

(1) On request / **(2)** F5 is an ASTM designation, only the chemical composition complies with ASTM A182 / **(3)** Only the chemical composition complies with the ASTM cited

WELLHEAD EQUIPMENT

Our many years of know-how and specific qualifications in the oil & gas sector allow us to meet our customers' requirements (drawings, particular specifications) and the main applicable standards for the complete manufacture of various items of wellhead equipment.

Our manufacturing is qualified as per:

- API spec 6A-0200
- API spec 5CT-0011
- API spec 7-1-0945
- VAM® Services License No. #109

VAM® is a registered trademark of Vallourec Oil and Gas France.

Materials:

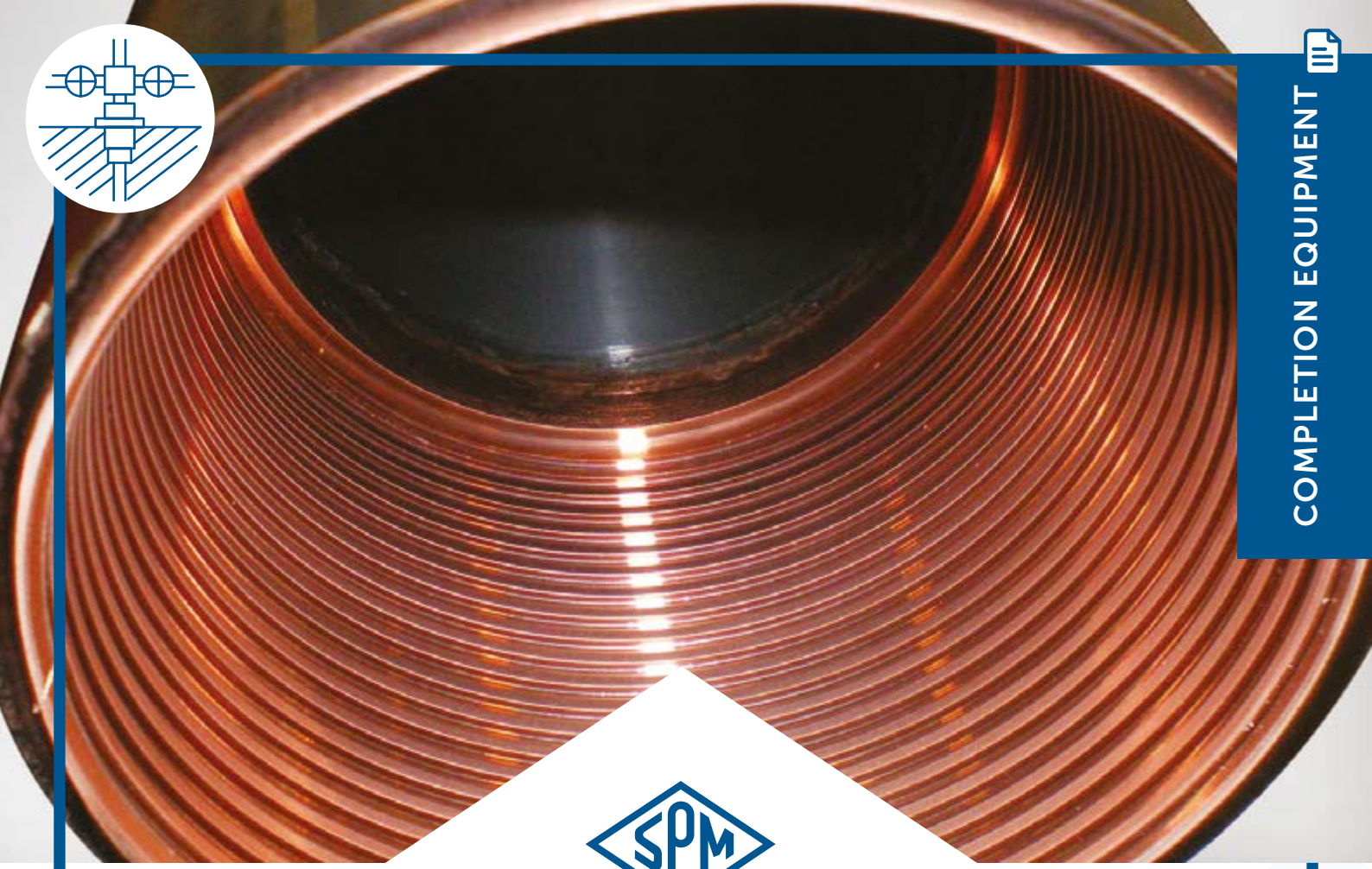
Carbon and low alloy steels, martensitic stainless steels, duplex, superalloys and other materials.

A wide range of equipment manufactured and tested according to your specific needs:

- Casing & tubing heads
- Casing & tubing hangers
- Crosses & tees
- Tools
- Top Connector Bodies

Other services offered:

Quality inspection plans, third-party inspections, coatings, protectives, special markings, magnetoscopy, dye-penetrant inspections, hydrostatic testing, special packaging, drift.



COMPLETION EQUIPMENT

Our many years of know-how and specific qualifications in the oil & gas sector allow us to meet our customers' requirements (drawings, particular specifications) and the main applicable standards for the complete manufacture of various items of completion equipment.

Our manufacturing is qualified as per:

- API spec 5CT-0011
- API spec 7-1-0945
- VAM® Services License No. #109

VAM® is a registered trademark of Vallourec Oil and Gas France.

Materials:

Carbon and low alloy steels, martensitic stainless steels, duplexes, superalloys and other materials.

A wide range of equipment manufactured and tested according to your specific needs:

- Landing nipples and others
- Pup joints & crossovers
- Mandrels
- Plugs
- Expansion adapters
- Cable cutter guides

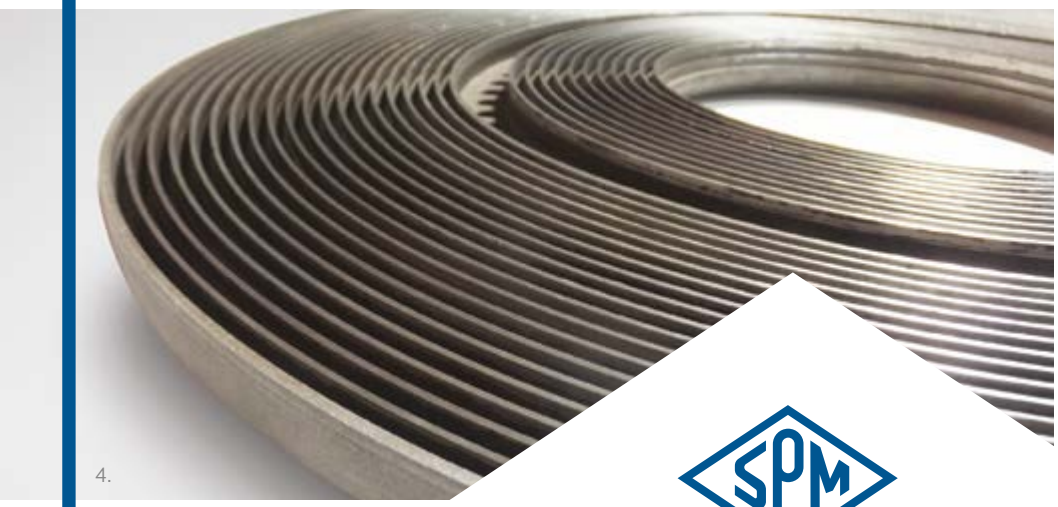
Other services offered:

Quality inspection plans, third-party inspections, coatings, protectives, special markings, magnetoscopy, dye-penetrant inspections, hydrostatic testing, special packaging, drift.


1.


2.


3.


4.

OTHER CUSTOMIZED SOLUTIONS

We offer expert know-how in a wide range of professions related to engineering, machining, metalwork, testing & inspection and surface treatment / heat treatment.

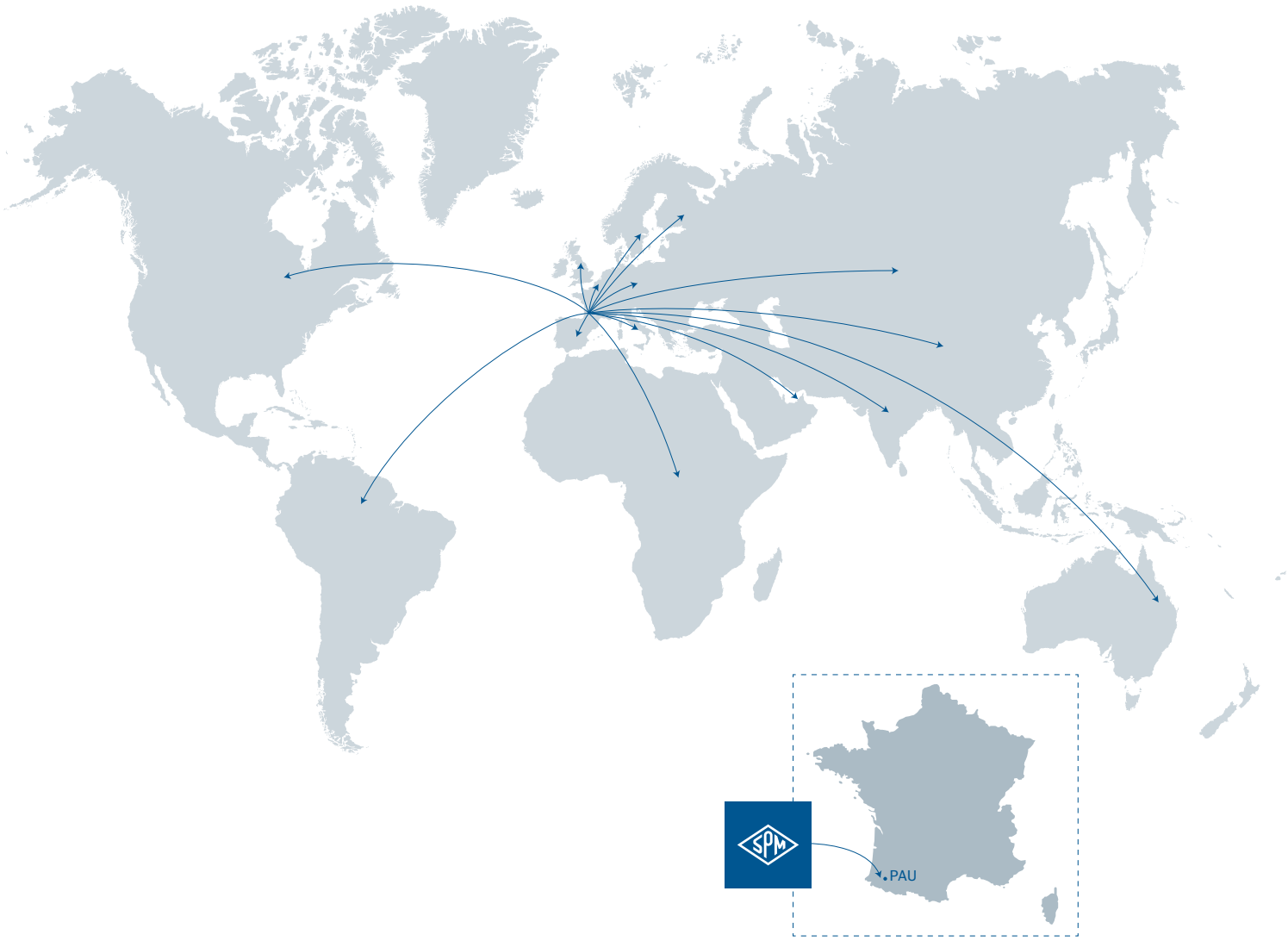
For any other type of application within our capabilities, we offer a service adapted to our customers' requirements:

- Complete service: design, procurement and manufacturing
- Partial service: procurement and manufacturing according to customer drawings
- Manufacture according to customer drawings including procurement of customer supplies
- Services in one of our business lines

Product examples:

1. Valve head for the turbo-machine maintenance sector
2. Specific on-board packaging for transportation in the nuclear sector
3. Cable-cutter guide for the oil sector
4. Reworking of sealing plates for centrifugal compressors

RECOGNIZED EXPERTISE WORLDWIDE



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