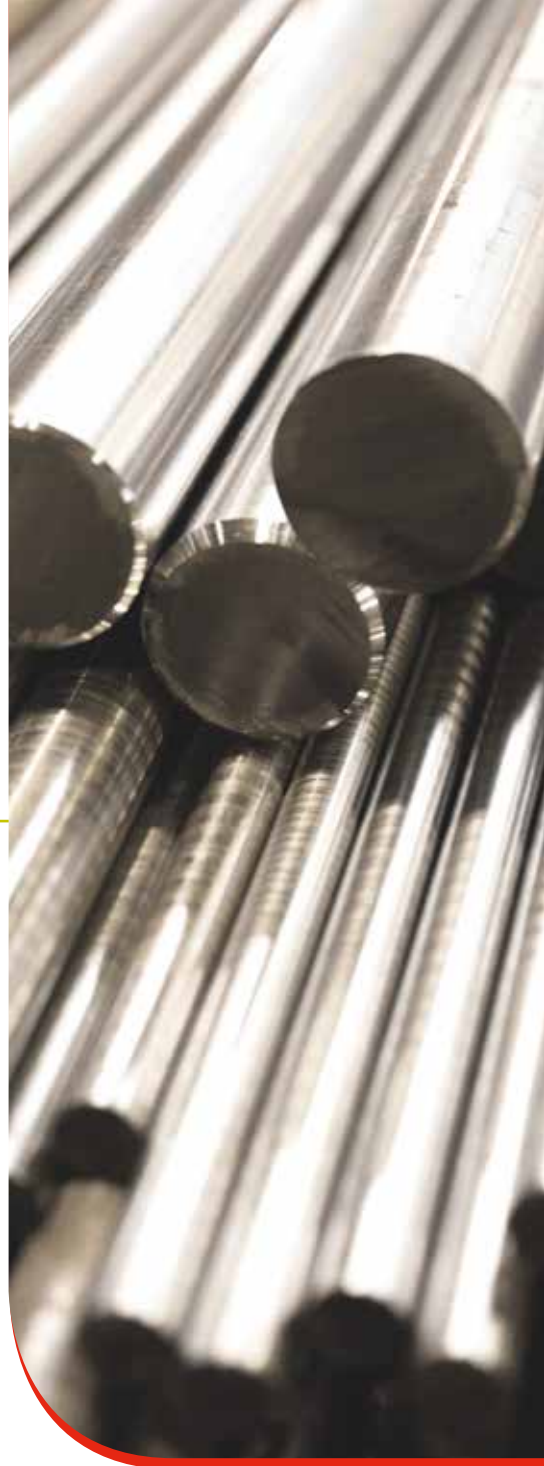


## SPECIAL BAR QUALITY





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# ASCOMETAL®

## A KEY EUROPEAN PRODUCER OF ENGINEERING SPECIAL LONG PRODUCTS

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*Through its commercial network covering Europe, America and Asia-Pacific, Ascometal® provides international support to its customers.*



**Ascometal® is a renowned global partner**, particularly in the **Automotive/Forging**, **Bearings**, **Oil and Gas**, and **Mechanical engineering** markets. Our organisational structure is based on specific industry sectors, which are supported by an in-depth knowledge of our customers' needs.

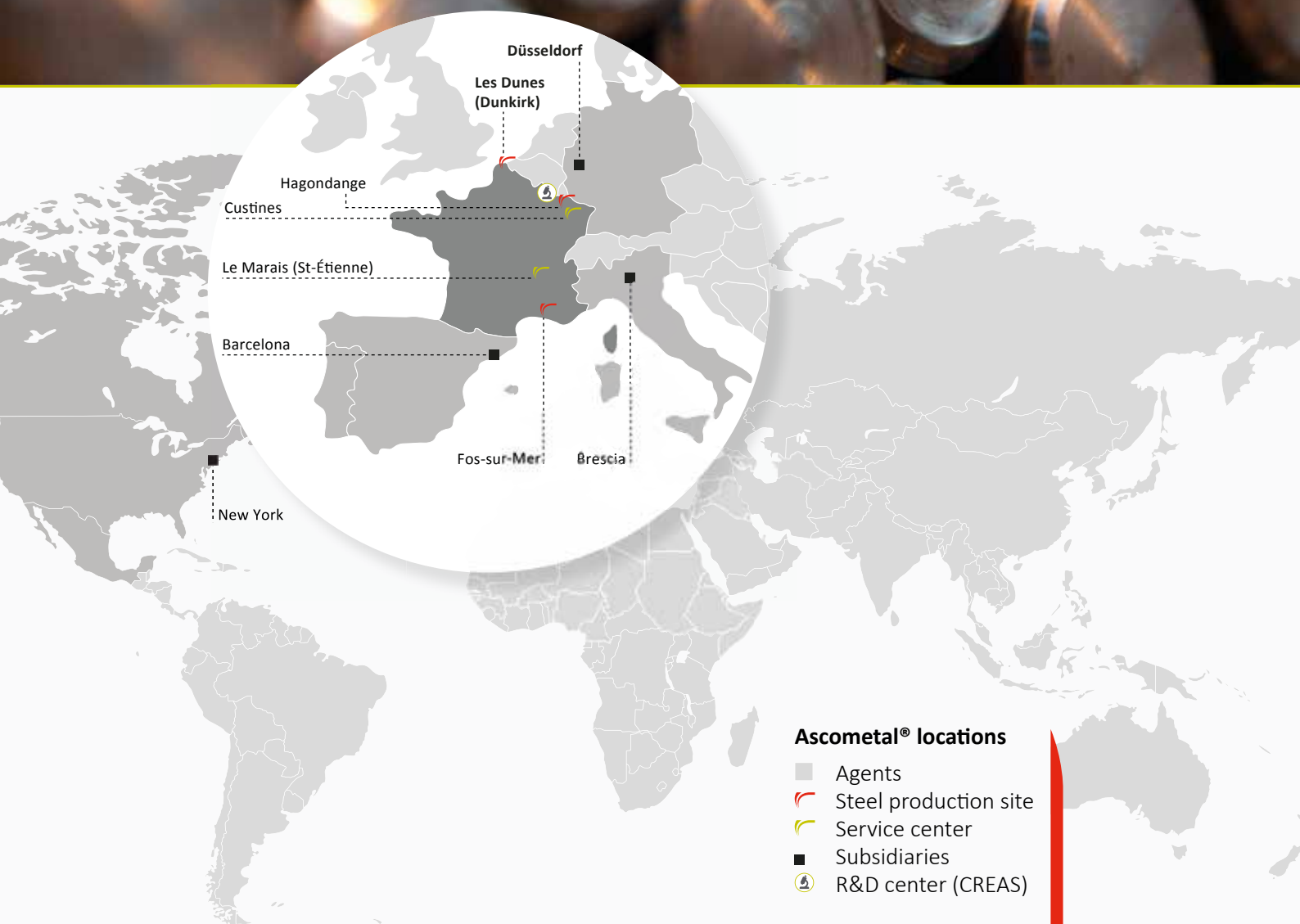
Our technical and commercial development is backed by **experienced teams** who are fully knowledgeable of all the industrial processes.

**A complete product offering from a specialist:** Ascometal® has an extensive range of grades, products (dimensions), and finishing processes (heat treatments, cold finishing, inspections) which are tailored to the various needs of its customers.

**Product/process innovation is at the core of our approach:** our Research & Development Center (CREAS) is constantly developing new steel solutions to meet the increasingly specific demands of our customers.

**Logistical offer** and value chain optimization.







## THREE PRIORITIES: QUALITY, ENVIRONMENT, SAFETY

### Environment

**Environmental protection is an integral part of our business approach**, applied in both our processes and products.

We act based on the following principles:

- Comply with all laws and regulations applicable to our activities.
- Control our disposal of industrial waste and implement waste recycling solutions.
- Limit our use of natural resources.
- Simplify production processes while saving fossil fuels.
- Help make vehicles lighter in order to limit their greenhouse gas emissions.

Ascometal® special steels, which can be **recycled virtually indefinitely**, also contribute to our customers' environmental efficiency.







## Quality

Ascometal® is attuned to its customers' needs and has **experts** capable of providing the metallurgical solutions that offer the most appropriate technical response to these requirements. All the reference systems, notably in the Automotive sector, and the customers' specific Quality requirements are integrated systematically into our Quality Management processes.

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## Safety

We ensure the highest standards in Occupational Health and Safety as per OHSAS 18001 to which our mills are certified without compromising on product quality. At the same time, our customers must have the assurance that our production is reliable and that our products can be used safely throughout all stages of their process. Safety data sheets (SDS) of our products are available to our customers.

Certifications : ISO 9001,  
ISO/TS 16949, ISO 14001,  
OHSAS 18001.

- 20 partnerships development programs with customers
- Value creation
- Aiming at optimizing our customers' processing

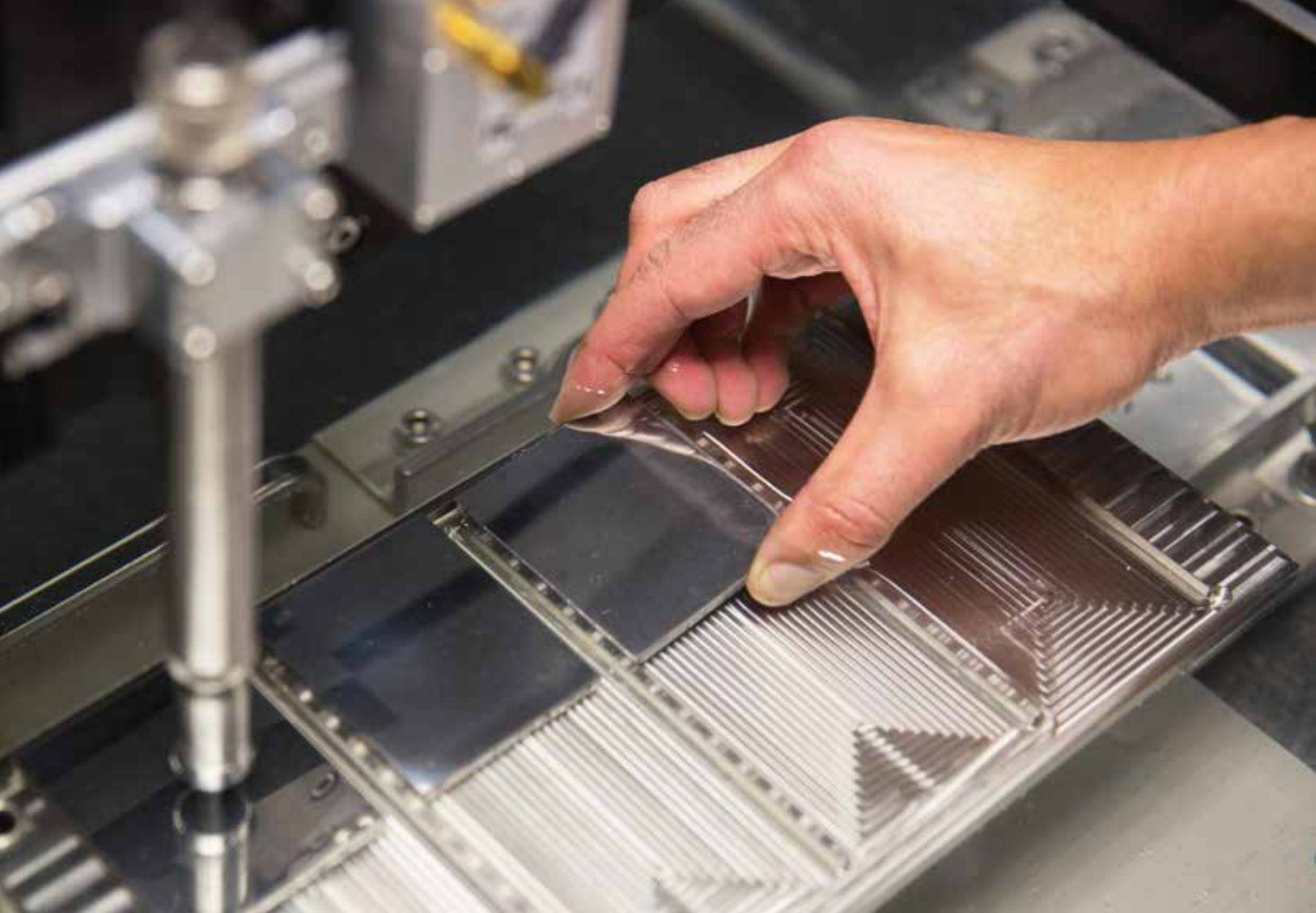
# ASCOMETAL® R&D CENTER (**CREAS**): AT THE FOREFRONT OF INNOVATION

*Research & Development, which is at the core of Ascometal® business strategy, creates **effective and original solutions**.*

The design and development process is based on our knowledge of our customers' requirements. The commercial teams provide the initial input through their relations with the customers, and this is then passed on downstream by the industrial teams in charge of manufacturing new products.







The fundamental principles of Research & Development are:

- Eco-design to guarantee solutions with controlled costs and short transformation processes.
- Optimisation and enhancement of mechanical characteristics, and the reduction in weight of components made from our steels.
- Achieving quality through in-depth knowledge of the physical and chemical, thermal and mechanical processes that are involved in the fabrication process (production and transformation).

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**CREAS (Ascometal® Special Steels R&D Center) fulfills 2 complementary functions:**

- Providing technical assistance to our customers and production mills.
- Improving the reliability and productivity of the industrial resources.

# CLOSE RELATIONSHIPS WITH AUTOMOTIVE PLAYERS AND A THOROUGH UNDERSTANDING OF TECHNICAL AND ECONOMICAL OPPORTUNITIES



**As a supplier to the main Automotive and Heavy Vehicle manufacturers,** Ascometal® works with all the players in the industrial chain to meet the various requirements of the Automotive world:

- Making parts lighter, while improving mechanical characteristics.
- Environmental goals: reduction in fuel consumption and CO<sub>2</sub> emissions, recyclability.
- Technical specifications: structure, strength and durability of steels, machinability, inclusion cleanliness, in-service behaviour, suitability of heat-treatment after forging, quenchability, technical characteristics (yield strength, tensile strength, etc.).
- Cost control.

## **An innovative Automotive offering**

Ascometal® offers all the products necessary for the manufacturing of **components for various vehicle functions: engine, injection, transmission, steering, gearbox, suspension system, etc.**

**Standard grades as well as more customized solutions,** available on products at the cutting edge of innovation:

**Jomasco®:** case-hardening steels with optimized Jominy and enhanced quenchability.

**Splitasco®:** steels for shear connecting rods.

**Metasco®:** steels suitable for hot forging treatment (bainitic and AFP steels).

**Vitac®, Supervitac®:** steels with improved machinability and proven levels of performance.

**These customers have formally approved our services as a sign of their confidence in Ascometal®:**

*Bosch, BMW, Daimler, Dana, Delphi, Denso, Detroit Diesel, Ferrari, FIAT, Ford, General Motors, Getrag, GKN, Iveco, JTEKT, PSA, Renault, Toyota, VAG, ZF...*



## OPTIMIZED STEEL SOLUTIONS FOR THE VARIOUS FUNCTIONS OF THE AUTOMOTIVE MARKET: QUALITY AND SERVICE

While fine tuning steel products to the customer specific process, Ascometal® **values a know-how developed over the years.**

Thanks to well defined R&D methods (measures, residual stresses, fatigue, corrosion...), Ascometal® constantly improves the metallurgical characteristics of its steel products to better fit the requirements of the Automotive market (down sizing, higher mechanical properties, lighter weight).

### Standard grades

A complete range of carbon and alloy steels meeting national and international standards

- Steels for heat treatment
- Case-hardening steels
- Bearing steels
- Spring steels
- Surface hardening steels
- Fastening/bolting steels
- Nitriding and carbonitriding steels
- Micro-alloy steels
- Non alloy steels
- Resulfurized and/or leaded steels



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# A LONG TERM PARTNERSHIP WITH THE WORLD'S BEARING MANUFACTURERS

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## Some main customer approvals:

*NSK group, Koyo, NRB Bearings, NTN SNR,  
Schaeffler, SKF, Timken...*



**A major player in the Bearing market**, Ascometal® has developed an active partnership with Bearing manufacturers and their subcontractors internationally for more than 25 years.

This partnership consists in optimising the technical characteristics of the bearings (reliability, vibration reduction, performance in tough environments, cleanliness, mechanical characteristics, improved resistance to high temperatures or to heavy loads, etc.) thanks to the skills of our Research & Development Center. **Delivering excellence is Ascometal® top priority for its Bearing customers.**





**An accredited Bearing steel offering:** carbon steels, through-hardening steels, case-hardening steels, grades that fulfill specific requirements, Endurasco®.

**Steel solutions for inner and outer bearing rings, latest-generation integrated bearings and rolling elements** (balls, rollers, needles), principally for the following markets: Automotive and Heavy Vehicle, Mechanical Engineering (wind turbines, machinery, etc.), Railways.

The extreme demands of many bearing manufacturers have led Ascometal® to develop specific volume inspection processes and methods (ultrasonic testing 10 to 100 MHz, SEO-CDI, SEV...) guaranteeing optimized compatibility of our products with the real needs of bearing manufacturers.

- **Typical grades:** 100Cr6, carbon grades, case-hardening or carbonitriding grades, through-hardening grades.
- Multi department relationships with Bearing manufacturers and their teams.

# OIL AND GAS MARKET: A WORLD-RENOWNED PLAYER IN DRILLING AND COMPLETION

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**Its industrial and technical assets** make Ascometal® the partner of choice for equipment manufacturers and specialized distributors.

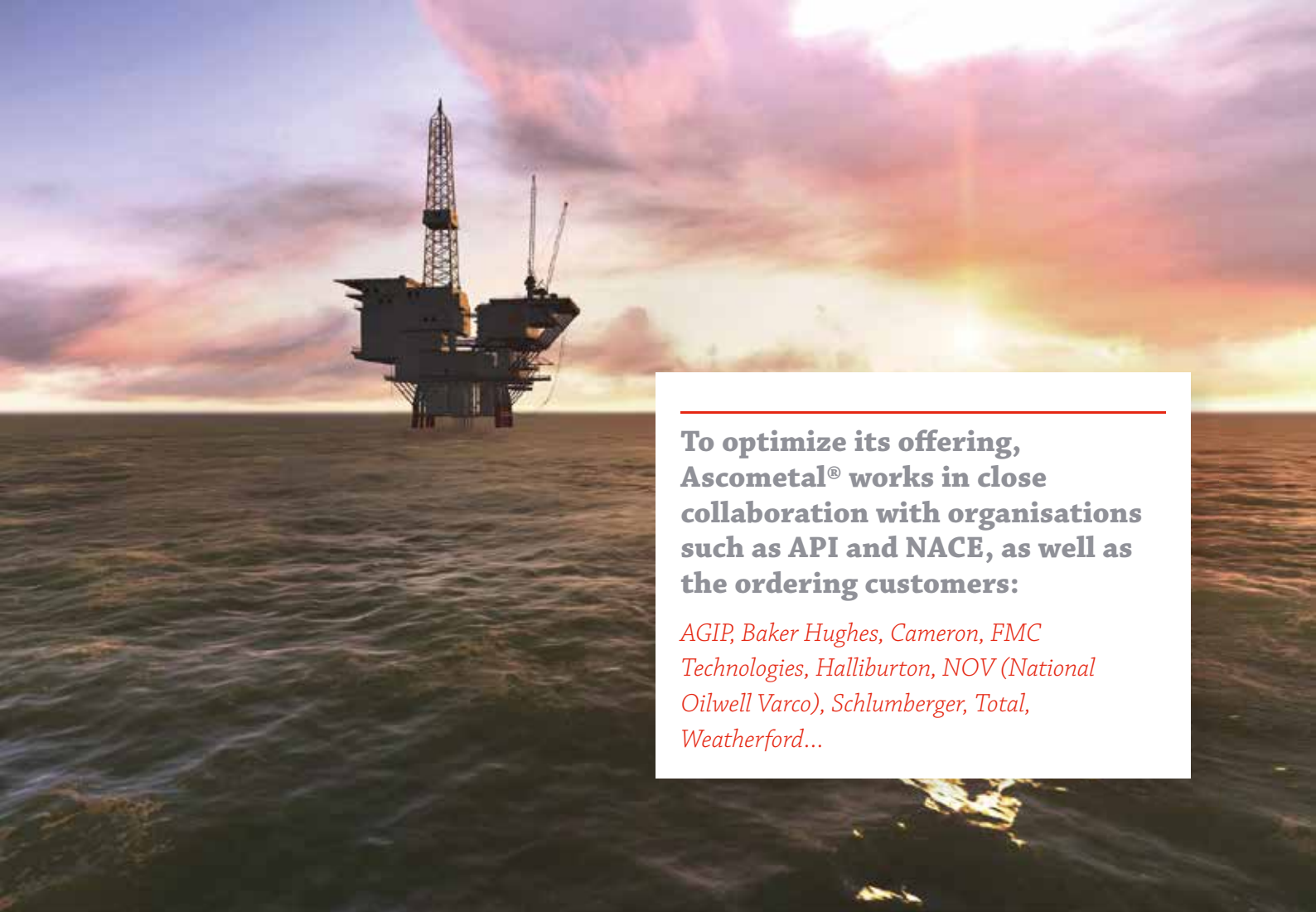
**A commercial and technical team** based in the USA, plus localized teams in Europe and Asia-Pacific region, enables the group to respond faster to the growing demands of the market.



**Appropriate industrial resources** to meet the customers' requirements and their most stringent specifications in terms of yield strength, toughness and sour service resistance:

- Heat treatment capacity, process excellence (macro and micro-inclusion cleanliness), absolute straightness, wide range of dimensions, control of long lengths and fixed lengths, high-performance inspection facilities, etc.
- High-tech heat treatment facilities (austenitizing, quenching, tempering, annealing).





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**To optimize its offering, Ascometal® works in close collaboration with organisations such as API and NACE, as well as the ordering customers:**

*AGIP, Baker Hughes, Cameron, FMC Technologies, Halliburton, NOV (National Oilwell Varco), Schlumberger, Total, Weatherford...*

## A tailored oil/gas offering

**In addition to the standard AISI grades, Ascometal® has developed innovative solutions** to respond to increasingly severe operating stresses (pressure, temperature, corrosion) and to increase the equipment service life, namely the **Ascowell®** steels for extreme conditions and **Jomasco®DB** for drill bits.

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### Main applications

- Bottom Hole Assembly: Drill Collar, Tool Joint, Heavy Weight Drill Pipe, etc.
- Tooling: Jar, Stabilizer, Reamer, Packer, Mandrel, etc.
- Completion: Wellhead, Valve, etc.
- Drilling and completion for oil and gas (conventional, unconventional, oil sands) in the most diversified conditions: vertical, horizontal drills, deep sea, H<sub>2</sub>S and high temperature conditions.

# MECHANICAL ENGINEERING: TECHNICAL ASSISTANCE FOR INNOVATIVE SOLUTIONS



**The Mechanical Engineering Industry encompasses many applications** ranging from the transformation of metals (forging, seamless tube manufacturing, etc.) to the production of more complex machine and engine components. The vast diversity of customers means that sales often involve specialized distributors. This level of complexity requires good knowledge of the users' needs.

Thanks to the support of its research and development center, Ascometal® proposes **an extensive range of products** that meet the customers' specifications and enhance the manufacture of the end-product (e.g. improved machinability, shorter case-hardening times, elimination of post-forging heat treatment).

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## **Ascometal® has developed innovative steel products to complement the conventional grades:**

**Vitac®, Supervitac®:** steels with improved machinability and proven levels of performance.

**Jomasco®:** case-hardening steels with optimized Jominy and enhanced quenchability.

**Nitrasco®:** nitriding steels offering ever-greater wear resistance.

**Metasco®:** steels suitable for hot forging treatment (bainitic and AFP steels).

**Ascoroc®:** steels for the mining industry, rock breakers, stone crushers, etc.





### Some main customer approvals:

*Bosch Rexroth, Caterpillar, Deutsche Bahn, Gamesa, Liebherr, MAN, Poclain, SEW, Siemens, SNCF, Vestas, Wartsila...*



**Main applications:** Power Transmission/Driving Chains, Wind Turbines, Railway Industry, Machinery, Mining, Public Works, Iron and Steel Works, Mechanical Engineering Subcontracting, Seamless Tubes, Defense, etc.

#### Examples of parts:

- Gearing, reduction gear, wind turbine slewing ring;
- Tool holder, cam shaft, printing cylinder, extrusion screws and barrels, etc.;
- Rock breakers;
- Wheels, axles for railway rolling stock.



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# CONTACTS

## France

France North + Belgium  
Tel. : + 33 3 28 29 60 20  
Fax : + 33 3 28 29 60 02  
alexandre.debout@ascometal.com

France East  
Tel. : + 33 3 87 70 50 89  
Fax : + 33 3 87 70 50 80  
jerome.lesage@ascometal.com

Central France  
Tel. : + 33 4 77 45 51 54  
Fax : + 33 4 77 45 50 98  
david.royer@ascometal.com

Cluses depot (74-Cluses)  
Tel. : + 33 4 50 98 28 46  
Fax : + 33 4 50 98 76 60  
jean.torres@ascometal.com

France South  
Tel. : + 33 4 42 47 92 31  
Fax : + 33 4 42 05 49 83  
sylvie.leroy@ascometal.com

### France commercial office (Paris)

Tel. : + 33 1 42 38 74 26  
Fax : + 33 1 42 38 74 84  
cedric.orban@ascometal.com

## Europe

Ascometal GmbH (Erkrath, Germany)  
Tel. : + 49 211 924 797 0  
Fax : + 49 211 924 797 33  
jose.espinosa@ascometal.com

Sales in Italy (Brescia, Italy)  
Tel. : + 39 030 305 848  
Fax : + 39 030 305 476  
mattia.sala@ascometal.com

Sales in Spain and Portugal (Barcelona, Spain)  
Tel. : + 34 93 363 1973  
Fax : + 34 93 419 7064  
miguel.gil@ascometal.com

Sales in UK and Ireland (LUR Ltd UK – Manchester, UK)  
Tel. : + 44 161 886 0368  
Fax : + 44 161 872 2895  
A.Moody@LUR.co.uk

## Central Europe, Scandinavia, Turkey, Africa, Middle East, Latin America

Tel. : + 33 1 42 38 74 26  
Fax : + 33 1 42 38 74 84  
yazid.haddad@ascometal.com

## Asia, Australia, India

Tel. : + 33 1 42 38 74 25  
Fax : + 33 1 42 38 74 84  
volychanh.boura@ascometal.com

## USA, Canada, Mexico

Ascometal North America USA (New York)  
Tel. : + 1 914 332 7550  
Fax : + 1 914 332 7551  
anellina.carbone@ascometalna.com





### **Asco Industries SAS**

Headquarters: avenue de France – 57 300 Hagondange – France

Registered capital: 25 001 000 €

Company registration number: 802 634 840 RCS Metz

[www.ascometal.com](http://www.ascometal.com)

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