

Brochure



Commitment made of steel

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COMPANY PROFILE

AMPO, located in Idiazabal, Spain, was founded in 1964, and has become an international leader in stainless steel & high alloy castings for the most severe applications and industries; supplying not only the product but also expertise in project management, finance of high value projects and logistical expertise to ensure trouble-free and on-time delivery of quality products.

AMPO has a clear ability for innovation and developing processes, products and technologies, being involved in diverse research projects in order to improve competitiveness and quality.

High added value valve, pump, marine & power generation components

Safety and guarantee for users

Reliability and profitability for customers



API



Lloyd's Register



NORSOK



Cutting edge technologies: SCC, Ceramic Moulding (Repicast) for large parts, patternless,...

Optimum performance, best cast quality & best production capacities

Machined components delivered from our new machining plant

Maximum care of our customers, suppliers and environment

In-House manufacturing process & quality control

Trouble free and on-time delivery of quality products

Material expertise and new materials development

Experts in Stainless Steel & High alloy castings

Norsok approvals

Teamwork and service in order to be your best partner for after market

**WHY CHOOSE
AMPO FOUNDRY
AS YOUR GLOBAL
PARTNER?**





INNOVATION

Our engineering team is dedicated to the development of new products, technologies and systems. The projects developed by our team are carefully tailored to each customer's requirements enhanced by our knowledge from working together with the customer's own engineering team. We also have an ongoing collaboration with international research centers and renowned universities. We work on the development of new processes and technologies, being involved in diverse research projects in order to improve our competitiveness and quality:

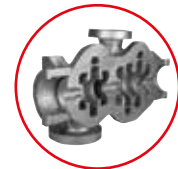
- Continuous improvement looking for the most efficient solutions.
- Development and Implementation of new casting materials.

SECTORS & INDUSTRIES

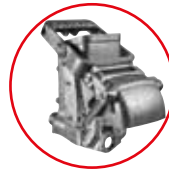
These are some of the main sectors and industries in which AMPO offers a wide range of castings:



VALVES



PUMPS



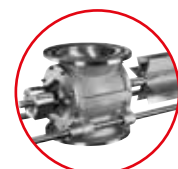
MARINE



POWER GENERATION



DECANTERS



ROTARY VALVES

OTHERS

PRODUCTION LINES

In order to offer our customers the widest possible range of castings and best solutions, AMPO has 4 production lines, each of which uses the most advanced technologies so that we can satisfy all of our customer requirements:

- Furnaces:
- 5 tonne Arc Furnace
 - 5 tonne AOD Converter
 - 7 Induction Furnaces



SAND MOULDING

Castings produced in sand chemically bonded with Phenolic Alkaline binders using wooden patterns. Manual moulding for large castings and semi-automatic moulding for medium-sized castings. Weight range for castings: **50-5500 kg**. Maximum moulding box size: **3000 mm x 3000 mm**.



CENTRIFUGAL SPINNING

Casting process using a metal die which spins at high speed. Once the molten metal is in the die, centrifugal force pushes the solidifying steel to the surface of the mould. We have facilities for both horizontal and vertical spinning. Horizontal spinning covers **100-700 mm** external diameter and vertical spinning **430-1320 mm**.



SHAPED CENTRIFUGAL CASTING

A process developed from Centrifugally Spun, where by using different tools and techniques, complex external geometries are obtained.



CERAMIC MOULDING REPLICAST®

High precision ceramic-moulding process capable of producing complex shapes. Rapid prototyping for unitary parts. Aluminium patterns for serial parts. Surface quality finish (RT8) Weight range for castings: **50-1200 kg**. Maximum moulding box size: **1'5 m³**



*Production capacities

RESEARCH & DEVELOPMENT

From the start of the process



METHODING & DESIGN

- 1. Technological Resources** to design any type of casting in a short period of time.
 - MAGMA Soft programme which simulates feeding and solidification of steel.
 - Solidworks.
- 2. Prototype Production** to guarantee the quality of our products, by strict controls at our plant, such as dimensional and NDT.

PATTERN

30,000 m³ of automated storage space enable us to store our customers patterns in the best conditions for prime conservation, usage and handling. This store is computer-controlled by a system synchronized directly with production. Nowadays we have more than 9000 patterns stored.

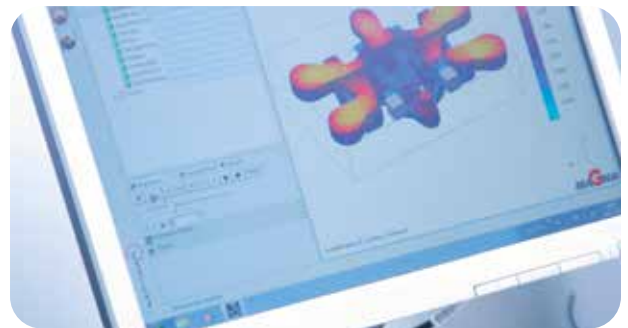
PATTERNLESS SERVICESS

AMPO FOUNDRY offers Patternless processes, such as **3D printing, reverse engineering and polystyrene machining** technologies for the production of large sand casting parts as well as for the manufacture of Ceramic Moulding castings. It is a very cost effective way of producing one-off or small production run castings, with the following benefits: **lead time reduction, manufacturing costs reduction, high integrity and dimensional accuracy castings, appropriate surface finishes, etc.** With this technology is no need to invest on patterns and core boxes.

MOULDING PROCESS CONTROLLED BY OUR SAND LABORATORY

We have an exhaustive control of the moulding process. The measurements that can be performed among others are strength development, bench life, LOI (lost of ignition), granulometry, dust content,...

Collaboration with the World's Leading R&D Centres, laboratories and University Engineering Departments.



STEELS AND GRADES

AMPO can assist customers in the selection of optimum steel grades for castings based on conditions, flow, etc. Moreover, we can also propose improvements in mechanical properties for different materials.

AMPO is an expert in stainless steel and high alloy castings.

“Our controls in casting, machining and coating technologies allow us to guarantee the products final quality to the highest levels demanded”

MARTENSITIC & HEAT RESISTANT ALLOYS

Martensitic Stainless Steels

| ASTM | EN | UNS | OTHERS |
|--------------|--------|--------|----------|
| A217 CA-15 | 1.4008 | J91150 | AISI 410 |
| A352 CA-6NM | - | J91540 | - |
| A747 CB7Cu-1 | - | J92180 | 17-4PH |

Heat-Resistant Steels

| ASTM | EN | UNS | OTHERS |
|---------|----|-----|--------|
| A297 HH | - | - | 25/12 |
| A297 HK | - | - | 25/20 |
| A297 HP | - | - | 25/35 |
| A297 HU | - | - | 18/38 |

DUPLEX & SUPERDUPLEX

Austenitic -Ferritic Stainless Steel(duplex)

| ASTM | EN | UNS | OTHERS |
|----------|--------|--------|--------------------|
| A890Gr4A | 1.4470 | J92205 | DUPLEX S31803 |
| A890Gr5A | - | J93404 | SUPERDUPLEX |
| A890Gr6A | 1.4469 | J93380 | SUPERDUPLEX S32760 |
| CD4MCu | 1.4517 | J93370 | - |

HIGH ALLOYS & NICKEL BASED ALLOYS

Super Austenitic Stainless Steels

| ASTM | EN | UNS | OTHERS |
|--------------|--------|--------|---------|
| A351 CN7M | 1.4527 | - | - |
| A351 CK3MCuN | 1.4593 | J93254 | 254 SMO |
| - | 1.4469 | S32654 | 654 SMO |

Nickel-Based Alloys

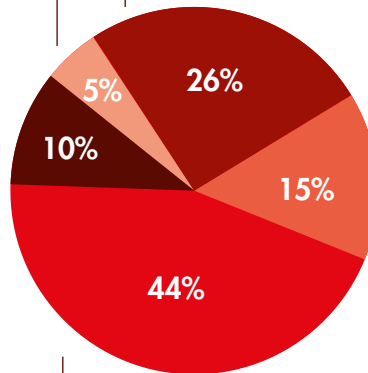
| ASTM | EN | UNS | OTHERS |
|--------------|----|--------|----------------|
| A494 CU5MCuC | - | - | INCOLOY 825 |
| A494 M-35-1 | - | N24135 | MONEL 400 |
| A494 M-30H | - | N24030 | - |
| A494 CW-6MC | - | N26625 | INCONEL 625 |
| A494 CW-12MW | - | N30002 | HASTELLOY C276 |

AUSTENITIC STAINLESS STEEL

Austenitic Stainless Steel

| ASTM | EN | UNS | OTHERS |
|------------|--------|--------|------------|
| A351 CF8 | 1.4308 | J92600 | AISI 304 |
| A351 CF8M | 1.4408 | J92900 | AISI 316 |
| A351 CF8C | 1.4552 | J92910 | AISI 347 |
| A351 CF3 | 1.4306 | J92500 | AISI 304L |
| A351 CF3M | 1.4404 | J92800 | AISI 316L |
| A351CF10MC | 1.4581 | - | AISI 316Nb |
| A351 CG8M | - | J93000 | AISI 317 |

MATERIAL BREAKDOWN



CARBON & LOW ALLOY STEELS

Low Temperature Carbon Steels

| ASTM | EN | UNS | OTHERS |
|----------|----|--------|--------|
| A352 LCA | - | J02504 | - |
| A352 LCB | - | J03003 | - |
| A352 LCC | - | J02505 | - |

Medium And Low Alloy Steels

| ASTM | EN | UNS | OTHERS |
|---------|--------|-----|--------|
| WC6 | 1.7357 | - | - |
| WC9 | 1.7365 | - | - |
| A217C5 | 1.7365 | - | - |
| A217C12 | - | - | - |

Carbon Steels

| ASTM | EN | UNS | OTHERS |
|----------|----|--------|--------|
| A216 WCA | - | J02502 | - |
| A216 WCB | - | J03002 | - |
| A216 WCC | - | J02503 | - |

CUSTOMISED SOLUTIONS

We have all the facilities needed to manufacture finished components, which is the basis for the high added value supplied by AMPO to its customers. Additionally, we can adapt to specific needs as required.

IN-HOUSE HEAT TREATMENT:

We have three heat treatment surfaces, all of which are NORSOK approved. Two with a capacity of 10 tonnes and one with a capacity of 6 tonnes.

FINISH MACHINING TECHNOLOGIES:

AMPO FOUNDRY offers a wide variety of solutions, supplying both rough cast and fully machined parts. Our machined components offer our customers an important added value, i.e. a reduction in total cost and delivery lead times, in addition to improving quality control. Our goal is to give our customer a complete service of finished products, a superior machining capability and better service with our new 12500m² Machining shop. To achieve this, AMPO has invested strategically in new cutting Edge machining centers and Weld overlay technologies:

1) FLEXIBLE MANUFACTURING SYSTEM (FMS) LATHES: These 2 separate vertical automatically managed lathes are used to manufacture complex parts, where high precision machining is always 100% guaranteed. (1 with "C" axis)

Maximum outside diameter of the parts: 2500mm or 98", with a height of 2000mm or 80".

It is equipped with several machining heads and robotized tool magazine, with a capacity of 520 tools.



It also has a Flexible Manufacturing Logistic System with a 10 pallet capacity, 2 centering stations and double carriage transfer.

Upon the completion of machining operations, the part can be measured by "Renishaw" probe and tool geometry can be automatically corrected.

2) A 5 AXIS CNC MACHINING CENTRE: This machining center is used to manufacture very complex and high value added parts and high geometric accuracy is achieved.

Maximum outside diameter of the parts: 1400mm or 55" with a height of 1200mm. The machine is fully equipped with a tool magazine with 650 tools capacity.

The 24 pallet Flexible Manufacturing System offers greater operational autonomy, and possibility to combine different parts machining randomly.



3) WELD OVERLAY CLADDING TECHNOLOGY:

Cladding operations can be handled on fixed workpieces with a high level of automation with our welding robot and our two new cladding cells.

Different high quality Surface coatings (Stellite, Ultimet, Nickel, Inconel 625, Incoloy 825, Colmoly, Cupronickel and other hardfacing alloys) and hardenings are applied for special processes and applications in sealing and contact areas to provide anticorrosive qualities and wear resistance, high temperature resistance, anti-coking, metal dusting resistance, etc

These investments, along with our current machine park that consists of machining centres, lathes, grinding machines, saws, etc., have put AMPO at the forefront of machining technology enabling us to provide high added value solutions for the most severe applications and industries.

OTHER HIGH ADDED VALUE SERVICES:

- Pre-assembly
- Pressure testing
- Painting
- Balancing
- After market solutions

QUALITY



Internal Quality Control Personnel are highly qualified to carry out Non-Destructive Examinations, including:

1. Radiographic Examination
2. Dye Penetrant Test
3. Magnetic Particles
4. Ultrasonic Test
5. PAMI (Positive Alloy Material Identification)
6. Pickling
7. 3D Dimensional Control

All production areas undergo intermediate and final inspections. These are documented with the corresponding certification and reports, directly coordinated by an efficient, highly-qualified team and always in accordance with the internal and external Quality Assurance standards and procedures.

Certificates are issued if required by third parties. We also work with laboratories accredited by ISO 17025.

WORLDWIDE SALES NETWORK

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