
FORGING YOUR FUTURE
YOUR OPEN DIE FORGING
& RING ROLLING PARTNER
www.gainzaforge.com

INDEX:

1.- About Gainza Forge

2.- Manufacturing Process & Capabilities

3.- Main Markets

4. - Products

5.- Certificates & Approvals

6.- Health, Safety & Environment

About Gainza Forge

- Located in the Basque Country, North of Spain, GAINZA FORGE is a well-known forge (Open Die Forging & Ring Rolling) and machining company (under Norm or Customer drawing), focused on the most demanding markets such as Off-Shore / Subsea, Nuclear, Ship-building, Thermal Energy and Petrochemical with a max. capability up to 40 Tn / Piece.

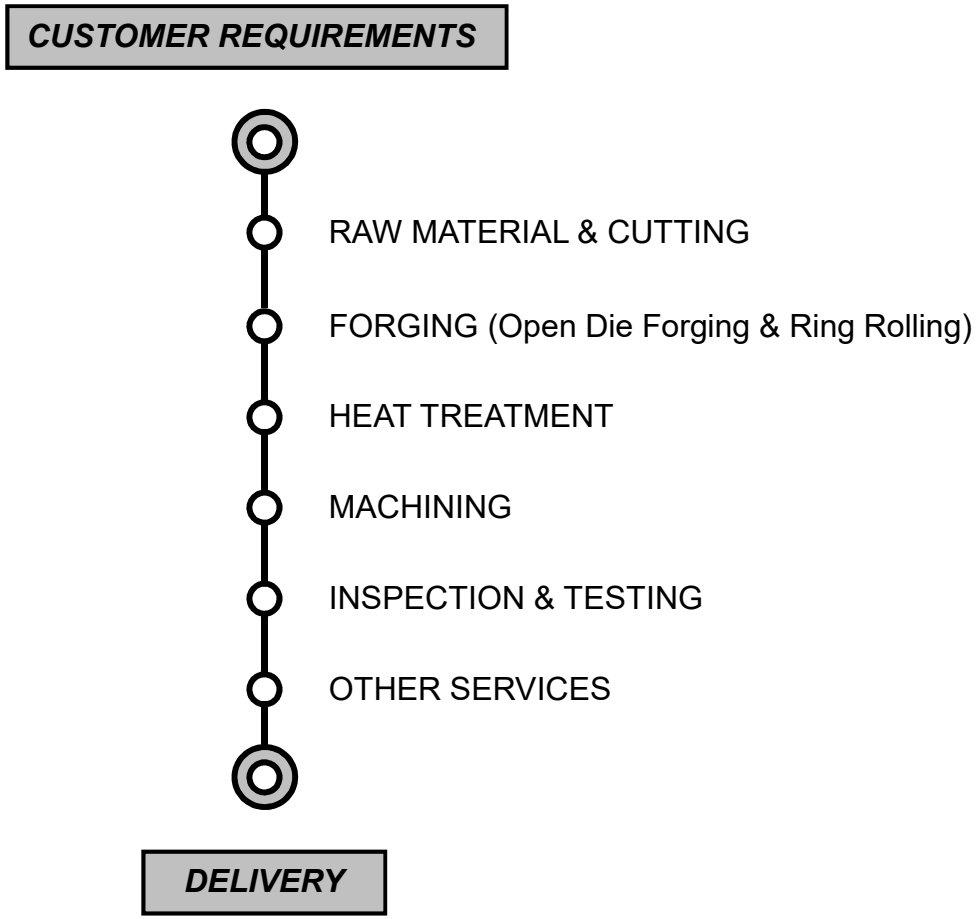
- Founded in 1978, GAINZA FORGE is a family owned company and all along these years our aim has been to become a forging partner for our customers, having established long term relationships.

- We offer customized solutions with tailored forgings in a wide range of sizes and materials.

- Reliability, an outstanding service, customer orientated management, competitive deadlines and above all premium quality, are the key factors of our policy that has placed us at the highest positions in demanding markets becoming a strategic forging supplier.

Services

In GAINZA FORGE we care about our clients and commit ourselves to always offering the best solutions in order to meet their requirements with optimal results and with the best quality products. Therefore, we supply forgings in different states; from raw forging conditions, raw machined and final machined. We also support our customers with quality documentation that is required in our markets



CUSTOMER ORIENTATED MANAGEMENT

Raw Material & Cutting:

- Premium quality raw material are fundamental to Gainza Forge in order to produce high quality products and that is why we work with the best known steel mills.

- Our metallurgical expertise in collaboration with several R&D centers has led us to design our own chemical compositions in several material grades. This allow us to achieve the mechanical properties that are requested in material used in highly strict requirement markets.

- Gainza Forge carries a comprehensive stock of several material grades and sizes in stock in order to support our customers with competitive and flexible delivery times.

Common used Material Grades:

- Carbon Steel
- High & Low Alloy Steel
- Austenitic, Martensitic & Superaustenitic Stainless Steel
- Duplex & Super Duplex Stainless Steel
- High Nickel Alloys

- The cutting area has considerable cutting capability and is equipped with modern and efficient band saw machines.

Forging:

The Forging process is one of the fundamental and core phase of the production cycle that defines the quality that the products will finally obtain.

The Know-How in forging obtained along the years and our good performance has allowed us to become a reliable supplier with a good reputation in the market.

RAW MATERIAL & CUTTING
FORGING
HEAT TREATMENT
MACHINING
INSPECTIONS & TESTING
OTHER SERVICES

Thanks to our Forging presses up to 5000 tons and the Ring Rolling mill, supported by different manipulators and heating furnaces, Gainza Forge can manufacture forgings up to 40 tons of black forging weight depending on its geometry.

However, we accommodate our forging capabilities to our customers' needs from smaller to heavier pieces in a wide range of material.

Forging Manufacturing Capabilities

DISCS, COVERS & BLIND FLANGES

Carbon Steel & Low Alloy Steel:

- Max. O.D.: 3.650 mm
- Max. Weight: 35.000 Kg

Stainless Steel, Martensitic & Duplex Steel:

- Max. O.D.: 3.650 mm
- Max. Weight: 35.000 Kg

Superduplex, Superaustenitic & High Alloy Steel:

- Max. O.D.: 3.650 mm
- Max. Weight: 15.000 Kg

RING ROLLING PIECES (FLANGES & RINGS)

Carbon Steel & Low Alloy Steel:

- Max. O.D.: 4.500 mm
- Max. Weight: 20.000 Kg

Stainless Steel, Martensitic & Duplex Steel:

- Max. O.D.: 4.500 mm
- Max. Weight: 20.000 Kg

Superduplex, Superaustenitic & High Alloy Steel:

- Max. O.D.: 4.500 mm
- Max. Weight: 10.000 Kg

SHAFTS

Carbon Steel & Low Alloy Steel:

- Max. O.D.: 1.500 mm
- Max. Weight: 35.000 Kg

Stainless Steel, Martensitic & Duplex Steel:

- Max. O.D.: 1.500 mm
- Max. Weight: 35.000 Kg

Superduplex, Superaustenitic & High Alloy Steel:

- Max. Weight: 6.000 Kg

SPECIAL SHAPES IN OPEN DIE FORGING

Carbon Steel & Low Alloy Steel:

- Max. Weight: 35.000 Kg

Stainless Steel, Martensitic & Duplex Steel:

- Max. Weight: 35.000 Kg

Superduplex, Superaustenitic & High Alloy Steel:

- Max. Weight: 15.000 Kg

Heat Treatment

The Heat Treatment is the key process that guarantees the structural uniformity and mechanical properties of each forged product. Our internal procedures are particularly accurate in this phase in order to guarantee the highest quality.

Our vast metallurgical expertise, allow us to achieve greater flexibility in our processes and products. Our fully automated and digitally controlled equipment monitors each part of the process, ensuring adherence to customer specifications.

RAW MATERIAL & CUTTING
FORGING
HEAT TREATMENT
MACHINING
INSPECTIONS & TESTING
OTHER SERVICES

New Heat Treatment facilities (2021) :

RAW MATERIAL & CUTTING

FORGING

HEAT TREATMENT

MACHINING

INSPECTIONS & TESTING

OTHER SERVICES

HEAT TREATMENT FACILITIES FEATURES:

- 2 Chamber Furnaces
  - * H1: 5 x 6 meters and 2,5 meter High
  - * H2: 2,5 x 6 meters and 2,5 meter High
- Quench tank: agitated bath of 310.000 Liters
- Weight Capability: Up to 50 Tn
- Tª Rate: Up to 1.200 ºC
- Ways of Cooling: Calm Air, Forced Air, Water Quenching and Polymer Quenching
- Available treatments: Normalizyng, Quenching, Tempering, Annealing, Solution Annealing, Aging, Stress Relieving
- Max. Transfer time: 60 seconds (Fully Automated System)
- Qualifications: ASTM A991, API RP 6HT, API SPEC 6A / ISO 10423, NORSOK M-650 Annex B & AMS 2750

RAW MATERIAL & CUTTING
FORGING
HEAT TREATMENT
MACHINING
INSPECTION & TESTING
OTHER SERVICES

GAINZA FORGE services include rough machining and final machining according to customer drawings or norm that is runned in an internal workshop which is equipped with parallel & vertical lathes and milling machines. In addition, our Deep Hole Drilling Machines allow us to carry out precision deep holes on tube plates that are used in Heat Exchangers.

We also cooperate with some external workshops in order to satisfy the production needs and enable us to supply our customers with extremely accurate and complex machining and weld overlay services.

MACHINING WORKSHOP GENERAL FEATURES:

- Workshop Built in 2014
- Built area: 2.600 m2
- Height: 15 m
- New machinery for medium – large pieces
- 5 Cranes
    * 1 Crane up to 63 Tn
    * 1 Crane up to 40 Tn
    * 3 Cranes up to 5 Tn

PARALLEL LATHES:

- Max. Swing Over Bed (mm)	2.900
- Max. Swing Over Cross Slide (mm)	2.000
- Max. Distance Between Centres (mm)	8.000
- Max. Weight Between Centres (kg)	40.000

VERTICAL LATHES:

- Max. Diameter (mm)	3.300
- Max. Height	2.000

MILLING MACHINES:

- Table (mm)	4.000 x 12.000
- X Shaft Course (mm)	12.000
- Y Shaft Course (mm)	3.000
- Z Shaft Course (mm)	1.800

DRILLING MACHINES:

- Max. Depth (mm)	450

Deep drilling machines with internal high pressure cooling

Inspection & Testing

A highly qualified staff and laboratory equipment allow us to respond to all ***DESTRUCTIVE (DT)*** and ***NON DESTRUCTIVE TEST (NDT)*** required by all international standards. Likewise, the main certifying bodies guarantee the quality of our products and our management.

New Lab built in 2014 with increased Testing Machinery Capability.

RAW MATERIAL & CUTTING
FORGING
HEAT TREATMENT
MACHINING
INSPECTIONS & TESTING
OTHER SERVICES

DESTRUCTIVE TEST (DT):

- Tensile & Hot Tensile Testing up to 600 ºC
- Impact Testing down to -196ºC
- Hardness Test (HRB, HRC , HB, HV)
- Drop Weight Test (Pellini)
- CTOD Test

NON DESTRUCTIVE TEST (NDT):

- Ultrasonic Testing (UT)
- Magnetic Particle Testing (MT)
- Dye Penetrant Testing (PT)
- Visual Testing (VT)
- Positive Material Examination (PMI)
- Ferrite content (Feritscope)

METALLOGRAPHIC & CORROSION TEST:

- Macrographs
- Micrographs
- Corrosion Test (HIC & SSC Test, …)
- Determination of Ferrite content

Other Services

RAW MATERIAL & CUTTING

FORGING

HEAT TREATMENT

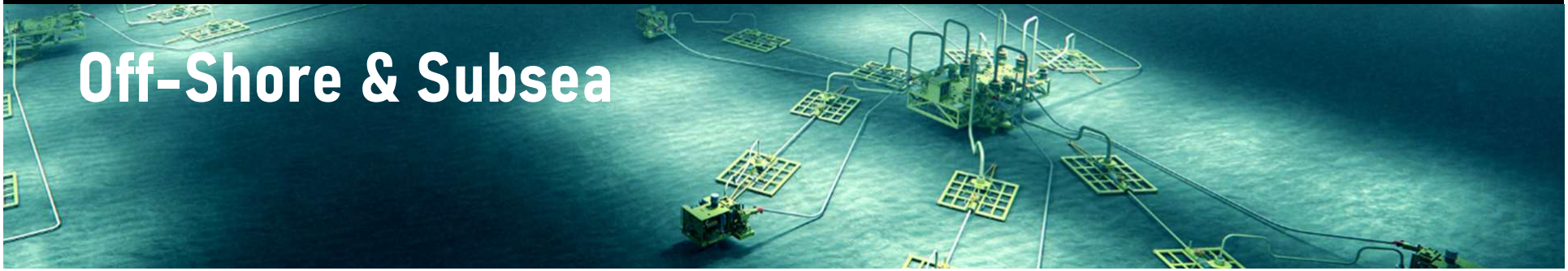
MACHINING

INSPECTIONS & TESTING

OTHER SERVICES

In case of needing any other service, please contact us in order to analyze its feasibility.

Main Markets



GAINZA FORGE has a long experience manufacturing forged pieces for the Off-Shore & Subsea applications and specially in **underwater connections** at great depths and low temperatures.

We provide forging solutions for critical applications according customer drawings with the highest quality, complying with strict specifications and with competitive & flexible delivery times.

Typical Products:

- Weld Neck Flanges
- Swivel Flanges
- Blind Flanges
- Hubs
- Anchor Flanges
- Wyes
- Special Parts

Norsok 22Cr

Norsok M-650 Type 22Cr Duplex (UNS31803)
Approval in **Open Die Forging** (Thickness up to 200mm)

Norsok 22Cr

Norsok M-650 Type 22Cr Duplex (UNS31803)
Approval in **Ring Rolling** (Thickness up to 200mm)

Norsok 25Cr

Norsok M-650 Type 25Cr Duplex (UNS32760)
Approval in **open Die Forging** (Thickness up to 200mm)

Norsok 25Cr

Norsok M-650 Type 25Cr Duplex (UNS32760)
Approval in **Ring Rolling** (Thickness up to 150mm)

Norsok A182 F44

Norsok M-650 ASTM A182 F44
Approval in **Open Die Forging** (Thickness up to 150mm)

DNVGL-RP-0034

DNVGL-RP-0034 Approval (SFC2 & SFC3)
Grade A694 F65 in **Open Die Forging** & **Ring Rolling**

Fully Machined examples






Premachined examples

Off-Shore & Subsea References

If you would be interested in receiving the complete information of our ***Off-Shore / Subsea Supply History***, please request it

GAINZA FORGE provides forging solutions with the highest quality, and manufactures according to the strict requisitions of the Nuclear Industry. Our forgings are critical components used for Heat Exchangers, Vessels, Reactors, Tanks, Steam Generators, Containers, Valves, Lifting Equipments, …

TÜV SÜD Industries Service

Approval in accordance with the Pressure Equipment Directive 2014/68/EU & AD 2000-Merkblatt W 0

Typical Products:

- Flanges & Rings
- Tubesheet
- Discs & Covers
- Self Reinforced Flanges
- Nozzles & Self Reinforced
- Special Parts

Machined pieces for Heat Exchanger






Nuclear






Nuclear References

If you would be interested in receiving the complete information of our ***Nuclear Supply History***, please request it

GAINZA FORGE is very familiar with the quality requirements and specifications of the industry providing flexible lead times and quality products. One of the specialities of our company are the flanges for high pressure equipment and with complex couplings, saddles, slants etc … From single rings to complex shapes and geometries, we have the capabilities to manufacture a wide range of materials, sizes and geometries.

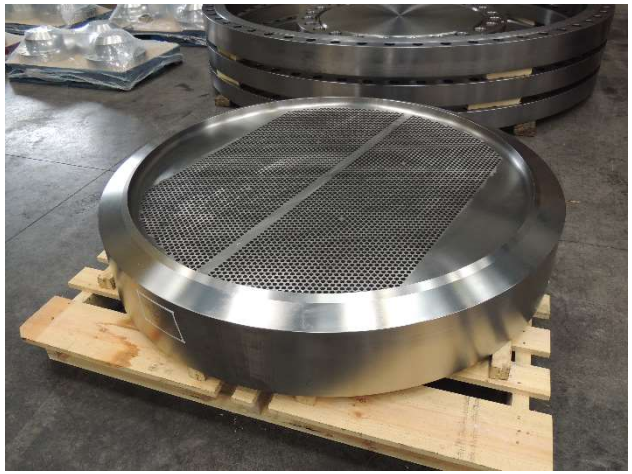
TÜV SÜD Industries Service

Approval in accordance with the Pressure Equipment Directive 2014/68/EU & AD 2000-Merkblatt W 0

Typical Forged parts:

- Tubesheets
- Flanges
- Discs & Covers
- Self Reinforce Flanges
- Nozzles & Self Reinforced
- Special Parts

Chemical & Petrochemical






Shipbuilding Industry

GAINZA FORGE has been supplying forged products for the marine and offshore application for a long time and we understand the importance of the on-time deliveries. In addition, our certificates and understanding of the specifications of the market together with our long relationships with third-party agencies, allow us to offer the best quality product and competitive lead times with a complete certification.

Lloyd`s Register

Lloyd`s Register Approval as for the Manufacture, Testing & Certification of Materials

ABS

AMERICAN BUREAU OF SHIPPING Approval to supply forged components for marine applications

Bureau Veritas

BUREAU VERITAS Marine & Offshore Division Approval to supply Carbon Steel, Low & High Alloy Steel, Stainless Steel and Nickel Alloy Steel Forgings

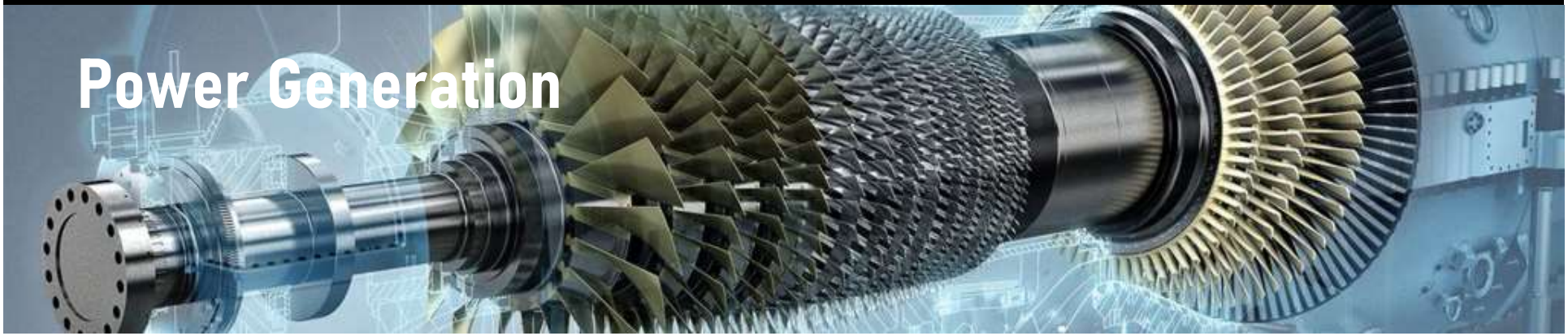
DNV-GL

DNV-GL Approval according DNV-GL rules for classification – Ships Offshores Standard DNV GL-OS-B101

GAINZA FORGE provides forging solutions in a wide range of materials, geometries and in different states (rough forge, rough machined and final machined conditions) for varied markets such as Valve Manufactures, Machine-Tool & Press Manufactures, Gear Industry, …

Typical Forged parts:

- Seamless Rolled rings
- Discs & Covers
- Valve Bodies, Wedges, Seat Rings, …
- Different Shafts (crankshafts & eccentric shafts, with cantered heads, lateral, dual head, square head, …)
- Couplings
- Flanges
- Special Parts



GAINZA FORGEs flexible manufacturing process enable us to deliver a wide range of materials and shapes in very competitive lead times. We produce rolled rings and open die forgings with the highest quality and according to industry specifications.

We deliver our products to several markets such as Hydro Energy, Wind Power, Gas Turbines, Compressor, Generators, …

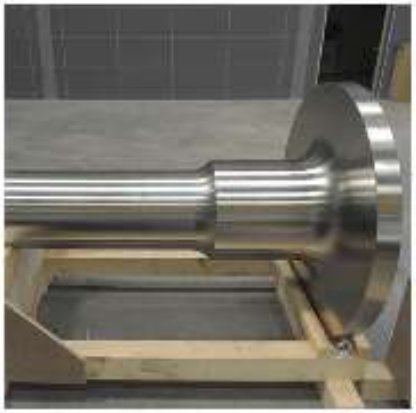
Products

ROLLED RINGS

DISCS, COVERS & TUBESHEETS

FLANGES & SELF REINFORCED FLANGES

HOLLOWS



SHAFTS

SPECIAL PARTS

Rolled Rings

Gainza Forge manufactures a wide range of seamless rolled rings in different shapes, size and material grades (Carbon Steels, High & Low Alloy Steels, Austenitic, Martensitic & Superaustenitic Stainless Steels, Duplex, Super Duplex and High Nickel Alloys).

Discs, Covers & Tubesheets

Gainza Forge manufactures forged discs for different products such as Blind Flanges, Covers, Tubesheets, Crane Wheels, … for a wide range of applications (Heat Exchangers, Subsea applications, Heavy Machinery, Gear Manufactures…)

Our services include rough forged, rough machined or final machined discs up to a weight of 40Tn per piece. In addition, our Deep Hole Drilling Machines allow us to carry out precision deep holes on tube plates that are used in Heat Exchangers

Flanges, Self Reinforced Flanges & Nozzles

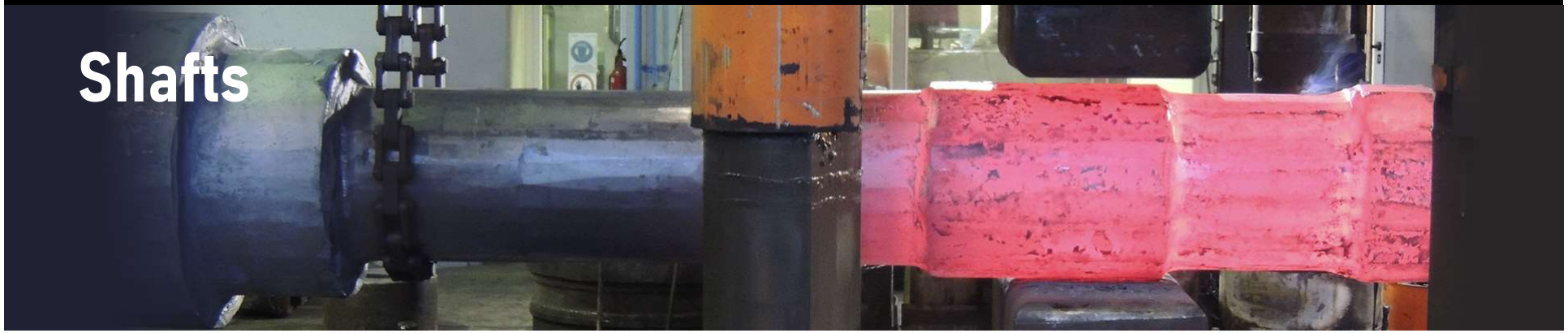
Hollows can be produced not only in straight cylindrical shape, but with different variations of O.D.s and I.D.s, forging the piece the closest to the final geometry.

Hollows

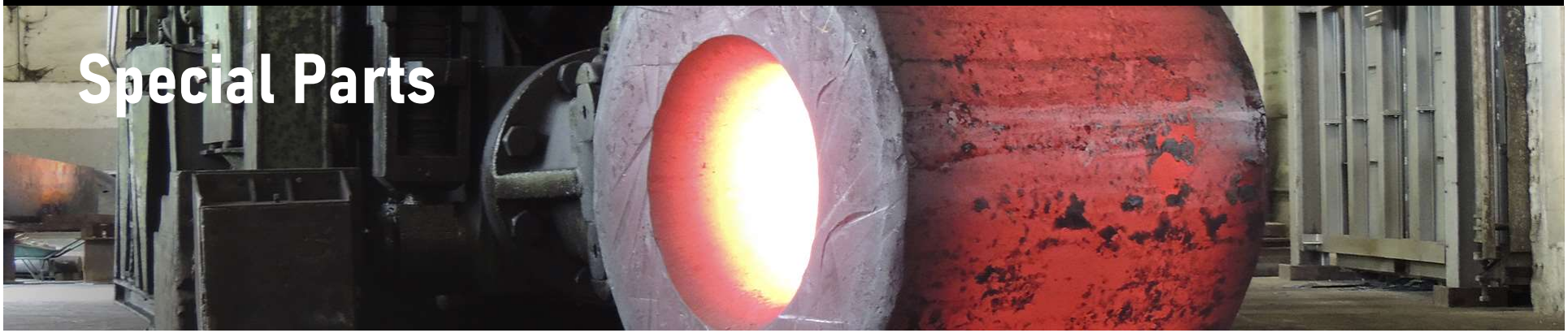
GAINZA FORGEs flexible manufacturing process enable us to deliver a wide range of materials and shapes in very competitive lead times. We produce rolled rings and open die forgings with the highest quality and according to industry specifications.

We deliver our products to several markets such as Hydro Energy, Wind Power, Gas Turbines, Compressor, Generators, …

Shafts

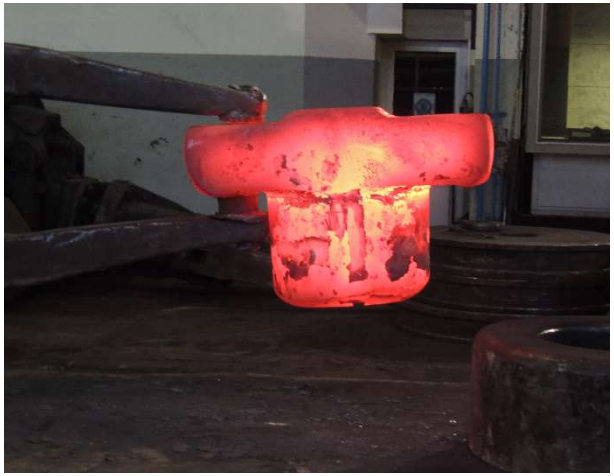


GAINZA FORGE manufactures several different models of shafts: with cantered heads, lateral, dual head, square head, simple crankshafts etc.



Special Parts

One of the strengths of GAINZA FORGE is the manufacturing of Tailored forgings with special shapes. We produce pieces in Open Die Forging or in Pot Die Forgings using special tools in order to obtain forgings close to the final shape. As an example we can find valve bodies, chambers, hooks, turbine parts, high pressure steam distributors or sleeves for axes.



Certificates & Approvals

ISO 9001:2015

LRQA Quality Management System according to the requirements of the standard ISO **9001:2015** and applicable to Manufacture of forgings and flanges in carbon steel, low and high alloy steels, stainless steels and nickel alloy steel

ISO 14001:2015

LRQA Environmental Management System according to the requirements of the standard **ISO 14001:2015** and applicable to Manufacture of forgings and flanges in carbon steel, low and high alloy steels, stainless steels and nickel alloy steel

ISO 45001:2018

LRQA Health & Safety Management System according to the requirements of the standard **ISO 45001:2018** and applicable to Manufacture of forgings and flanges in carbon steel, low and high alloy steels, stainless steels and nickel alloy steel

PED 2014/68/EU & AD 2000-Merkblatt W 0

TÜV SÜD Industries Service GmbH Quality Assurance System in accordance with the **Pressure Equipment Directive 2014/68/EU & AD 2000-Merkblatt W 0**

Lloyd`s Register

Lloyd`s Register Approval as for the Manufacture, Testing & Certification of Materials

DNV-GL

DNV-GL Approval according DNV-GL rules for classification – Ships Offshores Standard DNV GL-OS-B101

Bureau Veritas

BUREAU VERITAS Marine & Offshore Division Approval to supply Carbon Steel, Low & High Alloy Steel, Stainless Steel and Nickel Alloy Steel Forgings

ABS

AMERICAN BUREAU OF SHIPPING Approval to supply forged components for marine applications

Norsok 22Cr

Norsok M-650 Type 22Cr Duplex (UNS31803)
Approval in **Open Die Forging**
(Thickness up to 200mm)

Norsok 22Cr

Norsok M-650 Type 22Cr Duplex (UNS31803)
Approval in **Ring Rolling**
(Thickness up to 200mm)

Norsok 25Cr

Norsok M-650 Type 25Cr Duplex (UNS32760)
Approval in **open Die Forging**
(Thickness up to 200mm

Norsok 25Cr

Norsok M-650 Type 25Cr Duplex (UNS32760)
Approval in **Ring Rolling**
(Thickness up to 150mm)

Norsok A182 F44

Norsok M-650 ASTM A182 F44
Approval in **Open Die Forging**
(Thickness up to 150mm)

DNV-GL

DNVGL-RP-0034 Approval (SFC2 & SFC3)
Grade A694 F65 in **Open Die Forging** & **Ring Rolling**

TR2000

GAINZA FORGE is included in the Equinor´s approved vendor list

Gainza Forge is committed to integrate Health, Safety & Environment (HSE) in the way we do business and improving HSE performances in all our activities.

HEALTH & SAFETY

- We are a company driven by our **people** and by our shared values.
- We strive continuously for zero harm to people and prevent accidents.
- We focus on employee health and on continuously improving the work environment.
- We require every employee to take personal responsibility for HSE by focusing on their own behaviour.
- ISO 45001:2018 obtained during 2018.

ENVIRONMENT

- Our challenge is to reduce the negative impact of our activities and products on the environment.
- ISO 14001 obtained during 2018.

Thanks you for your attention!