



## **PREMIUM CRANE COMPONENTS FOR OFFSHORE INDUSTRIES**

**HEAVY DUTY CHALLENGES.  
FORGED SOLUTIONS.**

# ABOUT IRIZAR FORGE

**Founded in 1923, Irizar Forge is a specialist forge that offers practical and innovative solutions to onshore and offshore EPC & OEM companies.**

We are the leading experts in the metallurgy of heavy duty crane components and their application in harsh environments – on land, at sea, and in the air. Our heavy-duty crane hooks, blocks and related components have a lifting capacity of up to 5000t, comply with the highest standards and are fully certified by the LRS, DNV-GL, ABS and BV Class Societies. Besides forging high quality standardized components,

Irizar Forge also offers innovative, tailor made crane components that come with a full-service package. A package that includes design, testing, inspections and third party certifications. No matter how complex your engineering challenge is, we can swiftly provide you with a low-maintenance solution that is safe, practical and durable for years to come.

Irizar Forge products are made in the Basque Country of Spain. We have a global sales network: with sales offices in Spain, Brazil (São Paulo), the United States (Houston) and a network of agents in other countries.



# IRIZAR ADVANCED SOLUTIONS

The complexities involved in offshore and subsea projects often require more than a standardized crane component. That's why Irizar Forge offers **Irizar Advanced Solutions**: a full service solution for producing tailor made forged components in which Irizar Forge takes care of the entire development process. The service package ranges from design and production through to testing and full certification. This process usually involves a close cooperation between

the customer and Irizar Forge's engineering departments – something Irizar Forge excels at.

For standardized crane components, Irizar Forge offers **Irizar Standard Forgings**: high quality, standardized products without all the extras.



## OFFSHORE TOPSIDE LIFTING & RIGGING

- 】 Single, double and quad hooks with sling friendly shapes
- 】 Crane hook blocks
- 】 Variety of swivels (hook fitted, heavy duty eye-eye, eye-clevis combined)
- 】 Multiple sheave blocks
- 】 ROV-friendly eye Hooks (DIN7540)

## SUBSEA LIFTING & MOORING

- 】 Eye and KS-ROV Hooks
- 】 Mooring Connectors: shackles, hooks, tri-plates and H & Y links
- 】 Swivels
- 】 Dee, bow and wide body shackles (custom made)

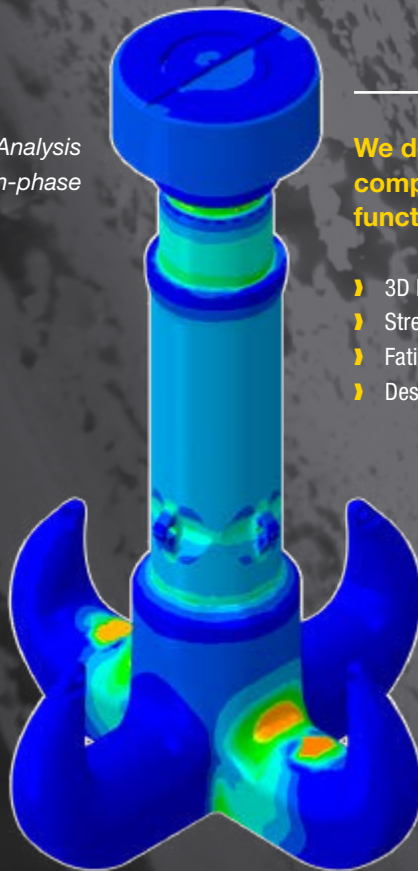


# THE IRIZAR FORGE THREE-STEP PROCESS



## 1. DESIGN

*Example of a Finite Element Analysis  
done during the design-phase*



**We design the lifting, rigging or mooring component to find the safest and most optimal functional solution. Services include:**

- › 3D Modeling
- › Stress studies & finite elements analysis
- › Fatigue strength simulations
- › Design Approvals of classification societies (DNV-GL, ABS, LR)



## 2. PRODUCTION

We provide forging of up to 20.000 kg / 44.000 lbs single weight, including:

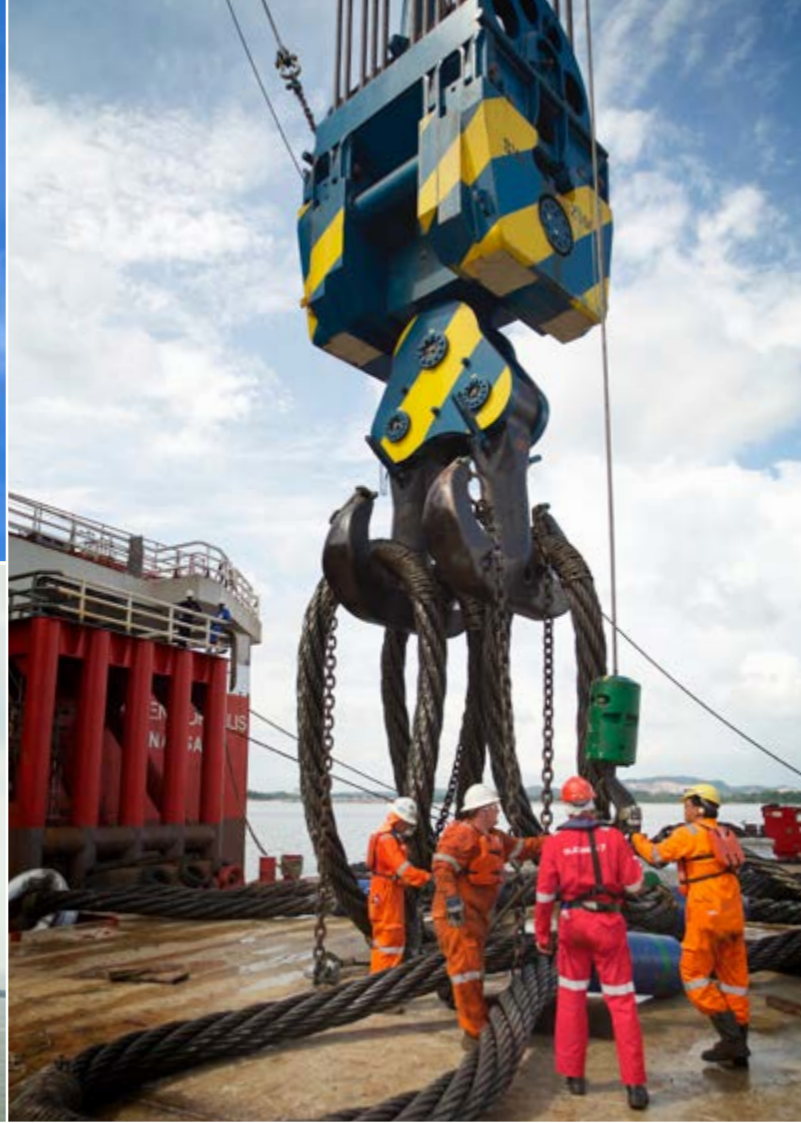
- › **Forging:** Our state-of-the-art forging methods lead to crane components that come with a high safety factor, excellent fatigue rating, lower maintenance costs and a longer lifetime. Irizar Forge production methods preserve the metal's molecular grain structure, which leads to superior mechanical values. Depending on project requirements, we use:
  - 'open die' forging method (flexibility in shape, more economical for smaller series)
  - 'closed die' forging method (less waste, more economical for larger series)
- › **Heat treatment** such as quenching and tempering, normalization or annealing to achieve optimal physical and mechanical properties (toughness, strength, elasticity)
- › **Surface treatments** such as grinding and shot-blasting to remove any surface defects that could impact mechanical and physical performance. This results in a superior fatigue life.
- › **Machining** of components to specification
- › **Assembly** of different components into the whole product
- › **Specialized coatings** to withstand extreme weather, temperature, chemicals, chlorine, and salt or subsea conditions. Irizar Forge also provides guidance on how to protect products in these harsh environments



## 3. TESTING & CERTIFICATION

We offer a range of tests, both during and after production and make sure the product is certified by a third party.

- › **DT inspection & destructive testing** to measure tensile strength, yield point, elongation and reduction of area and Charpy-V impact test
- › **NDT inspection & non-destructive testing to detect imperfections**, both internal examinations (ultrasonic testing) and surface examinations (magnetic particle tests)
- › **Metallurgical tests** to obtain chemical values to determine grain size, cavities, grain-flow orientation
- › **PT inspection & proof load testing** in a variety of benches on site up to 6.000t, vertical or horizontal depending on the product size and shape to be tested.
- › **MBL inspection & minimum break load testing**
- › **FAT** factory acceptance test to ensure functionality
- › **Certifications** part of full certification based on scope of supply following lifting or mooring rules of class societies
- › **Guidance & manuals** guidance and manuals for correct usage, maintenance & decommissioning operations for end users



# IRIZAR FORGE PRODUCT RANGE



▶ HEAVY DUTY COMPONENTS UP TO 5.000T SWL

#### LIFTING:

- ▶ FORGED HOOKS (SINGLE, DOUBLE, QUAD, EYE DIN7540)
- ▶ CRANE HOOK BLOCKS
- ▶ RAMSHORN HOOK SWIVELS

#### MOORING:

- ▶ FORGED HOOKS (ROV, KS, TRANSFER)
- ▶ TRIPLATES, Y-LINKS AND H-LINKS
- ▶ DEE SHACKLES
- ▶ MASTER LINKS

## LIFTING



› SINGLE HOOKS ‹



› DOUBLE HOOKS ‹



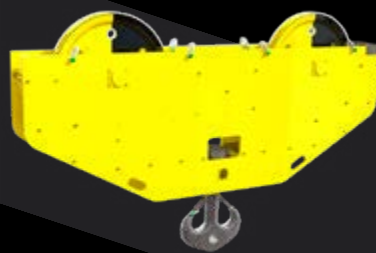
› QUAD HOOKS ‹



› EYE HOOKS DIN7540 ‹



› RAMSHORN EYE HOOKS ‹



› CRANE HOOK BLOCKS ‹



› RAMSHORN HOOK SWIVELS ‹

## MOORING



DEE SHACKLES



H LINKS



KS HOOKS



TRANSFER HOOKS



MASTER LINKS



ROV HOOKS



TRIPLATES



Y LINKS

Download standard  
product drawings for free  
on [traceparts.com](https://traceparts.com)









- › **SPECIALIST FORGE FOR HEAVY DUTY CRANE COMPONENTS**  
SINCE 1923, UP TO 5000T SWL
- › **SPECIALLY DESIGNED FOR OFFSHORE OIL & GAS, WIND AND RENEWABLES, SHIPYARDS AND SUBSEA**
- › **OFFSHORE LIFTING & RIGGING PRODUCTS: CRANE HOOKS (SINGLE, DOUBLE, QUAD), HOOK BLOCKS, SWIVELS, MULTIPLE SHEAVE BLOCKS AND ROV-FRIENDLY EYE HOOKS**
- › **SUBSEA LIFTING & MOORING PRODUCTS: ROV HOOKS, MOORING CONNECTORS, H&Y LINKS, SWIVELS AND CUSTOM MADE SHACKLES**
- › **COMPLIANCE WITH LEADING CRANE STANDARDS (EN13001) & CLASS SOCIETY RULES**
- › **UNRIVALED QUALITY CONTROL**
- › **FULL SERVICE SOLUTIONS**
- › **IN-HOUSE TESTING (DT, NDT, MT, PL AND MBL-TESTING UP TO 6.000T)**
- › **FULL CERTIFICATION (ABS, DNV-GL, LR- BV AND TUV. 3.2 OPTIONAL)**
- › **FAST DELIVERY - STOCK IN SPAIN, GERMANY AND THE USA**
- › **OFFICES IN SPAIN, BRAZIL, USA AND AGENTS WORLDWIDE**

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