



IRON CASTINGS

Industrial Partner for Cast Iron Components

Cast iron solutions casted with expertise:
quality, strength, and innovation.

Strong focus on process reliability, supply
continuity, and complexity management



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Cast iron solutions engineered with expertise quality, strength, innovation. Strong focus on process reliability, supply continuity and complexity management.

Founded 1961

Reggio Emilia, Italy

Grey · Ductile · ADI

Full cast iron portfolio

Flask Size

1100 × 900 × 400 + 350 mm

5–250 kg

Casting weight range

22,000 TON/year

Production capacity

Digital Foundry Industry 4.0

Integrated ERP, MES, QMS and PLM systems enabling traceability and real-time data management



Company Profile

Our History

Founded in **1961 in Reggio Emilia**, Italy. Over six decades, IRONCASTINGS has established leadership in precision Grey iron, Ductile Iron and ADI castings. Serving OEM and Tier-1 customers internationally. Ironcastings has evolved from a traditional foundry into a vertically integrated industrial partner, with internal Robotic Deburring, painting, heat treatment, machining and assembly with advanced engineering Dept. and a digital, Industry 4.0 production process. This integrated model enables to deliver complex, high-integrity structural components.

Global Presence

Headquartered in Italy, exporting high-quality cast iron components to customers across Europe and worldwide.

Melting

3 electric induction furnaces · IGBT technology

Molding

Green-sand automatic molding line · Heinrich Wagner Sinto (HWS) with SEIATSU technology · ~120 molds/hour

Made Green in Italy

Sustainability certified

ISO 9001:2015

Quality management

ISO 14001:2015

Environmental mgmt

ISO 50001:2018

Energy management

Industries Served by the Cast Iron Foundry

Our foundry provides high-precision components for various industrial sectors:



Material Handling

Drive axle housings, Steering axle bodies, Transmission housings, Wheel hubs, Mast support components, Gearbox casings, Brake housings.



Earthmoving & Construction & Mining

Axle housings, Suspension brackets, Counterweight support structures, Hydraulic pump housings, Gearbox casings.



Defence Sector

Transmission components, axles, brake drums Wheel rims, flanges, suspension arms



Hydraulic Sector

Valves, pumps, fittings and components for water distribution systems and treatment plants.



Energy Sector

Turbines, components for power plants, distribution systems and equipment for renewable energy.



Agriculture Sector

Housings and casings for gearboxes and transmissions, Structural frames, Pulleys.



Railway Sector

Components for tracks, train parts, braking systems and structural elements.



Forestry

Bogie housings, Wheel hubs, Transmission housings, Planetary carriers, Crane rotation components, Suspension brackets

Foundry Process: Melting & Molding

Melting

Pouring



Molding

Shakeout

The fully automated production line ensures consistent sand properties via GSC (Green Sand Control), delivering stable, repeatable process quality at every cycle.

1 · Melting

3 electric induction furnaces, IGBT technology - 55 t capacity, 5.5 MW

2 · Sand Preparation

Fully automated, GSC (Green Sand Control) including Simpson Cooler.

3 · Molding

HWS Horizontal automatic moulding line in green-sand system SEIATSU - flask size 1100×900×400+350 mm, ~120 flask/Hour

4 · Pouring

CAP 8 automatic pouring furnace optimized for ductile iron treatment

5 · Shakeout

Simpson cooling system shakeout and controlled cooling

PRODUCT PORTFOLIO

Finishing & Vertical Integration

One Supplier. Complete Solution.

Vertical integration from raw casting to ready to assembled components



Raw



**Robotic
Deburring**



Painting



Machining



Assembly

The Integrated Model

A Partner, Not Just a Supplier

IRONCASTINGS is designed to help OEMs improve structural performance, reduce weight, increase component durability and optimize total cost of ownership, particularly for **medium-volume, complex geometries** where engineering insight matters as much as casting capability.

Vertical integration consolidates multiple vendors casting, machining, painting, assembly into a single, accountable partner. Fewer interfaces. Lower procurement overhead. Measurable ROI that justifies a supplier transition.

1

Engineering ROI

Co-design and simulation deliver cost and weight reduction before production starts.

2

Supply De-risking

Proven production transfer methodology, no disruption, no delays.

3

Single Point of Contact

One supplier from raw casting through to finished assembly.





Digital Foundry / Industry 4.0

End-to-End Digital Workflow

Fully integrated stack from quotation to shipment connecting ERP, MES, quality systems and shop-floor data in real time.

- **Sage X3 ERP** integrated quote-to-ship management
- **APS** advanced planning & scheduling
- **MES** real-time shop-floor execution
- **QMS** digital quality management
- **PLM** drawing and revision control
- **Cast-level traceability** 3.1 certificates,
- **Business Intelligence** - Dashboards



Reliable Deliveries

APS-driven scheduling minimizes lead-time variance.



Full Traceability

Cast-level 3.1 certificates and digital records at every step.



Lower Onboarding Risk

Digital maturity translates to faster, safer supplier transitions.

Quality & Laboratories

Three dedicated laboratory environments process, product and metrology ensuring every casting meets specification before it leaves the facility.



Process & Metallurgical Lab

Foundry-sand analysis (GSC), thermal analysis, chemical analysis via two ARL spectrometers.



Product Laboratory

Micrography, tensile tests, sectioning; ultrasonic, hardness and dye-penetrant NDT.



Metrology Laboratory

Zeiss scan box for dimensional inspection with micrometric precision and full digital reporting.



Materials Portfolio

Three cast iron families covering the full spectrum of mechanical performance requirements from vibration-damping housings to steel-replacement structural parts.

Grey Cast Iron

Dimensional stability · vibration damping · excellent machinability

Grades: GH 190 · GH 45-33-15 · GH 60-38-10 · GH 65-48-05 · EN-GJL-200 / 250 / 300

Ductile (Spheroidal) Iron

Structural, powertrain and heavy-duty applications

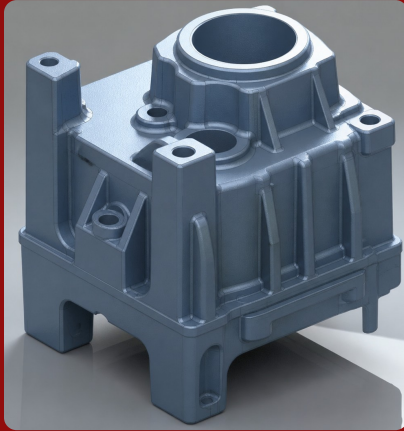
Grades: EN-GJS-400-15 · 400-18-LT/RT · 450-10 · 500-7 · 600-10 · 600-3 · 700-2

ADI - Austempered Ductile Iron

High mechanical strength proven steel replacement

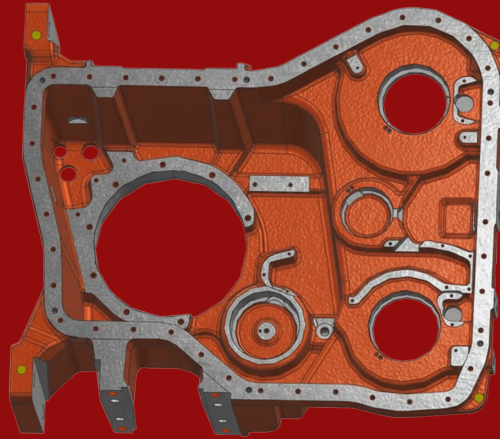
Grades: EN-JS-800-10 · 900-8 · 1000-5 · 1200-3 · 1400-1

PRODUCT PORTFOLIO



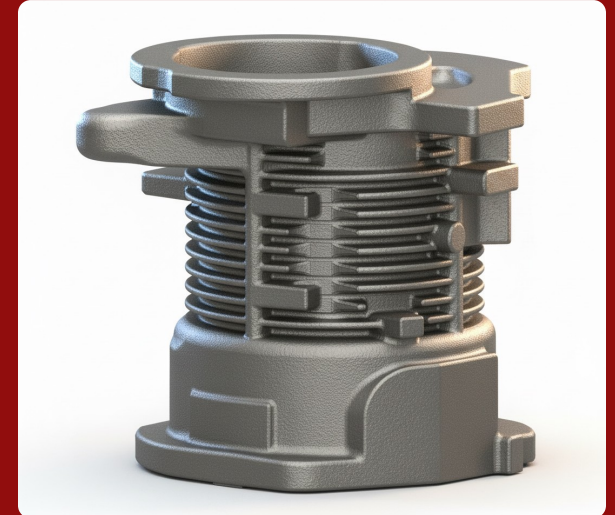
Material: GJL

Weight: 23 kg



Material: GJS-400/15

Weight: 190 kg



Material: GJS-400/15

Weight: 78 kg



Material: GJS 1050-6

Weight: 285 kg



Material: GJS-400/15

Weight: 106 kg



Material: GJS-400-15

GEARBOX FOR THE ROUND
BALERS

Product Lines



Electric Motor Housing

vehicle's suspension, is installed between the drive axle and the wheel rim. It is used on trucks, trailers, and forklift.



Wheel Rim Planetary Carrier

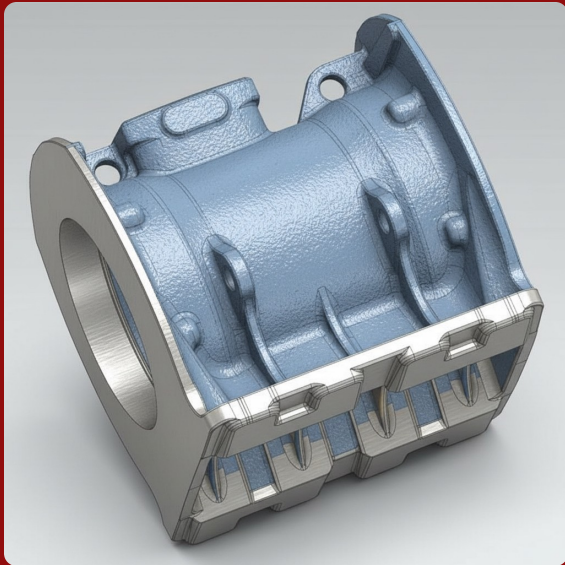
Optimised to reduce weight while maintaining structural strength. Used in premium vehicles.



Pump

Innovative solution to improve driving dynamics. Designed for high performance.

PRODUCT PORTFOLIO ASSEMBLED



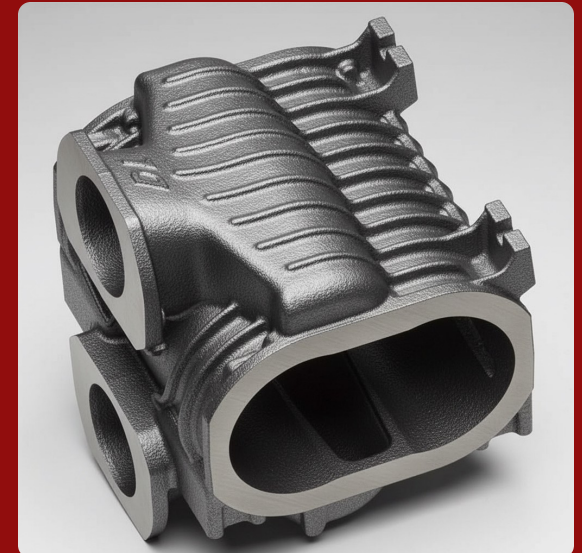
Material: GJS-400/15

Weight: 256 Kg



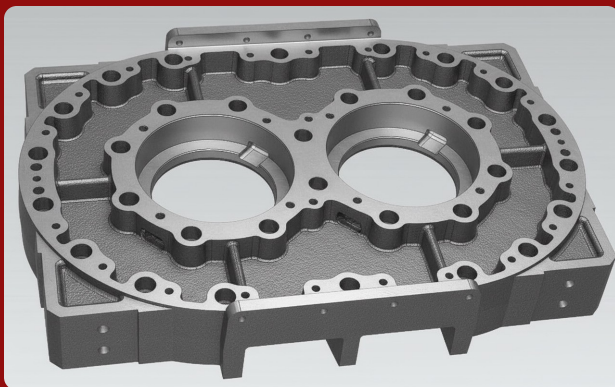
Material: GJS-400/15

Weight: 18 Kg



Material: GJL-250

Weight: 78 Kg



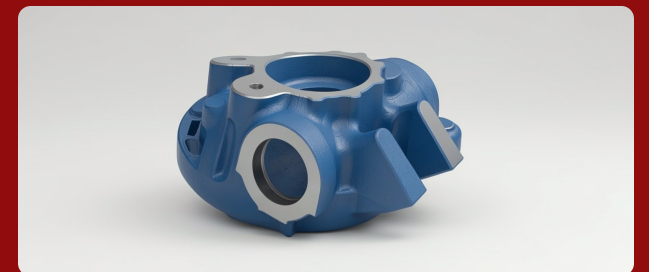
Material: GJL-250

Weight: 115 Kg



Material: GJS-500/7

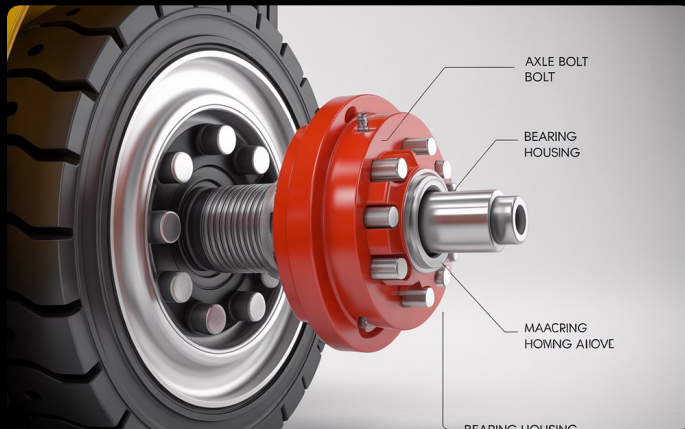
Weight: 55 Kg



Material: GJS-600/3

Weight: 65 Kg

Product Lines



Wheel Hub

vehicle's suspension, is installed between the drive axle and the wheel rim. It is used on trucks, trailers, and forklift.



Wheel Rim Planetary Carrier

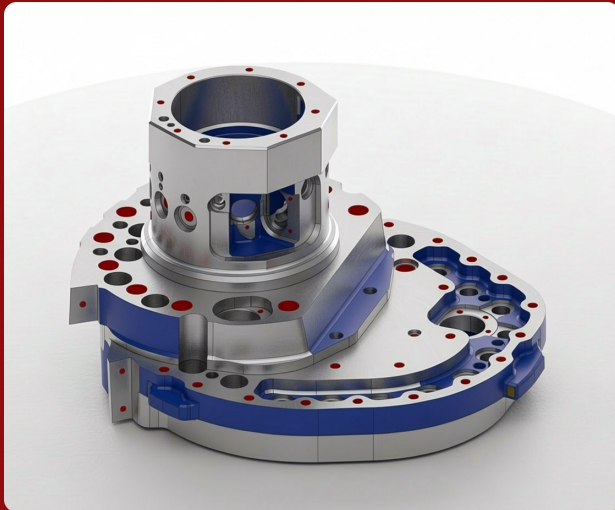
Optimised to reduce weight while maintaining structural strength. Used in premium vehicles.



Right Front Arm Chassis Interface

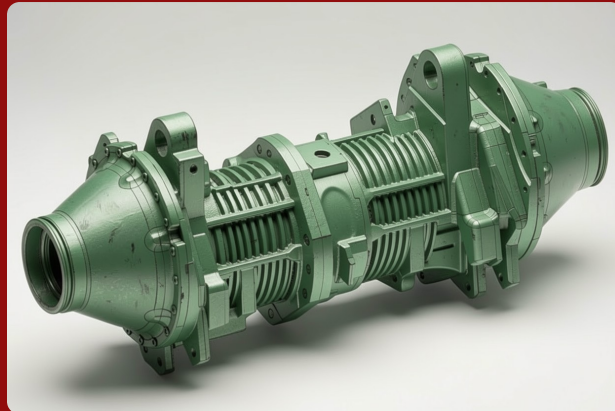
Innovative solution to improve driving dynamics. Designed for high performance.

PRODUCT PORTFOLIO ASSEMBLED



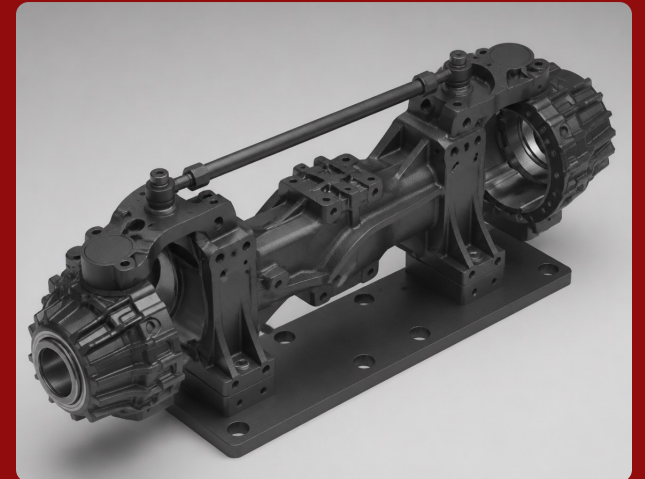
Material: GJS-400/15

Weight: 145 kg



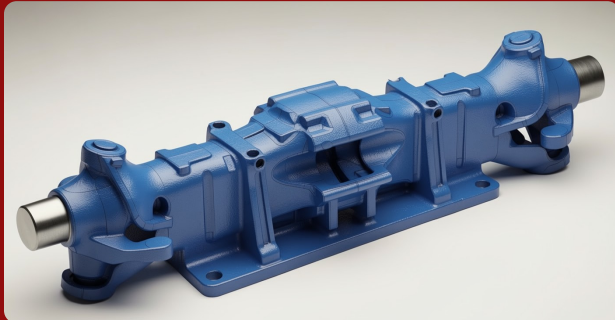
TRANSMISSION AXIS GHISA

Material: GJS-400-15



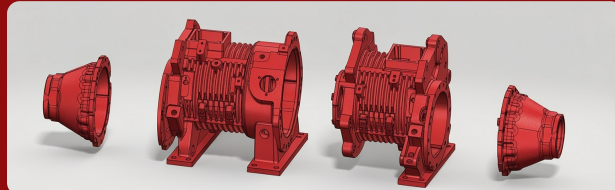
AXLE BEAM ASSEMBLY AND WHEEL HUB

Material: GJS-500-7



AXLE ASSEMBLY COMPLETE WITH STEERING CASE FOR AGRICULTURAL MACHINERY

Material: GJS 400-18RT



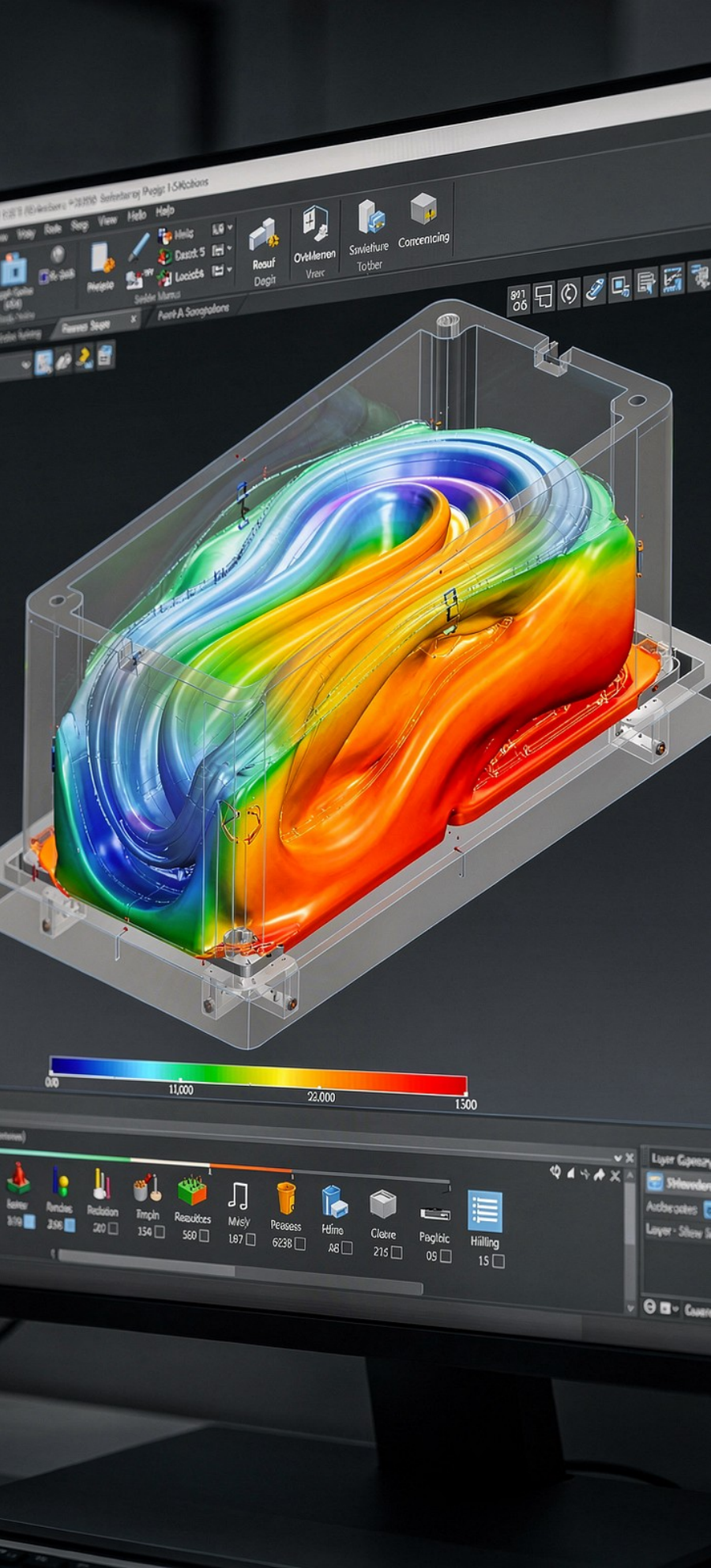
ELECTRIC AXLE HOUSING FOR FORKLIFTS

Material: GJS 400-15



TRANSMISSION SYSTEM FOR DEFENCE

Material: GJS 500-7



IRON
ENGINEERING

Iron
Engineering

An integrated engineering partner beyond casting supply



ProCAST Simulation

Mold filling, solidification, residual stress, validated before tooling investment



FEM Analysis

Structural, fatigue and modal analysis, durability verified by calculation



Topological Optimization

Lightweighting without compromising load paths or functional requirements



3D Scanning & Rapid Prototyping

Zeiss STL → 3D → 2D; 3D-printed sand molds for accelerated prototyping

Manufacturing, Engineering & Advanced Technologies

Manufacturing

- Automatic molding line
- 3 Electric induction furnaces – medium frequency - 55 tons melting capacity
- **Vertical integration:** Robotized Deburring
- Integrated Supply Chain : Painting, Turning and milling
- 3D Scan Zeiss
- Internal metallurgical laboratory for a stable and controlled metallurgical process
- Annual production capacity: 22,000 tons/year

Engineering Services

Design & Optimization

- Structural, fatigue and modal analysis
- Comparative studies
- Topological optimization
- Residual stress and post-solidification deformation analysis

Casting & Process Simulation

- Mold filling (fluid dynamics)
- Thermal and solidification simulation

Technical Design

- Advanced 3D modeling
- 2D technical drawings
- Feasibility studies for new projects

Advanced Technologies & Support

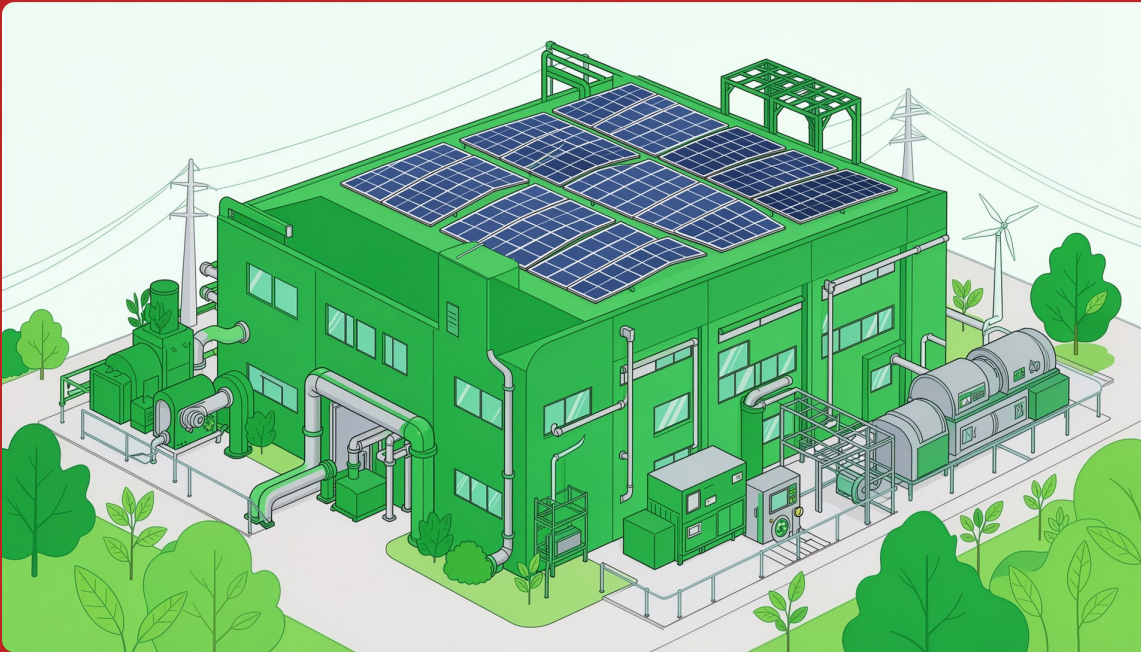
Advanced Technologies & Support

- 3D scanning
- Reverse engineering (STL → 3D → 2D)
- Rapid prototyping
- Industrialization and validation support

Testing & Validation

- Mechanical testing (tensile, impact, hardness)
- Chemical analysis (spectrometry)
- Non-destructive testing (UT, PT, X-ray, MPI)
- Metallographic analysis

Sustainability & ESG



Certified Environmental Commitment

IRONCASTINGS operates under **ISO 50001** energy management and **ISO 14001** environmental management frameworks, supported by an annual sustainability report and active foundry-sand recycling programs.

CBAM Procurement Advantage

As an EU-based foundry certified **Made Green in Italy**, IRONCASTINGS significantly reduces Carbon Border Adjustment Mechanism (CBAM) exposure for European OEMs, compared with sourcing from non-EU suppliers. Sustainability is not a cost here; it is a measurable **procurement advantage**.

Why IRONCASTINGS



Engineering Partner

Co-design, simulation and optimization
not a passive order-taker



Vertical Integration

Fewer suppliers, not one more, raw to
finished in one relationship



Digital Maturity

Full traceability, real-time data and
ERP-to-MES integration reduce
onboarding risk



Ductile, Grey, ADI & Material Breadth

Grey, ductile and ADI grades, including
proven steel-replacement solutions



EU-Based & Certified

ISO 9001/14001/50001

· Made Green in Italy · low CBAM
exposure for EU buyers

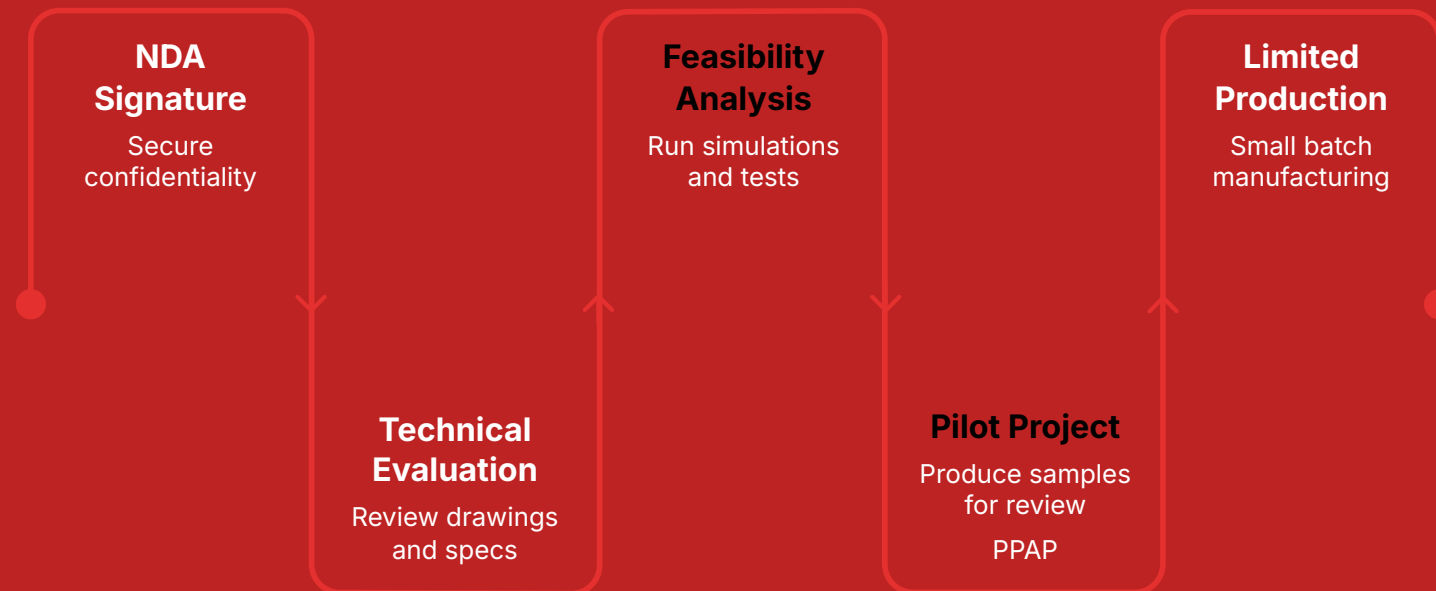


Supply Continuity

Proven transfer methodology,
de-risk your supplier base with
confidence.

How to Start a Collaboration

From first contact to serial production **approximately 90 days.**



Ready to begin? Contact our technical team to discuss your component, your volumes and your timeline. We are ready to evaluate your drawings from day one.

CASE STUDY 01

Existing Casting Redesign & Process Optimization

Challenge

Recurrent internal defects (microporosity, residual stress) on an existing casting sourced from another foundry. No changes permitted to draft angles or external geometry.

Approach

Advanced process simulation to redesign gating and feeding system while preserving all external geometry. Optimized mold filling and solidification sequence. Zeiss 3D scanning for dimensional validation.

Results

- Microporosity fully eliminated
- Improved internal soundness confirmed by destructive testing
- Reduced core weight
- Productivity increase: 3 → 4 patterns per molding plate
- Improved process stability and reduced scrap

CASE STUDY 02

Production Transfer Without Risk & Supply Continuity

Challenge

OEM request to transfer tooling and production from multiple foundries simultaneously, under tight timelines with zero tolerance for supply disruption.

Approach

Structured transfer methodology: integration of tooling from different foundry standards, custom-engineered technical adapters, and a dedicated ramp-up team managing a controlled production transition.

Results

- Zero production downtime zero delivery delays
- Serial production achieved within one month
- 13 tooling and model transfers managed simultaneously
- Lower, more stable cost per part vs. prior suppliers

Proven capability to absorb complex, multi-source transfers without disrupting OEM production schedules.

CASE STUDY 03

Engineering Support Beyond Casting Supply

Challenge

Component deformation (warping) after solidification, sourced from another foundry. Constraint: eliminate deformation without changing function or supply chain structure.

Approach

Full review of design and functional requirements. Advanced solidification simulation and residual stress analysis to identify root cause. Co-design of stiffening rib layout with OEM engineering team.

Results

- Residual stresses identified as root cause and significantly reduced
- Deformation fully eliminated
- Improved dimensional stability across production batches
- No foundry change required — issue resolved at source
- Reduced scrap and rework costs