BiRiNCi

Brief Summary

Established in	Industry	Employe	Revenue	Direct Export Rate
1971 KOCAELI, TURKEY	**FORGING, MACHINING ASSEMBLY**	**+1000 People**	**EUR 99.7 mn (2023fy)**	**45%**

OVERVIEW

Based in Kocaeli, Turkey, **Birinci** is one of the leading steel **hot forged & machined ready to assemble** / fit parts components manufacturers to both global leading **OEMs and TIER I suppliers.**

The Company has an **annual forging capacity of 38,000 tons**, situated in a 33k m2 closed (total 42k m2) production site, employs **1035** people and **exports 45%** of all products **directly** to Europe and North & South America.

Birinci is **globally preferred by global OEMs** thanks to its lowest manufacturing cost for weight ratio, reliability and high quality **safety products** that are mostly focused on chassis, steering, powertrain and driveline parts.

The Company denominates **70% of its sales in EUR and USD basis.**

Global Footprint

Manufacturing Capabilities

BiRiNCi

FORGING UNIT:

Description: With an annual capacity of 30,000 tons, Birinci is able to forge items from 200 gr up to 20 kg. per piece

Capabilities:

•6 hammer lines (40 KJ-125KJ)
•14 mechanical forging presses (500-4000 tons)
•2 upsetters.
•3 Screw presses(200-750 tons)
•Hyraulic and mechanical coining presses (Eccentric and hydraulic presses)
•Post forging operations such as controlled cooling and normalising.
•5 Sandblasting Machines
•1 Shot Peening Machines

MACHINING UNIT:

Description: Employing more than 115 CNC machines, Birinci is one of the global leading suppliers of finished components

Capabilities:

- CNC Machining (52 Horizontal,24 Vertical)
- Rotary Transfer Machine
- Turning (43 CNC Lathe)
- Grinding (8)
- Broaching (4)
- Thread and Spline
- Rolling (9)
- Robotic MAG Welding
- Friction welding
- Ultrasonic Washing
- Gear Cutting Machine
- Skiving Machine

ASSEMBLY UNIT:

Description: Birinci positions itself closer to its customers by shortening the supply chain ..

Capabilities:

- Power Step Asy
- Pitman Arm&Brackets Asy
- Hydraulic Piston Asy
- Planetary Carrier Asy
- Hinge Asy

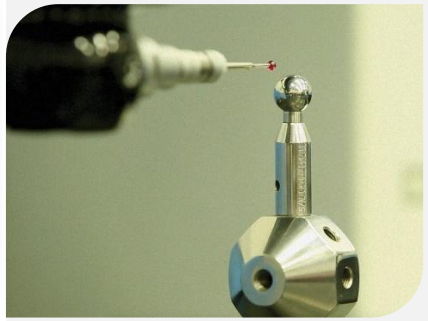
TOOL SHOP:

Description: In-house tool shop is one of the Birinci 's key advantage. This is the place where company manufactures all necessary tools for forging and machining process with optional dimensions, shapes and materials.

Capabilities:

- CNC Machining Centre(15)
- Turning Lathe(3)
- Grinding Machine(1)
- Erosion Machine(2)

QUALITY:

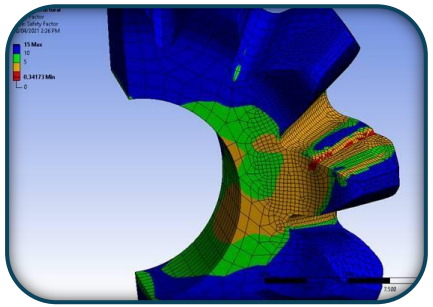


Description: There are advanced quality tools and in-house lab facility on the premises. Birinci holds IATF 16949, ISO 45001 , ISO14001, ISO 27001, IS0 50001, Q1 and JLRQ certifications .

Capabilities:

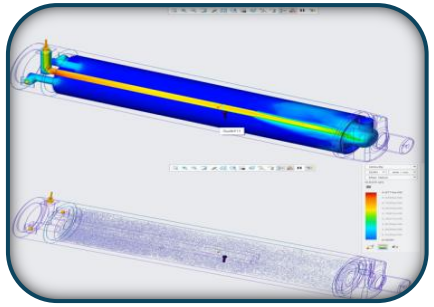
- CMM(3)
- Magnetic Particule Crack Control(4)
- GOM Scanning Machine
- Metallic Microscope
- Ultrasonic Crack Control
- Leak Testing
- Climatic Chamber (-40℃ / +150℃)
- Cleanliness (ISO16232)
- Klingelnberg Device
- Laser Optical Scanning And Measuring Device

R & D and Engineering Capabilities



DESIGN

- Product Design
- Process Design
- Tool And Machinery Design
- Reverse Engineering



CONTINUOUS IMPROVEMENT

- Lightweighting Studies
- Process optimization
- Loss Reduction
- In House Test Facility
- Six Sigma Principles

NEW TECHNOLOGIES

- Industry 4.0
- Innovation
- Alternatives material solutions
- Product and Process Diversity
- Rapid Prototyping (3D Printer)

SOFTWARE

- CREO Parametric
- SOLIDWORKS
- SIEMENS NX
- CATIA
- AUTOCAD
- KISSsoft
- TEAMCENTER
- QFORM
- ANSYS

PATENTS

- Horizontal Retractable Running Board with High Load Capacity –Türk Patent (2018)
- Hareketli Araç Basamağı İçin Bir Yük Freni (2018)
- Running Board Having Improved Performance Characteristics- America Patent (2019)
- Yüksek Hız Kapasitesi Haiz Yatay Toplanabilir Basamak Sistemi -America Patent (2016)

Sales Overview-Industry Based

BiRiNCi

COMMERCIAL VEHICLE	58%	Of Sales are From Heavy and Light Commercial Vehicles
PASSENGER VEHICLES	13%	Of Sales are From Passenger Vehicles
MATERIAL HANDLING	22%	Of Sales are From Material Handling Industry
OTHERS	7%	Of Sales are From Agriculture and Other Industries

Automotive Product Portfolio

Engine Parts

Steering Parts

Suspension Parts

Chassis & Exterior Parts

Automotive Product Portfolio

Axle & Differantial & Transmission Parts

Axle & Differantial & Transmission Parts

Axle & Differantial & Transmission Parts

Axle & Differantial & Transmission Parts

Material Handling Product Portfolio

A Novel Waste Heat Valorization Method in Hot Forging Industry

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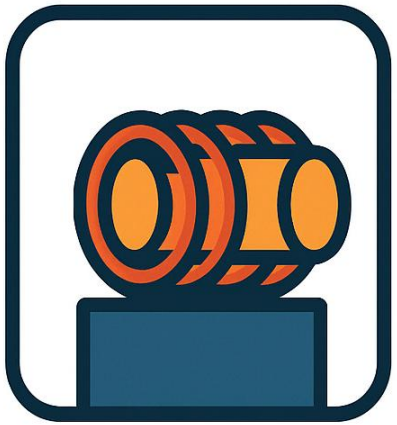
Current Process

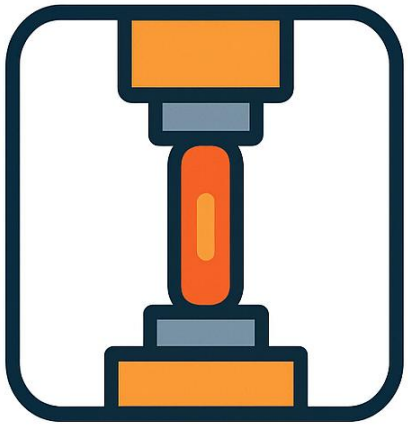
BiRiNCi

Heating



Billet is heated up to 1200 °C

Forging

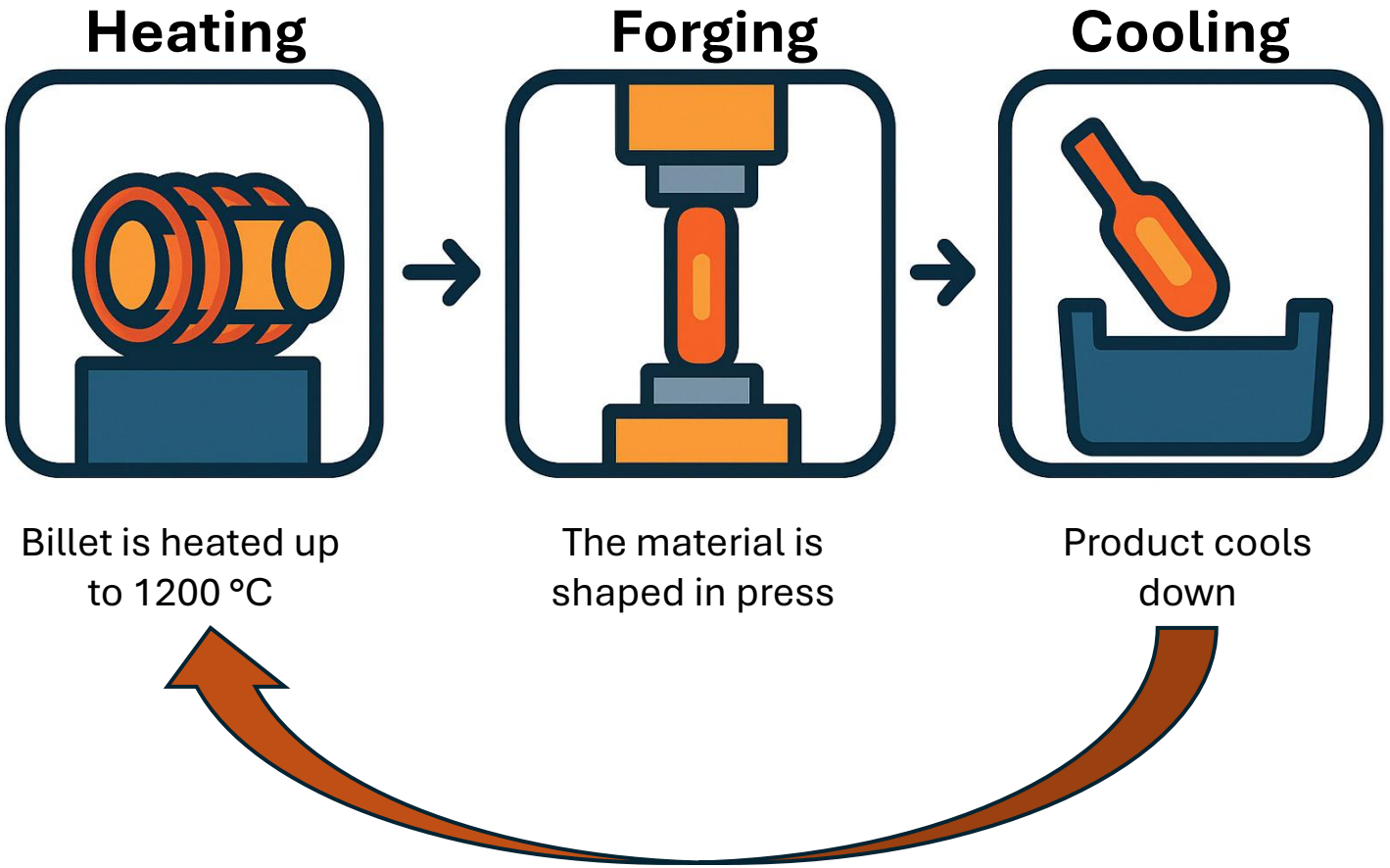


The material is shaped in press

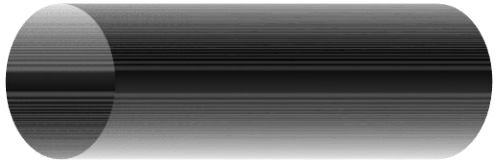
Cooling

Product cools down into the atmosphere

Planned Workflow



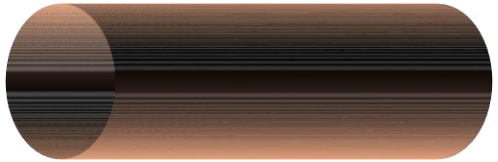
While cooling down, the product simultaneously heats up the billet crate. Thus reducing the energy consumption by induction heater, providing energy efficiency.



25 °C

~0.5 kWh/kg

1200 °C



~300 °C

~0.4 kWh/kg

1200 °C

20% less energy consumptionand CO2 emission for induction heating is aimed

Project Overwiev

Work Package	WP Name	Duration (Months)	Leader	Objective
WP1	Project management & coordination	1-24	Research Institute	Project management, reporting, communication
WP2	Simulation & System modeling	1-10	An SME specialized in thermal analysis	Heat transfer simulation, system modeling
WP3	Hardware & component development	6-16	An SME specialized in furnace production	Hardware production
WP4	Pilot demonstration	12-22	Birinci	Pilot set up, data collection
WP5	Impact analysis	16-23	Birinci	Impact analysis, LCA
WP6	Dissemination	1-24	Research Institute	Dissemination through media