
Sima
Aluminum
Extrusion and Forging

www.simaaluminyum.com



Dilovasi Imes Osb Plant

About Us

In line with its objective to forge aluminum alloys, our company was founded in 2016 in Cayirova Kocaeli under its plant with total area of 2.500 m². In 2022, the company moved to a new plant with total area of 22.000 m² located in Dilovasi Imes OSB industrial zone. Intending to follow and even to dominate modern technology, Sima Aluminum has initiated unmanned production in this new plant by adding robotic arms to its manufacturing capacity.

The major industries that we provide services are aviation, defense, automotive, electromechanics, rail systems, medical devices, bicycles, marine affairs, and clean energy. To satisfy customer requirements at full scale, the products are manufactured with state-of-the-art machinery and then checked and verified with precision gauges by our experienced technicians holding necessary qualifications. In line with our focus on quality, the rate of employees under Quality Assurance Department to total number of employees is 10%.

Our core principle is to make contribution to the development of entire supply chain network by providing our customers with durable and quality products in line with our respect towards the business and our awareness in quality, environment and occupational safety.



Why to prefer Sima Aluminum?

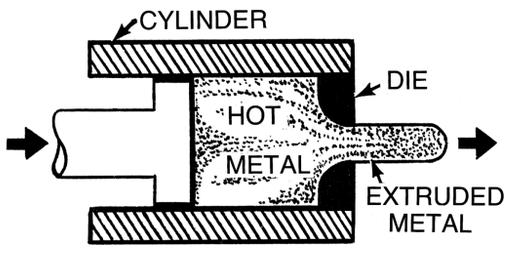
The required technical and engineering assistance is provided by our staff on industry basis including the materials selection process for the product.

To provide our customers with accurate data about the relevant industry, we perform necessary visual and practical trainings in our company. In fact, our major activity is to bring affordable and high-tech products to our customers with specific forging and drawing methods rather than low-strength products manufactured at high costs and long durations through the machining process.

Production

Extrusion

Chemical composition	Mechanical properties	Tolerances + Geometry
EN 573-3 ASTM B209	EN 485-1/2 ASTM B209	EN 485-3,4 ASTM B209



In line with its objective to become a leading aluminum manufacturer in the world, Sima Aluminum focuses on extruding 2XXX and 7XXX alloys under EN standards. This approach also made us to specialize in 5XXX and 6XXX alloys. We respect shipment dates by an ERP aided manufacturing plan. Considering that raw material is the initial step in the entire supply chain network, we intend to make a difference in the industry by providing quality products at the right time.

Forging







Aluminum alloys are forged in hot, warm, or cold forms without the melting process. By this process performed with custom pressing machinery, a high-strength and impermeable structure is obtained.

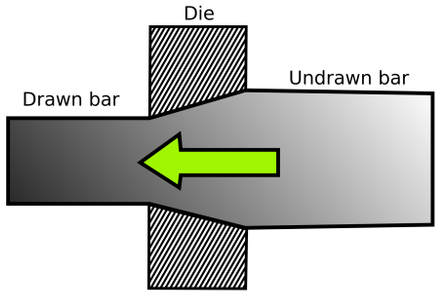
The products forged and manufactured of aluminum alloys are now used in almost all industries including aviation and space, defense, automotive, marine, rail systems, general machinery / mold, electrical / electromechanical / energy, tanks / bulk trailers, pressure tubes and medical/healthcare industries.

Cold Drawing

Cold drawing refers to a cold forming method that minimizes diameter and linearity tolerances of the extruded product.

The advantages of cold drawing method are:

- Increases surface quality of the material
- Improves mechanical values
- Increases corrosion resistance on the product surface
- Minimizes diameter tolerances
- Obtains maximum accuracy by the tension process





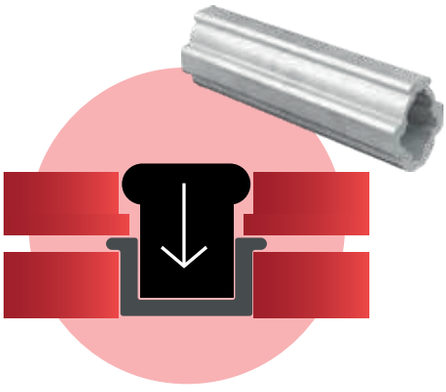
We are getting closer gradually to our Industry 4.0 vision by means of a full-automation manufacturing process supported by robotic arms. Here are the actors assisting us in this path:

- Autonomous Robots
- Data Analysis
- Smart Plant
- Simulation
- System Integration
- Full Traceability

Our intention is to make contribution to national production and exports by obtaining customer satisfaction at highest level.

Production

Deep Drawing



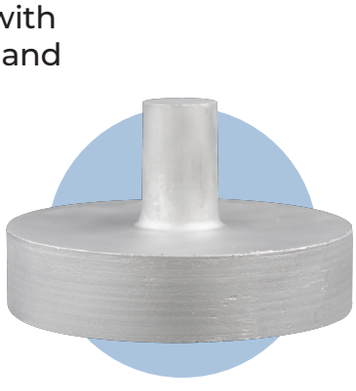
Refers to the specific manufacturing method applied typically by pressing aluminum parts with custom molds and methods to obtain cylindrical and thin-walled forms.

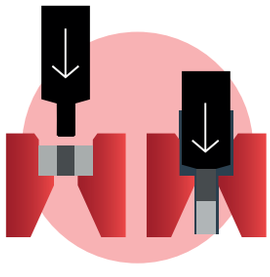
It is possible by this method to get products with larger dimensions but with less material.

Impact Forging

Refers to the pressing process performed with custom pressing machinery at high speed and high force levels by an aluminum punch.

By this method, a more rigid and resistant structure is obtained with thin walls.





Heat Treatment



The structures of aluminum alloys are reinforced with custom heat treatment methods selected in accordance with type and requirement.

All custom heat treatment processes are applicable in our plant through the precise furnaces programmed against distortion.

Laboratory

A high-end laboratory is established in our plant to perform dimensional checks in accordance with internationally accepted units of measurement and to verify and certify chemical analyses

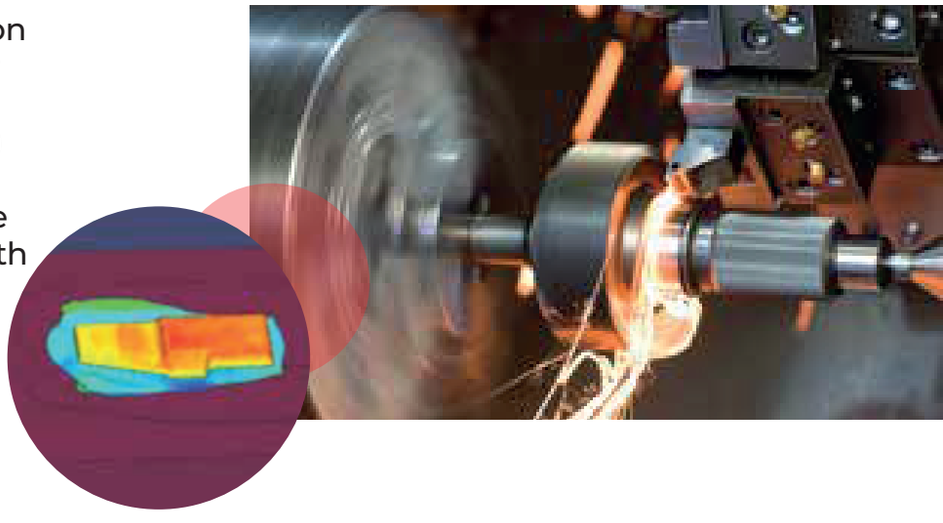
Our Inventory of Laboratory Test Devices

- Drawing / Pressing Device
- Stereo / Reverse Metallurgical Microscope
- Sample Preparation Devices (Cutting, Polishing and Bakelite Removal)
- Ultrasonic Crack Test Device
- ASTM B-594 Class A 100%
- Hardness Tester (mounted or mobile)
- Surface Gauge
- Caliper
- Plate
- Internal Diameter Comparator
- Conductivity, Surface Roughness and Coating/Dying Thickness meters
- CMM (Precise Coordinate Measurement Device)



Design and R&D

The mold design and production processes are performed in our company by our expert staff assisted by **SOLIDWORS (CAD)** and **SIEMENS NX (CAM)** software. We avoid any possible mistakes in our productions with the SIMUFACT (ANALYZ) program.



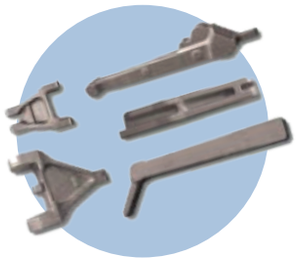
Industries

Aviation



- Airplane Engine Equipment
- Cockpit Equipment
- Airplane Seat Accessories
- Airplane Door Accessories
- Landing Gears

AMS 4050 j





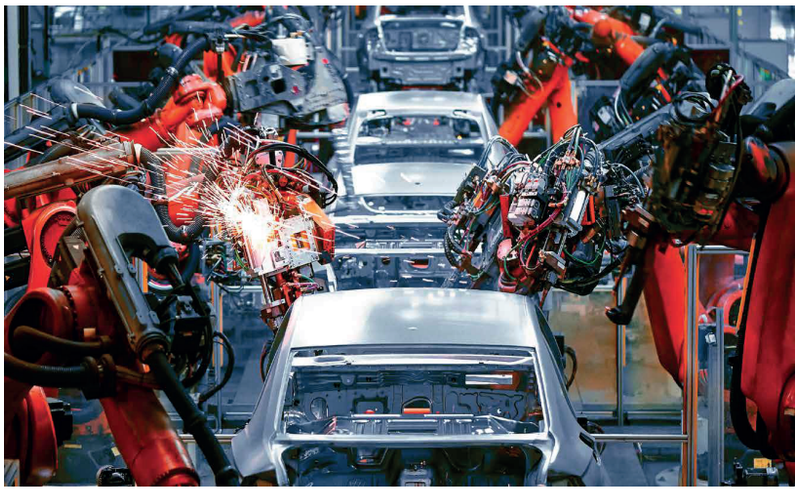
Automotive

- Connecting Rods
- Clutch Output Cylinder
- Forging Rods
- Pistons and Piston Frames
- Suspension Rods
- Absorbing Equipment
- Gears









Pressure Tubes

- Fire Extinguisher Tubes
- Diving Tubes
- Oxygen Tubes
- Medical Tubes
- Soda Tubes
- Other Industrial Pressure Tubes

ISO 7866





Rail Systems

- Track Fittings
- Locomotive Parts
- Wagon Parts
- Cooling Equipment

General Machining / Forming

- Flanges
- Molding Parts
- Cooling Equipment
- Fluid Equipment
- Compressed Air Equipment
- Valves and Gauges
- Other Fittings



AUTOMOTIVE INDUSTRY

“For the automobiles with better durability”

Connecting rods, clutch output cylinders,
forging rods, pistons and piston frames, suspension rods,
absorbing equipment and much more...



Sima

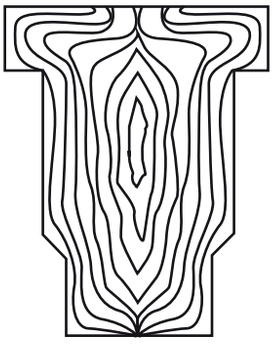
Advantages of Forging

TS 953

EN 586-2

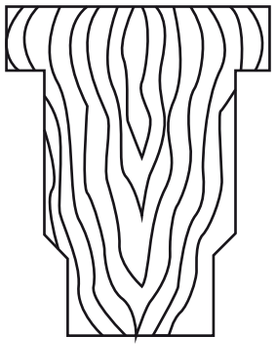
The forged parts have a better grain structure with effective combination of mechanical characteristics. Aluminum forging is mostly preferred in aviation and defense industries requiring high resistance and in aluminum combinations consisting of complex elements. The products manufactured through aluminum forging can reach maximum resistance. The resistance rates anticipated by other methods remain within the specified range whereas the resistance is at highest levels by the forging method.

Cold Forging



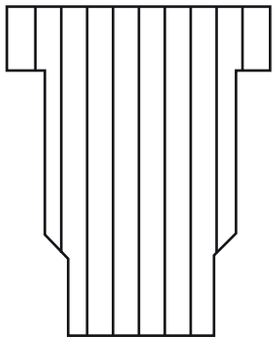
Maximum Resistance

Hot Forging



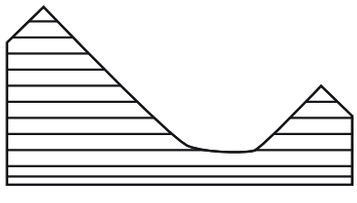
High Resistance

Rolling

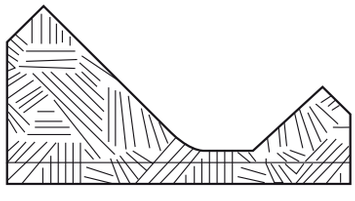


Low Resistance

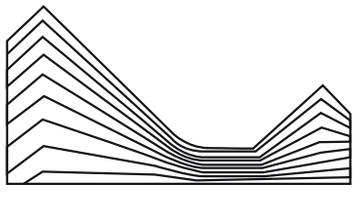
Rolled
The image of grain structure of the rolled products



Cast
The image of grain structure of the cast products



Forged
The image of grain structure of the forged products



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