



Die casting



Forging



Friction  
welding



**EMKA Aluminium**

## About EMKA Aluminium

---

Since 2021 a member of the EMKA Group

Production in Wuppertal, Germany

80 employees

5,000 m<sup>2</sup> area under roof

5,5 Mio. parts per year

2,500 t of aluminium alloys processed per year

3 Melting furnaces (2 tilting furnaces and 1 shaft furnace)

Fully automatic robot removal with deburring press

Own water treatment

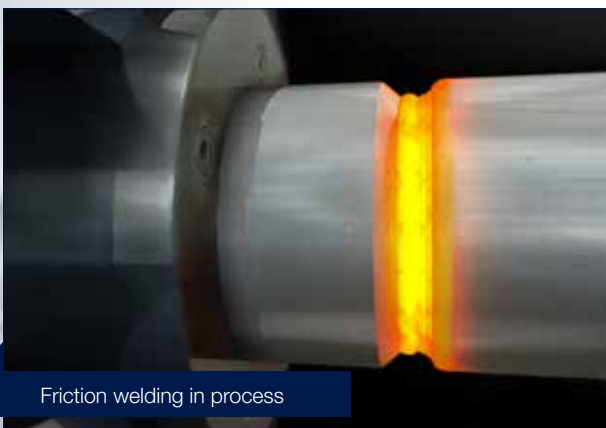
Certified according to ISO 9001:2015 and ISO 50001:2011



Manufacturing site Wuppertal



Charging the crucible with liquid aluminum



Friction welding in process

# Advantages of aluminum

---

Low weight

Corrosion and weather resistant

High stability

Low wall thicknesses possible

Good electrical conductivity as well as very high thermal conductivity

High process stability

Good convertibility of complex parts

Resistant to UV radiation

Easy to clean and odorless

Low tolerances

Excellent possibilities for mechanical finishing

Optimal material utilization

Production of small and large series possible

Durable and recyclable

Versatile use and processing



Screw-on hinge without hinge pin

# Our services

---

Application consulting by competent team

Project Management

Development and engineering

Mould and tool making

Alloy selection (special alloys with heat treatment)

Tool design (moulds, dies, punching tools)

In-house simulation calculations for die casting and hot forming processes

Consistent quality methodology throughout the product life cycle

Prototyping to EMPB

Series production

Surface treatment and post-processing

Assembly production

X-ray

Certification in the accredited EMKA test laboratory

Logistics



3D Unit connector for the HVACR industry

# Aluminium die casting

---

Extensive, long-standing experience in meeting the requirements of various industries enables EMKA to manufacture complex geometric shapes.

With 9 die casting machines of various performance classes, parts weighing from 50 g to 12,500 g can be produced in common aluminum alloys.

Necessary subsequent processes are possible internally on 15 machining centers with different performance focuses.

## Technical details

9 machines for aluminium die casting

Clamping forces from 220 t up to 1,250 t

Manufacturers: Frech, Bühler, Italpresse

15 machining centres

Max. tool clamping area: 1,500 x 1,500 mm

Part weight: 50 - 12,500 g



# Aluminium forging

---

High-quality products for special stresses - with low weight at the same time. This is the best way to describe the spectrum for the aluminum production sector.

Our screw press can produce aluminum forgings with a unit weight of up to 4,000 g.

In addition to lathes and machining centers, an extensive range of machinery is available for mechanical processing. The large number of other manufacturing processes, such as PUR sealing foam technology and surface finishing, enable EMKA to realize complex customer requirements.

In addition, the assembly of entire subassemblies is possible.

## Technical details

2 machines for aluminium forging

Pressing force: 800 t and 2,000 t

Manufacturer: Weingarten

Part weight: up to 4,000 g

Forging alloys: AlMgSi0.5 / AlMgSi1 / others on request



# Aluminum friction welding

---

The rotary friction welding process used at EMKA is designed for rotationally symmetrical weld cross sections.

The combination of extruded tubes, forged aluminum parts and final friction welding results in non-porous, high-strength joints without the addition of filler metals. The welding bead caused by the process can be removed in a subsequent operation. Additional work steps are carried out on our machining centers.

Other material combinations are possible with this process.

## Technical details

Manufacturer: KUKA

Diameter: up to 90 mm

Welding force: up to 20 t

Total length of the parts: up to 1,600 mm

Suitable for: Aluminum, copper, steel / various alloys



Suspension fork for series sports car



# Partner of the industry

---

Our diverse production capabilities around aluminum have been developed for your individual order and make EMKA Aluminium your unique partner for your demanding products.

We develop, design and produce according to customer requirements. Our extensive engineering capabilities, combined with state-of-the-art technology, provide complex, customized solutions, even for the most difficult contours or product requirements.

Current projects include, for example, aluminum die cast parts for an e-bike drive, HVACR construction and weight-optimized components (hybrid) for the transportation industry.



Housing for e-bike motor



Corner connector for enclosures in HVACR industry



Hybrid compression latch with aluminium housing

**WirtschaftsWoche**

---

 **WELT  
MARKT  
FÜHRER**

**Champion**

---

**2022**

---

**EMKA Beschlagteile**  
Verschlüsse, Scharniere  
und Dichtungen

---

 Akademie Deutscher Weltmarktführer

 Henri B. Meier  
Unternehmerschule

 Universität St.Gallen

[www.EMKA.com](http://www.EMKA.com)

EMKA Aluminium GmbH  
Phone: +49/(0)202/75 82 59-0  
Industriestraße 21-23 | D-42327 Wuppertal | Germany  
[info@emka-aluminium.de](mailto:info@emka-aluminium.de)