



EMKA Precision casting

About EMKA Precision casting

Since 2015 part of the EMKA Group

Production in Mionica, Serbia (80 km away from Belgrade)

187 employees

10,479 m² area under roof

4,000,000 parts per year

400 t of material per year

Certified acc. to ISO 9001:2015 and IATF 16949:2016



Our services

Application consulting

Project Management

Development and engineering

Specialised design centre

Series production

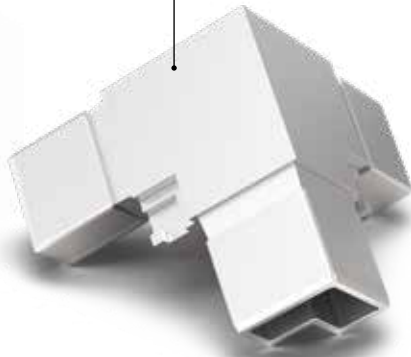
Surface treatment

Post-processing

Certification in the accredited EMKA test laboratory

Logistics

Corner connector for the HVACR industry



Technical details

Part weight from 5 g - 10 kg

Component lengths up to 250 mm

Steel and stainless steel in various qualities and alloys

Heat treatment of steel

- Hardening / Case hardening
- Tempering

Tolerances according to VDG P690 D2

Surface quality up to N8 ($R_z = 16 - 25 \mu\text{m}$) possible without reworking

Surface treatment

- Sand blasting
- Pickling
- Passivating
- Electropolishing
- Grinding

Post-processing

- Milling
- CNC turning
- Eroding

Housing for quarter turns
and compression latches



Advantages of precision casting

High dimensional accuracy

Good surface quality

Wide scope for design enables extremely resistant components with low material input

Complex, sophisticated shapes can be realised

Low wall thicknesses possible

Flexibility regarding size and quantity of parts

Wide variety of materials

Low-cost variant compared to other manufacturing options



Precision casting technology

1. Wax injection process

The wax patterns are produced in moulds comparable to the plastic injection process and form a positive model of the casting to be produced.

2. Create wax tree

The single wax patterns are attached to a central casting barrel and assembled into a complete casting cluster (also called a wax tree).

3. Creating the mould

The actual casting mould is created by alternately immersing the casting cluster in a ceramic slurry and in fine sand. In this process, up to 9 layers are built up, which in the end represents the actual mould.

4. Wax removal

After drying, the wax is melted out using a steam autoclave (steam at 150°C). In the further course, the mould is fired at 900 °C to 1,200 °C until complete curing.

5. Casting

The actual casting process takes place directly into the still-hot mould, where the molten metal can flow into the cavities created by the removed wax pattern.

6. Demolition of the mould (ceramic tree)

After solidification and cooling of the melt, the ceramic shell (ceramic tree) is removed by means of vibration or other mechanical processes.

7. Separating the individual parts

The castings are separated again from the original casting manifold and undergo further processes of machining.

8. Finished cast parts

Depending on the customer's requirements, further work steps can follow, such as heat treatment, surface finish and mechanical finishing (such as insertion of threads, etc.).

Partner of the industry

Automotive industry

Railway industry

Agricultural machines

Hydraulic and pneumatics industry

Electrical industry for electric motors and electrical systems

Machine tools and accessories

Medical technology e.g. orthopedic devices

Metalworking industry

Fitting parts industry

and many more

180° Screw-on hinge without hinge pin
in different sizes



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