Raytech foundry is able to produce and offer investment castings of high quality and high mechanical properties. Castings are used in sophisticated sectors, especially in aerospace industry. Investment casting offers for designers integrated parts with high quality mechanical properties, a high degree of precision and a high quality surface finishing.

EN 9100 — production requirements for the aviation, defence and aerospace industries
NADCAP — for the process heat treatment in accordance with SAE Aerospace Standard AS7003

Advantages

— Production of precise castings
— Castings of high quality thanks NDT (X-Ray and penetrant testing)
— Castings with high quality surface thanks water blasting
— Consultancy, design and service during production
— Production of parts with complicated cavities
— Castings with high mechanical properties
— Heat treated castings according to NADCAP certificate
Technical possibilities

Technology:
— Investment casting

Products:
— Production of investment castings by the technology “lost wax”
— Production of moulds
— Production of castings from customer moulds
— Production of castings from customer wax, printed SLS and other models
— Production of castings including machining, surface finishing and assembly
— Rapid Prototyping

Parameters of castings:
— Weight from 1 Gr to 8 Kg
— Min. wall thickness 1,8 mm (aluminium); 2 mm (steel)
— Max. dimensions 300 x 400 x 400 mm (aluminium);
  400 x 280 x 100 mm (steel)
— Surface roughness Ra 3,2 – 6,3 (aluminium); 6,3 (steel)
— Dimension tolerance VDG P690 A2, ČSN 014470, DIN ISO 2768mK

Casting process:
— Heat treatment according to AMS 2771, pyrometry AMS 2750
— Blasting with water, stainless, corundum
— Specimens separately casted, cut from the part

Mechanical properties:

Tensile test:
— Rp0,2 (yield strength): $\text{AlSi7Mg0,3} - \text{min. 220 Mpa}$
  $\text{AlSi7Mg0,6} - \text{min. 240 MPa}$
— Rm (tensile strength): $\text{AlSi7Mg0,3} - \text{min. 300 Mpa}$
  $\text{AlSi7Mg0,6} - \text{min. 320 MPa}$
— A5 (elongation): $\text{AlSi7Mg0,3} - \text{min. 4%}$
  $\text{AlSi7Mg0,6} - \text{min. 3%}$
(tensile test: EN ISO 6892, ASTM E8; mechanical properties:EN 1706)
Hardness test: min. 85 HB

Surface finishing:
— Anodize (max. dimensions 1050 x 650 x 250 mm) – colour according to the customer (yellow-green, black, red, blue, colourless – clear, orange, bronze and gold) – ČSN EN 12373-1 or MIL-C-5541
— Chromating (max. dimensions 1010 x 700 x 350) – colourless – clear
  SurTec 650 Cr3+; Alodine Cr6+, E-CLPS4600, ČSN EN 12487
— Painting (synthetic, polyurethan, acryl and epoxid painting)

Part description:
— vibration pen, laser
Delivery dates

Moulds including samples:
8 – 12 weeks after receiving of order

Delivery (lot ca 100 pcs.):
6 – 8 weeks after receiving of order

Machinery park

— Wax press LVM 40
— Wax press SVM 2
— Carousel SVM 5
— Autoclave
— Electrical annealing furnace
— Electrical melt furnace
— Electrical furnace for heat treatment
  — solution annealing (according to Nadcap)
— Electrical furnace for heat treatment
  — artificial ageing (according to Nadcap)

Measuring and testing equipments

— Spectrometer
— Hardness machine
— Machine for specimen test Beta 5
— Penetrant line according to ASTM-E-1417, AMS 2175, EN 571-1 (fluorescent method)
— X-Ray machine MU 2000 160 kV according to ASTM-E-1742, AMS 2175, ASTM-E-155 (radiography, radioscopcy)
— Developing automat GE Nova Structurix
— 3D measurement unit Wenzel
List of materials

List of Aluminium Alloys

<table>
<thead>
<tr>
<th>Alloys marking</th>
<th>Chemical marking</th>
<th>International marking</th>
<th>CEN Standard</th>
<th>Si%</th>
<th>Fe%</th>
<th>Cu%</th>
<th>Mn%</th>
<th>Mg%</th>
<th>N%</th>
<th>Zn%</th>
<th>Ti%</th>
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<tr>
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<td>A356.0</td>
<td>42.43.34</td>
<td>6.5 - 7.5</td>
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<th>Rm</th>
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List of Stainless Steel Alloys

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<th>Si</th>
<th>Cr</th>
<th>Ni</th>
<th>Mo</th>
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STAINLESS STEEL – FERRITIC

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