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**High strength and toughness**  
**High temperature resistance**

**Innovative new material**

**Aluminum Alloy 211Z**



Auto Lightweight Design  
Cast iron product replacement  
Customized Alu casting product supplier



### Heat-resistant and high-toughness cast aluminum 211Z

It is an innovative aluminum alloy material with the characteristics of high strength, high toughness and high temperature resistance. The mechanical and physical properties of cast aluminum 211Z are close to those of 7 series high-strength forged aluminum alloys. It is an innovative alternative to high-strength forged aluminum and cast iron parts.

Cast aluminum 211Z can improve the production efficiency and greatly reduce production costs through casting, and has a wide range of applications. Especially in the field of automotive lightweight design.

- Electricity Conductivity  $\geq 43\%$  IACS
- High Temperature Resistance: very good  
Tensile Strength  $R_m \geq 300\text{MPa}$  at  $250\text{ }^\circ\text{C}$
- Weldability: good
- Corrosion Resistance: good

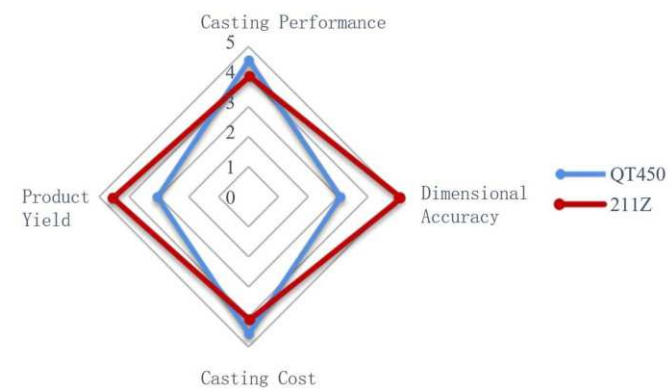


### Aluminium Alloy 211Z

#### Typical Mechanical Properties

Tensile Strength $R_m$	450 - 540 MPa (N/mm <sup>2</sup> )
Yield Strength $R_p 0.2$	370 - 450 MPa (N/mm <sup>2</sup> )
Elongation A5	6 ~ 12 %
Brinell Hardness	140 ~ 160 HB

Comparison of casting parameters



**Our partner Hualco company** is the inventor of cast aluminum 211Z and the national standard drafter and setter for this product, with 196 national invention patents and 5 international patents.

We can provide technical service solutions from casting mold design, trial production to delivery of complete products.

**We sincerely hope to cooperate with you.**







**High-strength and toughness  
High-temperature-resistant  
Aluminum alloys 211Z**

It has been used in truck wheel hubs and truck chassis parts. Because it has the strength of 7 series forged aluminum alloy, it can replace the load-bearing casting parts of truck chassis, ensuring the reliability of the product.

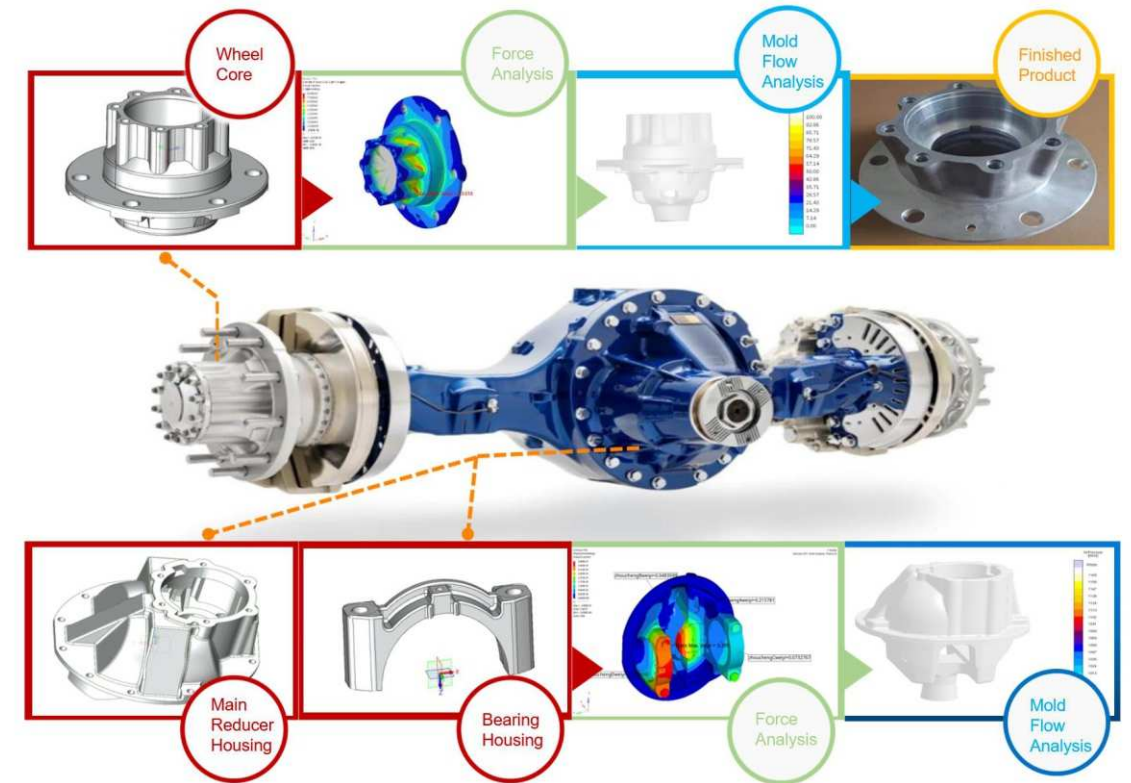
It also simultaneously has heat resistance, and its mechanical properties remain above 300MPa at a high temperature of 250 degrees Celsius, which is a feature that 7 series aluminum alloys do not have.

**innovative  
Aluminium Alloy  
211Z**

**Project Development Process**



**Developed Components**



Chassis System



**Assembly Site**

**Mass Production**

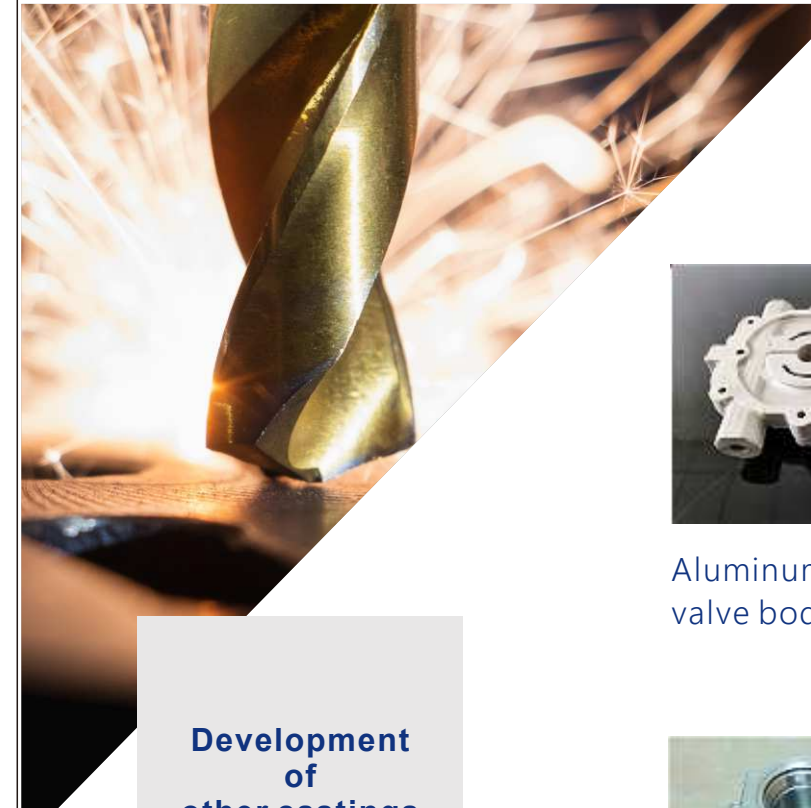






- Replacing the 7 series high-strength forging aluminum alloy
- Reducing the process and the cost of later machining
- The overall price and cost drop

**Development of other castings**



Aluminum alloy 211Z replaces the shell and valve body produced by ductile iron material

**Development of other castings**



Hydraulic parts  
Thin wall  
Oil pressure 44MPa  
Working temperature 150°C

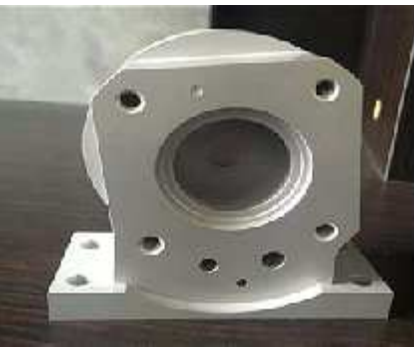


Hydraulic valve seat 4kg  
Thinnest wall part 2mm  
Oil pressure 27MPa



Steel Sleeve

Integral casting motor end cover with Steel sleeve



A certain type of instrument frame

- Solving process forming
- Solving deformation