



CORPORATE OVERVIEW

Dandong Dawang Steel Castings Co.,Ltd.

THE AGENDA FOR OVERVIEW

8 Sections On This Overview



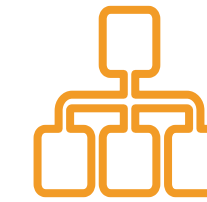
1. INTRODUCTION

Basic Information And Time Line



2. COMPETENCIES

Four Core Company Values



3. OUR PRODUCTS

Sand Casting And Investment Casting



4. SERVICES AND EQUIPMENT

Process Flow And Management



5. CUSTOMERS MAP

Most Customers Are Fortune 500 Firms



6. CERTIFICATE

System, etc.



7. OUR TEAM

Leaders Team



8. CONTACT US

www.dawangcasting.com



INTRODUCTION

1998 - 2021

大王精铸
DA WANG JING ZHU

BASIC INFORMATION

Company's Overview.

HISTORY

PEOPLE

CERTIFICATE

CLIENTS

PRODUCTS

FACILITIES

| | | | | | |
|--|---|--|---------------------|---------------------------------|---|
| Established in “1998” “20” years' casting production experiences | 400+ workers 30 professional staffs | ISO9001 Quality Standard | John Deere | Automotive | Spectrograph |
| | | ISO14001 Environmental Standard | BUYER of America | Railway | Automatic Sand Casting Molding Line |
| | | IOS 45001 Environmental Standard | HIGHLAND | Mining Machinery | |
| | | IATF 16949 | KUBOT of German | Agricultural Machinery parts | Multistation Wax Injection Machines |
| | | AD2000 Material Standard | AZBIL of Japan | Pump Valves | |
| | | | KOMATSU of Japan | Constructional Machinery | CMM |
| | | | | Medical Machinery | UT MT PT |
| | | TUV Nuard issued by Germany | | | |



4

TIMELINE SAMPLE

1998 - 2021

1998

DAWANG WAS FOUNDED

Kaibao Wang took over the company from his father, with fixed assets less than **200,000 RMB**, and less than 20 workers.

2008-2010

UPGRADE

Nearly **40 million** investment, adding four automatic shellmaking lines, improving work efficiency by **5 times**, optimizing manufacturing process, dust removal device, semi-automatic pouring production line, nontoxic and pollution-free, reducing labor intensity and improving working environment.

2003-2005

EXPANDING

Dawang becoming the largest foundry in Dandong, with the sales of **32.7 million yuan**. The factory was expanded to **13,000 m²**, with an investment of **10 million RMB**. Silica sol and machining production lines were added.

2012
MERGING

Invested **23 million** yuan to buy out Dandong Best Machinery Co., Ltd., Established the sand casting workshop, mainly producing mining machinery parts, coal machine parts, railway locomotive parts and excavator parts.

TIMELINE SAMPLE

1998 - 2021

2017

UPGRADE

Invested **10 million yuan** to carry out a technical transformation and upgrade the sand casting workshop. Introduced a 20t/h automatic molding production line, and achieved an annual production capacity of 5000t. The Japanese Fuji Electric Furnace was introduced.

2018

INVESTMENT IN NEW FACTORY

To meet market needs, in 2018, Dawang will acquire **53000 m²** of land in the industrial park, investing **60 million yuan** to establish two new casting production lines: a precision casting production line, and a shell mold shell production line. By 2021, annual capacity can reach 5000t.

2018

UPGRADE CASTING FOUNDRY

A technical improvement plan for precision casting production line has been determined. It is planned to be implemented in 2018, with an investment of **20 million yuan**. After the production, the annual capacity can reach 5000t.

2021

UPGRADE MACHINING

The machining workshop of the casting plant was expanded and established the Dawang Equipment Manufacturing Co.,Ltd, which is under construction now.

FIRST FACTORY

Dawang Has 4 Factories.



Dawang Steel Investment Casting

Precision casting factory covers an area of about **40000m²**. **300** employees.

The annual output is **5,500 tons**.

It is expected that a comprehensive transformation of the factory will be completed by 2021, mainly including equipment and process transformation.

New equipment and materials are selected to improve work efficiency, increase production capacity, and improve working environment.

The precision casting plant is expected to have a new annual output of **8,000 tons**.

SECOND FACTORY

Dawang Has 4 Factories.

Dawang Sand Casting

Sand steel casting factory covers an area of about **25000 m²**, with an annual output of **5000 tons**. **60 employees**.

In 2018, we will transform the sand casting factory through increasing the automatic molding line, changing the ceramsite technology, and introducing advanced Fuji electric furnace. These transformations will help Dawang save labor costs and energy consumption, protect the environment, and meet the national environmental protection requirements.

A second automatic molding line will be added in 2021 year. Then the sand casting factory is expected to produce **7,000 tons** per year and will continue to increase its capacity in the future.



THIRD FACTORY

Dawang Has 4 Factories.



Sanhe Steel Investment Casting

In 2018, The company is in the process of establishing a new precision casting factory, investing more than **60 million RMB**, acquiring a land of **55000m²**. It is predicted to have **200 workers** with new equipment and process control. The new factory has started its production in 2021.

FOURTH FACTORY

Dawang Has 4 Factories.

Dawang Equipment Manufacturing

The original machining workshop of Dawang Steel Castings Co., Ltd is rebuilt in 2021.

Dawang purchased 26,600 m² of land to establish a new machining factory, which is under the construction.





COMPETENCIES

1. Product Development 2. Process Flow 3. Management & Certification
4. Export Experience

THE STRENGTH OF OUR COMPANY

Four Core Company Strength.



PRODUCT DEVELOPMENT

Dawang has **23** years of history and **200** new products developed every year. We constantly have more than 1000 products in production.



EXPORT EXPERIENCE

With **20** years of export experience, **90%** of the company's products are exported to Europe, America, Japan and other areas.



SERVICE & PRODUCTION FLOW

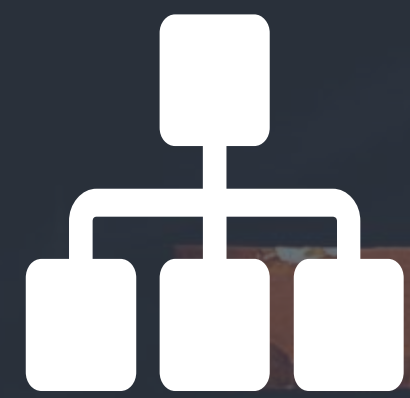
30 technical, quality and inspection talents. Throughout the process, we constantly improve our service and process, aiming for the best quality of our products.



MANAGEMENT & CERTIFICATE

IATF16949,ISO9001,ISO14001,GB/T45001 Management system certificate
Environmental: full compliance with the environmental protection laws and regulations of China.





OUR PRODUCTS

Our Products Covers Agriculture, Construction, Railway And Petrochemical Engineering

PRODUCT CATEGORIES

Besides These Four Main Products' Categories, We Also Can Produce Basis On Customers' requirements.



Agricultural Machinery

There are over **380** different parts we already developed. The main customer is John Deere.



Construction Machinery

We have developed over **360** parts. The main customers are Hitachi, CAT and Liebherr.



Railway Vehicle

Dawang has developed over **270** products. The main customers are SOEs.

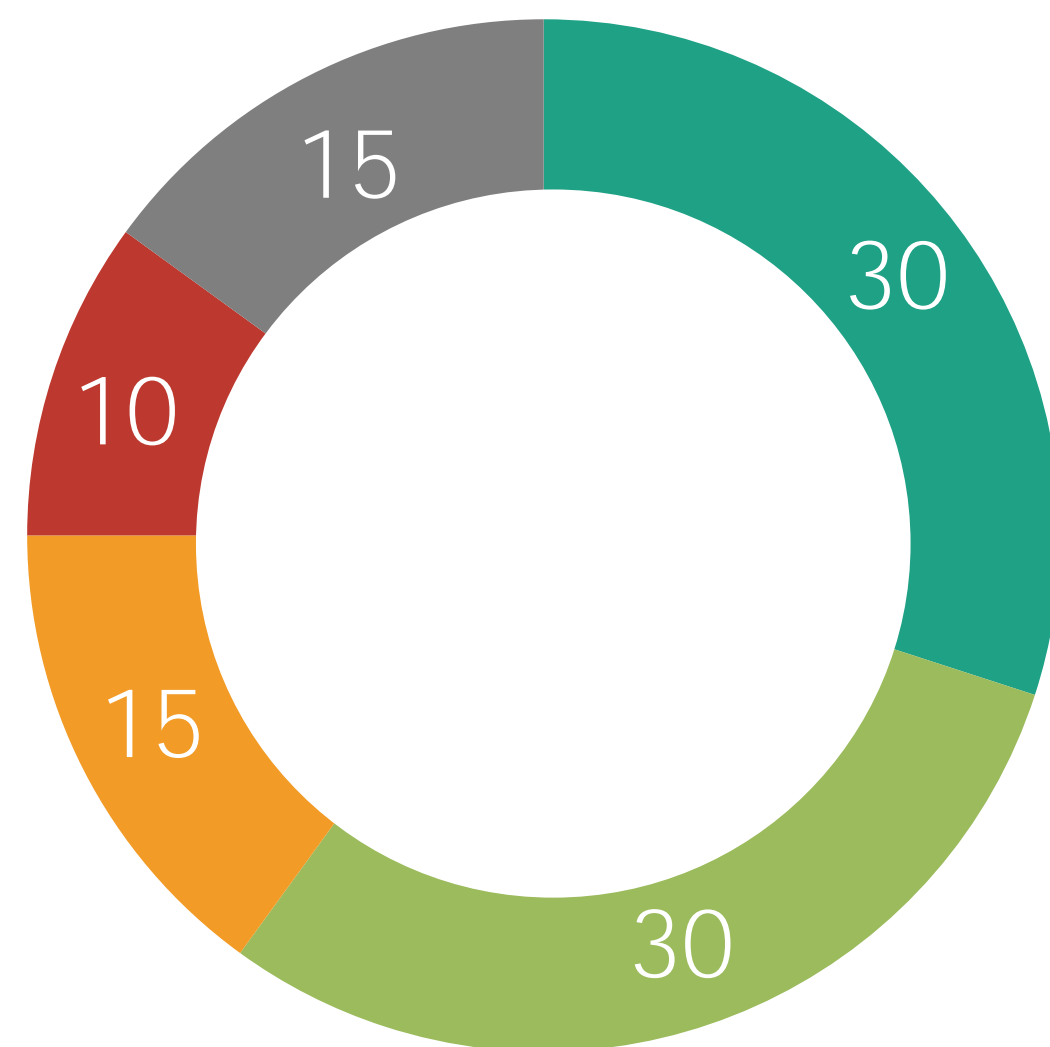


Petrochemical Engineering

Dawang has developed over **180** products. The main customers are Highland and LESER.

MAIN PRODUCTS PROPORTION

These Five Products Are Mainly Produced By Dawang Annually.



■ CM ■ AM ■ PE ■ Vehicle ■ Railway

30%

30% of products are for constructon machinery. Customers are Hitachi, Kubota, CAT, Liebherr and Komatsu.

30%

30% of products are for agriculture machinery. Customers are John Deere and other Chinese brands.

15%

15% of products are for petrechemical engineering. Customers are Highland Foundry

10%

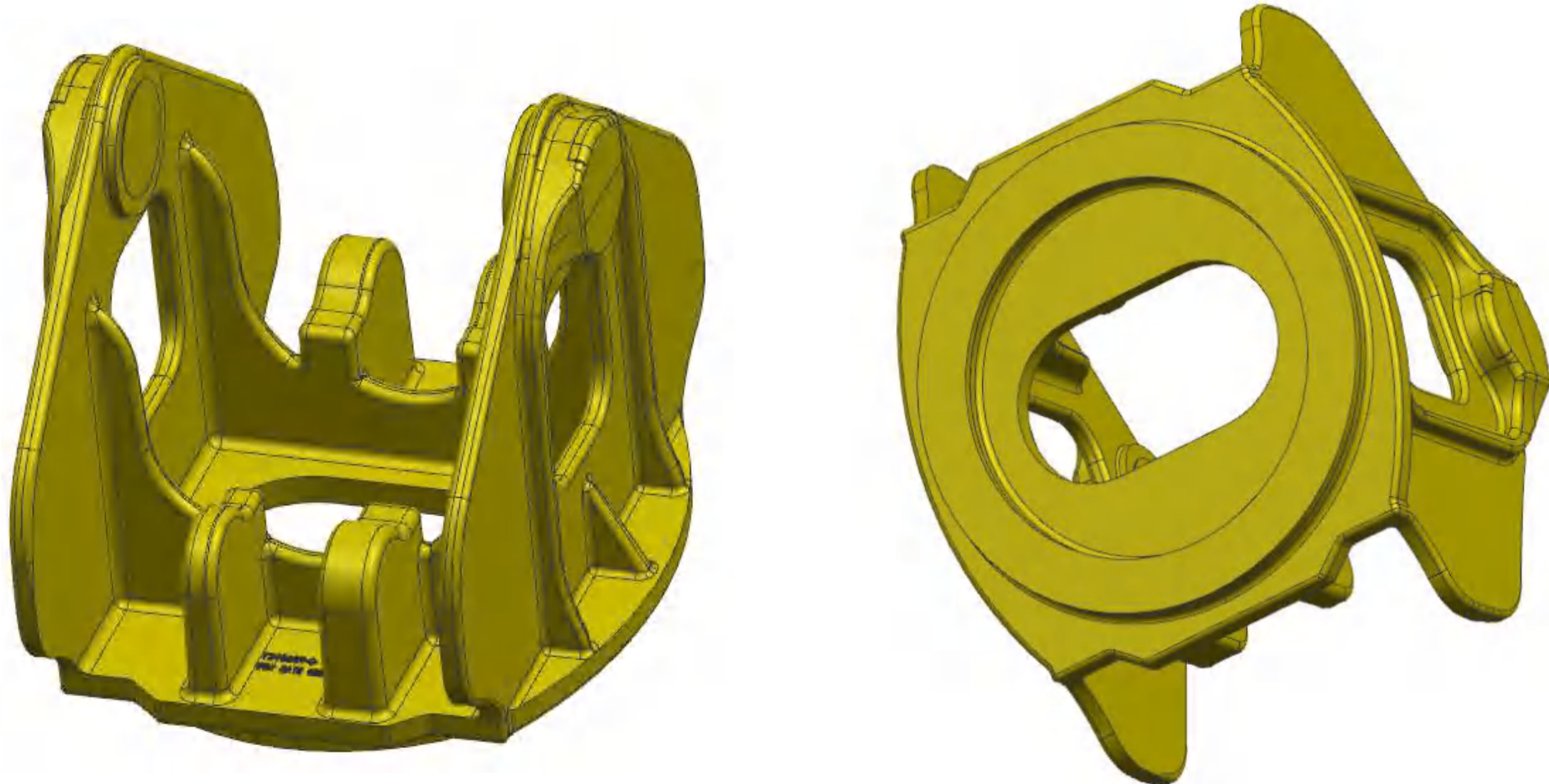
10% of products are for vehicle. Customers are Ameican Buyer and SG Automotive Group.

15%

15% of products are for railway. Customers are Chinese SOEs.

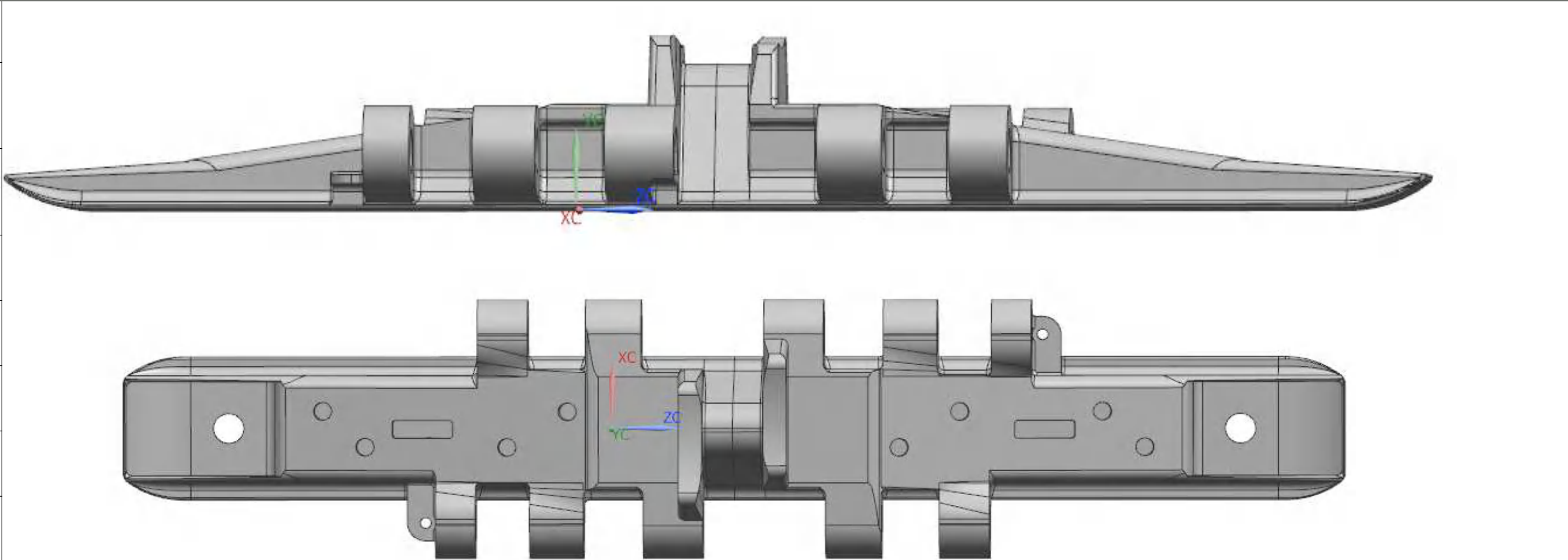
SAND CASTING

7 Samples Of High Difficulty Products that Dawang Is Producing.

| | | | | | |
|--|-----------------------------|---------------|--|-----------|--|
| Type | Connecting structural parts | |  | | |
| Material | JDM B2J 4330V | | | | |
| HT | Quenching and Tempering | | | | |
| Weight | 180Kg | | | | |
| Mechanical Property | | | | | |
| Yield | Tensile | Elongation | | | |
| ≥725MPa | ≥858MPa | ≥17% | | | |
| Reduction of Area | Hardness | Impact Energy | Inspection: Section、RT、PT、UT、Hardness、Impact、Tensile | | |
| ≥35% | 225-275HB | 27J(-30℃) | | | |
| Dimension | Length | Width | Height | Thickness | |
| MM | 660 | 410 | 480 | 19-60 | |
| Difficulty | | | | | |
| 1. The symmetric vertical end of casting can be easily deformed during casting and heat treatment, resulting in unqualified products with defects, such as shrinkage and porosity. 2. The mechanical properties requirement of the product is high, and tempering process is needed. 3. The heat treatment must be uniform, and the casting body must be kept within the required hardness range. 4. Must ensure that the casting body, at the time of impact energy experiment (temperature - 30 ℃), standard shock impact energy block reaches more than 27 j. | | | | | |

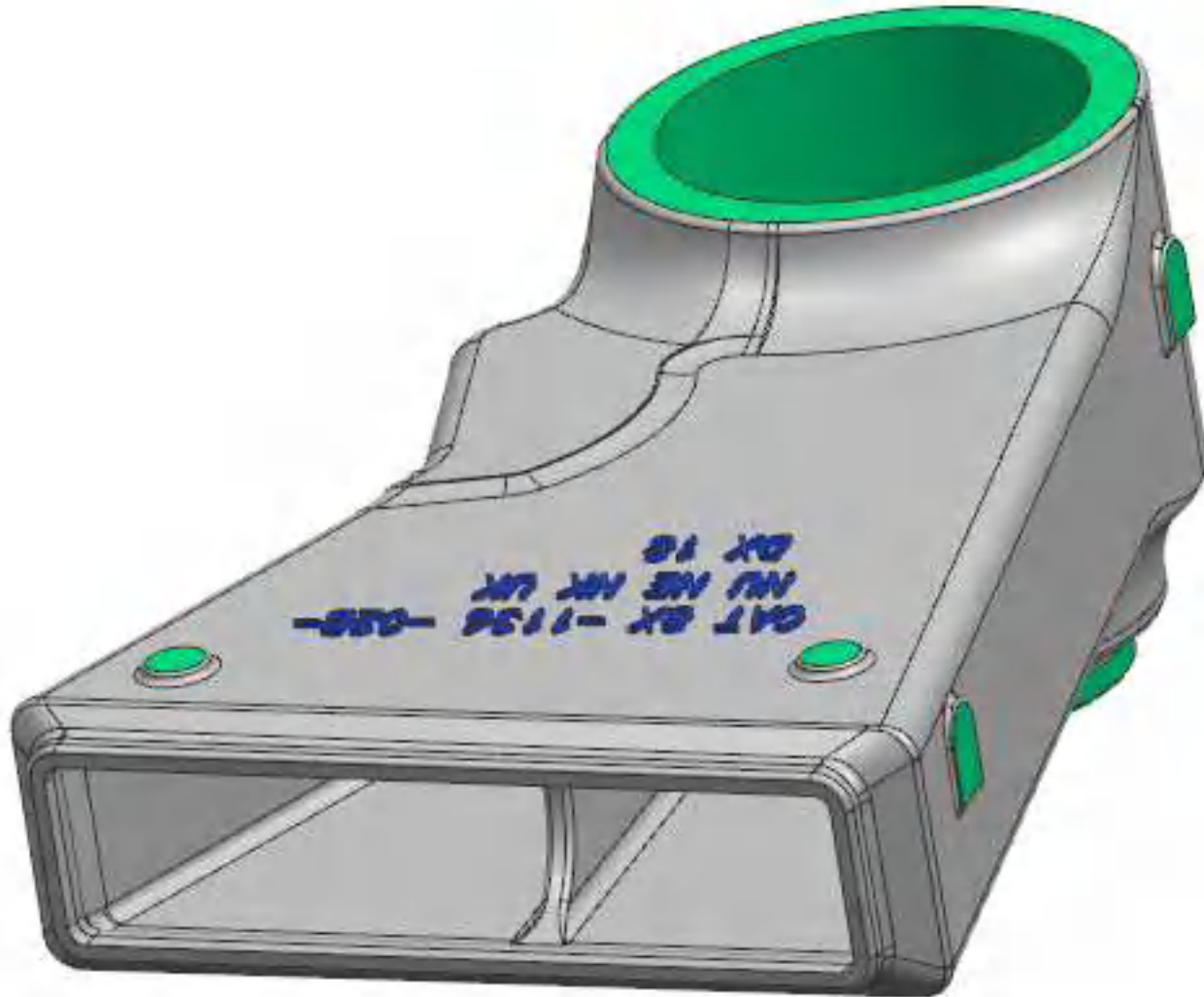
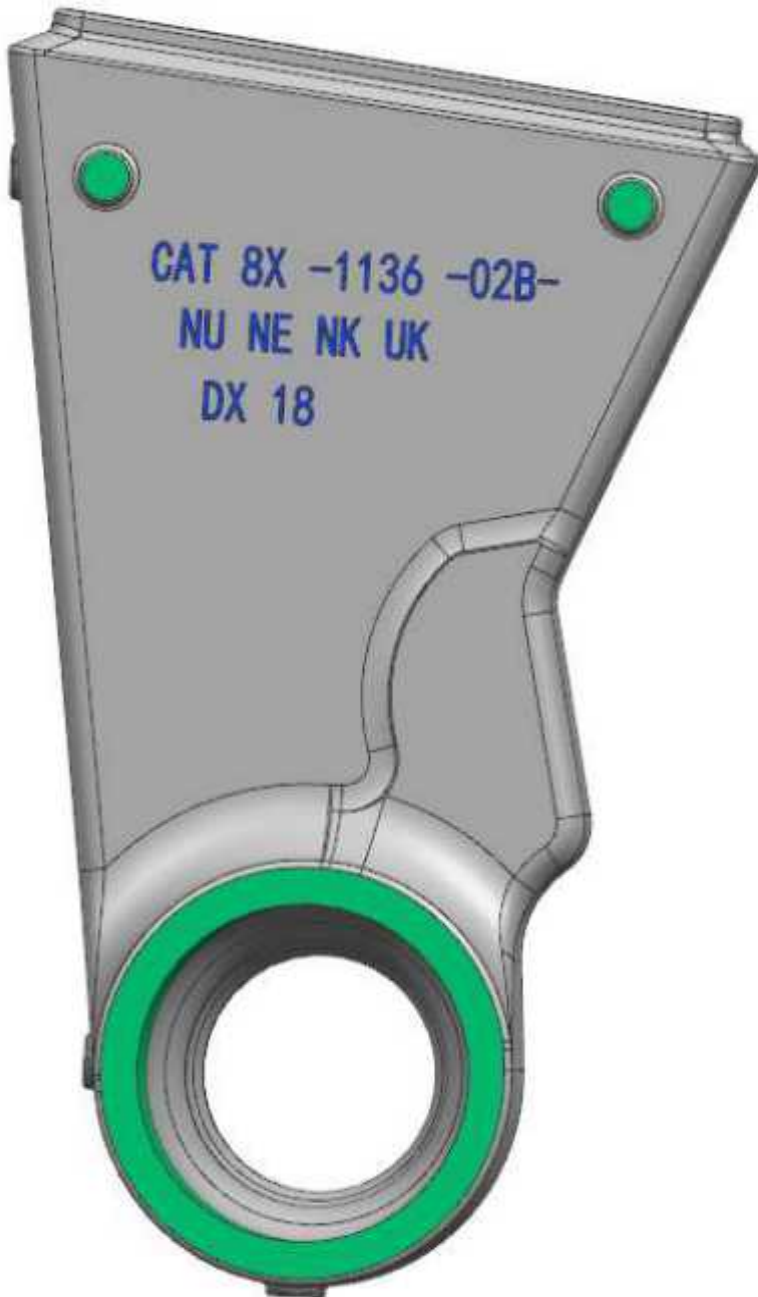
SAND CASTING

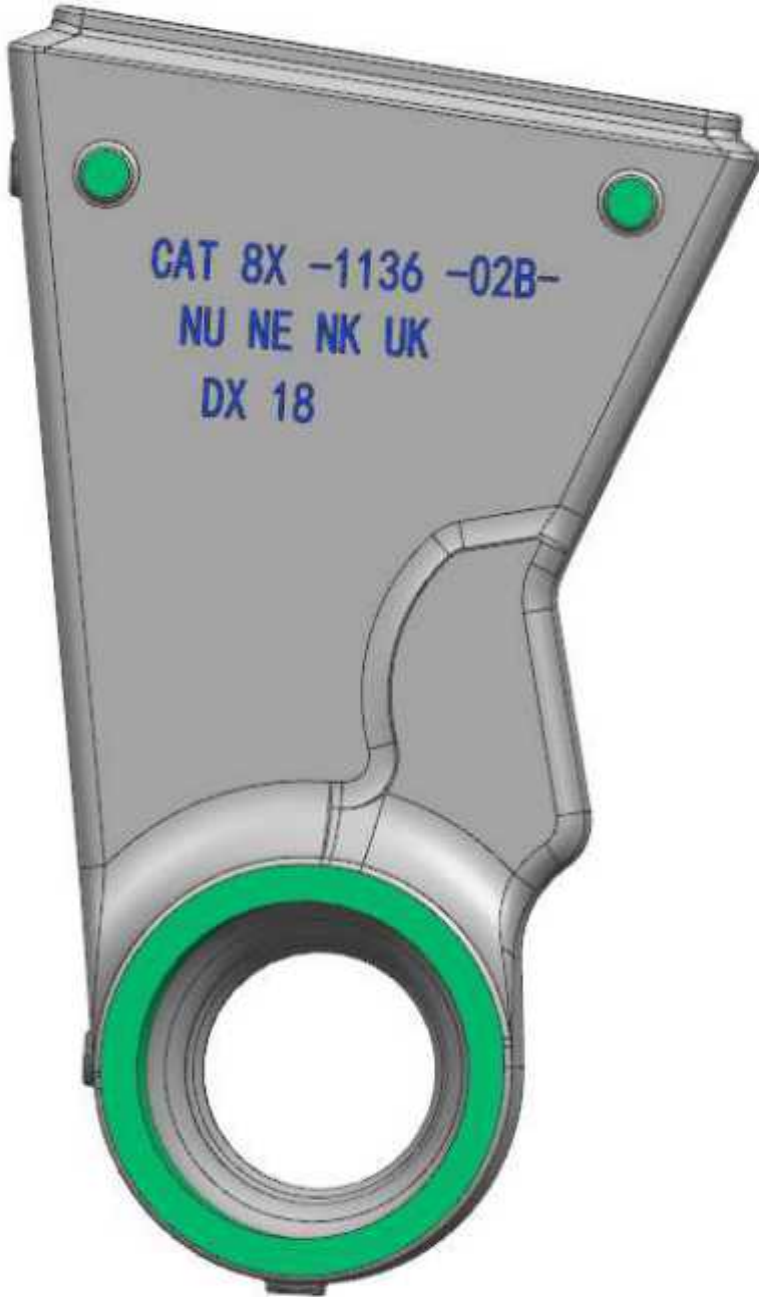
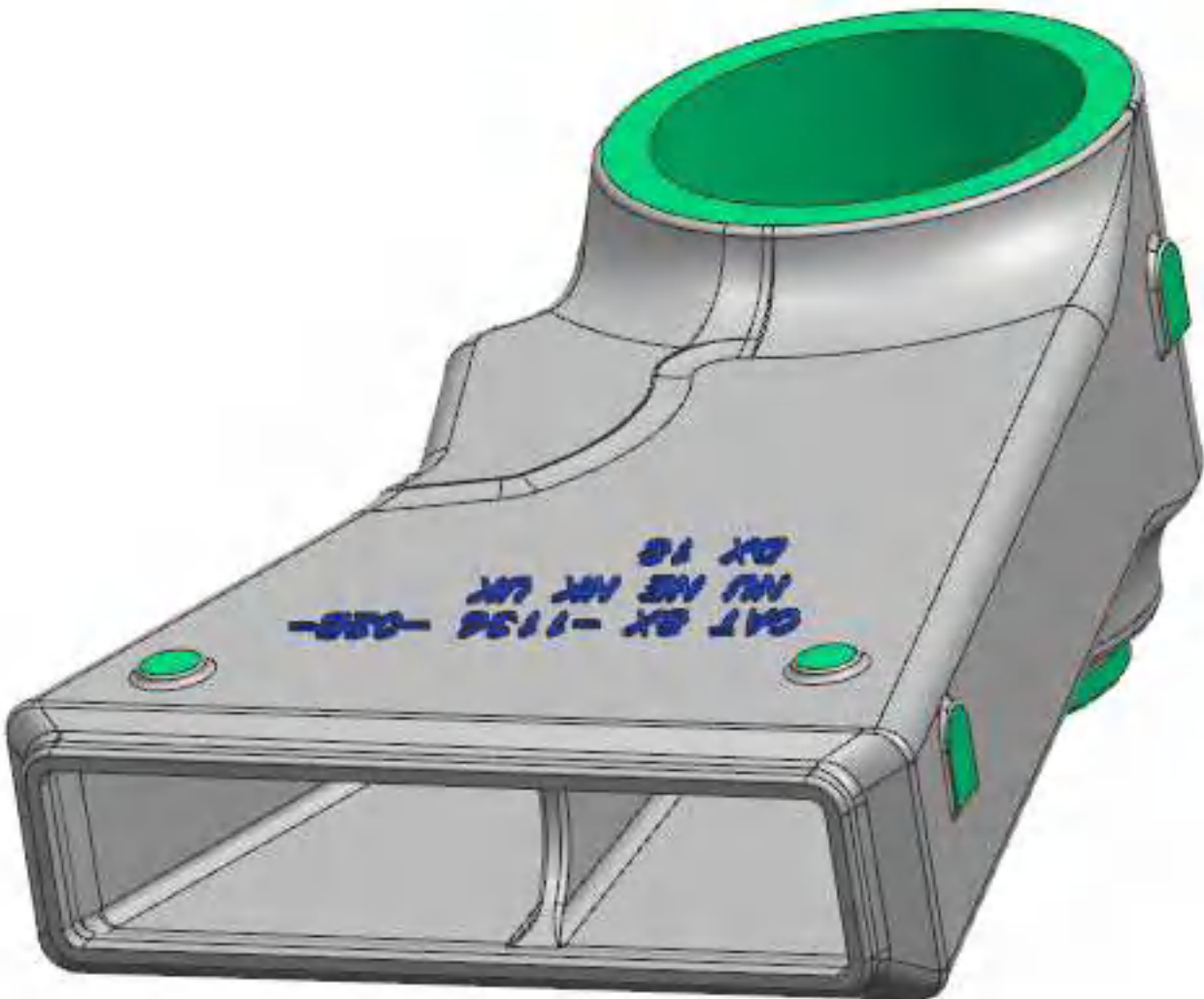
7 Samples Of High Difficulty Products that Dawang Is Producing.

| | | | | | |
|--|-------------------------|---------------|--|-----------|--|
| Type | Track Shoe | |  | | |
| Material | GS-22NiMoCr56 | | | | |
| HT | Quenching and Tempering | | | | |
| Weight | 180Kg | | | | |
| Mechanical Property | | | | | |
| Yield | Tensile | Elongation | | | |
| ≥800MPa | ≥900MPa | ≥10% | | | |
| Reduction of Area | Hardness | Impact Energy | | | |
| ≥22% | 280-310HB | 27J(-40℃) | | | |
| Dimension | Length | Width | Height | Thickness | Inspection: Section、RT、PT、UT、Hardness、Impact、Tensile |
| MM | 2000 | 440 | 220 | 10-30 | |
| Difficulty | | | | | |
| The casting body is long and thin. Due to high mechanical performance requirements, temperament is needed during heat treatment . As a result, problems like bending and cracks can easily arise. The thinnest part has a thickness of only 10mm, so insufficient pouring of steel can happen. There are five holes on both sides of the casting, and their centers should be kept in a straight line. Due to the use requirements, need to make sure that when at 40℃, the impact energy reaches 27 j (standard impact test block). | | | | | |

SAND CASTING

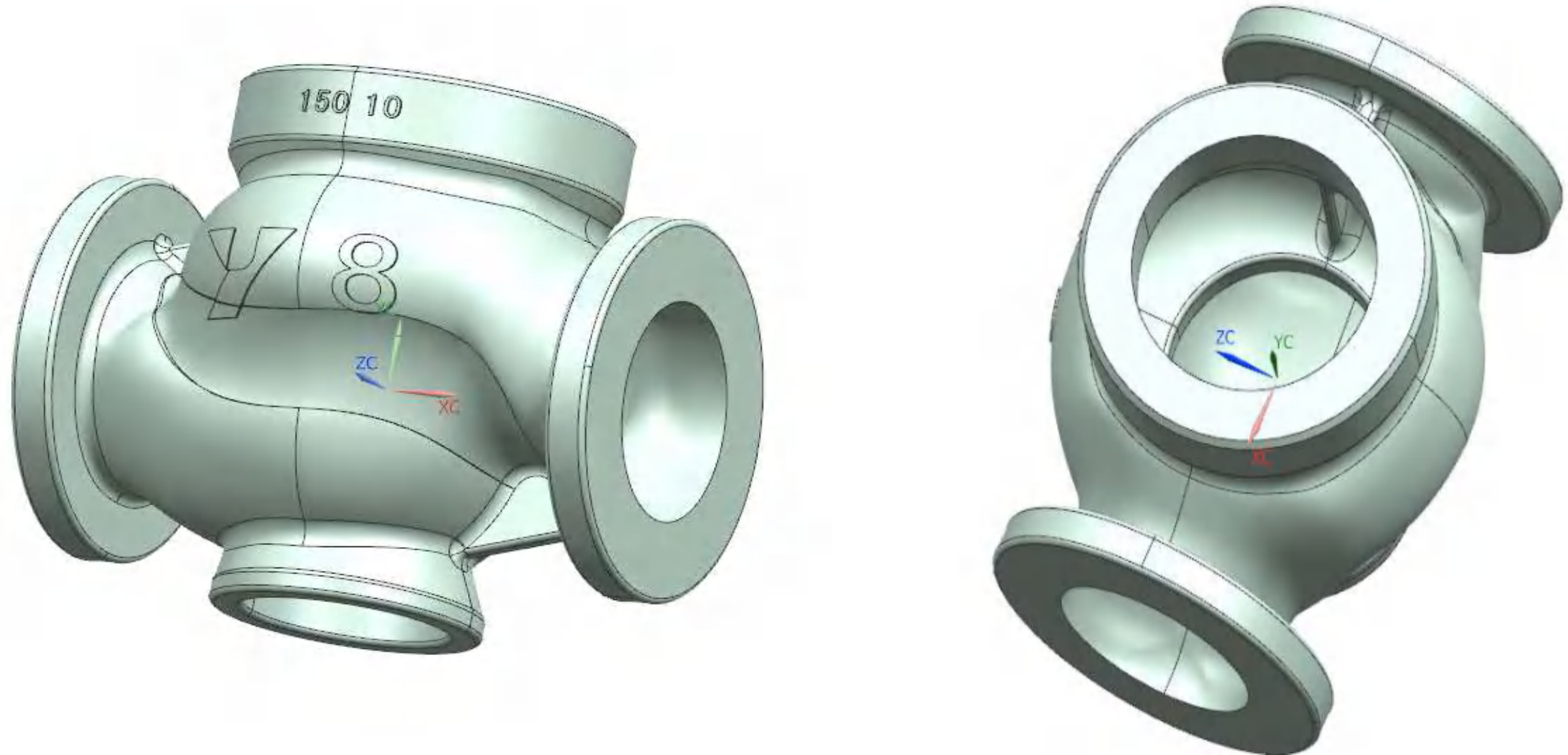
7 Samples Of High Difficulty Products that Dawang Is Producing.

| | | | | | |
|--|----------|-----------------------|--------|--|------------------------------------|
| Type | | Bracket | |  | |
| Material | | IE0627 | | | |
| HT | | Normalizing+Tempering | | | |
| Weight | | 360Kg | | | |
| Mechanical Property | | | |  | |
| Yield | Tensile | Elongation | | | |
| ≥275MPa | ≥485MPa | ≥10% | | | |
| Reduction of Area | Hardness | Impact Energy | | | |
| ≥16% | 149-197 | | | | |
| Dimension | Length | Width | Height | Thickness | Inspection: MT、UT、Hardness、Tensile |
| MM | 1200 | 730 | 210 | 15-40 | |
| Difficulty | | | | | |
| The casting size is large, so the surface area is large. During the casting process, a lack of wall thickness or even casting defects can easily happen. Its special structure also can lead to shrinkage and porosity in the joints between the plane and the facade. | | | | | |



SAND CASTING

7 Samples Of High Difficulty Products that Dawang Is Producing.

| | | | | | |
|--|--------------------|------------|--|-------|--|
| Type | Valve Body | |  | | |
| Material | CF8/CF8M | | | | |
| HT | Solution Treatment | | | | |
| Weight | 280Kg | | | | |
| Mechanical Property | | | | | |
| Yield | Tensile | Elongation | | | |
| ≥205MPa | ≥480MPa | ≥33% | Inspection: RT、PT、Hardness、Tensile | | |
| Hardness | | | | | |
| ≤183HB | | | | | |
| Dimension | Length | Width | | | |
| MM | 580 | 450 | 480 | 20-60 | |
| Difficulty | | | | | |
| The inner wall of valve body has a thickness of 20mm, which is very thin. Its shape is also irregular and large. Around the parts that connect to the valve port, due to the uneven thickness and rapid change, shrinkage and porosity and other internal defects can happen. Special tests need to be conducted. Because its material is CF8/CF8M, it is easy to generate cracks in the heat treatment process, which requires penetration test. In addition, when the material is cleaned later, it is difficult to polish due to its material characteristics, especially when the valve body cavity is treated. High quality requirements on surface include smooth internal and external walls; Because it is used in high pressure corrosion-prone environment, passivation treatment is needed. | | | | | |


SAND CASTING

7 Samples Of High Difficulty Products that Dawang Is Producing.

| | | | | | | |
|---|----------|---------------------------|--------|-----------|-------------|--|
| Type | | Cantilever connecting rod | | | | |
| Material | | SCW480 | | | | |
| HT | | Normalizing + Tempering | | | | |
| Weight | | 50Kg | | | | |
| Mechanical Property | | | | | | |
| Yield | Tensile | Elongation | | | | |
| ≥275MPa | ≥480MPa | ≥20% | | | | |
| Reduction of Area | Hardness | Impact Energy | | | | |
| | | 27J(0℃) | | | | |
| Dimension | Length | Width | Height | Thickness | Inspection: | |
| MM | 510 | 270 | 80 | 16-30 | | |
| Difficulty | | | | | | |
| The casting is the part of the connecting rod of excavators. It is mandatory that that there is no defect inside the connecting rod, such as sand holes, pores and shrinkage cavity and porosity. The customer also has high planeness requirements for castings. The long arm shall not be warped. | | | | | | |

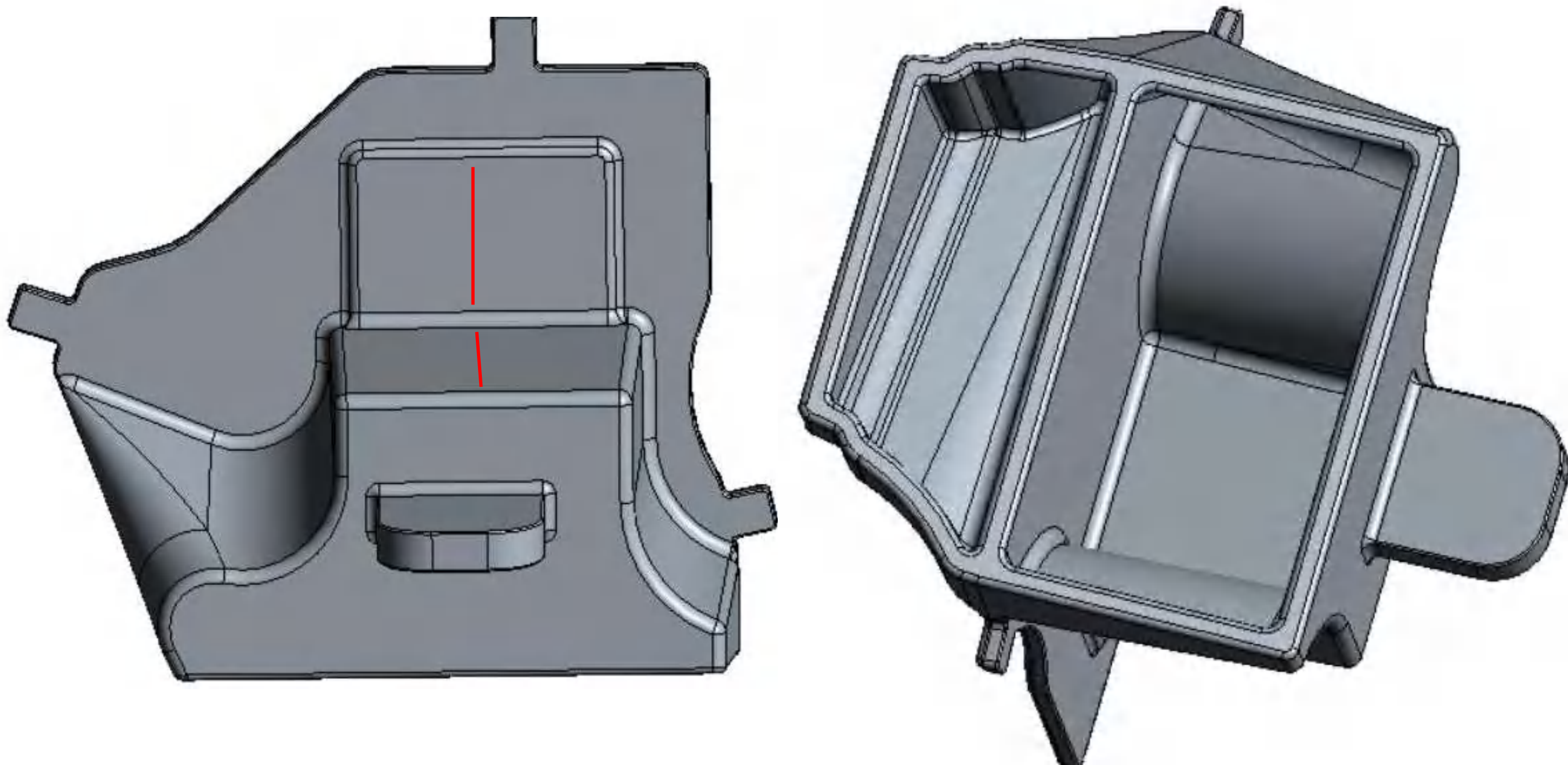
SAND CASTING

7 Samples Of High Difficulty Products that Dawang Is Producing.

| | | | | | |
|--|-------------------------|---------------|--|-----------|--|
| Type | Joint Structure | |  | | |
| Material | JDM B2J 4330V | | | | |
| HT | Quenching and Tempering | | | | |
| Weight | 180Kg | | | | |
| Mechanical Property | | | | | |
| Yield | Tensile | Elongation | | | |
| ≥725MPa | ≥858MPa | ≥17% | | | |
| Reduction of Area | Hardness | Impact Energy | | | |
| ≥35% | 325-375HB | 27J(-30℃) | | | |
| Dimension | Length | Width | Height | Thickness | Inspection: Section、RT、PT、UT、Hardness、Impact、Tensile |
| MM | 900 | 800 | 370 | 19-100 | |
| Difficulty | | | | | |
| The casting defects such as shrinkage and porosity are easily caused by the thickness change of the joint on each surface. Due to the high requirements of mechanical properties and the need for quality adjustment, the heat treatment stress can easily lead to cracks in the joints of surfaces. The heat treatment must be uniform, and the casting body must be kept within the required hardness range. Must ensure that the casting body block, at the time of impact energy experiment (temperature - 30 ℃), standard shock impact energy block reaches more than 27 j. | | | | | |

AGRICULTURAL MACHINERY

These Are Representative And Technically Difficult Products.

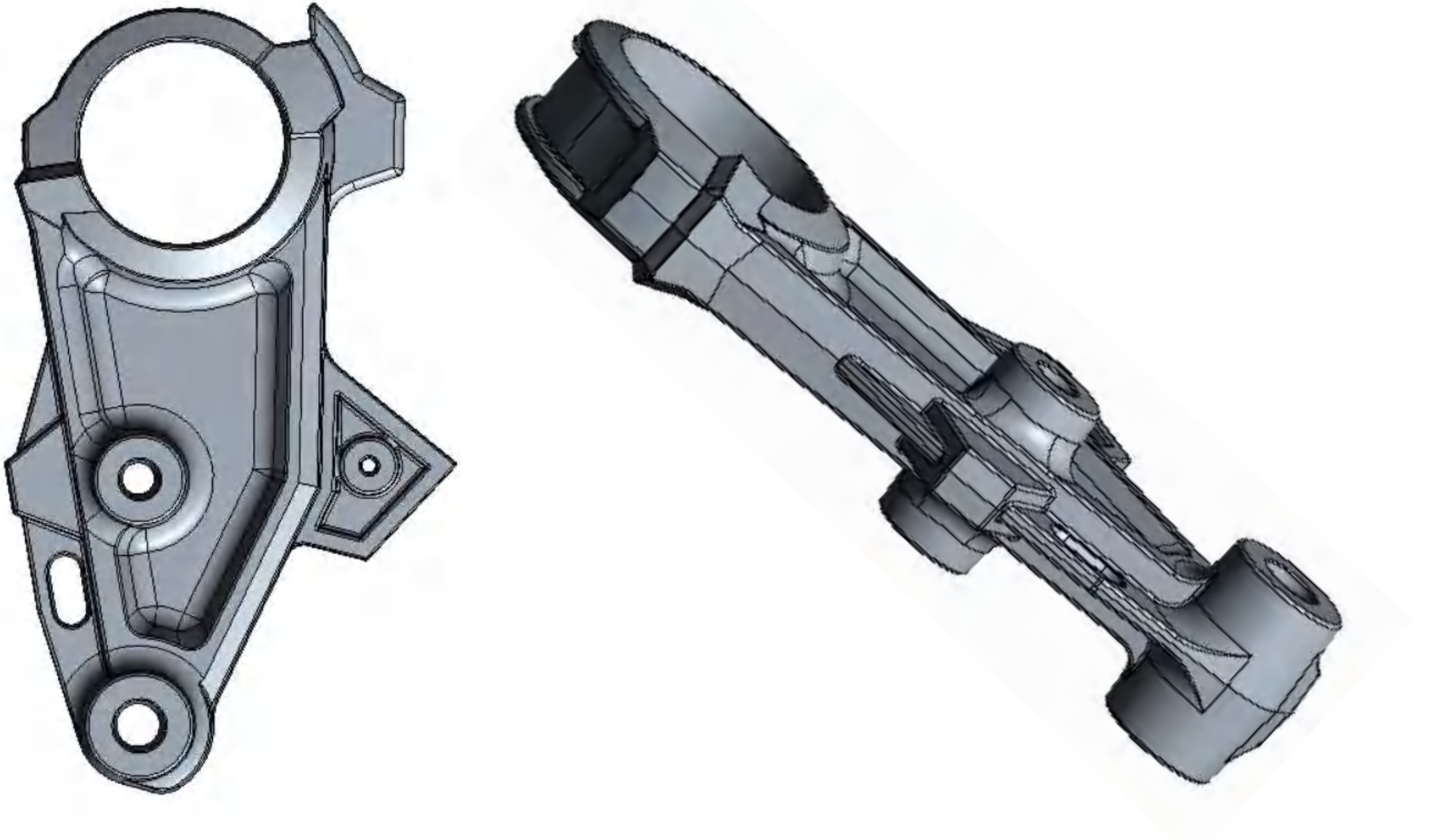
| | | | |
|---|--------------|------------|--|
| Type | Support Base | |  |
| Weight | 17.5kg | | |
| Material | JDM B2K1030 | | |
| HT | Normalizing | | |
| Chemical Property | | | |
| C: 0.25-0.35 Mn: 0.70-1.00 P≤0.04 S≤0.045 Si: 0.20-1.00Cu≤0.50 Ni≤0.50 Cr≤0.35 W≤0.10 Carbon: Ce≤0.45 | | | |
| Mechanical Property | | | |
| Yield | Tensile | Elongation | |
| ≥448 | ≥350 | ≥25 | |
| Dimension | | | |
| Length | Width | Height | |
| 306mm | 234mm | 284mm | |
| Difficulty | | | |

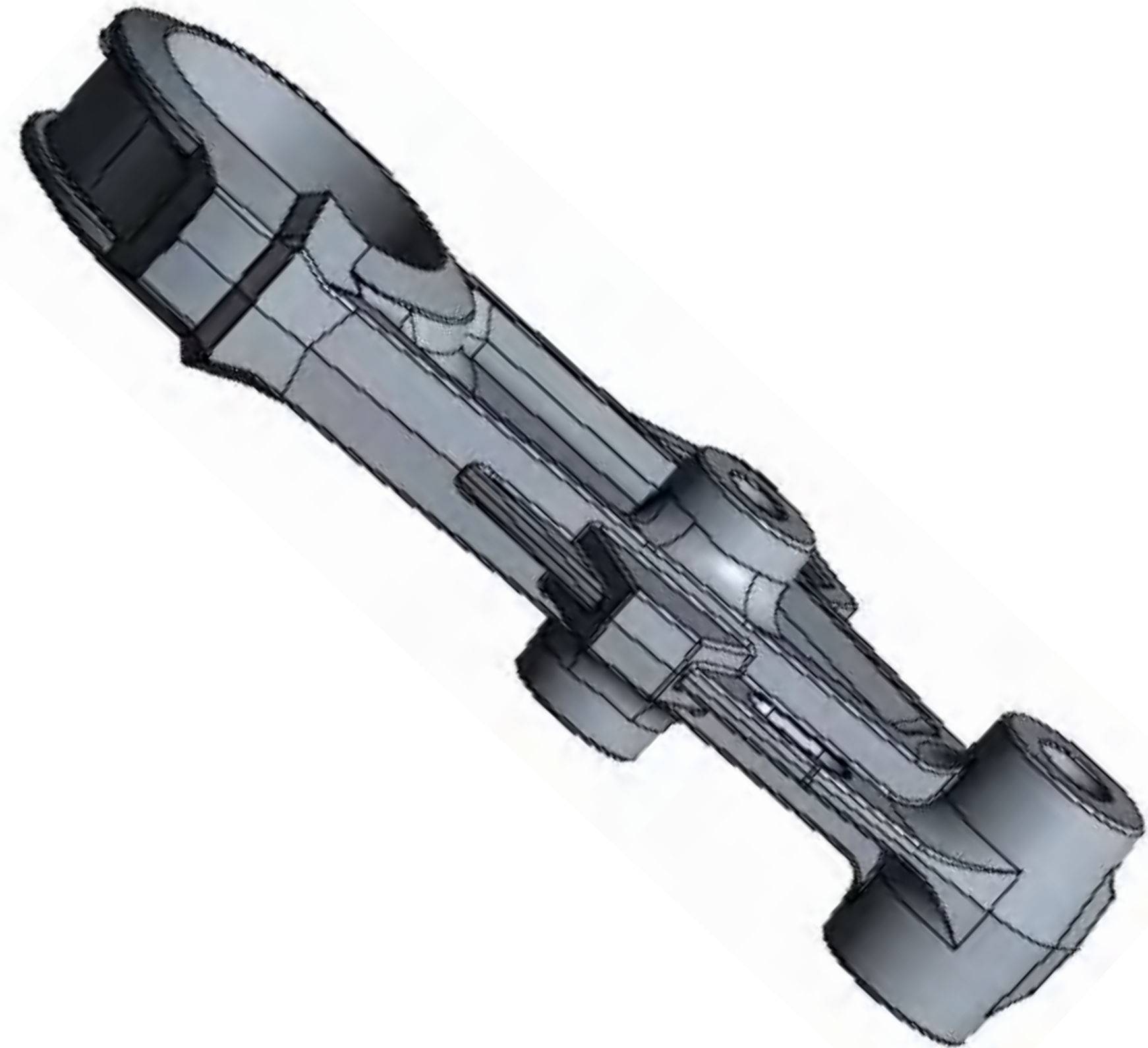
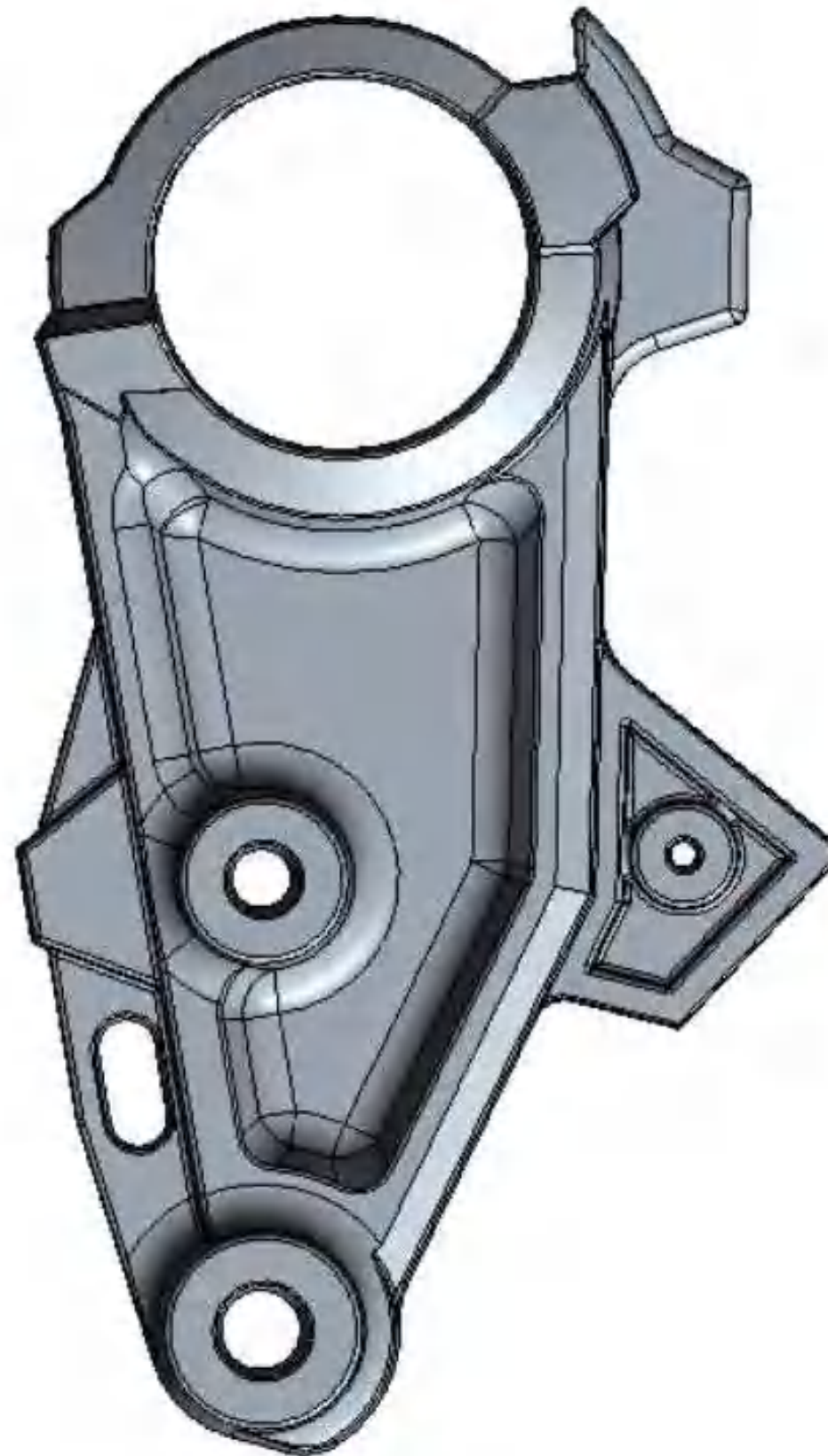
The product structure is complex, the wall thickness is not uniform, the three machine reinforcement points are easy to break in the production process, the red line two plane Angle in the figure is strict, and the large inner groove plane can swell easily.

AGRICULTURAL MACHINERY

These Are Representative And Technically Difficult Products.

| | | |
|--|-------------|------------|
| Type | Front End | |
| Weight | 21kg | |
| Material | JDM B2K1030 | |
| HT | Normalizing | |
| Chemical Property | | |
| C: 0.25-0.35 Mn: 0.70-1.00 P≤0.04 S≤0.045 Si: 0.20-1.00Cu≤0.50 Ni≤0.50 Cr≤0.35 W≤0.10 Carbon: Ce≤0.45 | | |
| Mechanical Property | | |
| Yield | Tensile | Elongation |
| ≥448 | ≥350 | ≥25 |
| Dimension | | |
| Length | Width | Height |
| 486mm | 104mm | 310mm |
| Difficulty | | |
| Product wall thickness is not uniform, deformation can be difficult to correct. Extra attention to defect prevention in hole processing. | | |

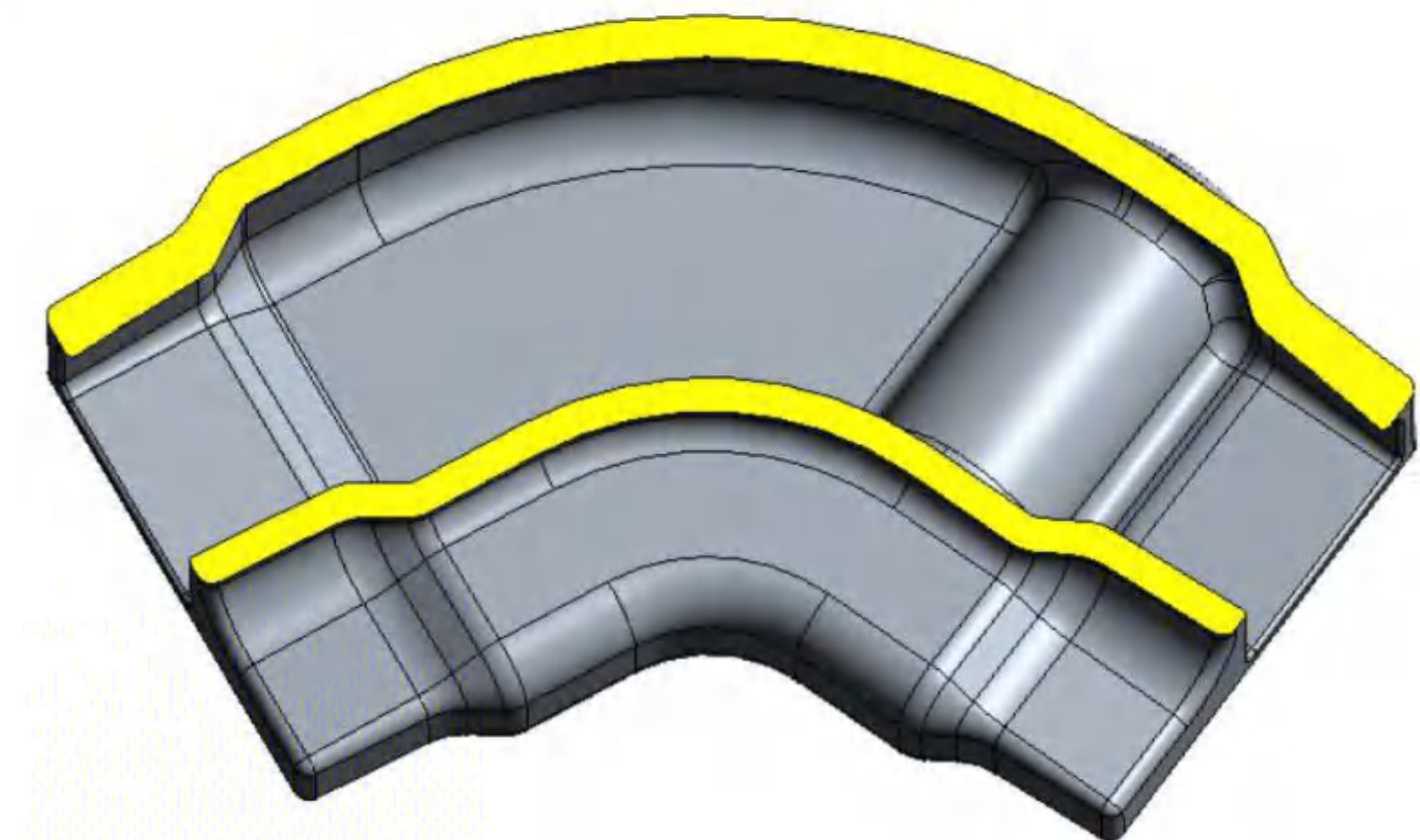
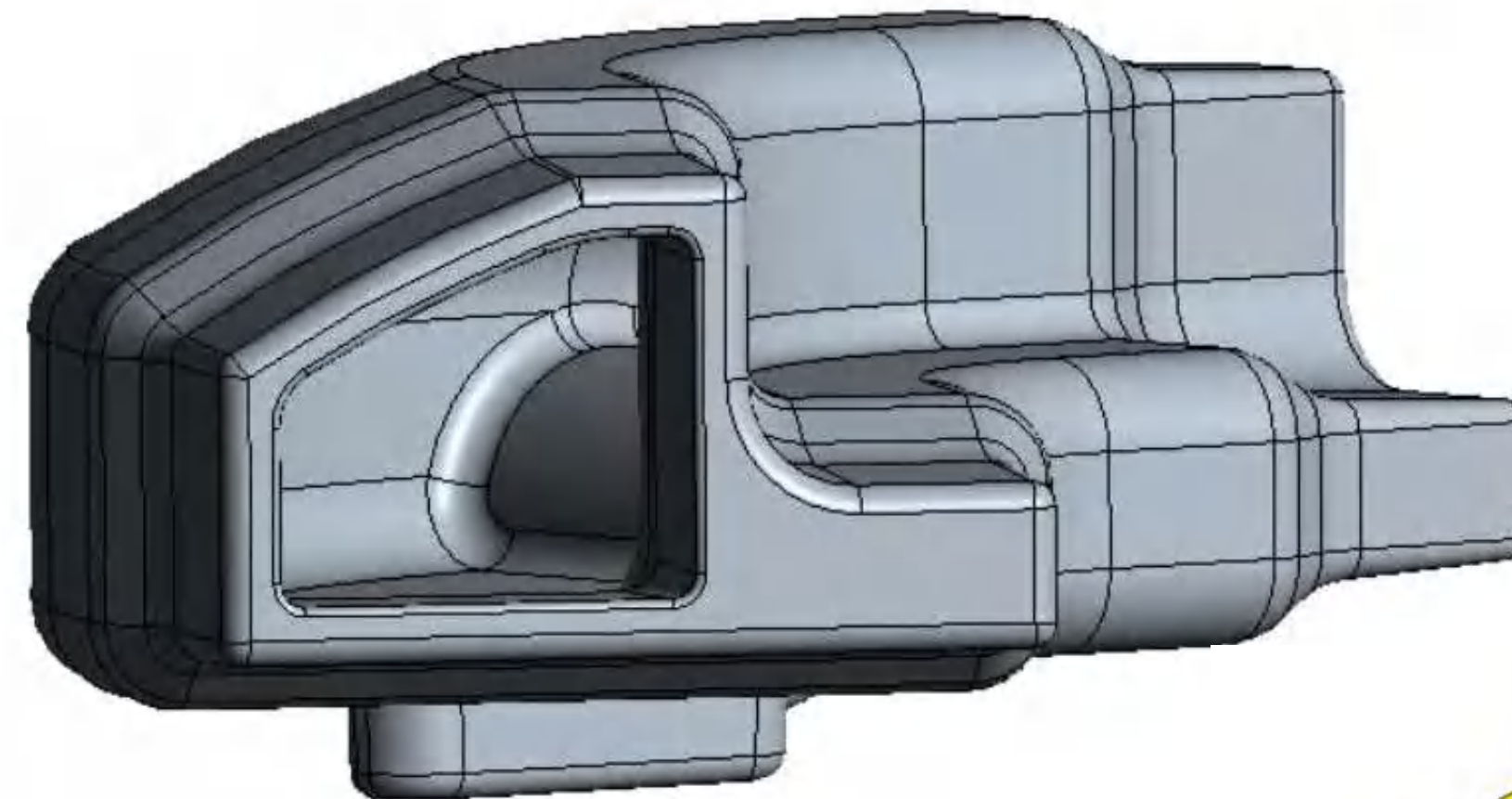




AGRICULTURAL MACHINERY

These Are Representative And Technically Difficult Products.

| | | |
|--|----------------|------------|
| Type | LH TOP CORNER | |
| Weight | 5kg | |
| Material | JDM B2K8620 | |
| HT | Annealing | |
| Chemical Property | | |
| C:0.15-0.25;Si:0.2-0.8;Mn:0.65-0.95;P≤0.04;S≤0.045; Ni0.4-0.7;Cr:0.4-0.7;Mo:0.15-0.25, Carbon: CE≤0.47 | | |
| Mechanical Property | | |
| Yield | Tensile | Elongation |
| ≥550 | ≥340 | ≥22 |
| Reduction Of Area | Impact (-30°C) | |
| ≥35 | ≥27 | |
| Dimension | | |
| Length | Width | Height |
| 240mm | 140mm | 83mm |
| Difficulty | | |

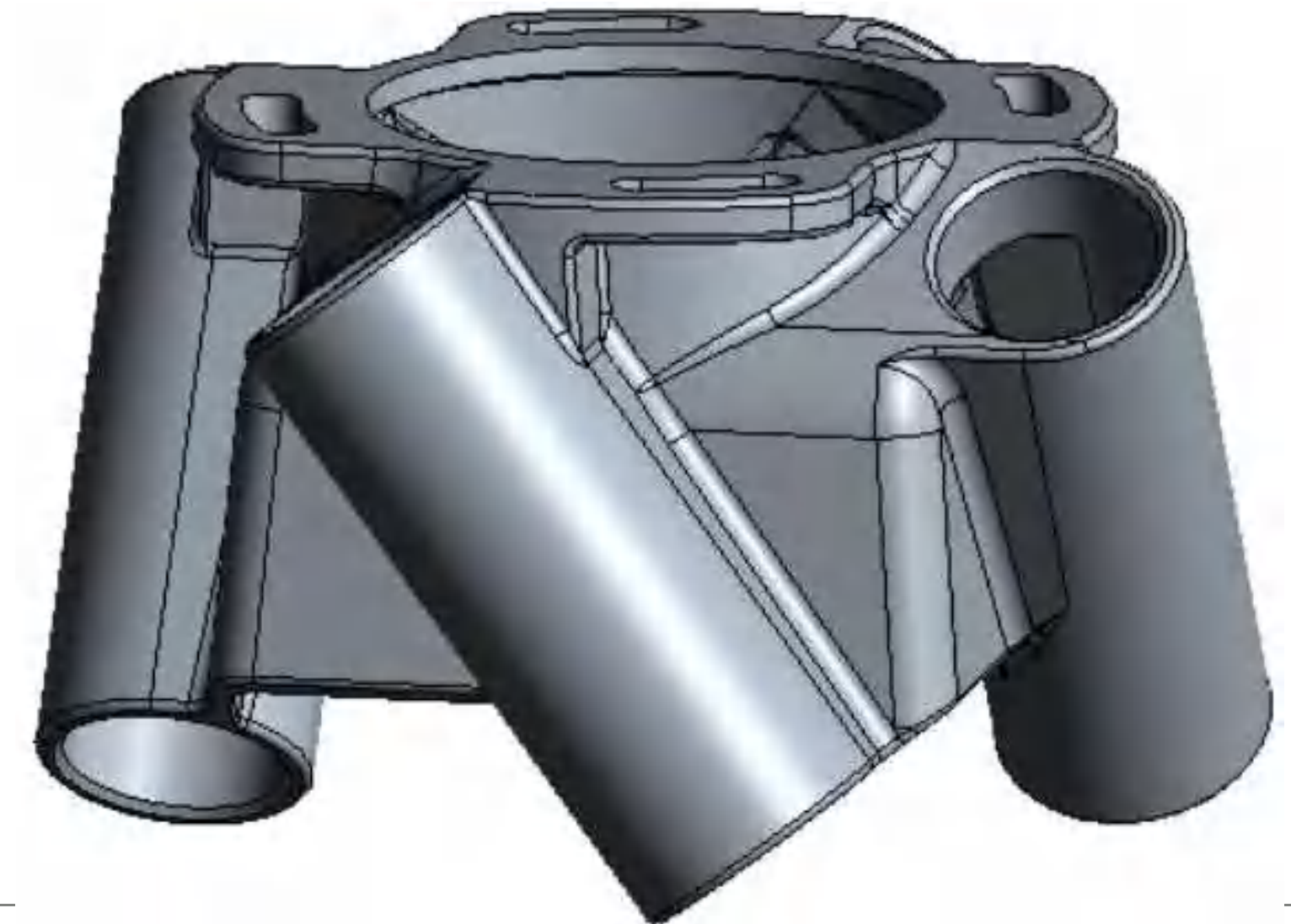


The wall thickness is not uniform. It is hard to dry the inner cavity when making the shell. Because it uses a silica sol process, the inner cavity is deep and curved, and it is difficult to remove sand after casting, which can easily lead to deformation.

CONSTRUCTION MACHINERY

These Are Representative And Technically Difficult Products.

| | | | |
|---|-------|------------------|------------|
| Type | | Support Hardware | |
| Weight | | 7kg | |
| Material | | SC410 | |
| HT | | Normalizing | |
| Chemical Property | | | |
| C≤0.3 Si:0.3-0.6 Mn: 0.3-0.6 P≤0.040 S≤0.040 | | | |
| Mechanical Property | | | |
| Yield | | Tensile | Elongation |
| ≥410 | | ≥205 | ≥21 |
| Reduction Of Area | | | |
| ≥35 | | | |
| Dimension | | | |
| Length | Width | Height | |
| 257mm | 257mm | 160mm | |
| Difficulty | | | |

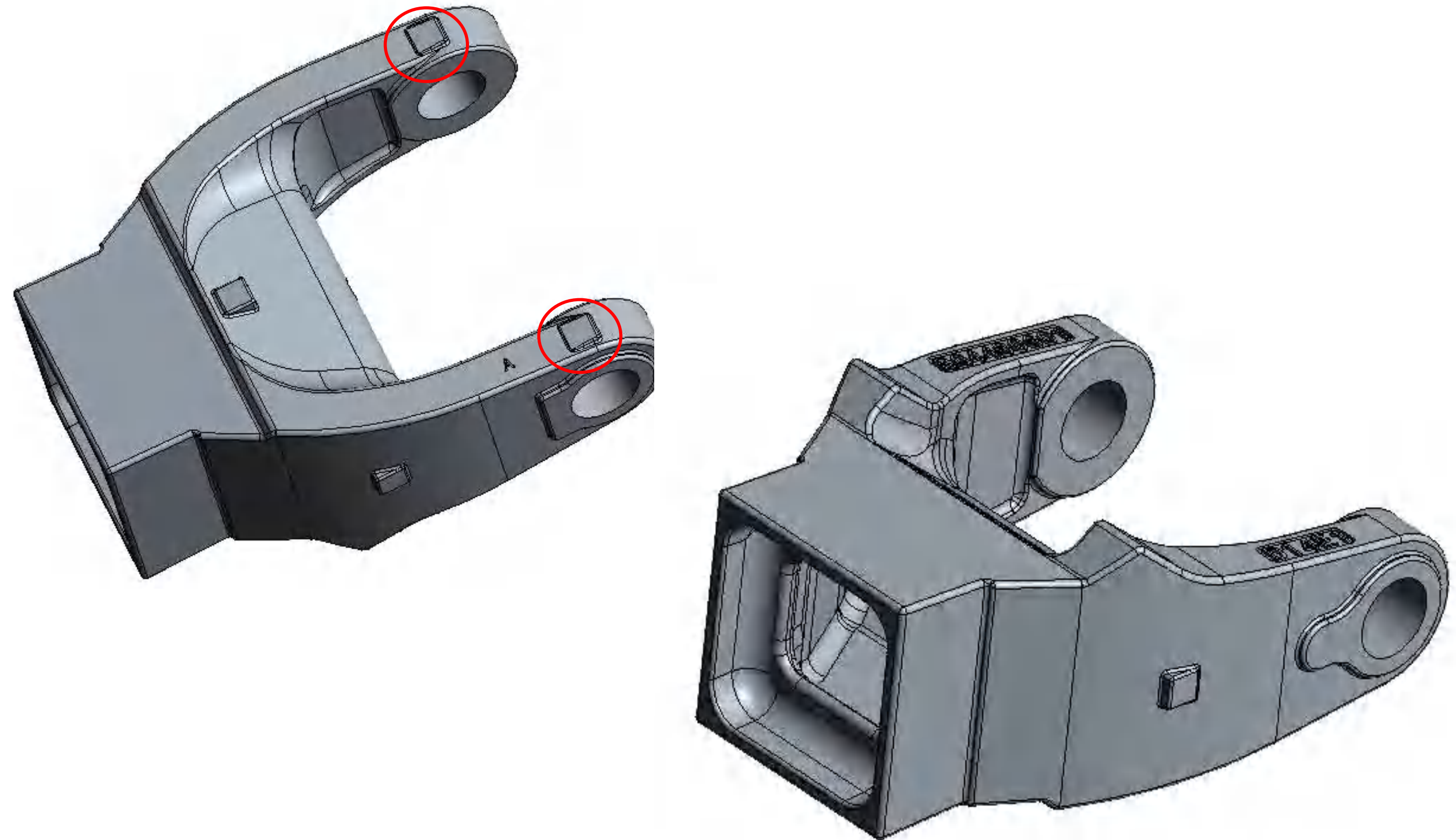


The product structure is complex and mold development process is hard, so we can only make the mold by hand. Also because there are many mold cores and it takes numerous steps to take out the mold, mold can be damaged easily. Uneven wall thickness or undercast can happen, This product needs hot dip zinc treatment.

CONSTRUCTION MACHINERY

These Are Representative And Technically Difficult Products.

| | | |
|--|-------------|------------|
| Type | BRACKET | |
| Weight | 24.3kg | |
| Material | SCW450 | |
| HT | Normalizing | |
| Chemical Property | | |
| C≤0.22;Si≤0.8;Mn≤1.5;P≤0.04; S≤0.04; Ce≤0.43 | | |
| Mechanical Property | | |
| Yield | Tensile | Elongation |
| ≥450 | ≥225 | ≥20 |
| Hardness（HB） | | |
| 140-170 | | |
| Dimension | | |
| Length | Width | Height |
| 345mm | 274mm | 156mm |
| Difficulty | | |

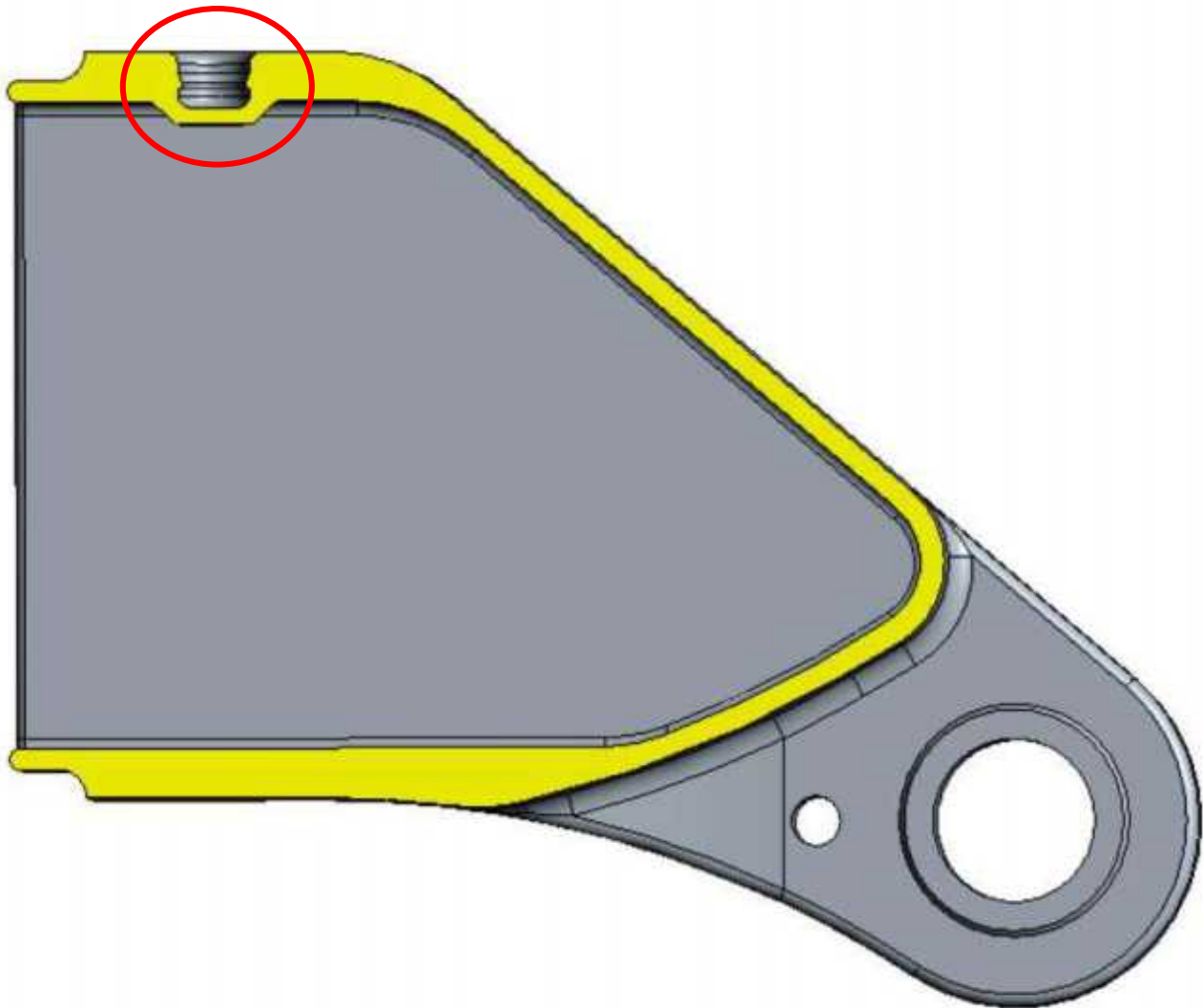
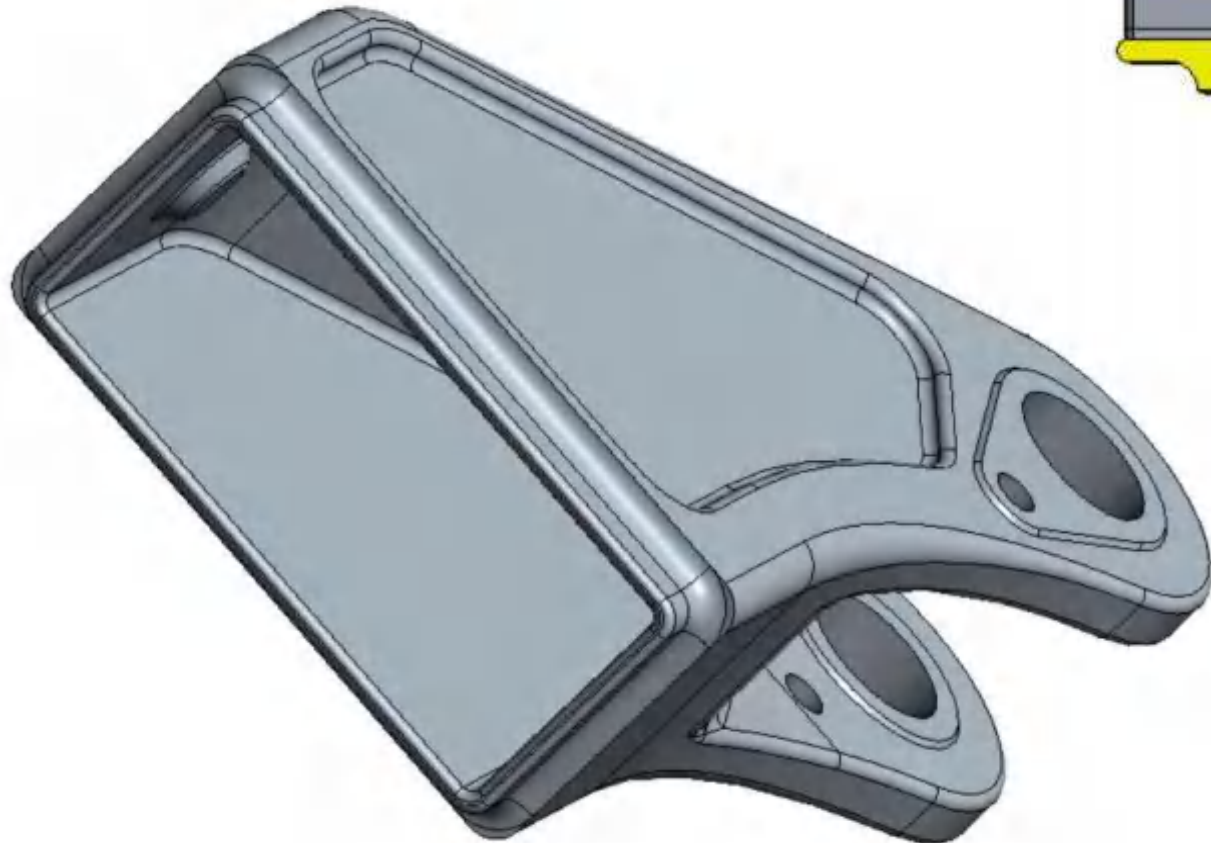


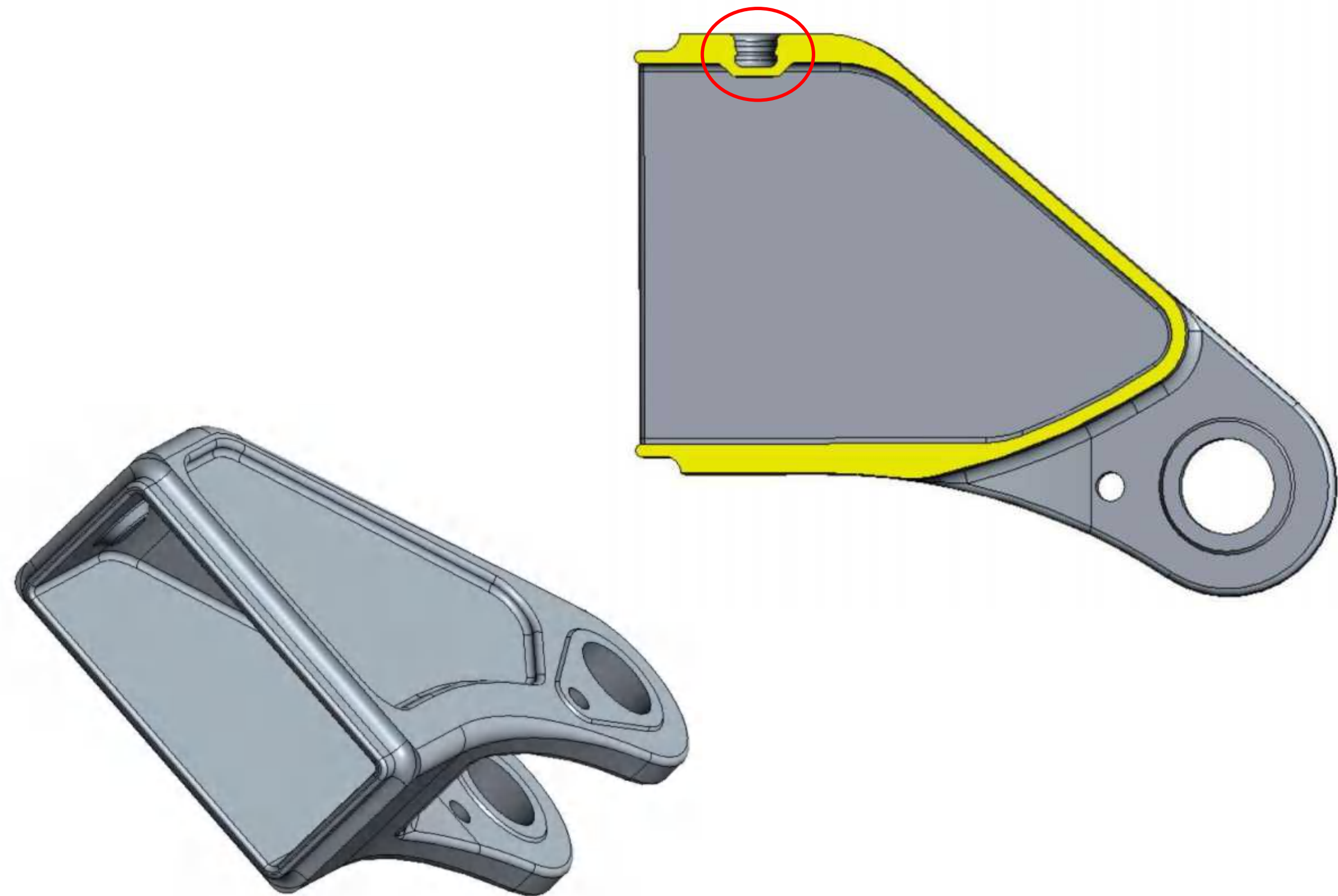
This product has uneven wall thickness and tedious casting system design. Process bars should be added in the middle to prevent deformation. The inner cavity is not easy to dry or be harden during shell making

CONSTRUCTION MACHINERY

These Are Representative And Technically Difficult Products.

| | | |
|--|----------------------------|------------|
| Type | CASTING,FEMALE CLEVIS,.250 | |
| Weight | 12.2kg | |
| Material | A487 GRADE 4C | |
| HT | Normalizing | |
| Chemical Property | | |
| C:≤0.3 Si≤0.8 Mn≤1.0 P≤0.045 S≤0.04 Cr: 0.4-0.8 Ni : 0.4-0.8 Mo:0.15-0.30 | | |
| Mechanical Property | | |
| Yield | Tensile | Elongation |
| ≥620 | ≥415 | ≥18 |
| Impact | Hardness (HB) | |
| ≥20 | ≤235 | |
| Dimension | | |
| Length | Width | Height |
| 330mm | 203mm | 102mm |
| Difficulty | | |
| The thickness of the product is uneven, and it requires X-ray inspection. No defect shall exist inside, which leads to tedious casting system design and low production rate. The blind hole in red circle is prone to defect of iron beans. | | |





CONSTRUCTION MACHINERY

These Are Representative And Technically Difficult Products.

| | | |
|---|-------------------------|------------|
| Type | CASTING,FEMALE | |
| Weight | 21.7kg | |
| Material | 25CrMo | |
| HT | Quenching and Tempering | |
| Chemical Property | | |
| C:0.22-0.3 Si:0.22-0.37 Mn:0.4-0.7 P≤0.035 S≤0.035 Cr:0.8-1.1 Ni≤0.03 Mo: 0.15-0.3 Cu≤0.03 | | |
| Mechanical Property | | |
| Yield | Tensile | Elongation |
| ≥885 | ≥685 | ≥12 |
| Hardness（HB） | Reduction Of Area | |
| 255-325 | ≤50 | |
| Dimension | | |
| Length | Width | Height |
| 520mm | 274mm | 258mm |

Difficulty

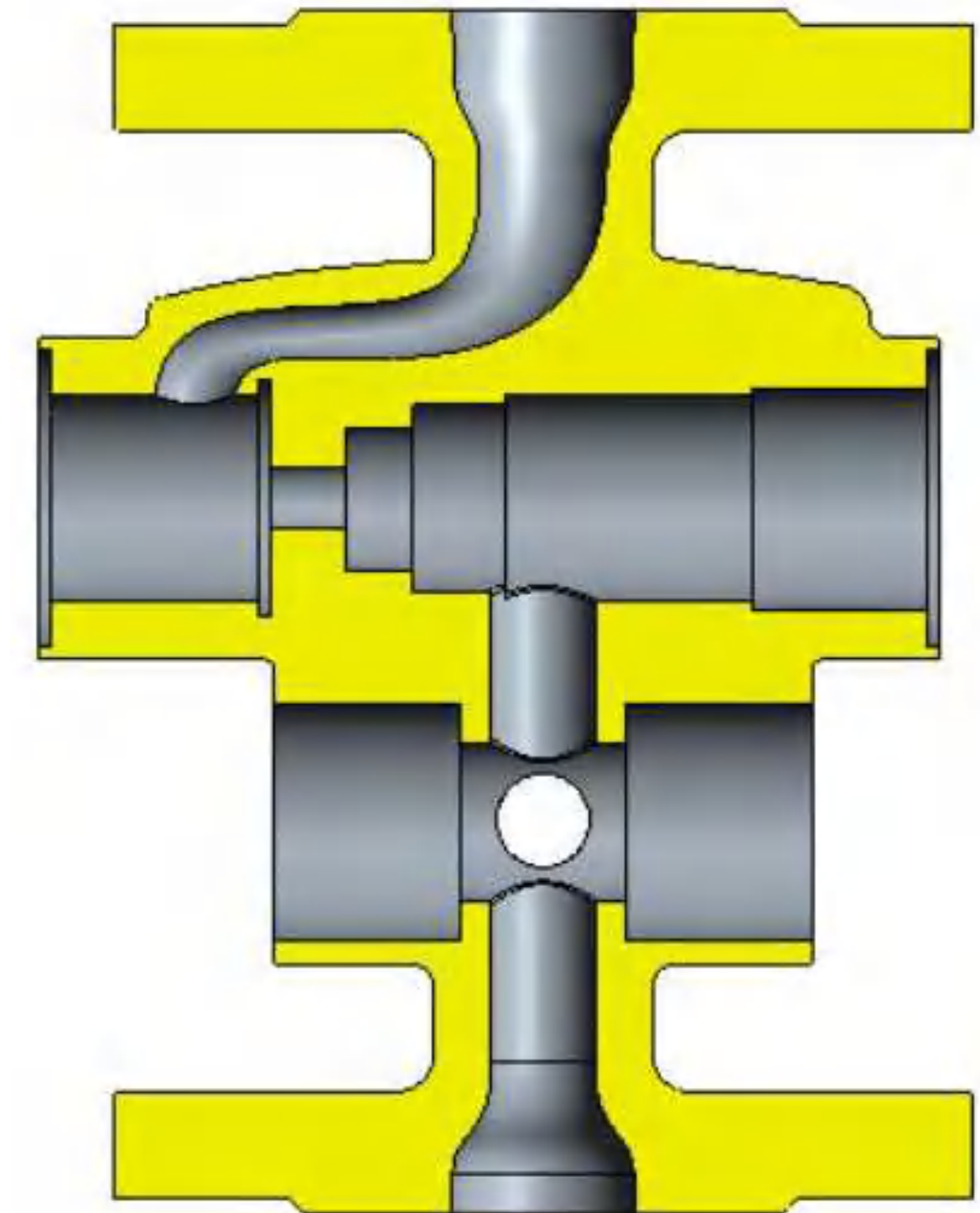
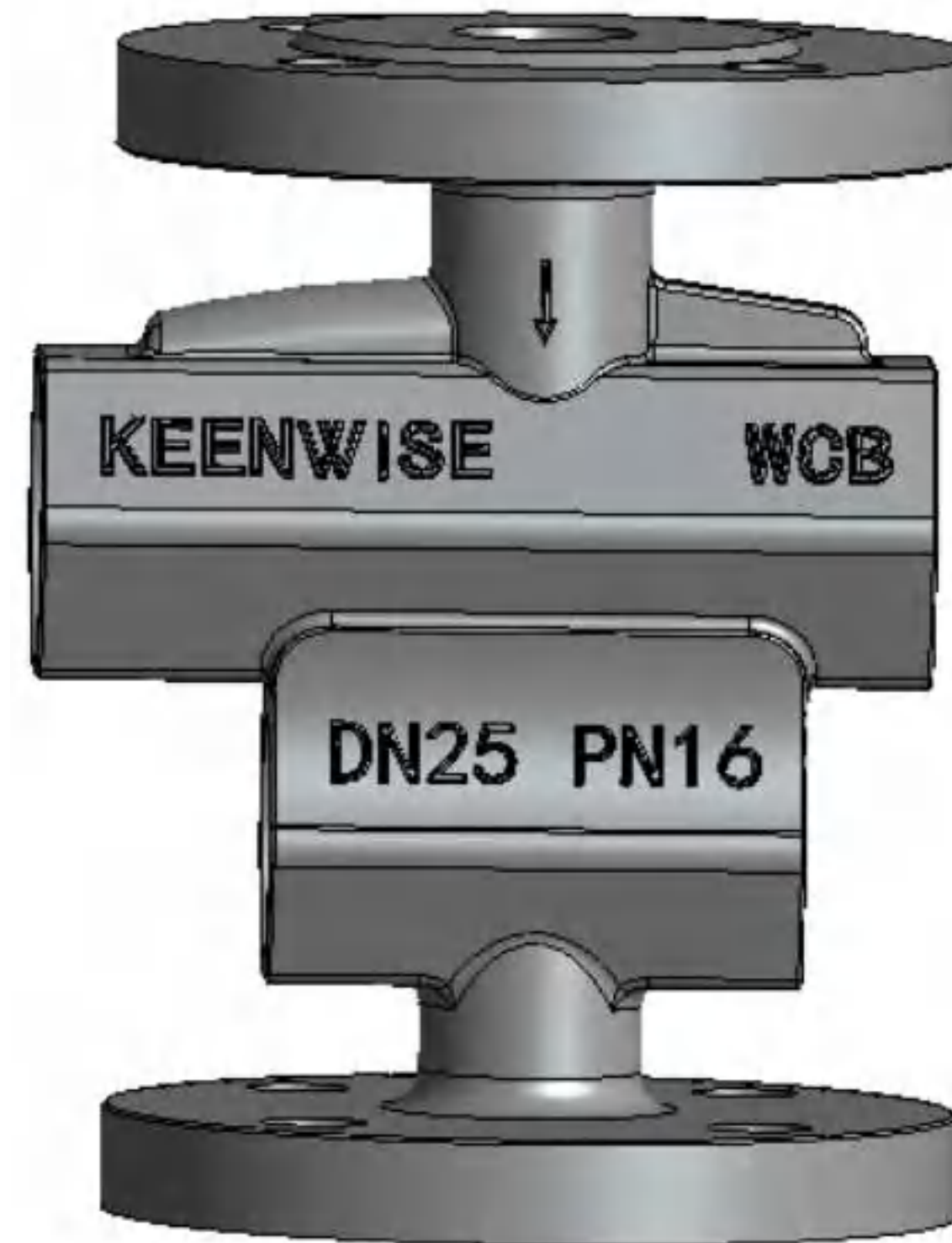
This product has complex structure, many hot joints, complicated casting system design, low yield, and complex die design structure. This casting needs to be tempered, and its hardness is easy to deform before hb255-325, and it is difficult to correct after treatment.



PETROCHEMICAL ENGINEERING

These Are Representative And Technically Difficult Products.

| | | |
|--|----------------|------------|
| Type | Draining Valve | |
| Weight | 3.31kg | |
| Material | WCB | |
| HT | Normalizing | |
| Chemical Property | | |
| C≤0.3 Si≤0.6 Mn≤1 P≤0.04 S≤0.04 Cr≤ 0.25 Ni≤0.5 Mo≤0.25Cu≤0.5 | | |
| Mechanical Property | | |
| Yield | Tensile | Elongation |
| 485-655 | ≥250 | ≥22 |
| Reduction Of Area | | |
| ≥35 | | |
| Dimension | | |
| Length | Width | Height |
| 160mm | 115mm | 120mm |
| Difficulty | | |

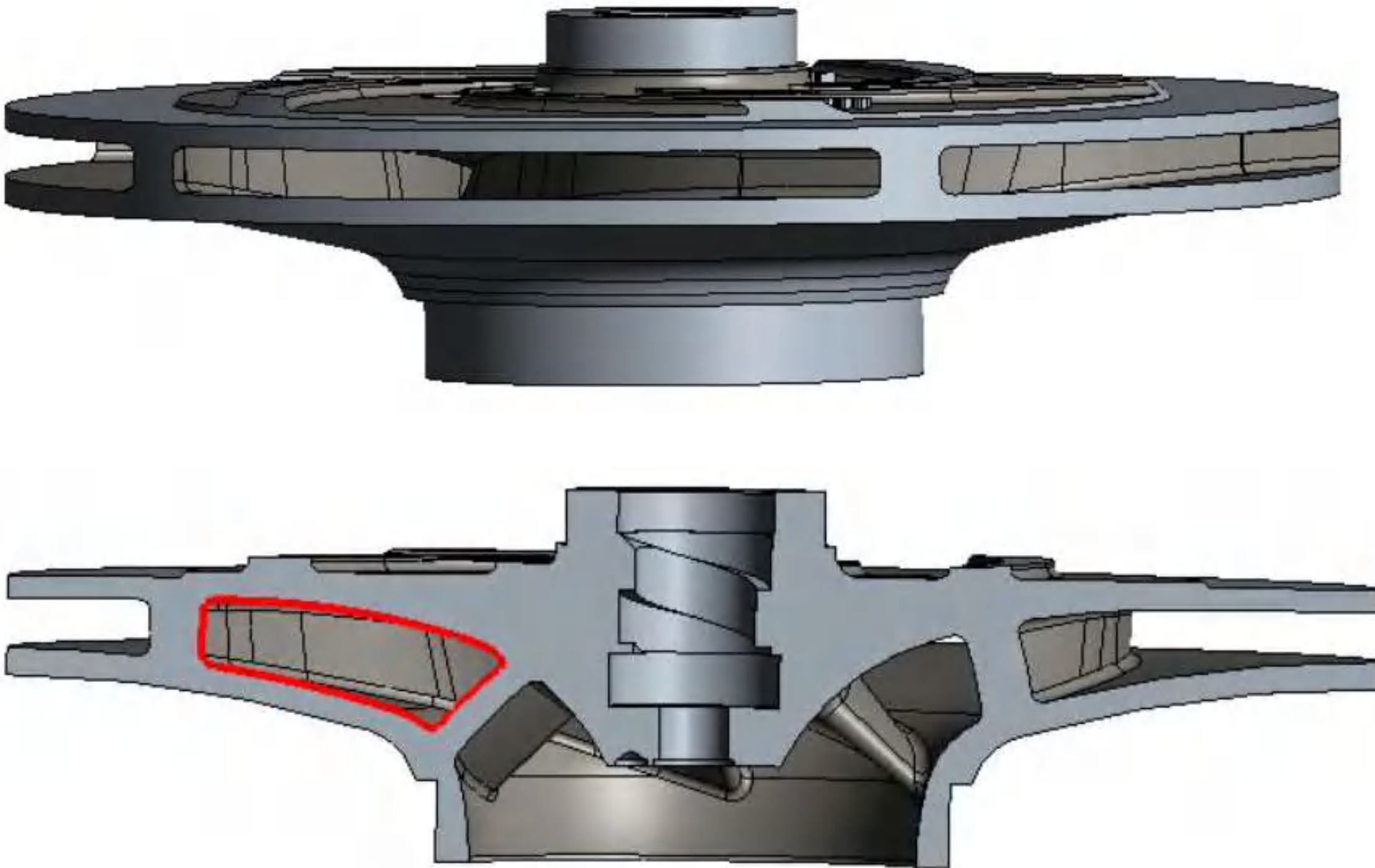


The thickness of valve body is not uniform, so it is easy to contract and loosen. The process design is complex, the production rate is low, the internal cavity hole groove is complex, not easy to clear sand, the inner cavity is easy to leak steel and the generation of pore sand hole, etc. The inner cavity needs to be fully hardened and air-dried during the shell making process.

PETROCHEMICAL ENGINEERING

These Are Representative And Technically Difficult Products.

| | | |
|---|--------------------|------------|
| Type | 闭口式叶轮 | |
| Weight | 8.23kg | |
| Material | 1.4460 | |
| HT | Solution Treatment | |
| Chemical Property | | |
| C≤0.05 Mn≤2 P≤0.035 S≤0.015 Si≤1 Cr: 25-28 Ni: 4.5-6.5 Mo:1.3-2 N:0.05-0.2 | | |
| Mechanical Property | | |
| Yield | Tensile | Elongation |
| 620-880 | ≥460 | 2≥0 |
| Hardness（HB） | | |
| ≤260 | | |
| Dimension | | |
| Length | Width | Height |
| 226mm | 226mm | 81mm |
| Difficulty | | |

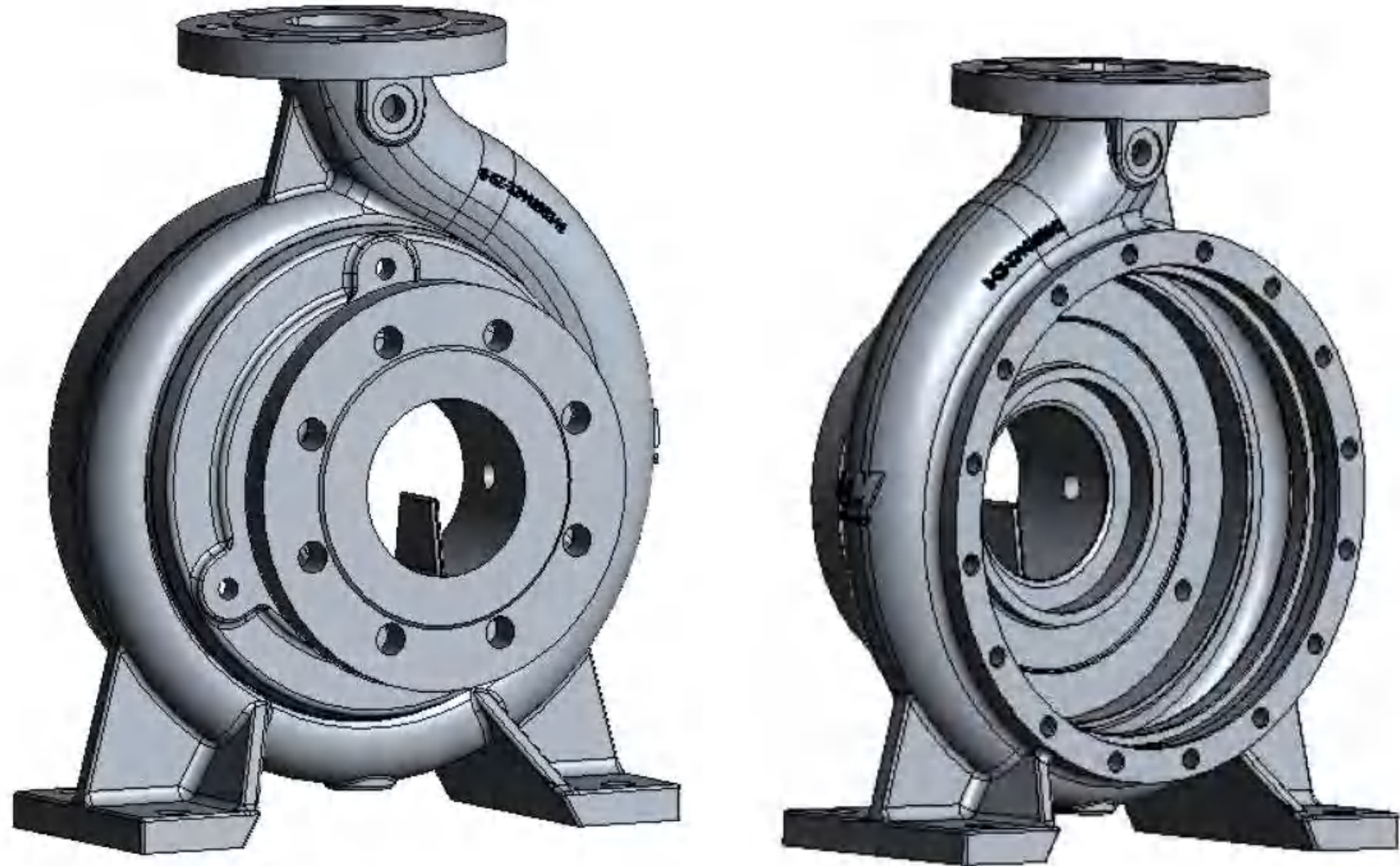


This impeller is a closed impeller with complex inner cavity shape, which is prone to leakage of steel and generation of pore sand holes. The wall thickness is not only thin, but also uneven. The wall thickness is 4mm.

PETROCHEMICAL ENGINEERING

These Are Representative And Technically Difficult Products.

| | | |
|--|--------------------|------------|
| Type | PUMP BODY | |
| Weight | 28.8kg | |
| Material | 1.4460 | |
| HT | Solution Treatment | |
| Chemical Property | | |
| C≤0.05 Mn≤2 P≤0.035 S≤0.015 Si≤1 Cr: 25-28 Ni: 4.5-6.5 Mo:1.3-2 N:0.05-0.2 | | |
| Mechanical Property | | |
| Yield | Tensile | Elongation |
| 620-880 | ≥460 | ≥20 |
| Harness（HB） | | |
| ≤260 | | |
| Dimension | | |
| Length | Width | Height |
| 405mm | 300mm | 175mm |
| Difficulty | | |

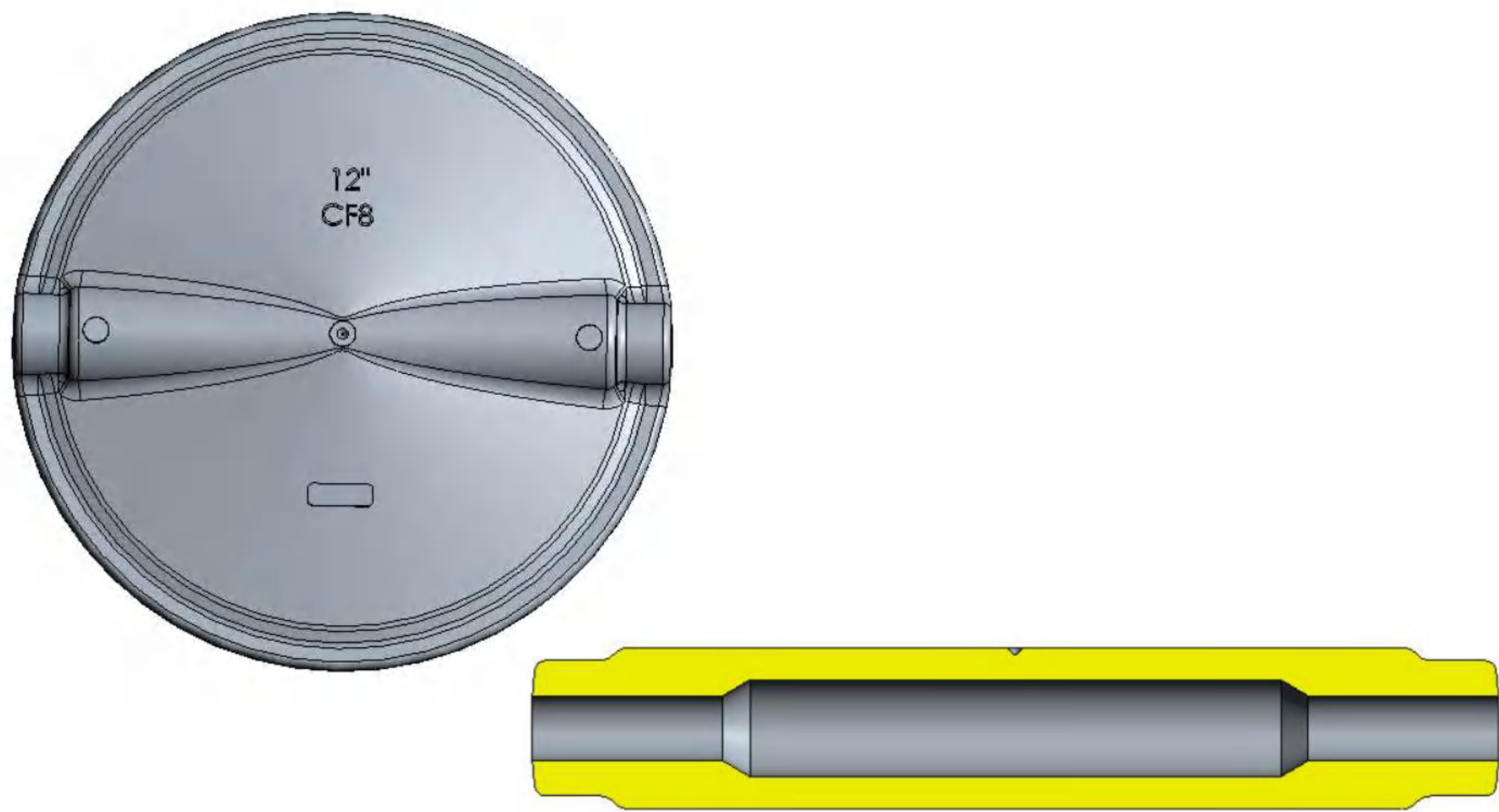


The product structure is complex and the pouring system is complicated. Because of the complex structure, the wax mold needs two parts of wax parts to be combined. It should be noted when melting ingredients, material is 1.4460, N elements are included in the chemical composition, and the amount of N elements should be noted. If N is added too much, gas will be generated during pouring, resulting in potential porosity defects on the surface of the casting.

PETROCHEMICAL ENGINEERING

These Are Representative And Technically Difficult Products.

| | | | |
|--|--------------------|------------|--|
| Type | DN300 BV-BLLT | | |
| Weight | 12.1kg | | |
| Material | CF8 | | |
| HT | Solution Treatment | | |
| Chemical Property | | | |
| C≤0.08 Mn≤2 P≤0.04 S≤0.04 Si≤2 Cr: 18-21 Ni: 8-11 | | | |
| Mechanical Property | | | |
| Yield | Tensile | Elongation | |
| ≥440 | ≥185 | ≥30 | |
| Hardness（HB） | | | |
| ≤183 | | | |
| Dimension | | | |
| Length | Width | Height | |
| 304mm | 304mm | 50mm | |
| Difficulty | | | |



The middle hole of the product is too long, and it is easy to have the defects of steel leakage and bulge. Because the outer circle of the product to polish, smelting to control the time to remove slag and deoxygenation to be long. It is very difficult to calibrate the casting, which may cause deviation of the outer circle during machining.

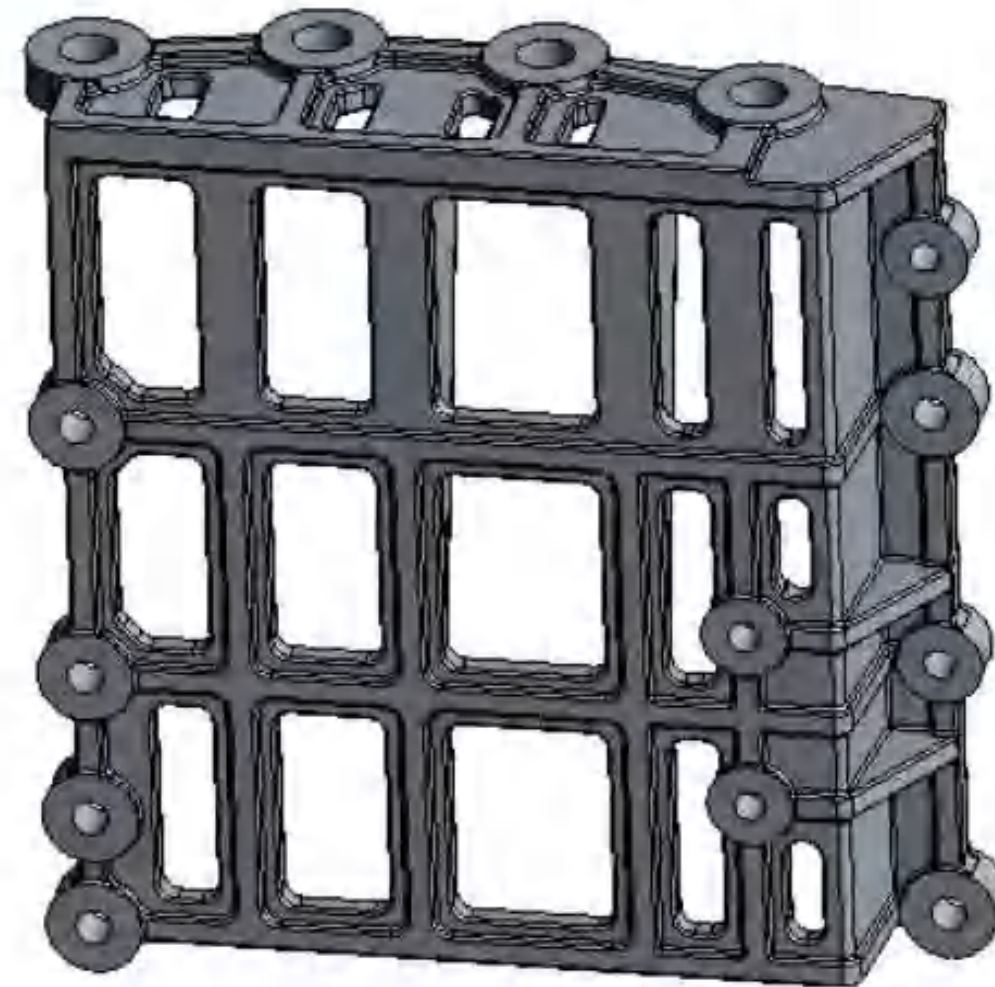
RAILWAY AND VEHICLE

These Are Representative And Technically Difficult Products.

| | | |
|---|---------------------|------------|
| Type | Fender Support Base | |
| Weight | 5.18kg | |
| Material | ZG270-500 | |
| HT | Normalizing | |
| Chemical Property | | |
| C≤0.4Si≤0.5Mn≤0.9P≤0.04 S≤0.04Ni≤0.3 Cr≤0.35 Mo≤0.2V≤0.05 Cu≤0.3 | | |
| Mechanical Property | | |
| Yield | Tensile | Elongation |
| ≥500 | ≥270 | ≥18 |
| Reduction Of Area | | |
| ≥25 | | |
| Dimension | | |
| Length | Width | Height |
| 275mm | 272mm | 78mm |

Difficulty

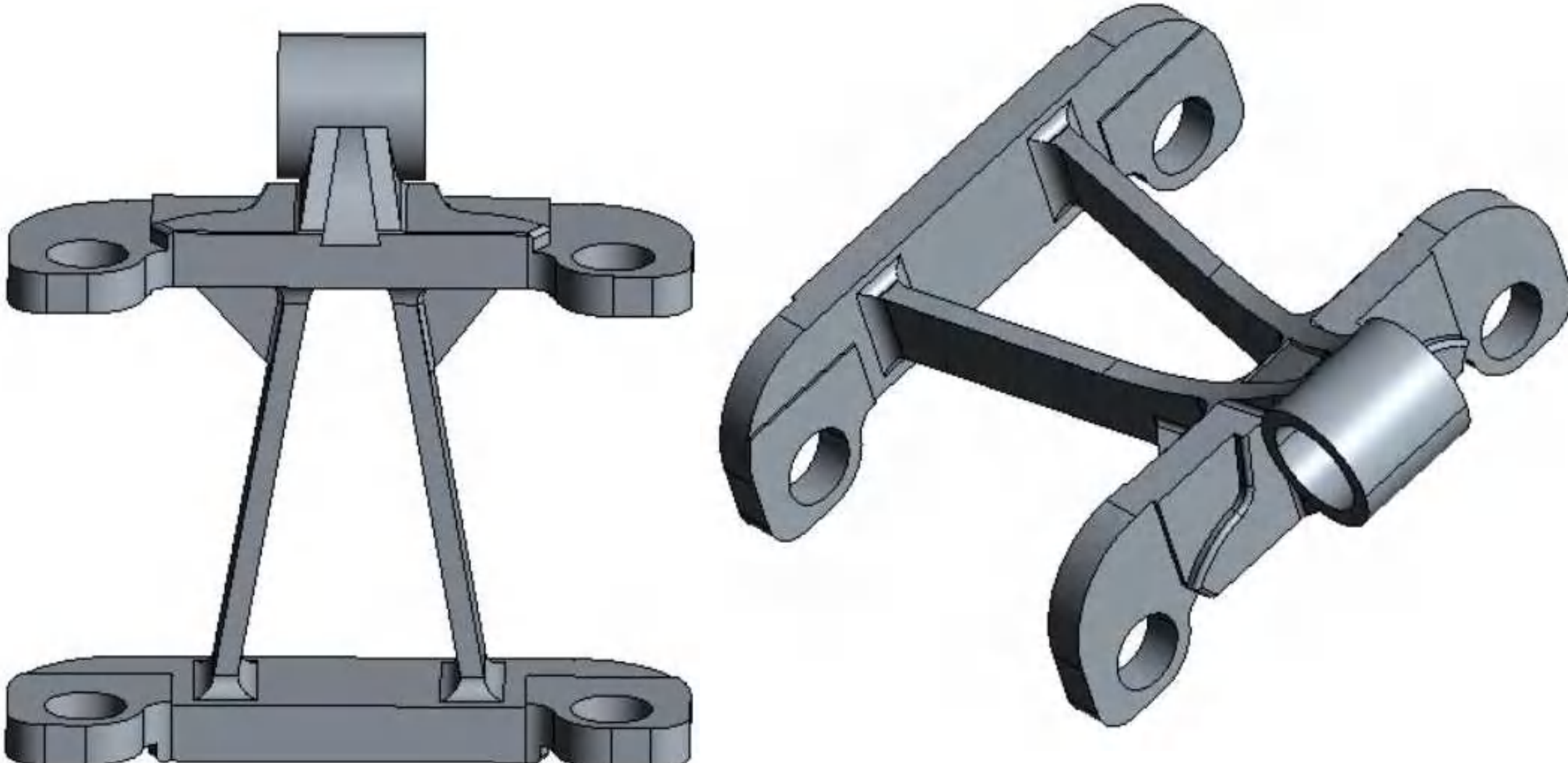
This product has many hot spots and complex process design. All the holes should be made through casting process. The defects of iron beans, steel penetration and shrinkage are easy to occur in the holes.



RAILWAY AND VEHICLE

These Are Representative And Technically Difficult Products.

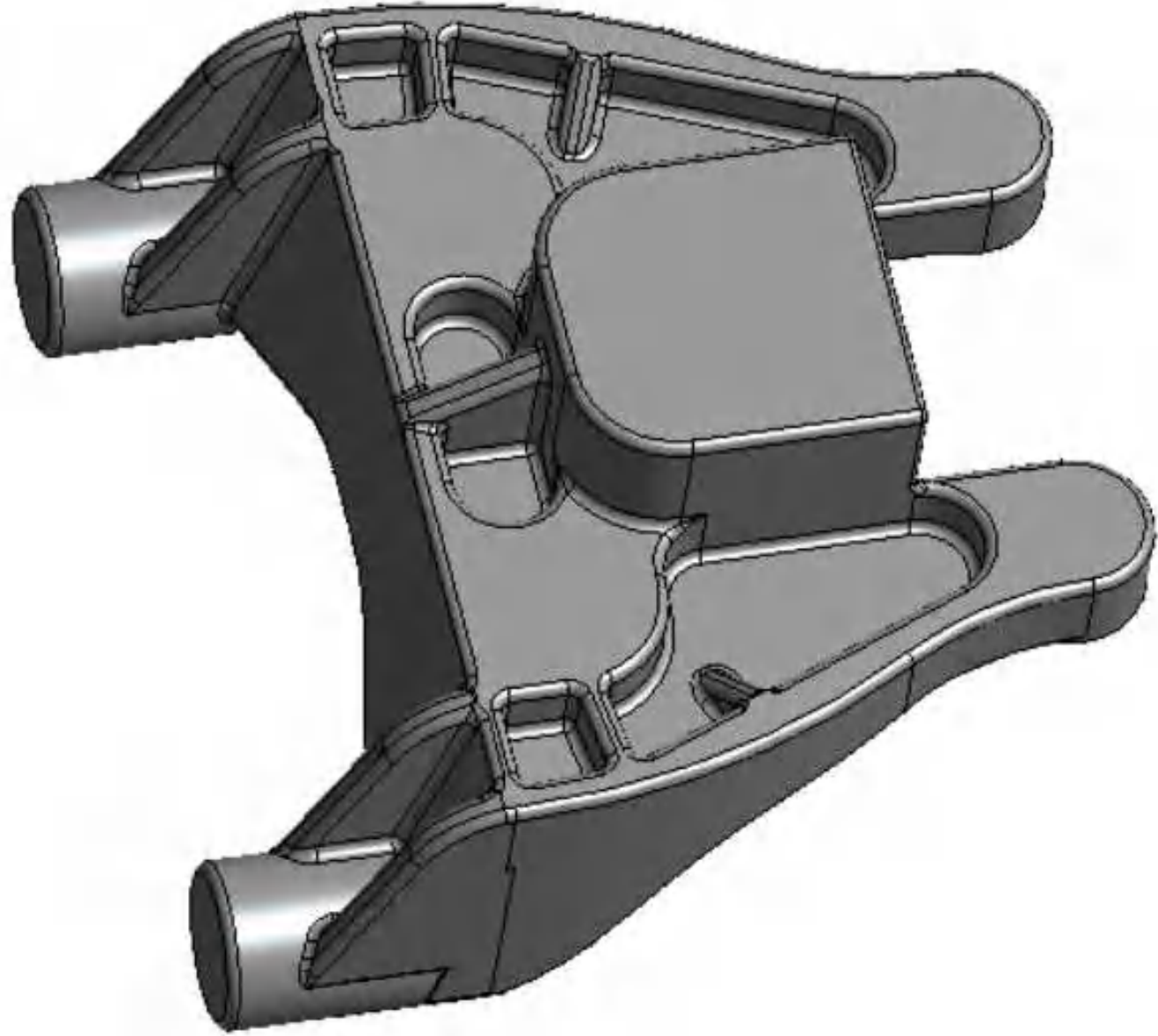

| | | | |
|--|-----------------|------------|--|
| Type | Hanging Bracket | | |
| Weight | 14kg | | |
| Material | ZG230-450 | | |
| HT | Normalizing | | |
| Chemical Property | | | |
| C≤0.3 Mn≤0.9 P≤0.04 S≤0.04 Si≤0.5Cu≤0.30 Ni≤0.30 Cr≤0.35 V≤0.05 Mo ≤0.2 | | | |
| Mechanical Property | | | |
| Yield | Tensile | Elongation | |
| ≥450 | ≥230 | ≥22 | |
| Reduction Of Area | | | |
| ≥32 | | | |
| Dimension | | | |
| Length | Width | Height | |
| 366mm | 350mm | 145mm | |
| Difficulty | | | |
| Complex structure, low process yield, difficult to correct, this is a safety component, all products to do magnetic powder detection and X-ray detection to ensure the surface and internal defects. | | | |

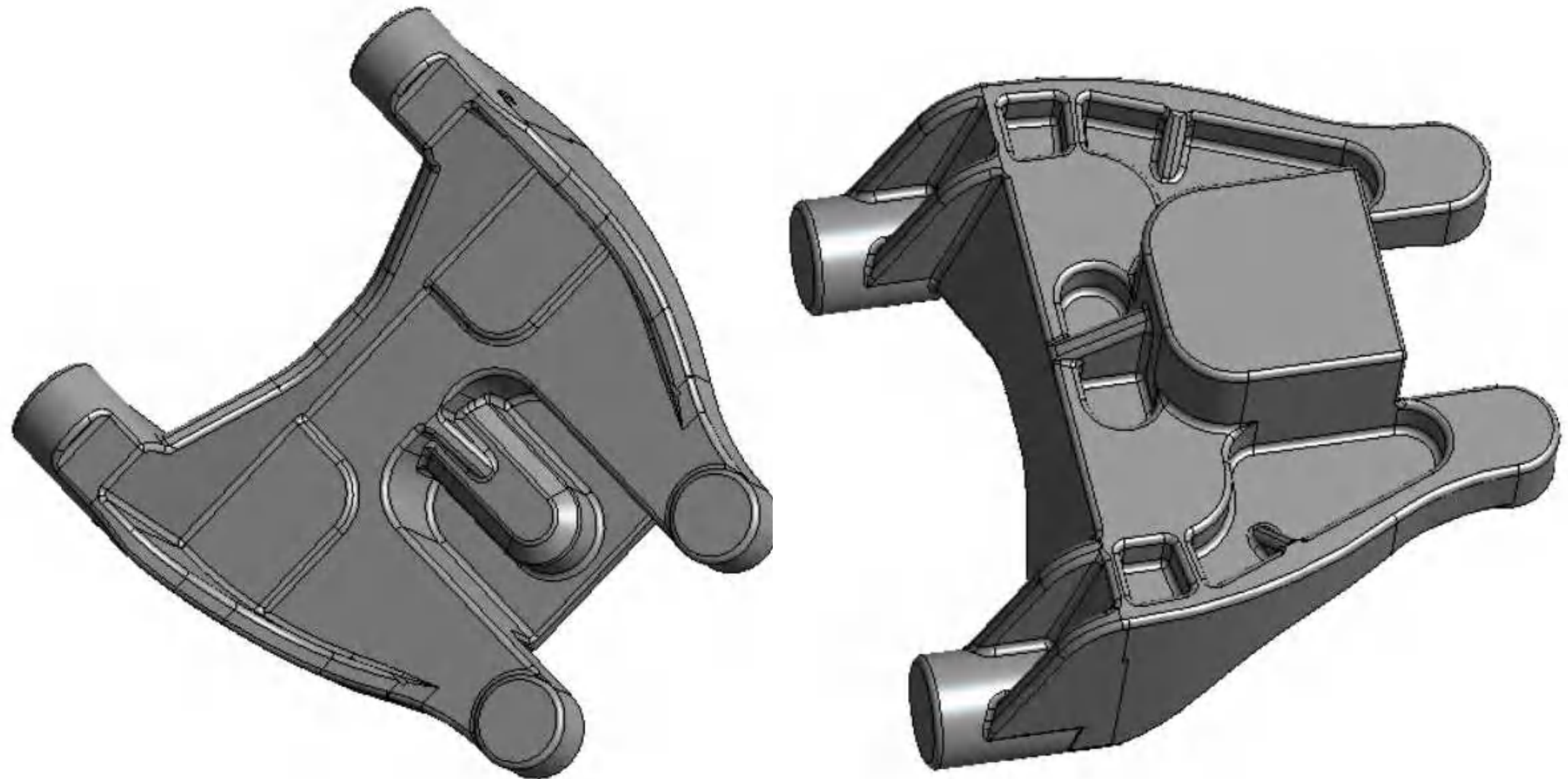


RAILWAY AND VEHICLE

These Are Representative And Technically Difficult Products.

| | | | |
|--|-------------------------|------------|--|
| Type | Hanging Bracket | | |
| Weight | 12.2kg | | |
| Material | 42CrMo | | |
| HT | Quenching and Tempering | | |
| Chemical Property | | | |
| C:0.38-0.45 Mn:0.6-1.0 Si:0.3-0.6 S:≤0.035 P≤0.035 Cr:0.8-1.2 Mo:0.2-0.3 Cu≤0.25 Ni≤0.03 V≤0.05 | | | |
| Mechanical Property | | | |
| Yield | Tensile | Elongation | |
| 740-880 | ≥510 | ≥12 | |
| Hardness HB | | | |
| 240-280 | | | |
| Dimension | | | |
| Length | Width | Height | |
| 366mm | 350mm | 145mm | |
| Difficulty | | | |
| This product has complex structure, complicated process design, low production rate, and is prone to defects such as iron beans in the groove. This product needs to be tempered and its hardness is required to be hb240-280. As the material is 42CrMo, it is easy to have cracks when it is tempered. | | | |






RAILWAY AND VEHICLE

These Are Representative And Technically Difficult Products.

| | | |
|---|---------------|-------------|
| Type | Brake Support | |
| Weight | 8.7kg | |
| Material | GS60 | |
| HT | Normalizing | |
| Chemical Property | | |
| 0.3-0.4 Mn:0.2-0.5 P≤0.04 S≤0.04 Si:0.3-0.6 | | |
| Mechanical Property | | |
| Yield | Tensile | Elongation |
| ≥600 | ≥300 | ≥15 |
| Reduction Of Area | Impact | Hardness HB |
| ≥21 | ≥27 | 170-230 |
| Dimension | | |
| Length | Width | Height |
| 382mm | 206mm | 163mm |
| Difficulty | | |
| The product is easy to be deformed. The drawings require strict dimensional tolerance. The tolerance shall not exceed 0.5mm when the casting is calibrated. | | |





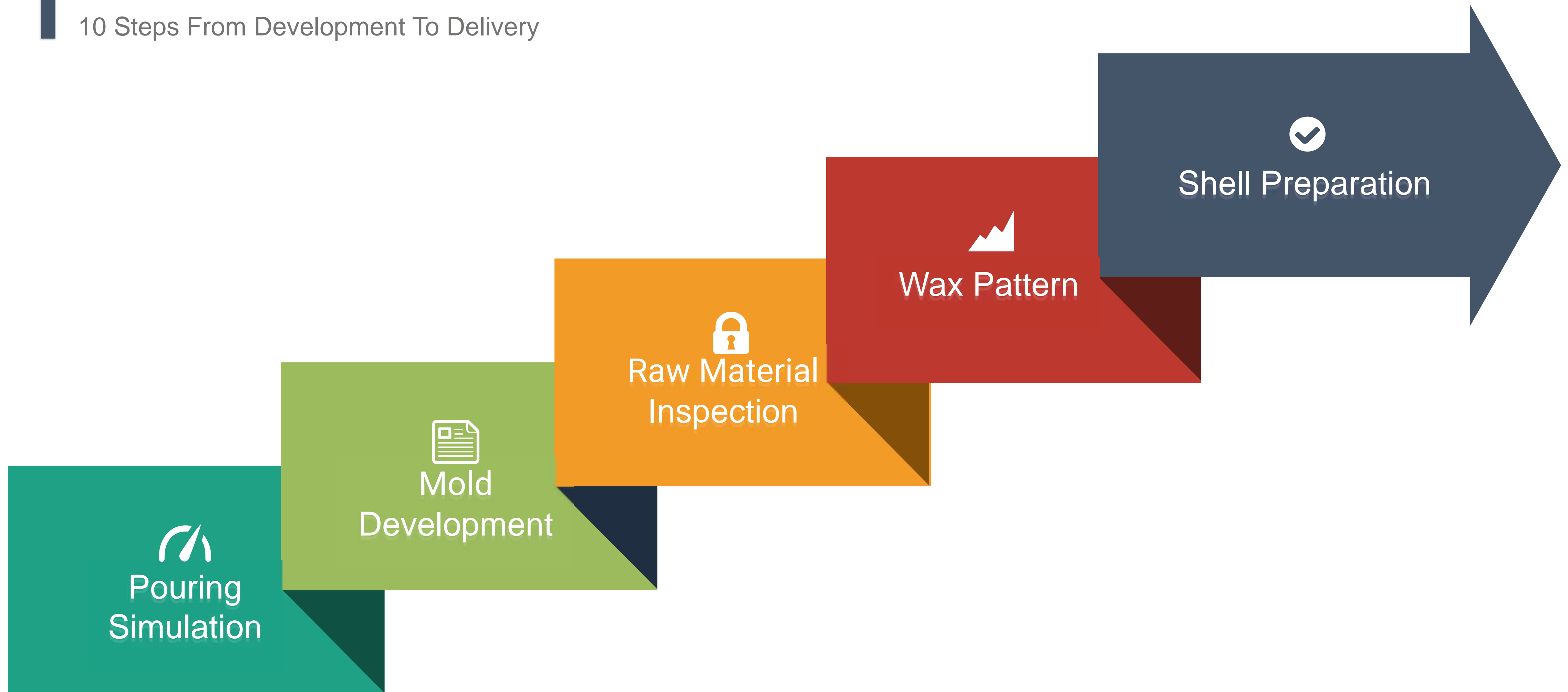
SERVICES & EQUIPMENT

Production Process All Have Strictly Control And Monitor For Quality And Output

丹东大王精铸有限公司
Dandong Dawang Steel castings Co., Ltd.

INVESTMENT CASTING PRODUCTION PROCESS

10 Steps From Development To Delivery



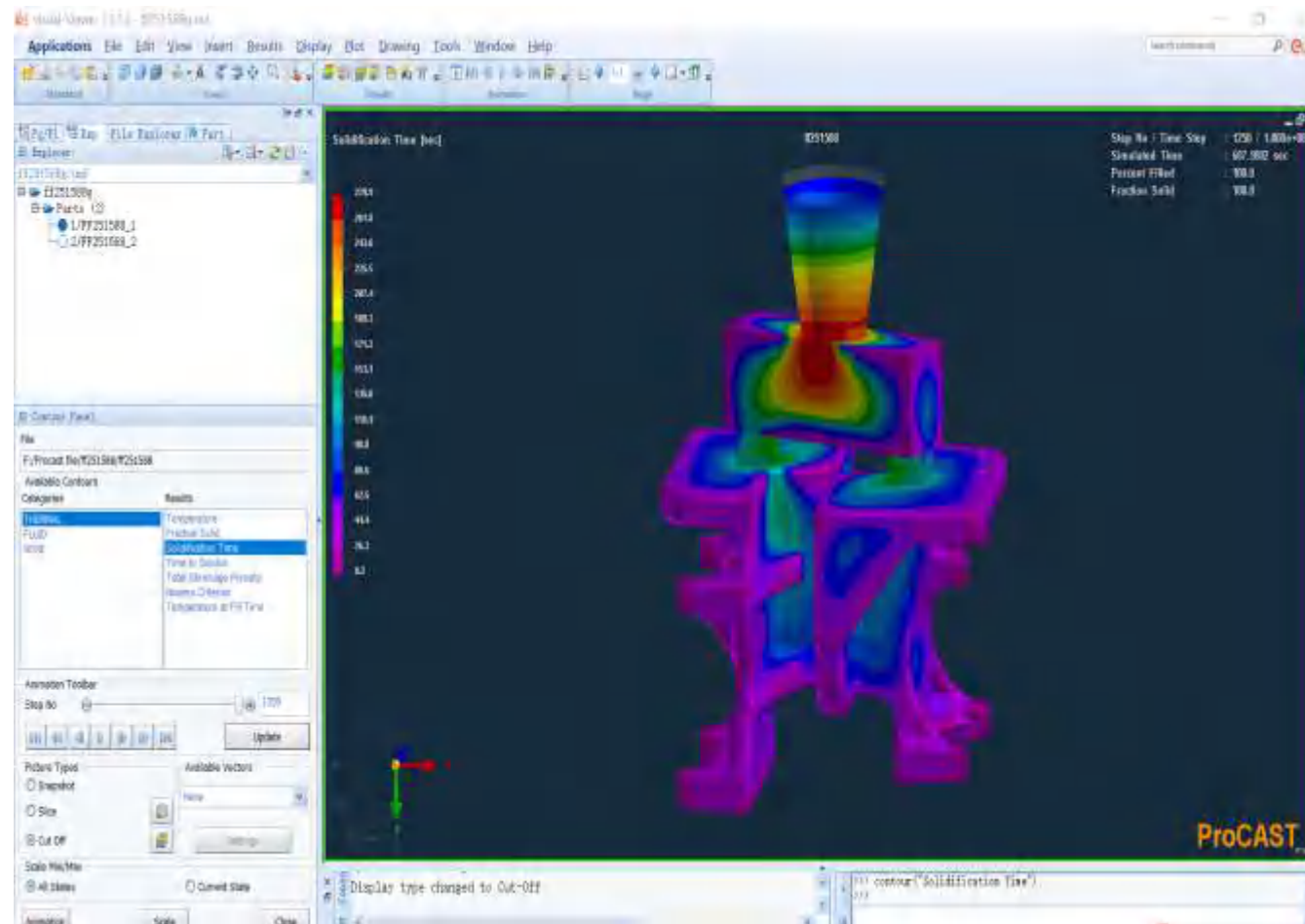
INVESTMENT CASTING PRODUCTION PROCESS

10 Steps From Development To Delivery



CASTIN GPRODUCTION FLOW & SERVICE

Pre-production: 1. Pouring System Simulation 2. Mold Development 3. Raw Material Purchasing



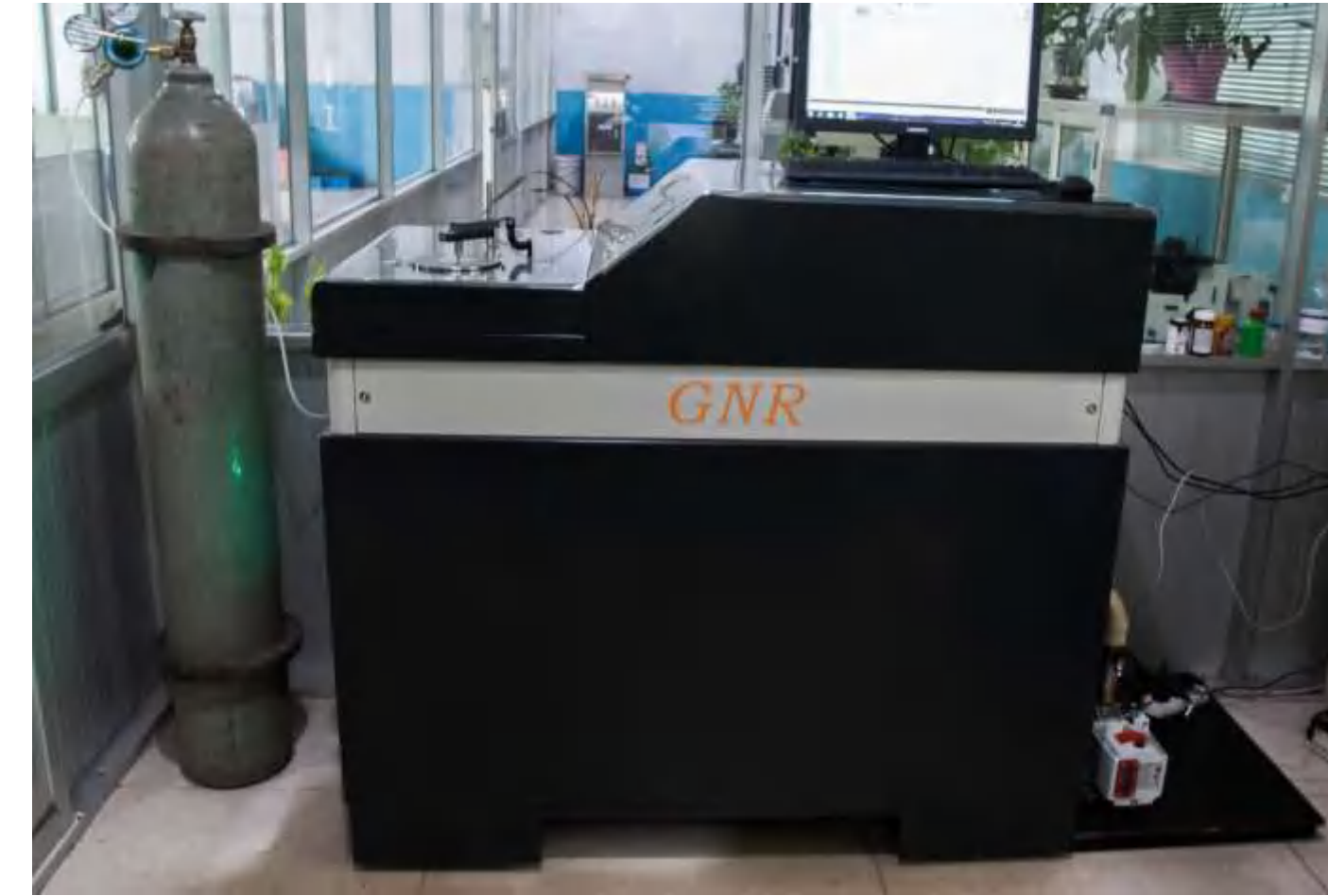
Pouring Simulation

A review meeting is held within the technical department to review the specification, determine the gating system and verify it through the simulation system software.



Mold Development

The technical department develops the mold, and the quality department uses the three coordinates to carry out the dimensional inspection.



Raw Material Inspection

The QA inspects the incoming materials. For the metal materials, inspection rate is 100%. Unqualified materials are strictly prohibited from entering the warehouse.

CASTIN GPRODUCTION FLOW & SERVICE

Production: 1. Wax Pattern Preparation 2. Shell Preparation



Wax Pattern

One shift for this step. If the production capability increases or customers have urgent demand, we can adjust shifts to guarantee supply. The workshop uses an automatic waxing machine to set the waxing pressure, holding time, etc.

制壳控制计划

JL-C01-09

| | | | | | | | | | | | |
|------------------------------|-----------|--|-----|--------------|--------|---------------------------|-----------------|---------|----------------|--------------|--------------|
| □样件 □试生产 ■生产 | | 主要联系人/电话 隋国江/13941584832 | | | | | 日期(编制) | | 日期(修订) | | |
| 控制计划编号 2013092001 | | 核心小组:隋国江, 宋兴广, 孙家成, 于晓娟, 隋冲, 杜安平, 邢余真, 韩智, 张永波 | | | | | 2013. 9. 20 | | 顾客工程批准/日期(如需要) | | |
| 零件号/最新更改水平 BB40FA-2401045 | | 供方/工厂批准/日期 | | | | | | | 顾客质量批准/日期(如需要) | | |
| 零件名称/描述 推力杆支架 | | 供方/工厂批准/日期 | | | | | | | 顾客质量批准/日期(如需要) | | |
| 供方/工厂 丹东大王精铸有限公司 | | 供方代码 | | 其它批准/日期(如需要) | | | | | 其它批准/日期(如需要) | | |
| 零件/过程编号 | 过程名称/操作描述 | 机器、装置、夹具、工装 | 特 性 | | 特殊特性分类 | 方 法 | | | | 反应计划 纠正措施 | |
| | | | 编号 | 产 品 | | 过 程 | 产 品/过程 规范/公差 | 评价/测量技术 | 取 样 | | 控制方法 |
| | | | | | | | | 容量 | 频率 | | |
| 10 | 面层涂料配制 | 搅拌机, 粘度计 | | 浆料状态 | | 浆料均匀无气泡、硬块 | 目测 | 100% | 连续 | 目视观察 | 按照复合工艺规程重新调整 |
| | | | | | 面层涂料配比 | 硅溶胶: 铝矾土=1:2.5 | 磅秤 | 100% | 每缸 | 制壳工序控制记录 | 按照复合工艺规程重新调整 |
| | | | | | 面层涂料粘度 | 30-33S | 粘度计 | 一次 | 每班 | 制壳工序控制记录 | 按照作业指导书重新调整 |
| | | | | | 铝矾土粒度 | 200 目 | 筛网 | 100% | 每批 | 制壳工序控制记录 | 按照复合工艺规程重新调整 |
| 20 | 面层沾浆 | 搅拌机 | | 模组沾浆状态 | | 模组不能卷进气体, 保证涂料时的均匀性, 不能堆积 | 目测 | 100% | 连续 | 目视观察 | 按照作业指导书重新调整 |
| 30 | 面层撒砂 | 淋砂机 | | 状态 | | 保证均匀性, 全覆盖表面 | 目测 | 100% | 连续 | 目视观察 | 按照作业指导书重新调整 |

Quality Control Proposal

The technical department develops workshop control plans and product operations, guide book, and there are specialized team who inspect each metric on a daily basis and keep them on record.



Shell Preparation

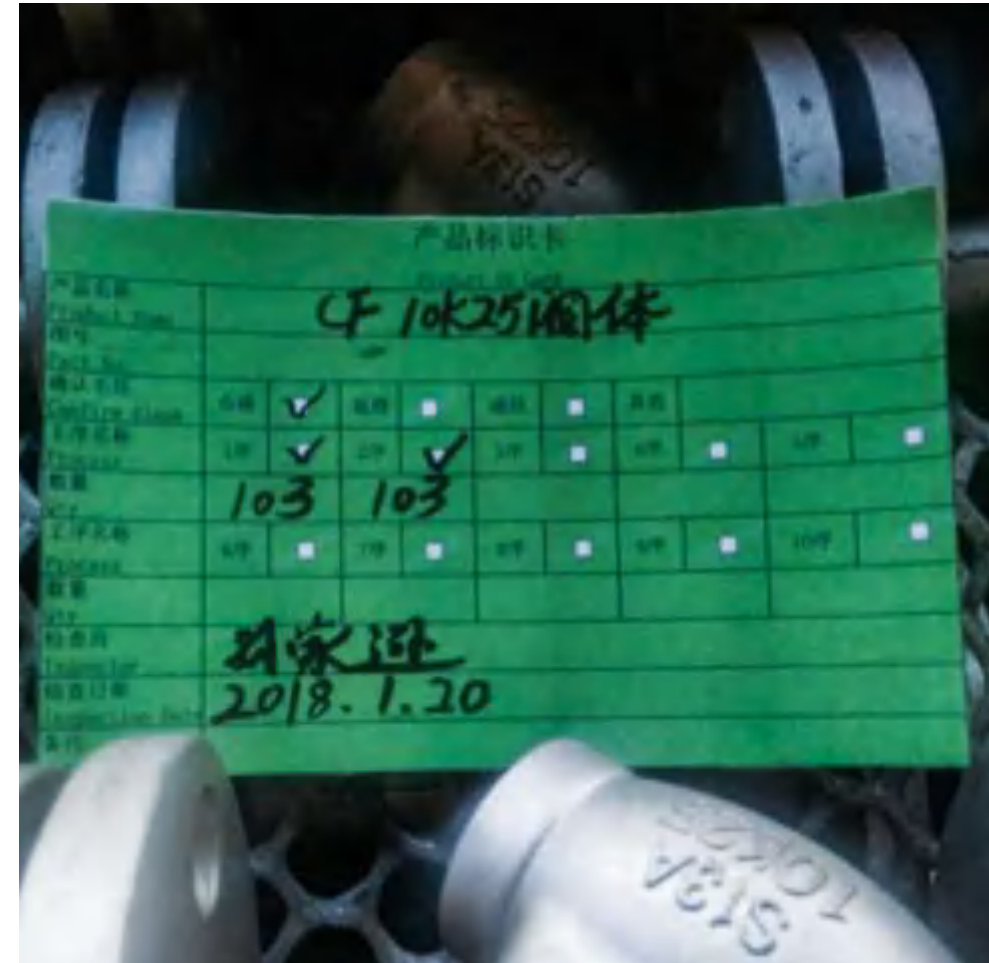
The workshop has 4 automatic production lines, able to produce 1800 sets of shells. We use hygrothermograph to monitor the humiture, use aerometer and PH to monitor the concentration of aluminum chloride liquor.

CASTIN GPRODUCTION FLOW & SERVICE

Inspection: 1. Inspection Method 2. Products' marks and records

MARKS

In order to prevent misuse of products, each workshop the product went through can be traced when necessary. All the signs are set; the workshop pays attention to metrics and fills in the records truthfully.



INSPECTION

All blank dimensions are checked using a CMM. We have rock well hardness machine, dynamic balance instrument, roundness meter, etc. The company's quality department has certified employees to do UT, PT, MT testing



制壳工序控制记录表

Shell Making Process Control Record Table

| | | | | | |
|--------------------------------|------------|------------------------|--------------------------------------|---------------|-----------------------|
| D日 | | | | | |
| 品名称 Product Name | 材质Material | 天气Weather 天气Weather | 晴 ☐ sunny | 阴 ☐ Cloudy | 雨 ☐ Rainy |
| | | 风向 | | 风力 | |
| 模料制备Mould material preparation | | | 实际执行工艺参数 Actual execution process | | |
| 料名称 Material Name | 型号Type | 单位Unit | 数量 Quantity | 项目Item | 标准值 Standard Value |
| 溶胶 | | | | 粉液比 | |
| 透粉 | | | | 粘度 s | |
| 溶胶 | | | | 粉液比 | |
| 钢土 | | | | 粘度 s | |
| | | | | 室温 °C | |
| | | | | 湿度 % | |
| | | | | 干燥时间 h | |

RECORDS

The QA inspects each workshop's use of signs. The technical department worker inspect the compliance of the records and the execution of the workshop process.

INSPECTION

Workers' self-inspection, inspector, first and last inspection, full inspection and other means. To ensure the processed products are qualified. In the initial inspection of the rough, the final inspection is carried out before the heat.

CASTIN GPRODUCTION FLOW & SERVICE

Shipping: 1. Warehouse 2. Packaging 3. Shipping



Warehouse

The warehouse manager follows the company's finished-product warehouse management guidelines, classifies and stores according to customer and product requirements, avoiding problems such as product mixing and scratching.



Packaging

The technical department reviews the packaging requirements and develops packaging instructions, especially for packaging of machined products, and uses a bubble film to isolate the products to ensure no bumps. Specific products can be specially packaged according to customers' requirements.



Shipping

The information of the transportation vehicle shall be checked in management systems, and the product shall be covered by the tarpaulin after the loading.

PRECISION CASTING EQUIPMENT

Automated Equipment To Increase Production Efficiency And Product Quality.



Wax Injection Machines

There are 12 new double-station wax injection machines in King Casting Factory and 10 new double-station wax injection machines in Sanhe Casting Factory to ensure quality and production capacity.



Dewaxing Devices

The dewaxing model shell adopts steam dewaxing, and has a complete set of dewaxing and recovery processing system . Safety and environmental protection.



PRECISION CASTING EQUIPMENT

Automated Equipment To Increase Production Efficiency And Product Quality.



Manipulator

DW has 6 mechanical shell making machines, which are responsible for the shell making of 6 production lines with stable quality and high efficiency.



Air Drying Equipment

The whole workshop is constant temperature and humidity, all-weather detection system, to ensure that the shell is dry and not cracking.



PRECISION CASTING EQUIPMENT

Automated Equipment To Increase Production Efficiency And Product Quality.



Shell Roasting

Tunnel kiln adopts natural gas combustion heating, safety, environmental protection and high efficiency, automatic monitoring of internal and external temperature and gas data.



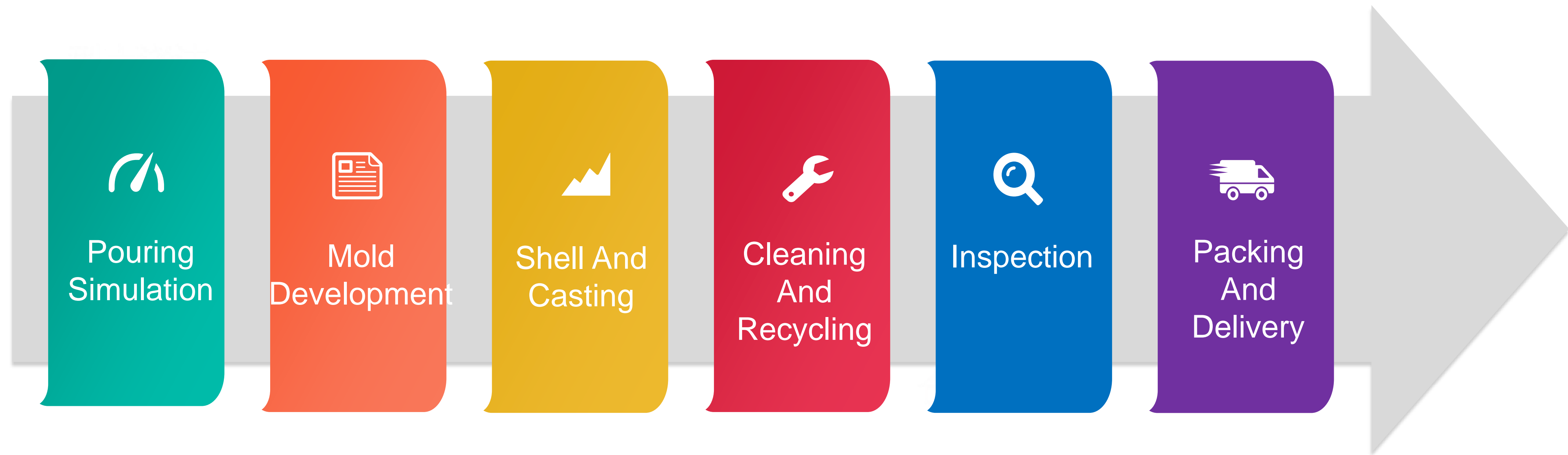
Smelting Equipment

National top medium frequency furnace, higher energy conversion efficiency, safety alarm system real-time monitoring furnace wall thickness, soot dust removal system to ensure the workshop environment.



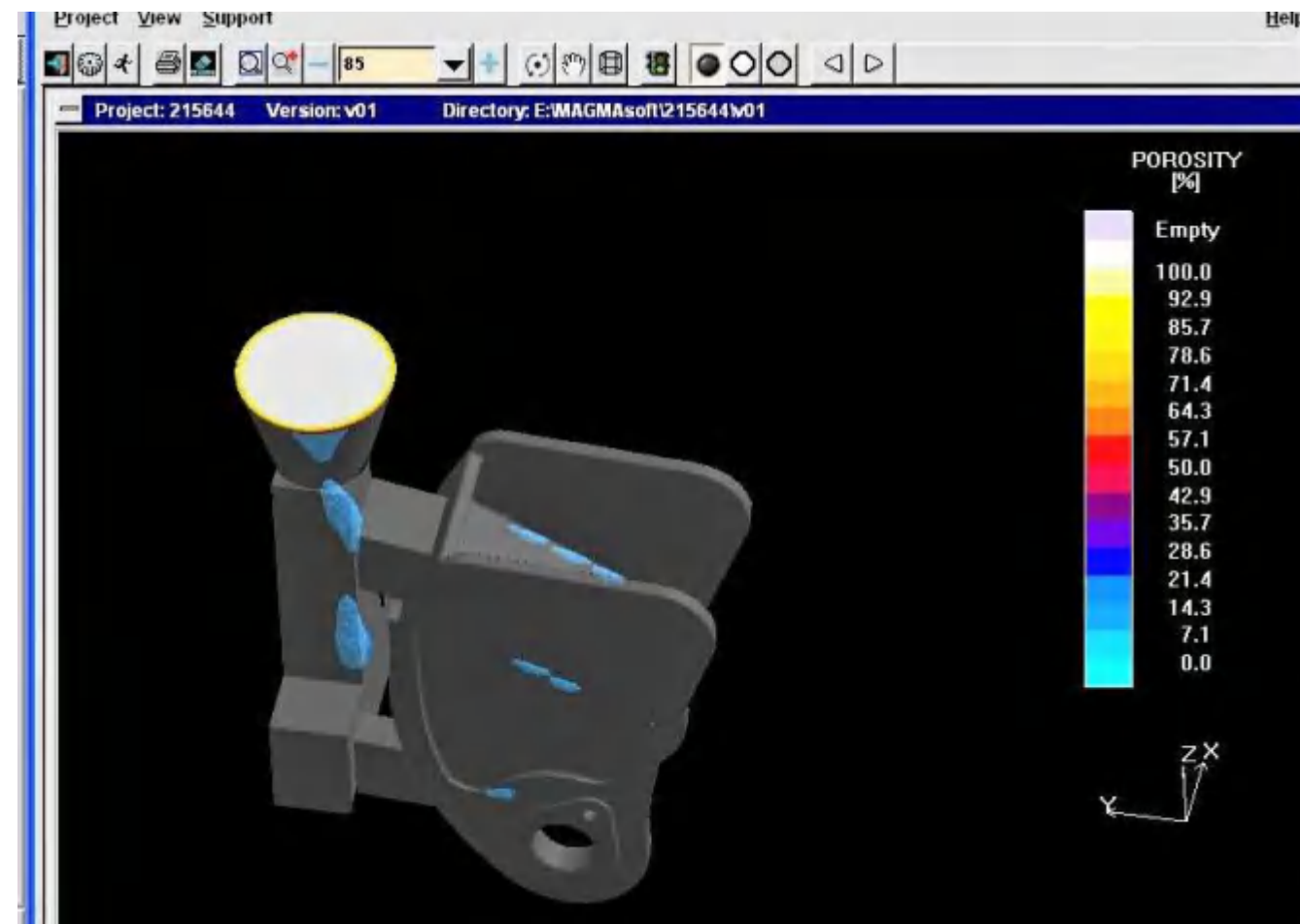
SAND CASTING PRODUCTION PROCESS

6 Steps From Development To Delivery



SAND CASTING PROCESS AND SERVICE

Production :1. Pouring System Simulation 2. Mold Development 3. Shell And Casting



Pouring System Simulation

The technical department holds an internal review meeting, reviews the specific details, determines the gating system and verifies it through the simulation system software Magma or ProCAST.



Mold Development

The technical department discloses the technology to develop the mold, and the quality department uses the three-dimensional coordinate to check the size, and it can be used in the workshop after it is judged qualified.



Shell And Casting

Two 1T electric furnaces work at the same time. Molten steel is tested chemical composition on each furnaces to ensure quality.

SAND CASTING PROCESS AND SERVICE

Production : 4. Cleaning And Recycling 5. Inspection 6. Packing And Delivery



Cleaning And Recycling

Selection of excellent pearl sand technology, shell easy to clean and can be recycled.



Inspection

According to the customers' requirements, to do various quality inspection strictly.



Packing And Delivery

After making an inventory, delivery.

SAND CASTING EQUIPMENT

Automated Equipment To Improve Production Efficiency And Product Quality



Melting Furnace

—
2 medium-frequency induction furnaces, high efficiency, and equipped with dust treatment system.



Automatic Molding Line

—
An automatic molding line, using new technology and new materials, environmental protection and energy saving.



SAND CASTING EQUIPMENT

Automated Equipment To Improve Production Efficiency And Product Quality



Shell Mold Machine

Shell mold equipment is a kind of sand casting equipment, which can produce sand castings with low weight.



Clean Up The Sand

Clear the sand from the sandbox and refine it further.



Sand Reclamation

The advanced sand treatment system can recycle and reuse sand materials, saving energy and environmental protection.

MACHINING WORKSHOP

Complete Equipment And Professional Team Guarantee High-precision Product Requirements.



Vertical Machining Center

The company has 13 vertical machining centers



Processing Workshop

The workshop has 6 horizontal machining centers, 13 vertical machining centers, 13 CNC lathes, two large boring machines, as well as general milling machine drilling machine and other equipment.



Horizontal Machining Center

The company has 6 horizontal machining centers

MACHINING WORKSHOP

Complete Equipment And Professional Team Guarantee High-precision Product Requirements.



Large Equipment

KH63G horizontal machining center 、 130 Large boring machine can be used for machining large castings 。



Large Equipment

110 large boring machine, 1.6m large vertical lathe can be used for machining large castings.



QUALITY INSPECTION EQUIPMENT

According To Customer Quality Requirements, a Variety Of Testing Solutions Are Available.



Hardness Tester

The company has Brinell hardness, Rockwell hardness tester, can provide customers with product hardness test.



CMM

The company has two sets of three coordinates, respectively for casting blank and processed products dimension inspection.



Tensile Testing Machine

It is used for tensile, compression, bending as well as other special tests for various metal material samples and products.

QUALITY INSPECTION EQUIPMENT

According To Customer Quality Requirements, a Variety Of Testing Solutions Are Available.



Impact Testing Machine

The company has 2 impact testing machines for metal Charpy impact test, to obtain the impact absorption work of metal samples.



MT

The equipment has manual and automatic control, which is suitable for quality inspection of large and small castings.



The Spectrometer

The company has 3 spectrometers, to meet all metal detection needs, can detect low nitrogen, low oxygen.

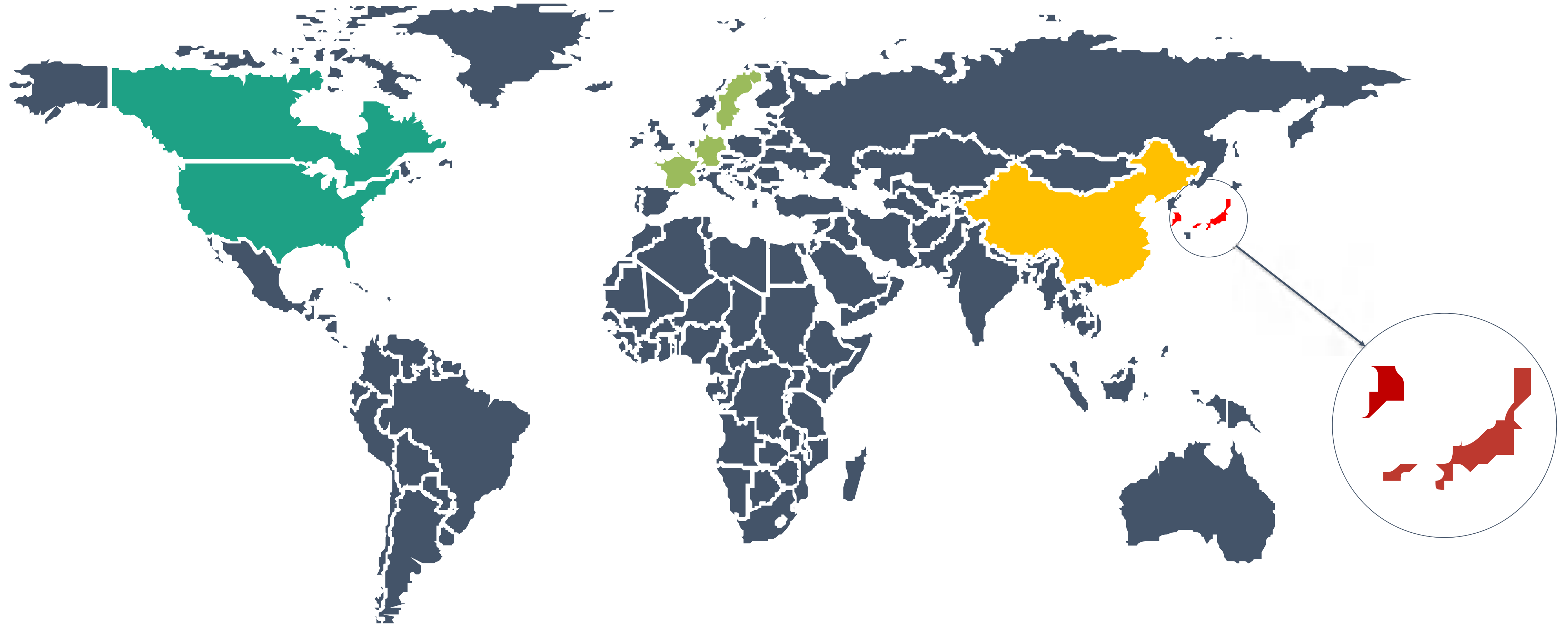


CUSTOMERS MAP

Most Customers Are Fortune 500 Firms

CUSTOMERS MAP

90% Of Its Products Are Exported



North America 40%

Europe 20%

Japan 30%

China 10%

Our Customers

Most Customers Are Fortune 500 Firms

LIEBHERR



HITACHI
Inspire the Next

KOMATSU



JOHN DEERE

azbil

Kubota

Pinotti

Tigercat



TADANO

Dawang



OUR CERTIFICATION

ISO、TUV、IATF16949, etc.

THREE STANDARD SYSTEM CERTIFICATION

The Latest System Certification Certificate



THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

CQM as an IQNet Partner hereby states that the organization:

Dandong Dawang Steel Castings Co.,Ltd.
Certification Add: Xiaozhu Group, Dawang Village, Pusamiao Town, Donggang City, Liaoning, P.R.China
Post code: 118314

for the following scope:

Production of common cast steel parts, precision steel casting and common machining component

For the subsidiary site and certification scope to the attachment
has implemented and maintains a
Quality Management System
which fulfils the requirements of the following standard:

ISO 9001:2008
Issued on: 2017-08-01
First issued on: 2015-08-03

for the validity date, please refer to the original certificate* issued by CQM

Registration Number: CN-00215Q14399R0M



Michael Drechsel
President of IQNet

Ji XiaoDong
General Manager of CQM

IQNet Partners**
AENOR Spain AFNOR Certification France Vincotte Belgium APCER Portugal CCC Cyprus
CISQ Italy CQC China CQM China CQS Czech Republic Cro Cert Croatia DQS Holding GmbH Germany
FCV Brazil FONDONORMA Venezuela ICONTEC Colombia IMNC Mexico Inspecta Certification Finland INTECO Costa Rica
IRAM Argentina JQA Japan KQF Korea MIRTEC Greece MSZT Hungary Nemko AS Norway NSAI Ireland PCBC Poland
Quality Austria Austria RR Russia SIGE Mexico SII Israel SIQ Slovenia SIRM QAS International Malaysia
SQS Switzerland SRAC Romania TEST St Petersburg Russia TSE Turkey YUQS Serbia
IQNet is represented in the USA by: AFNOR Certification, CISO, DQS Holding GmbH and NSAI Inc.

*This attestation is directly linked to the IQNet Partner's original certificate and shall not be used as a stand alone document



THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

CQM as an IQNet Partner hereby states that the organization:

Dandong Dawang Steel Castings Co.,Ltd.
Certification Add: Xiaozhu Group, Dawang Village, Pusamiao Town, Donggang City, Liaoning, P.R.China
Post code: 118314

for the following scope:

Production of precision steel casting and common machining component and related management activities

has implemented and maintains a
Occupational health and safety Management System
which fulfils the requirements of the following standard:

OHSAS 18001:2007
Issued on: 2017-08-01

for the validity date, please refer to the original certificate* issued by CQM

Registration Number: CN-CQM17S11521R1M



Michael Drechsel
President of IQNet

Ji XiaoDong
General Manager of CQM

IQNet Partners**
AENOR Spain AFNOR Certification France Vincotte Belgium APCER Portugal CCC Cyprus
CISQ Italy CQC China CQM China CQS Czech Republic Cro Cert Croatia DQS Holding GmbH Germany
FCV Brazil FONDONORMA Venezuela ICONTEC Colombia IMNC Mexico Inspecta Certification Finland INTECO Costa Rica
IRAM Argentina JQA Japan KQF Korea MIRTEC Greece MSZT Hungary Nemko AS Norway NSAI Ireland PCBC Poland
Quality Austria Austria RR Russia SIGE Mexico SII Israel SIQ Slovenia SIRM QAS International Malaysia
SQS Switzerland SRAC Romania TEST St Petersburg Russia TSE Turkey YUQS Serbia
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THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

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Dandong Dawang Steel Castings Co.,Ltd.
Certification Add: Xiaozhu Group, Dawang Village, Pusamiao Town, Donggang City, Liaoning, P.R.China
Post code: 118314

for the following scope:

Production of precision steel casting and common machining component and related management activities

has implemented and maintains a
Environmental Management System
which fulfils the requirements of the following standard:

ISO 14001:2004
Issued on: 2017-08-01

for the validity date, please refer to the original certificate* issued by CQM

Registration Number: CN-00217E21757R1M



Michael Drechsel
President of IQNet

Ji XiaoDong
General Manager of CQM

IQNet Partners**
AENOR Spain AFNOR Certification France Vincotte Belgium APCER Portugal CCC Cyprus
CISQ Italy CQC China CQM China CQS Czech Republic Cro Cert Croatia DQS Holding GmbH Germany
FCV Brazil FONDONORMA Venezuela ICONTEC Colombia IMNC Mexico Inspecta Certification Finland INTECO Costa Rica
IRAM Argentina JQA Japan KQF Korea MIRTEC Greece MSZT Hungary Nemko AS Norway NSAI Ireland PCBC Poland
Quality Austria Austria RR Russia SIGE Mexico SII Israel SIQ Slovenia SIRM QAS International Malaysia
SQS Switzerland SRAC Romania TEST St Petersburg Russia TSE Turkey YUQS Serbia
IQNet is represented in the USA by: AFNOR Certification, CISO, DQS Holding GmbH and NSAI Inc.

*This attestation is directly linked to the IQNet Partner's original certificate and shall not be used as a stand alone document



THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

CQM as an IQNet Partner hereby states that the organization:

Annex (1) to IQNet Certificate Number CN- 00215Q14399R0M

| Organization | Certification Address(Post Code) | Product and its process |
|---|---|------------------------------------|
| The Sand Casting Workshop of Dandong Dawang Steel Castings Co.,Ltd. | Xujiatun Village, Pusamiao Town, Donggang City, Liaoning, P.R.China(118384) | Production of common steel casting |

(This annex is effective only using with home page)

Issued on: 2017-08-01
First issued on: 2015-08-03

for the validity date, please refer to the original certificate* issued by CQM



Michael Drechsel
President of IQNet

Ji XiaoDong
General Manager of CQM

IQNet Partners**
AENOR Spain AFNOR Certification France Vincotte Belgium APCER Portugal CCC Cyprus
CISQ Italy CQC China CQM China CQS Czech Republic Cro Cert Croatia DQS Holding GmbH Germany
FCV Brazil FONDONORMA Venezuela ICONTEC Colombia IMNC Mexico Inspecta Certification Finland INTECO Costa Rica
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Quality Austria Austria RR Russia SIGE Mexico SII Israel SIQ Slovenia SIRM QAS International Malaysia
SQS Switzerland SRAC Romania TEST St Petersburg Russia TSE Turkey YUQS Serbia
IQNet is represented in the USA by: AFNOR Certification, CISO, DQS Holding GmbH and NSAI Inc.

*This attestation is directly linked to the IQNet Partner's original certificate and shall not be used as a stand alone document
*The list of IQNet partners is valid at the time of issue of this certificate. Updated information is available under www.iqnet-certification.com

TUV CERTIFICATION

It Is Valid Until 2021

TUV NORD

ZERTIFIKAT

Qualitätsmanagementsystem für Werkstoffhersteller
nach Druckgeräterichtlinie 2014/68/EU

Zertifikat-Nr.: 07/202/9030/WZ/1860/17

Name und Anschrift des Herstellers: Dandong Dawang Steel Castings Co., Ltd.
Dawang Village, Pusamiao Town, Donggang City,
Dandong City, Liaoning Province, 118314, P. R. China

Hiermit wird bescheinigt, dass der Hersteller ein Qualitätsmanagementsystem in Bezug auf Werkstoffe eingeführt hat und dies anwendet. Dieses QM-System wurde gemäß der Richtlinie 2014/68/EU, Anhang I, Nummer 4.3 in Bezug auf die im Geltungsbereich genannten Werkstoffe einer spezifischen Überprüfung unterzogen

Geprüft nach Richtlinie 2014/68/EU: QM-System in Bezug auf Werkstoffe,
EN 764-5, Abschnitt 4.2 und AD2000-Merkblatt W0

Zertifizierung-Az.: 8114380395

Auditbericht-Nr.: 9080AW_1860/17

Geltungsbereich (Produkt / Werkstoff): Gußstücke aus ferritischen und austenitischen Stählen

Fertigungsstätte: S. Adresse

Das Zertifikat ist gültig bis: Februar 2020

Nur gültig in Verbindung mit einem gültigen Zertifikat nach EN ISO 9001.

Hamburg, 14.02.2017



Notifizierte Stelle (0045)
für Druckgeräte

Dipl.-Ing. Marrek
TUV NORD Systems GmbH & Co. KG
Große Bahnstraße 31, D-22525 Hamburg

Mitglied der



Anlage: Geltungsbereich

Region: STW-HH
Technikzentrum
D - 22525 Hamburg

Tel. +49 (0) 40 8557 2368
Fax +49 (0) 40 8557 2710
e-mail technikzentrum@tuv-nord.de

Zertifikat QM Werkstoffhersteller DGR, deu, Rev.0/07.16

TUV NORD

CERTIFICATE

Quality-Assurance System for material manufacturer
according to directive 2014/68/EU

Certificate no.: 07/202/9030/WZ/1860/17

Name and address of the manufacturer: Dandong Dawang Steel Castings Co., Ltd.
Dawang Village, Pusamiao Town, Donggang City,
Dandong City, Liaoning Province, 118314, P. R. China

Herewith we certify that the manufacturer has established and applies a quality-assurance system related to the material. This QA System has been subjected to a specific assessment acc. to directive 2014/68/EU, annex I, point 4.3 with regard to the materials mentioned in the scope of approval.

Approved acc. to directive 2014/68/EU: QA-System in relation to materials,
EN 764-5, section 4.2 and AD2000-Merkblatt W0

Certification file no.: 8114380395

Audit report file no.: 9080AW_1860/17

Scope of approval (product / material): Castings of ferritic and austenitic steels

Production site: See address

The certificate is valid until: February 2020

Only valid with a certificate in force acc. to EN ISO 9001

Hamburg, 14.02.2017



Notified Body (0045)
for Pressure Equipment

Dipl.-Ing. Marrek
TUV NORD Systems GmbH & Co. KG
Große Bahnstraße 31, D-22525 Hamburg

Member of



Annex: scope of approval

Region: STW-HH
Technikzentrum
D - 22525 Hamburg

Phone +49 (0) 40 8557 2368
Fax +49 (0) 40 8557 2710
e-mail technikzentrum@tuv-nord.de

Certificate QA material manufacturer PED eng, Rev.0/07.16

TUV NORD

ZERTIFIKAT

Die TÜV NORD Systems GmbH & Co. KG

bescheinigt, dass das Unternehmen

Dandong Dawang Steel Castings Co., Ltd.
Dawang Village, Pusamiao Town, Donggang City,
Dandong City, Liaoning Province,
118314 P. R. China

als Werkstoffhersteller gemäß

AD 2000-Merkblatt W0

überprüft und anerkannt wurde.

Zertifikat-Nr.: 07/203/9030/WP/1860/17

Der Geltungsbereich der Überprüfung
ist der Anlage „Geltungsbereich“ zu entnehmen.
Aktenzeichen: 8114380395

Die Firma verfügt über folgende Voraussetzungen:
Einrichtungen, die eine sachgemäße und dem Stand der Technik entsprechende Herstellung und Prüfung gestatten, eine Qualitätssicherung, die eine den Technischen Regeln entsprechende Herstellung und Prüfung der in unserem Geltungsbereich genannten Erzeugnisformen sicherstellt, fachkundiges Aufsichts- und Prüfpersonal

Dieses Zertifikat ist gültig bis

Februar 2020

Hamburg, 14.02.2017



Marrek
TUV NORD Systems GmbH & Co. KG

TUV NORD Systems GmbH & Co. KG • Technikzentrum •
Große Bahnstraße 31 • 22525 Hamburg
Telefon (040) 8557-2368 • Fax (040) 8557-2710 • E-mail: technikzentrum@tuv-nord.de

AD2000 W0 Zertifikat FB-320, DE, Rev.06, 2016-12

TUV NORD

CERTIFICATE

The TÜV NORD Systems GmbH & Co. KG

certifies that the company

Dandong Dawang Steel Castings Co., Ltd.
Dawang Village, Pusamiao Town, Donggang City,
Dandong City, Liaoning Province,
118314 P. R. China

has been verified and recognized as material manufacturer according to

AD 2000-Merkblatt W0

Certificate-No.: 07/203/9030/WP/1860/17

The scope of approval is available in the annex
"scope of approval".
File no.: 8114380395

The company fulfils the following essential requirements:
Facilities permitting appropriate manufacturing and inspection corresponding to the present technical standards, quality assurance, which guarantees that manufacturing and inspection of products stated in our scope of approval are carried out in accordance with technical regulations, competent supervising and inspecting personnel.

This certificate is valid until

February 2020

Hamburg, 14.02.2017

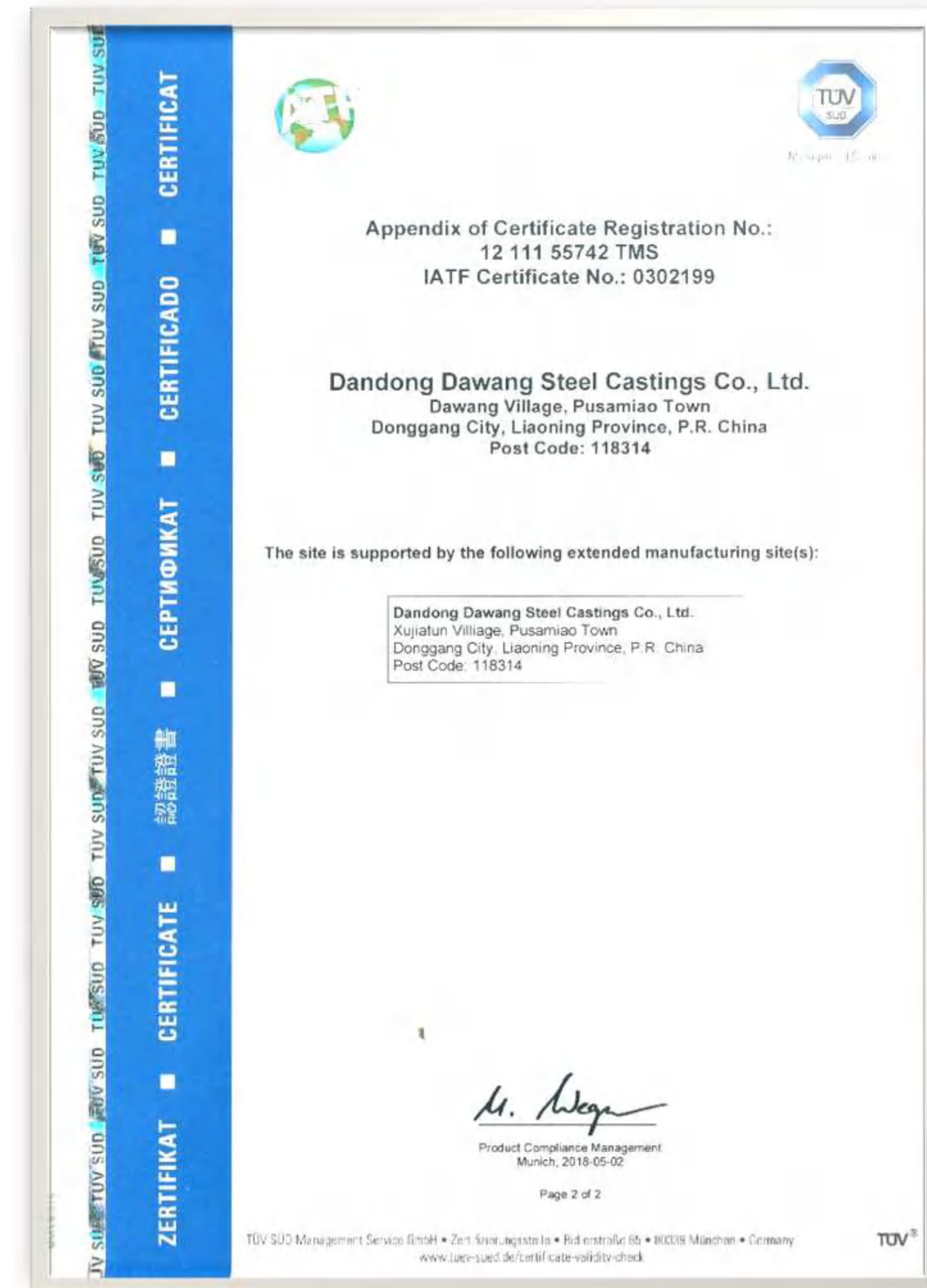


Marrek
TUV NORD Systems GmbH & Co. KG

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Telephone +49 40 8557-0 • Fax +49 40 8557-2710 • E-mail: technikzentrum@tuv-nord.de

AD2000 W0 Zertifikat FB-320, EN, Rev.05, 2016-07

Automotive Industry Management System Standard



ENVIRONMENTAL PERMITS

Comply With Environmental Policy Requirements

其他意见:

一、丹东大王精铸有限公司建设项目已取得东港市环境保护局批复，并给予环保验收。

二、建设项目生产工序均已按照环评文件要求配备环保设施。

三、《检测报告》符合技术规范要求，数据可靠，可以作为本项目达标评估的依据。

四、整改要求:

(1) 需要补充企业突发环境事件应急预案并及时备案。

(2) 食堂安装油烟净化装置，并由排气筒引至屋顶排放。

(3) 需要尽快落实排污许可证办理。

(4) 企业应建立完善的环保信息公开平台。

(5) 参照《排污单位自行监测技术指南 总则》相关监测内容、监测频次及采样要求，自行开展或委托监测。

综上，从环境污染治理角度出发，丹东大王精铸有限公司建设项目能实现污染源全面达标排放，建议建设单位按照整改意见进行整改。

第三方机构（盖章） 或专家签字

18 年 6 月 11 日

工业污染源全面达标排放评估报告（初稿）

所属行业：C3391 黑色金属铸造

单位名称（盖章） 丹东大王精铸有限公司

填 表 人 报 出 日 期： 2018 年 6 月 11 日

九、环保部门评估意见审核

| | | |
|------------------|--|---|
| 环保部门近三年行政处罚情况 | 1 | 无 |
| | 2 | 无 |
| | 3 | 无 |
| 整改落实情况 | 1 | 无 |
| | 2 | 无 |
| | 3 | 无 |
| 环境信访、群众举报及处理整改情况 | 无 | |
| 应急预案制定及备案情况 | 未编制应急预案 | |
| 近三年执法监测超标情况 | 无 | |
| 环保部门最终认定意见 | 同意评估部门意见。该企业需完善以下工作：1、完善监测制度，开展定期监测。2、实施信息公开，接受社会监督。3、制定应急预案并备案。4、加强各类设施管理维护，确保达标排放。2018 年 11 月底前完成整改。 | |

环保部门（盖章）
2018 年 6 月 26 日



OUR TEAM

400 Employees & 30+ Professional Technical Engineers

FOUNDER

Mr. Wang Is The Main Founder Of Dawang Casting.



Kaibao Wang
CEO & Founder

Kaibao Wang took over the foundry industry founded by his father in 1998. The fixed assets were less than 200,000 yuan, and the number of workers was less than 20. The trustee borrowed 100,000 yuan as the starting capital and started the road to entrepreneurship. In the past 20 years, Kaibao have continuously upgraded and upgraded the equipment and management of the factory, and made Dawang Casting a well reputed foundry in China. The founder has also become the “Top Ten Economic Development Figures” in Liaoning Province, received the honor “Private Star Entrepreneur” in Liaoning Province, “Outstanding Young Factory Director” nationwide.

✉ sales@dddwjz.com

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🌐 www.dawangfoundry.com

Our Team

Group Building And Anniversary Display



2021 Party

Our Team

Group Building And Anniversary Display



22nd Anniversary Activities

Our Team

Group Building And Anniversary Display



20nd Anniversary Activities





STAY IN TOUCH WITH US

DAWANG CASTING, EXCELLENT CASTING



Our Location

Dawang Village, Pusamiao
Town, Donggang City, Liaoning
Province .
ZIP 118314



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(0415) 7706276
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