

德阳天（应）和机械制造有限责任公司

Tianhe Casting Group
Introduction



公司概况 OVERVIEW 一

二 技术能力 Technology

质保能力 Quality Assurance 三

四 生产能力 Production Capacity

产品展示 Product Display 五



一、公司概况

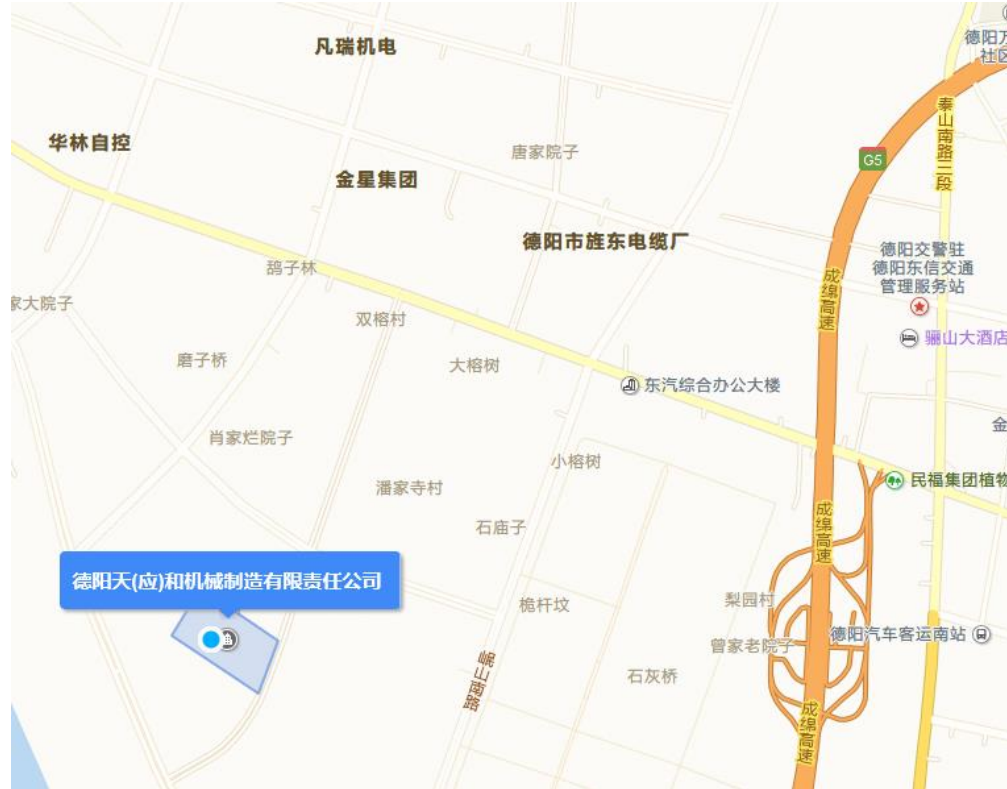
天（应）和机械制造有限责任公司（下称天应和公司）成立于1998年，最初是一家小型铝铸泵体厂，员工不到10人。经过二十多年的艰苦创业，天应和公司现下设铸造事业部——德阳应和机械制造有限公司，和数控加工事业部——德阳天和机械制造有限公司两大事业部，近30,000平方米的空间。如今，天应和公司拥有员工400余人，其中模具工程师、铸造工程师、CNC加工设计工程师40余人。此外，我们拥有50多项专利，其中4项发明专利。

Tianhe Casting Group was first established in 1998, starting with a small aluminum casting plant for pump body with just under ten employees. After more than two decades of hard-working, Tianhe casting group now consists of two business units: Casting Division - Deyang Yinghe Mechanical Manufacturing Co., Ltd. and CNC Machining Division - Deyang Tianhe Mechanical Manufacturing Co., Ltd, with a total floor space of nearly 30,000m². Nowadays, Tianhe Casting Group has more than 400 employees, including 40 mold engineers, casting engineers, CNC machining engineers. In addition, we own over 50 patents, including 4 invention patents.



一、公司概况——地理位置

1. Corporate Overview – Geographic location



● 成立时间：1998 年 Established time： 1998

● 业务范围：

铸铁/铸钢(覆膜砂壳型铸造)

Iron/ Steel Casting

铸铝(金属型重力/低压铸造)

Aluminum Casting

机械加工/装配 CNC Machining

地址：德阳经济技术开发区太白山路10号

Address: 10 Taibaishan Road, Deyang Hi-Tech Industrial Development Zone, Deyang, Sichuan.

占地：5.4万㎡； 建面：2.9万㎡

Total Area: 54000 m², Floor Area: 29000 m²

资产：3亿元 Total Assets: 300 Millions

职工：386人（工程技术人员：20-30人） Staff: 386 People
(Including 20-30 Engineers)

网站 Website： Tianhecasting.com



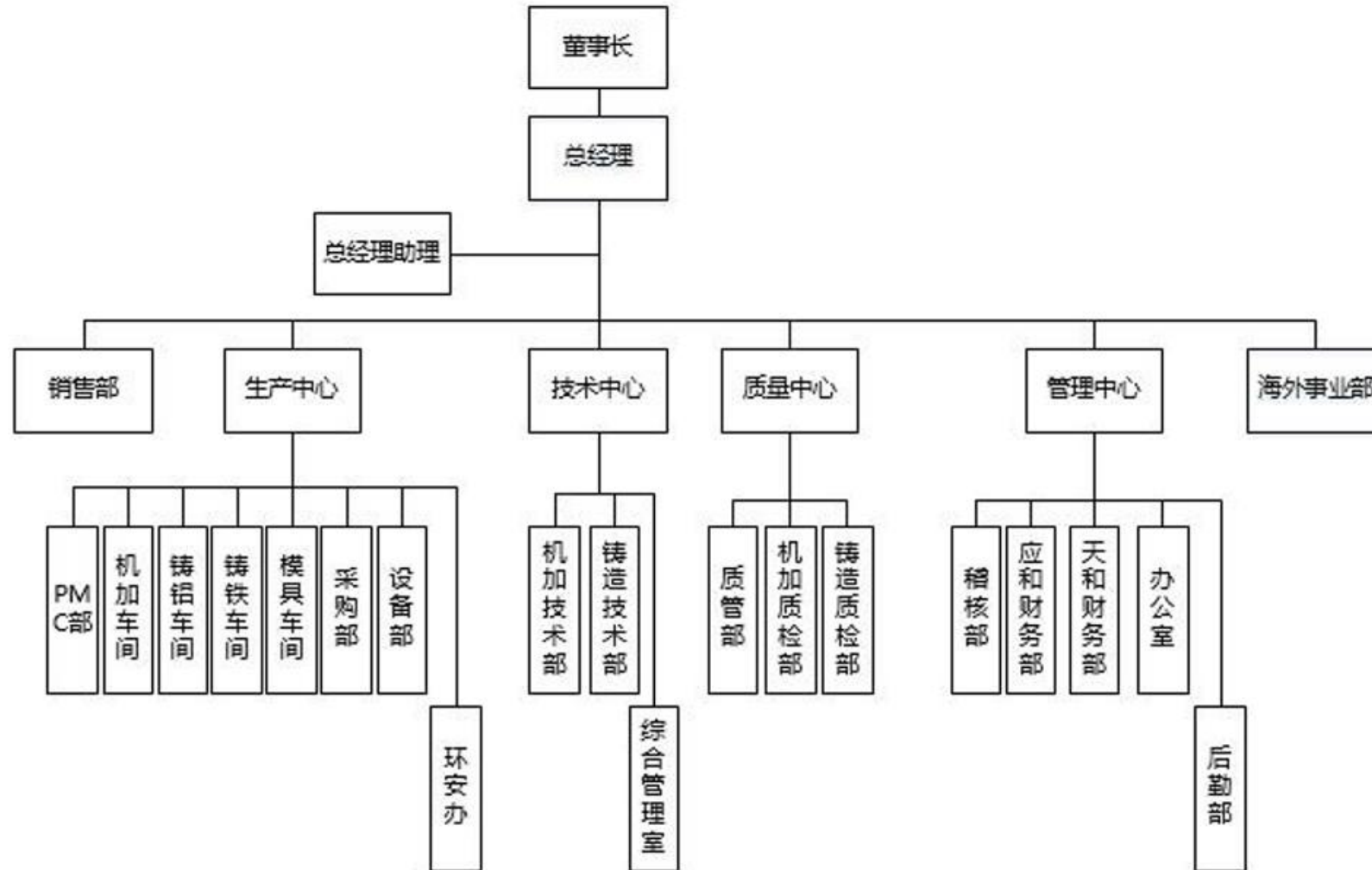
一、公司概况——理念

1. Corporate Overview - Concept



一、公司概况——组织机构

1. Company Overview – Organizational structure



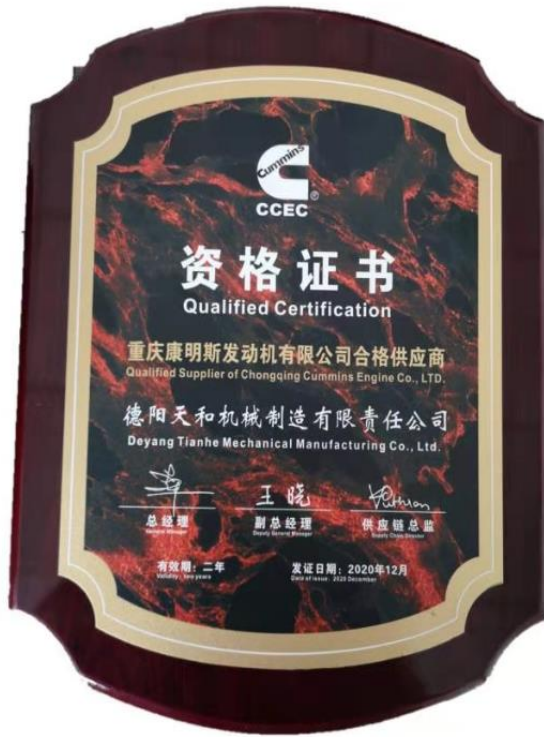
一、公司概况——主要客户

1. Company Overview – Main Customers



一、公司概况——荣誉

1. Corporate Overview - Honor



一、公司概况——荣誉

1. Corporate Overview - Honor

Awarded with
Excellent Supplier
from Sinotruk in
2019



Awarded with
Bronze Supplier
from Sinotruk in
2020



Awarded with Golden Supplier from
Sinotruk in 2021



一、公司概况——荣誉

1. Corporate Overview - Honor



2013被授予全国福利企业示范单位

Became National Welfare Organisation
in 2013



二、技术能力——开发流程

2. Production Technology Support – Development Process



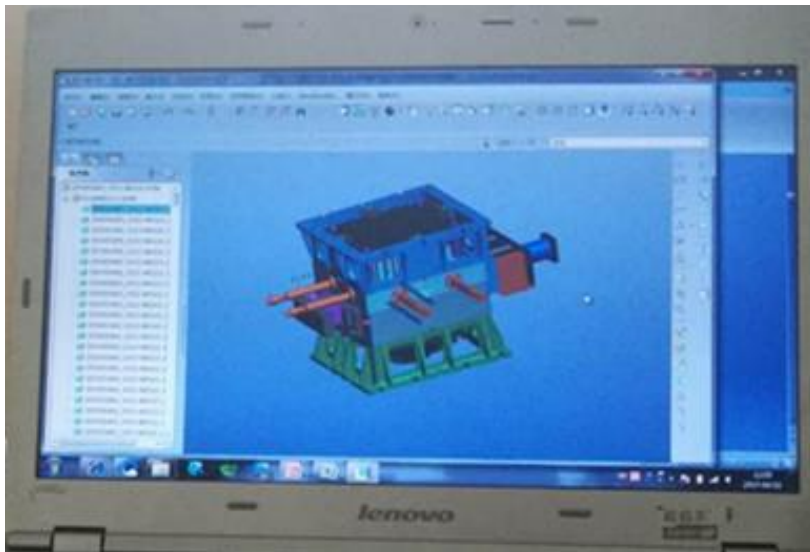
二、技术能力

2. Production Technology Support

车身/车桥零部件的协同开发与制造。

Manufacturing and developing key parts and components according to client's requirements such as engines, cabins, axles, etc. in the Heavy duty trucks and Light duty trucks segments .

- 具备与客户协同开发的能力与经验。
- Ability and experience of co-developing products under the requirements of clients.
- 拥有PRO/E、UG、AutoCAD、AnyCasting等设计及开发软件。
- Proficient in PRO/E、UG、AutoCAD、 AnyCasting.



二、技术能力

2. Production Technology Support

主要开发成果 Main products:

- 商用车**发动机**零部件：摇臂/从动件/轴承盖/凸轮轴盖/节温器壳/齿轮室盖/燃油泵泵体/进气管/恒温器壳/飞轮壳/油底壳
- Commercial Heavy truck engine parts: Rocker Arm/ /Bearing Cover/Camshaft/Thermostat Housing/Gear housing/Fuel pump body/Intake pipe/Thermostat housing/Flywheel housing/Oil Pan etc.
- 船舶用**发动机**零部件：齿轮室盖/进气管/油底壳
- Marine engines parts: Gear Housing/Intake Pipe/Oil Pan etc.
- 商用车**变速箱**零部件：后壳/小盖壳体/小盖端盖
- Commercial Heavy truck gearbox parts: Housing etc.
- 商用车**车架**零部件：弹簧支架/转向器支架/防护支座/悬置支架/集成支架/横梁总成
- Commercial truck frame parts: Spring Hanger/Steering Gear Hanger/Bearing Protector/Suspension hanger etc.
- 新能源**风电/光热**项目：中心阀块/铰轴座/杆头/导向套
- Sustainable energy (Wind electricity or Solar power) project: Central Blocks/ Hinge Shaft etc.

二、技术能力 - 专利

2. Production Technology Support -- Patents

超过50个专利证书，包括4项创新型证书。可上网站查看所有证书图片：<https://www.tianhecasting.com/certificate/>

Tianhe Casting Group owes more than 50 patens, including 4 intentional patents. View all the patents, please visit <https://www.tianhecasting.com/certificate/>



三、质保能力——质量体系

3. Quality Assurance Centre – Quality Control system



● 发展历程 Stages of Development:

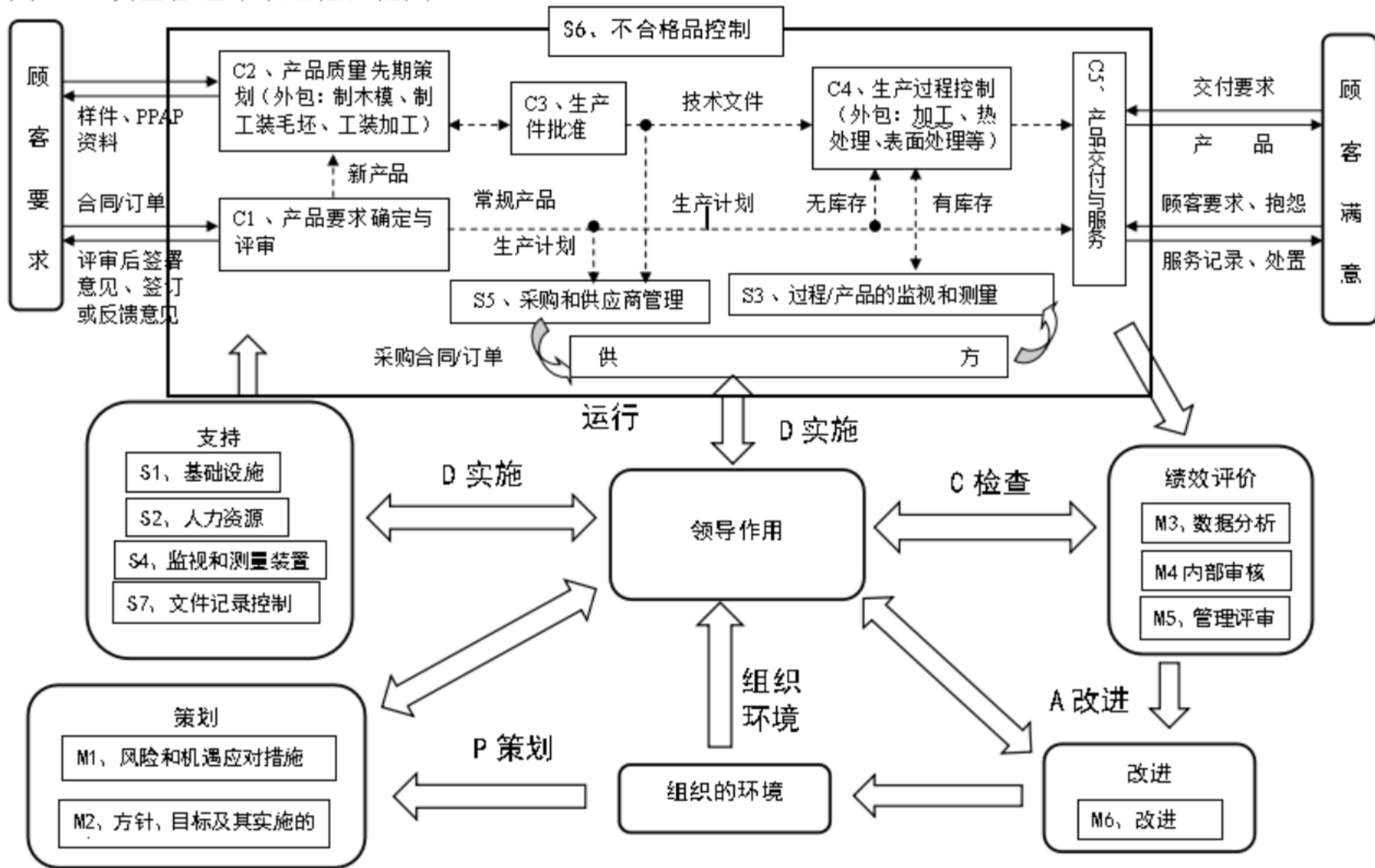
- 2004年通过ISO 9001质量体系认证
- Obtained ISO 9001 Quality System Certification in 2004.
- 2008年通过ISO/TS 16949质量体系认证
- Obtained ISO/TS 16949 Quality System Certification in 2008.
- 2017年通过IATF 16949质量体系认证
- Obtained IATF 16949 Quality System Certification in 2017.
- 2021年通过康明斯全球质量标准体系认证
- Obtained CCEC Global Quality Standard Certification.



三、质保能力——管理流程

Quality Control – Management process

附录一：质量管理体系过程流程图



三、质保能力——检测设备

3. Quality Assurance -- Examination Equipment



台式直读光谱仪

Optical Emission Spectrometer

FOUNDRY-MASTER UV(德国牛津)

- 检测范围：铝及铝合金化学成分
- Analysis of all metals and alloys, especially in Aluminum and Aluminum alloy.



三、质保能力——检测设备

3. Quality Assurance -- Examination Equipment



光谱仪 PDA-5500IV(日本岛津) Spectrometer PDA-5500IV (Shimadzu, Japan)

- 检测范围：钢铁合金化学成分
Detection range: chemical composition of steel alloys



三、质保能力——检测设备

3. Quality Assurance -- Examination Equipment



铝熔体测氢仪 Aluminum Hydrogen Tester

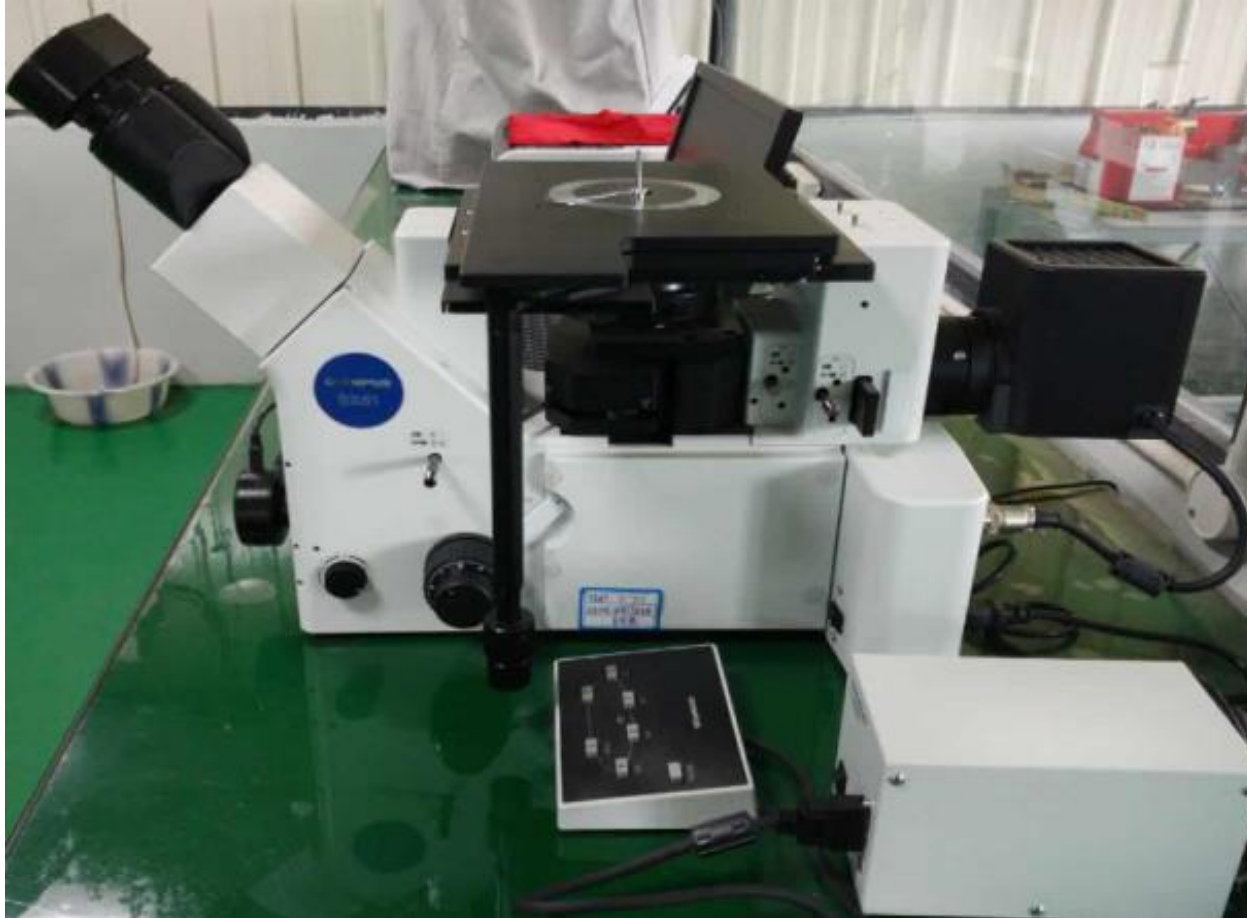
RT-CQ1000 (上海润台)

- 检测范围：铝熔体含气量(定性)、铝液密度
- Testing Scope: Aluminum density.



三、质保能力——检测设备

3. Quality Assurance -- Examination Equipment



倒置式系统金相显微镜

Inverted Microscope

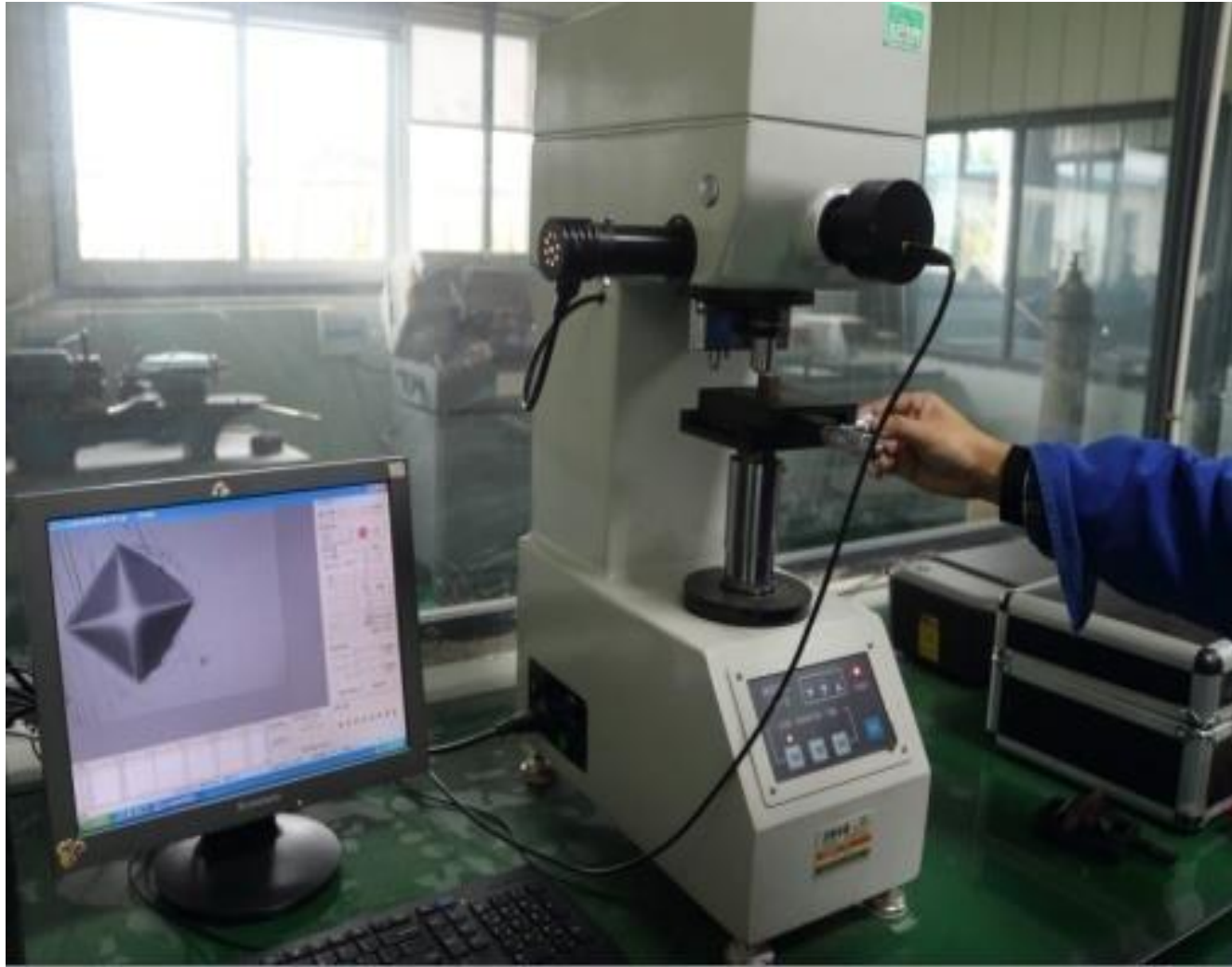
GX51-C-2 (奥林巴斯Olympus)

- 检测范围：铁、铝合金金相组织
- Testing Scope: Iron and Aluminum Alloy.



三、质保能力——检测设备

3. Quality Assurance -- Examination Equipment



硬度计

Hardness tester

HB-3000C (莱州华银)

- 检测范围：8~450HBS/8~650HBW
金属材料硬度
- Testing Scope:
8~450HBS/8~650HBW Hardness of
Metallic Materials



三、质保能力——检测设备

3. Quality Assurance -- Examination Equipment



伺服材料试验机

Material Cupping Machine

TY8000-300KN (江苏天源)

- 检测范围：金属材料抗拉强度/屈服强度/延伸率
- Testing Scope: Tensile Strength of metallic materials/Yield Strength/Elongation



三、质保能力——检测设备

3. Quality Assurance -- Examination Equipment



关节臂测量机

Articulated Coordinate Measuring Machine

RA 7320 SI (海克斯康)

- 检测范围：铸件尺寸
- Testing Scope: Product Size



三、质保能力——检测设备

3. Quality Assurance -- Examination Equipment



超声波测厚仪

Ultrasonic Thickness Meter

TIME2433 (北京时代之峰)

- 检测范围：金属材料壁厚
- Testing Scope: Wall thickness of metal material.



三、质保能力——检测设备

3. Quality Assurance -- Examination Equipment



工业内窥镜

Industrial endoscope

DN801BS-NW (北京德朗)

- 检测范围：内腔异物
- Testing Scope: carry out non-destructive inspections in the pipes or mechanical parts to ensure maintenance.



三、质保能力——检测设备

3. Quality Assurance -- Examination Equipment



高频X射线图像增强器成像系统

High X-ray image enhancer

检测范围：铝合金内部质量缺陷

- Testing Scope: Defects flaws inside Aluminum Alloy.



三、质保能力——检测设备

3. Quality Assurance -- Examination Equipment



三坐标

Coordinate Measuring Machine

Bridge-Global-B-Classic-7.10.7 (海克斯康 Hexagon)

- 精度: $2.5+3.3L/1000\mu\text{m}$
- Precision: $2.5+3.3L/1000\mu\text{m}$
- 检测范围: $700\times 1000\times 700$
- Testing Scope: $700\times 1000\times 700$



三、质保能力——检测设备

3. Quality Assurance -- Examination Equipment



圆柱度仪

Roundness measuring instrument

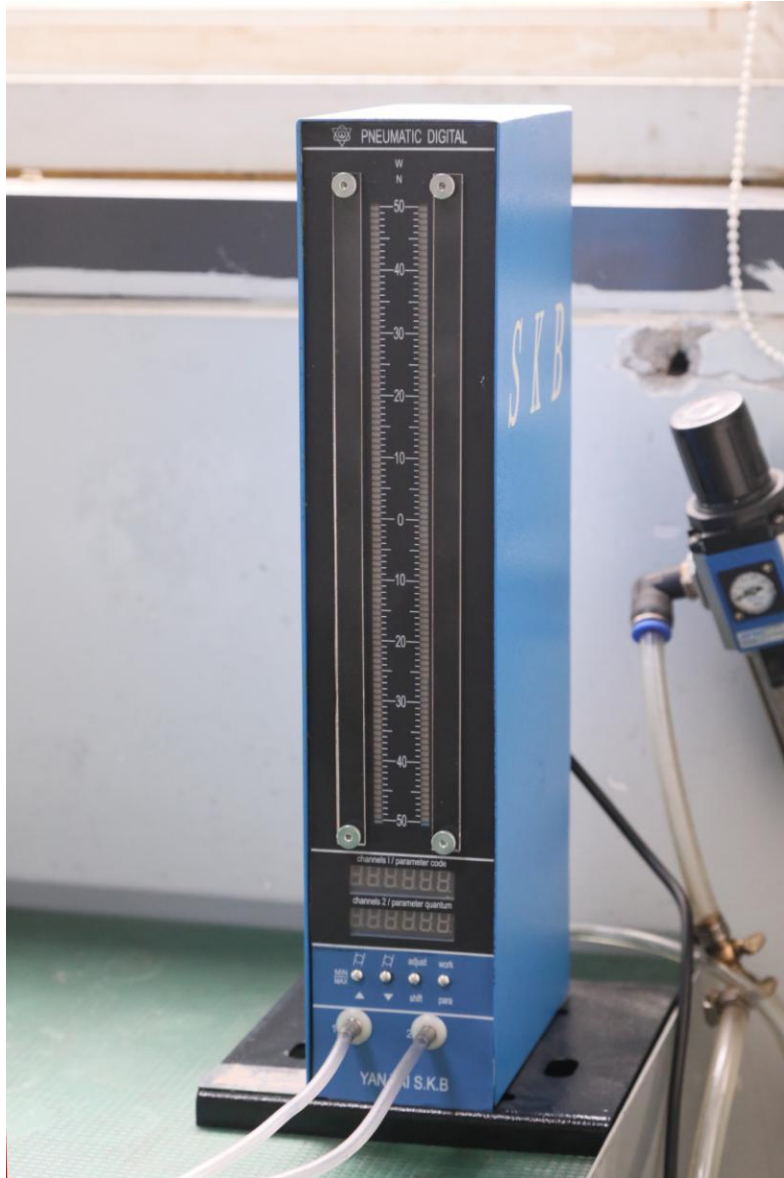
CA35(上海阅美)

- 检测范围：圆柱度
- Testing Scope: Cylindricity.



三、质保能力——检测设备

3. Quality Assurance -- Examination Equipment



气动量仪

Pneumatic Measuring Instrument

QDY-2MS(烟台思科博)

- 精度：全量程的 $\pm 1\%$
- Precision: $\pm 1\%$
- 检测范围： $25\mu\text{m}$
- Testing Scope: $25\mu\text{m}$



三、质保能力——检测设备

3. Quality Assurance -- Examination Equipment



HFD清洁度颗粒度计数分析显微镜

Cleanliness analysis of particle - counting microscope

(JOMESA)

- 检测范围 Testing Scope :
- 杂质类型 Type of Impurities of Impurities
- 颗粒数量 Numbers of particles
- 颗粒长宽 Width and Length of particles



四、铸造 Casting Division



德阳应和专业从事重力铸造和低压铸造。我们有能力和经验根据客户的要求共同开发产品。应和于2004年获得ISO 9001，2016年获得IATF 16949:2016质量体系证书。我们还于2018年获得国家高新技术企业证书。此外，盈和机械制造有限公司获得20多项专利，包括2项有意专利。此外，2020年，我们投资了3台Fanuc自动铸造机组和3台德国Striko Westofen自动铸造机组，以提高我们铸造员工的生产力和工作环境。将实施铸造线的进一步改进。

Deyang Yinghe Mechanical Manufacturing Co., Ltd. is the Casting company under Tianhe Casting group. Yinghe is specializing in gravity casting and low pressure casting. We have the ability and experience of co-developing products under the requirements of clients. Yinghe Casting has obtained ISO 9001 in 2004 and IATF 16949:2016 quality system certificate in 2016. We have also obtained the national high-tech enterprise certificate in 2018. In addition, Yinghe Mechanical Manufacturing Co., Ltd. has obtained more than 20 patents, including 2 intentional patents. Moreover, in 2020, we invested 3 Fanuc automatic casting units and 3 German Striko Westofen automatic casting units in order to increase our productivity and working environment for our casting employees. Further improvements in the casting line will be implemented.



四、生产能力——铸铁

4. Production Capacity -- Iron Casting



- 生产面积0.55万m²；生产能力：6千吨/年；当前平均产量180T/月
- Production Area: 5000 m²; Production Capacity: 6000 tones/year; Average Production Capacity: 180 tones/month.
- 铸造方式：壳型铸造；单件重量：0.24~29.6Kg
- Casting Method: Shell Mold Casting. Individual product weight: 0.24~29.6Kg
- 主要牌号：灰铸铁/球墨铸铁/铸钢
- Main Type: Gray Iron Casting/ Spheroidal Iron/Cast Steel
- 主要设备 Main Equipment:
 - 射芯机15台 15 Core Shooting Machine
 - 中频感应炉5台 5 medium frequency induction furnace
 - 覆膜砂壳型负压浇注生产线一条 1 Casting Production line



四、生产能力——铸铝

4. Production Capacity -- Aluminum Casting

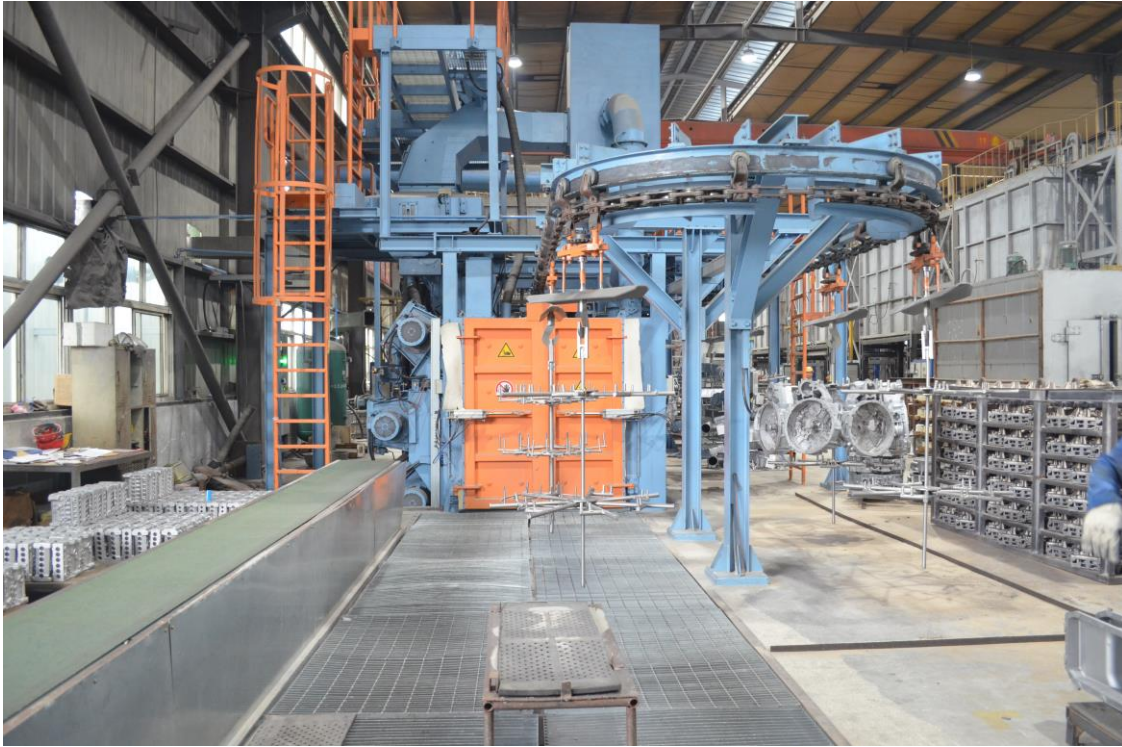


- 生产面积0.6万m² Production Area: 6000 m² ; 生产能力: 8500T/年
Production Capacity: 8500T/Year
- 铸造方式: 金属型重力/低压铸造 Manufacturing Method: Metal gravity casting/ Low-pressure casting
- 单件重量: 0.3~38.6Kg Product Weight: 0.3-38.6kg
- 主要牌号: 铝硅系合金 Main Material Code: Al-Si alloy
- 主要设备:
 - 定量炉单元3套 3 Dosing furnace Units
 - 机器人单元3套 3 Robot Casting Units
 - Z95系列壳芯机11台 11 Z95 Series Shell Core Shooting Machine
 - CMF-500燃气炉/电炉16台 16 CMF-500 Gas/Electric Furnace
 - MTS1500金属液处理站5套 15 MTS 1500 Liquid metal processing station
 - J33系列重力翻转浇注机27台 27 J33 Gravity Casting Machine
 - WFZJ45系列低压铸机5台 5 WFZJ45 Low pressure Casting Machine
 - SXLSCHL95140-6 立式热处理炉3套 3 SXLSCHL95140-6 Vertical Heat Treatment Machine



四、铸造——设备展示

Casting Division - Equipment



自动抛丸机 Automatic Shooting Blasting Machine



四、铸造——设备展示

Casting Division - Equipment



热处理器 Heat
treatment
Machine

德国熔化炉
German Melting
furnace



四、生产能力——机械加工

4. Production Capacity – CNC Machining



- 生产面积：1.1万m²。
- Production Area：11000 m²
- 加工能力：9000万元/年
- Production Capacity: 900 million yuan/year



四、生产能力——机械加工

4. Production Capacity – CNC Machining



● 主要加工设备 Main Equipment:

- 加工中心 85台
- 85 Computerized Numerical Control
- 卧式加工中心 3台
- 3 Horizontal Computerized Numerical Control
- 数控钻孔攻丝中心 6台
- 6 CNC Tapping Center
- 数控铣床19台
- 19 CNC Milling Machine
- 数控卧式车床23台
- 23 CNC horizontal lathe
- 无心磨床MGW10200: 2台
- 2 Centerless Grinding Machine
- 高温通过式清洗机、通过式清洗机、超声波清洗机、泵体
超声波清洗
- 4 Industrial Washer



四、生产能力——机械加工

4. Production Capacity – CNC Machining



我们有100多台数控机床，从日本和韩国进口。我们的大多数 CNC 加工中心都配备了 3 轴和 4 轴自动化装置，以处理从简单到复杂的小批量运行和大批量生产。我们的加工能力包括 CNC 车削、CNC 铣削和精密加工。我们能够承接不同规模的项目。可用的制造材料主要是金属，包括铝合金、铁、青铜/黄铜、不锈钢和钛。我们也可以为铝和铸铁件定制提供一站式服务。还提供不同的表面处理处理，例如抛光、电泳电镀、透明或彩色阳极氧化以及任何定制涂层。我们也意识到产品质量的重要性，因此我们一直在培训我们的工人牢记5S系统。此外，我们还添加了 SPC 工作站，其中记录了检查数据并立即上传到我们的云端进行检查。

We have over 100 CNC Machines, imported from Japan and Korea. Most of our CNC machining centers are equipped with 3 and 4 axis automation to handle simple to complex low volume runs and mass productions. Our machining capacities include CNC turning, CNC milling, and precision machining. We are able to undertake projects of different sizes. The available manufacturing materials are mainly metal, including aluminium alloy, iron, bronze/brass, stainless steel, and titanium. We are able to offer a one-stop service for aluminium and iron casting customization, too. Different surface finish treatment is also available such as polishing, electrophoresis plating, clear or coloured anodizing and any custom coatings. We are also aware of the importance of product quality, therefore we are always training our workers to keep the 5S system in mind. Additionally, we have added SPC Workstation where the examination data is recorded and uploaded to our cloud instantly for inspection.



四、机械加工-设备

4. CNC Machining -- Equipment



- 加工中心Doosan Dnm670



- 数车Doosan Puma3050



四、机械加工-设备

4. CNC Machining -- Equipment



● 加工中心VMP-50A



● 加工中心PV1300S



四、机械加工-设备

4. CNC Machining -- Equipment



清洗机 Cleaning Machines



四、机械加工-设备

4. CNC Machining -- Equipment



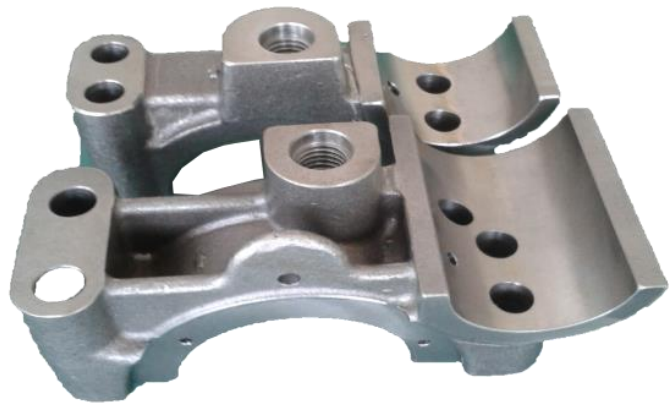
- 湿式试压机 Pressure Test Machine



五、产品展示 Product Display



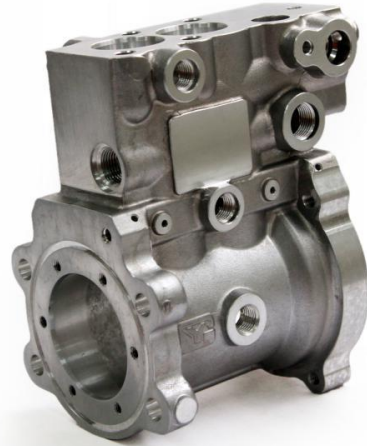
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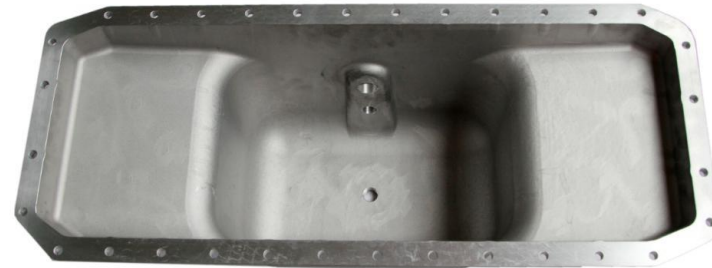
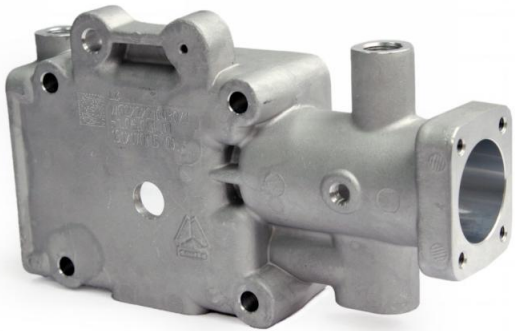
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五、产品展示 Product Display



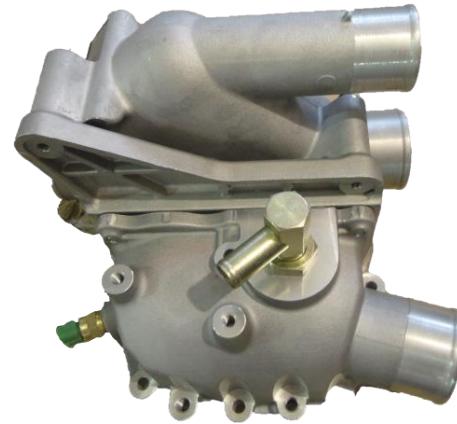
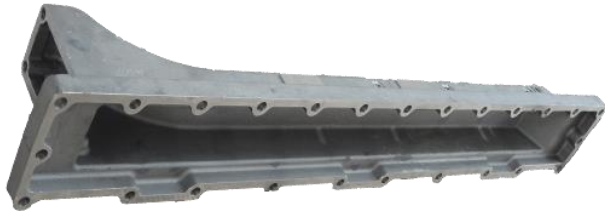
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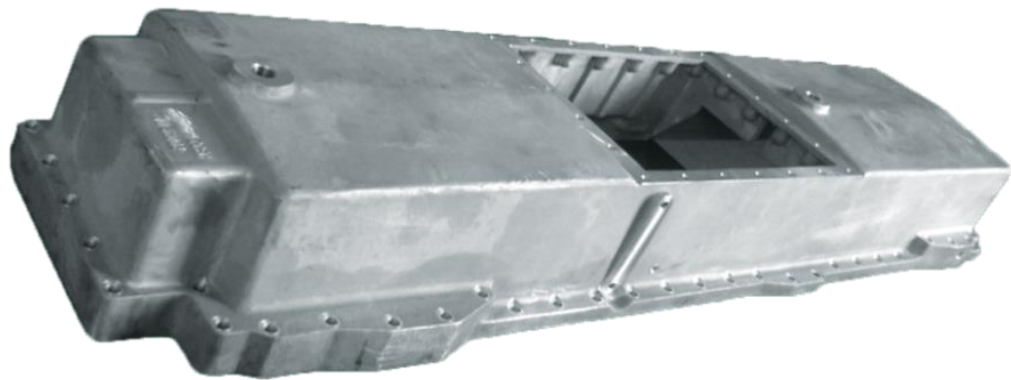
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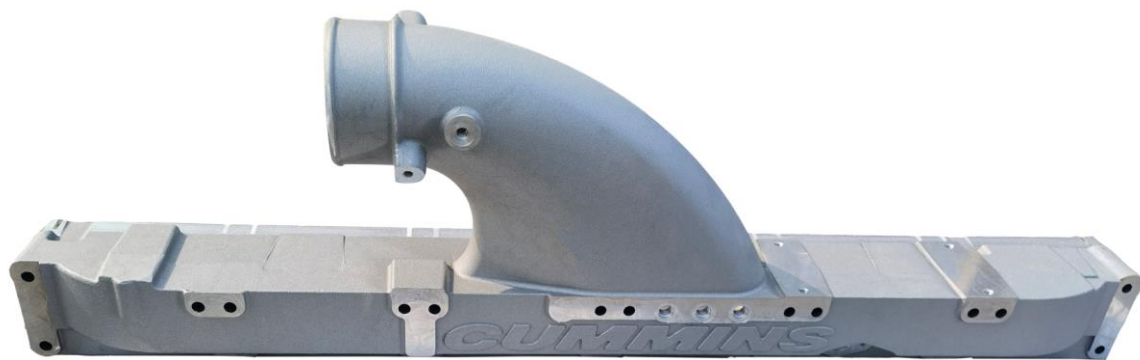
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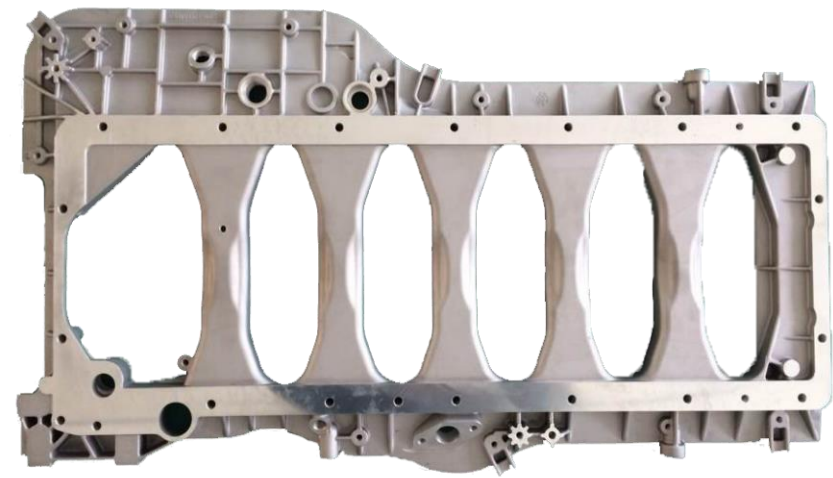
五、产品展示 Product Display



五、产品展示 Product Display



五、产品展示 Product Display



五、产品展示 Product Display



激活 Windows



五、产品展示Product Display

