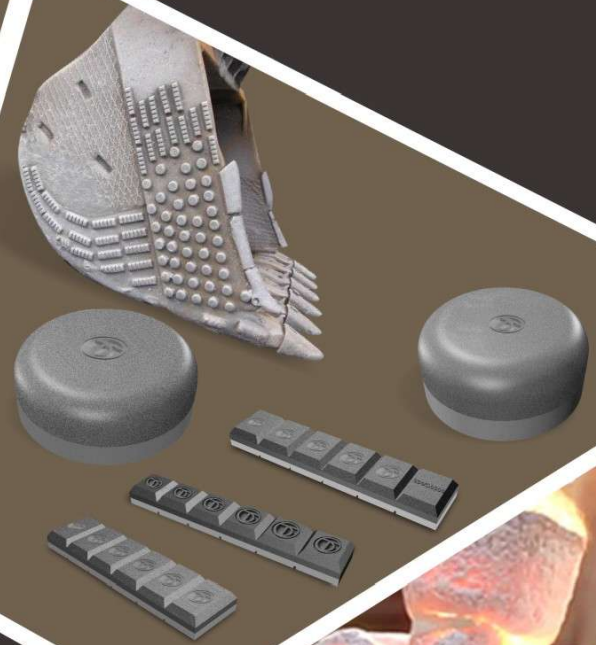
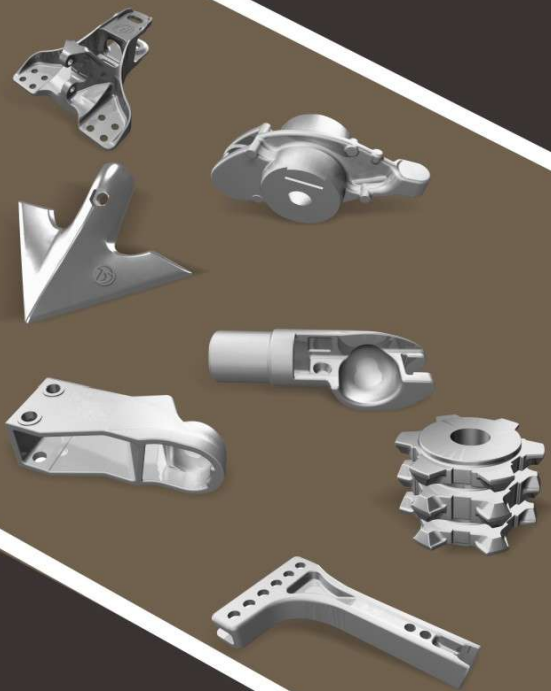




华森集团
HUASHEN GROUP

TONGDA CASTING
INTERNATIONAL
通达精密铸造



Engineer software for developing casting
CAD PRO/E SOLIDWORKS UG 华铸-CAE

CONTACT US

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ISO9001:2008
ISO/TS16949:2009
ISO14001:2004



COMPANY PROFILE

公司介绍

Zhejiang Huashen Group was founded in 2006. It includes 7 subsidiary companies as below:

1. Ningbo Tongda Precise Casting Co.,Ltd(1993)
2. Ningbo Fenghua Tongda Innovative Alloy Technology Co.,Ltd.(2005)
3. Ningbo Weirong Automobile Parts Manufacture Co.,Ltd(2004)
4. Ningbo Inrise International Trading Co.,Ltd(2004)
5. Hongkong Inrise Group(2004)
6. Zhejiang Huajian Medical Engineering Co.,Ltd(2004)
7. Ningbo Quanling Medical Instrument Co.,Ltd (2011)

Tongda precision casting focuses on the techniques of lost-wax and lost-foam castings. The materials we are dealing with are carbon steel, alloy steel, ductile iron, grey iron and so on. Our OEM products are widely used in the

industries of Automobiles, G.E.T., Forklifts, Marines and Railways. The annual capacity is 25,000 tons, with 85% parts exported overseas through Ningbo Inrise International Trading Co.,Ltd.

Tongda owns a professional team of engineers to do research on the variety of materials and also develop customers' OEM products. To ensure the quality, Tongda built a lab which has equipments like X-ray Tester, CMM, Spectrum Analysis Instrument, Metallographic Examination Instrument, Magnetic Particle Inspector, Hardness Tester, Impact Test Machine, and Universal Strength Tester.

Tongda has achieved a good reputation at home and abroad with its competitive prices, reliable quality, on-time delivery and good after-sale service. Tongda also aims at becoming a leading casting manufacturer in China.

浙江华森集团成立于2006年，旗下包括7个子公司：

- 宁波通达精密铸造有限公司(成立1993年)
- 宁波奉化通达创新科技合金有限公司(成立于2005年)
- 宁波伟荣汽车配件制造有限公司(成立于2004年)
- 宁波茵莱斯国际贸易有限公司(成立于2004年)
- 香港茵莱斯集团(成立于2004年)
- 浙江华健医用工程有限公司(成立于2004年)
- 宁波市全灵医疗设备股份有限公司(成立于2011年)

通达公司专业生产水玻璃熔模和消失模工艺的精密铸件，可生产的材质包括：碳钢、合金钢、球铁、灰铁等。生产的OEM产品被广泛运用于汽车行业、挖掘机配件、叉车行业、船舶以及铁路行业。85%以上的产品通过旗下的宁波茵莱斯

国际贸易有限公司远销海外。

我们拥有一个专业的技术团队致力于研究更多不同种类特性的材质，开发OEM产品。同时，我们也设立了一个实验室，严格认证产品质量，确保产品的合格。实验室有严整的规章制度，合格专业检验员，以及多台检测设备，包括：X光测试仪、三坐标、超声波、光谱分析仪、金相分析仪、磁粉探伤机、硬度计、万能试验机、冲击试验仪等。

通达公司以其具有竞争力的产品价格，较高的产品质量，交货的及时性，和良好的售后服务享誉国内外，但通达人并不以此为终点，而是会更加努力使企业成为中国精密铸造行业的领头羊。

- ◎ ISO9001:2008
- ◎ TS16949:2009
- ◎ GL
- ◎ DNV
- ◎ Work Safety Standardization Certificate
- ◎ Certificate of The High and New Technological Enterprise
- ◎ ISO14001:2004
- ◎ Good Standardizing Practice Certificate
- ◎ Certificate of Ningbo Famous Product
- ◎ Certification For The Ability Confirmation of Inspection、Measurement and Test



▲ ISO9001:2008



▲ TS16949:2009



▲ GL



▲ DNV



▲ Work Safety Standardization Certificate



▲ Certificate of The High and New Technological Enterprise



▲ ISO14001:2004



▲ Good Standardizing Practice Certificate



▲ Certificate of Ningbo Famous Product



▲ Certification For The Ability Confirmation of Inspection、Measurement and Test

01-03

公司介绍

INTRODUCTION

机加工车间

Machining Workshop

生产车间

Equipments

质检中心

Quality Center

研发设计

R & D

04-10

熔模工艺

LOST WAX PROCESS

汽车配件

Auto Parts

卡车配件

Truck Parts

挖掘机配件

G.E.T. Parts

耐磨件

Wear Parts

农用机械配件

Agricultural Machinery Parts

建筑配件

Construction Parts

矿山配件

Mining Machinery Parts

叉车配件

Forklift Spare Parts

铁路火车配件

Railway Parts

船舶配件

Marine Castings

11-12

消失模工艺

LOST FOAM PROCESS

13-16

硅溶胶工艺

SILICA SOL PROCESS

MACHINING WORKSHOP

机加工车间

EQUIPMENTS & QUALITY CENTER

生产车间/质检中心



▲ Semi-auto Wax Injection Machine
八工位注蜡机



▲ Shell-making Line
节能制壳流水线



▲ Dewaxing Line
失蜡流水线



▲ Pouring Line
轻型轨道浇筑线



▲ Belt Heat Treatment Furnace
热处理炉



▲ Painting line
喷漆流水线



▲ Pouring Line
轻型轨道浇筑线

EQUIPMENT设备名称	QUANTITY数量	EQUIPMENT设备名称	QUANTITY数量
Machining Center 加工中心	8 Sets(台)	Planer 刨床	2 Sets(台)
CNC Lathe 数控车床	8 Sets(台)	Engraving Machine 电脑雕刻机	2 Sets(台)
Milling Machine 铣床	7 Sets(台)	Grinding Machine 工具磨床	1 Sets(台)
Engine Lathe 普通车床	9 Sets(台)	Bench Drill 台钻	1 Sets(台)
Vertical Lathe 立式车床	1 Sets(台)	Hydraulic Press 油压机	1 Sets(台)
Vertical Drill 立式钻床	8 Sets(台)	Rivet Machine 柳钉机	1 Sets(台)
Radial Drill 摇臂钻床	1 Sets(台)	Wrapping Machine 打包机	1 Sets(台)
		Tapping Machine 攻丝机	1 Sets(台)



▲ Impact test Machine
冲击测试机



▲ Universal Strength Tester
万能测试机



▲ Spectrum Analysis Instrument
光谱仪



▲ X-RAY NDT Equipment
X光检验仪器



▲ Hardness Tester
硬度机



▲ Ultrasonic Tester
超声波



▲ Magnetic Particle Inspector
磁粉探伤仪



▲ CMM
三坐标

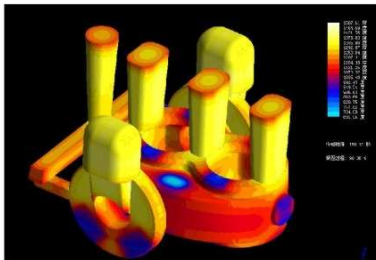


Tooling R&D 模具研发及设计

We can design the model and tooling according to customer's drawings or samples.

我们根据客户提供的图纸或样品，结合相关质量要求，对产品进行开发、设计，并绘制3D模具图

3D Casting Simulation 模拟浇铸



Our engineers evaluate casting design for complex parts with 3D Casting Simulation Software. With the capability to analyse metal flow and solidification, we can optimise casting design and identify difficulties in production before making tooling and samples.

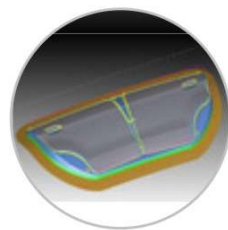
对于复杂件的设计和开发，我们采用3D软件进行模拟浇注，最大限度的分析金属液的流动和凝固，在模具开发和试样之前预见问题，从而优化工艺。



产品设计
DESIGN



结构设计
STRUCTURE DESIGN



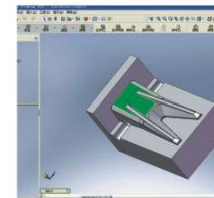
模拟浇铸
CAM

Introduction & Advantage of LWC

失蜡铸造工艺的介绍和优势

Lost-wax casting is now well-known as investment casting. It is an outstanding technique that is widely used throughout the casting industry. Compared to other casting techniques, the dimension accuracy and surface quality are much better. With lost-wax casting technique, the castings which are complex, heat-resistant and difficult to machine can be achieved.

失蜡铸造又称熔模铸造。这是在铸造领域中被广泛运用的一种工艺，相较于其他工艺，在保证产品尺寸的精确性以及表面质量方面更具有优势，此种工艺不受产品形状结构的复杂的限制，最重要的特点是其尺寸控制精密，表面平整光滑，耐高温。



▲ Pattern Design
模具设计



▲ Wax Model Manufacturing
制作蜡模



▲ Wax Model Assembly
蜡树组树



▲ Model shell Making
抛壳



▲ Dewaxing
脱蜡



▲ Model Shell Baking
模壳焙烧



▲ Melting
熔炼



▲ Compound Analyse
成份分析



▲ Pouring
烧铸



▲ Sand Stripping
清砂



▲ Heat Treatment
热处理



▲ Shot-Blast Cleaning
抛丸



▲ Inspection
检验



▲ Machining
机加工



▲ Packing
装箱



▲ Warehouse
储存

AUTO PARTS

汽车配件



TDA001



TDA002

TOWING HOOK 汽车拖钩



TDA003

ROCKER ARM 摇臂



TDA004



TDA005



TDA006



TRUCK PARTS

卡车配件

FRAME PARTS 卡车车架类



TDT001

TDT002

TRUCK SUSPENSION PARTS 重卡悬挂类



TDT003

TDT004



TDT005



G.E.T. PARTS

挖掘机配件



V61 V69 V71 V81 9W2452 9W4552RP F550 F600
9w8552 9W8452 F700 F800



59 61 69 4T5502 4T5503 6I6354 T59 T61
71 81 195-78-71330 6I6404 T71 T81
195-78-71340



F120X410 F120X440 F60 LS F70 LS V41 V51 V59
F140X420 F160X450 F90 LS F120 LS



9W4493 9w4494 8E4193 8E4194 6Y8960 22RN 25RN
9w4495 7T9127 8E4198 8E4199 132-4716 35RN
7T5701 175-71-22272 9N4621



100-4044 3G6395 4J8665 7J3023 HWW36W
3G6395 4T8091 HWW44V
4T6699 1U0761 HWW48W
T101639

MATERIAL MECHANICAL PROPERTIES		HARDNESS		IMPACT	
		硬度	冲击 (室温)	冲击 (-40°C)	冲击
TOOTH	斗齿	HRC 48-52	≥22J	≥18J	
ADAPTER	齿座	HRC30-35	≥26J	≥20J	
TOOTH SHOVEL	铲斗齿	HRC48-52	≥25J	≥20J	
CUTTING EDGES	侧板	HRC44-48	≥20J	≥18J	

机械性能

WEAR PARTS

耐磨件

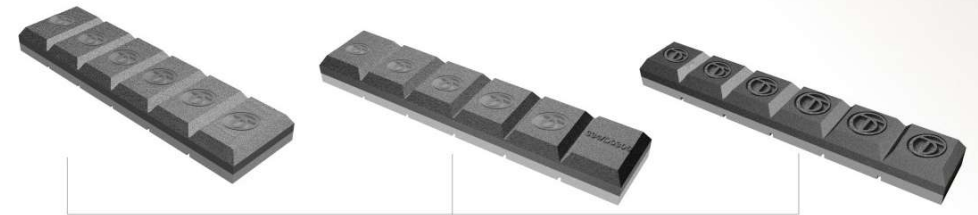
WEAR BUTTONS

WB60
WB75
WB90
WB110
WB115
WB150



CB25
CB40
CB50
CB65
CB90
CB100
CB130

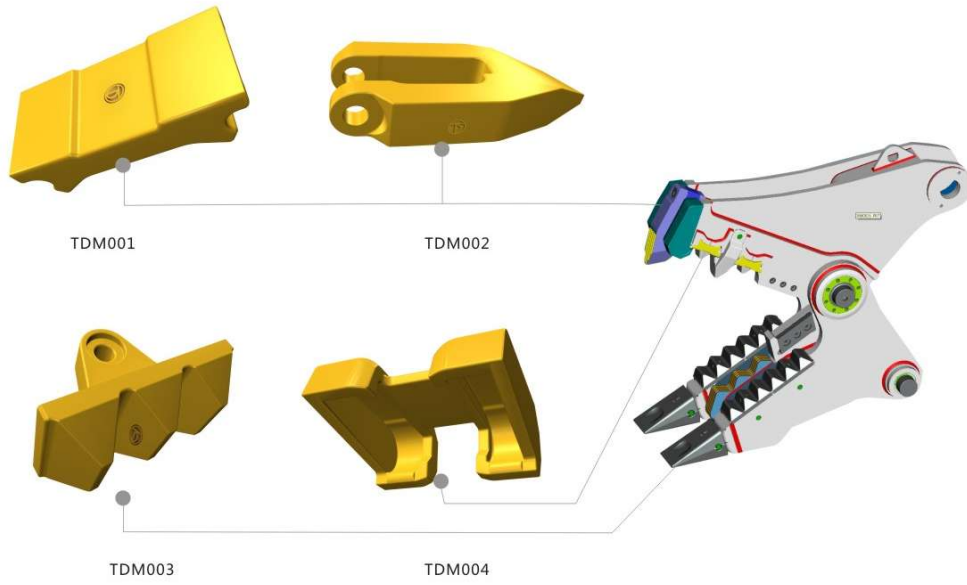
CHOCKY BARS



TRUCK PARTS
AUTO PARTS
WEAR PARTS
G.E.T. PARTS
Forklift Spare Parts
Mining Parts
Agriculture Parts
Construction Parts
Marine Castings
Railway Parts
Lost Foam Castings
Silica Sol Castings

MINING MACHINERY PARTS

矿山配件



FORKLIFT SPARE PARTS

叉车配件



TRUCK PARTS
AUTO PARTS

WEAR PARTS
G.E.T. PARTS

Forklift Spare Parts
Mining Parts

Agriculture Parts
Construction Parts

Marine Castings
Railway Parts

Lost Foam Castings

Silica Sol Castings

AGRICULTURAL MACHINERY PARTS

农用机械配件



TDG001

TDG002

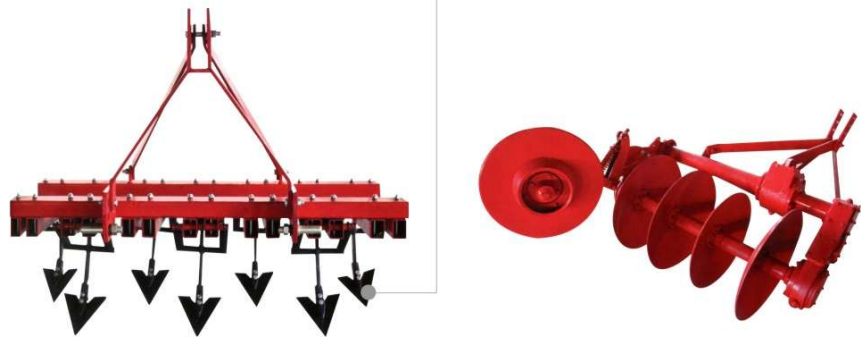


TDG003

TDG004

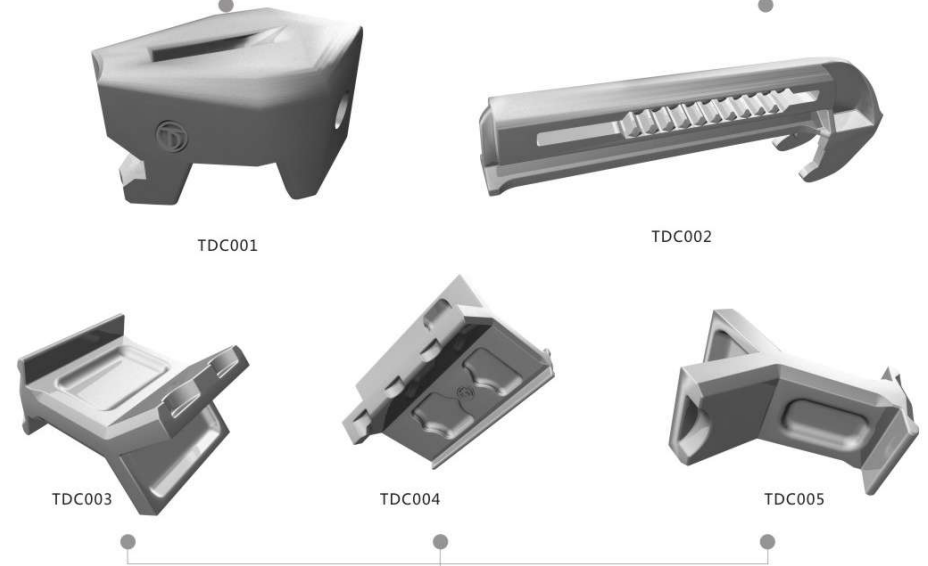
TDG005

TDG006



CONSTRUCTION PARTS

建筑配件



TDC001

TDC002

TDC003

TDC004

TDC005



TRUCK PARTS
AUTO PARTS

WEAR PARTS
G.E.T. PARTS

Forklift Spare Parts
Mining Parts

Agriculture Parts
Construction Parts

Marine Castings
Railway Parts

Lost Foam Castings
Silica Sol Castings



RAILWAY PARTS

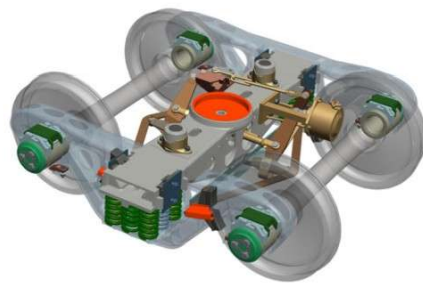
铁路、火车配件



TDR001



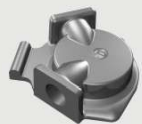
TDR002



TDR003



TDR004



TDR005



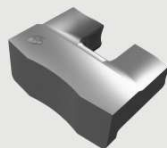
TDR006



TDR007



TDR008



TDR009



TDR010

MARINE CASTINGS

船舶配件



TDM001



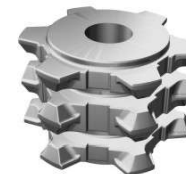
TDM002



TDM003



TDM004



TDM005



TDM007



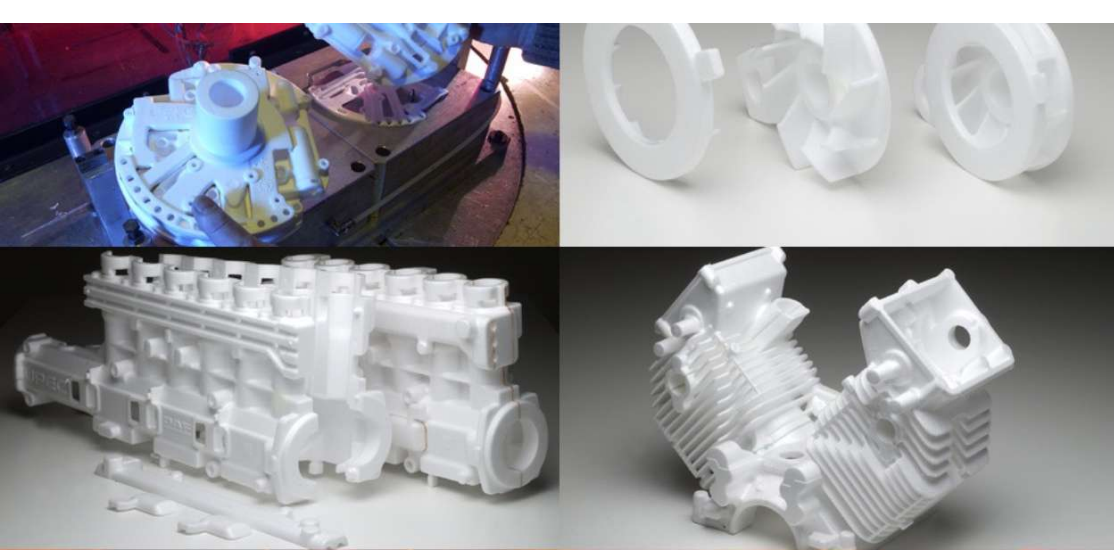
TDM008



TDM006



TRUCK PARTS
AUTO PARTS
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Agriculture Parts
Construction Parts
Marine Castings
Railway Parts
Lost Foam Castings
Silica Sol Castings



LOST FOAM PROCESS

消失模工艺

Lost foam casting (LFC) is a type of investment casting process that uses foam patterns as the investment. This method takes advantage of properties of foam to simply and cheaply foam castings that would be difficult or impossible, using normal "cope and drag" techniques.

消失模工艺是一种以聚苯乙烯为原料制成的泡沫模型的特种铸造工艺。这种工艺的优点在于工序简单，铸造成本低廉，不仅适用于形状简单的铸件，更适用于普通铸造难于下手的多开边，多芯子，几何形状复杂的铸件。

LOST FOAM CASTINGS

消失模配件

STEEL CAST PARTS 铸钢件



TDL001



TDL002



TDL003



TDL004



TDL005



TDL006

IRON CAST PARTS 铸铁件



TDL007



TDL008



TDL009



TDL010



TDL011



TDL012

WEAR PARTS 耐磨件



TDL013



TDL014



TDL015



TDL016



TRUCK PARTS
AUTO PARTS

WEAR PARTS
G.E.T. PARTS

Forklift Spare Parts
Mining Parts

Agriculture Parts
Construction Parts

Marine Castings
Railway Parts

Lost Foam Castings

Silica Sol Castings

SILICA SOL CASTING

硅溶胶工艺

Summary : Silica sol casting belongs to investment precision casting, and it is a kind of more advanced casting techniques.
Function : Silica sol casting is not only suitable for all types of alloy castings, and the size of castings is more accurate, surface quality is higher than that of the other casting methods, which can reach the first standard level.

Features

Silica sol precision casting as one type of investment precision casting is a relatively advanced casting technology which not only is applied to cast different kinds of alloy with many types, but also can meet the primary quality casting standard because of the final products with higher precision and surface quality than other casting methods.



Advantages

- 1. Castings are smooth and clean with precise shape and size.
- 2. Avoiding the casting flaws and wastes resulted from core making and core setting.
- 3. Simplify the shaping technology to a great extent, thus avoiding the casting flaws and wastes resulted from delivering and mould assembly.
- 4. Simplify the sand preparing system and realize the full reuse of moulding sand without preparation and avoid the handling of the sand conditioning.
- 5. Make sand shake-out so easy that the workload and labor intensity is reduced.
- 6. The castings have no trimming and burr which reduces over 50% of the cleaning and polishing labor.
- 7. Reduce the internal defect of the castings.
- 8. Vacuum-assist pouring helps liquid metals fill mould and feed, thus increasing the density of the castings.
- 9. Composite casting can realize one box with multi-castings at the same time which largely increases the exporting and production efficiency.

Parameters of Silica Sol Precision Casting

Applicable Material	Cast steel, cast iron, stainless steel, nodular cast iron, high chromium iron, high manganese steel, alloy steel, etc.
Material Standard	GB, ASTM, AISI, DIN, BS, JIS, NF, EN, AS, ARR
Weight	0.02kg-25kg
Tolerance	CT 6-7
Surface Roughness	Ra 6.5-12.5
Annual Output	10000T
Application	Auto, motorcycle, valve, marine, machine tools, hardware, railway, gear, impeller, pump, reducer, motor, mining machinery, engineering machinery, transmission machinery, forestry machinery, communal facility, etc.
Drawings software	Pro/E, Auto CAD, Solidwork, CAXA UG, CAD/CAM/CAE.
Machining	Turning, milling, drilling, grinding, threading, NC, etc.
Finishing	Sand blasting, polishing, plating, acid treatment, anodizing, painting, etc.
Inspection Equipment	Germany SPECTRO spectrum analyzer, three elemental analyzer, micro hardness tester, Rockwell apparatus, metallurgical microscope, hardness tester, CMM, etc.

STAINLESS STEEL 不锈钢



LOW-CARBON STEEL 低碳钢



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