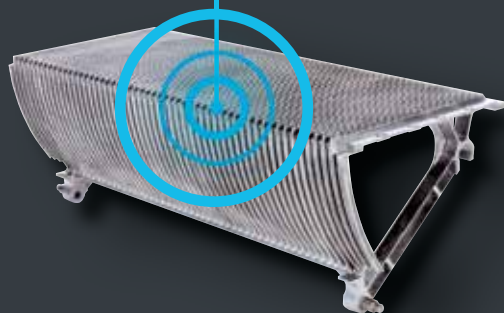


*The World of
Die Casting
Technology*

FRECH®

Castings Take You Higher



Wherever we go we are surrounded by castings. Every day. Serving their purpose. 100%.

Casting on FRECH machines is also kind to your budget and makes for a faster, better and more resource-efficient process.

It is a commitment we honour every single day. Have a look:

www.frech.com



Exone – COLD HARDENING PHENOL: THE NEW ALL-ROUNDER AMONG BINDER SYSTEMS | NINGBO HAITIAN DIE CASTING EQUIPMENTS CO., LTD. | MORGAN ADVANCED MATERIALS – ENHANCES CRUCIBLE PERFORMANCE WITH INTERNAL COATINGS FOR ALUMINIUM CASTING APPLICATIONS | Foundry Directory

Exone – 冷固苯酚：粘结剂系统中的新型全能 | 宁波海天金属成型设备有限公司是海天集团旗下产业之一 | 摩根先进材料通过内部涂层增强铝铸件应用的坩埚性能 | 大全

为行业中最 重要的日子做好准备！

全球领先的压铸展会

EUROGUSS

Germany, Nuremberg
January 2018
euroguss.com

CHINA DIECASTING

China, Shanghai

» 19 - 21 July 2017
diecastexpo.cn/en

ALUCAST

India, Delhi
December 2018

and more
to come...

信息提供: NürnbergMesse China Co., Ltd.
电话 +86 (0) 21.60 36-12 40
lucy.lu@nm-china.com.cn

euroguss.de/international

NÜRNBERG MESSE

We need to talk – Challenges, Changes, Answers

我们需要谈一谈挑战、变化和解答

It's like using a ketchup bottle: you shake it, and nothing comes out. You turn it around and knock on it, knowing something will come out, but you can't predict when and how much.

The impending challenges for engine construction are becoming increasingly clear. The relevance of new answers to the energy and socio-political aspects is well-known, although it has long been felt that it would not be so bad for the foundries.

No, it will not be a problem if a whole industry meets the challenges, clarifies and embraces the potential, focuses on new casting processes and materials, and agrees upon clear agreements with OEMs and policy makers.

If we interpret the signs of the time correctly, projected diesel driving bans in Germany are as unambiguous as the signals from China. After 2030, 50% of the vehicles are to be operated electrically or as a plug-in hybrid.

Therefore, it is high time that foundries worldwide prepare for this, and begin concerning themselves about losses in engine construction, as well as examining the opportunities to be found in lightweight construction and die-casting in the production of hybrid drives. Experts expect a growing cast-production in the next 15 years.

Now the course is set, and it will be crucial that the foundry industry as a whole—caster, supplier, and casting buyer—take on the challenges and present themselves well, both politically and socially, and keep persisting, whatever the circumstances.

Good luck!



Thomas Fritsch
Chief Editor

这就像使用番茄酱瓶子：摇晃它，什么也不会发生。把它翻过来敲一敲，虽然知道将会发生什么，但无法预测发生时间和猛烈程度。

迫在眉睫的引擎结构挑战正变得日益清晰。虽然对能源和社会政治方面的新解答所带来的相关性已经众所周知，但长期以来人们都认为这对铸造厂来说没有那么糟糕。

的确如此，如果整个行业都能直面挑战、理清和挖掘潜能、聚焦于新的铸造流程和物料并与OEM及政策制定者达成明确协议，这会成为问题。

如果我们对时机迹象的解读正确，那么预计的德国柴油驱动禁令与来自中国的信号一样清楚无误。在2030年以后，50%的车辆将采用电力或插电式混合动力驱动。

因此，全球的铸造厂现在就应为此做准备，开始关注他们自己在引擎结构方面的失败，以及论证在生产混合动力车时在轻量化结构和压铸中被发现的机会。专家们预计在今后的15年，铸造生产会蒸蒸日上。

现在，道路已经呈现在眼前，整个铸造行业——铸造商、供应商和铸造产品买家作为一个整体去迎接挑战、在政治和社会两个层面有所作为，并且不管情况如何变化皆勉力不懈将是至关重要的。

祝好运！



Thomas Fritsch
主编

Editorial

Titel 3

INDUSTRIAL / PRODUCT NEWS

WHO WILL DOMINATE THE FUTURE?

TALKING ABOUT MATERIALS FOR CAR BODIES 6

NOVELIS PARTNERS WITH NEXT-GENERATION

CAR COMPANY NIO 10

SECO/WARWICK IS PATENTING A GROUND-BREAKING HEAT

TREATMENT SOLUTION FOR THE MOST DEMANDING
INDUSTRIES, INCLUDING AEROSPACE. 12

MORGAN ADVANCED MATERIALS ENHANCES CRUCIBLE

PERFORMANCE WITH INTERNAL COATINGS FOR ALUMINIUM
CASTING APPLICATIONS* 14

THE INDUSTRIALIZATION OF HIGH PRESSURE

DIE CASTING AS KEY LEVER FOR ESTABLISHING
OF LIGHTWEIGHT STRUCTURES IN AUTOMOTIVE..... 16

FOUNDRIES

PREC-CAST ZHONGSHAN(PCZS)* 19

DGS CHINA CO., LTD., A MANUFACTURER FROM SWITZERLAND OF
DIECASTINGS FOR HIGH-END VEHICLES* 21

HAITIAN DIE CASTING OFFICIALLY LAUNCHES ITS HDC SERIAL COLD
CHAMBER DIE CASTING MACHINES* 22

MAJOR SUPPLIERS OF THE INDUSTRY

EXONE

COLD HARDENING PHENOL:

THE NEW ALL-ROUNDER AMONG BINDER SYSTEMS 23

KMA

CLEAN THE AIR IN YOUR FACTORY AND SAVE OPERATIONAL

COSTS A CONTRIBUTION TO CLIMATE PROTECTION 25

FRECH

LOST CORES FOR THE PRESSURE DIE-CASTING OF LIGHT METALS

PRODUCTION OF HIGH QUALITY SALT CORES
THROUGH HOT CHAMBER PRESSURE DIE-CASTING 29

JS AUTOMACHINE CO. LTD.* 31

BÜHLER* 32

DGS DRUCKGUSSSYSTEME AG* 33

Editorial

Titel 3

行业 / 产品新闻

未来谁是主宰 聊聊车身材料那些事儿 6

诺贝丽斯与未来出行方式倡导者蔚来NIO达成合作协议 10

西科沃克荣获航空航天热处理领域开

创性的解决方案专利证书。 12

摩根先进材料通过内部涂层增强铝铸件应用的坩埚性能* . 14

以高压压铸工业化为契机打造轻型汽车架构..... 16

铸造件

中山普瑞科精密压铸有限* 19

广州德志DGS, 来自瑞士的高端车用压铸件厂商* 21

海天金属正式发布HDC系列冷室压铸机* 22

行业主要供应商

EXONE

冷固苯酚: 粘结剂系统中的新型全能 23

KMA

清洁工厂空气, 节约运营成本

为保护气候作贡献 25

FRECH

轻金属压铸的型芯

通过热室压铸生产高品质的盐芯 29

公司简介* 31

布勒* 32

广州德志金属制品有限公司简介* 33



RUIFENG MACHINERY CO. LTD. *	35
HDTD CHINA *	37
NINGBO HAITIAN DIE CASTING EQUIPMENTS CO., LTD. *	38
TP TECHNOLOGY*	39
ITALPRESSE GAUSS	40
A-Me INTERACTIVE ASSISTANT	41
TP MACHINERY*	42
XINGYUAN MACHINERY*	43

ASSOCIATIONS / UNIVERSITIES / B2B

China DieCasting B2B-website	44
ABB intensifies scientific research cooperation with XI'AN Jiaotong University Advancing researches on DC interruption technologies	45
ABOUT FICMES *	47
THE RESEARCH AND APPLICATION OF NEW FOUNDRY TECHNOLOGIES IN THE SPACECRAFT'S ULTRA-LARGE MAGNESIUM ALLOY STRUCTURES*	48
SIMULATION AND APPLICATION OF CASTING PROCESS FOR ALUMINUMAUTOMOBILE PISTON*	49
INFLUENCES OF PORE DEFECTS TO ALSI7MG ALLOY FATIGUE PROPERTY AND ITS SOLUTIONS*	50
HARBIN JIXING MECHANICAL ENGINEERING CO. LTD. *	51
RESEARCH CENTER FOR ADVANCED SOLIDIFICATION TECHNOLOGY* .	52
STUDY ON APPLICATION TECHNOLOGY OF HIGH STRENGTH AND PLASTIC ALUMINUM ALLOY CASTING IN DOMESTIC RAIL TRANSIT INDUSTRY*	53
VDMA METALLURGY: GLOBAL COMPETENCE FOR CASTING INNOVATIONS	54

DIRECTORY

CHINESE DIECASTERS*	55
---------------------	----

公司简介*	35
公司简介*	37
宁波海天金属成型设备有限公司是海天集团旗下产业之一*	38
盈向科技:简介*	39
ITALPRESSE GAUSS	40
A-Me 人机交互系统	41
盈向科技*	42
宁波星源机械有限公司*	43

协会/大学/B2B

中华压铸网	44
ABB与西安交通大学深化科研合作 推动直流断路技术的研究	45
关于我们*	47
航天器超大型镁合金结构件铸造新技术研究与应用*	48
铝合金汽车活塞铸造工艺的模拟及应用*	49
微孔缺陷对AlSi7Mg合金疲劳性能的影响及其解决措施*	50
哈尔滨吉星机械工程有限公司*	51
北京有色金属研究总院先进控制凝固团队*	52
高强韧铝合金铸件在国内轨道交通行业应用工艺研究*	53
VDMA 冶金: 铸造创新的全球竞争力	54

大全

公司英文名*	55
--------	----

* Powered by CHINA DIECASTING, organized by FICMES and NürnbergMesse.

*资料来自于中国国际压铸会议暨展览会, 中国机械工程学会铸造分会及德国纽伦堡国际博览集团提供

Who Will Dominate the Future? Talking About Materials for Car Bodies

未来谁是主宰 聊聊车身材料那些事儿

These days, many people tend to press on the car door or the hood to see whether the body shell is hard enough or if it is made of good steel when they shop for cars. In fact, with the development of science and technology, an increasing number of manufacturers are using high-end, impressive and sophisticated materials. When it comes to white aluminum alloy and carbon fiber bodies, many potential customers may already be familiar with them. Not long ago, these materials were exclusive to luxury cars. What advantages do these materials have and how are they developing? A presentation from Mr. Yuanguang about car body materials.



如今好多朋友在选车的时候，都喜欢按一下车门，或者发动机盖，看看车壳硬不硬，是不是好的钢材。其实随着科技的发展，已经有了越来越多的厂商采用了更高大上的材料。提起铝合金车身和碳纤维车身，估计许多朋友也不陌生。曾几何时这些材料还是豪华车的专属，那他们究竟有什么优势，现在的发展状况又如何呢？

今天远光君就和大家聊聊车身材料那些事儿。

全铝车身有什么优势？

CADILLAC CT6 MIXED-MATERIAL STRUCTURE



Aluminum alloy materials are liked by automakers for their characteristics such as being lighter, more corrosion-resistant, and more plastic. Currently, the cars on the market made with aluminum bodies are the Audi A8L, Cadillac CT6, Tesla MODEL S, and Range Rover. CT6 is the high-end model of Cadillac, and one of the highlights is that the lightweight technology has been used in this car, whose curb weight is only 1655 kilograms. The quantity of aluminum materials used account for more than 57% of the total quantity of materials used for the whole body. At the same time, the integral strength of the composite body made of aluminum material and other materials is increased by 30%, compared with traditional car bodies.

更轻、更耐腐蚀、可塑性更高等特质，让铝合金材质备受车企喜爱，而目前市场上采用全铝车身的车型有奥迪A8L、凯迪拉克CT6、特斯拉MODEL S、揽胜等。CT6作为凯迪拉克高端车型，在轻量化技术的应用是这台车的亮点之一，整备质量仅有1655公斤。整车铝材用量超过了57%，同时铝材与其他材料打造的复合车身，整体强度相对于传统车体上升30%。

Speaking of aluminum bodies, Audi is the earliest ancestor in this respect. In 1994, Audi A8 was put on the market as the first car with the aluminum body in the world. Compared with steel cars at that time, its weight was reduced by 40%. Operability and fuel efficiency improved greatly. The aluminum body, the technology that makes Audi as famous as Quattro, is applied to high-end cars such as Audi R8 and A8. Besides the improved fuel consumption and acceleration mentioned above, the aluminum body also aids greater control of the car to some degree.

全铝车身的鼻祖



谈到铝车身，奥迪可以说是这方面的鼻祖，1994年奥迪A8作为世界首款铝制车身的汽车投放市场，与当时的钢铁车相比，它的质量减轻了40%，操作性和燃油经济性都有了相当大的提升。作为奥迪与quattro齐名的科技，全铝车身应用于奥迪R8、A8等高端车型上。除了上面我们提到的对油耗和加速的帮助外，全铝车身对于操控也有一定的提升。

In fact, in terms of technical progress, the aluminum body is absolutely one of the development directions of the future, as against the steel body. But the reality is that manufacturers are not ready to pay for the aluminum body. Why? Because, compared with steel, the aluminum metal is more expensive. Furthermore, it is more difficult to manufacture and repair, and the cost is increased in later periods. And with the development of high-strength steel, the advantages of the aluminum body have gradually been reduced.

铝制车身的发展



其实光就铝合金车身相较钢制车身的提升来看，铝制车身绝对是未来的发展方向之一。可是现实却是厂家并不乐于为铝制车身买账。原因何在呢？由于铝金属价格昂贵，相较钢材成本大幅提高。而且在制造和维修上都很困难，后期用车成本提升。此外，随着高强度钢材的发展，铝制车身的优势已经逐步被淡化。

Carbon fiber, CF for short, is a new-type, high tensile strength, and high-modulus fiber material containing more than 95% carbon. The carbon fiber is made by stacking organic fibers such as flake graphite along the long axis of the fiber. It is a crystal graphite material obtained by carbonization and graphitization, creating a new material with excellent mechanical properties. Its specific gravity is less than one quarter that of steel. The tensile strength of carbon fiber resin composite material is generally more than 3500Mpa, seven to nine times that of steel. Its tensile modulus of elasticity is 23000 to 43000Mpa, also higher than that of steel. However, carbon fiber materials have high strength only along the axis of the fiber, but its impact resistance is weak, so that it is prone to damage. In manufacturing structural components, its advantages of high tensile strength and low weight are therefore made use of, but it is not used to make the parts that are subjected to side impacts.

碳纤维是什么



碳纤维 (carbon fiber, 简称CF), 是一种含碳量在95%以上的高强度、高模量纤维的新型纤维材料。它是由片状石墨微晶等有机纤维沿纤维轴向方向堆砌而成, 经碳化及石墨化处理而得到的微晶石墨材料。碳纤维是一种力学性能优异的新材料, 它的比重不到钢的1/4, 碳纤维树脂复合材料抗拉强度一般都在3500Mpa以上, 是钢的7~9倍, 抗拉弹性模量为23000~43000Mpa也

高于钢。但碳纤维材料也只是沿纤维轴方向表现出很高的强度, 其耐冲击性却较差, 容易损伤, 所以在制造成为结构组件时往往利用其耐拉质轻的优势而避免去做承受侧面冲击的部分。

Speaking of the carbon fiber car body, we have to talk about McLaren. As the first automobile brand that introduced carbon fiber material to F1, McLaren actively applied the material technology and experience at the racing car level to the road supercar. In 1992, McLaren launched the McLaren F1 supercar. The underpan of this car is completely made of carbon fiber. The car body, except for the engine support and the hanging connectors, is likewise made of carbon fiber, which greatly reduces the weight of the car while simultaneously increasing the stiffness of the car body.

说到碳纤维车身，我们就不得不到迈凯轮。作为首个将碳纤维材料引入F1的汽车品牌，迈凯轮积极地将这赛车级别的材料技术和经验运用到公路超跑身上去。1992年迈凯轮推出了McLaren F1超级跑车，该款车是首款采用全碳纤维底盘的公路车，除了发动机支架和悬挂的连接件外车体都由碳纤维制成，在大幅降低车重的同时增强了车身刚性。



First, the strength of carbon fiber materials can match that of steel, but its density is 30% lower than that of aluminum materials. That is to say, carbon fiber is better in terms of light weight. More importantly, as a new material, its cost can be greatly reduced. That is why it is enjoying a use quite different from that of aluminum materials.

价格昂贵为何还有厂商对它趋之若鹜呢？



首先碳纤维材料强度可媲美钢材，但密度却要比重材还低30%。也就是说在轻量化方面碳纤维拥有着更极致的表现。而且更重要的是，作为新兴材料，碳纤维的成本还有大幅压缩的空间，这也就是为什么它能拥有与铝材截然不同待遇的原因。

BMW i3 is the outcome of cost reduction. The carbon fiber car body, which had only appeared in the supercar, now entered normal people's homes for the first time. With the important characteristics of firmness and light weight, the focus of its development now remains cost reduction. Moreover, carbon fiber has the same defect as aluminum materials. That is, it cannot be repaired after collision. It will certainly increase the burden on the owner to have the whole part replaced by a brand-new carbon fiber part. Plastics are used more than we think.

其实碳纤维车身离我们并不远



宝马i3就是成本压缩的产物，曾经只出现在超级跑车上的碳纤维车身，第一次走入百姓家中。有了坚固和轻质这两个最重要特性的碳纤维，目前发展的重点依旧是压缩成本。而且碳纤维存在一个与铝材相同的缺点，那就是碰撞后的不可修复性，整体更换全新的碳纤维部件无疑将加重车主的负担。塑料应用比我们想象的多

Finally, let's talk about plastic car body. Actually, the application of plastic to the car body is greater than we think. In recent years, car manufacturers have begun to use a lot of plastic materials. The advantages of plastic are obvious. Plastic features a good strength to weight ratio, plasticity, can improve the aerodynamics, enhances the style for differentiation, reduces the work involved in refolding and enhances anti-collision. All these proven advantages explain why plastics are used in cars, making them a choice for lightweight cars.

最后我们来说说塑料车身，其实塑料对于车身的应用远比你想象的高。近年来，汽车开始大量使用塑料材料。塑料的优点显而易见，它有着良好的强度重量比，可塑性强，可以改善空气动力学、增强样式差异化、减少制造复杂性、增强防撞性——这些已发现的优点都是汽车使用塑料的原因，使得它们成为汽车轻量化的选择。



In addition to traditional automotive exterior parts, a good example of plastic material application is the fiber-reinforced plastic rear axle system launched by ZF. In the figure, the green area shows the reinforcing fiber used by the lightweight rear axle system developed by ZF. ZF engineers report that the fiber has gone through ZF simulation and testing and can meet the relevant laws and regulations for collision standards. Unlike the rear suspension we usually see, ZF only uses a spare part, namely the wheel-oriented transverse plate spring, to bear the wheel orientation. With the spring and roll damping function and the aid of the materials, the weight of the rear axle is reduced by 15%.



除了传统的汽车外饰件，塑料材质应用的极致案例要数ZF推出的纤维强化塑料的后桥系统了。图中ZF开发的轻量化后桥系统中绿色的部分使用的强化纤维，ZF工程师表示，这种纤维经过采埃孚模拟和测试，可以达到相关法规的碰撞标准。和我们平时所见的后悬不同，ZF只使用了一个零部件——带车轮导向的横置板簧，来承担着车轮导向，以及弹簧和侧倾阻尼功能，加上材料的帮助可以使得后桥减重15%。

From the above introduction to the various new materials, it can be seen that lightweight cars are the future development trend; however, when consumers now buy cars, they should keep in mind that lightness will involve high prices and high maintenance costs, while the savings from lower fuel consumption will not necessarily be so much. In the future, when lightweight technology and materials are widely used in household cars with the reduction of manufacturing costs, I think that consumers can then really benefit.

车身材料未来路在何方？



从我们上面介绍的几种新材料可以看出，轻量化是未来汽车发展的趋势，但是现阶段，消费者购车的时候就要考虑，轻的质量，换来的是高售价，高维修成本。而节省的却是不一定会低很多的油耗。未来，随着制造成本的降低，轻量化的技术和材料能真正普及到一般家用车的时候，我觉得消费者才是真正获得了实惠。

NOVELIS PARTNERS WITH NEXT-GENERATION CAR COMPANY NIO

诺贝丽斯与未来出行方式倡导者蔚来NIO达成合作协议

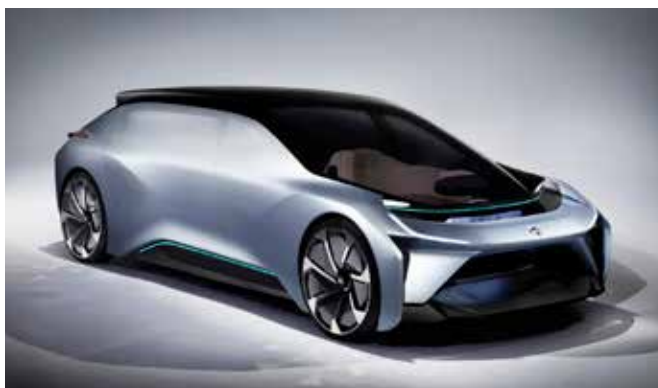
Today, we announced our first major commitment in the electric vehicle market through a supplier agreement with NIO, a next-generation car company.

Through a long-term partnership, NIO will leverage the unique properties of our high strength, lightweight aluminum alloys to design a lighter, better performing, & more fuel-efficient vehicle. Over the next five years, NIO will launch electric SUV models using Novelis' automotive aluminum solutions.

Leveraging our global reach, NIO will draw supply from our Changzhou plant—China's first facility dedicated to heat-treated automotive sheet. Enabling a local supply source will be key to expediting NIO's production schedule at a time when automakers face mounting pressure in China to increase electric vehicle production. As aluminum becomes increasingly integrated into autonomous and electric vehicle designs, our partnership with NIO will showcase the state-of-the-art benefits of automotive aluminum.

NIO and Novelis are pushing the limits of what is possible with electric vehicles from both a performance and design standpoint. This innovative partnership demonstrates that Novelis is more than just a material supplier, we are collaborators and problem solvers working closely with design teams to help ensure vehicles are built to maximize the unique attributes of aluminum and meet the mobility demands of the future.

Novelis' expertise and experience working with world-class automakers make it the best choice for NIO and the right choice for the electric vehicle market.



EVE, NIO's vision car, showcases the future of autonomous driving and seamlessly blends experiences at home, work and play.

EVE: 蔚来NIO概念车, 展现了未来无人驾驶与人们生活、工作以及娱乐完美结合的无限可能。

作者: 诺贝丽斯中国区董事总经理兼诺贝丽斯亚洲汽车业务副总裁 刘清先生

近日, 我们宣布与全球领先的初创电动汽车公司蔚来NIO签订合作协议, 此次合作是诺贝丽斯拓展高端电动汽车市场的重要成果。

在未来的合作过程中, 蔚来NIO将发挥铝材高强度、轻量化的特性制造出新一代更轻量、更节能、性能更佳的车车型。诺贝丽斯汽车铝材解决方案将在未来五年被应用于蔚来NIO的一系列量产车型中。

诺贝丽斯拥有全球化的生产与技术资源。此次我们与蔚来的合作将由中国首间汽车铝板热处理制造厂——诺贝丽斯常州工厂供货。中国汽车制造商在提升电动汽车产量方面一直面临着巨大压力, 而利用本土资源供货将成为加速蔚来NIO生产进程的关键举措。随着铝材应用日益融入到自动驾驶和电动汽车的设计中, 诺贝丽斯与蔚来NIO的合作将充分展现最先进的汽车铝材应用带来优势。

蔚来NIO 与诺贝丽斯的合作将打破当今电动汽车的性能与设计极限。这种创新合作关系体现了诺贝丽斯不仅是材料供应商, 更是汽车制造商的重要合作伙伴的性质。我们将与蔚来设计工程团队紧密协作, 研发制造航空级的车用铝材产品, 打造满足未来出行方式的新一代电动汽车。

诺贝丽斯与众多世界一流汽车制造商的多年合作经验及专业技术知识使其成为蔚来的最佳材料合作伙伴, 同时也有能力服务于更广阔的电动汽车市场。

NIO EP9 - the world's fastest electric car, set a world record for the fastest self-driving car at Circuit of the Americas (COTA) in Austin, Texas achieving a lap time of 2 minutes 40.33 seconds and a top speed of 160 mph.



EP9: 蔚来NIO EP9在美国奥斯汀举办的德克萨斯美洲赛道无人驾驶测试中创造了每小时257公里的速度记录, 和2分40秒33的圈速记录, 成为全球最快无人驾驶汽车。



宗炫/箭恩股份有限公司
JS AUTOMACHINE CO., LTD.

专业精神 力求完美

宗炫/箭恩股份有限公司成立于1989年，从事专业制造压铸机自动化周边设备，为台湾目前唯一荣获 ISO9001 之专业制造压铸机周边自动化设备之厂商。

宗炫秉承“专业精神、力求完美”的宗旨，致力于改善压铸车间工作环境及提高产品质量，拥有完全的自主研发能力。

宗炫在中国大陆成立了“宗炫压铸设备厂”，并拥有国内外30多个服务据点。

宗炫期以最完善的服务与最精良的品质作为本公司长期追求的目标。



二十多年压铸自动化成功经验，服务客户。

箭恩股份有限公司 (台湾)

地址：桃园县杨梅市高狮路 863 巷 8 弄 8 号

电话：+886-3-4855258

传真：+886-3-4855232

邮箱：jsam.tw@vip.163.com

联络人：林小姐

佛山市南海区盐步宗炫压铸设备厂

佛山市南海箭恩压铸自动化有限公司

地址：广东省佛山市南海区盐步涌龙村水雨边7号厂房

电话：+86-757-85702289

+86-757-85701297

传真：+86-757-85702279

邮箱：jsamcn@vip.163.com

网址：<http://www.jsautomachine.com>

JS AUTOMACHINE CO., LTD (泰国)

地址：189 Mootee 3, Nadee, Muang Samutsakhon, Samutsakhon 74000

电话：034-834856

传真：034-834855

邮箱：jsam@vip.163.com

联络人：刘先生

SECO/WARWICK IS PATENTING A GROUND-BREAKING HEAT TREATMENT SOLUTION FOR THE MOST DEMANDING INDUSTRIES, INCLUDING AEROSPACE.

西科沃克荣获航空航天热处理领域开创性的解决方案专利证书。

The SECO/WARWICK engineering team has designed an innovative way of continuous control over the heating and cooling of the entire cycle in multi-chambers furnaces. It is a unique, technological solution on a global scale that could revolutionize the heat treatment process and exceed the aerospace sector's standards.

„All of our customers set the bar high and expect the equipment of the highest quality that will meet the strict industry standards and their expectations in terms of technology implementation. Nevertheless, the aerospace industry sets the bar the highest. Meeting such requirements would not be possible without the regular introduction of product and technology innovations, like this one“ says Katarzyna Sawka, Global Marketing Director at SECO/WARWICK. „The combination of a rich, long-term experience and expertise of SECO/WARWICK with the latest technologies leads to the introduction of another groundbreaking solution that by enabling constant temperature control, provides customers with a heat treatment process of even higher quality and efficiency.“

The patented solution, designed to meet the highest AMS standard, addresses the inclusion of thermocouples during the heat treatment cycle, which move between chambers attached to the tray. Temperature control is achieved based on a special construction that allows the operator to monitor the temperature in both chambers. This provides full temperature control of the processed parts in a multi-chamber vacuum furnaces during the entire process. The solution has already been successfully implemented in a two-chamber vacuum furnace CaseMaster Evolution® used for vacuum case hardening for the most challenging industries, such as aerospace, but also automotive machinery, wind energy, transmission and commercial heat treat facilities. SECO/WARWICK is at the forefront of the heat treatment industry, constantly introducing innovations into the market that answer Customers' key needs. In 2016, SECO/WARWICK received a number of prestigious, recognizable in the world of business awards and nominations, including the SYMBOL OF INNOVATION 2016 for implementing research and development projects with the best technical international universities and the development of innovative graphene production line. It has also been noticed, that the company, as one of the first in the world, introduced augmented reality technology into the heavy industry (SECO/LENS). SECO/WARWICK has also been placed among the ten most innovative Polish companies, shortlisted for the title of Hidden Champions of HSBC Bank and in 2015 won the first place in the ranking of the most innovative companies in Lubusz Province.



西科沃克工程师团队成功研发了一种革命性的控制方式，这种方式可以使多室炉整个加热和冷却周期实现连续控制。这是在全球热处理行业内唯一超越航空航天标准的革命性解决方案

“我们所有的客户对设备的高品质都设立了很高的门槛以期可以在技术实施方面满足严苛的行业标准。其中，航空航天产品拥有最高的技术门槛。为满足这种需求不得不经常性的推出这类创新性的技术和产品” Katarzyna Sawka西科沃克全球市场总监说道“长期拥有丰富经验和专业知识的西科沃克运用最先进技术推出的又一突破性的解决方案可以持续控制温度，为客户提供更高质量和效率的热处理工艺。”

这项专利解决方案是专为满足最高的AMS标准而设计的。此专利是在热处理工艺周期中把热电偶附在工装托盘上，使热电偶可以跟随炉料在炉内不同工艺区移动。由于这种特殊结构，操作员可以在不同工艺区实时监控温度。这种方式为多室真空炉提供了全程工艺温度控制。这种解决方案已经成功运用在CaseMaster Evolution®双室真空炉的真空渗碳淬火工艺中。此设备已经在最具挑战性的航空航天行业中生产运用，并且还广泛应用在汽车、机械、风能、传动和商业热处理等领域。西科沃克是热处理行业最前沿科技的代表。经常向市场推出革命性技术以满足市场的需要。2016年，西科沃克在全球商业领域荣获了多项颇具声望的商业奖项和提名。包括 2016创新标志 以表彰公司与国际知名技术

大学合作研发创新性石墨生产线项目。同时，公司还是世界上第一个将增强现实技术引入到重工业的公司(SECO/LENS)。西科沃克也同时被评为波兰十大最具创新性的公司，并接受汇丰银行授予的“隐形冠军称号”。2015年被评为LUBUSZ省“最具创新性公司”第一名。

西科沃克 荣获航空航天
热处理领域开创性解决
方案专利证书



为用户能生产出良好的铸件

新东提供「适合操作」「良好环境」的铸造设备……
为用户的铸件生产提高附加价值。

制芯机

- ▶ 无机砂芯
- ▶ LYTECORE(发泡砂芯)
- ▶ 壳芯
- ▶ 冷芯盒



实现了铸铝件芯子生产的
成本降低及作业环境改善

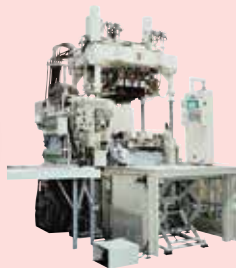
重力铸造

- ▶ 傾動式重力鑄造機
GDCX



通过高精度的倾动浇注,防止
了浇包溶液表面氧化膜进入
模具,从而降低了不良品率。

- ▶ 低压铸造机
LPD系列



采用高精度的控制技术,
防止了铸造缺陷的发生,
实现了稳定生产

后处理

- ▶ SUS投射材料



吊钩式抛丸机
SHBX系列

- ▶ 锌丸



吊钩式抛丸机
DZB系列

实现控制产品歪曲的抛
丸机,并可提供粉尘
爆炸性较低的投射材料。

芯砂再生

- ▶ 砂再生系统
- ▶ 砂再生機 USR



可根据砂子的工艺及
再生的用途进行高效率的
芯砂再生。

模型清掃

- ▶ 金属模型清掃用噴丸機
Q2605



可对细微处进行准确·
均衡的清扫

环保设备

- ▶ 脉冲式除尘器
UDC系列



最适合熔炼炉的微尘除尘,
也可适用于抛丸机的防爆
对策。



MORGAN ADVANCED MATERIALS ENHANCES CRUCIBLE PERFORMANCE WITH INTERNAL COATINGS FOR ALUMINIUM CASTING APPLICATIONS

摩根先进材料通过内部涂层增强铝铸件应用的坩埚性能

Morgan Advanced Materials is highlighting the consequences of aluminium contamination, as it continues to make strides in the development of two specialist coatings, designed to act as a diffusion barrier during the melting process. Although aluminium is often alloyed with other metals and elements to give the exact mechanical and chemical properties for each application, contamination and impurities caused by chemical reactions with crucibles can affect the overall microstructure of the material post melting.

Morgan's answer to this is its PRO and STAR coatings, which have proven particularly effective in reducing impurities in aluminum alloys, preventing contamination of material, and dross build-up in the crucible. These specialist formulas can be applied to the interior surface of a crucible to help prevent chemical reactions between the metal and the crucible, acting as barrier to reduce impurities. PRO coating is relatively simple to apply. It can be mixed with water and applied to the crucible with a brush by a trained manual labour. It also acts as a mortar, to repair areas that have been damaged or chipped, to maximise crucible life.

STAR coating is more advanced and gives superior results for clay-bonded as well as carbon bonded crucibles. It must be applied by skilled supervisor using specific spray gun to form a nano particle scaled layer inside the crucible. It further needs to be sintered under specific conditions to ensure a strong bond.

For further information please visit: URL <http://www.morganmms.com/isopress-crucible>



摩根先进材料公司非常重视铝污染所带来的后果，因此该公司继续大力研发出两种专业涂层用于熔融工艺中的扩散阻挡层。虽然铝通常会与其他金属或元素熔成合金为各种应用提供精确的机械和化学特性，但它与坩埚的化学反应会产生污染和杂质，并影响材料在熔融后的整体微观结构。

摩根研发出PRO和STAR涂层，经过验证，它们在减少铝合金杂质，防止材料污染及坩埚中熔渣方面特别有效。这些专业配方可用于坩埚内表面，防止金属和坩埚之间产生化学反应，可作为减少杂质的屏障。PRO涂层的应用相对简单，可以与水混合，然后由受过训练的手工劳动者用刷子涂覆到坩埚上。它还可以用作砂浆，修复已损坏或缺损的区域，最大化地延长坩埚的使用寿命。

STAR涂层更为先进，可为粘土粘合及碳粘合的坩埚带来更佳的效果。它必须由熟练的主管来操作，使用特定的喷枪在坩埚内形成纳米颗粒层，然后在特定条件下烧结，以确保其牢固结合。这减少了清洁时间，同时其产出的金属纯度比标准坩埚制成的更好。

欲知更多信息，可访问 <http://www.morganmms.com/isopress-crucible>



海天金属，铸造未来

CASTING THE FUTURE



海天金属
HDC 冷室压铸机系列

宁波海天金属成型设备有限公司

地址：宁波市北仑区小港江南中路 32 号 销售热线：0574-86185710 E-mail: hjw@mail.haitian.com

THE INDUSTRIALIZATION OF HIGH PRESSURE DIE CASTING AS KEY LEVER FOR ESTABLISHING OF LIGHTWEIGHT STRUCTURES IN AUTOMOTIVE

以高压压铸工业化为契机打造轻型汽车架构

Sven Roeren, Severin von Kuepach, Tim Schneider, Maximilian Sirek

Technology Center Dingolfing –
An Institute of the University of Landshut
Bräuhausgasse 33, D-84130 Dingolfing
Email: sven.roeren@haw-landshut.de

The need for lightweight concepts in automotive industry increase constantly due to requirements of reduced-emission vehicles. Both common and innovative power concepts demands lightweight for a certain advantage in the market [Pfitzer 2016]. The `space frame´ by AUDI was one of the first structures in automotive based on different joint parts. Integral Aluminum parts, such as complex longitudinals and shock tower houses, became parts in a wide range of vehicles beginning in 2015. Since then, more and more companies tend to concepts based on integral aluminum parts. Currently, these concepts are limited by today´s available degree of industrialization.

At the technology center Dingolfing, a group of engineers represented by the authors is working on solutions to ensure the stability of complex process chains that are needed to produce integral aluminum structural parts for automotive high pressure die casting (HPDC). Figure 1 shows a typical process chain for the production of these parts.

作者: Sven Roeren, Severin von Kuepach, Tim Schneider 和 Maximilian Sirek

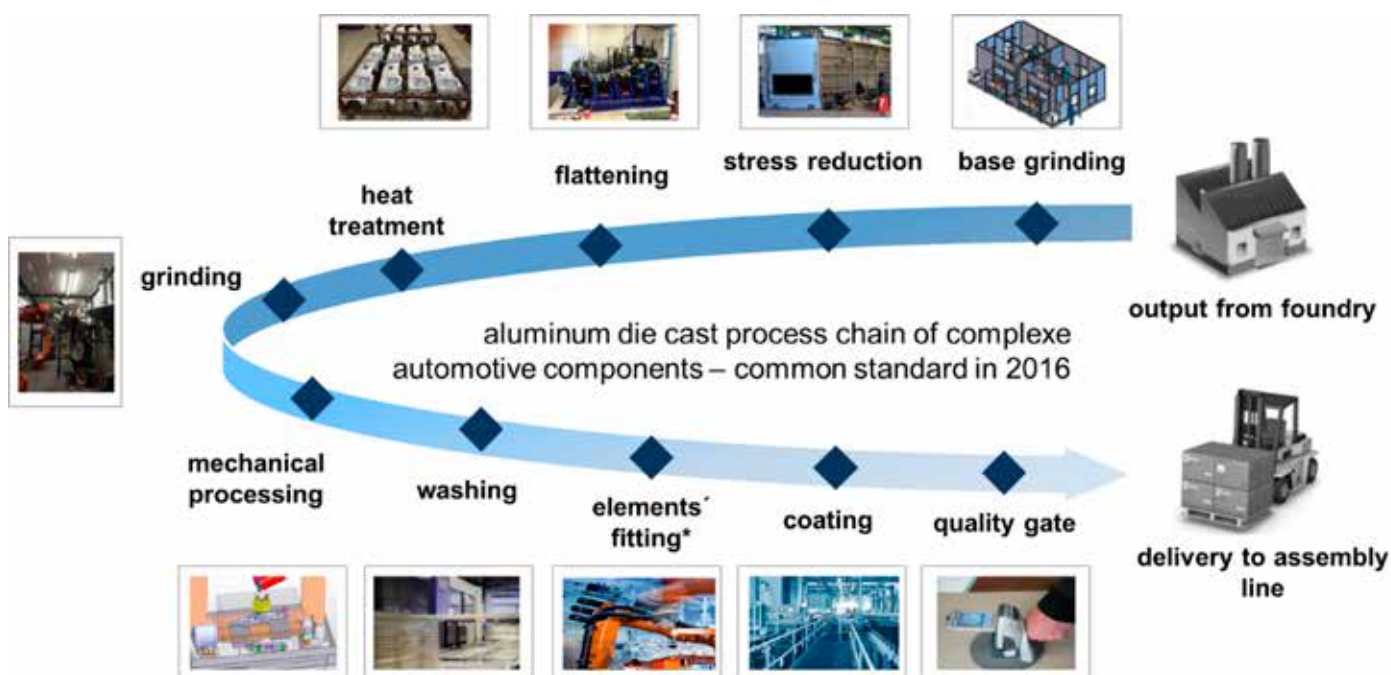
Technology Center Dingolfing – An Institute of the University of Landshut (兰茨胡特大学学院Dingolfing 技术中心)

Braeuhausgasse 33, D-84130 Dingolfing
电子邮件: sven.roeren@haw-landshut.de

鉴于降低汽车排放的需要, 汽车工业中对轻量化理念的需求不断攀升。常规和创新动力概念都要求轻量化, 以获得一定的市场优势 [Pfitzer 2016]。

奥迪的“空间框架结构”是基于不同连接部件的初级车身结构之一。一体式铝质部件(例如复杂的纵向部件和减震器外壳)在 2015 年首先成为被广泛应用的汽车部件。此后, 越来越多的公司倾向于一体式铝质部件的理念。目前, 这些理念仍因现今的工业化程度受到一定限制。

在 Dingolfing 技术中心, 本文作者所领导的一个工程师团队正在开发生产一体式汽车高压压铸 (HPDC) 铝质结构部件所需的解决方案, 以确保复杂工艺链的稳定性。图 1 显示生产这些部件的典型工艺链。



A typical process chain for the industrial production of integral aluminum parts in automotive industry

汽车工业进行一体式铝质部件工业生产的典型工艺链

As relevant key factors for the stabilization of a complex process chain after HPDC are seen

- a fully understood and fairly adjusted set of requirements by design and the assembly plants,
- enough know how and capacity of engineering due to late changes of these parts shortly before start of production,
- both robust and flexible machinery
- concepts with high precision, and
- an intelligent and feasible logistic and quality concept.

Requirements, e.g. by tolerances are defined by design departments, often driven by sheet experienced designers. A lot of restrictions in production can be seen, that lead to higher cost in production and an increase of complexity. Sometimes it is feasible to define, for example, surface parameters according to the following processes of joining at the relevant areas. Therefore, a method was established by the author's team to define the parameters of different surfaces [Roeren 2016].

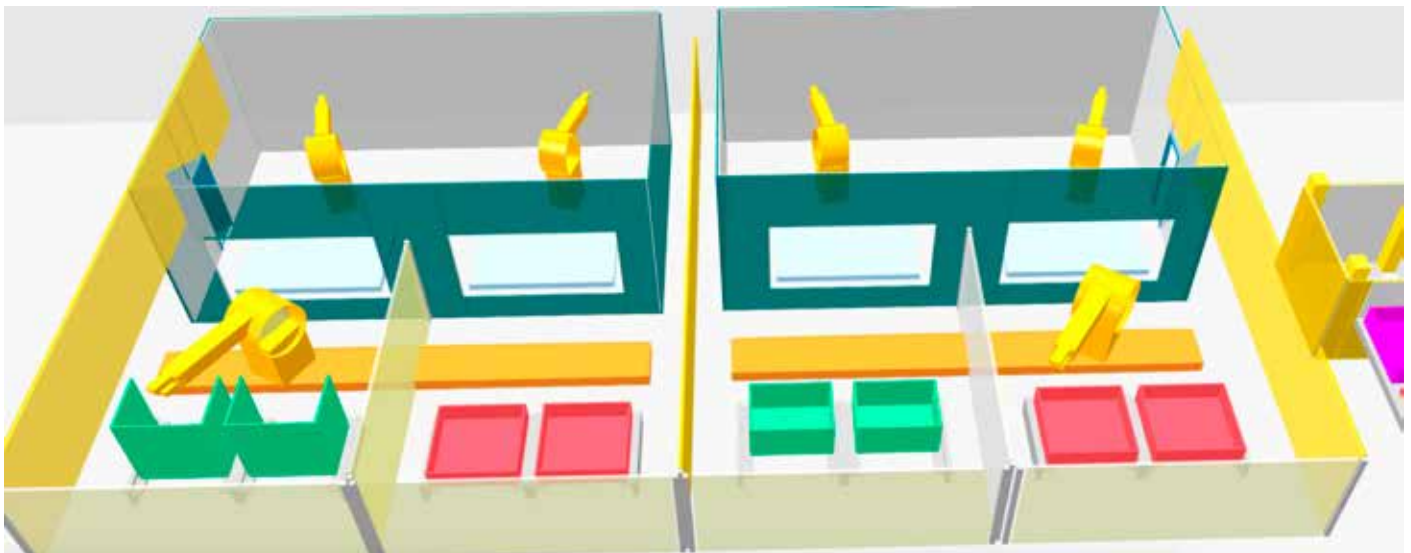
Robust and individually designed machinery concepts are needed to ensure an optimum of cost reduction in invest and operating cost. The concepts for each single machine have to fit into an overall logistic concept based on the required volume of parts. Therefore, simulations and models of the relevant sequences are needed to generate restrictions and information in an early stage of production as seen in figure 2.

HPDC 之后与复杂工艺链的稳定性相关的关键因素如下:

- 设计和装配厂需要进行全面了解和合理调整;
- 需要具
- 足够的专业知识和工程能力以应对开始生产前这些部件出现的最新变化;
- 需要具
- 高精度、结实耐用且灵活的机械理念; 以及
- 需要具
- 智能和可行的后勤支持和质量理念。
-
-
-

由设计部门定义(例如,公差)的要求,通常由具丰富板材加工经验的设计人员领衔制定。生产过程中肯定会遇到很多局限和限制,导致更高的成本以及复杂性。例如,有时可以根据下列工艺定义相关部位接头的表面参数。因此,作者的团队建立了一种定义不同表面的参数的方法 [Roeren 2016]。

要确保优化降低投资成本和运营成本,结实耐用的个性化设计机械理念必不可少。每台机器的设计理念必须基于部件的需求量,与整体后勤支持理念相适应。因此,需要准备相关工序的模拟和模型,以获取早期生产阶段可能遇到的限制及相关信息,参见图2。



A schematic overview of a machinery design for the handling of complex structural parts

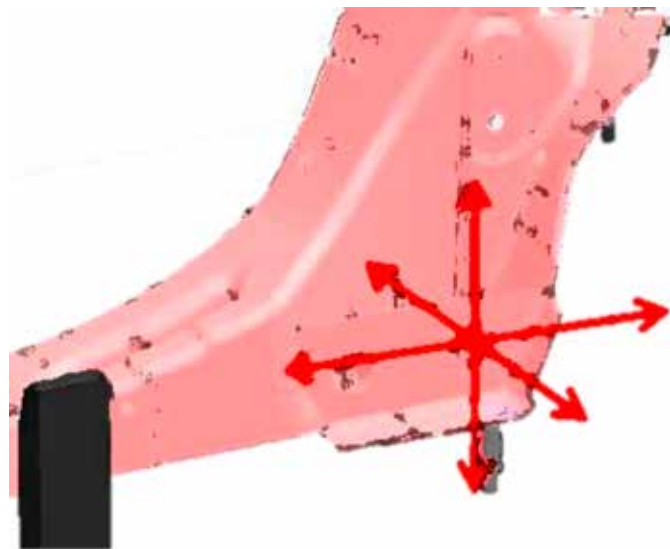
用于加工复杂结构部件的机器设计示意图

Related to the part's requirements, specific concepts of measuring have to be defined over all the process chain. In this context, it has to be considered, that the parts characteristics change during the process chain in a significant way [Fent 2001]. This leads to a flexible approach to define measurement concepts.

In figure 3 a typical measurement center system of a complex part after HPDC is shown. But, the center point, that describes the base of the later to assemble car, is a result of a machining process. This process follows different other process steps as described before. Therefore, new approaches are to be developed. First samples of different strategies are generated at the technology center in Dingolfing.

The most important aspect is the transfer of different measure point systems from a casted part into a part for assembly given with a minimum loss of accuracy.

Schematic description of a measurement center point of a complex aluminum HPDC part to be assembled but not yet given after casting



铸造后即将装配但仍未提供相关测量数据的复杂铝质 HPDC 部件的测量中心点示意图

For the future it is seen, that further automotive concepts will be designed based on aluminum structural parts – so the need for a further improvement of the process chain stability is given. Thus, the therefore addressed team at the Dingolfing technology center will be intensified.

REFERENCES

- [Pfitzer 2016] Pfitzer, M: Einsatz von Aluminium-Strukturteilen in weltweiten Fahrzeugprojekten bei Mercedes Benz. Konferenzbeitrag: VDI Fachtagung „Gießen von Fahrwerks und Karosseriekomponenten“. Kassel 17.02. – 18.02.2016, VDI-Verlag 2016.
- [Roeren 2016] Roeren, S.; Wagensohn M.: Prozessstabilisierung durch automatisierte Erkennung von Oberflächenfehlern in der Gesamtprozesskette AL-Druckgussbearbeitung. Konferenzbeitrag: VDI Fachtagung „Gießen von Fahrwerks und Karosseriekomponenten“. Kassel 17.02. – 18.02.2016, VDI-Verlag 2016.
- [Fent 2001] Fent, A.: Einfluss der Wärmebehandlung auf den Eigenspannungszustand von Gussteilen. Dissertation, TU München, 2001.

必须在所有工艺链中定义与部件要求相关的特定测量理念。因此，在工艺链期间，必须考虑部件的重要特征变化[Fent 2001]，由此形成一种定义测量理念的灵活方法。图3显示HPDC之后一种典型的复杂部件测量中心系统。但是，关键的一点是，用于装配汽车的复杂部件是通过加工工艺获得的结果。如前所述，该工艺关联着其它不同的工艺步骤。因此，必须开发新方法。在 Dingolfing 技术中心，依据不同战略开发了的首批样品。最重要的是，以最低的精确度损失将不同的测量点系统从铸造部件传导至用于装配的部件。

未来可以预见：基于铝质结构部件将设计出其它更多汽车理念，因此，需要进一步改进工艺链的稳定性。为此，文中提及的 Dingolfing 技术中心的这一团队还将继续增强。

参考书目

- [Pfitzer 2016] Pfitzer, M: Einsatz von Aluminium-Strukturteilen in weltweiten Fahrzeugprojekten bei Mercedes Benz. Konferenzbeitrag: VDI Fachtagung „Gießen von Fahrwerks und Karosseriekomponenten“. Kassel 17.02. – 18.02.2016, VDI-Verlag 2016.
- [Roeren 2016] Roeren, S.; Wagensohn M.: Prozessstabilisierung durch automatisierte Erkennung von Oberflächenfehlern in der Gesamtprozesskette AL-Druckgussbearbeitung. Konferenzbeitrag: VDI Fachtagung „Gießen von Fahrwerks und Karosseriekomponenten“. Kassel 17.02. – 18.02.2016, VDI-Verlag 2016.
- [Fent 2001] Fent, A.: Einfluss der Wärmebehandlung auf den Eigenspannungszustand von Gussteilen. Dissertation, TU München, 2001.

PREC-CAST ZHONGSHAN (PCZS) 中山普瑞科精密压铸有限



Prec-Cast Zhongshan(PCZS) is an important hub in China for the WOLF Group which supplies die castings parts for the entire Chinese market as well international markets, including raw parts and machined parts. Our team is committed to excellence and initiative. Our product is stable and outstanding. Our motto is "together towards future!". Through lean manufacturing and TQM, it is our goal to provide the customer safe and reliable products while keeping down the cost, and by means of continuous improvement and innovation to be the leader in the Chinese aluminum die-casting products market.

PCZS has 10 sets of high-precision die-casting machines, including Buhler and LK, as well as a machining center with 15 sets of CNCs from Chiron, Hans, brother. With leak machine, ultrasonic cleaning machines, X-ray machines and more than three CMM to satisfied production. PCZS has passed TS16949:2009 and ISO14001:2004 certification. The company sales continue to grow at 15% a year with main customers including Audi, Autoliv, Iwis and Lear, Wabco and other well-known enterprises at home and abroad. Main products include brake system, compressor, tensioner, spindle, cover and housing for automotive parts, motor end shield, heat sink for consumer electronics, etc.

PCZS owned high base capital quote more than 67%, at the same time the company has a presence all over the world, with sales service locations across the country in Chongqing, Wuhan, Changchun, Jinan, and Wuxi. In the first time to grasp the market demand, PCZS is the customers powerful development partners!



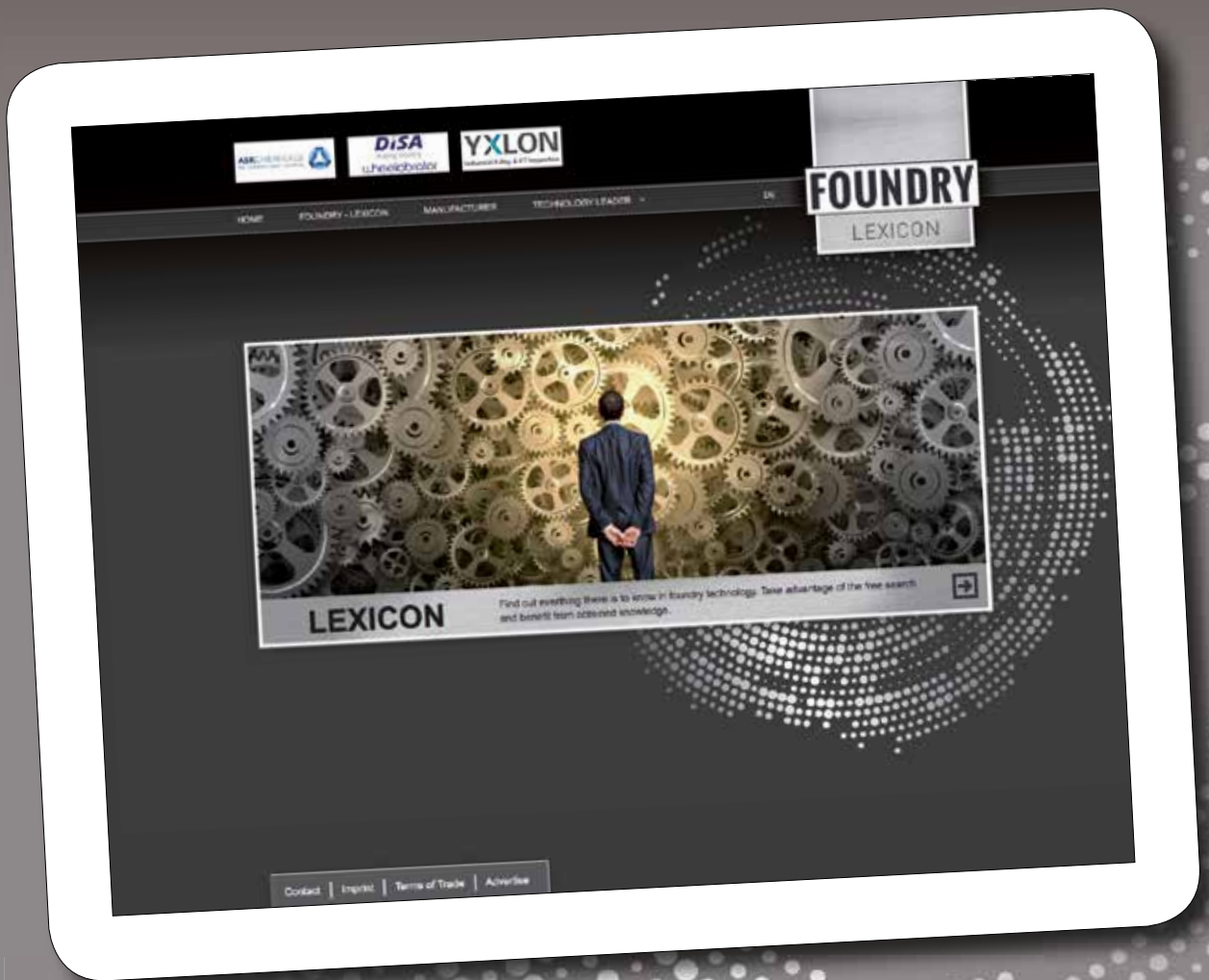
中山普瑞科精密压铸有限公司位于广东省中山市，是沃尔夫集团的全资企业。公司为来自中国及国际市场的客户供应铝合金压铸件：包括机加工、表面处理、各种人工加工装配等。公司的理念是“我们的团队承诺卓越和创新；我们的产品承诺优异和稳定；我们的宗旨是共塑未来”。公司的质量方针是“通过精益生产系统和全面质量管理，在控制制造成本的同时，向客户提供安全可靠的产品，并通过持续改进和创新，做中国铝合金市场的领先者。”

公司拥有10台高精密的压铸机：布勒和力劲；同时匹配15台CNC加工中心：德国巨浪，汉斯，兄弟机，另有测漏机，超声波清洗机，X光机和三坐标测量机等。主要客户为奥迪，奥托立夫，伊维氏，李尔，威伯科等知名企业。主要产品有制动器，安全带滚轴，张紧器，气缸端盖，壳体，阀体等汽车零部件等产品。

公司自有资产率高达67%，先后在重庆，武汉，长春，济南，无锡成立销售服务中心，满足客户的需要。必将成为客户强大的发展合作伙伴！



www.foundry-lexicon.com



- More than 1.200 Keywords
- Links, Pictures, Graphics, Videos
- FOUNDRYPEDIA.com = www.foundry-lexicon.com
- Based on German GIESSEREI-LEXIKON
- Free access

Publisher:

Foundry Technologies & Engineering GmbH (FT&E) – Phone: +41 52 620 10 56

Sales & Marketing:

Victoria Kanat – Phone: +49 8362 930 85 66 – E-Mail: vk@foundry-lexicon.com

Social Media:



Main Sponsors:



FOUNDRY

LEXICON

www.foundry-lexicon.com

DGS CHINA CO., LTD., A MANUFACTURER FROM SWITZERLAND OF DIECASTINGS FOR HIGH-END VEHICLES

广州德志DGS，来自瑞士的高端车用压铸件厂商

CHINA DIECASTING 2017 attracts more well-known diecasting exhibitors from home and abroad. DGS China Co., Ltd. ("DGS China"), the wholly-owned subsidiary set in China by DGS Group (Switzerland), is one of them.

The automobile structures with the Swiss bloodline makes a stage pose in CHINA DIECASTING

Mr. Song Chengliang, a director/general manager of DGS China, says that DGS Group is in the leading position of structure production area, and also one of the first few diecasting companies that can produce automobile structures in bulk. In this exhibition, DGS China will display its latest structure products, and high-quality aluminium alloy, magnesium alloy and special magnesium alloy diecasting used for automatic parts manufactured by the factories in Switzerland and Guangzhou.

By virtue of advance diecasting techniques, die design and production process, the diecastings produced by DGS China are widely pursued by internationally well-known complete vehicle manufacturers and it has become a supplier of high-and mid-end diecasting products and solutions in China. Mr. Song says that besides the highly automatic production, our advantages mainly lie in the unique die design, and we can use a diecasting machine with smaller tonnage to achieve more economic production. We use high vacuum diecasting and design efficient and reliable thermal treatment equipment with our suppliers based on our rich experiences in the production of structures to reach the strict requirements on mechanical property of products from our customers.

CHINA DIECASTING 2017吸引的国内外知名压铸件展商。瑞士DGS集团设在中国的全资子公司——广州德志金属制品有限公司（下称“广州德志”）就是本届压铸件展商中的一员。

瑞士血统的汽车结构件 亮相CHINA DIECASTING

广州德志金属制品有限公司董事总经理宋成亮先生表示：“DGS集团在结构件生产领域处于国际领先地位，广州德志亦为国内首批量产汽车用结构件的少数压铸公司之一。” 本次展会，广州德志将展示来自瑞士、广州工厂生产的最新结构件产品，用于汽车零部件的高品质铝合金、镁合金及特殊镁合金压铸件。

凭借着先进的压铸技术、模具设计和生产工艺，广州德志生产的压铸件产品受到国际知名整车厂商追捧，成为国内中高端压铸产品及解决方案提供商。宋成亮先生表示：“除了生产的高度自动化外，我们的优势主要体现在独特的模具设计，可运用相对较小吨位的压铸机实现更经济化生产。我们采用高真空压铸，并基于DGS生产结构件的丰富经验，与供应商一起设计高效、可靠的热处理设备，严格达到客户对产品苛刻的机械性能的要求。”

DGS
passion for lightweight



HAITIAN DIE CASTING OFFICIALLY LAUNCHES ITS HDC SERIAL COLD CHAMBER DIE CASTING MACHINES

海天金属正式发布HDC系列冷室压铸机

HDC products unveiled

On March 25, 2017, HAITIAN Die Casting officially launched the HDC serial cold chamber die casting machines. The events marked a year since Haitian's entry into the die casting industry last year, where Haitian Group officially began marketing and promoting die casting machines as new products to the market all over China.

The quality of Haitian as a leading national brand

Taking "reliability and durability" as its design tenet, the Haitian HDC serial cold chamber die casting machine has many innovative designs, solves most of the generally existed problems that affect the machine stability and service life, and significantly improves its precision, stability, speed and efficiency, safety and durability.

The guests visited Haitian's "8+16" highly smart and automatic valve plate production workshop and diecasting machine production workshop. The powerful machining production capacity, flexible processing line, modern tridimensional storage system in the valve plate workshop, and the large-scale, standard and modular production and assembly in the diecasting machine production workshop are all impressive and give further confidence and recognition to the audiences on Haitian's quality.

HDC产品全新亮相

2017年3月25日，浙江宁波，宁波海天金属成型设备有限公司（下称“海天金属”）新产品发布会在海天集团新总部大楼多功能厅隆重举行。会议正式发布了HDC系列冷室压铸机，此举标志着海天集团自去年进军压铸行业以来，正式向全国市场销售和推广压铸机新产品。

海天品质，民族领军品牌

海天HDC系列冷室压铸机以“可靠、耐用”为设计宗旨，融入了许多创新设计，对行业里普遍存在的影响机器稳定性和使用寿命的问题进行重点解决，机器精密度、稳定性、速度及效率、安全性、耐用性显著提高。

与会嘉宾参观了海天“8+16”高度智能化和自动化阀板生产车间、压铸机生产车间。在阀板车间，超强的机加工生产能力，柔性加工生产线，现代化的立体仓储系统；在压铸机装配车间，规模化、标准化、模块化的生产装配，震撼全场，让在场观众进一步加强对海天品质的信心和认可。



EXONE: COLD HARDENING PHENOL: THE NEW ALL-ROUNDER AMONG BINDER SYSTEMS

冷固苯酚： 粘结剂系统中的新型全能

Faster and more efficient production of sand cores and molds

The ExOne development team has been testing the new binder CHP – cold hardening phenol - for several months.

The CHP project manager, Dr. Martin Bednarz, explains the binder and its applications.

What is special about CHP?

The special aspects of CHP special can best be explained in comparison to our furan system. With the CHP binder it is possible to create moldings and cores with a higher heat resistance than those created using furan.

In addition, the gas development during casting is considerably lower than what is found in furan parts and the resulting gas defects in the casting are significantly lower. The higher heat resistance also reduces the tendency to form sheet ribs in high-temperature casting.

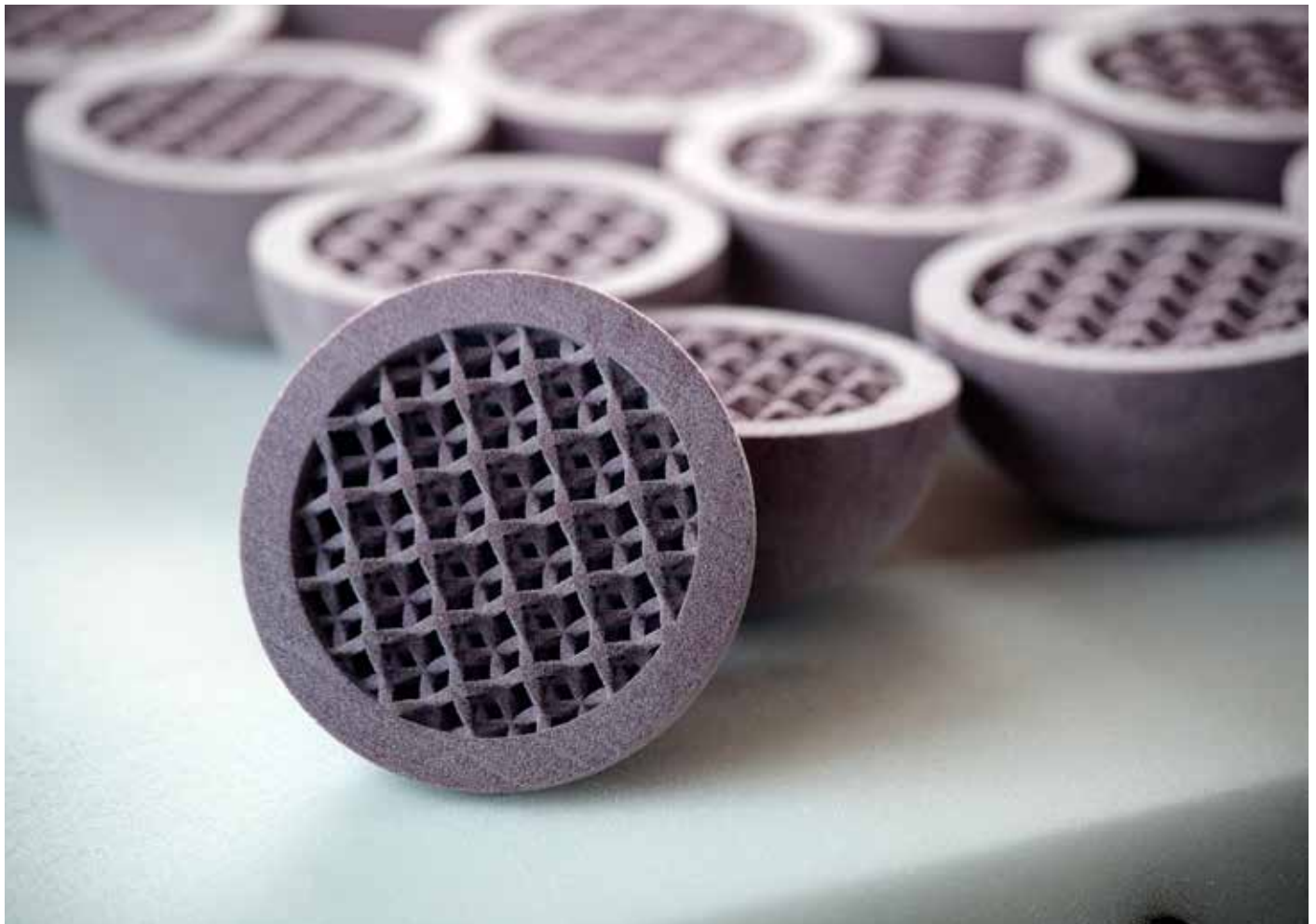
更快更有效地生产砂芯和砂模

几个月以来，ExOne开发团队对其新粘合材料CHP（冷固苯酚）进行了一系列测试。在一次详细的采访中，CHP项目经理Martin Bednarz博士介绍了这种材料及其应用可能。

CHP有什么特别之处？

通过与我们最早广泛推广的Furan系统做比较，即可了解KHP的特性。使用该KHP粘结剂所制造的砂芯与砂型的强度最高可达到两倍。

此外，与Furan部件相比，铸造时气体产生显著减少，因此因气体而导致的铸件缺陷也相对少得多。通过提高热强度，也可以减少高温铸造时叶筋形成的趋势。



What does that mean for the casting and complexity of the core?

Due to the higher cold and hot strength of CHP, even greater part complexity and delicate geometries can be realized. In fact, molds and cores printed with this binder are more suitable for iron and steel castings. CHP has the added benefit of being classified as safer to human health than furan. Odor issues that occur during printing, unpacking, and casting of furan molds and cores is significantly reduced when using CHP. This is especially important as workplace and environmental regulations become stricter.

CHP advantages at a glance

- + Saves time: cores and molds can be taken directly from the Jobbox and cured separately in an oven or microwave
- + Easy finishing: no migration of the cores and molds with unprinted sand
- + All-rounder: combines the advantages of all other binders
- + Reduced environmental impact
- + Strength: higher cold and hot strength
- + Better surface: reduced formation of veining
- + Geometry: production of more complex cores and molds



ExOne[®]
DIGITAL PART MATERIALIZATION



这对砂芯的复杂度和铸造意味着什么？

由于CHP冷热强度更高，所以能实现更复杂更精致的几何形状。此外，用这种粘合剂打印出的砂模和砂芯更适合钢铁铸造。因此CHP比呋喃的健康损害级别更低，打印、拆模、铸造过程中与之相比气味更小。在工作环境和环保要求日益严格的情况下，该课题至关重要。

CHP优势一览

- + 节省时间：砂芯和砂模可以直接从工作箱取出，然后逐个放在烘箱或微波炉进一步固化
- + 易处理：打印出的砂芯和砂模不残留未打印的砂粒
- + 功能多样：集中了所有其它粘结剂的优势
- + 环境污染更小
- + 强度：冷、热强度更高
- + 表面更好：减少叶筋的形成
- + 几何特性：可完成更复杂、更精细的砂芯和砂模



CLEAN THE AIR IN YOUR FACTORY AND SAVE OPERATIONAL COSTS A CONTRIBUTION TO CLIMATE PROTECTION

清洁工厂空气，节约运营成本 为保护气候作贡献

The newest World Health Organization report stated that in the year 2012 around 7 million people died - one in eight of total global deaths - as a result of air pollution exposure. Awareness and responsibility towards air pollution is needed more than ever, especially in the industrial sector. Especially in the mega cities of the People's Republic of China, where smog hangs heavy over Beijing and Shanghai alone, where children grow up with asthma and other respiratory illnesses.

In many factories the exhaust air is captured and (often without being filtered) transported to the outside. This provides a small improvement of the air quality inside the hall, but only means a shift of air pollutants to outdoors. In addition, letting polluted air disperse in the hall before being filtered allows aerosols to be deposited on products and expensive machinery. This means high maintenance costs and in most cases short life expectancy for the machinery. And the large amount of exhaust air movements implicates high energy consumptions for the exhaust and inlet ventilation systems. At the same time, this method causes heating costs during the winter period, because the transported air to outdoors must be replaced with the same amount of fresh air from outside. These facts increase the company's operation costs and carbon dioxide (CO₂) emissions. The use of energy efficient air filtration systems can lead to a significant improvement in the company's balance sheet. Besides, clean air at the workplace increases productivity, motivation and overall health of employees.

Methods of exhaust air treatment:

An interesting aspect about modern solutions for air purification is the energy efficiency. Air treatment systems with a disadvantageous layout can cause enormous investment and running costs. A modern solution can, however, help to reduce the energy consumption and the operating costs significantly, permitting a short payback period on air filtration installations.

A comparison between the exhaust air treatment systems

To give a better idea about the differences in the energy demand of different exhaust air treatments, a practical example for several methods of air purification will be explained in the following.

We assume that there is a die casting foundry in Changchun, because it's particularly interesting to direct the attention to energy efficiency in provinces with significantly high or low temperatures, where heating or cooling of make-up air is required.

世界卫生组织的最新报告指出,2012年大约有700万人因空气污染而死亡——占全球总死亡人数的八分之一。我们现在比以往任何时候更需要加强对空气污染的认识和责任,特别是工业部门。尤其是中国的大城市,雾霾笼罩着北京和上海,儿童正在哮喘等呼吸道疾病中成长。

许多工厂收集废气并(通常是不经过滤)直接将其排放到外界环境。但这仅仅是小程度的改善了室内空气的质量,也即意味着只是将空气污染物转移到了户外。此外,在过滤前驱散室内污染空气,会使得气溶胶产物沉积在产品 and 昂贵的设备上。这意味着高昂的维护成本,且在大多数情况下,会缩短设备的使用寿命。并且,大量的排气运动意味着排气和进气通风系统中大量的能耗。同时,这种方法会造成冬季的热损失,因为必须用户外等量的新鲜空气替换排放至户外的污染空气。这些情况增加了公司运营成本和二氧化碳(CO₂)排放量。使用高效空气过滤系统可以显著改善公司的资产负债表。除此之外,工作场所的清洁空气可以提高员工的生产力、热情和整体健康。

废气处理方法:

现代空气净化方案的一个有趣的方面是能量效率。布局落后的空气处理系统可能会造成巨大的投资和运营成本。然而,现代解决方案可以大幅降低能量消耗和运营成本,可以缩短空气过滤装备的投资回收期。

废气处理系统之间的比较

为了更好的说明不同废气处理方法之间的能量需求差异,在下文通过一个关于几种空气净化的实际案例予以解释。

我们假设一个在长春的压铸铸造公司,它特别专注于需要加热或冷却补充空气的地方中能量效率特别高或低的部分。



Die casting machines create highly greasy and polluted smoke. Changchun has a median daytime temperature of -4.4°C degrees during the winter period (October to the end of April). The desired inside temperature is with 17°C degrees around room temperature. The manufacturing hall of the foundry has a total volume of 78,000 m³ and is equipped with 20 die casting machines in several sizes (from 640 tons up to 2500 tons machines). The management has now several air treatment options to purify the waste air of the die casting machines.

First method: Conventional exhaust air ventilation system

A conventional exhaust ventilation system works in a very easy way: the waste air is led outside through complex exhaust ducts and chimneys at the roof of the building and fresh air from outdoors is led inside through the inlets. This method ensures clean air at the workplace but creates high follow-up costs. The main reason: allowing fumes to get dispersed in the hall first a nonessential increase of the exhaust air volume is created, which needs to be purified. And a high air volume always means high energy consumption. Practical examples show that generally the ambient air inside the hall has to be changed by a conventional ventilation

system 10 to 12 times per hour by air from outdoors to keep it clean. In our example this means an air volume exchange of at least 781,200 m³ per hour, plus high pressure loss (generated by the exhaust air ducts) and high heating costs of the incoming air. This results in an annual operation cost of 19,056,770 CNY and carbon dioxide emissions of about 3,500 tons per year.

压铸机会产生高度油腻和严重污染的烟雾。长春冬天的白天平均气温 -4.4°C (10月至4月底)。内部所需温度为室温 17°C 左右。铸造生产大厅的总体积为78000立方米,配备了20台多种尺寸的压铸机(机器重量在640吨到2500吨之间)。管理部门现在有多种净化压铸机废气的空气处理方法可选。

第一种方法:使用传统的排气通风系统

传统的排气通风系统的工作方式非常简单:该系统通过复杂的排气管道和屋顶烟囱将废气排到室外,再通过进气管道将新鲜空气从户外吸入室内。这种方法可以确保生产大厅空气清洁,但会产生较高的后续成本。主要原因:让气体先在大厅里扩散,增加了不必要且需要净化的废气量。且高风量意味着较高的能量消耗。实例表明,通常情况下,传统的通风系统每小时要更换10-12次大厅内的空气才能保持空气清洁。在我们的示例中,这意味着每小时至少交换了781200立方米空气,加上高压损失(排气管道中产生的)和进气加热损耗。这造成了每年19056770元的运营成本和3500吨/年的二氧化碳排放量。



In the recirculating air mode, the exhaust air is highly purified so that it can be fed back into the work area. Therewith, there is no heat loss during the cold winter months. Accordingly, the recirculating air mode contains the highest potential of energy savings.

在空气再循环模式下,废气被高度净化,可以重新供应给工作区域。于是,在寒冷的冬天没有热量损失。因此,空气再循环模式具备最高的节能潜力。

Second method: exhaust air filtration system in a recirculating air mode

Today's most energy-efficient principle of exhaust air treatment is the recirculating air mode. For the comparison: in the exhaust air mode the waste air is led outside, either with or without air purification. This method ensures clean air at the workplace but creates high follow-up costs, especially during cold winter periods or hot summer periods. The reason: the same amount of air that is led outside has to be replaced by incoming fresh air from outdoors, which has to be heated up first or cooled down first before it is led inside. Heating up or cooling down the fresh air to room temperature will cause high amounts of energy consumption and operation costs for the company. At the same time the environment gets polluted by high CO2 emissions caused by energy consumption processes. In a recirculating air mode the exhaust air will be filtered very effectively by the use of highly efficient electrostatic filter units. After the filtration the purified air will be led back into the production hall. As the purified air is led back into the manufacturing hall, there is no need of maintenance-intensive exhaust air ducts, which cause high pressure loss and increase the energy demand.

Here, each die casting machine is equipped with specially adapted extraction hoods. These extraction devices capture fumes efficiently and directly at the die casting machines, avoiding fumes get dispersed into the production hall and therewith, no high air volumes for the exhaust air treatment. In our example the exhaust air volume decreases to 215,400 m³ per hour. Low air volume always means less energy consumption. Each die casting machine is also equipped with one decentralized compact filter system. The filter units are electrostatic precipitators, which ensure highly effective separations of smoke, dust, and fine mist whilst using little energy. Unsuitable filter types can quickly clog and become ineffective, leading to excessive costs associated with filter replacement and disposal. However, changing the electrostatic filter cells is not necessary and they never obstruct the air flow through the exhaust system. The electrostatic filter is an economical and durable filter medium for many applications. In our model case the exhaust air filter system with a recirculating air mode leads to very low energy consumption. Hence, the foundry in Changchun has now just operation costs of 1,098,791 CNY. That's more than 90% less compared to a conventional ventilation system. Also the carbon dioxide emissions are reduced to 416 tons per year.

第二种方法:使用空气再循环模式的排气过滤系统

如今最高效的废气处理方法就是空气再循环模式。作为比较:在排气模式下,吸入经过或未经净化的废气。这种方法可以确保工作场所清洁空气,但会产生较高的后续成本,尤其是在寒冷的冬季或炎热的夏天。主要原因:必须用等量的室外新鲜空气替换废气,且必须先经加热或冷却才能引入。加热或冷却室温新鲜空气至室温会产生大量的能量消耗和公司运营成本。同时,能量消耗过程排放的大量二氧化碳会污染环境。在空气再循环模式中,高效静电过滤单元在过滤排气方面非常有效。过滤后,将净化空气引入生产大厅。在将净化空气导入生产大厅时,无需集中式维护的排气管道,那会导致大量的压力损失和增加能量消耗。

这里,每个压铸机都需配备专门匹配的抽气风罩。这些抽气设备可以直接有效的收集压铸机产生的气体,避免气体排入生产大厅,也减少了大量的废气处理。在我们的案例中,排气量每小时减少至215400立方米。低风量意味着较低的能量消耗。每个压铸机还配备了一套分散式紧凑过滤系统。该过滤单元为静电除尘器,可以利用少量能量高效分离烟雾、灰尘、水雾。不合适的过滤器型号会很快堵塞,从而失效,造成更换和处置过滤器相关的额外成本。然而,没有必要更换静电过滤器单元,它们不妨碍空气流过排气系统。静电过滤器在许多应用中是一种经济耐用的过滤介质。在我们的模型中,空气再循环模式下的排气过滤系统能量消耗非常低。因此,这个长春铸造厂的运营成本仅为1098791元。这比传统的通风系统减少了90%。其次,每年的二氧化碳排放量减少416吨。

Operating in an exhaust air mode, a heat recovery system can be integrated, which extracts the heat out of the exhaust air before it is conducted outdoors. The recovered heat can be used for follow-up processes (e. g. to heat up the incoming cold air during the winter months).



在一种排气模式下运行,集成了热回收系统,在废气排出至室外前提取废气中的热量。可以在后续流程(如在冬季加热冷空气)中利用回收的热量。

According to these, the recirculating air mode includes the most energy-saving potential. Although this principle is used in many modern and new-built foundries, it is a fact that in some foundries the demand for exhaust air mode systems still exists. For those cases there is an energy-efficient exhaust air alternative, explained below.

Third method: Centralized exhaust air filtration combined with heat recovery system

At some winter days in Changchun the ambient median temperature is going down to -16°C . By using conventional exhaust ventilation system, the temperature inside the hall will also turn cold. Therefore, many foundries in that region have to heat up the production halls to keep the productivity high. But due to the high energy costs that are caused by heating systems, some foundry managers see this proposition as an incapable solution. What often is not considered is the fact that in most production processes high amounts of heat and energy is created, which can be used for follow-up processes. The centralized exhaust air filtration system, equipped with an integrated heat recovery system, enables an energy-efficient heating or cooling of the hall by perform in an exhaust air mode.

Here, the multiple machines are connected to one centralized large exhaust air filter system. That means the waste air from the machinery is extracted through exhaust ducts and led to the centralized filter system, which is equipped with electrostatic precipitators as well as integrated fin tube heat exchanger. After filtering aerosols out of the exhaust air, the heat pump, which is connected to the filter system, extracts the energy out of the purified air. The energy is transferred in the condenser of the heat pump to a heating water circuit. Afterwards the heating water is led to a second heat exchanger, which is installed in the incoming air duct. With this method the incoming cool air is heated up in an energy-efficient and economical way before it flows into the production hall. With the help of the highly efficient heat pump the foundry in Changchun increases the temperature inside the hall up to a room temperature just by using the heat recovered out of the exhaust air. By an energy demand of 352 kW per hour, the heat pump is creating almost 1,500 kW per hour for follow-up processes. Here the foundry in Changchun is having annual operation costs of 4,235,717 CNY, which goes along with an annual carbon dioxide emission of almost 1000 tons. These energy-savings are less than the foundry in Changchun would reach with the recirculating air mode, but still much higher than the conventional exhaust ventilation system with a simple and energy-intensive heating system would reach.

Take action on air pollution

The energy consumption in foundries is strongly depending on the energy input of the exhaust and supply air systems. High energy consumptions always mean high amounts of CO₂ emissions. Through the use of energy-efficient exhaust air filtration systems the air gets clean and significant reductions in carbon dioxide emissions can be done. Die casting foundries and other metal processing industries can easily improve the company's "Carbon Footprint" and make an important contribution to climate protection. Therefore, a change in thinking for each factory is worthwhile.

据此可知,空气再循环模式最具节能潜力。虽然这种方法被广泛用于许多现代新兴的铸造厂,事实上,一些铸造厂仍需要排气模式系统。下文将说明一种适用于那些情况的节能排气模式。

第三种方法:结合热回收系统的集中排气过滤

长春冬天的某些日子里环境平均温度会下降到 -16°C 。使用传统的排气通风系统,大厅内的温度也会变冷。因此,该地区的许多铸造厂必须为生产大厅供热以保持较高的生产力。但由于供热系统的高能量成本,一些铸造经理将这种提议作为无能的解决方案。人们通常没有考虑到一个事实,即大多数生产过程都产生了大量的热量和能量,可以在后续的流程中使用。配备了集成热回收系统的集中排气空气过滤系统可以在排气模式下高效加热或冷却大厅。

可以将多台机器连接至一个集中大型排气空气过滤器系统。这意味着通过排气管道收集机器产生的废气并将其引导至配备了静电除尘器及集成翅片管式热交换器的集中过滤系统。在过滤了废气中气溶胶后,与过滤系统相连的加热泵提取净化空气中的能量。通过加热泵的冷凝器将能量转移至水加热循环中。然后,将热水引入安装在进气管道内的第二个热交换器。利用这种方法,在冷空气进入生成大厅前,可以经济高效的加热流入的冷空气。凭借高效加热泵,该长春铸造厂仅通过回收废气中的热量就将大厅内的温度加热至室温。该加热泵每小时消耗352千瓦能量,却能在后续流程中产生1500千瓦/小时的能量。在此,该长春铸造厂的年度运营成本为4235717元,每年排放近1000吨二氧化碳。在该长春铸造厂,这种方法的节能效果比空气再循环模式差一些,但仍远高于配备简单的和能量集中加热系统的传统排气通风系统。

采取行动,治理空气污染

铸造厂的能量消耗强烈依赖于废气和供气系统的能量输入。高能消耗总是意味着大量的二氧化碳排放。通过使用高效排气过滤系统,可以让空气更清洁并显著降低二氧化碳的排放量。压铸厂和其它金属加工行业可以很容易的提高公司的“碳足迹”,为气候保护作出重要贡献。因此,改变思想对工厂而言意义重大。

LOST CORES FOR THE PRESSURE DIE-CASTING OF LIGHT METALS PRODUCTION OF HIGH QUALITY SALT CORES THROUGH HOT CHAMBER PRESSURE DIE-CASTING

轻金属压铸的型芯 通过热室压铸生产高品质的盐芯

Pressure die-casting is extremely productive and delivers high quality cast parts. However, an unresolved problem to date has been the use of lost cores for complex inner hollow cavities, e.g. with pumps, manifolds or engine components. High pressures and melt speeds destroy the sand cores conventionally used with other casting methods. Until now, only salt cores have proven themselves among the alternative technologies tested, and even then only in niches.

Their advantages are dimensional accuracy, high strength, good de-moulding characteristics and very smooth surfaces. To date, production has predominantly taken place through pressure die-casting in cold chamber machines. However, the results have not always been satisfactory.

An important obstacle is the high volumetric shrinkage of the salt when solidifying, which causes numerous cavities to form in the core. This can therefore break during pressure die-casting, resulting in faults.



"We have utilised the advantages of the hot chamber pressure die-casting process for salt core production!" Dipl. Ing. Helmar Dannenmann (photo: Klaus Vollrath)

“对于盐芯的制造我们信赖于热室压铸工艺的优点！” 硕士工程师 (FH) Helmar Dannenmann 如是说 (摄影: Klaus Vollrath)

压铸是非常有效的，并能提供高品质的铸件。诸如泵、歧管、发动机元件等复杂内部空腔的型芯是个老问题。常用的砂芯会被高压和高融化速度会破坏。

替代技术的研究迄今只有盐芯得到证实，但也处于起始阶段。其优点是尺寸精度高、强度高、脱模性能好，且表面非常光滑。一直以来大多通过冷室压铸机来制造。然而，结果并不总是令人满意。一个重要的障碍是：在凝固过程中盐的体积收缩高，由此在芯内形成许多缩孔。因此，铸造过程中会有断裂，造成缺陷。

因此，Oskar Frech 有限公司使用热室压铸工艺而非冷室压铸来生产盐芯。其显著优点是：模具中空气更少，浇注系统中的边缘外壳形成可忽略，无需使用活塞润滑剂，铸造压力更小，循环时间短。实验室试验和测试铸件表明，这些盐芯牢固度高达五倍，且让铸造过程安全可控。



The hot chamber pressure die-casting machine used in the Frech technique for the production of salt cores (photo: Klaus Vollrath)

Frech 技术中心为制造盐芯而使用的热室压铸机 (摄影: Klaus Vollrath)



Example: Complex sand core with sophisticated three-dimensional varied geometry for a sand mould (photo: Klaus Vollrath)

模板：用于沙模的、带精密的三维几何结构变化的复杂砂芯 (摄影: Klaus Vollrath)

FRECH®



Lost cores are particularly well-suited for cast parts for flow machines, such as pumps, manifolds, valves and motors (photo: Klaus Vollrath)

型芯特别用于泵、歧管、阀或电机等流体机械的铸件 (摄影: Klaus Vollrath)



In comparison to the use of the standard long sprue cone, the use of the Frech Gating System (FGS) enables not only solid runners but also a significant reduction in the material used and therefore the materials circulating (photo: Frech)

相比于普通的长浇道, 使用 Frech 铸件浇注系统 (FGS) 在实现大规模的浇注外还能显著减少材料消耗, 从而减少电路元件的使用 (摄影: Frech)



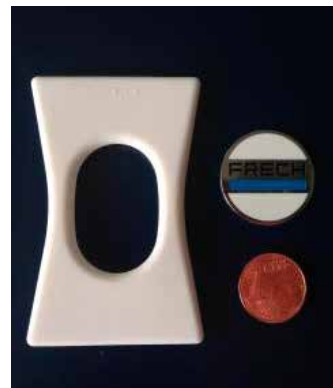
The system for mould venting detects the point in time at which the melt replenishment is interrupted and issues the signal for the subsequent pressure build-up for optimum compression (photo: Klaus Vollrath)

这是出于对磨具进行排气的目的而对熔化物再补给的中断时间进行识别的设备, 并为最后的压力累积发出信号, 以达到最佳压缩比 (摄影: Klaus Vollrath)

As an alternative to cold chamber pressure die-casting, Oskar Frech GmbH + Co. KG has therefore been applying the hot chamber pressure die-casting method in salt core production.

Significant advantages are less air in the mould, negligible edge shell formations in the casting system, the omission of plunger lubricants, lower casting pressures and short cycle times.

Laboratory investigations and test mouldings have shown that these salt cores are up to five times stronger and enable a safely controllable pressure die-casting process.



A salt core depositor produced in a hot chamber process for the production of an aluminium pressure die-cast part with media-transporting inner channels (photo: Frech)

一个通过热室工艺生产的盐芯, 用于带有内部介质输送管道的压铸铝件的制造 (摄影: Frech)



Electrically-heated sprue nozzle for salt core production. Separate heating circuits and thermal sensors ensure precise compliance with the desired temperature levels (photo: Klaus Vollrath)

盐芯制造用电加热喷嘴浇口。独立的加热电路和热传感器用于精确维持所希望的温度水平 (摄影: Klaus Vollrath)



The temperature level for producing salt cores is approx. 60 K higher than the processing of magnesium (photo: Klaus Vollrath)

盐芯的制造温度比镁的处理温度约高 60 K (摄影: Klaus Vollrath)

JS AUTOMACHINE CO. LTD.

公司简介

Established in 1989, JS AUTOMACHIE CO. LTD. is presently the only professional manufacturer in Taiwan awarded with ISO9001, producing peripheral automatic equipment for die-casting machines. Products include: lading, spraying, and extraction machines, piston type granulators, and rapid melting furnaces, as well as central programming systems for a whole die-casting plant.

Our company's product control ensures uniformity in specifications with all the die-casting manufactories in Taiwan and the distinguished machinery plants such as Toshiba, TOYO, UBE, BUHLER and LK, and will continue introducing products of good value to match the users' requirements with commitment to win users satisfaction and trust.

宗炫箬恩股份有限公司有限公司成立于公元1989年，为台湾目前唯一荣获ISO9001之专业制造压铸机周边自动化设备之厂家，同时在此行业占领先地位。宗炫公司始终以“专业精神、力求完美”作为企业的宗旨，不断研发新的产品，制造更专业、更出色的压铸机周边自动化设备。

公司产品包括：给汤机、喷雾机、取出机及压铸整厂规划中央系统。不但和台湾所有压铸厂完成配套，并且和东芝机械、东洋机械、宇部机械、瑞士布勒机械、力劲机械也已联机配套，产品已营销全世界。宗炫公司致力于为用户提供专业的接口设备解决方案，完善的售前、售中、售后的服务。

通过专业的技术、出色的产品、丰富的经验，在当今的不断发展的复杂的环境内，宗炫公司会继续推出物超所值、安全性高之产品，符合客户之需求，并以赢得客户完全满意和信赖为誓志。宗炫公司总部位于台湾，并于中国大陆的广东佛山、福建、厦门等地设有生产基地，服务华南、华中、华北之广大客户群。宗炫的不断的扩大，目的在于为国外和国内的市场提供更好的产品和服务，这同时也是宗炫迈向下一阶段的高速发展，期以最完善的服务与最精良的质量作为本公司长期追求的目标。



专业精神 力求完美

二十多年压铸自动化成功经验，服务客户。

宗炫箬恩股份有限公司成立于1989年，从事专业制造压铸自动化周边设备，为台湾目前荣获ISO9001之唯一制造压铸机周边自动化设备之厂家。

宗炫秉承“专业精神、力求完美”的宗旨，致力于改善压铸车间工作环境及提高产品质量，拥有完美的自主研发能力。

宗炫在中国大陆设立了“宗炫压铸设备厂”，并拥有国内外多个服务据点。

宗炫期以最完善的服务与最精良的品质作为本公司长期追求的目标。

宗炫/箬恩股份有限公司
JS AUTOMACHINE CO., LTD.

国内外压铸机厂指定配套厂家！

佛山市南海宗炫压铸设备厂 宗炫/箬恩股份有限公司 JS AUTOMACHINE CO., LTD.
 佛山市南海区里水镇宗炫自动化有限公司 地址：台湾台中市南屯区文心南路100号
 地址：中国广东省佛山市南海区里水镇 电话：+886-4-23522000 传真：+886-4-23522001
 地址：中国福建省厦门市集美区 电话：+86-592-8071212 网站：www.jsautomachine.com
 地址：中国福建省厦门市集美区 电话：+86-592-8071212 网站：www.jsautomachine.com

BÜHLER

布勒

Bühler Die Casting is the leading global provider of aluminum lightweight solutions to the automotive industry and supports its efforts to reduce CO2 emissions. Around 20 % of all cars drive with engine blocks made with Bühler equipment. The Swiss company provides optimized die casting solutions, fully integrated process controls, plant layout knowhow, process knowledge and global assistance. Bühler supports its customers with a strong global service network, modern application centers as well as its own sites for production, machine revision, and technology in Europe, Asia, and North America.



布勒压铸业务单元是全球领先的汽车行业轻质铝解决方案供应商，能助力业界减少 CO2 排放。全球约 20% 的汽车使用的是由布勒设备制造的发动机缸体。这家瑞士公司提供压铸解决方案、完全集成的工艺控制、设备布局技术、工艺知识和全球支援。借助其强大的全球服务网络、现代化应用中心以及欧洲、亚洲和北美地区的自有生产、设备修复和技术基地，布勒可为客户提供完美支持。

Bühler Ecoline S series

Ecoline S is the ideal Bühler solution for casters which need a basic set of functions and want to rely on proven, dependable and high-performance die-casting technology. It is excellently designed in Switzerland and precisely manufactured in China to reduce your costs. The Ecoline S series has a locking force range from 3,400 to 8,400 kN and is available with options to meet your specific requirements.

布勒 Ecoline S 系列

Ecoline S 系列既能满足压铸厂家对机器基本功能的需求，又为注重成熟性、可靠性及高性能压铸技术的厂家提供理想之选。该系列经由瑞士专家精心设计并在中国精密打造，可大幅缩减成本。Ecoline S 系列锁定力范围为 3,400 至 8,400 kN，可选空间大，足以满足您的特定需求。

Bühler Carat – the modular two-platen die casting system

Carat is the Bühler two-platen die-casting solution with a locking force range from 10,500 to 44,000 kN. Special casting units can be adapted to their intended application, which makes the Carat the best solution for customers that manufacture large and complex parts that have to meet the highest quality standards.

布勒 Carat – 模块化双压板压铸系统

Carat 是一款布勒双压板压铸解决方案，其锁定力范围为 10,500 至 44,000 kN。特殊的压铸单元可满足客户的个性化要求，使得 Carat 压铸机能够生产符合最高质量标准的大型复杂部件，从而成为最佳的客户解决方案。

BÜHLER



DGS DRUCKGUSSSYSTEME AG

广州德志金属制品有限公司简介

DGS DruckgussSysteme AG has 80 years' experience in producing high quality die casting parts with lightweight alloy for aluminum structural parts and complex, compact and thin magnesium parts in automotive industry. Since 2005, DGS has started producing structural die-casting parts, and worldwide with 3 production locations in Switzerland, Czech Republic and China. DGS is a well-known international casting and solution provider with special aluminum and magnesium alloys, and has especially in the fields of structural parts for body in white, a worldwide leading position.

DGS公司有着80多年运用多种轻合金材料生产高品质压铸件的历史，为汽车行业提供铝合金结构件和复杂、致密、壁薄的镁合金零部件。2005年，公司开始致力于汽车结构件的生产，目前在全球共有三个生产基地，分别位于瑞士、捷克和中国，是国际知名的轻合金（含镁合金和铝合金）压铸方案和产品的提供商，特别是在汽车结构件领域，处于全球领先地位。



DGS China Co Ltd is a wholly owned subsidiary of DGS group, founded in 2007 in Nansha district, Guangzhou city.

Since 2013, DGS China invested 150 million RMB and rapidly increased its sales by almost 10 times within the next 4 years, and becomes one of the very few first die casting foundries in 2014, which produce structural casting parts in series locally in China. DGS China is also the first Europe / America based foundry, which has an in-house tool design and production capability in China.

广州德志金属制品有限公司于2007年在广州市南沙区成立，为DGS公司在华全资子公司。

从2013年开始，在短短4年内广州公司投入达到近1.5个亿，销售额也几乎增长了10倍，并于2014年成为国内首批量产汽车用结构件的极少数压铸公司之一。同时，广州公司还是国内首家具有自主的模具设计和制造能力的欧美压铸企业。



DGS China delivers both aluminum and magnesium products to local car makers, mainly used in their body in white, front and rear modules, steering systems, instrument panel assembly, handbrake and shift housing systems. Besides castings, we also provide ready-to-use solutions, including heat-treatment, machining, assembly etc. In middle of 2017, we will implement advanced manufacturing execution system in the production, so as to realize on-line control and traceability in all the processes.



目前广州公司主要为国内的汽车制造商提供车身、前后端模块、转向系统、仪表盘总成、手刹和排档系统上用到的铝、镁合金压铸件。除了铸件本身，我们还有热处理，机加工和组装等工艺，为客户提供一体化的解决方案，并将于2017年中引进国际先进的电子信息管理系统，实现结构件生产的全过程自动监控和可追溯。



RUIFENG MACHINERY CO. LTD.

公司简介

Dongguan Ruifeng Machinery Co., Ltd. was established in 1997, and it is engaged in the R&D, manufacture and sell of cold chamber die casting machine, hot chamber die casting machine as well as other supporting equipments. The factory has a favorable location in Dongguan City of Guangdong Province and occupies over 10,000 square meters of land area. Relying on the rich experience in providing manufacture service and technological support, Ruida die casting machine has become a trustworthy brand in the industry and has been widely recognized by all clients.

Ruifeng ranks among the best manufacturers depending on its far-sighted development concept, powerful technological strength, and advanced manufacture technology. It adopts ISO9001 and ERP to establish a sound management system, uses finite element method to optimize machine performance, and keeps innovating in new products as per European and Asian industrial design standards. The Factory is equipped with advanced hydraulic equipments, electrical components and efficient controlling system. It has established a complete set of strict procedures, including processing, inspection, assembly, and debugging to make sure all finished machines are easy to use and have stable performance and high reliability. Moreover, the Factory has been in close cooperation with many universities in China to ensure continuous technological improvement.

东莞市锐风机械有限公司创建于1997年，占地一万平方米，总部座落在制造名城广东东莞，地理位置优越，商贸聚集，交通便利。十余年来，公司稳健经营，专注于冷、热室压铸机及周边设备研发、生产制造和销售，长期积累的生产经验和服务经验，使“锐达”品牌压铸机成为业界知名品牌，赢得了客户的广泛认可。

锐风理念超前，技术力量雄厚，生产工艺先进，管理中推行ISO9001和ERP，技术上采用有限元法对产品性能进行优化提高，采用欧洲、亚洲行业设计标准进行自主研发，配备世界名牌的液压、电器元件及控制系统，通过严格的加工、检验、装配、调试，机器操作方便，性能稳定、安全可靠。此外，公司与国内知名学府进行全方位的合作，保证技术持续发展。

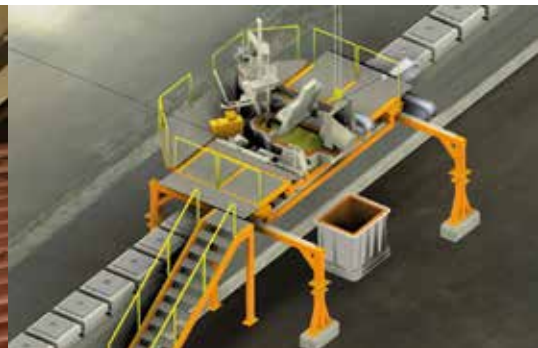




PEOPLE. TECHNOLOGY. SUCCESS.

We are an international market and technology leader of induction systems for melting, pouring and holding of steel, ferrous and non-ferrous metals.

Our success is based on our more than 400 dedicated employees. They provide the perfect combination of proven and innovative technology.



HDTD CHINA 公司简介

HDTD was founded in 2005, with experienced and professional team and the cooperation with professional universities, based on innovative technology, the company made a breakthrough in the technology of low pressure die casting machine, has become a world leader. Our products are exported to all over the world, and win wide reputation.



HDTD公司成立于2005，凭借着股东几十年业内的从业经验和专业化的团队以及与专业院校的合作，依托不断创新的技术，公司在低压铸造机技术方面取得突破，已经处于世界领先地位，产品销往世界各地，并赢得广泛美誉。

HDTD now has developed into an international group. In China, we have three plants in Qinhuangdao and Jiangsu. Overseas we have HDTD Europe in Italy, Sales and service team in Turkey, and agencies separately in India, Iran and South America.

Qinhuangdao Hong Tong Machinery Co., Ltd., covers an area of 20000 square meters, the main products are: low pressure casting machine and ancillary equipment.

Jiangsu Tian Ding FineMachinery Co., Ltd., covers an area of 26000 square meters, the main products are low pressure casting machine, gravity casting machine, robot system integration, factory automation system and etc.

Siyang Lazzero Precision Machinery Co., Ltd., a Sino-Italian joint-venture company, produces of helium leak-test equipment for testing aluminum wheels and other parts.

HDTDEurope separately in Turin, Italy, is responsible for promoting the company's products to Europe; to supply service, and responsible for new product research, development and etc.

HDTD目前已经发展为一个国际化的集团公司，

中国公司在秦皇岛和江

苏有三个工厂，海外在意大利有欧洲公司，在土耳其有销售和服务团队，另外在印度和南美有代理机构。

秦皇岛鸿通机械有限公司：占地两万平米，主要产品是：低压铸造机及附属设备

江苏天鼎精密机械有限公司：占地两万六千平米，主要产品是低压铸造机、重力铸造机、机器人系统集成以及工厂自动化系统等。

江苏拉杰罗精密机械有限公司：中意合资企业，生产铝合金轮毂等氦气试漏设备

HDTD欧洲公司：在意大利都灵，负责公司产品欧洲市场的推广、服务以及引进欧洲的先进技术和工艺，负责新产品的研发等。



NINGBO HAITIAN DIE CASTING EQUIPMENTS CO., LTD.

宁波海天金属成型设备有限公司是海天集团旗下产业之一

Ningbo HAITIAN Die Casting Equipments Co., Ltd. is a subsidiary company under Haitian Group. HDC series cold chamber die casting machine takes the Europe die casting machine standard for reference. It is at the domestic advanced level at performance and reliability.

We have made a large amount of investigations before the R&D of HDC series die casting machine. All problems affecting the performance and life of the machine are well solved. In respect to the injection system, the no-floating piston injection structure is optimized, and the isolating valve designed by Haitian is adopted as the core structure. Therefore, it has quicker response. Problems, including the instable pressure and over pressure building-up caused by leakage of boosting pressure are solved as well.

The closed-loop energy storage system initiated by Haitian can realize more precious energy storage and more stable injection.

The closing system of HDC series die casting machine has 4 main characters: 1. Quick mould open and close; 2. Small impact from movement, and high precise in repetition; 3. shock resistance, wear resistance, with long service life; 4. Precise and reliable clamping force. In addition, the auxiliary calculation of injection process parameters is available, which can shorten the time of technical adjustment; memory function of quality parameter is adopted as well, which can facilitate the tracing of quality and the adjustment of manufacturing technique.

宁波海天金属成型设备有限公司是海天集团旗下产业之一，秉承海天半个世纪的精密设备制造管理理念，主营多种系列压铸机。HDC系列冷室压铸机参考欧洲压铸机标准设计，性能及可靠性处于国内领先水平，主要技术参数达到了同类进口压铸机水平。

在HDC系列压铸机研发之前，我们做了大量的调研工作，把行业里普遍存在的影响机器稳定性和使用寿命的问题进行重点解决。在压射系统上，优化无浮动活塞压射结构，核心结构采用海天独特设计且自制的隔离阀，反应更加快速，解决了行业普遍存在的因增压压力内泄造成的压力不稳、建压时间过长的问题。行业首创的闭环储能系统，储能压力更精确，压射更稳定。

HDC系列压铸机合模系统具有四大特点：1、开合模速度快；2、运动冲击小，重复精度高；3、抗冲击、耐磨损，使用寿命长；4、锁模力精度高，稳定可靠。此外，HDC系列压铸机还增加了多个新功能，例如，标配压射工艺参数辅助计算功能，能有效节省工艺调整时间；标配品质参数记忆功能，有助于产品品质的追溯和生产工艺的调整。



TP TECHNOLOGY

盈向科技:簡介

The TP Technology core management and engineering team have 15 years of professional experience and specializes in the development of technology, sales, after-service network and has an outstanding quality control system. With its multiplex products and other development of technology, it conforms the advantages of Die-Casting machines and CNC, promotes industrialization 4.0 and provide "One-Stop" Die Casting solutions for our customers.

盈向科技憑藉核心管理層及工程團隊15年或以上的專業經驗，擁有專業技術及開發優勢，完善的銷售、服務網路，過硬的品質管制體系。目前依託其多元化產品及開發路線，充份整合了壓鑄機與加工中心結合優勢，推出工業化4.0，為客戶提供壓鑄機一站式解決方案。



Introduction of TP's Oil-Cooled Servo Control Energy-Saving Die-Casting Machine (4th Generation)

Standard:
Oil-Cooled Servo Motor

Energy Efficiency:
Energy Saving up to 45 ~ 75%

Precision Control:
The hydraulic system has high repeatability within 0.3%

Quick Response Time:
Response time of servo system is <50MS, the production cycle time is 5 to 7% quicker than normal machines

Extend Working Life:
System flow and pressure are servo controlled, it makes the machine works smoothly. Which extends the working life of machines with less vibration and less impact.

盈向科技第4代油冷伺服控制节能压铸机介绍:

标配
油冷伺服电机

高效节能
节能效果可达45~75%，绿色环保

高精度控制
整个油路系统重复精度在0.3%以内

调整响应:
整体系统动态响应时间<50MS，生产效率比普通机型提高5~7%以上

延长使用
寿命采用流量压力双闭环，使机器运行平稳及重复性高，大幅减少冲击，降低各部件的磨损，延长使用寿命。



ITALPRESSE | GAUSS

C A S T I N G T E C H N O L O G Y



Capriano del Colle (布雷西亚), 意大利 2017年5月-在彼此都对开发出HMe压铸机操作系统很满意在基础上-HMe是目前意特佩雷斯压铸机最高科技的人机交互操作系统, 具有人机交互界面友好易于使用, 同时也能很好的控制和监控实时发生的所有数据-意特佩雷斯和施耐德旗下的Wonderware公司在最近共同开发出最新版本, A-Me人机交互系统, 售后服务和维护保养新的移动终端。

A-Me 人机交互系统将会在6月在意大利维罗纳的Metef 展会正式呈现出来。

此次的最新系统中意特佩雷斯根据市场需求提供高效的远程协助和远程维护技术支持用来解决压射程序问题以及指导操作者一步步的来进行设备维护:

人机交互和维护指导将是此次A-Me 人机交互系统应用的基本革新理念, 将会在展会上进行现场测试。

一个非常重要在因素开发这套新系统是因为Wonderware公司一直是工业4.0行业在先驱者, 同时也是施耐德旗下在工业软件行业重要领头人。

通过A-Me系统, 可以把人机交互的效率推向一个新境界。

目前在全世界, 意特佩雷斯-高斯公司在轻金属铸造行业内可以提供完整的三种铸造工艺设备和自动化方案: 高压压铸, 重力浇铸, 低压铸造。

随着监控系统上在投入, 意特佩雷斯-高斯的团队和工程师一起同Wonderware共同研发创新型的系统。

两家公司之间的美好合作已经拒Wonderware将意特佩雷斯这个案例作为其2016年分析报告, 会议在主题就叫“工业4.0”。



A-ME INTERACTIVE ASSISTANT: THE NEW MOBILE FRONTIER FOR SERVICE AND MAINTENANCE

A-Me 人机交互系统 售后服务和维护保养新的移动终端

Capriano del Colle (BS), Italy April 2017 – In the wake of their mutual satisfaction for the development of HMe – the innovative tool that improves man-machine interaction with a user-friendly interface, but also a powerful tool that controls and supervises the system to collect large amounts of data in real time – Italtipresse has recently developed, together with Wonderware, a company owned by Schneider Electric, the A-Me Interactive Assistant, the new mobile frontier for maintenance and service.

A-Me Interactive Assistant will be presented at the next Metef Exhibition on next June in Verona, Italy.

Italtipresse has fulfilled the market's demand for increasingly efficient remote assistance and maintenance support services capable of providing troubleshooting procedures and guiding the operator step-by-step during maintenance operations: interactive assistance and guided maintenance are basically the innovative functions of the A-Me Interactive Assistant application, which can be tested during the two trade exhibitions.

A crucial factor in the development of the new system geared towards Industry 4.0 was the collaboration with Wonderware, a global leader in industrial software and part of Schneider Electric.

With A-Me Interactive Assistant, the goal of integrating man and machine through increasingly effective performances has entered a new frontier.

Active worldwide, Italtipresse-Gauss is a complete supplier for light alloy foundries with equipment and automation for three different die casting processes: high pressure, gravity and low pressure.

With the aim to invest in the field of supervision, Italtipresse-Gauss together with its team of engineers has chosen to rely on Wonderware for the development of innovative systems.

The good cooperation between the two companies has led Wonderware to mention Italtipresse as case study of the year during NOW 2016, the conference organized on theme "Industry 4.0".





盈向科技

3 AXES LINEAR WAYS

High precision liner rails are used on all 3 axes. Its works light and smooth, which suitable for high-speed precision machining. It was designed with high-speed and high-precision for mold manufacturing, the high-speed direct spindle or built-in spindle are optional features.

The structural parts are analyzed by FEM. It ensures the rigidity of machine, excellent resistance during high speed machining and low gravity center of machine body.

Precision class C3 ball screws are used for assembly, inspect and alignment. It avoids the backlash between the bearing and ball screws. It ensures the precision and stability of machine.

加工中心介绍 三軸線軌機特性

X、Y、Z三軸採用精密線軌，行程動作輕巧順暢，適合高速高精度加工之需求。設計是針對高速、高精度模具加工的需求，可搭配直結式高速主軸及內藏式高速主軸。

有限元素分析FEM ANALYSIS

採用先進的有限元素分析(FEM)，做最佳的結構分析與設計，以確保結構體的最佳剛性，以及耐高速加工及低重心的優良特性。

精密滾珠螺桿PRECISION BALL SCREWS

配合精密組裝檢驗、檢測、組立，採用C3級精密預壓滾珠螺桿，避免軸承與滾珠螺桿的背隙問題，保證最佳進給精密與穩定度。



Production

Diecasting-Dialogue / China Issue 2017

Publisher: Thomas Fritsch

Senior Editor: Oanh Larsen & Viviane Mößmer
(verantwortlich i.S.d.P.)

Editors International: Adriana Weisenbach
Theresa Neumann

Translation:

Macfarlane International Business & 24translate.de
Services GmbH & Co. KG

Phone: +49 (0) 83 62 / 9 30 85 -65

Fax: +49 (0) 83 62 / 9 30 85 -20

E-Mail: service@foundry-planet.com

Web: www.Diecasting-Dialogue.com

Layout: Anne-M. Köhl, Druckerei Wagner GmbH, Mindelheim

Pictures: Work pictures of the press, Fotolia.de

Publishing company: Foundry Planet Ltd.

CEO Thomas Fritsch

Sebastianstraße 4

D-87629 Füssen

Tax number: 125/104/35026

VAT-Nr.: DE241247752

Trade register: 05357464, Cardiff/GB

Design & Artwork: Druckerei Wagner GmbH, Mindelheim

The digital version can be found on: www.diecasting-dialogue.com

Copyright: The Foundry-Planet-Online Magazine contains pre-authorized editorial contributions, publications and announcements.

All publication are protected by copyright.

XINGYUAN MACHINERY

宁波星源机械有限公司



宁波星源机械有限公司

NINGBO XINGYUAN MACHINERY Co., Ltd.

XingYuan Machinery is a global leader in the design and manufacture of die casting tooling, magnesium and aluminum die casting, CNC machining, secondary finishing and assembly. We serve all markets across Asia, Europe and North America.

The manufacturing capacity of the tooling shop is 200 + die sets per year. Our production CNC department includes 40 machines and the Die Casting shop has 10 presses ranging from 300T to 2000T. Shot blasting, tumbling and ultrasonic washing are integrated into the process flow to assure the surface excellence.

XingYuan utilizes JS Cast, the premier casting flow software to design runners, gates and venting. XingYuan deploys 10 Cold chamber die casting machines ranging from 300T to 2,000T with fully automated controls for the melt, spraying and trimming. Over 40 CNC's utilizing four and five axis machining on Fanuc, HAAS and Mazak. In total producing over 5,000,000 components per year.

XingYuan is TS16949 registered for the Quality Systems. We utilize the Zeiss CMM, X-Ray technology and Spectra analyzer to test and verify all incoming raw material. We have a dual approach for in-process inspection by using functional gaging, and variable data by the QC department as an independent check, to support XingYuan's Quality First principle.

In response to the light-weight design of the automotive industry, XingYuan has been working with many famous OEM and Tier I suppliers to develop the production magnesium die castings.

Over the twenty-four years since its inception, XingYuan Machinery has always been dedicated to its Quality First principle, and to serving its customers with the highest level of excellence.



宁波星源机械有限公司，是一家集压铸模具设计与制造，镁合金，铝合金压铸，精加工生产和销售为一体的大型外商独资企业。模具车间配备德国DMG高速加工中心、慢走丝线切割，数控电脉冲、深孔钻等高精尖设备一应俱全、精加工车间和压铸配备全自动生产压铸机、发那科、马扎克五轴加工中心等各

类设计、生产设备。公司引进日本JS Cast模流分析软件，实现了模具设计先期可视化分析。本着一切以质量为先的原则，星源通过一系列严格的测试，确保模具在原材料、热处理、标准件，以及制造过程等各环节都始终处于严格受控状态。公司拥有从300T到2000T不同规格全自动压铸设备10余台，全部实现自动化生产。哈斯，发那科，马扎克5轴加工中心40余台，年产合格压铸件500万件。通过了ISO9001和TS16949质量管理体系认证。近年来，星源机械始终掌握时代脉络，坚持走高端铸造镁合金市场，奥迪、克莱斯勒、TORO、特斯拉等众多知名主机厂和汽车行业一级供应商纷纷选择了星源开发的镁合金产品，并已投产应用于各量产车型上。星源公司长期为汽车行业和知名机械行业主机厂服务，营销网络遍布全球。



China DieCasting B2B-website

中华压铸网

China Die Casting Website www.001cndc.com is the first die casting industry B2B website established in China, which is located in Shanghai, the economic capital of China, which is a public platform to provide product and brand promotion, product offline transaction, information exchange, technical consultation and the latest industrial information service for domestic and overseas enterprises as well as the relevant suppliers (including die-casting machine, die-casting mould, die casting alloy, machining equipment, melting furnace, accessories and etc.). After ten years of development, it has accumulated abundant experiences in small and medium-sized enterprise procurement, promotion trend, upstream and downstream matching, and included the data of nearly 10000 small and medium-sized enterprises as well as the supply and demand information of upstream and downstream industry chain.

We are committed to serve the die casting industry. Since the establishment, we adheres to the goal of realizing the transformation and upgrading of the Chinese die casting industry, improving efficiency and reducing cost, providing talents, orders, management and technical consultation for enterprises, developed into the most authoritative and influential large-scale e-commerce interactive platform.

Our website successfully held the top benchmarking die-casting entrepreneurs salons for several times and became the platform gathering the most complete resources of die-casting entrepreneurs.

Our mission is to help customers to succeed and provide the professional transaction information, connection and trade matching. "Shaking hands with China Die Casting Website means the beginning of success", we will make the die casting business more simple!

中华压铸网 (www.001cndc.com) 是我国成立最早的压铸行业B2B网站, 坐落于中国经济之都——上海, 为国内外压铸企业及相关供应商(包括压铸机、压铸模具、压铸合金、机加工设备、熔炉、辅料等)提供产品及品牌推广、产品线下交易、信息交流、技术咨询及行业最新资讯服务的公共平台。经过10年的发展, 积累了众多中小企业采购、推广趋势、上下游匹配撮合经验, 收录了全国上万家中小企业数据以及上下游产业链供求信息。

我们专注于服务压铸行业。网站自创办以来, 就以实现中国压铸行业转型升级, 提高效率降低成本为目标, 为企业提供人才、订单, 以及管理、技术咨询, 发展成为压铸行业内最具权威、最有影响力的大型电子商务互动平台。

网站曾多次成功举办国内最顶级标杆压铸企业家沙龙, 是国内集最全最多压铸企业家资源的平台。

我们以帮助客户成功为使命, 提供专业的买卖信息、对接及贸易撮合, “与压铸网握手就是成功的开始”, 让压铸生意更容易更简单!

公司地址: 上海嘉定区南翔佳通路31弄5号楼1307室
Address: Room 1307, no.5 building, no.31 Lane, Jiatong road, Nanxiang, Jiading district, Shanghai, China
Phone/ 电话: 021-52669735
Fax / 传真: 021-59576033
<http://www.001cndc.com>



ABB intensifies scientific research cooperation with XI'AN Jiaotong University Advancing researches on DC interruption technologies

ABB与西安交通大学深化科研合作 推动直流开断技术的研究

ABB signed a two-year cooperation agreement today with Xi'an Jiaotong University, according to which ABB will carry out researches on DC interruption technologies together with Xi'an Jiaotong University. Doctor Liu Qianjin, Head of ABB Corporate Research Center in China and Chief Technology Officer of ABB (China) Limited, and Professor Rong Mingzhe, Vice-Principal of Xi'an Jiaotong University and Deputy-Director of the State Key Lab, attended the signing ceremony.

Xi'an Jiaotong University is a key university directly under China's Ministry of Education and one of the first accredited universities under "Project 211" and "Project 985", boasting rich technologies in the power equipment field. Professor Rong Mingzhe is one of the first experts who carried out researches on DC interruption technologies in China, with research directions in basic theories, optimized design and operation evaluation related to switching devices as well as discharge plasma and its application.

Professor Rong Mingzhe said, "ABB is a global leader in the power field, as well as an important partner of Xi'an Jiaotong University in advancing industry-university-research cooperation. DC technologies not only show excellent technological and economic performance in high voltage transmission, but also enjoy huge potential in medium and low voltage fields. ABB has obvious advantages in new energy network integration and data centers. We hope to jointly advance the development, promotion and application of DC technologies through the cooperation and complementation of advantages between our two sides."

As a global leader in the power industry, ABB pioneered HVDC technology as early as six decades ago. It has been awarded over 110 HVDC projects across the globe. In 2012, ABB launched the hybrid HVDC breaker, which combined very fast mechanics with power electronics, and was capable of 'interrupting' power flows equivalent to the output of a large power station within 5 milliseconds--thirty times faster than the blink of a human eye. The breakthrough removed a 100-year-old barrier to the development of DC transmission grids which enabled the efficient integration and exchange of renewable energy and laid the foundation for the construction of HDVC power grids.

Doctor Liu Qianjin said, "Collaborating with universities on scientific researches is ABB's long-term commitment to China, as well as an important way for ABB to advance local innovation and talent cultivation. ABB has established sound cooperation with Xi'an Jiaotong University for many years. We are glad to further expand the cooperation and explore frontier technologies in the power field. In the future, we'll set up scientific re-



ABB与西安交大深化科研合作

北京，2017年4月25日——ABB与西安交通大学签署为期两年的合作协议，根据协议，ABB与西安交通大学合作开展直流开断技术的研究。ABB集团中国研究院负责人、ABB（中国）有限公司首席技术官刘前进博士与西安交通大学副校长、国家重点实验室副主任荣命哲教授作为双方代表出席签字仪式。

西安交通大学是国家教育部直属重点大学，也是首批进入国家“211”和“985”工程建设的知名高校，在电力装备领域拥有长期的技术积累。荣命哲教授是国内最早开展直流开断技术研究的专家之一，其研究方向涵盖开关电器基础理论、优化设计和运行状态评估，放电等离子体及应用等方面。

荣命哲教授表示：“ABB是全球电力领域的佼佼者，也是西安交通大学长期推动产学研发展的重要合作伙伴。直流技术不仅在高压输电中表现出卓越的技术经济性能，在中低压领域同样拥有巨大潜力，特别是在新能源并网、数据中心等方面具有显著优势。希望通过双方的强强合作和优势互补，共同推动直流技术的开发、推广及应用。”

作为全球电力领域的领导企业，ABB早在60多年前就率先应用了高压直流输电技术，并参与了目前全球110多个高压直流输电项目的建设。2012年，ABB推出混合式高压直流断路器，这一研究成果将机械动力学与电力电子设备相结合，可以在5毫秒之内断开一所大型发电站的输出电流，其速度比人眨眼速度快30倍。这项突破消除了直流输电网络发展的百年障碍，实现了可再生能源的高效集成和交换，也为打造高压直流电网奠定了基础。



ABB与西安交大深化
直流开断技术合作

search cooperation with more universities and jointly contribute to industrial progress and the 'Created in China' initiative." The cooperation between ABB Corporate Research Center in China and Xi'an Jiaotong University started in 2005. Over the past five years, ABB has provided nearly RMB 4 million on a cumulative basis to support the basic researches of Xi'an Jiaotong University in such fields as the "Protection solution for grid with large-scale wind power", "Power transformer thermal model improvement and load promotion scheme", "Research on experimental study on GIS diagnosis & risk assessment method" and "Investigation on the breakdown mechanism in polyethylene based nanocomposites", which have produced fruitful results. The agreement signed this time will take bilateral cooperation to a brand-new research level.

The cooperation is also an epitome of ABB's efforts to advance technological innovation together with Chinese universities in recent years. So far, ABB has carried out cooperation of different scientific research projects with more than 20 universities and scientific research institutes, including Zhejiang University, Hong Kong University of Science and Technology, Tsinghua University and South China University of Technology, with the subjects of cooperation covering forward-looking technologies, including integration of new energy, electric vehicle charging, industrial application of nano-technologies as well as development and application of industrial robots. In 2016, ABB signed a three-year cooperation agreement with Huazhong University of Science and Technology, which provided RMB1.8 million for the development of topology and hardware in power and electronic fields.

ABB (ABB: SIX Swiss Ex) is a pioneering technology leader in electrification products, robotics and motion, industrial automation and power grids, serving customers in utilities, industry and transport & infrastructure globally. Continuing more than a 125-year history of innovation, ABB today is writing the future of industrial digitalization and driving the Energy and Fourth Industrial Revolutions. ABB operates in more than 100 countries with about 132,000 employees. www.abb.com

刘前进博士表示：“与高校进行科研合作是ABB在华发展的长期承诺，也是ABB推动本土创新和人才培养的重要途径。ABB与西安交通大学有着多年良好合作的基础，非常高兴双方能够进一步开拓合作空间，继续探索电力领域前沿技术的发展与创新。未来，我们将与更多高校建立持久的科研合作关系，携手为行业进步和‘中国创造’贡献力量。”

ABB中国研究院和西安交通大学的合作始于2005年。在过去5年中，ABB已累计提供近400万人民币支持西安交通大学在“大规模风力发电下的电网保护解决方案”、“电力变压器热模型的改进”、“气体绝缘开关柜诊断和评估方法的分析”以及“聚乙烯纳米复合材料的故障机制”等领域开展基础研究工作，并取得丰硕成果。本次协议的签署将双方的长期合作拓展至一个全新的研究领域。

该合作也是近年来ABB携手中国高校推动技术创新的一个缩影。目前，ABB已与浙江大学、香港科技大学、清华大学、华南理工大学等20多家高校和科研机构在不同科研项目上开展合作，合作课题涵盖新能源并网、电动汽车充电、纳米技术的工业应用、工业机器人开发与应用等前瞻性技术。2016年，ABB与华中科技大学签署为期3年的合作协议，为其提供约180万元用于电力电子领域拓扑与硬件的开发。

ABB (ABB: SIX Swiss Ex) 是全球电气产品、机器人及运动控制、工业自动化和电网领域的技术领导企业，致力于帮助电力、工业、交通和基础设施等行业客户提高业绩。基于超过125年的创新历史，ABB正在不断地推动能源革命和第四次工业革命，谱写行业数字化的未来。ABB集团业务遍布全球100多个国家，雇员达13.2万。ABB在中国拥有研发、制造、销售和工程服务等全方位的业务活动，40家本地企业，1.7万名员工遍布于139个城市，线上和线下渠道覆盖全国300多个城市。

ABOUT FICMES

关于我们

Since its establishment in 1962, Foundry Institution of Chinese Mechanical Engineering Society (FICMES) has been fully committed to development of foundry industry through academic and technical communications.

FICMES consists of 14 technical committee and 8 working committees. Membership includes metal casters and suppliers, universities and institutes from China and abroad.

FICMES organizes a series of activities and events including:

1. China Foundry Week, annually;
2. Die-casting Conference and Exhibition together with China Nonferrous alloys and special casting exhibition, annually;
3. China Foundry Congress, every 4 years;
4. Evaluation and rewarding of the best technical papers, annually;
5. Training and consultancy;
6. International communication

Contact us

FOUNDRY INSTITUTION OF CHINESE MECHANICAL ENGINEERING SOCIETY

Add: 17 South Yunfeng Street Tiexi District, Shenyang 110022, P.R. China

Tel: +86 24 25851598 / 25850149

Fax: +86 24 25855793

E-mail: society@foundryations.com

Website: www.foundryations.com/en/



中国机械工程学会铸造分会 (FICMES) 自1962年成立以来, 始终致力于中国铸造行业的发展, 不断加强与世界各国铸造组织的交流与合作, 在国内外广泛开展铸造行业技术交流与贸易合作活动。始终如一的为中国及全球铸造业的发展服务。

FICMES由理事会及其下设的14个专业技术委员会和8个工作委员会组成。其下属的会员单位分别来自于国内外铸造企业、大学及科研院所。

中国机械工程学会铸造分会主要活动

1. 中国铸造活动周
2. 压铸会议及展览会
3. 铸造学术年会
4. 培训工作
5. 铸造专业优秀论文评选
6. 国际交流

FICMES每年组织国内铸造企业参加各种大型国际会议及展览展示活动, 带领国内企业参观世界上先进的铸造企业进行学习、交流活动。同时FICMES每年接待世界各国的铸造组织及企业单位到中国企业参观、考察, 洽谈合资、合作, 交流技术、研发产品。

FICMES主办的刊物有《铸造》、《特种铸造及有色合金》、《中国铸造装备与技术》、《现代铸铁》、《铸造世界报》和《压铸世界》等多种期刊。参与编辑出版《CHINA FOUNDRY》, 并编辑出版有《铸造手册》、《中国铸造史》、《铸造词典》等多种铸造专业书籍。

FICMES通过所拥有的媒体, 报道世界各国铸造行业的发展动态及行业活动以及国内外企业的经营战略和成功经验; 宣传铸造业相关政策法规; 推广新产品; 跟踪报导在铸造材料、工艺、设备等方面的最新技术动向和综合发展评述; 对外介绍学会会员单位, 并为企业进行产品与技术的宣传提供便利条件。

FICMES于1978年正式成为世界铸造组织成员单位, 与世界各国铸造组织保持着密切的联系, 建立了良好的合作关系。FICMES于1995年在中国北京成功举办了第61届世界铸造会议, 并于2010年在中国杭州成功举办了第69届世界铸造会议。

联系方式

中国机械工程学会铸造分会

地址: 沈阳市铁西区云峰南街17号

邮编: 110022

电话: 024-25851598 024-25852311-202

传真: 024-25855793

网址: www.foundryations.com

THE RESEARCH AND APPLICATION OF NEW FOUNDRY TECHNOLOGIES IN THE SPACECRAFT'S ULTRA-LARGE MAGNESIUM ALLOY STRUCTURES

航天器超大型镁合金结构件铸造新技术研究与应用



中国空间技术研究院
China Academy of Space Technology

With the research on foundry technologies related to the large magnesium alloy structures used in spacecraft, we established the design concept of whole simultaneous solidification and partial sequential solidification casting forming processes for large, thin-walled castings. We apply the ultra-large magnesium alloy foundry process design, with nearly shrinkage-free technology, as well as form and position accuracy control technology. The large magnesium alloy structures to be used in the spacecraft are developed within the dimension range of 1800-4200mm, an average wall thickness of 5mm, and with internal mass and mechanical properties which meet the Type II casting requirements in QJ168-85. In addition, the dimension precision of the castings meets Level ZJ6 precision requirements. The maturity of the technologies are thus enhanced to Level VII from Level IV. The research results can be applied in the foundry magnesium Alloy-bearing structures of many satellite models including the resource, HD, mapping and ocean satellites.

通过对航天器大型镁合金承力构件铸造技术的研究，确定了大型薄壁铸件的整体同时凝固、局部顺序凝固的铸造成型工艺设计理念，发明了大型铸件桥式多点同时浇注铸造机构；掌握了超大型镁合金铸造工艺设计、近自由收缩技术和形位精度控制技术；研制出外形尺寸范围1800—4200mm，平均壁厚5mm的航天器大型镁合金结构件，其内部质量、力学性能达到QJ168

85中的Ⅱ类铸件要求，铸件的尺寸精度达到ZJ6级的精度要求，各项技术成熟度由四级提升至七级。研究成果可以应用于资源、高分、天绘、海洋等多个卫星型号的铸造镁合金承力结构件中。



Bottom Structure Body of
the Load Cabin of a Certain Model
(2300 mm X2100 mm X110 mm,
and 6mm Wall Thickness)

某型号载荷舱底部构架本体
(2300 mm X2100 mm X
110 mm, 壁厚6mm)

SIMULATION AND APPLICATION OF CASTING PROCESS FOR ALUMINIUM-AUTOMOBILE PISTON

铝合金汽车活塞铸造工艺的模拟及应用

The piston is one of the most important parts in the engine. It is worked in the hard condition with high temperature, high load, high speed, poor lubrication and cooling, etc. By means of comparison actual casting trial and simulation, the foundry process can be analyzed well in order to get the reasonable solution for the piston casting defect. The study showed that the piston skirt porosity on casting caused by the different casting wall thickness in partial area, which generated the hotspot. The additional riser is hard to be applied for solidification in order effectively caused by the casting tool space constraints.

In this study, the cooling design on the mold is optimized by simulation in order to eliminate the porosity of the castings, which also is verified the feasibility by the actual production. The casting mass: 398g; the casting volume: 172mm³; the dead head volume: 27.4mm³; the casting system volume: 45mm³; the part boundary dimension: $\Phi 88$. The requirements on mechanical properties borne for the piston casting under the engine operating condition: the max. load power is 155kW (211PS)/5500rpm, the max. load torque is 350Nm/1200-4000rpm, and the material hardness shall not be lower than HB140.

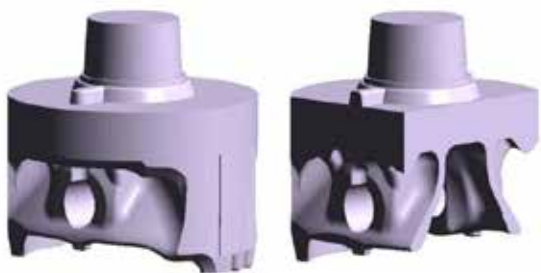
活塞是汽车发动机的重要零件之一，活塞工作条件相当严酷，如高温、高负荷、高速运动、润滑不良和冷却困难等。利用实际试制浇铸及模拟分析软件相结合的方法，分析铸件的成形过程，得到解决活塞铸造缺陷的方案。研究表明，活塞铸件裙部区域形成缩孔的原因是铸件局部壁厚不均匀，从而有热节产生。受模具结构限制难以通过辅助冒口实现铸件有效补缩和顺序凝固。

本研究针对活塞铸件，提出通过模拟分析手段优化模具冷却设计，从而达到消除铸件缩孔缺陷的方法，并通过实际生产验证其可行性。铸件质量：398 g；铸件体积：172mm³；冒口体积：27.4mm³；浇铸系统体积：45mm³；零件外形尺寸约为： $\Phi 88$ 。该活塞铸件在发动机工况下所城守的机械性能要求：最大功率承载功率为155kW (211PS) /5500rpm，最大承载扭矩为350Nm/1200-4000rpm；材料硬度不得低于HB140。



上汽集团

SAIC MOTOR



3D Structural Drawing of the
Piston Casting

活塞铸件三维结构图

Macrographic Examination Defect Graph
Before and After Improvement

改进前后的宏观检验缺陷图



a) Shrinkage Cavity On the Casting
Side Before Improvement

b) No Shrinkage Cavity On the Casting
Side After Improvement

a) 改进前进浇有缩孔

b) 改进后进浇侧无缩孔

INFLUENCES OF PORE DEFECTS TO ALSI7MG ALLOY FATIGUE PROPERTY AND ITS SOLUTIONS

微孔缺陷对AlSi7Mg合金疲劳性能的影响及其解决措施

For casting aluminium alloy, the internal porosity and pore defects are usually hard to avoid, and they are the primary reason for fatigue cracks. After product inspection, we find that the size, shape and position of porosity have important impact to the generation of fatigue cracks on the test samples; the porosity away from the test sample surface has lower level of impact to its fatigue cracks, and when the porosity is near the sample surface, it becomes an apparent source for fatigue cracks; the bigger the porosity size, or the irregular the shape, the more favorable for the generation of the fatigue cracks.

The test research on pore defects shows that as the level of pore defect rays increases, the fatigue limit gradually decreases when the axial direction radius equals 0.1; when the pore defect ray is Level 2~3, the fatigue limit will be approximately 70Mpa; when the pore defect ray is Level 7~8, the fatigue limit will be approximately 50Mpa. During the actual production process, we will take measures such as the low pressure or diecasting technology, enhancement of the refining and degassing effect, improvement of the casting cooling speed, which will effectively avoid the generation of shrinkage and pores and thus improve the fatigue property of the product.

对于铸造铝合金，内部疏松和针孔缺陷一般难以避免，它是导致疲劳开裂的主要原因。本文通过对产品检测发现，疏松的大小、形状和位置对试样的疲劳裂纹萌生有重要的影响，远离试样表面的疏松对其疲劳断裂影响较小，当疏松临近试样表面时，就成为明显的疲劳裂纹源；疏松的尺寸越大，或者形状越不规则，越有利于疲劳裂纹的产生。

对针孔缺陷的试验研究表明，随着针孔缺陷射线等级的增加，轴向R=0.1下的疲劳极限逐渐降低，针孔缺陷射线为2~3级时，疲劳极限约为70MPa，针孔缺陷射线为7~8级时，疲劳极限降为50MPa。在实际生产过程中，采取低压或压力铸造工艺，加强精炼除气效果，提高铸件冷却速度等措施，可有效避免缩松和针孔的产生，从而提高产品的疲劳性能。



Global
Casting
世界铸造 Magazine

Your Digital Gateway to the World of Metalcasting!

Subscribe for free at:

www.globalcastingmagazine.com

Published By:



MODERN
CASTING
A PUBLICATION OF THE AMERICAN FOUNDRY SOCIETY



HARBIN JIXING MECHANICAL ENGINEERING CO.LTD

哈尔滨吉星机械工程有限公司

Harbin Jixing Mechanical Engineering Co., Ltd. was founded by Professor Ji Zesheng, who is the professor of HUST and studied abroad Japan. The company with the Japanese University of Tokyo, Harbin University of Technology has a stable reputation of good cooperation. The company has advantages in the automotive support parts from the structural design, process identification and final evaluation, such as the development of aluminum instead of steel lightweight parts, with the main vehicle factory development of aluminum alloy engine bracket and differential bracket has been for the Toyota RAV4 and CARORA. The Company is the auto parts supplier for Tianjin FAW Toyota Motor Co., Ltd. and Sichuan FAW Toyota Motor Co., Ltd. Research and development of high-performance aluminum alloy steering knuckle for Geely Group has been through the National Automobile Testing Center test.

哈尔滨吉星机械工程有限公司由留日归来的哈尔滨理工大学教授吉泽升博士创办.公司与日本东京大学、哈尔滨理工大学具有良好的合作关系,尤其擅长汽车承力件从结构设计、工艺方法确定到最后评价等以铝代钢轻量化零件的开发,与主车厂同步开发的铝合金发动机支架和差速器支架已经为丰田汽车RAV4和CARORA配套.公司系天津一汽丰田汽车有限公司、四川一汽丰田汽车有限公司一级供应商,为吉利集团研发的高性能铝合金转向节已经通过国家汽车检测中心台架测试。



RESEARCH CENTER FOR ADVANCED SOLIDIFICATION TECHNOLOGY

北京有色金属研究总院先进控制凝固团队

The Research Center for Advanced Solidification Technology named the „melt dispersion process“ innovation team by the Ministry of Science is a gathered research, development and industrialization in one high-tech innovation and R & D base for advanced preparation of non-ferrous materials and semi-solid forming technology.

Around the lightweight, high performance and low cost of automotive and military products, the team formed the unique research and innovation system in the field of large aluminum ingot microstructure refinement and homogenization precise control and light alloy and composite materials semi-solid forming, and built the largest engineering demonstration base for the preparation and forming technology of high performance light alloy semi-solid material.

The team published more than 150 technical papers, has 18 national invention patents and received 5 National and Provincial science and technology awards.

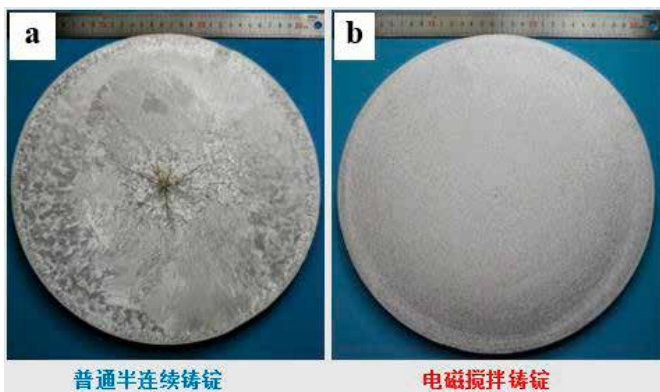
先进凝固技术研究团队是国家科技部命名的“熔体分散处理”创新团队，是一个集科研、开发和产业化于一体的有色金属材料先进制备、半固态成形与加工的高技术创新研发基地。

围绕汽车、军工产品的轻量化、高性能化和低成本化等技术难题，在大型铝合金铸锭组织细化均匀化精确控制，轻合金及其复合材料半固态成形技术领域形成独特的研究特色和创新体系，建成国内最大的高性能轻合金半固态材料制备和成形技术工程化示范基地。

发表学术论文150余篇，拥有国家授权发明专利18项，获国家及省部级科技奖励5项。



有研总院
GRINM



Comparison of large high strength aluminum ingot microstructures

a) Traditional casting ingot

b) Electromagnetic stirring casting ingot

大规格高强铝合金铸棒对比



Semi-solid forming pressure impeller

半固态成型压叶轮

STUDY ON APPLICATION TECHNOLOGY OF HIGH STRENGTH AND PLASTIC ALUMINUM ALLOY CASTING IN DOMESTIC RAIL TRANSIT INDUSTRY

高强韧铝合金铸件在国内轨道交通行业应用工艺研究

Due to its high specific strength and rigidity, low density, excellent corrosion resistance and processing performance, together with the comprehensive mechanical and physical properties after the cold/hot working and heat treatment, the aluminum alloy has been obtained extensive application in the rail transportation industry.

This paper* summarizes the application of high strength aluminum alloy castings in domestic rail transit vehicles, the pure preparation, grain refinement, silicon phase modification, heat treatment regulation and residual stress release, accompany with the typical microstructure and mechanical properties of ZL114A and ZL205A alloy are discussed meticulously. The application of FDM and FEM numerical simulation technology in the design optimization of solidification process of heavy load locomotive, high speed EMU, urban rail subway aluminum alloy bolster, sub frame and gear box casting are elaborated systematically.

Key words: rail transportation; Al-Si alloy; Al-Cu alloy; mechanical properties; microstructure.

* please contact for more information:
www.foundrynations.com

近年来，我国轨道交通行业不断蓬勃发展；由于比强度高、比刚度高，密度低、耐蚀性与加工性能优异，铝合金材料在国内轨道交通行业得到了广泛的推广与应用。考虑到复杂构件一体化成形制造与批量化制造成本，高强韧铝合金铸件的应用需求近年来逐步增加。

本文以应用于重载机车、高速动车组与城轨地铁的铝合金摇枕、副构架及齿轮箱铸件为研究对象，详细阐述了亚共晶铝硅ZL114A与高强高韧铝铜系ZL205A合金的纯净化制备、晶粒细化、硅相变质、热处理调控、残余应力释放与控制及数值仿真与计算，为其他轨道交通高强韧铝合金铸件的工艺设计与性能优化提升提供了技术参考与数据支撑，具有重要的工程指导意义与市场推广价值。

关键词：轨道交通；铝硅合金；铝铜合金；力学性能；微观组织

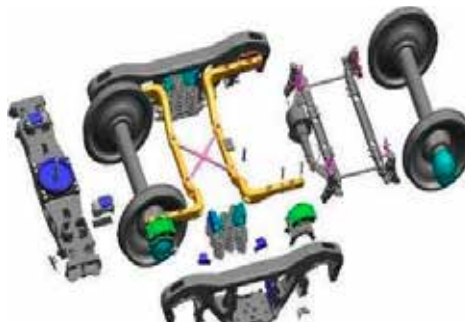


The domestic CRH2 series
of high-speed EMU

国产CRH2系列高速动车组



The sub frame and gearbox castings



副构架与齿轮箱铸件

VDMA METALLURGY: GLOBAL COMPETENCE FOR CASTING INNOVATIONS

VDMA 冶金：铸造创新的全球竞争力

VDMA Metallurgy is the joint platform of metallurgical machinery producers. It includes the specialist associations Foundry Machinery, Metallurgical Plants and Rolling Mills, and Thermo Process Technology.

The member companies of VDMA Metallurgy stand for modern, high-efficiency, environmentally compatible solutions. They not only supply tailor-made plants, devices and process technology but are also competent advisors offering holistic solutions to their customers – including system partnership and full service over the entire life cycle.

The casting machinery suppliers within VDMA have the know-how required for energy-efficient thermal process control, low-emission mould and core production systems, closed material cycles, optimum automation and precise process control, strength and casting simulation, energy-efficient components, advanced waste gas and spent air systems, the reduction of metal loss in melting operation, material and process development.

The targets of modern iron, steel and non-ferrous metal production and processing are connected with lightweight design, efficiency, flexibility and the conservation of resources. These objectives set the standards by which the casting industry is measured in competition with other production processes or non-cast materials. Casting solutions can only be successful if they offer the user clear advantages.

In view of international competition in segments which are customers for metallurgical machinery, global efforts to improve industrial productivity are developing dynamically. Although there are divergent developments in the steel and non-ferrous metal sectors, further investments are expected wherever operators are striving to produce goods economically for export in the context of international competition. Industrial expansion calls for a powerfully innovative technology base. It is here that German machinery producers can contribute their comprehensive know-how and their development capabilities with respect to quality, productivity, efficiency and safety.

VDMA 冶金是冶金机械生产商的联合平台。它包括铸造机械、冶金厂和轧制厂以及热处理技术专业协会。

VDMA冶金的成员公司代表了现代化、高效率、环保的解决方案。他们不仅提供量身定制的工厂、设备和工艺技术，而且还是能够为客户提供全方位解决方案的顾问——包括系统合作和贯穿整个生命周期的服务。

VDMA中的铸造机械供应商们拥有以下领域所必需的专业知识：节能热过程控制、低排放模具和型芯生产系统、封闭材料循环、最佳自动化和精确过程控制、强度和铸造模拟、节能部件、先进的废气和废空气系统、减少熔化操作中的金属损失、材料和工艺开发。

钢铁、有色金属的现代化生产和加工目标都与轻量化设计、效率、灵活性以及资源节约结合在一起。在与其他生产工艺或非铸造材料的竞争中，这些目标确立了衡量铸造行业的标准。铸造解决方案只有在为用户提供明确优势的情况下才能取得成功。

在冶金机械的客户细分市场所面临的国际竞争中，全球提高工业生产力的努力正在动态发展。虽然钢铁和有色金属行业也有着不同程度的发展，但是在国际竞争的背景下，仍需要运营商在经济地生产出口商品的努力上进一步投入。工业扩张需要有强大的创新技术基础。这正是德国机械生产商能够在质量、生产力、效率 and 安全性方面贡献自己全面专业知识和开发能力之处。



Contact:
Dr. Timo Wuerz · Managing Director
VDMA · Foundry Machinery
Metallurgical Plants and Rolling Mills
Thermo Process Technology

联系人：
Timo Wuerz 博士 · 常务董事
VDMA · 铸造机械
冶金厂和轧机厂
热处理技术



CHINESE DIECASTERS

展会名称	公司中文名	公司英文名	网址 / Foundry Web Site
压铸展 CID	SCHAUFLEER Tooling GmbH & Co. KG	SCHAUFLEER Tooling GmbH & Co. KG	www.schaufler.de
压铸展 CID	慈溪阿尔特新材料有限公司	Cixi ALT Advanced Material Co.,Ltd.	www.cixihuili.com
压铸展 CID	东莞市华铸模具科技有限公司	Dongguan Huazhu Moulds Co., Ltd.	
压铸展 CID	东莞市力拓五金压铸有限公司	Lituo Metal Die Casting Co., Ltd.	www.dglituo.en.made-in-china.com
压铸展 CID	广州德志金属制品有限公司	DGS China Co., Ltd.	www.dgs-druckguss.com/cn/
压铸展 CID	海泰克精密压铸江苏有限公司	HTN Precision Die Casting Jiangsu Co., Ltd.	www.jshtn.com
压铸展 CID	合美精密五金(深圳)有限公司	Master Die Casting Co.,Ltd.	www.masterdiecasting.com
压铸展 CID	嘉兴辉鸿五金有限公司/嘉兴永泽金属制品有限公司	Jiaxing Huihong Hardware Co., Ltd.	www.zjhuiho.com
压铸展 CID	宁波巴特勒精密机械有限公司	Ningbo Buttler Precision Machinery Co.,Ltd.	www.buttler.cn
压铸展 CID	宁波北仑东叶模具有限公司	Ningbo Dongye Moulds Co., Ltd.	www.dongyem.com
压铸展 CID	宁波孚士威机械有限公司	Ningbo Focusway Machinery Co., Ltd.	www.focusway.com.cn
压铸展 CID	宁波海威汽车零部件股份有限公司	Ningbo Asiaway Automotive Components Co., Ltd.	www.asiawaygroup.com
压铸展 CID	宁波汇嵘机械有限公司	Ningbo Huirong Mould Co., Ltd.	www.nbhuirong.com
压铸展 CID	宁波吉烨汽配模具有限公司	Ningbo Jiye Automobile Components Die-Casting Co., Ltd.	www.nbjjye.com
压铸展 CID	宁波经济技术开发区博威模具金属制品有限公司	Ningbo Bowei Mould Metal Products Co., Ltd.	www.bwmjyz.com
压铸展 CID	宁波骏图机械有限公司	Ningbo Juntu Machinery Co., Ltd.	www.nbjuntu.com
压铸展 CID	宁波敏嵘机械有限公司	Ningbo Minrong Machinery Co., Ltd.	www.nbminrong.net
压铸展 CID	宁波普锐明汽车零部件有限公司	Ningbo Premium Automotive Parts Co., Ltd.	www.nbpremium.com
压铸展 CID	宁波市北仑诚信工贸有限公司	Ningbo Beilun Chengxin Co., Ltd.	
压铸展 CID	宁波市北仑区大碇凯伦模具机械厂	Ningbo Beilun Daqi Kailun Mould Machinery Factory	www.kailunmould.com
压铸展 CID	宁波市北仑区大碇锐达模具厂	Ningbo Beilun Daqi Ruida Mould Factory	www.ruidamould.com
压铸展 CID	宁波市北仑区大碇袁旺模具制造厂	Ningbo Beilun Daqi Yuanwang Mould Factory	
压铸展 CID	宁波市北仑区大碇兆宇模具厂	Ningbo Beilun Daqi Zhaoyu Mould Factory	www.nbzhaoyu.com
压铸展 CID	宁波威恩精密机械有限公司	Ningbo Wing Precision Manufacturing Co.,Ltd.	www.wingdiecast.com
压铸展 CID	宁波星源机械有限公司	Ningbo Xingyuan Machinery Co., Ltd.	www.nbxingyuan.com
压铸展 CID	宁波甬杰模具有限公司	Ningbo Yongjie Mould Co., Ltd.	www.nbyongjie.net
压铸展 CID	上海奈那卡斯电子配件有限公司	Dynacast (Shanghai) Co., Ltd.	www.dynacast.com
压铸展 CID	晟懿工业股份有限公司	JoinCast Co., Ltd.	www.tsengyih.com
压铸展 CID	苏州昌恒精密金属压铸有限公司	Suzhou Changheng Precision Metal Die Casting Co., Ltd.	www.scpdiecasting.com
压铸展 CID	苏州杰泰龙精密压铸工业有限公司	Suzhou Jietailong Precision Casting Industry Co., Ltd.	www.szjtl.cn
压铸展 CID	苏州金澄精密铸造有限公司	Suzhou JinCheng Precision Die Casting Co., Ltd.	www.jcpesz.com
压铸展 CID	台州法纳科机械有限公司	Taizhou FNC Machinery Co.,Ltd.	www.fenchcn.com
压铸展 CID	无锡吉冈精密科技股份有限公司	Wuxi Precision Engineering Co., Ltd.	www.ysoka.com
压铸展 CID	永富丰机电(昆山)有限公司	Altop Precision Die Casting (Kunshan) Co., Ltd.	www.altop-pdc.com.cn
压铸展 CID	永年县泰普特汽车配件厂	Yongnian Tapert Auto Parts Factory	www.yazhulv.cn
压铸展 CID	中山普瑞科精密压铸有限公司	Prec-Cast (Zhongshan) Co.,Ltd.	www.preccast.cn
有色展 CNF	温州力邦企业有限公司	Wenzhou Libang Enterprise Co.,Ltd.	www.chinalbn.cn
压铸展 CID	杭州海格金属金属制品有限公司	Hangzhou Higer Metal Products Co., Ltd.	www.hzhiger.com
压铸展 CID	广州市美开实业有限责任公司	Guangzhou Meka Industrial Co., Ltd	
铸件评选2016	常州鑫霞辉模具厂	Changzhou Xinxiahui Mould Factory	
铸件评选2016	畅鼎精密五金(上海)有限公司	Changding precision hardware (Shanghai) Co.,Ltd.	www.bestcd.cc
铸件评选2016	东莞宜安科技股份有限公司	DongGuan EONTEC Co.,Ltd.	www.e-ande.com
铸件评选2016	飞利富科技有限公司	Feilifu Technology Co., Ltd.	www.flifu.com
铸件评选2016	河间市恒泰汽车配件有限公司	Hejian City Hengtai Auto Parts Co., Ltd.	hj-hengtai.cn
铸件评选2016	河南英利特科技有限公司	China Henan Elite Technology Co.,Ltd.	www.hnyltkj.com
铸件评选2016	湖南省嘉力机械有限公司	Hunan Jiali Machinery Co.,Ltd.	www.jljxgs.net
铸件评选2016	黄骅市广乾模具有限公司	Huanghua County Guangqian Mold Co.,Ltd.	www.xfmold.com

CHINESE DIECASTERS

展会名称	公司中文名	公司英文名	网址 / Foundry Web Site
铸件评选2016	江苏中色锐毕利实业有限公司	Jiangsu CNPT-Rabily Industrial Co.,Ltd.	www.rabily.com
铸件评选2016	靖江市洪源汽车零部件有限公司	Jingjiang Hongyuan Auto Parts Co., Ltd.	www.jjhongyuan.com
铸件评选2016	乐陵市吉恩特五金制品有限公司	Leling Giant Special Hardware Products Co.Ltd.	www.sdgiant.cn
铸件评选2016	宁波北仑赛帕迪机械制造有限公司	Ningbo Beilun SPD Machinery Manufacturing Co., Ltd.	www.nb-spd.com
铸件评选2016	宁波博力汽车零部件有限公司	Ningbo Boli Automotive Components Co., Ltd.	
铸件评选2016	宁波东叶模具有限公司	Ningbo Dongye Molds Co.,Ltd.	www.dongyem.com
铸件评选2016	宁波环亚机械制造有限公司	Ningbo Huanya Machinery Manufacturing Co.,Ltd.	www.alcasting.com.cn
铸件评选2016	宁波洁星压铸模具塑胶有限公司	Ningbo Jiexing Die Casting Mould Plastic Co.,Ltd.	cn.china-jiexing.com
铸件评选2016	宁波金达模具有限公司	Ningbo Jinda Dies & Tooling Co., Ltd.	www.jindamould.com
铸件评选2016	宁波经济技术开发区博威模具金属制造有限公司	Ningbo Bowei Machinery Co.,Ltd.	www.bwmjyz.com
铸件评选2016	宁波君灵模具技术有限公司	Ningbo Junling Mould Technology Co., Ltd.	www.junlingmould.com
铸件评选2016	宁波联大模具铸造有限公司	Ningbo Lianda Mould Casting Co.,Ltd.	www.nblianda.com
铸件评选2016	宁波隆源精密机械有限公司	Ningbo Longyuan Precision Machinery Co., Ltd.	www.nblongyuan.com
铸件评选2016	宁波盛技机械有限公司	Ningbo Shengji Machinery Co., Ltd.	www.cj666.com
铸件评选2016	宁波市北仑东方汽摩压铸厂(普通合伙)	Ningbo Beilun DongFang Car Motorcycle Die-casting Factory	www.dongfang.cc
铸件评选2016	宁波市北仑燎原模铸有限公司	Ningbo Beilun Liaoyuan Mould & Die-casting Co.,Ltd.	www.cn-liaoyuan.com
铸件评选2016	宁波市北仑旭日模具机械有限公司	Ningbo Beilun Xuri Mould Machinery Co.,Ltd.	
铸件评选2016	宁波市丰豪模具机械制造有限公司	Ningbo Fenghao Mould Machinery Manufacturing Co.,Ltd.	www.fnhao.com/
铸件评选2016	宁波市恒通汽车配件有限公司	Ningbo Handtight Auto Accessories Co., Ltd.	
铸件评选2016	宁波市鄞州三升金属制品有限公司	Ningbo Yinzhou Sansheng Metal Products Co.,Ltd.	
铸件评选2016	宁波市镇海压铸厂	Ningbo Zhenhai Die-casting Factory	www.nbzhyz.com
铸件评选2016	宁波银润汽车零部件有限公司	Ningbo Beilun Yinrui Auto Parts Co.,Ltd.	www.nbyinrun.com
铸件评选2016	宁波众鑫压铸模具有限公司	Ningbo Zhongxin Die-Casting Mould Co.,Ltd.	www.nbzxyz.net
铸件评选2016	强胜精密机械(苏州)有限公司	Johnson Precision Engineering (Suzhou) Co.,Ltd.	www.jspez.com/
铸件评选2016	瑞安市金橡铸造	Ruian Jinxiang Al-Foundry	
铸件评选2016	山东新安凯动力科技有限公司	Shandong New Ankai Drive & Technology Inc.	www.xak.com.cn
铸件评选2016	山东银光钰源轻金属精密成型有限公司	Shandong Yinguang Yuyuan Light Metal Precise Forming Co.Ltd.	www.ygyycn.com
铸件评选2016	胜赛思精密压铸(扬州)有限公司	Sensus Precision Die Casting (Yangzhou) Co., Ltd.	
铸件评选2016	苏州瑞延压铸有限公司	Suzhou SEOYON Die Casting Co.,Ltd.	
铸件评选2016	太仓市南丰汽车附件有限公司	Taicang Nanfeng Auto Accessories Co.,Ltd.	www.nfpesc.com
铸件评选2016	温岭市青石汽摩配件有限公司	Wenling Qingshi Auto-Motorcycle Parts Co.,Ltd.	www.zjqingshi.com
铸件评选2016	无锡朗贤汽车组件研发中心有限公司	Wuxi Langshion Auto Components R & D Co.,Ltd.	
铸件评选2016	无锡盈丰汽车零部件制造有限公司	Wuxi Yingfeng Auto Parts Manufacturing Co.,Ltd.	
铸件评选2016	新昌县惠工机械有限公司	Xinchang Huigong Machinery Co.,Ltd.	
铸件评选2016	新涛华宇控股集团有限公司	Xintao Huayu Holding Group Co.,Ltd.	www.xthyjt.com
铸件评选2016	玉环天瑞机械有限公司	Yuhuan Tianrui Machinery Co.,Ltd.	
铸件评选2016	浙江大东吴汽车电机有限公司	Zhejiang Dadongwu Auto Electric Motor Co., Ltd.	www.dadongwu.com
铸件评选2016	诸暨市汇鑫机械有限公司	Zhuji Huixin Machinery Co., Ltd.	www.huixincasting.com

CORPORATE PUBLISHING

WWW.FOUNDRY-PLANET.COM



B2B FOR TECHNICAL AND COMMERCIAL FOUNDRY MANAGEMENT

Industrial-Grade 3D Printing

Materialize Sand Molds, Cores & Functional
Metal Parts Directly from CAD Files



ExOne[®]
DIGITAL PART MATERIALIZATION

Consult with our Experts. Invest in an ExOne system
or simply have ExOne manufacture a part for you.

+49 (0) 821 650 63 0 • ExOne.com



Hall N1 - A21/10