



金属加工行业 荣格技术创新奖
Ringier Technology Innovation Awards 2020 Metalworking Industry



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2020 金属加工行业 — 荣格技术创新奖

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专业评审团

—2020 金属加工行业荣格技术创新奖

以下排名不分先后



张为民

1990年4月起在同济大学工作，历任助教、讲师、副教授、教授。曾担任机械工程系工艺及自动化教研室副主任、主任；现代制造技术研究所副所长、所长；同济大学中德学院生产系统、制造技术教席教授。德国波鸿鲁尔大学和德国斯图加特大学访问学者。中德 AMTC（Advanced Manufacturing Technology Center 先进制造中心）实验室主任。全国高等学校制造自动化研究会理事、中国汽车工程学会汽车现代化管理分会委员、中国机械工程学会高级会员、沈阳机床“高档数控机床”企业国家重点实验室专家、生产工程学会机床专业委员会常务委员。主要从事机械设计制造及其自动化专业的教学、科研工作，研究方向是制造系统及自动化、单元化制造及其控制技术、金属切削机床与加工工艺等。



李如松

1962年毕业于哈尔滨工业大学。自1962年至1996年，在机械工业部大连组合机床研究所从事组合机床及自动线的设计和课题的研究，主管设计了作为研究课题的缸体专能镗床。1966年主持和设计组合机床研究所的第一个镗孔车端面动力头系列和其通用部件。1976年主管设计的多路阀体加工自动线获得江苏省科技进步三等奖。先后担任过机床、自动装配、工业机器人、总师办、引进办、新工艺和CAD计算机辅助设计等研究室的副主任、主任以及研究所的副总工程师等职务。获得铣边机专用铣刀的发明专利一项。担任《机械工程手册（第二版）》的《机械制造工艺及设备卷（二）》的分编辑委员会委员和《加工过程自动化篇》的副主编。2005年来被荣格工业传媒聘为《国际金属加工商情》和《国际模具制造商情》杂志的编委。已发表科技文章160多篇。



李明

1963年1月生，硕士学位。上海大学机械工程与自动化学院研究员、博士生导师。现任上海大学工训中心主任。同时担任全国产品尺寸和几何技术规范标准化技术委员会会员（SAC/TC240,ISO/TC213）、上海市模具行业协会特种加工委员会副主任委员、上海市机械工程学会先进制造技术专业委员会理事、上海高校互换性与技术测量基础研究会副理事长。国内坐标测量技术领域的知名专家，长期从事几何精度设计与质量过程控制、机电一体化系统设计制造方面的教学与研究工作。承担过包括国家863、上海市重大和重点攻关项目，并且十分重视与企业的产学研合作，多次获得上海市科技进步奖。主持和参与了30多个国家产品几何技术规范与标准的制订。已公开发表学术论文50余篇，获发明专利10余项。



章宗城

教授，曾任东华大学机械制造教研室主任以及全国摩擦学学会理事。之后在日本从事切削加工，切削工具磨损等研究，主要研究各种表面处理对刀具和零件性能提高的影响和改进途径。目前任职尚亚国际贸易公司高级顾问，主要介绍国外先进刀具制造工艺，进行一系列的科普工作。



徐正平

原上海机床工具集团有限公司市场部部长，高级工程师，上海机械工程学会顾问。长期从事数控机床技术工作，注重研究当今国际数控机床发展动向及市场趋势。曾担任重大工程项目的评审工作，也是多家境内外媒体特邀记者及撰稿人。主要论作包括“创新是机床发展的不懈动力”、“加工中心选型”等。



仲梁伟

上海理工大学机械学院教授，上海理工大学 CAD 中心主任，上海机械工程学会理事，上海制造技术与装备专业委员会秘书长，上海市工程图学会理事，机械工业联合会精密磨削重点实验室副主任。主要从事机床设计开发、先进加工技术、计算机辅助智能设计制造、机械快速设计及敏捷制造系统、产品数据管理系统（PDM）、企业信息化、虚拟技术等方面的研究。

主持及参与了“高效高精度卧式加工中心开发”、“机床虚拟样机系统”、“数控机床加工检测数据表研制”、“岸桥快速设计系统开发”，“破碎机快速设计及敏捷制造系统研究”、“掩护式液压支架数字化样机研究”、“破碎机虚拟制造系统”，“结晶器数字化样机研究”、“钢包回转台数字化样机研究”、“钢筒成形及加工计算机仿真软件研究”、“CAPP/PDM 基础支撑系统研制”、“圆锥破碎机备件信息库”等四十余项。主持研制了“产品数据管理系统软件 ecPDM”、“重型机械标准件库图库软件”、“颚式破碎机辅助设计软件”，“桥式起重机计算机辅助设计系统”，“电站除氧器计算机辅助设计”等软件系统，并获得软件著作权。发明专利三项，实用新型专利一项。发表论文五十余篇。



张书桥

上汽大众汽车有限公司高级经理，教授级高级工程师。上海市金属切削协会副理事长，全国生产工程学会委员，中国机械工程学会首批工业工程专家，中国刀协刀具管理委员会秘书长，浙江工业大学客座教授。在国内外发表论文二十余篇，专著《现代制造系统》一书。在科技与管理方面获教育部科技进步二等奖、上海市企业管理现代化创新二等奖、上海市科技进步二等奖等多项荣誉。



唐波

1944 年 5 月出生，1967 年清华大学机械系毕业，高级工程师。40 多年来，唐波一直在装备制造行业从事技术和管理的工作。曾经担任上海建设路桥机械设备有限公司副总工程师、上海冶金第二机修厂厂长、上海冶金设备总厂副厂长、上海市冶金科学技术委员会委员。

现任高端装备制造业协会合作联盟秘书长，曾任上海重型装备制造行业协会副会长兼秘书长，兼任上海市机械工程学会理事、上海市机械工程学会重型机械专业委员会秘书长。近年来，接受上海市经信委委托组织并执笔编写了《十一五行业发展规划》建议、《十一五行业自主创新规划》建议、《十二五行业发展规划》建议等；接受市科委委托，主笔撰写了“行业节能减排蓝皮书”、“关于加快开发核电材料，振兴上海先进制造业的建议”以及“积极推进两个中心建设、发展上海装备制造业的建议”等课题，分别提交给市经信委、浦东新区等；面对“后危机时代”的到来，又写了“上海重型装备制造行业后危机时代的应对措施和建议”课题，提交市商务委。



李俐群

哈尔滨工业大学先进焊接与连接国家重点实验室教授、博士生导师，兼任亚琛联合科技（天津）有限公司 CEO。主要研究方向：激光增材制造、激光熔覆、激光焊接、激光加工过程智能控制。作为项目与课题负责人，主持科技部重点研发专项、国家自然科学基金、04 专项、国防重点基金、航空航天及各类工业项目等 40 多项。获得省科技进步一等奖 1 项，授权专利 18 项，软件著作权 5 项，发表学术论文 200 多篇。



杨明川

现任北京奔驰汽车有限公司发动机维护高级经理。北京理工大学车辆学院硕士研究生，北京大学在读工商管理硕士。2011 年加入北京奔驰汽车有限公司，从事发动机、汽车电池制造的设备管理工作。与跨部门团队一起建立的 iTPM 的管理创新，获得北京奔驰 2018 年度“星辉奖”，北京市管理创新一等奖，并荣获 ROI 中国工业 4.0 最佳金奖。目前涉及的相关技术：自动化制造，设备检测，工业机器人，激光打码等。



金属切削机床类
(车, 铣, 镗, 磨削类, 齿轮加工)

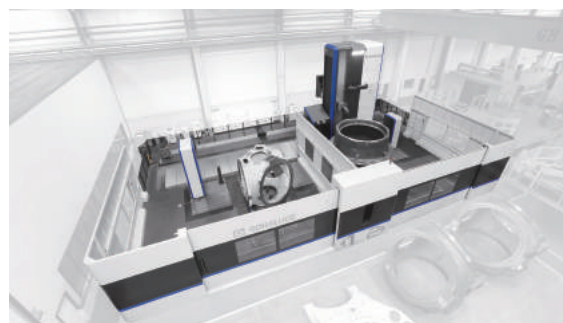
达诺巴特集团 – 索拉露斯 DANOBATGROUP - SORALUCE



索拉露斯隶属于达诺巴特集团。拥有 57 年的生产加工经验并深受创新的启发，凭借其面向未来的制造技术发展机床行业。致力于开发客户技术进步的创新解决方案，以高效率和高生产率应对苛刻的加工挑战，并树立新标准。索拉露斯的成功基于卓越的品质，一流的服务，自身的尖端技术以及根据客户的个性化需求定制每种产品的技术能力。产品涵盖广泛的铣床，镗床和立式车床，多任务解决方案以及自动化系统和生产线，并提供有关加工工艺的专业建议。机床智能部件专利技术示例: DAS + (动态主动稳定器)，消除可能出现的任何震颤；VSET，简化组件设置。

Soraluce belongs to DANOBATGROUP. With 57 years of experience and inspired by innovation, Soraluce continues to evolve the machine tool sector thanks to its future-oriented manufacturing technologies. Soraluce develops innovative solutions committed to the technological progress of its customers, responding to the most demanding machining challenges with efficiency and high levels of productivity, setting new standards. Soraluce's success is based on excellent quality, a top-rate service, its own cutting edge technology and its technological capacity to customise every product according to the individual needs of the customer. Soraluce offers a wide range of milling machines, boring machines and vertical lathes, multitasking solutions and automated systems and lines, with professional advice on machining engineering. Innovation plays a key role in the company's strategy and many of the developments that drive the machine tool industry forward are pioneering work by SORALUCE. Examples patented technologies: DAS+ (Dynamics Active Stabilizer), which eliminates any chatter that may arise, or VSET to simplify component set-up.

索拉露斯车削 / 镗铣 / 磨削多功能加工中心 SORALUCE Multitasking series



1. 高度集合性的加工中心：具备立车，镗铣，磨削三大功能。
2. 由于一次装夹可完成所有加工，特别适用于复杂的大型零件，极大提高了加工精度和加工效率。
3. 自主研发的多任务铣头 (multitask-head)，在车铣转换时，不用更换主轴铣头，做到了真正复合机的集成一体化，该铣头可同时实现三大加工功能。
4. DAS+ 技术，可同时应用于以上三大功能，大大减少了客户的刀具损耗，提高了加工效率的同时也节约了加工成本。
5. 复合机减少了夹具，工具，单机投资用于多个流程。节约了用户工厂的使用面积，原先需要 2-3 台设备才能实现的加工，在一台设备上便可完成，场地得到了节约，参与加工流程的操作人员也大大降低。特别适合场地有限并注重成本效益的用户。

Multitasking solutions which allow different machining operations to be integrated into a single machine, making it possible to reduce cycle times, save costs and increase the efficiency of machining processes. Multitasking systems are also versatile, compact, highly flexible, improve process efficiency and make it possible to manufacture small batches efficiently. Soraluce multitasking centres are equipped with high-torque, mechanically driven swivelling multitasking heads and highly versatile tables that make it possible to machine parts of different dimensions and geometries.



格劳博机床（中国）有限公司 GROB Machine Tools (China) Co., Ltd.



格劳博 GROB – 拥有全球领先的技术实力

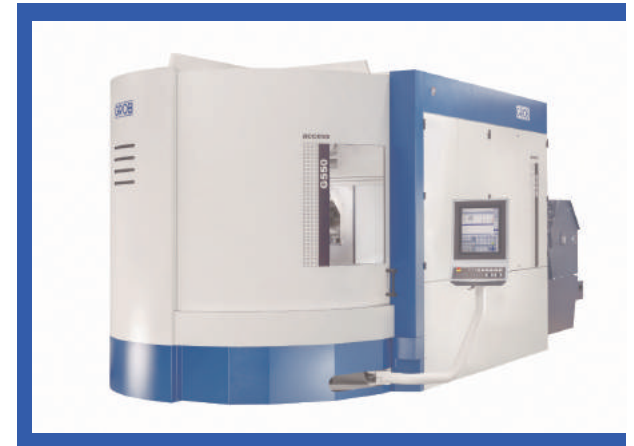
格劳博机床（中国）有限公司于 2012 年在中国大连投产，现已能通过销售、设计、生产和服务等一系列核心价值，近距离为中国乃至亚洲客户提供满足其需求的所有重要产品和服务。目前，格劳博占据了中国汽车动力总成市场约 75% 的份额，并凭借通用加工中心为航空航天，机械制造，工具模具，医学工程，能源行业等多个业务领域提供最佳解决方案，是中国市场上最知名的供应商之一。

As the 4th production plant of GROB Group -- GROB China possesses comprehensive sales, design, production and service abilities and has occupied 75% market share of Chinese automotive powertrain market and also gained very good feedback of customers from aerospace, die and mold, mechanical engineering, medical technology as well as energy technology areas by means of the 5-axis universal machining centers. GROB China is now one of the most famous producers of flexible manufacturing lines (Turn-Key project) and metal cutting machine tool industry.

格劳博五轴联动通用加工中心 access 系列 G550a GROB 5-Axis Universal Machining Centers access-Series G550a

格劳博全新的五轴联动通用加工中心 access 系列 – G350a 和 G550a，是带领您智能化步入格劳博技术天地的理想选择：投资回报期短，但仍可以提供出色的加工质量；经强化的功能可提供具备出色可靠性的高效生产，并能够针对自动化解决方案进行扩展；全球服务网络提供卓越的 24/7/365 全天候服务，为您的生产保驾护航。access 系列目前已在格劳博中国大连生产基地以“德国品质，中国制造”为标准进行本地化生产，以期为中国乃至全亚洲的客户带来更短的交货期和更迅捷的售后服务。无论是通用机械制造，委托加工，汽车零部件供应商，还是工具制造，泵，阀及配件制造，access 系列可广泛适用于各行各业，为五轴联动加工提供高精度，高效率，高质量，全新且多样化的可能性。

The G350a and G550a machine variants offer a number of benefits already familiar to GROB customers from the conventional G-series. Thanks to renowned GROB 5-axis technology, the new universal machining centers promise the best machining quality for single item and series production. At the same time, the basic models are designed to guarantee maximum efficiency and flexibility with modularly expandable and fully customizable automation solutions.





金属切削机床类
(车, 铣, 镗, 磨削类, 齿轮加工)

CHIRON Group

巨浪凯龙机床（太仓）有限公司 Chiron Machine Tools (Taicang) Co., Ltd.

巨浪凯龙机床(太仓)有限公司位于江苏省太仓市,于2012年正式成立。产品集铣削、车削、自动化、交钥匙全方位解决方案及单主轴、双主轴全功能产品线为一体。并提供备件供应、客户培训、设备升级改造以及大修服务等。

Chiron Machine Tools (Taicang) Co., Ltd., established in 2012, which is located in Taicang city, Jiangsu province, China. The products integrates all-round solutions for milling, turning, automation, turnkey and full-function product lines with single-spindle and dual-spindle to meet customers' different needs. Meanwhile, provides spare parts supply, customer training, retrofit, retooling and overhaul services.

MC 528 TWIN 双主轴双五轴立式加工中心 MC 528 TWIN double spindles vertical machining center

MC 528 TWIN 双主轴双五轴立式加工中心采用无与伦比的 TWIN 工艺技术,集高效切削与高精度加工于一体,提供 3 轴固定工作台、4 轴摆动工作台及 5 轴回转工作台多种配置,性能稳定可靠,全能型机床轻松应对各种加工需求。

MC528 TWIN double spindles vertical machining center, high efficiency and high precision mass production solution, can realize comprehensive economic and efficient functions.





瑞士斯达拉格公司 Starrag AG



斯达拉格集团是制造高精度机床的全球技术领导者，产品主要用于对金属、复合材料及陶瓷材料工件进行铣削、车削、镗削和磨削加工。主要客户为在航空航天、能源、运输和工业领域从事国际业务活动的公司。

Starrag Group is a global technology leader in manufacturing high-precision machine tools for milling, turning, boring and grinding workpieces of metallic, composite and ceramic materials. Principles customers are internationally active companies in the Aerospace and Turbines, Industrial and Transportation as well as Luxury Goods and Med Tech sectors. In addition to its portfolio of machine tools, Starrag Group provides integrated technology and maintenance services that significantly enhance customer quality and productivity.

5 轴联动叶盘加工中心 NB 151 5 axis Blisk Machining Center NB 151

为满足在一次装夹中快速可靠地加工叶盘和叶轮，并达到省时经济的目的，NB151 由此开发而来。航空航天和能源领域的用户客户将获益于其更短的加工节拍，更低的刀具成本及废品率。它可以加工直径达 600 毫米、重量达 300 公斤的工件，尤其适合钛合金、高温合金以及不锈钢叶轮、叶盘的加工。

The NB151 was developed for fast and reliable processing of blisk and impeller in a single clamping, which can realize time and cost-effective. Customers in the aerospace and energy sectors will benefit from shorter cycle time, lower tooling costs and scrap rates. It can machine the workpiece up to 600 mm in diameter and 300 kg in weight, especially suitable for impellers and blisks made of titanium alloy, nickel-based alloy and stainless steel.





金属切削机床类
(车, 铣, 镗, 磨削类, 齿轮加工)

埃斯维机床（苏州）有限公司 SW Asia Co., Ltd



埃斯维机床（苏州）有限公司是德国埃斯维机床有限公司的全资子公司。SW 是全球知名的机床生产商。一期已投产，占地 18000 平方米，为客户提供最具经济效益的金属加工全套解决方案。二期占地 20000 多平米，2021 动工建设，打造 SW 全球第二大生产和研发基地。

SW Asia Co., Ltd is a wholly owned subsidiary of Schwaebische Werkzeugmaschinen GmbH, a world-famous machine tool manufacturer. The 1st phase has been put into production with land size of 18000 square meters, able to provide a complete production solution for metal processing economically. The phase II will cover 20,000 square meters, and start to build on 2021, strive to build up a 2nd production and R&D base of SW group.



BA W08-12 卧式加工中心 BA W08-12 Horizontal Machining Center

所有运动轴的直接驱动为机床提供了理想的加速度和快移速度 (2G, 120 米/分)。两个独立控制的 X 轴和 Z 轴提高了机床的柔性和精度。机床同时具有 SW 机床的标志性特性：整体框架式设计，双摇篮式工作台，加工同时装卸工件。当然，4 轴和 5 轴加工也可轻易实现并且容易掌握。此款市场上空前的加工中心会让您绝对领先。

The direct drive in all axes provides the ideal acceleration and speed (up to 2 g, 120 m/min). Two independent X- and Z-axes increase flexibility and accuracy. Monobloc, double swivel carrier and in-cycle workpiece loading are proven SW standards which must not be missing. 4- and 5-axis machining is of course possible and is easy to handle. Unequaled on the market. The new BA W08-12 – a machining center that will allow you to advance.



斯图特公司 Fritz Studer AG



Studer 斯图特公司, 属联合磨削集团 United Grinding Group 成员。Studer 公司成立于 1912 年, 有百年历史, 在内外圆磨床行业是领军企业, 引领行业发展, 是全球最大的内外万能圆磨床生产商。自 1937 年出口到中国, 市场分布在: 航空, 航天, 机床, 汽车, 内燃机, 液压, 模具等精密零件行业。

磨致机械(上海)有限公司(UGC)属于联合磨削集团子公司, 在上海拥有 16000 平方米的生产厂房, 在中国各地拥有约 200 名员工。除了在上海的生产工厂外, UGC 在北京有销售和服务办事处。磨致机械(上海)有限公司负责 Studer 公司中国的市场销售及服务, 有 Studer 专有技术服务人员近 30 人及备件库

Fritz Studer AG, one of United Grinding group, Leading manufacturer of precision, cylindrical grinding machines since 1912. Exceeding 22 '000 machines worldwide; Export approx. 96%, Export to China since 1937. Widely applicate on the field Aerospace & Aviation, Automotive, Machine tool, Hydraulic., Mould, Energy, Precision ..Etc.

高精度万能内外圆磨床 STUDER S31 High Precision Cylindrical Grinding Machine STUDER S31

S31 最新款是 Studer 的当前尖端技术产品, 机床床身采用 Studer 的最新一代设计的坚固的 Granitan®S103 人造花岗岩床身, 集成有最新智能温控技术, 具有极佳的吸震性及热稳定性。StuderGuide® 专利静动压集成导轨直接成形于床身上。S31 机床磨削圆度精度 0.2um, X 轴和 Z 轴分辨率 0.01um, 有 400/650/1000/1600mm 顶尖距可选, 175mm 的中心高度。工件最大加工重量为 150kg。S31 采用可扩展模块化系统, 配备了 0.00005° 高分辨率的砂轮头架直驱 B 轴。S31 数控万能外圆磨床是设计用于磨削各种材料的大中小规格精密零件; 一次装夹完成内外圆, 端面, 锥面的加工, 具有非圆和螺纹磨削功能, 是既适用单件试制也试用大批量生产的高精度通用磨床。

Compact CNC universal cylindrical grinding machine for external and internal grinding of small to large workpieces in a single clamping. Its foundation is a machine base made of solid Granitan®S103 and new temperature control technology, directly molding the StuderGuide® guide system for the longitudinal and cross slides into the machine base and finishing it with a wear-resistant Granitan®S200 surfacing material. The guideways offer the highest possible accuracy through the entire speed range with high load capacity and dampening levels. The S31 is a cylindrical grinding machine for small to large workpieces in single, small and large series production. It has a distance between centres of 400mm (15.7") / 650mm (25.6") / 1,000mm (40") / 1,600mm (63") and a centre height of 175mm (6.9"). It can machine workpieces with a maximum weight of 150kg (330lbs). live spindle roundness accuracy 0.2um





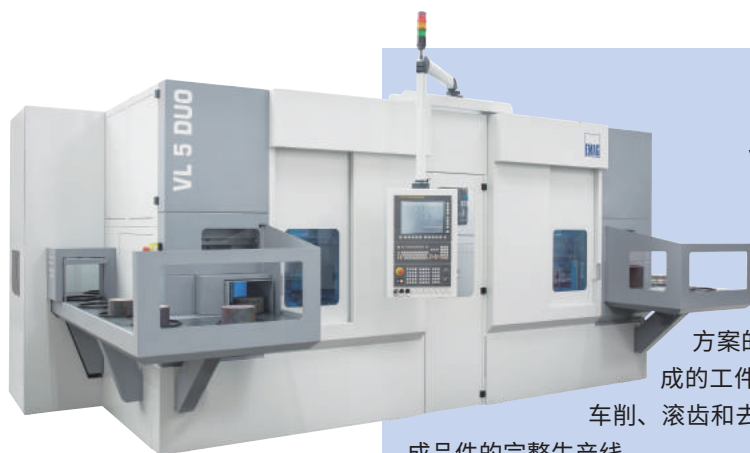
金属切削机床类
(车, 铣, 镗, 磨削类, 齿轮加工)

埃马克 (中国) 机械有限公司太仓分公司 EMAG (China) Machinery Co., Ltd Taicang Branch



埃马克集团总部设在德国萨拉赫市, 传统悠久, 机床制造经验丰富。其工艺技术全面而完善, 能为用户提供加工盘类件、轴类件和箱体类零件的机床和生产系统。不管是车床, 还是磨床、滚齿机、激光焊接机、热套装配设备、电化学设备或是感应加热设备—埃马克集团几乎能为所有的应用提供最佳的解决方案。

EMAG Group is a company steeped in tradition with global headquarters in Salach, Germany, and has rich experience in machine tool manufacturing. Access to a wide range of technologies, EMAG Group offers the machine tools and complete manufacturing systems for chucked parts, shaft parts as well as the prismatic components. Not only for turning, grinding, gear hobbing, laser welding, heat shrink assembly, ECM/PECM, but also for the induction hardening, EMAG is able to provide the best solutions for almost all applications.



VL 5 DUO 双主轴车削中心 VL 5 DUO Dual-Spindle Turning Center

VL 5 DUO 的推出, 为埃马克模块化解决方案系列产品增加了一套适合大批量生产动力总成部件的高效生产系统。VL 5 DUO 是一款极为高效的生产机床。像其它所有模块化解决方案的机床一样, 这款模块化机床也采用统一的设计结构、具有集成的工件输送系统并具备同样的传输高度, 因此可以相对简单地联接车削、滚齿和去毛刺等各种不同的工艺技术。由此也能快速实现从毛坯件到成品件的完整生产线。

The VL 5 DUO extends the EMAG Modular Solutions series by a high-productivity manufacturing system for powertrain components in large-scale production. The VL 5 DUO is already a highly effective production machine in itself. However, same as with all the Modular Solutions series, the unified design of the modular machines with their integrated automation and consistent transfer height makes it much easier to link different technologies such as turning, gear hobbing and deburring. This means that even complete production lines from raw to finished part can be implemented quickly.



山崎马扎克（中国）有限公司 YAMAZAKI MAZAK (CHINA) CO., LTD.

Mazak

山崎马扎克（中国）有限公司是山崎马扎克株式会社在中国设立的子公司。全面负责马扎克在中国市场的研发、生产、销售和服务。通过长期投资，已建成了涵盖生产、销售、工程技术、售后服务、备件支持的全面客户支持体系，拥有 1 座备件中心、2 座生产基地（宁夏小巨人机床有限公司和山崎马扎克机床（辽宁）有限公司）。以先进的全球化模式实施本土化经营，服务于中国制造业。

Yamazaki Mazak (China) Co., Ltd. is a subsidiary of Yamazaki Mazak Co., Ltd. in China. Responsible for Mazak's R&D, production, sales and service in the Chinese market. Through long-term investment, a comprehensive customer support system covering production, sales, engineering technology, after-sales service, and spare parts support has been established. It has 1 spare parts center and 2 production bases (Ningxia Little Giant Machine Tool Co., Ltd. and Yamazaki Mazak Machine Tool (Liaoning) Co., Ltd.). Mazak implements localized operations with advanced globalization models to serve the Chinese manufacturing industry.

马扎克新一代高速度、高精度、高附加值数控车削中心——QTE-200 L QTE-200 L - CNC turning center

传承了经典：自 1927 年马扎克第一台车床问世，经过 90 多年的精心打磨，马扎克的机床生产技术已经非常成熟。这款机型就是基于马扎克多年经典技术的精华研发而成的。

加工效率高：QTE-200 L 内置式电主轴、伺服非升降鼓式刀塔、丝杠和伺服电机驱动的尾座及高刚性构造等结构，确保了这是一款新一代的高速、高精度、高附加值的数控车削中心。

交付速度快：马扎克的 QTE-200 L 以及正在快速扩充的所有 E 系列产品都具备生产周期短、交货迅速的特点，而且可以大批量供货、快速安装调试，让客户实现快速投产。

QTE-200 L has inherited the classics (inheriting classics) from Mazak: Since the first Mazak lathe came out in 1927, after more than 90 years of research and development, Mazak's lathe production technology has been very mature. The new model QTE is developed based on the essence of Mazak's classic technology for many years.

QTE-200 L has high processing efficiency: Its built-in motorized spindle, servo non-lifting drum turret, ball screw, servo motor driven tailstock and high rigidity structure ensure that this is a new generation of high speed, high precision and high added value CNC turning center.

QTE-200 L is delivered fast: QTE-200 L and all E series products have the characteristics of short production cycle and fast delivery, and can be supplied in large quantities, quickly installed and debugged, allowing customers to achieve rapid production.





瑞士威力铭 - 马科黛尔公司 Willemin-Macodel SA



威力铭 - 马科黛尔股份公司创建于 1974 年, 位于瑞士 Delemont 地区。是生产高精度数控设备的制造厂商, 主要生产高精度、高可靠性、高柔性的数字化机床设备。产品在国内涉及众多领域, 航空航天、医疗、电子、钟表、珠宝首饰等。

Willemin-Macodel S.A. was established in the year 1974, located Delemont in Switzerland. Presently, Willemin-Macodel S.A. has earned a reputation as one of the Swiss leaders in the manufacturing of high precision machine tools. This reputation is built on the will to develop and manufacture very high quality machine tools on the basis of advanced technology, thus ensuring productivity and reliability.

Thanks to an important technical know-how acquired over more than 20 years, the target of Willemin-Macodel S.A. is to develop and to propose to his customers, advanced machines as well as customized turnkey manufacturing solutions which meet specific production requirements and reach very high technical performances.

Our production widely serves for Aerospace, Aviation, Watch Industry, Medical Industry, Dental, Mould, etc.



701S 并联加工中心 701S Machining center in parallel

701S 是首台通过三角移动结构从而充分体现机床高动态及高刚性的并联加工中心, 机床的设计理念基于三角结构, 依托与工件支架相连的 3 个机械臂进行并联移动。该结构最大优势在于减少移动物体为微型加工应用提供完美的高精度保证及高动态性能

701S is the first parallel machining center that fully reflects the high dynamics and high rigidity of the machine tool through a triangular movement structure. The design concept of the machine tool is based on the triangular structure and relies on 3 mechanical arms connected to the workpiece support to move in parallel. The biggest advantage of this structure is to reduce moving objects to provide perfect high precision guarantee and high dynamic performance for micro processing applications



因代克斯贸易（上海）有限公司 INDEX Trading (Shanghai) Co.,Ltd.



INDEX 集团拥有 INDEX 和 TRAUB 品牌，位于埃斯林根，是全球一流的数控车床制造商。INDEX 集团拥有六个生产制造厂，六个国际销售及服务子公司以及还有庞大的经销商网络遍布于全球 80 个地点。

With its INDEX and TRAUB brands, the INDEX Group is today one of the world's leading manufacturers of CNC turning machines. The Company Group in Esslingen has 80 sites worldwide with six production sites and six international sales and service companies as well as an extensive retailer network.

INDEX G420 车铣复合中心 INDEX G420 Turn-mill Center

INDEX G420 在同级别领域中，是款革命性的车铣复合中心，特别当它用于高效加工复杂多品种的大型工件时。得益于高刚性阻尼整体床身和 X/Z 轴的大尺寸直线导轨，G420 代表了现代化的高效加工。

The INDEX G420 is an innovative turn-mill center in a class of its own – especially when it comes to efficient production of large work pieces with high complexity and variance. Based on a rigid and vibration-damping machine bed in mineral cast monoblock design and generously dimensioned linear guides in X and Z axes, the G420 stands for modern mechanical engineering and thus for excellent machining results with high productivity.





金属切削机床类
(车, 铣, 镗, 磨削类, 齿轮加工)

牧野机床（中国）有限公司 Makino (China) Co., Ltd.



为服务于快速成长的中国市场，促进和推广牧野集团产品，扩大我们的业务及更好地为客户服务，牧野机床（中国）有限公司于2002年8月在江苏省昆山成立。牧野机床（中国）有限公司为新加坡牧野机床亚洲私人有限公司全资拥有，牧野机床亚洲私人有限公司是日本牧野集团的一部分。日本牧野集团创始于1937年5月，是专业从事制造数控金属加工机床及提供在汽车，航空及模具加工行业柔性加工革新方案的知名企业。

In order to expand our business activities and service our customer better in the fast growing China market, Makino (China) Co., Ltd was established on August 2002 in Kunshan Jiangsu Province. The company is wholly owned by Makino Asia Pte. Ltd., part of Makino global group of company. The Makino group was founded in May 1937, that engaging in manufacturing precision CNC metal cutting machines and providing innovative solution of flexible manufacturing to automobile, aerospace and die/mold industry.



五轴立式加工中心 V80S/V90S V80S/V90S - 5 axis machine tool

现代模具加工中，对大中型模具加工产品的要求也越来越高，既要有高效率加工，又要高精度加工质量，于是牧野研发了新一代高精密五轴加工中心 V80S/V90S。

新研发的主轴与倾斜轴及旋转轴单元的轴进给动作更加敏捷而顺畅，实现了既高效又有高精度表面的模具加工 5 轴加工中心。

In modern mold processing, the requirements for large and medium-sized mold processing products are also higher and higher, which requires both high-efficiency processing and high-precision processing quality. Therefore, Makino has developed a new generation of high-precision 5-axis machining center V80S / V90S.

The newly developed spindle, tilt axis and rotation axis unit can feed more quickly and smoothly, and realize a 5-axis machining center with high efficiency and high-precision surface.



萨瓦尼尼 Salvagnini

salvagnini
萨瓦尼尼

萨瓦尼尼公司由意大利著名工程师萨瓦尼尼先生创建于1963年，是全球钣金柔性加工系统和工业4.0解决方案的最杰出代表之一，发展至今已成为一家全球性的股份制集团公司，拥有5家制造工厂，23家分公司，并在全球三十多个国家和地区设立了售后服务中心。

The Salvagnini Group which founded in 1963, designs, builds and sells the top level metal sheet FMS (Flexible Manufacture System) and Industry 4.0 solution. Thanks to its global presence, the Group established 5 factories, 23 branches and direct customer service in more than 30 countries around the world.

PX 精华型多边折弯中心 Panel Bender px

全新的PX多边折弯中心可对冲剪好的板材进行柔性折弯，仅需一次定位便能自动完成多边折弯；只有在上、下料时才需要人工操作。与萨瓦尼尼所有多边折弯中心一样，PX拥有一套通用的、万能折弯模具，并由自主研发的软件进行控制。

The new PX panel bender automatically produces panels from punched/cut metal sheets; operator intervention is required only for loading and unloading. Like all Salvagnini panel benders, it works with universal bending tools with movements optimized by software cycles that are the result of the extensive experience accumulated by Salvagnini in more than 40 years.



精华型多边折弯中心 PX



特种加工

(激光加工、电火花加工、等离子弧加工、电化学加工等设备、3D 打印)

斯棱曼激光科技(上海)有限公司 SLM Solutions Shanghai Co., Ltd.



SLM Solutions 参与发明了激光粉末床熔融工艺，并在全球范围内率先开始提供多激光系统。公司致力于在工序链的每个阶段与客户通力合作，为客户提供全面的技术支持和知识共享，提升客户对技术的掌握程度从而帮助客户实现投资回报的最大化。

SLM Solutions helped invent the laser powder bed fusion process, was the first to offer multi-laser systems. Taking a vested interest in customers' long-term success in metal additive manufacturing, SLM Solutions' experts work with customers at each stage of the process to provide support and knowledge-sharing that elevate use of the technology and ensure customers' return on investment is maximized.



SLM[®]500 激光选区熔化设备 SLM[®]500 Selective Laser Melting Machine

SLM[®]500 可确保操作人员的安全并降低整体运行成本。全闭环粉末处理系统可实现操作人员与金属粉末的零接触。可更换的成型缸能最大程度减少设备闲置时间，从而最大化生产效率和降低零部件的平均成本。作为市场上第一个拥有四激光的金属增材制造系统，SLM[®]500 是一款大尺寸金属增材制造的旗舰设备。

The SLM[®]500 is built to ensure operator safety and lower overall operational costs. Material and operator are separated through a closed-loop powder handling strategy that includes an automated powder sieve and supply. Machine downtime is minimized through exchangeable build cylinders to maximize productivity and reduce cost per part. As the first quad-laser metal system on the market, the SLM[®]500 serves as the flagship machine for high volume metal additive manufacturing.

特种加工

(激光加工、电火花加工、等离子弧加工、电化学加工等设备、3D 打印)



通快（中国）有限公司 TRUMPF (China) Co., Ltd.



创立于 1923 年的通快集团是高端制造装备领域的全球领导者。我们致力于以领先的机床和激光技术为 30 多个国家的客户提供更具竞争力的生产技术。目前，通快在全球范围内拥有大约 14300 名员工，年销售额达 35 亿欧元。

Established in 1923, TRUMPF is the world technological and market leader for machine tools and industrial lasers. We provide advanced production technology to customers in more than 30 countries. The company – which has about 14,300 employees – achieved sales of 3.5 billion euros.

多激光 3D 金属打印设备 TruPrint 5000 TruPrint 5000 (Highly Productive 3D Printing for Industrial Serial Production)

作为市面上最高效的金属部件中画幅 3D 打印系统，TruPrint 5000 金属 3D 打印系统非常适合工业批量生产。得益于 500° C 预热装置及全域式多激光系统选配等功能，该款机床能快速可靠地生产出由不同金属材料制成的各种部件，同时满足工具与模具制造、航空航天以及医疗技术领域的高质量要求。

The highly productive, partially automated TruPrint 5000 3D printing system provides the ideal basis for industrial series production. With optional features, including 500° C-preheating and the fullfield multilaser, you are perfectly equipped to handle even the most demanding industrial applications. The machine quickly and reliably manufactures high-quality components from a range of different metal materials, all while meeting the stringent quality requirements for tool and mold making, the aviation and aerospace industry, and the medical technology sector.





特种加工

(激光加工、电火花加工、等离子弧加工、电化学加工等设备、3D 打印)



福祿超高压水射流技术（上海）有限公司 Flow UHP Waterjet Technology (Shanghai) Co., Ltd.

福祿公司为制造和工业清洗市场提供技术先进、环保的解决方案。福祿是超高压（UHP）水刀技术开发和制造领域的领导者，也是机器人和装配设备的领先供应商。

自 1974 年以来，福祿已经交付了超过 100,00 套纯水水刀和加砂水刀系统，客户遍及 100 多个国家和地区。福祿的核心市场包括航空、汽车、加工厂、造纸、食品、艺术装饰和建筑、工业清洗、表面处理、食品加工和其他特殊应用。

Flow is the world leader in the development and manufacture of ultrahigh-pressure (UHP) waterjet technology, and a leading provider of robotics and assembly equipment. Flow provides technologically advanced, environmentally-sound solutions to the manufacturing and industrial cleaning markets.

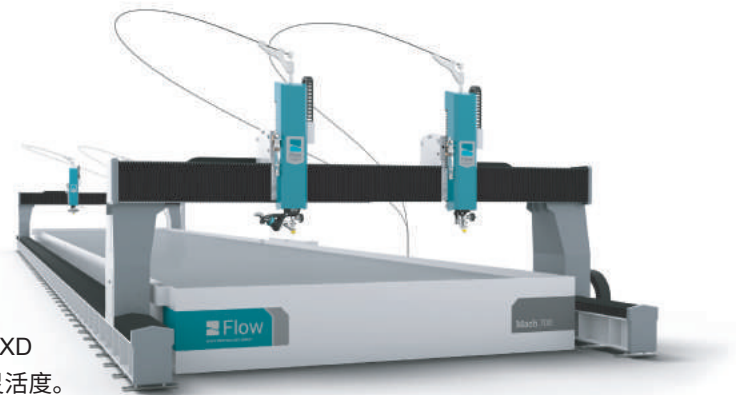
Since 1974, Flow has delivered more than 10,000 waterjet and abrasive waterjet systems to customers in more than 100 countries and regions.

The company's core markets have grown to include aerospace, automotive, job and machine shops, paper, food, art and architecture, industrial cleaning, food processing and other specialty applications.

马赫 700 水切割系统 Mach 700 waterjet cutting system

马赫 700 水刀是适合重工业的理想切割解决方案。采用双桥架的马赫 700 系列是大型水刀，专门为严苛的环境和预期目标而设计。尺寸、速度与精度的理想组合。马赫 700 给您的利润带来重大的积极影响。

借助福祿动态水刀 XD 3D 斜角切割技术，实现准确的 5 轴运动。动态 XD 能够以高精度切割复合角，是最快速准确的切割头，同时具有最大的灵活度。



The Mach 700 waterjet is the ideal cutting solution for heavy industry. Available with a dual bridge, the Mach 700 series is a large format waterjet designed for demanding environments and exacting expectations. The ideal combination of size, speed, and accuracy. Make a big impact on your bottom line with the Mach 700.

Get accurate 5-axis motion with Flow's Dynamic Waterjet XD 3D bevel cutting technology. Capable of cutting compound angles with high accuracy, Dynamic XD is the fastest, most accurate, cutting head with the greatest amount of flexibility.

伊斯卡刀具国际贸易（上海）有限公司 ISCAR INT'L TRADING (SHANGHAI) CO.,LTD.



伊斯卡，一家风格鲜明、极具创新特色的金属切削刀具生产商。总部位于以色列，在全球超过 50 个国家设立分公司及代表处。公司的 QS-9000 质量体系认证涵盖了各功能和用途的切削刀具。

公司的整体架构有足够的进行非标刀具的设计与制造；公司每年有数百种新品面世。公司每一位员工尽最大的努力为世界各地的客户提供高效、经过验证及经济的解决方案。

ISCAR IS A PRODUCER OF UNIQUE AND INNOVATIVE CUTTING TOOLS FOR METALWORKING. ITS HEADQUARTERS ARE LOCATED IN ISRAEL, WITH FULLY-OWNED SUBSIDIARIES AND OTHER REPRESENTATIVES IN MORE THAN 50 COUNTRIES AROUND THE GLOBE. THE COMPANY'S QS-9000 CERTIFIED MANUFACTURING FACILITIES ARE DIVIDED BY FUNCTION AND PURPOSE. THE ENTIRE ORGANIZATION IS ARRANGED TO ALLOW FOR SPECIALIZATION. IT IS THIS SEPARATION OF ACTIVITIES THAT HAS RESULTED IN HUNDREDS OF NEW PRODUCTS AND PRODUCT VARIATIONS EACH YEAR. THROUGHOUT THE COMPANY, HARDWORKING INDIVIDUALS APPLY THEMSELVES TO THE CREATION OF EFFICIENT, PRACTICAL AND ECONOMICAL SOLUTIONS FOR CLIENTS ALL OVER THE WORLD.

逻辑·智胜王牌车刀 LOGIQ4TURN

LOGIQ4TURN 车刀，夹持带 4 个切削刃的双面强固车刀片，大正前角，通用于车削加工，旨在替代带 2 个大正前角的车刀片。楔形刀片牢靠夹持于定位槽，刀片定位更精准，加工更稳定，刀片及刀具寿命更长。提供带内冷却通孔及不带内冷却通孔两种类型的刀杆。

LOGIQ4TURN, double sided robust and positive 4 cutting-edged rake inserts for general turning applications, to replace positive 2 cutting edged inserts. Their dovetail shape fits into a pocket design to enable better insert positioning and stability, for longer insert tool life.

The holders can be ordered with or without through-tool coolant channels.

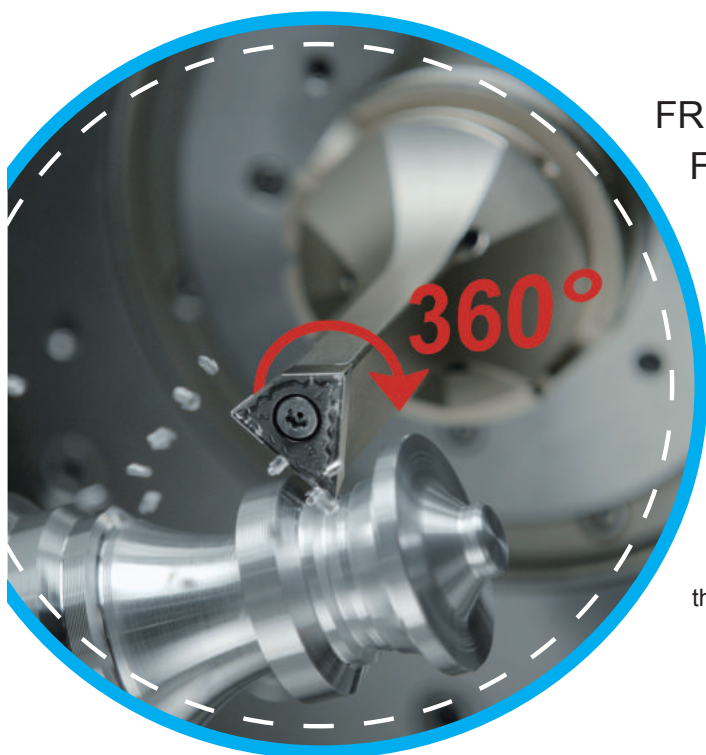




森拉天时精密刀具（上海）有限公司 CERATIZIT Cutting Tools (Shanghai) Co., Ltd.

森拉天时精密刀具（上海）有限公司（原名：高迈特达恩特精密刀具（上海）有限公司）成立于2016年，是森拉天时集团（CERATIZIT Group）切削刀具业务在中国的唯一销售公司，全面负责集团旗下4大切削刀具品牌：Cutting Solutions by CERATIZIT，KOMET 高迈特，WNT 达恩特以及 KLENK 在中国的销售、推广和运营。

CERATIZIT Cutting Tools (Shanghai) Co., Ltd. - former KOMET WNT Cutting Tools (Shanghai) Co., Ltd., established in 2016, is the only sales organization of Team Cutting Tools from CERATIZIT in China. We operates with the four product brands: Cutting Solutions by CERATIZIT, KOMET, WNT & KLENK in China.



FREETURN – 车削全能王

FREETURN - THE ALLROUND TURNING TOOL

通过 High Dynamic Turning（简称 HDT）技术以及 FreeTurn 车削刀具，CERATIZIT 正彻底改变传统的车削方式。粗加工、精加工、仿形车削、端面和纵向车削等常见车削作业，如今仅需一把刀具即可完成，最大程度地为用户提升加工效率、优化生产成本。

With High Dynamic Turning, HDT for short, and the dynamic FreeTurn turning tools, CERATIZIT is turning the conventional method of turning completely on its head. All familiar turning operations such as roughing, finishing, contour turning, facing and longitudinal turning can now be completed using just one tool. It will greatly help the customers to enhance the machining efficiency and optimize the production costs.

年度团队创新奖

山特维克可乐满 Sandvik Coromant



山特维克可乐满隶属于全球工业集团山特维克，是世界领先的金属切削刀具制造商，同时也是刀具解决方案和专业加工知识的提供者，致力于制定行业标准，不断推出创新技术，在满足金属切削行业当前要求的同时，引领世界进入工业 4.0 时代。完善的培训支持、巨大的研发投入以及强大的客户关系确保山特维克可乐满的加工技术不断进步，进而改变、引领和推动加工制造业的未来发展。山特维克可乐满在全球拥有 3100 多项专利，雇佣 7900 多名员工，在 150 多个国家和地区设有代表机构。

Sandvik Coromant, part of global industrial engineering group Sandvik, Sandvik Coromant is at the forefront of manufacturing tools, machining solutions and knowledge that drive industry standards and innovations demanded by the metalworking industry now and into the next industrial era. Educational support, extensive R&D investment and strong customer partnerships ensure the development of machining technologies that change, lead and drive the future of manufacturing. Sandvik Coromant owns over 3,100 patents worldwide, employs over 7,900 staff, and is represented in 150 countries.

CoroPlus[®] ToolPath 软件 CoroPlus[®] ToolPath

CoroPlus[®] ToolPath 软件目前包括两个不同的模块：PrimeTurning[™] 车削模块和螺削车削模块。PrimeTurning[™] 模块更新后，支持内孔车削工序，支持内外螺纹车削工序。该软件将根据您的加工位置提供正确的刀具材质和槽型，设定切削参数。能够快速导入 CAD 模型 (STEP/IGS)，从而快捷地定义零件和坯料，并提供包含碰撞检测的三维仿真模拟。

The CoroPlus[®] ToolPath software now includes two different modules, PrimeTurning[™] and thread turning. The PrimeTurning[™] module is updated to support internal PrimeTurning[™] operations, offering programming support for external and internal thread turning operations. This software provides the correct grade and geometry selection as well as cutting data recommendations, based on your pre-machining settings, possibility to import CAD models (STEP/IGS) for defining component and blank, 3D-simulation with collision detection is available.



瓦尔特 (无锡) 有限公司 Walter wuxiCo.,Ltd.



瓦尔特公司在金属加工领域是全球领先企业之一。专业提供各种用于铣削、车削、孔加工和螺纹加工的精密刀具。瓦尔特为客户提供种量身定制的机加工解决方案，用于通用机械、航空航天、汽车和能源等行业整体零部件的加工。集团的 Engineering Kompetenz (优势技术能力) 涵盖了整个切削工艺。作为高效、数字化流程解决方案的创新性合作伙伴，瓦尔特在行业内是工业 4.0 的开拓者。瓦尔特集团的员工超过 3500 人，并拥有数量众多的子公司和销售合作伙伴，为全球 80 多个国家的客户提供服务。

Walter Tools is one of the world's leading metalworking companies. As provider of specialized machining solutions, Walter offers a wide range of precision tools for milling, turning, drilling and threading applications. Walter works together with its customers to develop custom solutions for fully machining components for use in the aviation and aerospace industries, as well as automotive, energy, and general engineering. The company demonstrates its Engineering Kompetenz at every stage of the machining process. As an innovative partner capable of creating digital process solutions for optimal efficiency, Walter is pioneering Industry 4.0 throughout the machining industry. With about 3500 employees worldwide, together with its numerous subsidiaries and sales partners, Walter AG serves customers in over 80 different countries.

瓦尔特 TC685 硬材料螺纹加工三合一

Walter TC685-Threading milling-All three in one for ISO-H hard material

瓦尔特新产品 TC685 三合一螺纹铣刀，可以在 HRC44-65 硬度实体材料上直接铣出底孔并加工出螺纹和孔口倒角。目前可以提供 M3-M16 公制 M 和 MF 细牙螺纹，无论是通孔还是盲孔螺纹，无论有无底孔，它都可以轻松完成。

瓦尔特 TC685 铣刀的优势在于：

- 1) 三合一复合标准铣刀，可以减少换刀时间，提高加工效率
- 2) 加工工艺安全性好和稳定性好，不存在断刀的困扰
- 3) 螺纹质量更好，精度更高，表面更光滑
- 4) 刀具寿命更长

Walter new product TC685: the updated art of thread milling cutter which combined hole making, thread milling and chamfering, thus three operations into one tool. It can perfect work for HRC44-65 Hardness material. Walter can offer M3-M16 as standard tools, both for through hole and blind hole, with or without core hole, it is your best choice.

The advantages are:

- 1) Three operations into one cutter, less tool change and higher productivity.
- 2) The production process is stable and safe.
- 3) Better thread quality.
- 4) Longer tool life.





霍夫曼工具贸易（上海）有限公司 Hoffmann Quality Tools Trading (Shanghai) Co.,Ltd.

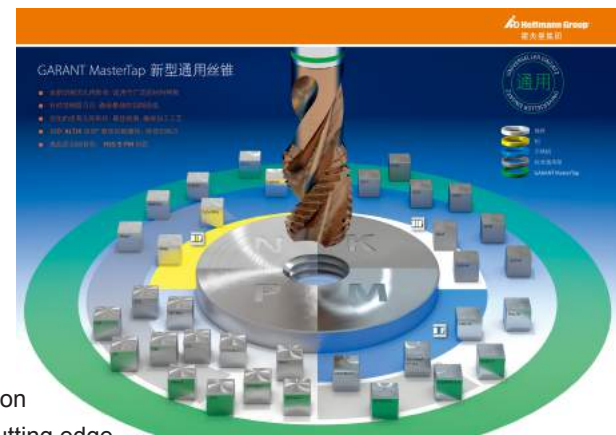
霍夫曼集团是欧洲领先的优质工具系统伙伴，集制造、服务和贸易核心能力于一体，为全球 50 多个国家超过 135,000 家客户提供优质工具与专业建议。霍夫曼集团提供来自世界领先制造商的超过 50 万种优质产品，包括切削刀具、手动工具、车间装备和个人防护产品，最新的产品目录收录了超过 8 万种产品。

As Europe's leading system partner for quality tools, the Hoffmann Group combines commercial expertise with both manufacturing and service competence. This combination guarantees reliability in supply, quality and productivity in the tooling sector and with workstations and storage solutions to over 135,000 customers. This is coupled with optimum advice. Alongside tools for machining, clamping, measuring, grinding and cutting, the portfolio also comprises hand tools, protective work-wear, workstations and storage and workshop accessories. Customers include major listed companies as well as medium-sized and small companies in more than 50 countries.

佳安特丝锥（螺纹加工） GARANT Master Tap

- 1、全新切削刃几何形状：适用于广泛的材料种类
- 2、针对性倒圆刀刃：确保最佳的切削形成
- 3、优化的齿背几何形状：最佳排屑，确保加工工艺
- 4、创新 TiAlN 涂层：最佳的耐磨性，降低切削力
- 5、高品质切削材料：HSS-E-PM 材质

- 1、 Optimised flute geometry: Controlled chip formation and chip evacuation
- 2、 Special micro-geometry : Pitch-dependent parameters for the honed cutting edge
- 3、 Stable geometry of the back of the tooth : Avoidance of cutting edge discontinuities when reversing
- 4、 TiAlN multilayer co: Wear resistance due to the ultra-hard surface of the coating Reduced cutting temperatures due to reduced friction
- 5、 HSS-E-PM tool material: High wear resistance, Optimum rigidity

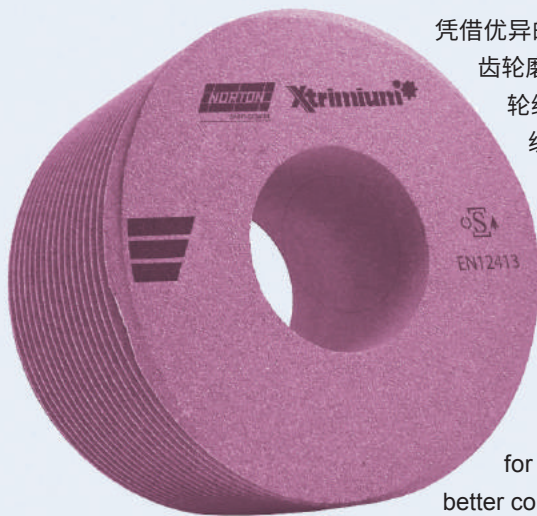


圣戈班磨料磨具（上海）有限公司 Saint-Gobain Abrasives (Shanghai) Co., Ltd.

圣戈班磨料磨具是世界 500 强圣戈班集团旗下的分支机构，拥有超过 130 年磨削行业经验，设计、制造并销售 NORTON®（诺顿®）、NORTON@WINTER®（诺顿®温特®）、FLEXOVIT®（富来维特®）等三大主导品牌的磨具产品，为相关制造领域提供专业、精确和人性化的综合磨削解决方案。圣戈班磨料磨具在中国拥有 5 家生产工厂、一个研发中心及专业磨削技术中心。

As a part of Saint-Gobain group listed in Fortune 500, Saint-Gobain Abrasives has more than 130 years of experience in designing, manufacturing and delivering abrasives products with the major brands including NORTON®, NORTON@WINTER®, FLEXOVIT®, etc. With 5 production sites and 1 R&D center equipped with grinding technology center in China, we are providing our customers in a wide range of industries with professional, precise and user-friendly grinding solutions.

诺顿 Xtrimium 蜗杆磨砂轮 Norton Xtrimium Worm Gear Grinding Wheel



凭借优异的切削效率、高保形性和冷切削性能，诺顿 Xtrimium 系列蜗杆磨砂轮可在大幅提升齿轮磨削效率的同时，极大地降低烧伤和振纹的风险，带来更高的齿轮精度，并且降低齿轮综合磨削成本。组合蜗杆磨砂轮兼具磨齿和抛光的功能，可进一步提升齿轮的精度等级。最新的小直径蜗杆磨砂轮（外径小于 150mm）专为轴齿一体加工开发，可提升齿轮的同轴度并提升加工效率。

With their superior cutting efficiency, excellent form holding and burn-free grinding, Norton Xtrimium wheels can significantly increase the grinding efficiency of gears, while greatly reduce the risk of burn and chatter mark, leading to higher precision and lower overall grinding cost. The new dual-worm grinding wheels combine grinding and polishing, taking the precision of gears to the next level. Baby worm gear grinding wheels (diameter < 150mm) are designed for directly grinding gears on the gear shaft, which provides higher efficiency and better concentricity.

上海玛帕贸易有限公司 Mapal China Ltd.



玛帕中国，成立于2004年，作为在业内以非标刀具解决方案最为知名的公司，一直将提高加工效率作为服务客户的首要目标，并且以多样化产品种类以及卓具特色的全方位服务体系，来有效的满足客户多方位的需求，MAPAL (玛帕) 中国以优化工艺、更新产品、降低成本、提高效率为目标，为客户提供专家级的服务。目前，500余人的团队，设立在全国19个城市的分支机构和位于上海与台湾的工厂，共同致力于为中国市场的客户提供最及时的服务响应。

MAPAL China was founded in 2004, as a leader in non-standard tool solutions industry. Our primary goal is to improve machining efficiency, provide a diverse and comprehensive service system in order to better serve our customers. To reach this goal we've optimized our ability to constantly optimize our products, reduce costs and improve efficiency. Our company also has more than 500 people serving under branches that reach 19 different cities. We also have two factories located in Shanghai and Taiwan that are jointly committed to serving the Chinese market.

电驱动展开式刀具 MAPAL TOOLTRONIC[®] System

玛帕 TOOLTRONIC[®] System (电驱动展开式刀具) 是一款机电一体化产品，此刀具可以在加工中心和专用机床上操作简单与稳定的径向展开动作。

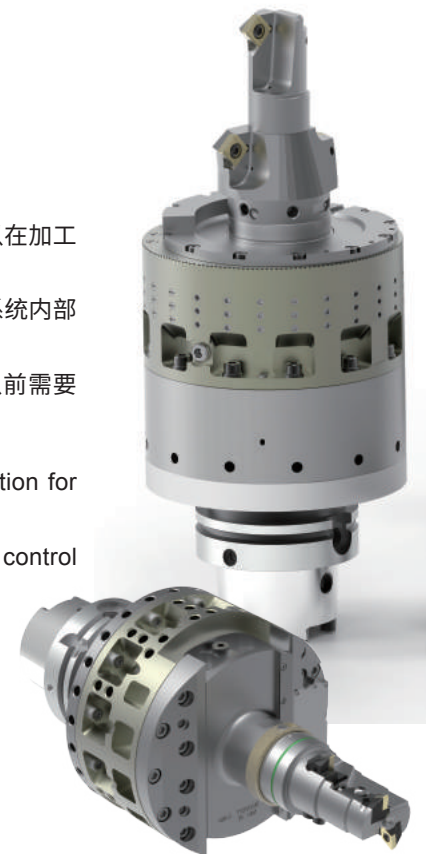
TOOLTRONIC[®] 是一个高精度自驱动系统，由一个增加的数控轴，实现集成在机床数控系统内部的模块控制。

用于加工中心的 TOOLTRONIC[®] 是一套完整的可更换的刀具，其应用范围极为广泛，以前需要成型刀具或专用机床来完成的加工内容，现在用 TOOLTRONIC[®] 就可以实现。

MAPAL TOOLTRONIC[®] System is a mechatronic product that allows for a total solution for complex geometries, and can operate in both machining centers and special machines.

TOOLTRONIC[®] is a high-precision automated system, with an increased numerical control shaft, which integrates the module control within the CNC system of the machine.

TOOLTRONIC[®] for machining centers is a complete set of replaceable tools, with a wide range of applications, which previously would require multiple molding tools, or special machine tools to complete. MAPAL thus offers customers the complete process with minimum tool changes, which is specially geared to the prevailing conditions in each case.



山高刀具（上海）有限公司 Seco Tools (Shanghai) Co.,Ltd.



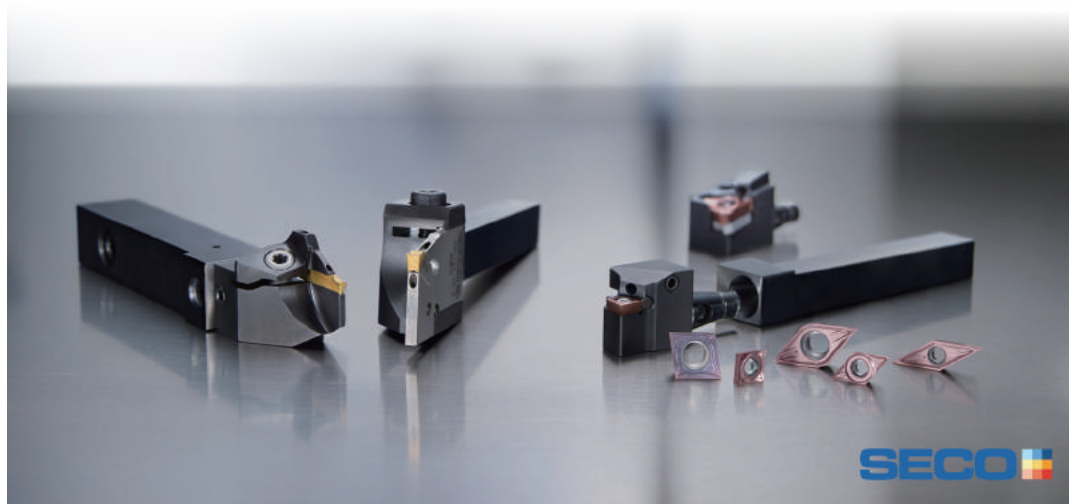
山高刀具总部位于瑞典法格什塔，目前在超过 75 个国家开展业务。作为全球领先的金属加工解决方案提供者，山高刀具提供铣削、车削、孔加工及刀柄解决方案。在过去 80 多年里，公司为制造商们提供技术和工艺，帮助他们取得成功。

Headquartered in Fagersta, Sweden and present in more than 75 countries, Seco Tools is a leading global provider of metal cutting solutions for milling, stationary tools, holmaking and tooling systems. For more than 80 years, the company has provided the technologies, processes and support that manufacturers depend on for maximum productivity and profitability.

针对小零件加工的 QC 模块化接口刀杆 QC Modular Toolholder for Small-part Machining

QC 模块化刀杆采用分体式设计，刀杆头部与杆部分离，允许用户将刀头和刀片作为一个组件快速拆下，有效解决了在走心式走刀式机床上刀尖转位难、组装繁琐等问题。结合山高 Jetstream Tooling® 技术，帮助客户实现高效的切削控制并延长刀具寿命。

Seco Tools has introduced a modular toolholder system for manufacturers seeking to improve their productivity with Swiss-style machining. The Seco QC Modular Toolholder allows users to remove both cutting heads and inserts as a single assembly, enabling fast, easy and repeatable insert indexing and tool changes outside of tight machine work envelopes. The QC Toolholders also features Seco Jetstream Tooling® technology for optimal chip control and extended tool life.



株洲欧科亿数控精密刀具股份有限公司 OKE Precision Cutting Tools Co.,Ltd.



株洲欧科亿数控精密刀具股份有限公司成立于 1996 年，是从事数控刀具产品和硬质合金制品的研发、生产和销售的高新技术企业。在册员工 600 余人，其中技术研发人员 80 多人，形成由首席技术专家、研发工程师、新品实现工艺师、专家顾问组成的技术研发团队，截至 2019 年底，公司已获得授权的专利国内专利 74 项，包括 9 项发明专利，42 项实用新型专利及 23 项外观设计专利。

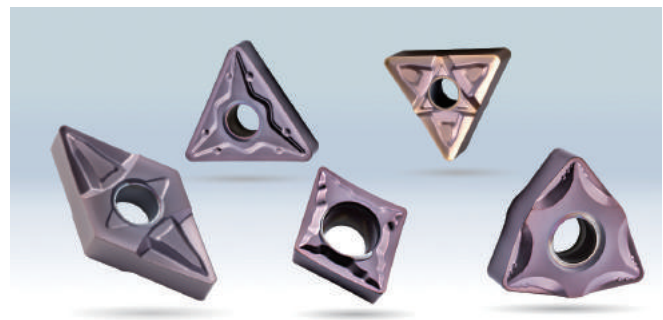
OKE Precision Cutting Tools Co., Ltd. was founded in 1996, is a high-tech enterprises engaged in research and development, production and sales of CNC cutting tool products and cemented carbide products. Registered more than 600 employees, of which the technology including R&D personnel more than 80 people, which formed an R&D team by the chief technical experts, R&D engineers, process development engineers, and expert advisor. implementation of new technology R&D team of technicians, experts, advisers, by By the end of 2019, the company OKE has licensed patent 74 domestic patents, including 9 invention patents, 42 patents of utility model and 23 patent of appearance design.

飞流系列 - 不锈钢材料加工刀片

Flying steam series- for stainless steel cutting

产品介绍：8-11% 的亚细晶 WC-Co 合金的硬质合金基体，匹配 TiSiN-TiAlN 多层纳米复合涂层和特殊的结构设计，稳定性高，广泛适用于汽车、轨道交通、航空航天、模具、医疗、卫浴等行业。自主研发的不锈钢加工 OP 系列 PVD 涂层刀片，已经过公司内部及市场的充分论证，得到了市场的广泛认可。

创新点：该系列产品采用具有硬度梯度特性和晶体结构互补优势的 TiSiN-TiAlN 多层纳米复合涂层。通过精确的工艺控制，让 Si 元素以 Si₃N₄ 非晶相细化 TiN 涂层晶粒，生成纳米复合膜层，实现了 TiSiN 膜层 40Gpa 的高硬度和优异的表面粗糙度。结合多项创造性的结构设计，该系列产品最终在不锈钢加工领域中表现出宽适用性和高稳定性。



Product introduction: 8-11% cemented carbide substrate of subfine crystal grain WC-CO alloy, matching TiSiN-TiAlN multilayer nanocomposite coating and special structural design, with which provides high stability, and widely used in automobile, rail transit, aerospace, mold, medical treatment, sanitary ware and other etc industries. Independently research and development of stainless steel processing OP series PVD coated grade inserts for stainless steel cutting, has been fully demonstrated in intrathe company company cutting lab and the market, and widely recognized by the market.

The innovations points: This series of products adopts TiSiN-TiAlN multilayer nanocomposite coating with which has gradient hardness gradient feature and grain structure complementary crystal structure. By precisely processing control, Si element was used to refine TiN coating grain with by forming Si₃N₄ amorphous phase to generate nanocomposite film, thus achieving a 40Gpa high hardness and excellent surface roughness of TiSiN film. Combined with a number of creative structural designs, this products series of products finally shows wide applicability and high stability in the field of stainless steel processing.

上海川奇机电设备有限公司 KJ International Group Co., Ltd. Helmut Diebold GmbH & Co.



Helmut Diebold GmbH & Co. 公司创立于 1952 年，总部位于德国荣金根。曾受邀参加 HSK 标准制定，68 年来一直秉承创新和严谨的信念为广大用户提供高精度专利金环刀柄，技术领先的热缩机，刀柄和主轴检测设备，高速电主轴，在行业中不断树立标杆，并取得了众多里程碑式的成就！

上海川奇机电设备有限公司作为德国 Diebold 中国合作伙伴，负责 Diebold 中国市场，致力于为广大用户提供世界先进技术的产品及技术方案。

Helmut Diebold GmbH & Co. Helmut Diebold GmbH & Co. was founded in 1952, with its headquarter based in Jungingen, Germany. It has participated in establishing the HSK standard and for 68 years, company Diebold always sticks to the philosophy of innovation and precision. It provides users with high-precision patented Goldring tool holders, intelligent shrink units, gauges for tool holders and spindles, and high-end motor spindles. Diebold has been constantly setting benchmarks and achieving milestones in this field!

KJ International Group, as the authorised Diebold China Partner, dedicates itself into providing the Chinese market with the world-leading products and solutions.

Diebold JetSleeve2.0 端面环喷冷却热缩刀柄 Diebold JetSleeve™ 2.0 Schrink Fit Tool Holder

Diebold JetSleeve2.0 端面环喷热缩刀柄，针对深腔、薄壁、凹槽等难加工工序，具有独特优势，油气混合物、冷却液或者空气通过刀柄鼻端的微小喷嘴形成高压，Venturi 文丘里效应将冷却介质直接向刀刃，并保证冷却介质与刀具始终粘附，以便更有效地冷却及润滑刀具并在几毫秒内吹离切屑。即使是 50000 转/分的高速加工，不受离心力影响，保证刀具的冷却效果。切屑不会缠绕刀具，刀具不会断裂，刀具寿命将延长 100% -300%，实现“无人值守”生产。有效解决近年来深腔铣削过程中排屑不畅的难题，并可每分钟为您节省 1 欧元的成本。

Diebold JetSleeve2.0 tool holder is born to apply for milling of deep contours and cavities.

The tiny nozzles are still incorporated into this jet ring, air-oil mixture, coolant or only air can be sprayed to the tip of the milling cutter at high pressure caused by the nozzles. The Venturi Effect points the coolant directly to the cutter tip in order to blow away the chips effectively in milliseconds. JetSleeve™ tool holder can ensure the cooling effect for high-speed machining even at 50.000 rpm. Now cutter damage by overrunning chips is impossible. This increases tool life by 100 to 300% and frequent re-start of the CNC programs, as required earlier after changes, is no longer necessary. Now, with this extra insurance, “lights-out” production is possible. It solves the problem of deep calvity milling and saves pure money with one EUR per minute.



罗姆精密夹具（上海）有限公司 Roehm China Co.,Ltd.



经过百年的积累，罗姆已经发展成为一家综合性的夹具解决方案供应商和制造商。罗姆的产品系列非常广泛，从卡盘到顶尖；从内胀芯轴到自动化抓手；从精密虎钳到拉刀机构，为工业的各个领域提供高生产力和高性价比的夹具产品。与此同时，专业的技术团队以及全球化的售后服务体系为您的生产提供着最大程度的支持和保障。

For over 100 years, RÖHM has run the gamut on powerful and precise clamping and gripping solution that help manufactures from all industry segments secure their productivity and profitability. From chucks to live centers; from mandrels to grippers; from vice to tool clamping systems, RÖHM has a comprehensive line of products to choose. a professional technical team and a comprehensive maintenance team provide maximum protection for your production.

DURO-A 动力卡盘 DURO-A Power Chuck

新型的 DURO-A 动力卡盘 ---- 有力，轻巧，紧凑

新型 DURO-A 动力卡盘，最大加紧力提高 30%，产品自重减轻 10%，它胜过了绝大多数的同等级竞品。通孔较同等级竞品已扩大了近 30%，最大转速提高了近 35%，纵使可用于更广泛的工件范围和更多样化的应用，并且提供长达三年保修（根据 DURO-A 保修条款）。

New DURO-A Power Chuck----Powerful, Light, Compact

New DURO-A Power Chuck, up to 30% higher maximum clamping force, and with a weight reduction of 10%, it prevails over comparable power chucks. The through-hole, which has been expanded by up to 30%, as well as the up to 35% higher maximum speed for a broader spectrum of workpieces and a more diverse assortment of applications. And the three-year warranty for its customers. (pursuant to the DURO-A warranty conditions)





海克斯康测量技术（青岛）有限公司 Hexagon Manufacturing Intelligence



海克斯康是全球传感器、软件和数字信息技术解决方案的领导者，致力于充分发挥数据的潜力，提升工业、装备制造业、基础设施、安全和移动出行等领域的效率、生产力和质量。来自海克斯康的专业技术，正在塑造智能制造和智慧城市两大生态系统，使其更互联、更自主，从而实现可扩展、可持续的未来。

海克斯康的制造智能业务单元专注于为客户提供贯穿设计工程、生产制造、计量测试等领域的专业技术、产品与解决方案，通过使工厂更智能，帮助用户实现品质、效率和生产力的提升，推动以质量为核心的智能制造。

Hexagon is a global leader in sensor, software and autonomous solutions. We are putting data to work to boost efficiency, productivity, and quality across industrial, manufacturing, infrastructure, safety, and mobility applications. Our technologies are shaping urban and production ecosystems to become increasingly connected and autonomous – ensuring a scalable, sustainable future.

Hexagon's Manufacturing Intelligence division provides solutions that utilise data from design and engineering, production and metrology to make manufacturing smarter and help users to improve quality, efficiency and productivity – pushing smart factories with intelligent quality.



激光球杆干涉仪 X-AX Laserbar

X-AX 激光球杆干涉仪完美的集成了传统干涉仪、球杆仪以及旋转轴校准设备的功能，集最高的精确性、较短的测量时间、通用的应用程序和完整的误差检测功能于一体，为 3-5 轴中小型机床制造商、用户提供了突破性的解决方案。

The X-AX Laserbar perfectly integrates the functions of traditional interferometers, ball bars, and rotating axis calibration equipment, integrating the highest accuracy, short measurement time, universal applications and complete error detection functions into one. It provides a breakthrough solution for 3-5 axis small and medium-sized machine tool manufacturers and users.

雷尼绍（上海）贸易有限公司 Renishaw (Shanghai) Trading Co Ltd.



雷尼绍是世界领先的工程科技公司之一，在精密测量和医疗保健领域拥有专业技术。公司向众多行业和领域提供产品和服务 — 从飞机引擎、风力涡轮发电机制造，到口腔和脑外科医疗设备等。

Renishaw is a global, high precision metrology and healthcare technology group.
We design, develop and deliver solutions and systems that provide unparalleled precision, control and reliability.

XK10 激光校准仪 XK10 alignment laser system

雷尼绍开发出全新 XK10 激光校准仪，用于在机床装配与校直过程中取代实物标准器。XK10 可以安装在直线导轨上，确保导轨的直线度、垂直度、平面度和机器调平，以及评估机器旋转部件的主轴方向和同轴度。借助 XK10 的实时显示功能，用户在机器装配过程中便可对这些误差进行测量和校直。XK10 还是一款功能强大的诊断工具，用于在发生碰撞后或者对机器进行定期维护期间识别误差源。

The XK10 alignment laser system has been developed for use during the build and alignment of machine tools, replacing the need for artefacts. It can be used on linear rails to ensure that they are straight, square, flat, parallel and level, as well as to assess spindle direction and coaxiality of rotary machines. These factors can be measured and aligned with the XK10 during build, using the systems live display. The XK10 is also a powerful tool for diagnosing the source of errors following a collision or as part of regular maintenance.





卡尔蔡司（上海）管理有限公司 Carl Zeiss (Shanghai) Co., Ltd.



蔡司工业测量是一直致力于不断创新的三坐标及智能测量的解决方案供应商，为工业制造领域及测量实验室的多维测量提供专业的测量解决方案。蔡司中国总部设立在上海，且在上海、东莞、南京、宁波、天津、长春、成都等地设有应用服务中心，为用户提供真正优质的售后服务和全面的测量解决方案。

CARL ZEISS Industrial Quality Solutions is an innovative solution supplier in coordinate measuring machines and smart quality, which provides complete solutions for multidimensional metrology in the metrology lab and production. With China headquarters in Shanghai, it also has competence centers in Shanghai, Dongguan, Nanjing, Ningbo, Tianjin, Changchun and Chengdu to provide after-sales service.

蔡司关联清洁度分析 - CAPA Zeiss Correlative Particle Analysis - CAPA

使用蔡司光镜依照 ISO16232 标准进行清洁度分析，能够得到颗粒的数量、大小分布以及鉴别金属与非金属等信息，同时获取所有颗粒的位置信息，将样品转移到蔡司扫描电镜下能够实现快速自动颗粒定位，从而实现感兴趣颗粒快速自动元素分析，并按成份进行归类，全部分析结果整合在一份报告中，在更短时间内获取更丰富的信息。

Perform a particle analysis supporting ISO 16232 with your motorized ZEISS zoom or light microscope. It delivers information on the quantity, size distribution, morphology and color of particles. Polarization contrast allows you to differentiate between metallic and non-metallic objects. Identify suspect particles and relocate them in your ZEISS scanning electron microscope (SEM). Now you can automatically analyze their elemental composition with energy dispersive spectroscopy (EDS). One report consolidates all results from light and electron microscopy. Capture more information in less time.





HEIDENHAIN
海德汉

约翰内斯·海德汉博士(中国)有限公司 DR. JOHANNES HEIDENHAIN (CHINA) Co., Ltd.

海德汉 – 高精位置测量和控制技术

约翰内斯·海德汉博士公司研发和生产高质量直线光栅尺和角度编码器、旋转编码器、数显装置和数控系统。海德汉公司产品主要用于精密机床和电子元件的生产和加工设备。

我们拥有研发和生产测量设备和数控系统的丰富经验和专业知识，我们为未来大型设备和生产型机床的自动化打造发展基础。

HEIDENHAIN – Measurement and Control Technology for Demanding Positioning Tasks

DR. JOHANNES HEIDENHAIN GmbH develops and manufactures linear and angle encoders, rotary encoders, digital readouts, and numerical controls for demanding positioning tasks. HEIDENHAIN products are used primarily in high-precision machine tools as well as in plants for the production and processing of electronic components.

With our extensive experience and know-how in the development and manufacture of measuring devices and numerical controls, we create the groundwork for the automation of tomorrow's plants and production machines.

新一代 TNC 640 及 GEN 3 驱动系统 The New TNC 640 and Gen3 Drives

车间和企业流程地数字化影响着硬件设计和功能。数据量地大幅增长需要高速和可靠地数据传输，车间的系统也需要简单易用。为此，海德汉推出两款解决方案：Gen 3 驱动系统采用光纤传输技术，纯数字地传输数据，提高工作性能和控制速度。同时，TNC 640 的多点触控和分屏显示技术让您直接在数控系统上全数字化地管理车间任务。

The digitalization of the machine shop and other corporate processes impacts hardware design and functionality. Greater information volumes require fast and dependable data transmission and a user-friendly workstation in the shop. To answer these challenges, HEIDENHAIN is offering two new solutions: The Gen 3 drives deliver purely digital transmission technology featuring fiber optics, enhanced performance specs, and greater controller speed. Meanwhile, the multi-touch operation and divided screen of the TNC 640 enable fully digital job management right on the control.



TNC 640 和新一代 Gen 3 驱动系统
可靠地管理数字化流程

车间和企业流程的数字化影响硬件设计和功能。数据量的大幅增长需要高速和可靠的数据传输，车间的系统也需要简单易用。为此，海德汉推出两款全新解决方案：Gen 3 驱动系统采用光纤传输技术，纯数字地传输数据，提高工作性能和控制速度。同时，TNC 640 的多点触控和分屏显示技术让您直接在数控系统上全数字化地管理车间任务。



奥奔麦贸易（上海）有限公司 OPEN MIND Technologies China Co.,Ltd.



OPEN MIND 是全球最受欢迎的强大 CAM 解决方案开发商之一，产品专门用于独立于机床和控制器的编程。

OPEN MIND 可设计 CAM 优化解决方案，包括大量其他产品无法提供的创新功能，显著提升了编程和加工性能。hyperMILL® CAM 系统中高效内嵌了诸如 2,5D、3D 以及 5 轴铣削 / 铣削车削等策略，以及诸如 HSC 和 HPC 等加工操作，其解决方案可满足汽车、工具和模具制造、生产加工、医疗、加工车间、能源和航空业的最高需求。

OPEN MIND is one of the world's most sought-after developers of powerful CAM solutions for machine and controller-independent programming.

OPEN MIND develops optimized CAM solutions that include a high number of innovative features not available elsewhere to deliver significantly higher performance in both programming and machining. Strategies such as 2.5D, 3D as well as 5-axis milling/mill turning, and machining operations like HSC and HPC are efficiently built into the hyperMILL® CAM system. The CAD/CAM solutions of OPEN MIND fulfil the highest demands in the automotive, tool and mold manufacturing, production machining, medical, job shops, energy and aerospace industries.

hyperMILL® 软件 hyperMILL® soft



hyperMILL® 是 OPEN MIND 推出的整套高性能 CAM 解决方案。通过 hyperMILL® 可完美精确地对 2.5D、3D、5 轴铣削和铣削 / 车削任务进行编程。只需要一款 CAM 软件和一个后置处理器即可完成铣削和车铣加工，从而造就一体化的工序以及最短的加工时间，同时增强了可靠性，最大限度地提高了工序可靠性、成本效益和质量。

优点：易于操作的 CAM 策略；加工操作适于简单到复杂的组件；世界领先的 5 轴技术；适于铣削和车削一体的后置处理器操作；广泛的自动化；集成于领先 CAD 系统；精确的模拟和全面的避让碰撞控制造就了可靠的工序；一流的 CAD/CAM 技术实现最优编程和制造；持续高效的工序，减少加工时间，以及极高的可靠性水平；机床性能的充分发挥。

hyperMILL® is a modular and flexible CAM solution for 2.5D, 3D and 5-axis milling as well as mill turning and machining operations such as high-speed cutting (HSC) and high-performance cutting (HPC), with everything integrated in a single interface. The special applications for milling impellers, blisks, turbine blades, tubes and tire molds complete the range of functions available in hyperMILL®. Complete machining for milling and mill turning with just one CAM software and just one postprocessor results in integrated processes and minimized machining times, while also increasing reliability – for maximum process reliability, cost efficiency and quality.

Benefits: CAM strategies that are easy to operate; Comprehensive range of machining operations for simple to complex components; The world's leading 5-axis technology; One postprocessor for all milling and turning operations; Extensive automation; Integration in leading CAD systems; Reliable processes thanks to true-to-detail simulation and comprehensive collision control; State-of-the-art CAD/CAM technologies for optimal programming and manufacturing; Continuous and efficient processes, reduced processing times and extremely high level of reliability; Gets the most out of machine tools.

rexroth

A Bosch Company

上海博世力士乐液压及自动化有限公司

Shanghai Bosch Rexroth Hydraulics & Automation Ltd.

作为全球领先的传动与控制技术供应商之一，博世力士乐致力于为各类机械和系统设备提供高效、强大、安全的智能运动解决方案。公司在行走机械应用、机械应用与工程及工厂自动化等领域拥有丰富的项目经验，并且凭借其智能元件、定制化解决方案及服务，为实现互联工业创造完美的应用环境。同时，博世力士乐还为客户提供各种液压、电子传动与控制、齿轮、线性传动及组装技术，软件及物联网的接口。公司业务遍及全球 80 多个国家与地区，拥有约 31,000 多名专业员工，2019 年全球销售额近 62 亿欧元。自 1978 年进入中国市场以来，博世力士乐已在北京、武进和西安建立了生产基地，截止至 2019 年 12 月，拥有约 2,700 名员工。

As one of the world's leading suppliers of drive and control technologies, Bosch Rexroth ensures efficient, powerful and safe movement in machines and systems of any size. The company bundles global application experience in the market segments of Mobile Applications, Machinery Applications and Engineering, and Factory Automation. With its intelligent components, customized system solutions and services, Bosch Rexroth is creating the necessary environment for fully connected applications. Bosch Rexroth offers its customers hydraulics, electric drive and control technology, gear technology and linear motion and assembly technology, including software and interfaces to the Internet of Things. With locations in over 80 countries, roughly 31,000 associates generated sales revenue of roughly 6.2 billion euros in 2019.



CytrBox- 全新一代智能液压动力单元 CytrBox-New generation of intelligent hydraulic power unit

“四优合一”智能液压动力单元 CytrBox——紧凑，高效，静音，互联。相比传统设计，占地面积减小 50%，节能最高达 80%，油箱体积减少 75%，噪音降低 10 分贝。CytrConnect 使其实现“互联液压”。CytrBox 集成了最新的技术，正在变革市场并定义新的标准。

4 in 1 Intelligent Hydraulic Power Unit CytrBox – Compact, Efficient, Silent, & Connectivity.

The USP of the CytrBox is that it requires 50% less space, saves up to 80% of energy, reduces oil volume by 75% and reduces noise emissions by 10dB(A). The digital service CytrConnect makes the CytrBox a "Connected Product". The CytrBox combines our latest technologies in a compact and attractive design. It is revolutionizing the market and setting completely new standards.



科比传动技术（上海）有限公司 KEB POWER TRANSMISSION TECHNOLOGY (SHANGHAI) CO., LTD.

德国 KEB 集团是欧洲电子驱动控制及机械传动先导者之一。科比传动技术（上海）有限公司是 KEB 集团在华全资子公司，在上海设有德国标准的现代化工厂。产品涵盖 HMI、PLC、IPC 产品、驱动、电机、减速机电机、制动器，并提供定制化服务。

KEB group was founded in 1972, which is one of the leading European provider in drive control and power transmission. KEB power transmission technology (Shanghai) Co., Ltd. is a wholly-owned subsidiary of KEB group in China. It has a German standard modern plant in Shanghai. Products portfolio : HMI, control, drive, motor, gearmotor, clutches and brakes. We also supply customized services.

COMBIVERT F6 驱动器 COMBIVERT F6 Drive

COMBIVERT F6 是德国 KEB 全新研发的一款高性能驱动器，功率范围 4 至 400kW，外型紧凑，可扩展模块化设计，配置灵活，可匹配多种类型电机。具有高精度、高效率等优点，转速达 128000rpm，运行平稳，效率可达 98%。并有 COMBIVIS 6 软件匹配使用，使开发更高效便捷。

COMBIVERT F6 is a new high-performance drive controller developed by KEB group. The power range is from 4kW to 400 kW.

- Compact designed(smaller size)
- Expandable in modular, multiple functions
- Flexible in configuration and suitable for various types of motors.
- High precision and high efficiency. The maximum speed can up to 128000rpm. The efficiency is up to 98% and running smoothly.
- COMBIVIS 6 software is used to coordinate with COMBIVERT F6, they can help you to make the development more efficient and convenient.





奎克好富顿 Quaker Houghton



奎克化学与好富顿国际于 2019 年 8 月 1 日合并成为奎克好富顿，总部位于美国，营业收入达 16 亿美元，拥有 4,000 多名员工，为全球 15,000 多家客户提供服务。产品和服务应用于航空航天，铝业，汽车，制罐，零件制造，矿业，钢铁等行业。

Quaker Chemical and Houghton International has come together as one company on August 1, 2019 to become Quaker Houghton, a global leader in industrial process fluids, based in USA. After the combination, operating income reached 1.6 billion US dollars, with more than 4,000 employees, serving more than 15,000 customers worldwide. Our company's products and services can be widely used in various industries, such as aerospace, aluminum, automotive, machinery, canning, industrial parts manufacturing, mining, offshore, steel, etc.



无磷无氮环保型水性清洗剂 QUAKERCLEAN® 5365

QUAKERCLEAN® 5365 是用于自动喷淋清洗设备的碱性清洗剂，是最新技术的不含磷、不含氮、不含亚硝酸盐的环保型清洗剂，泡沫低，适合于中高压清洗。本产品免漂洗，无残留物，并且不会影响后续的表面处理工序，如电镀。

QUAKERCLEAN® 5365 is a kind of alkaline cleaning agent for automatic spray cleaning equipment. It is an environmentally friendly cleaning agent that does not contain phosphorus, nitrogen and nitrite with the latest technology. It has low foam and is suitable for medium and high pressure cleaning. This product is free of rinsing, no residue, and will not affect the subsequent surface treatment processes, such as electroplating



巴索国际贸易（上海）有限公司 Blaser international trading(Shanghai)Co.,LTD.

巴索公司作为一家有着 85 年悠久历史的瑞士家族企业，如今在全球拥有 600 多名员工、业务遍及世界各地。自 1936 年成立以来，一直专注于高品质金属加工液与润滑剂的研发与生产。“液体切削工具”为客户提高加工效率，降低综合生产成本，同时为人体健康和环境保护作出了贡献。

As a Swiss family-owned company with a long history of 85 years, Blaser now has more than 600 employees and does businesses all over the world. Since the establishment in 1936, we have been focusing on the development and manufacture of high-quality metalworking fluids and lubricants. "Liquid Tool" improves the processing efficiency and reduces the comprehensive manufacturing cost for customers. At the same time, it has contributed to human health and environmental protection.



高品质切削油 Blasomill GT15

High performance tool cutting oil - Blasogrind GT15

Blasomill GT 以在高品质切削油内整合基础油优点为理念研发。该产品将更新的基础油产品应用到产品创新中，体现了产品创新的速度与敏感性。该基础油优点包括透明无色、抗老化性能优秀，比以前的产品在同样粘度情况下闪点更高，油雾更少，清洗性更好，气味更加柔和，可以使机床和车间环境获得很大改善。

基于大量测试数据，Blasomill GT 在有色金属、不锈钢、钛合金、镍基合金等材料加工中表现出强大优势。该产品的主要市场是医药技术，飞机制造和钟表制造行业。需要强调的是，Blasomill GT 可以满足医药技术中所用材料卫生纯度、清洁和加工表现的所有要求。

Blasomill GT was developed with the idea of incorporating the advantages of the base oil in an optimally high-performance cutting oil. The base oil advantages include incomparably fast air release and a high flashpoint, and it is almost colour-less and excellent ageing resistance. With less oil mist, better cleaning ability and softer smell, the working conditions can be greatly improved.

Great Machining performance on materials such as nonferrous metals, stainless steel, titanium and Inconel etc. The primary market segments for Blasomill GT are medical technology, the aircraft and watchmaking industries. Blasomill GT meets all requirements for hygienic purity, cleaning and machining performance on the materials used in medical technology.



康达特中国 CONDAT CHINA



法国 CONDAT(康达特)集团早在 166 年前在里昂成立,是一家法国独资的跨国集团,主业是生产和开发特种润滑剂和相关的化工产品,并为客户提供适合的润滑解决方案。CONDAT(康达特)在法国是研发和生产特种油品的第一品牌,在全球个别行业份额和品牌亦可名列前茅。CONDAT(康达特)集团在中国销售长达 40 年之久,上海工厂亦成立超过 15 年。

Condat Group is a French owned multinational company which is founded in Lyon 166 years ago. We are specialised in developing and manufacturing the special lubricants and related chemical goods, as well as to offer the suitable lubrication solutions to our customers. CONDAT Group is the first special oil brand in France, and it can also stand in the top in the world's individual industry share and brand. CONDAT has been entered into Chinese market for more than 40 years and it set up the Shanghai plant for more than 15 years.

CONDAT MECAGREEN 450 AERO 植物基切削液 CONDAT MECAGREEN 450 AERO

CODNAT MECAGREEN 450 AERO 是一款以植物基成酯为基础油,配以多种高性能功能添加剂的水溶性切削液,具有卓越的润滑性和材料兼容性,尤其适合于不锈钢、钛合金、镍基合金、航空铝等材质中负荷/重负荷的切削加工。

该产品不含甲醛,不含杀菌剂,无氯无硼无硅,符合 ROHS 要求,是一款与人体兼容型和环境友好型的微乳液,可为操作人员提供更佳的工作环境。

MECAGREEN450 AERO 拥有诸多航空认证:

EADS, specification ASN 42302

Pratt & Whitney, specification PMC 9300-1

SNECMA, specification n° 455-201-0-00 RevB

CODNAT MECAGREEN 450 AERO is water miscible fluids based on vegetable base oil and extensive additives. The coolant has very good lubrication and material compatibility, especially suitable for medium to heavy load machining for stainless steel, titanium alloy, Nickel alloy and Aluminium.

The coolant is formaldehyde free, biocide free, chlorine free, boron free and silicon free, in line with ROHS. It is human friend and environment friend micro-emulsion and provide better working environment to operator.

Approvals:

EADS, specification ASN 42302

Pratt & Whitney, specification PMC 9300-1

SNECMA, specification n° 455-201-0-00 RevB





Tebis 中国 Tebis China



CAD/CAM MES
Software & Services

30 多年来，Tebis 在 CAD/CAM 和 MES 领域一直保持世界领先水平，Tebis 致力于制造过程优化与技术服务，为客户提供高效、可靠的解决方案，帮助客户规划、设计和制造优质的模具、模型和零部件。

For over 30 years, Tebis has been a global technology leader in the CAD/CAM and MES sector. Tebis focus on the optimization of manufacturing process and technical services, and provide highly efficient and reliable solutions for planning, design and manufacture of dies, molds, models and mechanical components.



工业 4.0 数字化智能制造云平台 Tebis ProLeiS MES

- ★ 一个 Tebis 云平台满足多种制造需求，深度集成 CAD/CAM/MES
- ★ Tebis 数字化孪生镜像虚拟制造环境，企业制造经验数据库和云端制造管理，人才梯队建设
- ★ Tebis 智能编程，优化标准化、数字化、智能化制造过程
- ★ Tebis 云端智能制造，虚拟机床、刀具系统、工件管理都与现场一一对应
- ★ Tebis cloud platform meets the multiple manufacturing requirements, deeply integrated with CAD/CAM/MES.
- ★ Tebis digital twins virtual manufacturing environment, manufacturing experiences libraries and cloud manufacturing management, talents cultivation
- ★ Tebis intelligent programming to optimize the process of standard, digital and intelligent manufacturing.
- ★ Tebis cloud intelligent manufacturing, virtual machine, tool system and workpiece management corresponding with onsite.

DMG MORI 中国 DMG MORI China

DMG MORI

DMG MORI 是机床制造商的全球领导者。产品包括车削中心和铣削加工中心以及先进加工技术，例如超声加工技术、激光加工技术和增材制造技术，并且提供自动化系统和全面的技术解决方案。我们为“航空航天”、“汽车”、“模具制造”和“医疗器械”重点行业提供综合性的卓越技术。通过开发基于 APP 控制和操作环境的 CELOS、独有的技术循环和 Powertools，DMG MORI 积极的致力于打造工业 4.0 的世界。

DMG MORI is a worldwide leading manufacturer of machine tools. The range of products includes turning and milling machines as well as Advanced Technologies, such as ULTRASONIC, LASERTEC and ADDITIVE MANUFACTURING, plus automation and integrated technology solutions. Our technology excellence is bundled within the main sectors of “Aerospace”, “Automotive”, “Die & Mold”, and “Medical”. With our APP-based control and operating environment CELOS as well as exclusive Technology Cycles and Powertools, we are actively shaping Industry 4.0.

PH CELL 模块化自动化系统 PH CELL modular automation

全新 PH CELL 托盘系统占地面积仅 10.7 m²，该系统将搭载于 DMG MORI 的 DMU 65 monoBLOCK 加工中心共同展示。该系统从侧面为加工中心装件，拥有优异的操作舒适性和加工区易接近性。这款模块化托盘系统拥有更高灵活性。单隔架的基础版在三或四个隔架中提供 12 个 500 x 500 mm 盘位，16 个 400 x 400 mm 盘位或多达 20 个 320 x 320 mm 盘位。该系统还能配第二隔架模块，提供多达 40 盘位。无需增加占地面积就能加装第二隔架模块。独立和选配的回转式装夹位可在加工的同时轻松地装夹。PH Cell 是 DMG MORI VERTICO 风格设计的高性价比自动化系统，拥有定义好的接口和模块型设计，能快速投入使用。

A new PH CELL pallet system with a footprint of 10.7 m² is presented by DMG MORI on a DMU 65 monoBLOCK. The side loading into the machine tool guarantees optimal ergonomics and accessibility to the workspace. The pallet system has a modular design and offers the highest flexibility. The basic version with one shelf module can accommodate up to 12 500 x 500 mm pallets, 16 400 x 400 mm pallets or up to 20 320 x 320 mm pallets distributed over three or four shelves. The system can also be expanded by a second shelf module, making up to 40 pallet storage spaces available. The second shelf module can be retrofitted without the need for any additional space. A separate and optionally rotatable setup station allows ergonomic setup while machining. The PH Cell is an attractively priced automation unit in the DMG MORI VERTICO design and, with a defined interface and a modular principle, is able to be put into operation very quickly.





芬发自动化（上海）有限公司 Fastems (Shanghai) Co. Ltd.



芬发自动化（上海）有限公司是芬兰 Fastems 集团的全资中国子公司，专为 Fastems 集团在中国的客户 提供智能工厂自动化解决方案，托盘交互自动化，柔性制造系统 FMS 相关的软件，硬件和产品全生命周期服务。

成立于 1901 年，芬兰百年家族企业 Fastems 集团是世界领先的智能工厂自动化解决方案提供商和智能制造的全球领导者，其专为金属切削行业的客户提供柔性自动化解决方案，客户遍及航空工业，机床制造，轨道交通，机械重工，液压部件制造等行业，截止 2018 年，Fastems 已为全球 40 多个国家和地区的 1000 多家工业客户定制并交付了超过 4000 套自动化系统，Fastems 的主要优势在于其自主研发的智能生产管理软件 MMS，该软件可实现自动生产计划，模拟，执行，动态计划变更和管理。

Fastems (Shanghai) Co.,Ltd. is part of the Fastems group from Finland, it serves for the Fastems group's Chinese customers here in China with Fastems' intelligent factory automation solutions, Pallet handling automation solutions, Flexible manufacturing system (FMS) related software, hardware and life-cycle services.

Founded in 1901, the Fastems group is the world-leading intelligent factory automation solutions provider for metal-cutting industry customers to increase their productivity and profitability by its' intelligent factory automation solutions, especially the software, hardware and life-cycle service in Flexible Manufacturing System (FMS).

Till the year 2018, Fastems has delivered 4000+ automation systems to 1000+ industrial customers in more than 40 countries and regions in the world. What makes Fastems special is its own-developed intelligent manufacturing management software (MMS) which could realize the automatic production scheduling, simulation, execution, proactive production plan changes and management.



Fastems 智能生产管理软件 MMS Fastems Intelligent Manufacturing Management Software (MMS)

Fastems 自主研发的工业领域领先的智能生产管理软件 MMS，现已经到第七代。该软件可实现自动化动态生产计划，模拟，执行，对接 ERP, MES, CAD, CAM, TDM 等第三方软件，并可集成自动化刀具管理，物料管理以及其他生产辅助设备，如清洗机，测量仪，对刀仪，打印机，机器人去毛刺单元，二维码扫描仪，中央刀具自动化等。

The intelligent Manufacturing Management Software (MMS) is developed at Fastems' own expertise and now it has been updated into the 7th generation. It could realize automatic production scheduling, simulation, execution, proactive production plan changes, and integrate with 3rd party data management software like ERP, MES, CAD, CAM, TDM, also it could be integrated with tool automation, material management, and manage production auxiliaries like washing machine, CMM, tool pre-setter, printer, Robotic finishing cell, QR reader, Centralized tool management.

上海节卡机器人科技有限公司 Shanghai JAKA Robotics Ltd.

JAKA® | 节卡

JAKA 节卡机器人，全球协作机器人革新者。创立于 2014 年，是一家聚焦于新一代协作机器人本体与智慧工厂创新研发的高新技术企业。

节卡机器人以“用机器人解放双手”为使命，秉持专注、专业、原创精神，将智慧的火花传递到全球各个角落，助力企业迈入工业 4.0 时代。

JAKA Robotics, worldwide innovator of cobot, was founded in 2014. JAKA stands for "Just Always Keeping Amazing". JAKA robotics is a high-tech company aiming at innovation and R&D for new generation of cobots and smart factory.

JAKA has inherited the accumulation and genes of technology since 1979 from Shanghai Jiao Tong University and has a R&D department with strong scientific research ability organized by over 10 leading experts and 100 senior engineers. Innovative breakthroughs have been made in many applications such as drive control integration, integral joints, free-drive programming, wireless connection, etc. JAKA has continuously led the trend of robotics development.

JAKA is on mission to "Free Your Hands By JAKA", We are in accordance with spirit of concentration, professionalism, and originalism to spread the sparkle of wisdom to every corner of the Earth, and facilitating enterprises striding onto Industry 4.0.

JAKA Zu 12 协作机器人 JAKA Zu 12 Cobot

自重 41kg, 负载 12kg, 工作半径达到 1327mm; 一体化关节设计, 易组装、易拆卸; 更高载荷, 更大工作半径, 替代繁重的体力搬运工作, 兼顾部署灵活性和使用便捷性; 无需安装安全栅栏, 与人、机器人、周围环境共融协作。

The self-weight is less than 41 kg, the bearing capacity is 12 kg and the working radius is 1327 mm. Integrated joint design, easy to assemble and disassemble; Higher load, larger working radius, suitable for replacing heavy manual handling work, while taking into account the flexibility of deployment and ease of use; There is no need to install safety fence and cooperate with people, robots and the surrounding environment.





威图电子机械技术（上海）有限公司 Rittal Electro-Mechanical Technology (SH) Ltd.Co.



威图电子机械技术(上海)有限公司占地 11 万平方米,是总部位于德国黑博恩的威图公司的子公司。威图是世界领先的机柜系统、配电系统、温控系统、IT 基础设施及软件与服务系统的供应商。来自各行各业的客户,如机械工程、IT 和电信等,都正在使用威图的系统解决方案。自 1997 年以来,威图迅速地在中国蓬勃发展,并成为亚太区的物流中心。

Rittal Electro-Mechanical Technology (SH) Ltd. Co.is a subsidiary of Rittal GmbH & Co. KG. headquartered in Herborn, Germany. Rittal is one of the world's leading system suppliers for enclosure system, power distribution, climate control, IT infrastructure and software & services. Customers from all sectors of industry are making use of the system solutions from Rittal. Now Rittal is developing rapidly and successfully in China.



威图智能机柜系统 Rittal Smart Enclosure System

威图于 2019 年重磅发布“智能机柜系统”,整合威图全系列产品的解决方案,涵盖了机柜、母线、温控、IT 以及服务,实现对工业机柜内部环境的智能监控,为客户提供可靠的机柜系统解决方案,从而满足客户安全运营和远程管理的智能化生产需求。

Rittal has successfully launched “Smart Enclosure System” in 2019. This system combines all the Rittal portfolios including enclosure, climate control, bus bar, IT sensors and service, which focus on the smart control of industrial enclosure inside environment. The reliable and high efficient total solution will be offered by Rittal, which devoted to fulfill the strategy of Industry 4.0 in security operation and remote control.



oerlikon
balzers

欧瑞康巴尔查斯涂层（苏州）有限公司 Oerlikon Balzers Coating (Suzhou) Ltd.

欧瑞康巴尔查斯是全球领先的表面处理解决方案供应商。通过先进的表面处理技术，金属和塑料加工行业中所用到的精密部件与工具能够实现其性能和耐用性的显著提升。欧瑞康巴尔查斯在全球 36 个国家拥有 110 多个涂层中心。

Oerlikon Balzers is one of the world's leading suppliers of surface technologies that significantly improve the performance and durability of precision components as well as tools for the metal and plastics processing industries. Oerlikon Balzers operates a dynamically growing network of more than 100 coating centres in 35 countries.



BALINIT TISAFLEX

钛、镍基合金、不锈钢、硬化钢等难切削材料的加工正越来越多地被应用于航空航天、3C 和模具制造等行业，将刀具的性能要求推向极限。BALINIT TISAFLEX 能提供卓越的抗氧化性，热稳定性和耐磨性，是加工这些挑战性材料的完美选择。

Machining difficult-to-cut materials such as titanium, nickel-based alloys and stainless and hardened steel, which are being used more and more in the aerospace, 3C (Computers, Communications and Consumer electronics) and mould-making industries, pushes cutting tools to the limits of their performance. BALINIT TISAFLEX from Oerlikon Balzers is a high-end coating solution that offers superior oxidation resistance, high thermal stability and exceptional wear resistance, making it perfect for machining these challenging materials.

一胜百模具（东莞）有限公司 ASSAB Tooling (Dong Guan) Co., Ltd.



一胜百成立于 1945 年，面向市场销售高品质的瑞典模具钢。一胜百总部设在新加坡，在亚太各地设有近 50 家销售服务中心，为市场提供最优质的钢材。作为亚洲工具钢解决方案供应商，一胜百拥有一流的冶金加工服务和技术专长，是行业先行者与领导者。

ASSAB was formed in 1945 to market high quality tool steel from Sweden, renowned for its quality standards. Headquartered in Singapore, ASSAB operates close to 50 ASSAB sales offices in Asia Pacific supplying the best steel available in the market. Coupled with its best-in-class metallurgical tooling services and technical know-how, ASSAB is both the pioneer and the leader in tool steel

AM Corrax 不锈钢粉末 (适用于增材制造)

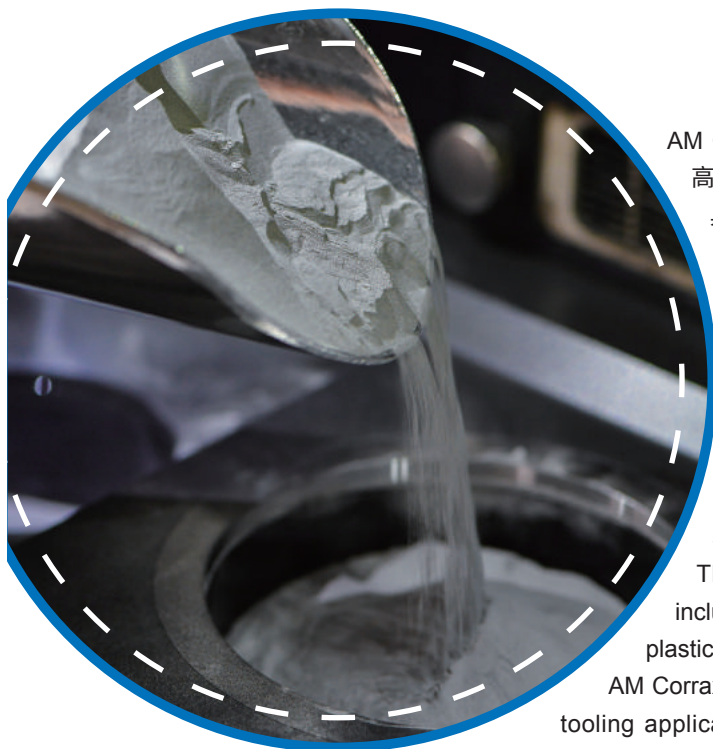
AM Corrax

AM Corrax 是适用于增材制造的一种不锈钢粉末，其独特的综合性能使其成为高耐腐蚀高硬度工模具的首选。这些特性也使其完美适用于高要求的塑胶模具，如医疗器械、腐蚀性塑料，如 PVC，以及橡胶等零件的生产。

AM Corrax 具有很好的抛光性能，适合于高挑战性的模具制造和应用。AM Corrax 极佳的耐蚀性，能够最大限度地降低复杂的随形冷却水道阻塞、水道表面氧化造成冷却效率降低以及腐蚀导致开裂的风险。AM Corrax 独特的成分设计使其非常适合增材加工，以获得优质的打印效果和极佳的材料性能。

AM Corrax is a stainless steel made for Additive Manufacturing with a unique set of properties making it the ultimate choice for tools where superior corrosion resistance combined with high hardness is needed. These properties makes it perfectly suitable for tools for plastic moulds including demanding applications such as moulds for medical parts, corrosive plastics i.e. PVC and parts made of rubber material.

AM Corrax offers high polishability in terms of surface finish suitable for challenging tooling applications. The corrosion resistance is also beneficial when implementing complicated conformal cooling designs due to minimised risk for clogging of cooling channels, oxide layers reducing the cooling efficiency or corrosion initiated cracks. The unique chemical composition makes AM Corrax easy to process in additive manufacturing processes to get excellent printing results and excellent material properties.





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金属加工行业 Metalworking Industry

关于荣格创新奖 Ringier Technology Innovation Awards

荣格技术创新奖由领先的工业资讯媒体荣格工业传媒主办，自 2006 年成功举办以来，以其公正、客观的评选流程受到业界的广泛关注，影响力不断扩大；活动旨在通过表彰业界具有突出贡献的创新产品和技术，鼓励更多企业投入技术创新，以提高生产力、经济效益；给用户提供更便利；达到绿色环保、可持续发展的目的；已逐步涵盖食品饮料、塑料、金属加工、涂料、个人护理品、激光工业领域，是中国最具专业性和影响力的工业行业技术创新奖！

The Ringier Technology Innovation Awards for industrial manufacturing were inaugurated by Ringier Trade Media in 2006. The Awards are now rewarded to a select group of innovators each year in China's Food & Beverage, Plastics, Metalworking, Coatings, Personal care & Cosmetics, Laser Industries. The purpose of the Awards is to encourage, acknowledge and reward those individuals and companies who have introduced and developed a new idea, a new methodology, a new product or a new technology for manufacturing production efficiency, cost effectiveness, user convenience, which might result in energy saving and more responsible clean manufacturing.

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