国机集团
SINOMACH

TOOL RESEARCH INSTITUTE 工具研究所

求实创新 追求卓越

PRAGMATIC INNOVATION THE PURSUIT OF EXCELLENCE

成都工具研究所有限公司
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品质源于1956

SINCE 1956

成都工具研究所有限公司

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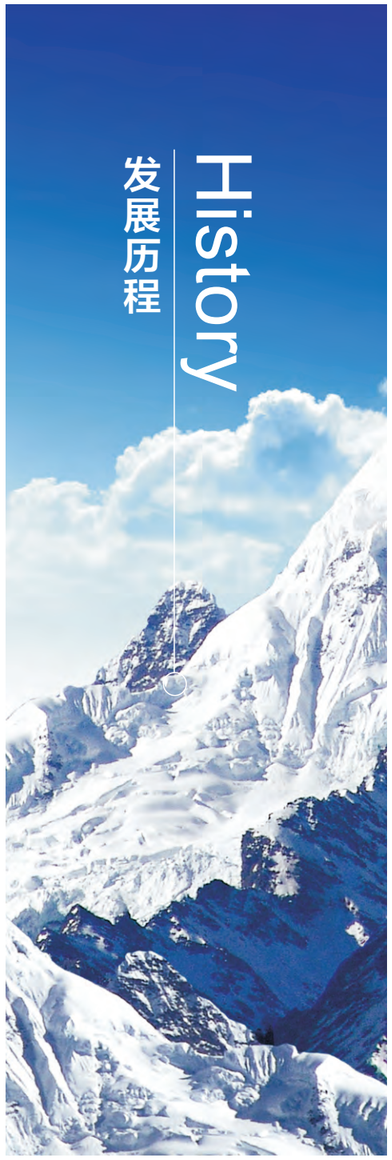
Company Profile
企业介绍

成都工具研究所有限公司的前身是“第一机械工业部工具科学研究院”，1956年创建于北京，是原国家机械工业部直属的我国机械行业唯一的综合性工具科研开发机构，1965年内迁至成都。1998年经国家科技部批准，成为“国家精密工具工程技术研究中心”和“国家工具生产力促进中心”的依托单位。1999年转制为科技型企业，进入中国机械工业集团有限公司。

工研所主要从事现代高效切削刀具、先进刀具材料、表面改性技术、精密量仪与装备、行业服务等基础、共性技术的研究及高新技术产品的研发与产业化，并担负着全国工具行业发展规划、产品标准、产品质量监督检测等行业技术工作。产品应用领域主要涉及工具（刀具、模具）、汽车、轴承、能源（石油、地质、汽轮机、风电等）、齿轮、航空航天、轨道交通等行业。

Chengdu Tool Research Institute Co., Ltd. was formerly known as "The First Ministry of Machinery Industry Tool Scientific Research Institute", established in Beijing in 1956. It was relocated to Chengdu in 1965 and was the only comprehensive tool research and development institute directly under the previous Ministry of Machinery Industry in China. In 1998, approved by the Ministry of Science and Technology of China, the company became the supporting unit of the "National Precision Tool Engineering Technology Research Center" and the "National Tool Productivity Promotion Center". In 1999, it was transformed into a technology-based company and joined the China National Machinery Industry Corporation (SINOMACH).

CTRI is mainly engaged in the development and industrialization of high-efficiency cutting tools , advanced tool materials, surface modification technology, precision measuring instruments and equipment, industry services, etc. It is also responsible for the development planning of the national tool industry, product standards, product quality supervision and testing and other industry technical work. Product applications mainly involve tools (cutting tools, molds), automotive, bearings, energy (oil, geology, turbines, wind power, etc.), gears, aerospace, rail transportation and other industries.



SINCE 1956

1956年

在北京原部属北京计量检定所的基础上成立第一机械工业部工具科学研究院，所址在北京市安定门外小黄庄。

In 1956

on the basis of the Beijing Measurement Inspection Institute, the Tool Science Research Institute of the First Ministry of Machine-Building Industry was established in Beijing, located in Xiaohuangzhuang, outside Andingmen.

1957年

第一机械工业部工具科学研究院改组后成立第一机械工业部工具研究，并迁往哈尔滨。

In 1957

The Tool Science Research Institute of the First Ministry of Machine-Building Industry was reorganized to establish the Tool Research Institute of the First Ministry of Machine-Building Industry and moved to Harbin.

1965年

第一机械工业部工具研究所由哈尔滨内迁成都，同时更名为第一机械工业部成都工具研究所。

In 1965

The Tool Research Institute of First Ministry of Machine-Building Industry was moved to Chengdu and renamed as Chengdu Tool Research Institute of theFirst Ministry of Machine-Building Industry.

1988年

我所发明的”弧锥齿轮测量技术”向德国著名齿轮量仪制造厂 Klingelberg 公司转让。

In 1988

The "Spiral Bevel Gear Measuring Technology" invented by our institute was transferred to Klingelnberg, a famous gear measuring instrument manufacturer in Germany.

1998年

科技部正式批准我所为“国家精密工具工程技术研究中心“和”精密工具生产力促进中心”的依托单位。着手建立多层次的科技产业结构。

In 1998

The Ministry of Science and Technology officially approved our institute as the supporting unit of "National Precision Tool Engineering Research Center" and "Precision Tool Productivity Promotion Center". We started to build up a multi-level scientific and technological industrial structure.

1999年

进入中国机械工业集团公司，转制为科技型企业。

In 1999

Merged into China National Machinery Industry Corporation and was transformed into a science and technology-based company.

2010年

“成都工具研究所”改制为＂成都工具研究所有限公司”。

In 2010

"Chengdu Tool Research Institute" was transformed into "Chengdu Tool Research Institute Co. Ltd”

2017年

“高档数控机床与基础制造装备”国家科技重大专项课题“数控刀片精密加工装备研制及应用示范”获得批准立项。
“高效切削刀具设计、制备与应用＂项目获得国家科学技术进步奖二等奖。

In 2017

"CNC inserts precision machining equipment development and application demonstration", a project of "high-grade CNC machine tools and basic manufacturing equipment" National Science and Technology Major Project of the Ministry of Science and Technology of China, was approved to establish a project.
The project "Design, preparation and application of high-efficiency cutting tools" won the second prize of National Science and Technology Progress Award.

2022年

荣获国家专精特新“小巨人”企业称号。
联合组建高性能工具全国重点实验室。

In 2022

Awarded the title of National "Small Giant" Company, which means a specialized and sophisticated enterprises that produce new and unique products.
Jointly established the National Key Laboratory of High Performance Tools.

Awards
荣誉资质

自成都工具研究所成立以来，主要取得以下科研成果：

The following scientific achievements have been received.

一、国家发明奖三项：

- 齿轮整体误差测量新技术发明二等奖
- 单晶金刚石钎焊工艺及焊料发明二等奖
- 无钴易磨高性能高速钢发明三等奖

- Three National Invention Awards.

- Second prize for the invention of integrated gear error measuring technique.
- Second prize for the invention of single crystal diamond brazing process and solder
- Third prize for the invention of Cobalt-free, easy-to-wear, high-performance high-speed steel

二、国家科技进步奖九项：

- 量具刃具产品标准的制定和贯彻二等奖
- 中模数硬质合金齿轮滚刀三等奖
- 立方氮化硼聚晶机理及其应用三等奖
- 涂层硬质合金刀片成套技术及装备研究三等奖
- QPQ 盐浴复合处理技术及成套设备二等奖
- 机电一体化发展预测与综合分析(合作项目)三等奖
- 材料动态断裂性能研究及其在典型机械零部件中的应用获(合作项目)三等奖
- 机械工业共性数据库(合作项目)二等奖
- 高效切削刀具设计、制备与应用二等奖

- Nine National Science and Technology Progress Awards

- Second prize for the development and implementation of product standards for gauges and cutting tools
- Third Prize for Medium Modulus Carbide Gear Hobs
- Third prize for the mechanism of cubic boron nitride polycrystallization and its application
- Third prize for the research of complete sets of technology and equipment for coated carbide inserts
- Second prize for QPQ Salt Bath Nitriding Technology and Complete Sets of Equipment
- Third prize for Forecast and Comprehensive Analysis of Mechatronics Development (Cooperative Project)
- Third prize for research on dynamic fracture performance of materials and its application in typical mechanical parts (cooperative project)
- Second Prize for Common Database of Mechanical Industry (Cooperative Project)
- Second prize for design, preparation and application of high efficiency cutting tools

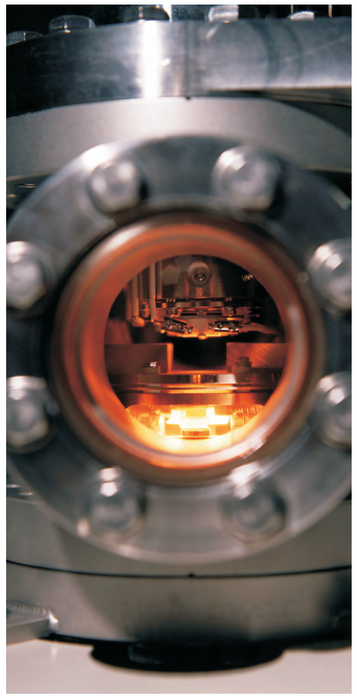
三、省部科技进步奖176项：

- 176 Ministry Science and Technology Progress Award

Industry Platforms
行业平台

成都工具研究所是我国工具行业科研、技术的领头羊、行业归口所，以下组织挂靠在我所：

Chengdu Tool Research Institute is the leader of scientific research and technology in China's tool industry, is also the responsible unit of the following organizations:



- 中国机械工业金属切削刀具技术协会
- 中国机床工具工业协会工具分会
- 中国仪器仪表学会机械量测试仪器学会
- 国家刀具质量监督检验中心
- 机械工业量具量仪产品质量监督检测中心
- 国家进出口商品检验局（刀具）认可实验室
- 国家进出口商品检验局（量具量仪）认可实验室
- 科技成果检测鉴定国家级检验机构（刀具）
- 科技成果检测鉴定部级检验机构（量具量仪）
- 全国刀具标准化技术委员会秘书处（TC 91)
- 全国量具量仪标准化技术委员会秘书处（TC 132)
- ISO / TC 29（工具）P 成员国内归口单位
- ISO /TC213（产品的几何尺寸和几何技术规范及检验）P 成员国内归口单位
- CNAS 国家认可实验室
- 《工具技术》杂志社
- 国家精密工具工程技术研究中心
- 国家工具生产力促进中心
- 中国机械工程学会生产工程分会切削专业委员会
- 四川省机械工程学会机加工专业委员会
- 高性能工具全国重点实验室

- China Metal Cutting Tool Engineering Association
- China Machine Tool Industry Association Tool Branch
- Mechanical Quantity Measurement Instrument Federation of China Instrument and Control Society
- National Cutting Tools Quality Supervision and Inspection Center
- Mechanical Industry Gauges and Measuring Instruments Quality Supervision and Inspection Center
- China IE Commodity Inspection Bureau (cutting tools) Nationally Recognized Testing Laboratory
- China IE Commodity Inspection Bureau (gauges and measuring instruments) Recognized Testing Laboratory
- National Inspection Authorities of Science and Technology Achievements Testing and Appraisal(cutting tools)
- Ministerial Inspection Authorities of Science and Technology Achievements Testing and Appraisal(gauges and measuring instruments)
- Secreariat of National Technical Committee 91 on Cutting Tools of Standardization Administration of China
- Secreariat of National Technical Committee 132 on Measuring Instruments of Standardization Administration of China
- ISO / TC 29 (Small Tools) The responsible unit of P members in China
- ISO /TC 213 (Dimensional and geometrical product specifications and verification) The responsible unit of P members in China
- China National Accreditation Service for Conformity Assessment (CNAS)
- Journal – "Tool Engineering"
- National Precision Tool Engineering Research Center
- National Tool Productivity Promotion Center
- Cutting Professional Committee of Production Engineering Branch of Chinese Mechanical Engineering Society
- Sichuan Mechanical Engineering Society Machining Professional Committee
- National Key Laboratory of High Performance Tools

Certifications
体系认证

ISO 9001质量管理体系认证
ISO 14001环境管理体系认证
ISO 45001职业健康安全管理体系认证
欧盟CE认证

ISO 9001 Quality Management System Certification
ISO 14001 Environmental Management System Certification
ISO 45001 Occupational Health and Safety Management System Certification
CE certification

Corporate Culture
企业文化

企业愿景

工具科技先锋
Pioneer of Tool Technology

企业使命

以促进中国工具工业的进步为己任
以实现企业和员工的共同发展为目标
Promoting the progress of China's tool industry
Realize the common development of both company and employees

核心价值观

求实创新 追求卓越
Pragmatic innovation, the pursuit of excellence

管理理念

以人为本 精细化管理
People-oriented refinement management

经营理念

精品高效 诚信为赢
Excellent and effective, winning with Integrity

求实创新 追求卓越

PRAGMATIC INNOVATION THE PURSUIT OF EXCELLENCE

2 高效切削刀具 EFFICIENT CUTTING TOOLS

石油管螺纹梳刀
THREADING CHASER INSERTS

- **加工范围广：**主攻美国石油协会API标准、俄罗斯套管标准，涵盖油田使用的油管、套管、地质勘探钻杆等，规格齐全。
- **刀具结构丰富：**覆盖从简易数控车到高效专用车丝机全系列刀具产品，如PMC、Colint、EMAG等刀具系列。
- **刀具牌号覆盖管加工全系列：**覆盖J55、N80、P110、抗硫、抗挤毁、13Cr、镍基合金等管材，方案全自主化。
- **产品性能优：**同环境竞争与山特、森拉天时、瓦格斯、托佛等国际公司的产品性能相当，部分环境已优于进口产品。

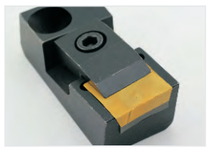
- Wide processing scope: Mainly focus on API standard and GOST standard, covering oil pipes, casing, geological exploration drill pipes used in oil fields, etc. with full specifications.
- Rich tool structure: Including the entire range of tool products from simple CNC to high efficiency special wire turning machine, such as PMC, Colint, EMAG and others.
- Tool grades cover the whole series of pipe processing: Covering J55, N80, P110, anti-sulfur, anti-crush destruction, 13Cr, nickel-based alloys, and other pipes, with full autonomy of the program.
- Excellent product performance: Similar to other international firms like Sandvik, Senra Tenshi, Vargas, and Toffer, the product's performance is equivalent, and in certain cases, it has even outperformed imported goods.

通用螺纹刀具
INDEXABLE THREAD CUTTING TOOLS

可转位螺纹车刀涵盖各种螺纹型式，包括局部剖面60°/55°截顶形螺纹、ISO、UN、W、BSPT、ACME、STACME、NPT、TR等，其刀具精度和切削性能已达国际同类产品水平，产品适用于不锈钢、铸铁、铸钢、高强度钢及有色金属等广泛加工领域。

The indexable thread turning tools cover a variety of threads, such as partial profile 60° /55° truncated top thread, ISO, UN, W, BSPT, ACME, STACME, NPT, TR, etc. The accuracy and cutting performance of the tools have reached the international level of similar products. Mainly used for stainless steel, cast iron, cast steel, high-strength steel and non-ferrous metal, etc.

焊管加工刀具
WELDED PIPE CUTTING TOOLS



- **铣边刀：** 铣边机对钢板两边缘进行双面铣削，使钢板达到要求的板宽、板边平行度和坡口形状。铣边刀为成组使用，一般为2个或4个刀盘组合使用。
- **毛刺刀：** 去除焊接后产生的焊疤，焊疤分钢管内壁和钢管外壁毛刺，分别用内、外毛刺刀刮削去除。刀片需具有极高的热稳定性，刀片刃口破损在焊缝处产生的划痕控制要求极高。
- **平头倒棱刀：** 平头倒棱刀用于钢管两端修端加工，一般2个或4个刀片一组，有平端面和倒棱两种加工模式。

- Edge milling cutter: To achieve the desired plate width, plate edge parallelism, and bevel shape, the edge milling machine mills the steel plate's edges on both sides. The Edge milling cutters are used in groups, usually 2 or 4 cutters are used in combination.
- Pipe scraping inserts: To remove the welded scarring after welding. The welded scar separates the internal walls of the steel pipe and the exterior wall of the pipe, and the scratch is removed with the internal and external scratches respectively. The blade needs to have extremely high thermal stability. The cracking control requirements of the blade blade breakage in the welding seam are extremely high.
- Bevelling inserts: Used for steel pipe end processing, generally 2 or 4 cutters in a set, with end milling and chamfering two processing modes.

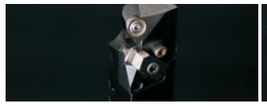
汽车刀具
AUTOMOTIVE CUTTING TOOLS

公司生产的汽车发动机关键零件加工专用刀具，适合于锻钢、球墨铸铁、灰铸铁干湿加工；具有良好的耐磨性和抗崩刃性；能满足专业高效的加工需求；特别针对无冷却液加工的高性能牌号，在粗、半精加工中具有明显优势，具有更大的切削效率和稳定性。

应用领域：曲轴、缸体缸盖、铝合金轮毂、凸轮轴、连杆、转向节、球笼、覆盖件等。

The company produces special tools for the processing of key parts of automotive engines, suitable for dry and wet processing of forged steel, ductile iron and gray cast iron, with good wear resistance and chipping resistance to meet the needs of professional and efficient machining. Especially for high-performance brands without cooling liquid Processing has a clear advantage in rough, semi-finished processing, with greater cutting efficiency and stability.
Application areas: Crankshafts, cylinder covers, aluminum alloy wheels, camshafts, connecting rods, steering knuckles, joints, covering parts, etc.

轴承刀具
CERMET BEARING CUTTING TOOLS




金属陶瓷轴承成型刀具，主要用于轴承套圈车加工上的成型加工，能加工套圈的滚道、密封槽、倒角、止动槽、大小油沟等，目前主要为轴承套圈车加工自动线配套，可为各种型号的深沟球轴承、圆锥滚子轴承、滚针轴承、轮毂轴承、CVJ轴承等提供成型刀具及其配套刀具。同时，我们也为纺织机械钢领、滚动功能部件（滚珠丝杠副）、皮带轮等成型加工提供非标成型车加工解决方案。

Cermet Bearing Cutting Tools, mainly used for bearing collar turning. It can process raceways, seal grooves, chamfers, snap grooves, large and small oil grooves of the rings. Mainly used for the automatic line of bearing rings turning processing. Can provide cutting tools and its coupling tools for various types of deep groove ball bearings, tapered roller bearings, needle roller bearings, wheel bearings, CVJ bearings, etc. We also provide non-standard forming turning solutions for steel collars of textile machinery, rolling functional parts (ball-screw pairs), pulleys, etc.



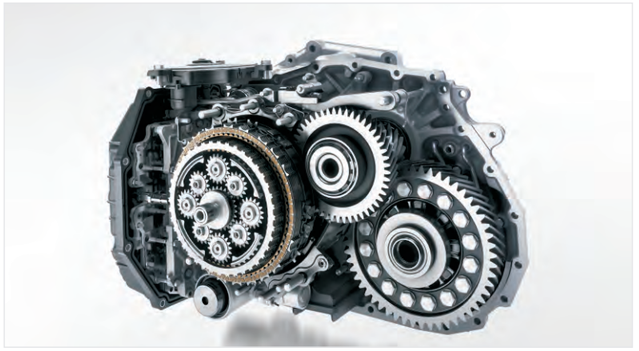
齿轮刀具
GEAR CUTTING TOOLS AND HOBS

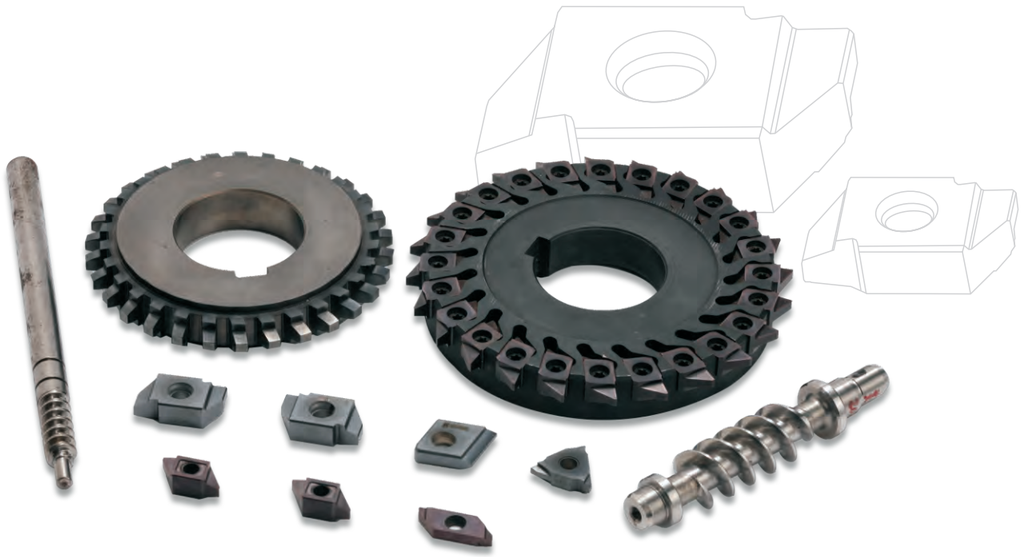
应用领域

- 数控机床及自动线用精密减速器
- 机器人关节减速器
- 智能器具、IT5G设备、医疗保健设备、科学仪器等所需
- “控制+电机+减速器”集成的“机电动力模块”
- 钟表、刃量具、鱼竿传动行业
- 汽车变速箱齿轮、飞机发动机传动齿轮
- 风电行业大型齿轮

Application field

- Precision reducers for CNC machines and automatic lines
- Robot joint reducer
- Intelligent appliance, IT5G devices, healthcare equipment, scientific instruments, etc.
- "Electromechanical power module" integrated with "control + motor + reducer”
- Clocks, watches, cutting tools, measuring instruments, fishing rod transmission industry
- Automobile transmission gears, aircraft engine transmission gears
- Lage gears for the wind power industry



蜗杆刀具
CUTTING TOOLS FOR WORMS

广泛应用于齿轮、螺杆、蜗杆加工。

It is widely used in gear, screw and worm machining.

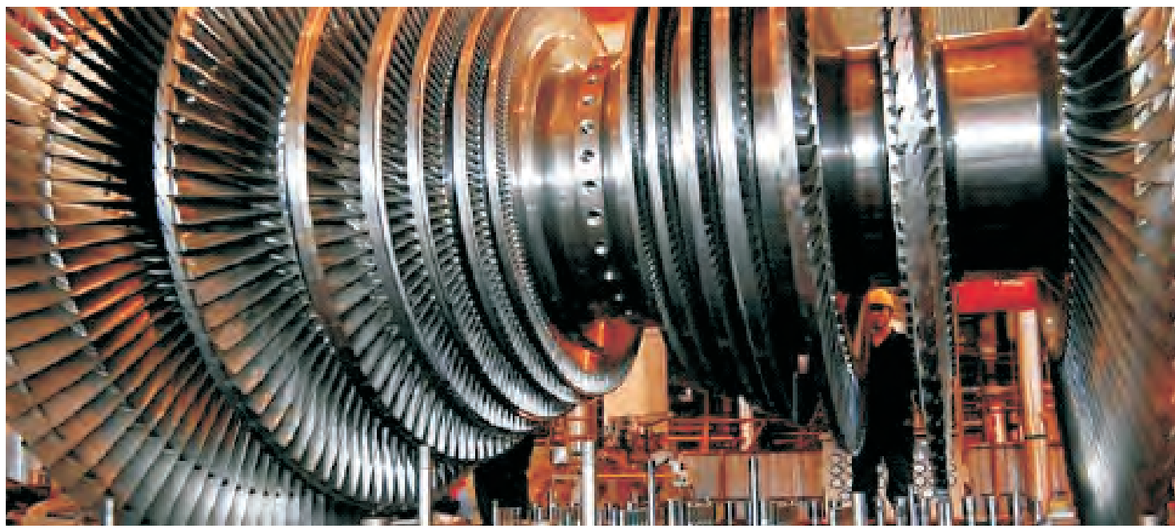
能满足渐开线蜗杆、阿基米德蜗杆、法向直廓蜗杆、 锥面包络圆柱蜗杆等所有类型蜗杆的设计及加工；可为客户提供整体硬质合金铣刀和机夹刀片式铣刀，在良好的设备状况下，可加工DIN3974 6级或更高精度等级的蜗杆。

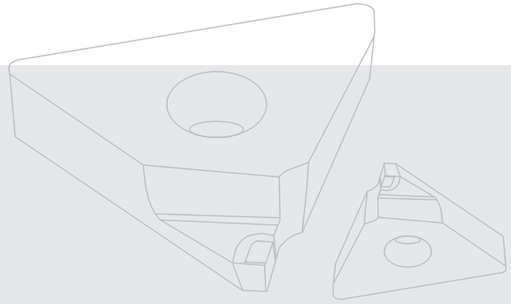
All types of worm gears can be processed, such as involute worm, Archimedes worm, normal straight profile worm, tapered envelope cylindrical worm. Supplied solid carbide milling tools and indexable milling tools. With good equipment condition, it can be used on DIN3974 6 or higher precision. Widely used in gears, screws and worms machining.

高温合金刀具
CUTTING TOOLS FOR HIGH TEMPERATURE ALLOY

针对钛合金、镍基合金、不锈钢等难加工材料开发的系列刀具，具有优异的耐磨性、韧性和红硬性。广泛应用于航空航天、核电、石油、燃气轮机、水轮机等军用与民用高端制造领域。

Especially developed for processing difficult-to-machine materials such as titanium alloy, uranium base alloy, and stainless steel. It is widely used in military and civil high-end manufacturing fields of aviation, nuclear power, oil, gas turbines, water turbine and others.

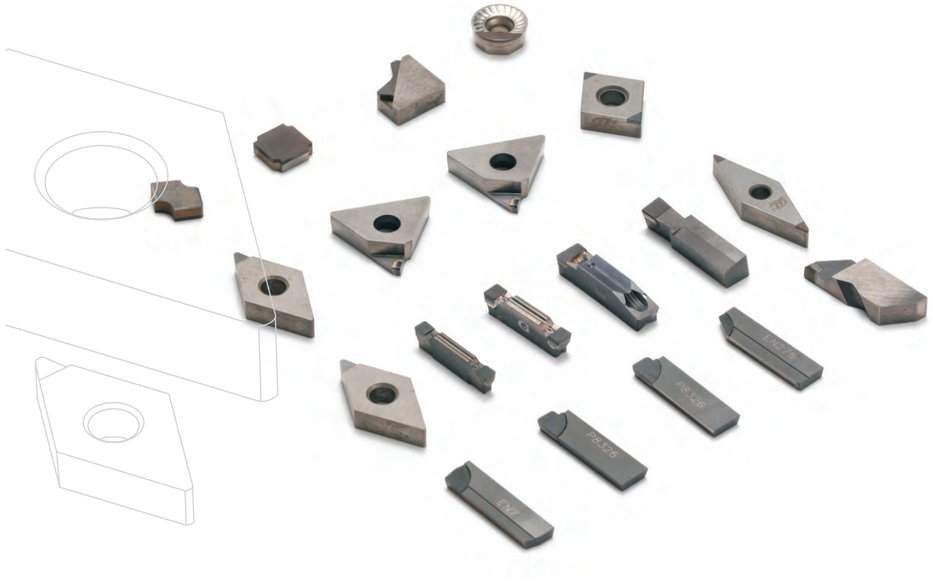




超硬刀具
ULTRA HARD CUTTING TOOLS

产品涵盖PCD刀片、CBN刀片、整体CBN刀片、陶瓷刀片等。超硬系列刀具的使用领域与常规合金刀具具有一定的区别，往往在常规合金刀具加工遇到问题的时候，就可以尝试采用超硬材料刀具。

Include PCD inserts, CBN inserts, integral CBN inserts, ceramic inserts, etc. The using field of ultra hard cutting tools is different from carbide cutting tools. Often when the processing of carbide cutting tools encounters problems, ultra hard cutting tools can be tried.



孔加工刀具
DEEP HOLE DRILLS

- BTA深孔钻
- 枪钻
- 模块化钻

- BTA deep hole drills
- Gun drills
- Modular Drills

源于1956——专注深孔加工60年。基于国家科研院所技术开发研究专项资金项目，广泛应用于国防工业、航空航天、机床、发电设备制造、石油机械、钢铁以及各种重型装备制造领域。

Since 1956 -focus on deep hole drilling for 60 years. Based on the special funding project of national research institutes for technology development and research. Widely used in national defense industry, aerospace, machine tools, power generation equipment manufacturing, petroleum machinery, iron and steel industry and heavy equipment manufacturing fields.

- 高效、高精度，高质量；
- 标准化、模块化、提供深孔加工整体解决方案；
- 覆盖孔径 ϕ8-ϕ300之间的各种深孔加工，长径比最大超过300。
- 针对性的牌号和断屑槽型——满足普通碳钢、合金钢、铸铁、不锈钢钛合金、高温合金等各种材质的深孔加工要求。
- 可差异化需求，提供多种解决方案

- High efficiency, high precision, high quality.
- Standardization, modularization, Providing a comprehensive solution for deep hole drilling.
- Covering all kinds of deep hole drilling between ϕ8-ϕ300, the maximum length-to-diameter ratio exceeds 300.
- Targeted grades and chipbreaker - meet the deep hole processing requirements of various materials such as carbon steel, alloy steel, cast iron, stainless steel, titanium alloy, high temperature alloy, etc.
- Iproviding various solutions upon requst.

重型切削刀具
HEAVY CUTTING INSERTS

剥皮刀：与普通车削加工相比，效率提高10倍以上。
可加工Φ6~Φ300以上的线材或棒材，目前以加工普通碳钢、各类合金钢、不锈钢为主。
加工大尺寸工件，余量较大时，会用复合刀座，前面加圆形刀片粗剥。
轨道交通系列刀具包括车轮加工刀具（轮毂刀和修轮刀）、车轴加工刀具和钢轨铣磨刀具（含刀盘）等，主要用于列车车轮、车轴和钢轨的高效加工。

Bar Peeling Inserts: 10 times as effective as standard turning.
It can process wire rod or bar in the range of Φ6 to Φ300 or even more.
It is mainly processes carbon steel, various alloy steel and stainless steel.
A compound tool block with a circular insert in front can be used for rough stripping when milling large size workpieces with large machining allowances.
Cutting tools for rail transportation – Include wheel hub processing tools (turning and trimming tools), axle processing tools, rail milling and grinding tools (including cutters), etc. Mainly used for processing train wheels, axles and rails.

轮槽刀具
GROOVE CUTTING TOOLS

各类皮带轮槽刀
Various pulley grooving inserts

- 皮带轮刀
- 电梯轮槽刀
- 其他特殊形状定制
- JTGR/L系列立装浅切槽刀
- JT系列平装浅切槽刀
- 内圆加工槽刀
- 轮槽刀具

- elt pulley inserts
- Elevator pulley grooving inserts
- Other special shape customization
- JTGR/L series vertical shallow grooving inserts
- JT series horizontal shallow grooving cutter
- Internal grooving tools
- Wheel grooving tools

主要面向汽车、能源等行业。产品以我司自主研发的基体+涂层方案为基础，经过精密磨制，精度高，性能优异，达到行业领先水平。同时，凭借我们在成型加工领域多年的经验，可定制各种车、铣刀具，能满足不同工况下的复杂槽加工要求。

Mainly for automotive, energy and other industries. With self-developed substrate and coating, the tools have high precision and excellent performance. Attain a high standard in the industry.ed to a high standard in the industry. We also customise a variety of turning and milling tools to fulfil the needs of processing complex grooves under various working conditions.

可换头铣刀
MODULAR TOOLS

也称模块化刀具，是一种硬质合金刀头与刀杆通过一定的接口装配而成的组合式刀具。通常刀头部分可做成平头刀、圆鼻刀、球头刀、槽铣刀、端铣刀、螺纹铣刀、其它非标铣刀等形式。

应用领域：可换头刀具系列主要用于航空、能源、汽车领域各种曲面、平面、槽型加工，针对不同的材料都有专属的刀具材料、结构、涂层设计，满足客户需求。

It is a combined tool with carbide head and arbor assembled through a certain connector. The head part can be made into flat head, bull milling head, ball nose head, groove milling head, end milling head, thread milling head, or other forms.
Application areas –In the fields of aviation, energy, and automobiles, it is mostly used for processing curved surface, flat and groove. To meet customer requirments, we developed exclusive materials, structures, and coatings for different materials.

专用立铣刀
SPECIALIZED FORM MILLING CUTTERS

应用领域

应用领域：专用立铣刀主要应用在航空、军工、汽车零部件等加工难度大、技术要求高的领域，对刀具产品结构设计、形状精度和可靠性要求高，需要针对不同的应用场景设计不同的刀具结构以及相应的工艺控制方法，同时要满足客户高精度和高稳定性要求。

精度：

全型线可 ± 0.015mm

关键局部可 ± 0.005mm

Application areas –Mainly used in aviation, military, automotive parts and other fields, which has high processing difficulties and high technical requirements. The products require a superhigh level of structural design, shape precision and reliability. On account of different practical applications we design specialized strcture of end mills and corresponding process control methods to meet high precision and high stability.

Accuracy:

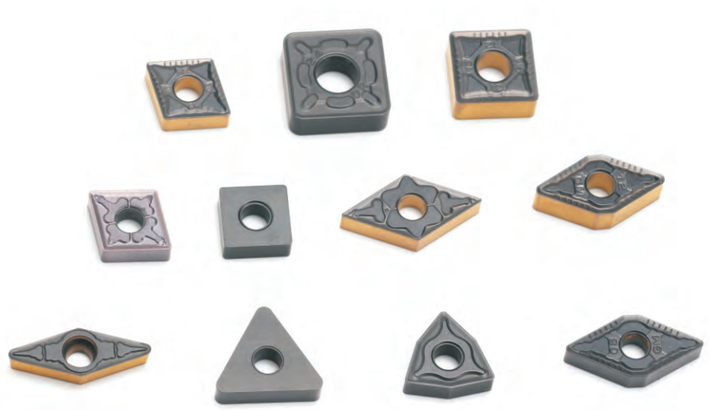
Full shaped line: ± 0.015mm
Key Part: ± 0.005mm

标准刀具
CNC CUTTING TOOLS

全新钢件车削用CVD牌号，采用特殊工艺制备梯度硬质合金新基体，具有梯度微观组织结构能够有效地阻止涂层裂纹应力向基体内部扩散，增加基体的抗崩刃能力。

通过改良的结合层设计和α-Al2O3工艺控制，保证了极其优异的膜基结合强度和耐磨损性能，辅之以特殊的后处理工艺，大幅改善涂层内部应力状态，减少裂纹，使表面更光滑，排屑更流畅。

The products are covered with a newly developed coating, adopt a special technology manufacturing gradient carbide substrate, which has a gradient microstructure that can effectively prevent the cracking stress of the coating from spreading to the interior of the substrate and also increase the chipping resistance of the substrate. Excellent bonding strength of films and wear resistance are ensured by the improved bonding layer design and -Al2O3 process control. Complemented by a special post-treatment process, it significantly improves the internal stress state of the coating, reduces cracks, and results in a smoother surface and smoother chip removal.



刀杆刀盘刀夹
TOOL HOLDERS & CUTTERS

我司非标专用刀体类产品具有高精度、高可靠性、高寿命的特点，产品范围覆盖石油管加工、冶金、汽车、航空航天、齿轮加工等各领域，可根据客户设备及产品特点提供专业高效化的产品切削加工方案。

The tool holder products have high precision, high reliability and high life. The applicationg areas cover petroleum pipe processing, metallurgy, automotive, aerospace, gear processing, etc. Providing various solutions according to different requirements. We provide professional and efficient processing solutions to fit for purpose.

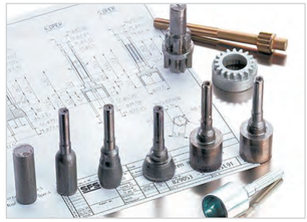
SFS螺钉
SFS SCREWS

瑞士SFS公司是具有30年生产可转位刀具用螺钉的世界知名企业，占领欧美90%的可转位刀具用螺钉份额，是世界知名刀具制造商供应商，甚至是独家供应商，如SANDVIK、KENNAMETAL、WALTER、ISCAR、三菱、山高等等。

成都工具研究所有限公司是瑞士SFS公司在中国的全国授权代理商。

SFS Switzerland is a well-known company that has been manufacturing screws for indexable tools for 30 years. It holds 90% of the market share for these screws in Europe and America and is the supplier, even the exclusive supplier to companies like SANDVIK, KENNAMETAL, WALTER, ISCAR, Mitsubishi, Sanko, and many others.

CTRI is the countrywide authorized distributor of SFS in mainland China.



冷压成型
Cold Press Molding

注塑技术
Injection molding technology

深冲技术
Deeply drawing technology

紧固技术
Fastening technology

沉头螺丝
Countersunk head screws

半圆头螺丝
Semi-round head screws

双头螺柱
Double-headed studs

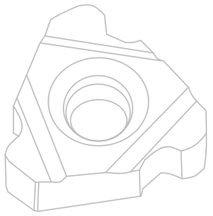
圆柱头螺丝
Cylindrical head screws

螺纹杆
Threaded Rods

特殊紧固件
Special Fasteners

求实创新 追求卓越

PRAGMATIC INNOVATION THE PURSUIT OF EXCELLENCE



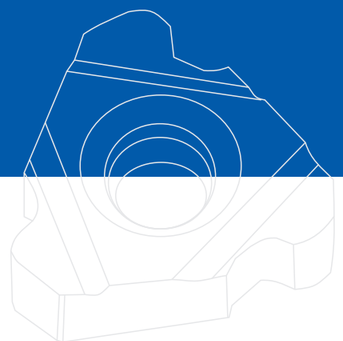
3 表面技术及处理
SURFACE TECHNOLOGY AND TREATMENT

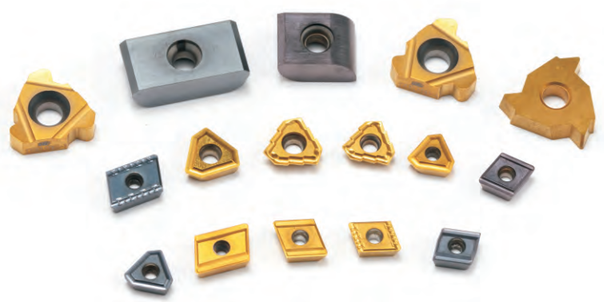
QPQ复合处理技术
QPQ SALT BATH NITRIDING TECHNOLOGY

第二代QPQ技术——深层QPQ技术，其化合物层深度由原有QPQ技术的15-20微米增加到30-40微米,甚至更深。第二代QPQ技术环保、无污染，可完美替代普通镀铬、镀镍工艺。耐磨性比淬火及渗碳淬火高10倍以上。抗蚀性比镀硬铬高20倍以上。解决硬化变形是其特长，工件几乎不变形，可以同时替代热处理和防腐两道工序。

该技术广泛应用于汽车、摩托车、纺织机械、化工机械、轻工机械、石油机械、机床、仪器仪表、齿轮、模具、精密机械、军工、航空、航天等几十个行业。

The second generation of QPQ technology, its compound layer depth is increased from 15-20 μm in the original QPQ technology to 30-40 μm, or even deeper. It is environmentally friendly, non-polluting, and can perfectly replace the chrome and nickel plating process. Its wear resistance is 10 times higher than quenching and carburizing quenching. Corrosion resistance is 20 times higher than hard chrome plating. Its speciality is the treatment of hardening deformation. The workpieces are almost not deformed. It can simultaneously replace both heat treatment and anti-corrosion.
The technology is widely used in automobile, motorcycle, textile machinery, chemical machinery, light industry machinery, petroleum machinery, machine tools, instruments, gears, molds, precision machinery, military industry, aviation, aerospace, etc.





涂层
COATING

传统刀具涂层技术主要可分两大类，化学气相沉积（CVD）；物理气相沉积（PVD）；

分别简称化学涂层技术，物理涂层技术。

CVD：各种气体高温下化学反应，沉积温度一般在800-1050度

PVD：高能离子轰击靶材，将靶材材料溅射出来在基体上形成涂层，因此沉积温度较低，一般在500-550度。

Traditional tool coating technologies can be divided into two main categories – chemical vapor deposition (CVD) and physical vapor deposition (PVD).
CVD: Chemical reactions at high temperatures with various gases, deposition temperatures generally in the range of 800-1050 degrees.
PVD: high-energy ion bombardment of the target material, sputtering the target material to form a coating on the substrate. The deposition temperature is lower than CVD, generally at 500-550 degrees.

- 可根据客户需求提供涂层服务
  Coating services are available upon request.

毛刷系列产品
APPLICATIONS

含磨料尼龙刷是一种工业刷，主要用于去毛刺，刀口钝化和表面精整加工。刷子可制成管道刷（孔刷）、平面刷（笔刷、盘刷）、轮刷、辊刷及其他定制刷。

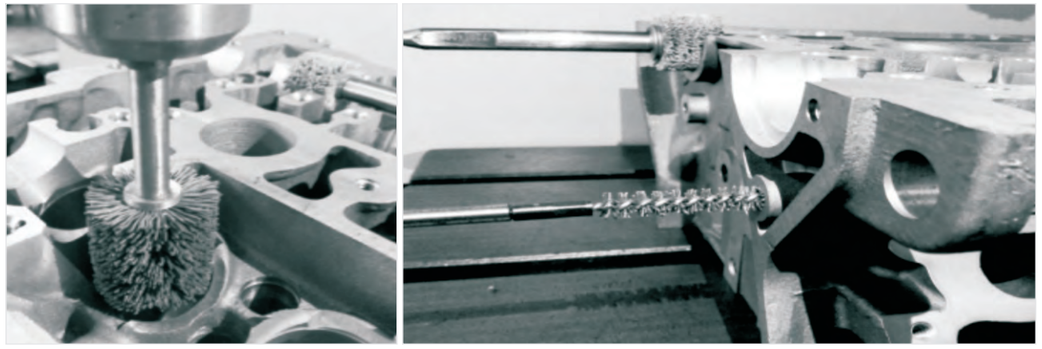
Abrasive nylon brush is an industrial brush, mainly used for deburring, knife edge passivation and surface finishing. The brush can be made into pipe brush (hole brush), plane brush (brush, disc brush), wheel brush, roller brush and other customized brushes.

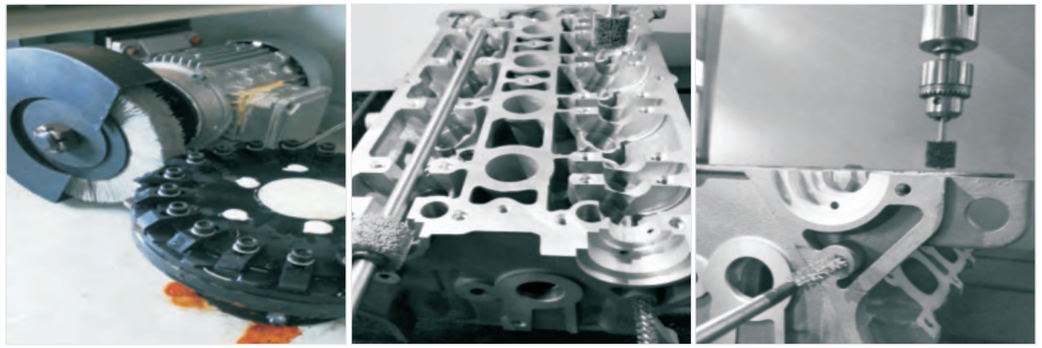
应用范围：

- 金属零部件：抛光、除锈、去毛刺
- 金属板材、带材：清洗、打磨、去氧化皮
- 工具行业（刀具）：钝化、抛光
- 线路板：清洗、抛光、去毛刺
- 造纸、人造板： 抛光、拉丝纺织、皮革产品：整理、磨毛

Applications:

- Metal parts -polishing, rust removal, deburring
- Metal plates and strips -cleaning, polishing, oxide removal.
- Tool industry (cutting tools) -passivation, polishing
- PCB -cleaning, polishing, deburring
- Papermaking, artificial board -polishing, brushing
  Textile, leather products -finishing, brushing





应用行业：用于汽车、摩托车行业：工具行业；有色金属行业； PCB 、木工行业等加工行业，经在汽车发动机、刀具制造行业使用反馈，完全可以替代进口产品。

Application areas: automotive and motorcycle industries, tool industry, non-ferrous metal industry, PCB, woodworking industry and other processing industries.

可根据用户需求，设计制造各种形式的含磨料尼龙刷。

We also design and manufacture various forms of brushes according to the requirements.

求实创新 追求卓越

PRAGMATIC INNOVATION THE PURSUIT OF EXCELLENCE

4 装备及服务类
EQUIPMENTS AND SERVICE

主动量仪
IN-PROCESS GAUGE

- 磨加工主动测量系统主要应用于轴承、汽车等领域大批量工件磨削过程的自动检测与控制。

  Mainly used for the automatic inspection and control on a large scale of workpiece grinding process in the fields of bearings, automobiles industy, etc.

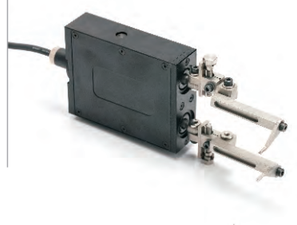
- 国家级新产品奖
  国家科学技术进步三等奖

  National New Product Award
  Third Prize for National Science and Technology Progress Award

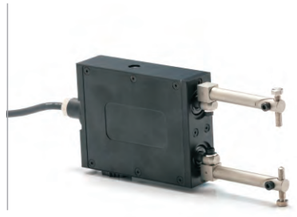
- 超过30年主动量仪产品研发生产经验
  产品多样性其应用涵盖轴承、汽车零部件、家电行业等
  与马波斯主动量仪（E9）优良的互换性
  提供全套的量仪产品售前、售中、售后技术服务与支持
  精密、可靠、全面的仪器制造检测设备

  Over 30 years of experience in developing and producing in-process gauges
  Applications cover bearings, auto parts, household appliance industry, etc.
  Excellent interchangeability with Marposs In-Process Gauge (E9)
  Provide comprehensive service and technical support
  Precise, reliable and comprehensive instrument manufacturing and testing equipment

内径测量系统



外径测量系统



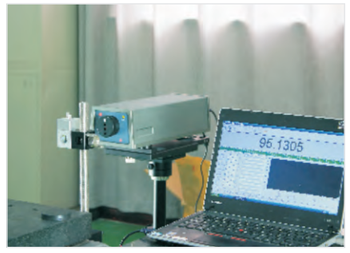
微孔测量系统

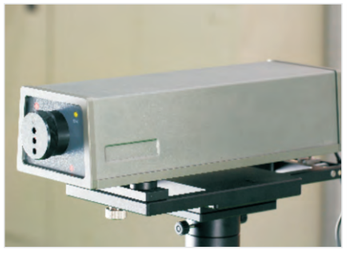
激光干涉仪
Laser interferometer

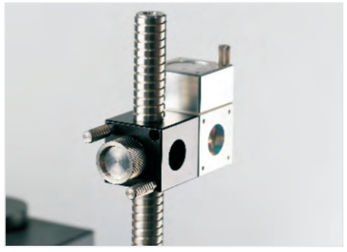
工研所是国内重要的大型精密测量仪器研发生产企业，长期从事精密测量仪器领域的共性基础技术研究及其高新技术产品的开发和生产；激光干涉测量技术是成都工具研究所有限公司在精密测量领域的突出代表及重点发展方向，拥有多项发明专利及专有技术。

激光干涉仪主要应用于数控机床生产制造厂、数控机床使用企业、质量监督检验单位等。

CTRI is an important domestic large precision measuring instrument research and development production enterprise that has long engaged in developing and manufacturing of generic-and high-tech research in the field of precision measuring instruments.
The research of laser measurement technology is a representative and key development direction in the precision measurement of CIRI. The company has got everal invention patents and proprietary technologies in this fields.
It is mainly used in CNC machine tool manufacturing plants, CNC machine tool using enterprises, quality supervision and inspection units, etc.







行业服务
INDUSTRY SERVICE

刀具产品全性能检测及分析服务：

- 几何精度
- 材料性能（定碳、定氧、激光粒度、硬度、抗弯强度、密度、矫顽钻磁、金相、X衍射、X荧光、断口分析）
- 涂层性能（压痕、划痕、球痕、涂层厚度、纳米硬度）
- 扫描电镜（能谱EDAX)
- 切削性能

Tool product full performance testing and analysis service:

- Geometric accuracy
- Material properties (carbon testing, oxygen testing, laser particle size, hardness, flexural strength density, coercive force, metallographic, x- ray diffraction, x- ray fluorescence, fracture analysis)
- Coating properties (indentation, scratches, ball marks, thickness, nano-hardness)
- Scanning electron microscopy (energy spectrum EDAX)
- Cutting performance

标准与技术服务
STANDARDS AND TECHNICAL SERVICE

- 标准化：标准制修订（国标、行标、团标、企标）、标准咨询服务
- 行业技术支撑：行业分析、技术服务、展会、培训、技术咨询、资源整合

- Standardization -Standard formulation and revision (national standard, industrial standard, group standard, enterprise standard), offer standard consulting service
- Industry technical support -industry analysis, technical services, exhibitions, training, technical consulting, resource integration

广告业务
ADVERTISING SERVICE

《工具技术》是国家批准的中央级科技期刊，由成都工具研究所有限公司主管和主办。1964 年1月创刊，月刊，邮发代号62-32。主要报道国内外切削与测量工程领域的最新研究进展、新产品、新工艺、新技术、新材料以及精密工具科学研究上的最新成就。

Tool Technology is a state-approved core science and technology journal, supervised and sponsored by CTRI. It was founded in January 1964 and is a monthly publication with the postal code 62-32. The Journal focuses on new products, technologies, and materials, as well as the recent progress and achievements in scientific research in cutting and measurement engineering at home and abroad.

求实创新 追求卓越

PRAGMATIC INNOVATION THE PURSUIT OF EXCELLENCE

5 工程设计与安装 PROJECT DESIGN AND INSTALLATION

百级→N万级洁净室
Class 100 → Class N million cleanroom

某所烧结炉配套特气工程
Sintering furnace supporting special gas project in an institute

某所功能金刚石项目
Functional diamond project in an institute

特气工程
SPECIAL GAS SYSTEMS

1. 在刀具行业中的应用

特气系统及工程常用于化学涂层、物理涂层、烧结炉等的气体管路配套。

2. 在半导体和人造金钢石行业中的应用（电子气特气工程）

芯片制造中硅片制备、装配封测等需求的特种气体，可划分为掺杂气、外延气、离子注入用气、LED用气、光刻气、载运和稀释气体等大类。

3. 在氢能源行业中的应用

氢气浓度监测及安全控制系统

4. 在医药行业中的应用

生物制药行业的洁净车间。医院行业的医用中心供氧系统，包含中心供气站、管网系统、监控报警系统、和手术室重症监护室病房终端。

5. 在航天、航空和研究院所中的应用

1. Application in cutting tools industry
Special gas systems are often used for gas lines of CVD-, PVD-coating and sintering furnaces.
2. Application in semiconductor and artificial diamond industry (Electronic specialty gases)
The Special gases required for silicon wafer preparation, assembly and testing in chip manufacturing can be classified as doping gas, epitaxial gas, gas for ion implantation, gas for LED, lithography gas, carrier and dilution gas.
3. Applications in hydrogen energy industry
Hydrogen concentration monitoring and safety control system
4. Applications in the pharmaceutical industry
Cleanrooms for the biopharmaceutical industry
Oxygen supply system of medical central for hospital industry, including central gas supply station, pipe network system, monitoring and alarm system, and ward terminal of operating room and ICU.
5. Applications in aerospace, aviation and research institutes

电子特气工程

某集成电路公司特气工程

氢气浓度检测及安全控制系统

高压加氢装置

配气台

高压超高压配气盘

生物感应智慧周界-安防工程
INTELLIGENT BIOLOGICAL DETECTION SECURITY SYSTEM

生物感应智慧周界-安防工程针对“人”作用于平行感应体轴向360° 范围内电场变化的安防
准确、快速、可靠地感应人体移动而引起的电场变化抗干扰能力强
可过滤小动物、非生物、自然气候的干扰

The Security system of electric field changes acting in a 360° range specially aimed at humans.
Accurate, fast and reliable sensing of electric field changes caused by human movement.
Strong anti-interference ability
Can filter out small animals, non-living things, natural climate interference

特气设备
远程监控自动特气柜
危险气体使用
电子气级惰性气体使用

Special gas equipment
Remote monitoring automatic cabinets for special gases
dangerous gases use
inert gas of electron gas level use

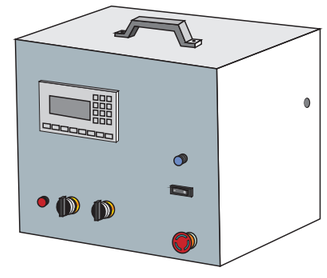
高纯及超高纯气体纯化器
（5N→7N）（7N→9N）
流量可选、最小漏率达到-11pa.m3.s

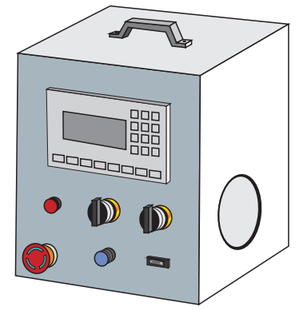
Purifier for high purity-and ultra high purity gases
(5N→7N) (7N→9N)
Adjustable flow, minimum leakage rate reach to -11pa.m3.s

氢气浓度检测及安全控制系统
高压超高压配气盘
配气台
高压加氢装置

气溶胶取样器
（便携式、分布式）
（模块化设计、静音、高效，可与气象监测集成）

Aerosol sampler
(Portable, distributed)
(modular design, silent, efficient, can be integrated with meteorological monitoring)





Hydrogen concentration detection and safety control system
Gas distribution tray under high-and ultra-high pressure
Gas distribution station
High pressure hydrogenation unit