上 海 彤 诚 实 业 有 限 公 司

Shanghai Tong Cheng Industry Co., Ltd.

金 刚 石 线 切 割 机

Diamond Wire Cutting Machine

产 品 手 册

Product Manual















高效精密切割·适配高端硬脆材料

High-efficiency Precision Cutting for Advanced Hard & Brittle Materials

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关于彤诚
About SHTC

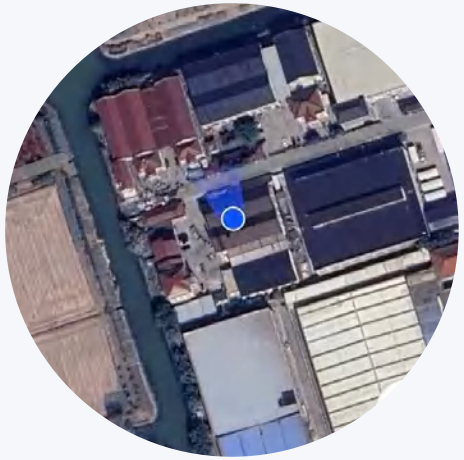


上海彤诚成立于2018年，企业主营业务为生产金刚石线切割设备，已获得全球超过上百家客户的信赖。

我们专注于为半导体、光学、光伏/新能源、粉末冶金、航空航天等行业提供硬脆材料加工解决方案。作为源头工厂，我们兼具灵活与高效；既可提供标准化方案，又可提供定制化方案。

Shanghai Tongcheng was established in 2018, with its core business focused on the manufacturing of diamond wire cutting equipment. The company has earned the trust of over 100 customers worldwide.

We focus on providing processing solutions for hard and brittle materials for industries such as semiconductors, optics, photovoltaics/new energy, powder metallurgy, aerospace, etc. As a source factory, we are both flexible and efficient; we can offer both standardized solutions and customized solutions.



- 我们专注于为高价值脆性材料提供实用、低损伤的切割解决方案。
  We specialize in practical, low-damage cutting solutions for high-value brittle materials.
- 由专业工程师提供定制化的专业设计，满足客户需求。
  Customized professional designs are provided by professional engineers to meet customer needs.
- 关键零部件自主加工，确保设备全生命周期的供应。
  Key components are processed independently to ensure the supply of equipment throughout its entire lifecycle.
- 持续稳定的研发投入，不断升级切割技术。
  We maintain steady R&D investment to upgrade cutting technology continuously.

双品牌战略
Dual Brand Strategy

ewirexon 专注海外市场，SHTC 深耕本土需求。二者共享同一核心技术平台，同时针对全球客户的多样化应用场景，提供差异化的高性能金刚石线切割解决方案。

ewirexon focuses on overseas markets, while SHTC is deeply rooted in local (domestic) needs. Both brands share the same core technology platform and, in response to the diverse application scenarios of global customers, provide differentiated high-performance diamond wire cutting solutions.

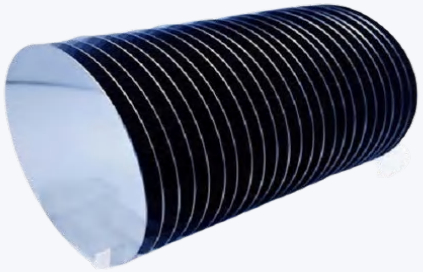
海外品牌：ewirexon
Overseas Brand

- 定位：面向国际市场的高端品牌
  Positioning: A Premium Brand Targeting International Markets
- 设计：环形轨道元素，呼应线切割工艺，传递全球化服务理念
  Design: Orbit element echoes the wire cutting process, conveying a global service concept
- 色彩：蓝红搭配，体现科技精密与创新活力
  Color Scheme: Blue-red palette, representing precision technology and innovative energy

国内品牌：SHTC
Domestic Brand

- 定位：面向国内市场的中高端品牌
  Positioning: A Mid-to-High-End Brand Targeting the Domestic Market
- 设计：齿轮元素，象征工业制造的精密与稳定
  Design: Gear element symbolizes precision and stability in industrial manufacturing
- 色彩：渐变蓝色，代表专业、可靠的国产装备形象
  Color Scheme: Gradient blue, representing the professional and reliable image of domestic high-end equipment

应用领域
Application



半导体
Semiconductors



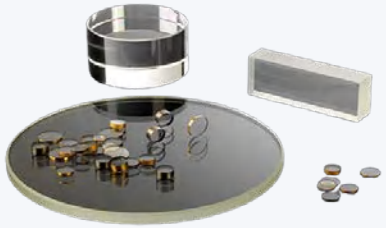
光伏/新能源
Photovoltaics&New Energy



新兴材料
Emerging Materials



其他应用领域
Other Application Areas



光学
Optics



精密陶瓷
Precision Ceramics

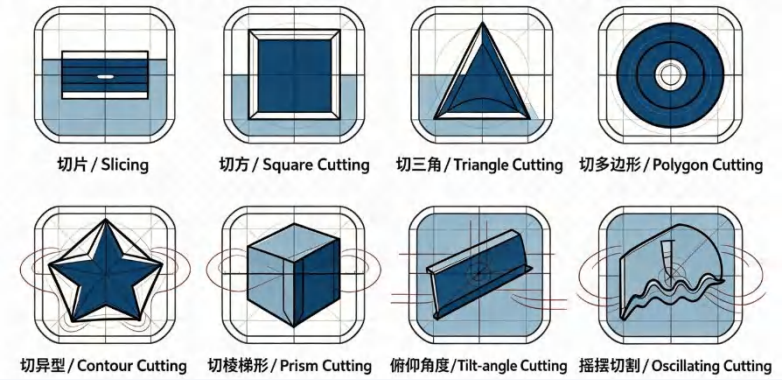
产品系列
Product Series

龙门式切割系列
Gantry Cutting Equipment Series



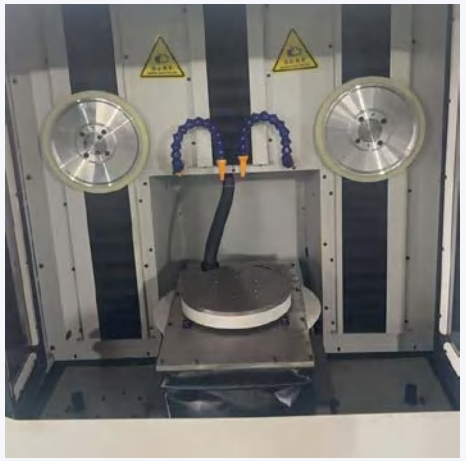
上海彤诚龙门式切割机型系列广泛应用于玻璃、晶体、陶瓷、硬质合金等材料领域，对于各种尺寸硬脆材料的截断、开方、切片都有高效成熟的应用案例。

Shanghai Tongcheng gantry cutting machine series is widely used in processing materials such as glass, crystal, ceramics, and cemented carbide. It has proven efficient and mature application cases for cutting-off, squaring, and slicing hard and brittle materials of various sizes.



产品优势及特点 Product Advantages & Features

- 精密线架+ 高线速，保证端面光洁度高、平行度优异;
  Precision wire frame + high wire speed ensures high surface finish and excellent parallelism;
- 支持定制，可选摇摆/ 旋转工作台和晶向调整夹具;
  Customization is available, including an optional swing/rotary worktable and crystal orientation adjustment fixture ;
- 配备高精度旋转工作台，支持360°灵活分度定位。
  Equipped with a high-precision rotary workbench,supporting flexible 360°indexing and positioning.



主要技术参数 Specification

项目 Items	规格 Specs
线径范围 Wire Diameter Range	Φ0.3~Φ1.0mm 可选(optional)
最高线速度 Max. Wire Speed	0.1~50mm/s 可选(optional)
张力范围 Tension Range	0~300 N
张力控制方式 Tension Control Method	伺服涨紧 Servo Tensioning
X/Y 轴进给速度 X/Y Axis Feed Rate	0.01~35 mm/s

型号规格 Model Specifications

龙门式切割机 Gantry Cutting Machine		加工尺寸范围（mm） Workpiece Size			外形尺寸（mm） Machine Dimensions			整机重量（kg） Weight	整机功率（kw） Rated Power
系列Series	型号Model	长L	宽W	高H	长L	宽W	高H		
200系列 200Series	TCQF200LNC-FM	200	200	200	1,050	950	1,820	560	2.4
	TCQF200LNC-YB-HL	200	200	200	1,050	950	1,820	560	3.2
	TCQF200LNC-FM-HL	200	200	200	1,050	950	1,820	560	2.8
	TCQF200LNC-FM-FY-HL	200	200	200	1,050	950	1,820	580	3.6
400系列 400Series	TCQF400LNC-YB	400	400	400	1,070	1,070	1,970	680	3.2
	TCQF400LNC-FM-FY-HL	380	380	280	1,050	950	1,960	680	3.2
	TCQF2040L	260	400	220	1,070	1,070	1,810	580	2.4

提示：本表描述产品之技术参数可能因定制需求调整，最终标准以双方签署之合同及技术协议为准。
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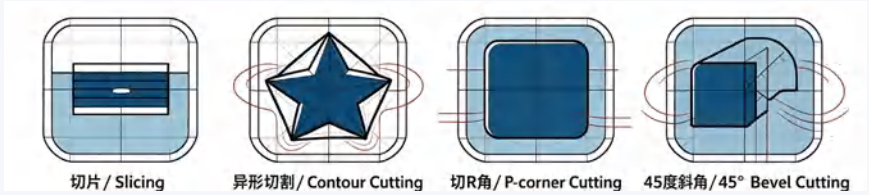
立式切割系列
Vertical Cutting Equipment Series



上海彤诚立式切割机型系列广泛应用于陶瓷、石墨、晶体、碳碳复合材料、硬质合金等材料领域，对于硬脆材料的异形切割、切片、切圆以及其他内外轮廓切割都有非常成熟的应用案例。

Shanghai Tongcheng vertical cutting machine series is widely used in processing materials such as ceramics, graphite, crystal, carbon-carbon composites, and cemented carbide. It has highly mature application cases for profile cutting, slicing, circular cutting, and other inner and outer contour cutting of hard and brittle materials.



产品优势及特点 Product Advantages & Features

- 精密主轴 + 高防护敏捷张力机构 + 精密线架，保证设备稳定高速工作;

  Precision spindle + high-protection agile tension mechanism + precision wire frame, ensuring stable and high-speed operation of the equipment;

- 精密动平衡导轮与实时张力控制系统，确保高速切割下的尺寸精度与表面质量;

  Combined with a precision guide wheel system and real-time tension control system, it significantly improves machining accuracy and processing stability;

- 垂直走线+ 水平进给，装夹便捷，线弓控制稳定

  Adopts a vertical diamond wire travel + horizontal feed mode, offering convenient clamping and stable wire bow control.

主要技术参数 Specification

项目 Items	规格 Specs
线径范围 Wire Diameter Range	Φ0.5~Φ1.5mm 可选(optional)
最高线速度 Max. Wire Speed	0.1~35mm/s 可选(optional)
张力范围 Tension Range	0~500 N
张力控制方式 Tension Control Method	气动涨紧 Pneumatic Tensioning
X/Y 轴进给速度 X/Y Axis Feed Rate	0.01~35 mm/s

型号规格 Model Specifications

立式切割机 Vertical Cutting Machine		加工尺寸范围（mm） Workpiece Size			外形尺寸（mm） Machine Dimensions			整机重量（kg） Weight	整机功率（kw） Rated Power
系列Series	型号Model	长L	宽W	高H	长L	宽W	高H		
600系列 600Series	TCQF600PNC-HL	600	600	600	1,750	1,550	2,000	1,300	3.4
600系列 600Series	TCQF6060LNC-HL	600	600	600	1,750	1,550	2,000	1,800	3.4
1000系列 1000Series	TCQF1000LNC	1,000	1,000	1,000	4,000	1,700	2,560	3,800	5.6
1500系列 1500Series	TCQF15030LNC-HL	1,200	1,200	1,000	4,000	1,700	2,560	4,200	5.6
2500系列 2500Series	TCCK25080LNC-HL	1,500	1,500	1,000	4,000	1,700	2,560	5,400	7.2
定制机型Customized Models		定制尺寸 Custom Sizes							

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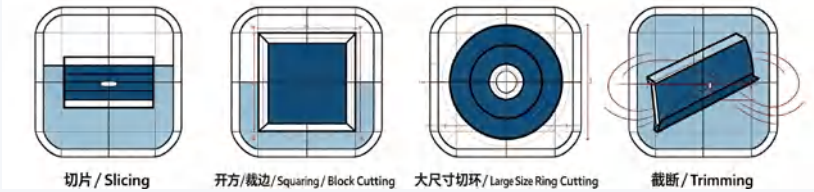
卧式旋切/平割系列

Horizontal Rotary Cutting & Flat Cutting Series



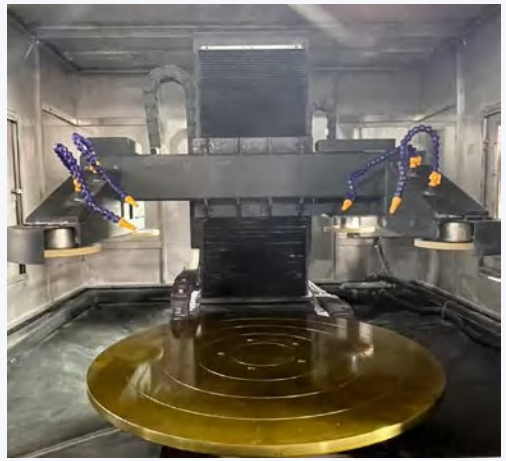
上海彤诚卧式旋切割机&平切割广泛应用于中大型圆柱体、长方体硬脆材料而设计，水平放置工件解决了大重量、大尺寸、超脆材料的装夹难题，辅以上海彤诚自主创新的摇摆和旋转切割机构，轻松应对大型硬脆材料切割。

The Shanghai Tongcheng horizontal rotary cutting and flat cutting machine series is specifically designed for processing medium to large cylindrical and rectangular hard and brittle materials. By placing the workpiece horizontally, it effectively resolves the clamping/fixturing challenges posed by heavy, oversized, and ultra-brittle workpieces. Supplemented by Shanghai Tongcheng's independently developed swing and rotary cutting mechanisms, the system effortlessly handles the cutting of large hard and brittle materials.



产品优势及特点 Product Advantages & Features

- 多种摇摆/ 旋转切割模式，高线速、高进给，带来强大加工能力;
  Multiple swing/rotary cutting modes, high wire speed, and high feed rate deliver powerful machining capabilities;
- 支持多环线切割，大幅提升加工效率;
  Support for multi-loop wire cutting significantly enhances processing efficiency.
- 增加辅助导轮，适配多尺寸工件。
  Add auxiliary guide wheels to adapt to multi size workpieces.



主要技术参数 Specification

项目 Items	规格 Specs
线径范围 Wire Diameter Range	Φ0.5~Φ1.5mm 可选(optional)
最高线速度 Max. Wire Speed	0.1~35mm/s 可选(optional)
张力范围 Tension Range	0~500 N
张力控制方式 Tension Control Method	气动涨紧 Pneumatic Tensioning
X/Y 轴进给速度 X/Y Axis Feed Rate	0.01~35 mm/s

型号规格 Model Specifications

卧式旋切/平切切割机 Horizontal Rotary Cutting & Flat Cutting Machine		加工尺寸范围（mm） Workpiece Size		外形尺寸（mm） Machine Dimensions			整机重量（kg） Weight	整机功率（kw） Rated Power
系列Series	型号Model	直径φ	高H	长L	宽W	高H		
600系列 600Series	TCQF600PNC	600	500	1,750	1,550	2,000	1,300	3.4
1000系列 1000Series	TCQF1000PNC	1,000	500	2,350	2,350	2,050	1,800	3.4
1600系列 1600Series	TCQF1600PNC-HL	1,600	500	4,600	3,280	2,570	5,700	5.6
1800系列 1800Series	TCQF1800PNC	1,800	500	4,600	3,280	2,570	5,700	5.6
2500系列 2500Series	TCQF2500PNC	2,500	500	5,600	3,580	2,570	6,500	7.2
定制机型Customized Models		定制尺寸 Custom Sizes						

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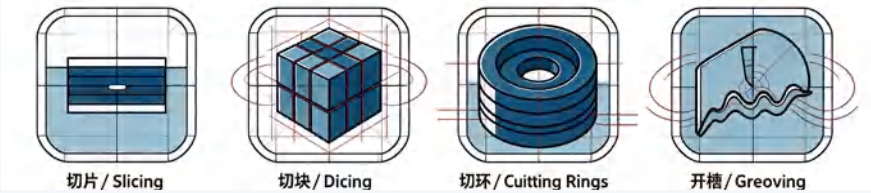
多线切割系列
Multi-wire Cutting Equipment Series



上海彤诚多线切割机系列支持更宽的切割厚度范围，适用于晶体、光学、陶瓷等多种硬脆材料，在提升张力和切割稳定性的同时，兼顾高精度与高效率切片需求。

Shanghai Tongcheng multi-wire cutting machine series supports a wider cutting thickness range and is suitable for various hard and brittle materials such as crystals, optical materials, and ceramics. While improving wire tension and cutting stability, it also meets the demands of high-precision and high-efficiency slicing.





产品优势及特点 Product Advantages & Features

- 高精度：切割精度达0.01mm，晶片翘曲小、TTV离散性小;
  High precision: cutting accuracy to 0.01mm, low warp and TTV variation;
- 高效率：一次切割数百片，效率为传统内圆切割的30–50倍;
  High efficiency: slices hundreds of wafers at once, 30–50× faster than conventional ID sawing;
- 低损耗：切缝窄，材料利用率高，适用多种硬脆材料。
  Low loss: narrow kerf, high material yield, suitable for various hard-brittle materials.

主要技术参数 Specification

项目 Items	规格 Specs
线径范围 Wire Diameter Range	Φ0.1~Φ0.25mm 可选(optional)
最高线速度 Max. Wire Speed	0.1~1,000mm/min 可选(optional)
张力范围 Tension Range	0~32 N
切片厚度Slicing Thickness	0.3~12mm
收线轮储线量Take-up Reel Wire Storage Capacity	3Km
最大往复循环次数Maximum Reciprocating Cycle Count	8次/8times

型号规格 Model Specifications

多线切割机 Multi-wire Cutting Machine		加工尺寸范围（mm） Workpiece Size	外形尺寸（mm） Machine Dimensions			整机重量（kg） Weight	整机功率（kw） Rated Power
系列Series	型号Model	直径φ	长L	宽W	高H		
200系列 200Series	LH-Z2020	200	1,060	1,200	2,100	1,500	25
400系列 400Series	LH-ZF4083	400	2,920	1,920	2,510	8,000	60

定制机型Customized Models　　定制尺寸 Custom Sizes

提示：本表描述产品之技术参数可能因定制需求调整，最终标准以双方签署之合同及技术协议为准。
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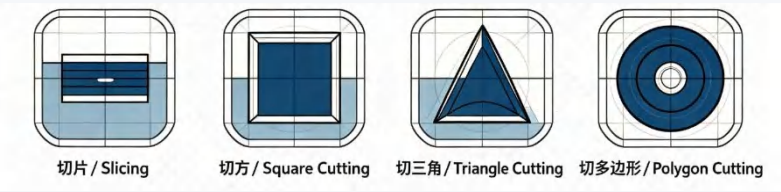
迷你切割系列
Mini Cutting Equipment Series



上海彤诚研发的这款迷你金刚石切割机专为企业研发与高校科研设计，具备高精度低损伤切割能力，支持多品种小批量硬脆材料加工，操作直观灵活，是实验室材料分析的理想工具。

Developed by Shanghai Tongcheng, this mini diamond cutting machine is designed for corporate R&D and academic research. With high-precision, low-damage cutting, it handles small-batch hard-brittle materials and is easy to operate, making it ideal for lab analysis.



产品优势及特点
Product Advantages & Features

- 专为研发设计，适配多品种小批量，材料切换便捷高效;
  Designed for R&D, adaptable to diverse small-batch materials, with quick and efficient changeover;
- 高精度低损伤切割，保障试件完整性，满足微观分析要求;
  High-precision, low-damage cutting ensures specimen integrity for micro-analysis requirements;
- 紧凑轻量，操作直观，适合实验室频繁使用与工艺探索。
  Compact and lightweight, intuitive operation, ideal for frequent lab use and process exploration.

主要技术参数 Specification

项目 Items	规格 Specs
线径范围 Wire Diameter Range	Φ0.3~Φ1.0mm 可选(optional)
最高线速度 Max. Wire Speed	0.1~50mm/s 可选(optional)
张力范围 Tension Range	0~150 N
张力控制方式 Tension Control Method	伺服涨紧 Servo Tensioning
X/Y 轴进给速度 X/Y Axis Feed Rate	0.01~35 mm/s

型号规格 Model Specifications

迷你切割机 Mini Cutting Machine		加工尺寸范围（mm） Workpiece Size			外形尺寸（mm） Machine Dimensions			整机重量（kg） Weight	整机功率（kw） Rated Power
系列Series	型号Model	长L	宽W	高H	长L	宽W	高H		
150系列 150Series	TCQF150LNC	150	150	150	640	620	670	220	2
定制机型Customized Models		定制尺寸 Custom Sizes							

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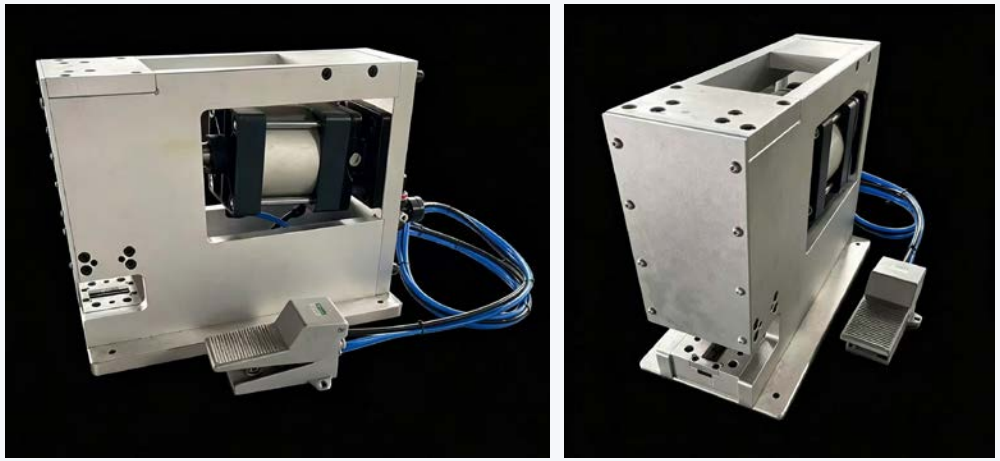
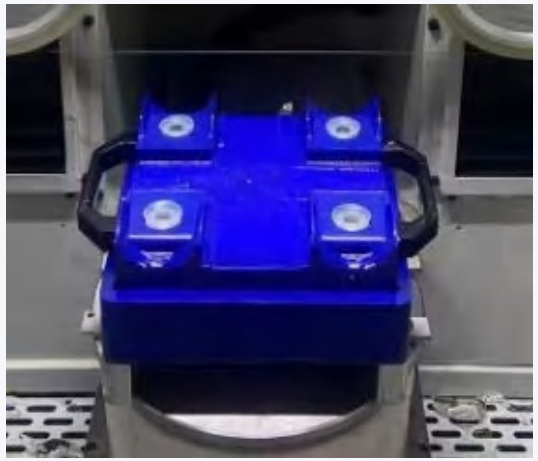
机床附件及工装
Machine Tool Accessories and Fixtures

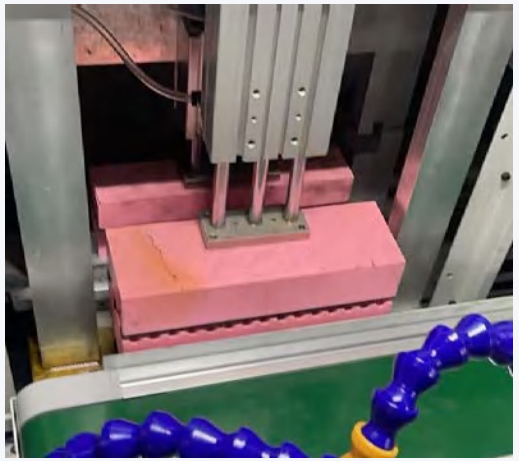
上海彤诚提供多样化的设备选装配置，同时支持工装夹具定制，解决用户的特殊工艺难题，为您打造专属高效的工艺方案。

Shanghai Tongcheng provides diverse equipment options and custom tooling/fixture solutions to address your special processing needs, creating an exclusive and efficient process plan for you.



金刚石环线接线系统
Diamond Wire Loop
Routing System





定制夹具
Custom Fixture

高效精密切割•适配高端硬脆材料

High-efficiency Precision Cutting for Advanced Hard & Brittle Materials



离心过滤系统
Centrifugal Filtration System

分离切屑，净化切削液，提升加工稳定性。
Separate chips, purify cutting fluid, enhance machining stability.



恒温系统
Temperature Control System

稳定切削液温度，减少热变形，保证切割精度。
Stabilize cutting fluid temperature, reduce thermal deformation, ensure cutting precision.



集尘器
Dust Collector

抽吸粉尘，减少污染，保障清洁生产。
Extract dust, reduce pollution, ensure clean production.



油雾收集
Oil Mist Collection

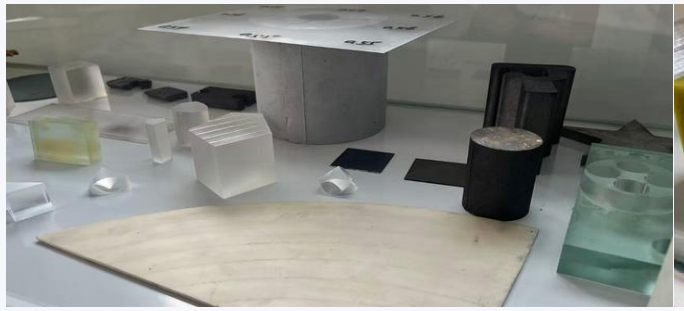
油雾回收，减少排放，改善车间环境。
Recover oil mist, reduce emissions, improve workshop environment.



真空吸盘
Vacuum Suction Cup

吸附薄片工件，避免夹伤，确保切割稳定。
Hold thin wafers without damage, ensuring stable cutting.

切割案例
Cutting Case




切割成品展示
Cutting Sample Display



陶瓷
Ceramic materials



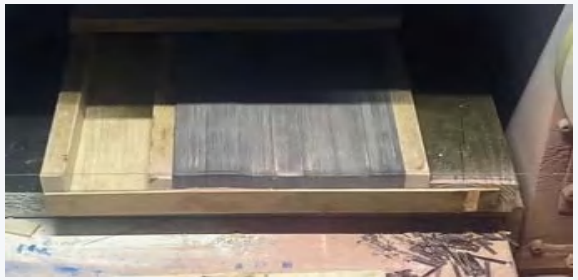
锗
Germanium



聚氨酯
PU



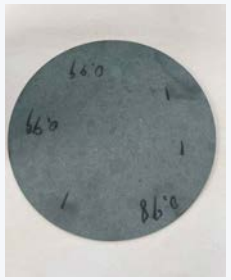
氧化铝
Alumina



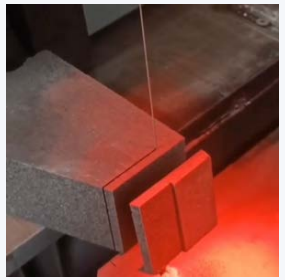
纳米材料
Nanomaterials



K9玻璃
K9 optical glass



油石
Whetstone



石墨
Graphite material



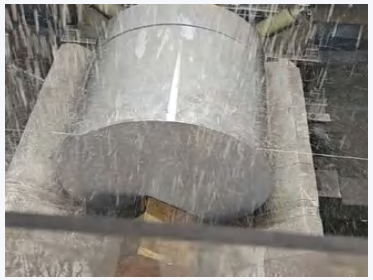
石英玻璃
Quartz Glass



碳化硅
Silicon Carbide



工程塑料
Engineering Plastics

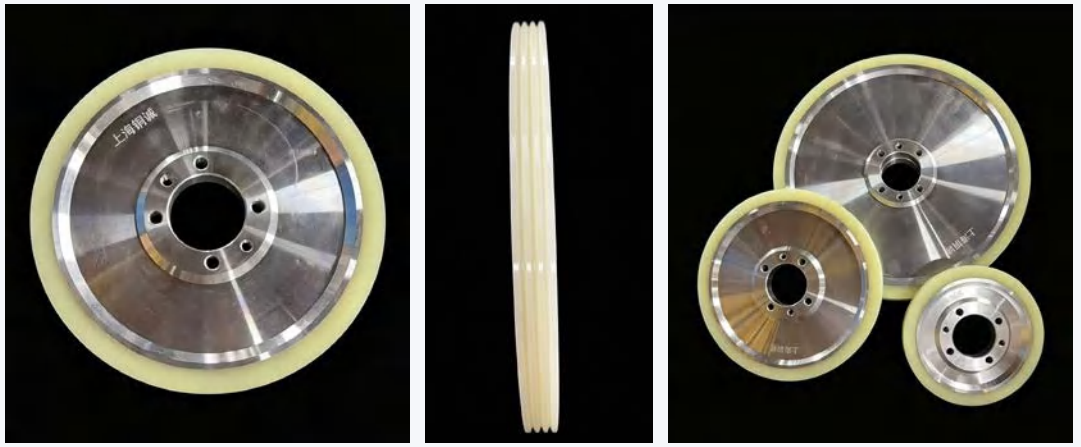


单晶硅
Monocrystalline Silicon

售后与服务
After-sales & Services



金刚石线现货和定制服务
Diamond Wire Stock&Custom Service



导轮定制和包胶服务
Guide Wheel Customization & Rubber Coating Service



罗拉定制及包胶刻槽服务
Custom roller manufacturing,
rubber coating and grooving services

24h响应
24h Response

调试培训
Debugging Training

技术支持
Technical Support

远程诊断
Remote Diagnosis

全球市场
Globle market

舜宇集团 SUNNY GROUP
YOFC Smart Link Better Life.
Heraeus
COHERENT
DELTA
CRYLIGHT
fabrinet
中国兵器工业集团有限公司 CHINA NORTH INDUSTRIES GROUP CORPORATION LIMITED
EXCELITAS TECHNOLOGIES
FERRITE
STI
FerroTec
DOTI Micro 东田微科技股份有限公司
AZURE PHOTONICS change·innovation·forward
HITRONICS
TIMEMAKER
Optowide 腾景科技

服务超过100+客户
Serving over 100 customers worldwide

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