汇专科技集团

CONPROFE Technology Group

Converging of Global Resources, Professional as Industry Leader

Updated Date / Version: 2024.07.25/ VE7.2.35

CONTENTS

01 PART ONE About CONPROFE

1.1 Conprofe Connotation

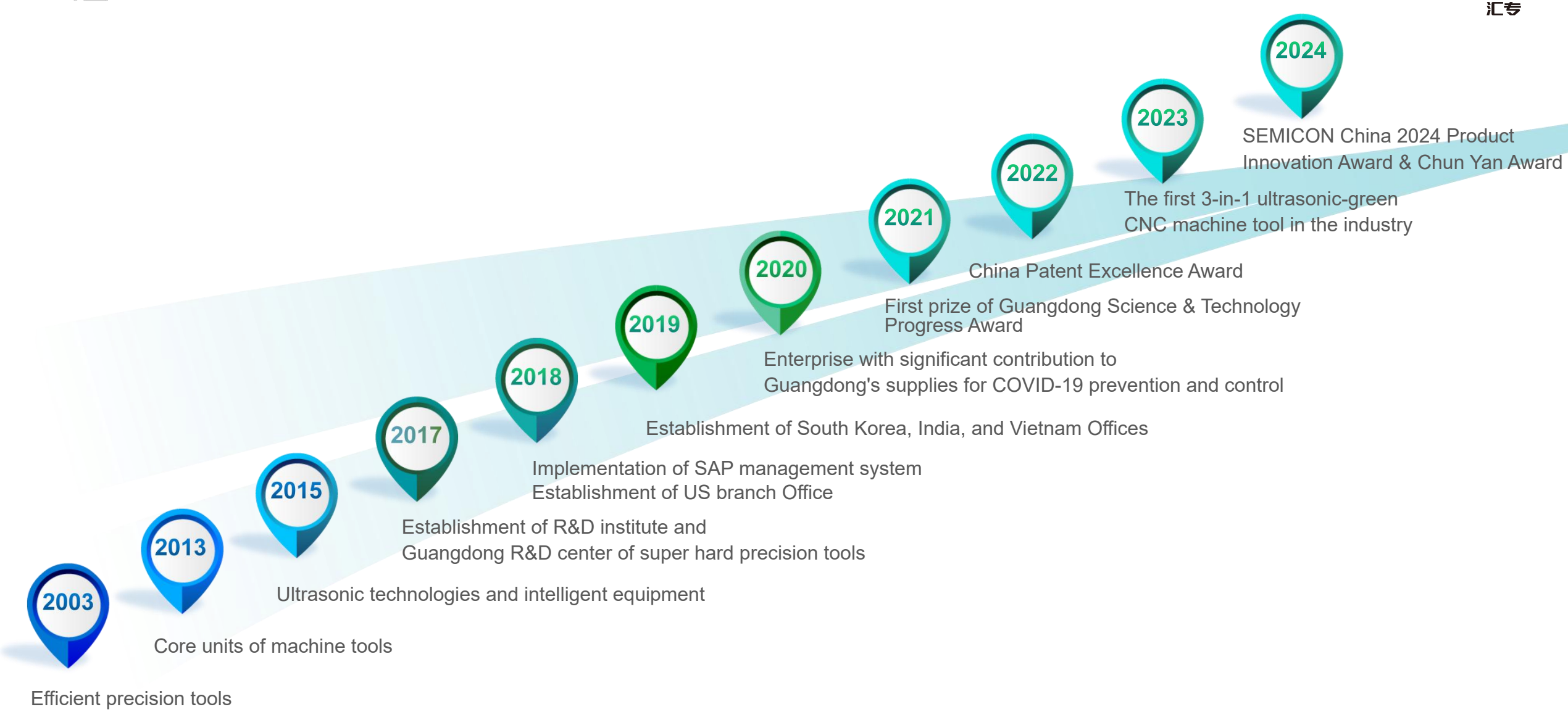
Converging of Global Resources

Professional as Industry Leader

“CONPROFE”

Trademarks were successfully registered in 50+ countries and regions across the world

1.2 Milestones



CONPROFE 汇专

Efficient / Green / Intelligent

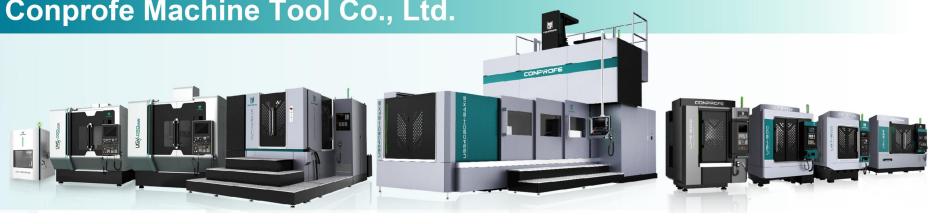
Provider of Efficient, Green & Intelligent Manufacturing Solutions and Key Units

CONPROFE

Conprofe Technology Group Co., Ltd.

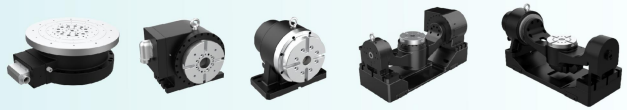
CONPROFE 汇专机床

Conprofe Machine Tool Co., Ltd.



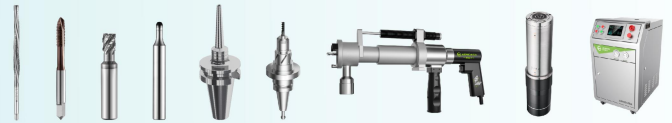
SMARTGUY 科益展

SmartGuy Intelligent Equipment Co., Ltd.



AENOASA

AENOASA Precision Tools Co., Ltd.



1.4 Selling Worldwide

6 CONTINENTS
Sales spread over

70+ COUNTRIES & REGIONS
Excellent sales record and customer endorsement

20+ YEARS
Dedicated in bringing added value to customers

1.5 Global Network

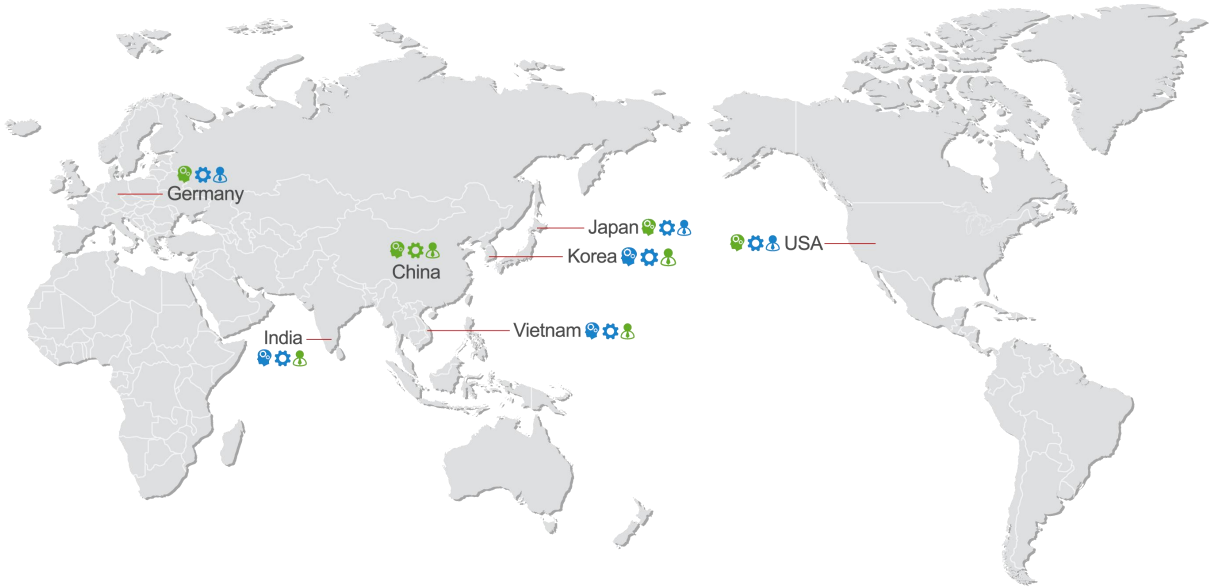
Headquarters:

Sales and After-Sales Office (24)

7 Regions

- North China
- Northwest China
- Southwest China
- Northeast China
- East China
- South China
- Central China

Figure No. GS(2020)4624 **Supervised by** Ministry of Natural Resources of the P.R.C
Image Source: bzdt.ch.mnr.gov.cn



	In Operation	Under Construction
R&D Network:		
Production Network:		
Sales Network:		

Figure No. GS(2019)1652 **Supervised by** Ministry of Natural Resources of the P.R.C
Image Source: bzdt.ch.mnr.gov.cn

24 Sales and After-sales Offices in seven regions across China

02 PART TWO
R&D Capacity

2.1 R&D Efforts

Innovative Platforms

- National High-Tech Enterprise
- Guangdong Engineering and R&D Center
- Guangdong Provincial Enterprise Technology Center

R&D System

- Establishment of global innovation R&D centers and labs in **Japan, Germany, and U.S.A**

IPR

- Trademarks cover more than **50** countries and regions, **included in Guangdong Key Trademark Protection List**
- **Core patents**

850+

IUR

- In-depth cooperation with South China University of Technology, Dalian University of Technology, Shandong University and Guangdong Academy of Sciences
- Undertake or participate in over **10** national/provincial/municipal special projects

China-Germany Industrial Equipment Joint Research Lab

- German Fraunhofer Institute for Structural Durability and System Reliability/LBF

Acknowledged by experts led by members of CAE (Chinese Academy of Engineering)

Ultrasonic-green Technologies and Equipment - Internationally Advanced Level

- **Key ultrasonic-green technologies and equipment for high-efficiency and high-quality machining of hard-to-cut materials**
- **Super-hard cutting tools** and high-speed machining technology and equipment for **hard-brittle materials**
- Critical technology and equipment for high-quality medical protective equipment manufacturing & industrialized application
- Key ultrasonic welding technology and equipment for large-scale medical protective equipment production

科学技术成果登记证书

登记号：6062023JXC028

科技成果名称：难加工材料高效高质超声绿色加工关键技术与装备

主要完成单位：广东工业大学、汇专科技集团股份有限公司、汇专机床有限公司、科益展智能装备有限公司

主要完成人员：王成勇、颜炳姜、李伟秋、杨新建、郑李娟、袁尧辉、林海生、吴世雄、陈建波、王先利、何吉峰、聂浩峰、张国立、王 燕、王 勇、陆劲波、齐 锋、张 琳、何淑坚、汪 喜、杨简彰、赖志伟、[illegible]、梁赐乐

登记机构：中国机械工业联合会

发证日期：2023 年 6 月 9 日

鉴定委员会认为，项目技术难度大，创新性强，总体技术达到国际先进水平，其中高转速超声波主轴技术和HfBN抗粘结涂层技术处于国际同类技术领先水平。同意通过鉴定。

建议进一步加大推广力度及拓展应用领域。

鉴定委员会主任：[illegible] 副主任 [illegible]、王黎明

2022 年 9 月 18 日

2.3 Major Achievements

- **First Prize** of Guangdong Science & Technology Progress Award
- Guangdong Patent **Silver Award**
- China Patent **Excellence Award**
- National enterprise with **an advantage in IPRs**

- Guangzhou City Private Leading Enterprise
- Guangzhou Unicorn Innovative Company
- Guangzhou High-grade, Precision and Advanced Enterprise

- **First Prize** of Science and Technology Award by China Association of Machinery Manufacturing Technology
- **Special Prize** of Guangdong Machinery Industry Science and Technology Award
- **"Top Ten Independent Innovation Projects"** of China Machine Tool & Tool Builder's Association
- **First Prize** of SEMI Product Innovation

03 PART THREE

R&D and Production Equipment

3.1 Dimensional Inspection of Precision Parts and Units

ZOLLER | Universal Measuring Machine

Measurement of tool profile, circle run-out, diameter, etc.

ALICONA | 3D Surface Profiler

Measurement of three-dimensional structural parameters of tools, surface roughness, etc.

ZEISS | Coordinate Measuring Machine

Measurement of length, width, diameter, position accuracy, profile, etc. of the machined workpiece

3.2 Analysis of Material Mechanical Properties

ANTON PAAR | Nanoindentation Tester

Tests on mechanical properties of surface and sub-surface layers of samples

INSTRON | Tensile Testing System

Tests of macroscopic mechanical properties of materials (tensile, compressive, bending, etc.)

SHIMADZU | Micro Vickers Hardness Tester

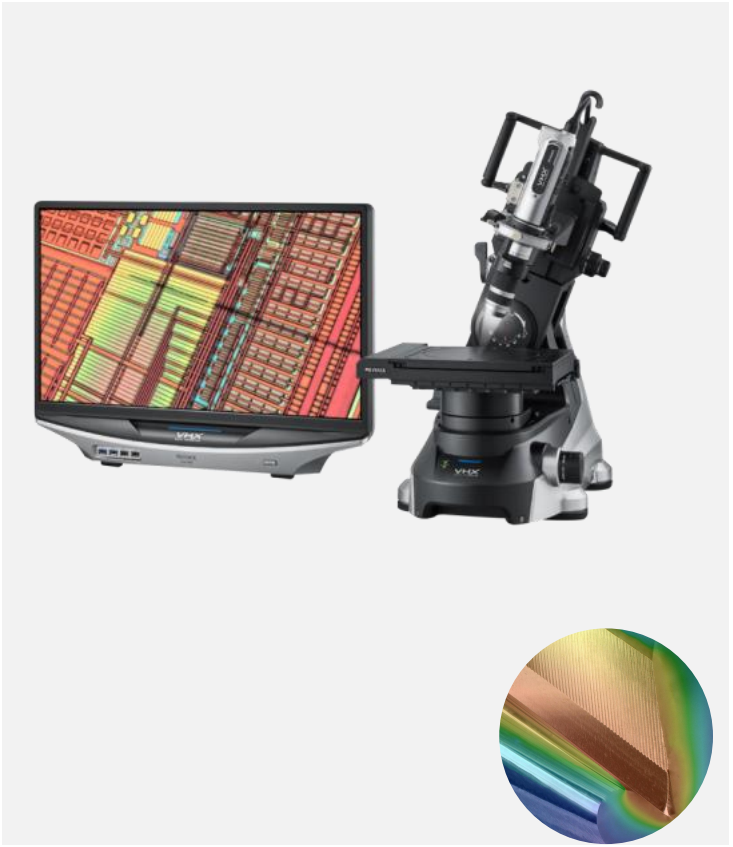
Tests of sample Vickers hardness (< 5000HV)

3.3 Surface Micro-Analysis

HITACHI | Scanning Electron Microscope

Observation of the microscopic morphology of the workpiece and detection of the element content (max. magnification of 180,000 times)

KEYENCE | Digital Microscope



Observation and measurement of the workpiece dimensions and surface quality (max. magnification of 1,000 times)

ZYGO | 3D Optical Profiler

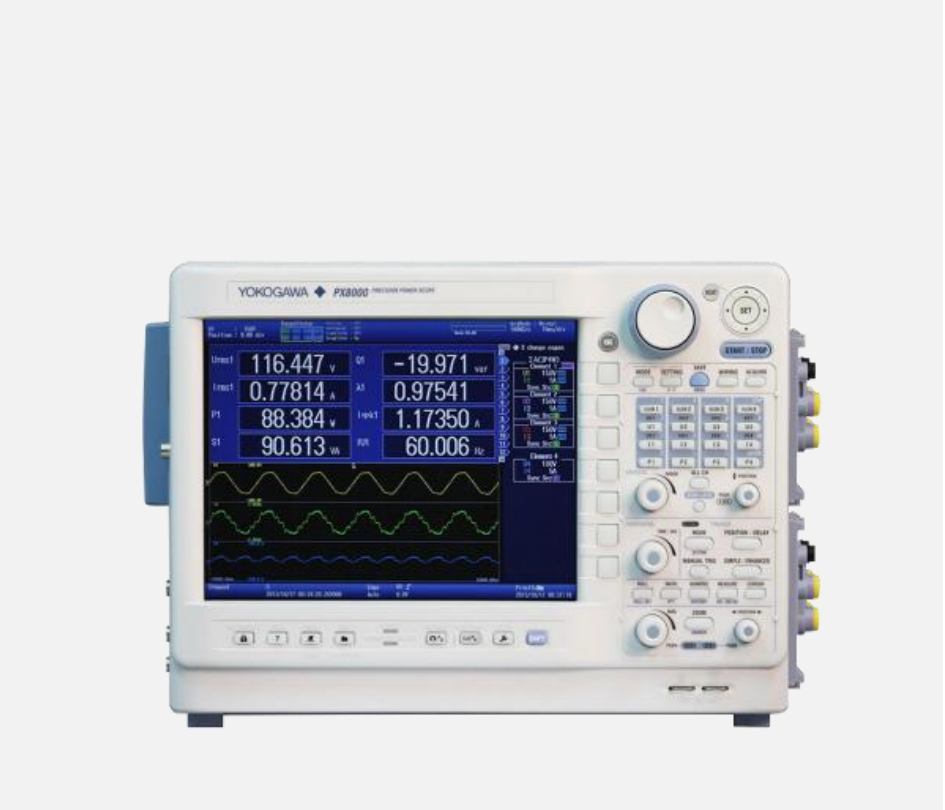
Detection of workpiece roughness, sub-surface damage, etc.

3.4 Ultrasonic Feature Analysis

POLYTEC | Scanning Vibrometer

Detection of ultrasonic vibration (modal, amplitude, frequency, etc.)

YOKOGAWA | Precision Power Scope



Measurement and analysis of ultrasonic power parameters

3.5 Cooling and Lubricating Feature Test

Microtap | Torque Tester

Test of MQL oil's lubricity

MALVERN | Laser Spray Particle Sizer

Spray and particle distribution of lubricating medium

3.6 Test of Key Spindle Properties

Silent laboratory

Test on spindle noise, spectrum, etc.

G-TECH | Horizontal Dynamic Balancing Instrument

Dynamic balancing testing of the spindle core

SUST | Universal Testing Machine

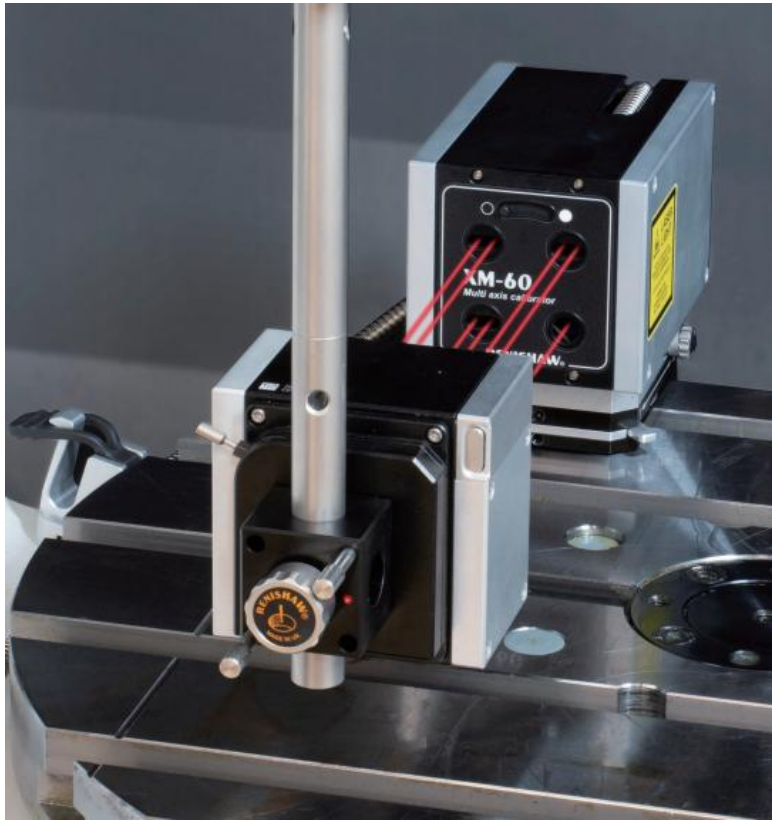
Test on various forces of the spindle

3.7 Machine Tool Reliability Test

SIEMENS | LMS Vibration & Noise Tester

Test on vibration frequency, inherent frequency and structural part dynamic rigidity, etc.

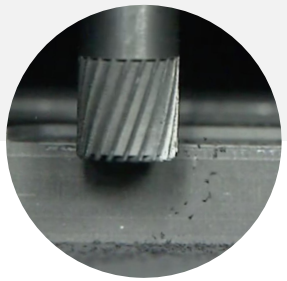
RENISHAW | XM-60 Multi Axis Calibrator



Accuracy calibration with the ability of delivering, 6 DOF error tests in any direction at once

3.8 Cutting Process Data Analysis

NAC ACS-3 M16 | High Speed Camera

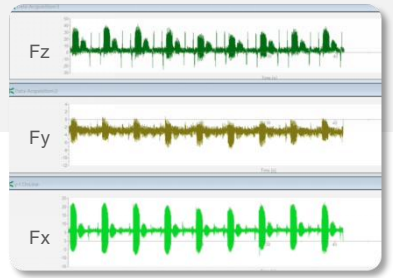


Dynamic observation of high-speed machining process

FLIR A655SC | Thermal Infrared Imager

Measurement of the real-time temperature changes on the machining area during operation

KISTLER | Dynamometers



Measurement of real-time changes in cutting forces

3.9 Production Equipment

ROLLOMATIC | 6-Axis CNC Grinding Machine

Production of carbide cutting tools

SMS | 7-Axis CNC Grinding Machine

Production of threaded cutting tools

3.10 Production Equipment

COBORN | CNC Ultra-Precision Grinding Machine

Production of super-hard cutting tools

VOLLMER | CNC Electrolytic Grinding Machine

Production of super-hard cutting tools

3.11 Production Equipment

DMG | 5-Axis Laser Machining Center

Machining of parts and units made of super-hard materials with complex contour

CEMECON | Coating System

Surface treatment of key parts and units

3.12 Production Equipment

STUDER | 5-Axis Universal Precision Grinding Machine

Machining of inner and outer circles for precision parts and units

DMG | 5-Axis Turning and Milling Center

Machining of precision parts and units

3.13 Production Equipment

MAKINO | Horizontal Machining Center

Machining of precision parts and units

MAZAK | Horizontal Machining Center

Machining of precision parts and units

04 PART FOUR Main Products and Achievements

4.0 Product Layout

Accessory Level

Precision cutting tools

Parts & Units Level

Core Units

Machine Level

The first three-in-one technology in the industry

Ultrasonic-Green CNC Machine Tools

4.1

PART 4.1

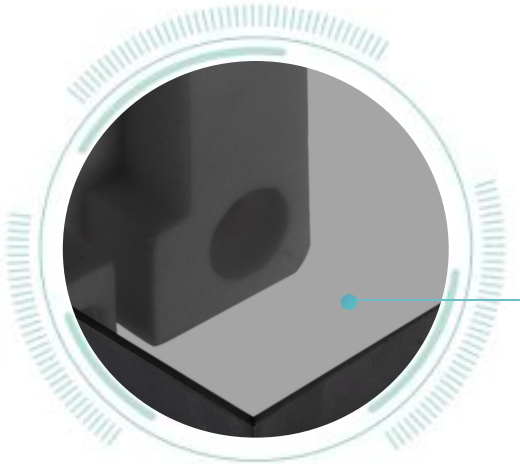
Parts

Efficient cutting tools, the teeth of industry

4.1.1 Super-Hard Cutting Tools | Solid PCD Micro-Edge Cutting Tools

Solid PCD Micro-Edge Cutting Tool

- Edge width **≥ 5μm**
- **No. of cutting edge ≤ 300**



- **Roughness ≤ 5nm**
- **Mirror finish**
- Milling instead of grinding
- SiC **HV2300**

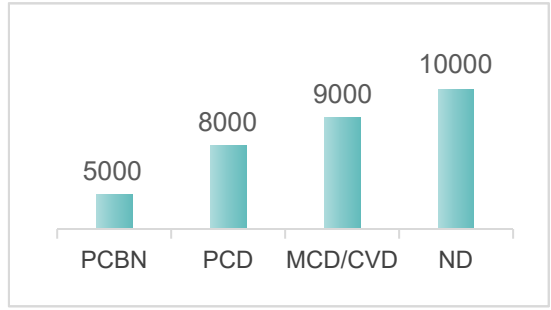
Hard-brittle material composites

High-efficiency, high-gloss and high-precision machining

Chinese and International Patents

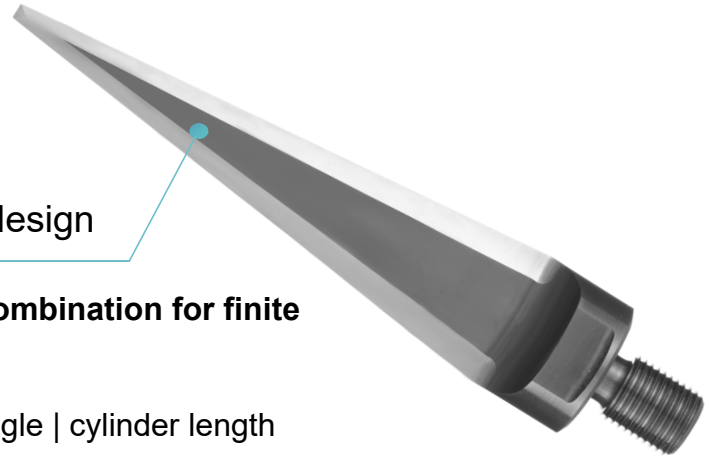
>60

Certificate of Japanese Patent of Invention



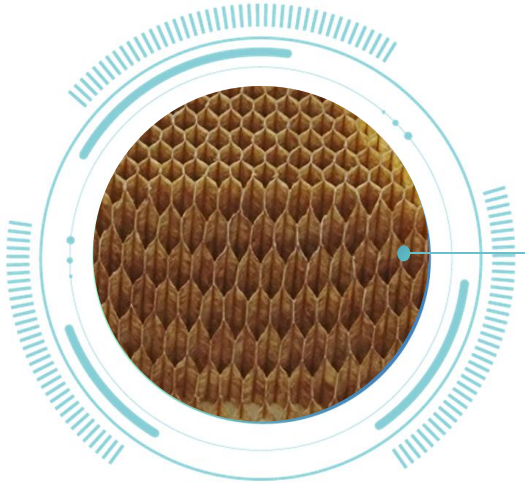
Super-hard Cutting Tools of Conprofe and Their Hardness (HV)

4.1.2 Solid Carbide Cutting Tools | Carbide Straight-Edge Cutting Blade



Ultrasonic matching design

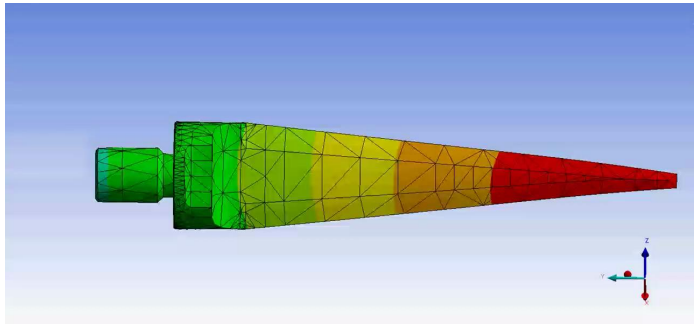
- **Optimal parameter combination for finite element analysis**
- Weight | thickness | angle | cylinder length diameter | acute angle of cutting edge



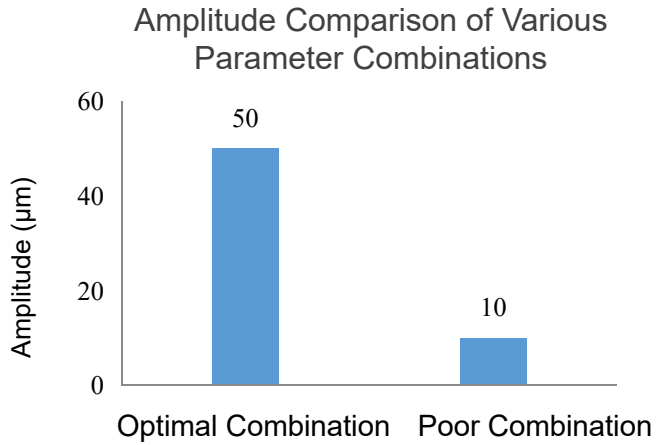
- Low dust generation and no burrs
- Smooth surface and neat cut

Honeycomb material

High-efficiency, high-quality and environmental-friendly machining

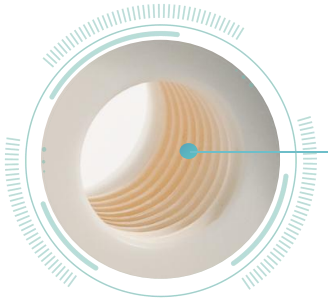


Modal Analysis - Ultrasonic Matching Design



4.1.3 Tapping Tools | PCD Thread Milling Cutter

- Patented cutting edge with microtexture design



- Thread tolerance up to **4H**
- Alumina (Al_2O_3) **HV1900**

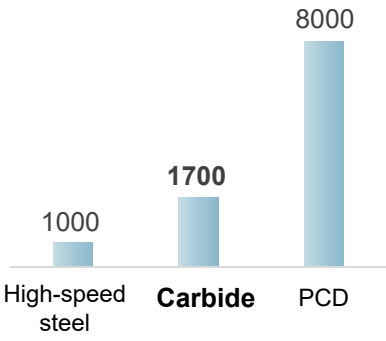
Hard-brittle material Composites

High-efficiency, high-quality and high-precision threading

Core patents

>10

Invention Patent Certificate



Tapping Tools of Conprofe and Their Hardness (HV)

4.1.4 Precision Tool Holders | Ultrasonic Tool Holders

Ultrasonic Spring Collet Tool Holder

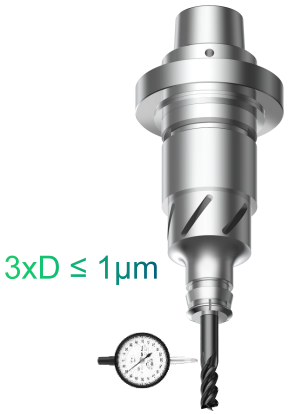
Patented dust-proof design

- Little innovation in design to solve tricky problem in work

Ultrasonic Shrink-Fit Tool Holder

- Clamping cycles **≥ 5,000**

Ultrasonic Press-Fit Tool Holder



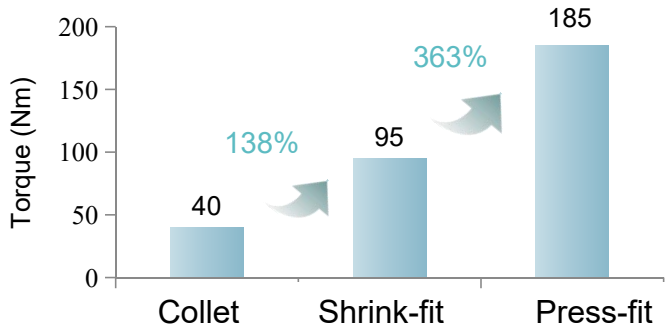
- **8 second** quick clamping

First in the industry

Ultrasonic Shrink-Fit Tool Holder

Ultrasonic Press-Fit Tool Holder

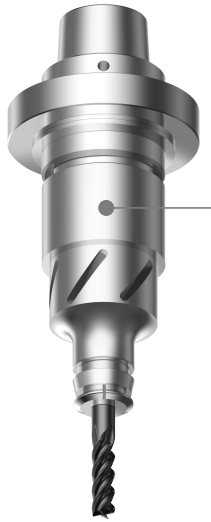
Comparison of Clamping Force of Tool Holders (D10)



4.2 PART 4.2 Units

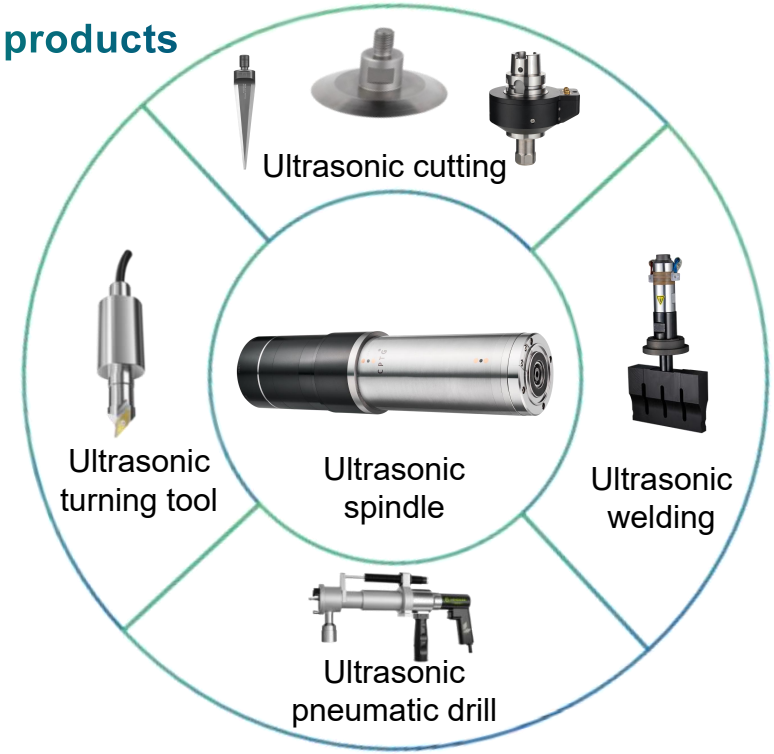
4.2A.1 Ultrasonic Technology | Product Series

The first company in the industry with five series of ultrasonic technology products



Ultrasonic machining system

- First Prize of Guangdong Science & Technology Progress Award



Chinese and international patents

>200

Countries and regions of export

>60

Customers

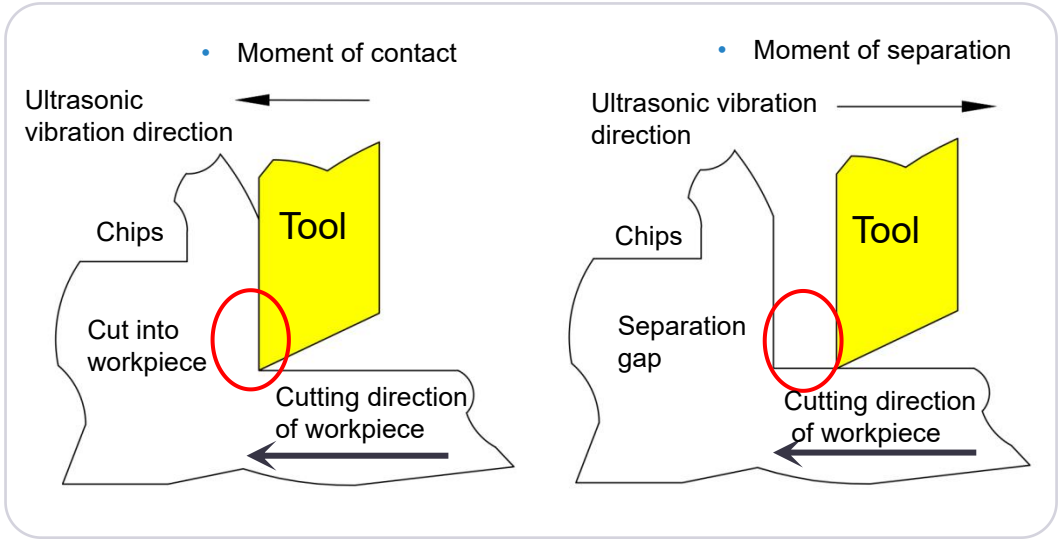
>4,000

Cumulative sales volume

>500,000

With **tens of thousands of** vibrations applied to the surface of the tool or workpiece per second, the tool and workpiece are **periodically contacted and separated**. The technology shows **five major benefits** over traditional machining.

Trajectory and algorithm of tool motion



$$\begin{cases} x_i = V_f \cdot t_i + r \cdot \sin\left[wt_i - (i-1)\varphi \right] \\ y_i = r \cdot t_i + r \cdot \sin[wt_i - (i-1)] \\ z_i = 0 \end{cases}$$

$$\begin{cases} x_i = V_f \cdot t_i + r \cdot \sin[wt_i - (i-1)\varphi] \\ y_i = r \cdot \cos[wt_i - (i-1)\varphi] \\ z_i = A \cdot \sin\left(2\pi f t_i + \psi\right) \end{cases}$$

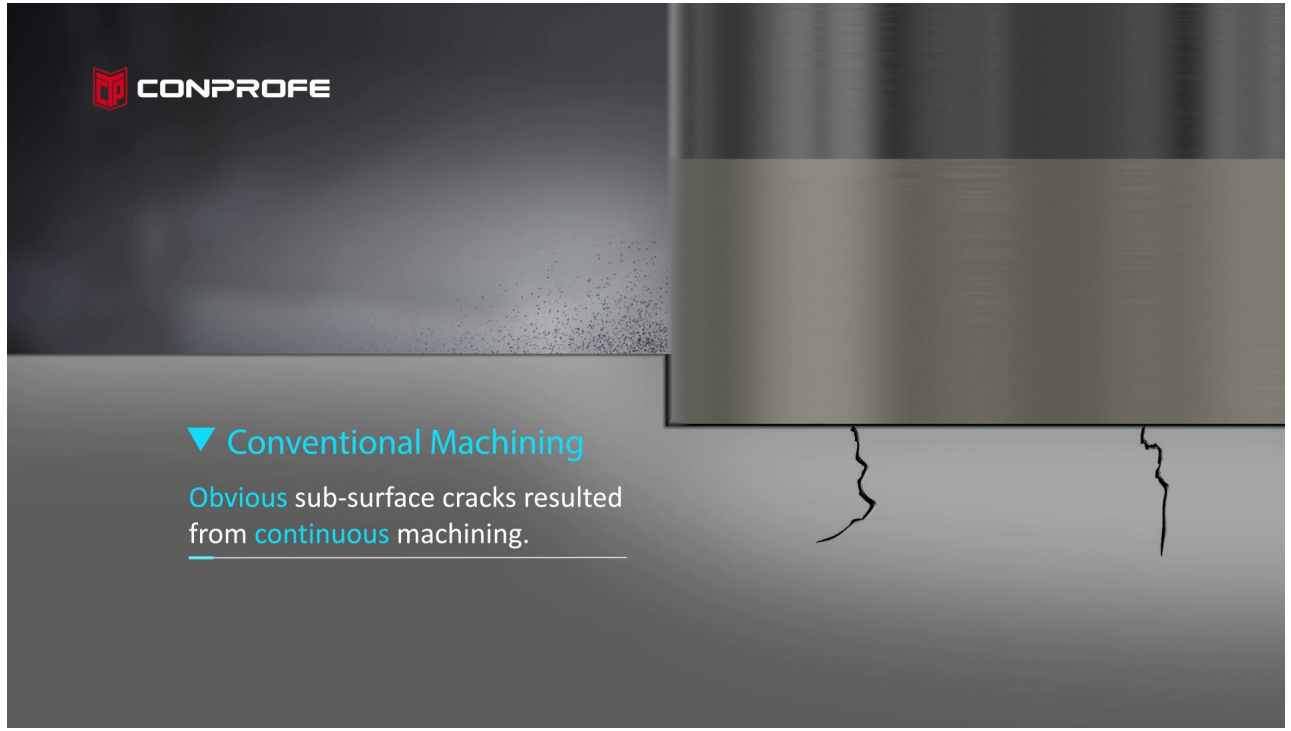
Five major benefits of ultrasonic machining

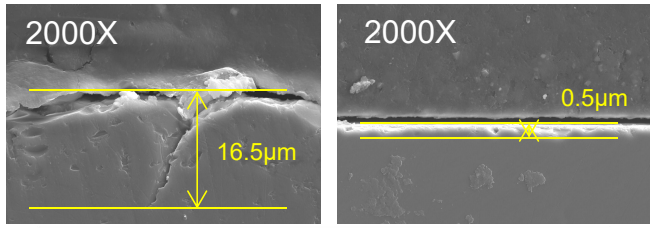
- Mitigated Microcrack Formation
- Improved surface quality
- Reduced burr size
- Reduced cutting force
- Longer tool life

4.2A.2.1 Ultrasonic Technology | Mitigated Microcrack Formation

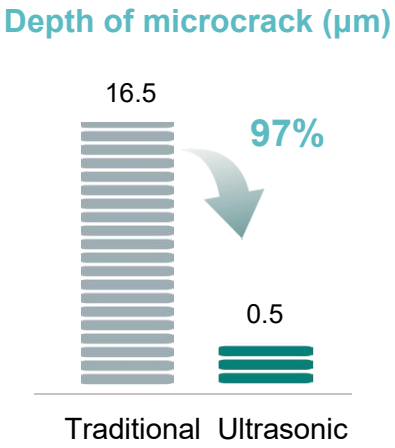
Benefits

Effectively inhibit formation of microcracks and deliver better surface quality



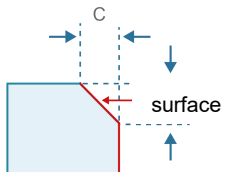


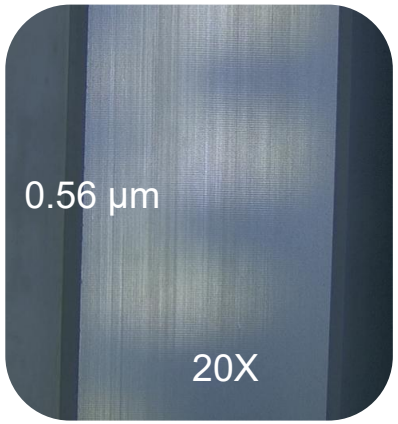
Traditional Ultrasonic



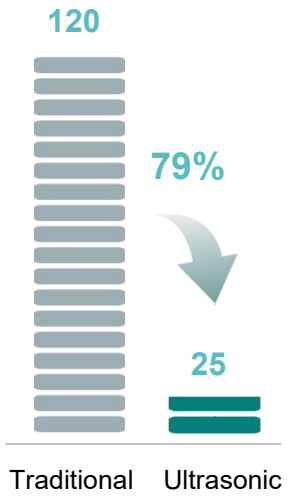
4.2A.2.2 Ultrasonic Technology | Improved Surface Quality

Quartz Glass Substrate of Photolithography Machine





Cycle Time (min)



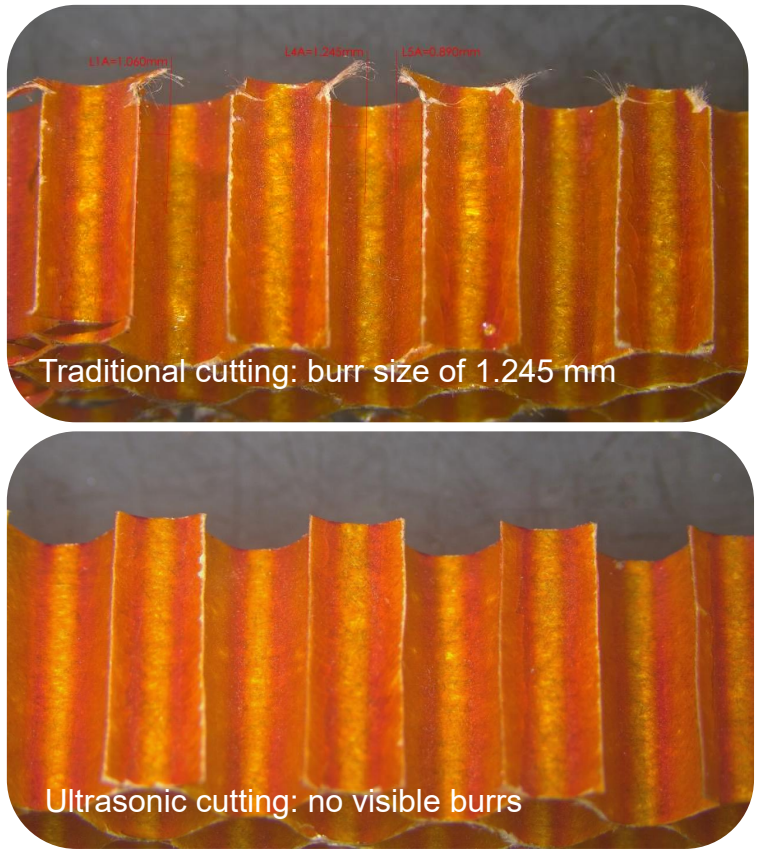
Side Wall Roughness Ra (μm)

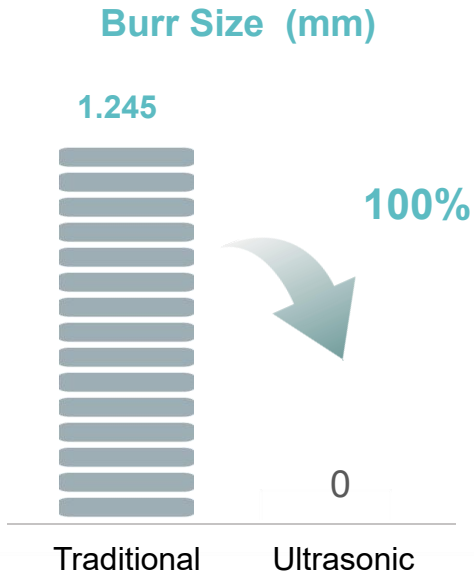
Benefits

+ Cycle time down by 79%
+ 82% reduction in side wall roughness Ra with ultrasonic machining

4.2A.2.3 Ultrasonic Technology | Reduced Burr Size

Honeycomb Material Cutting

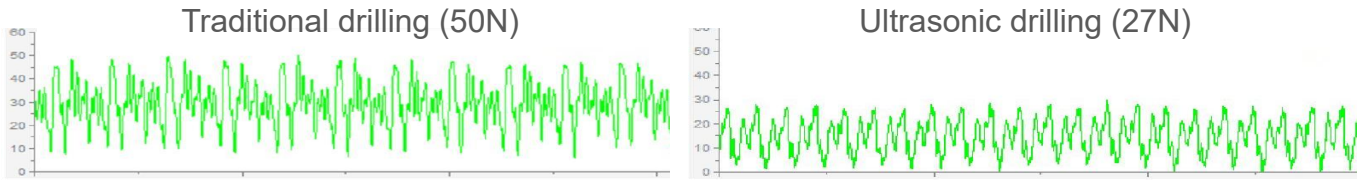


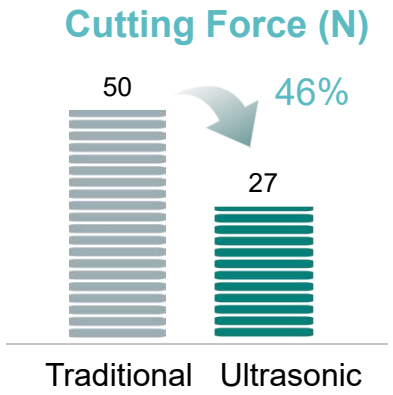


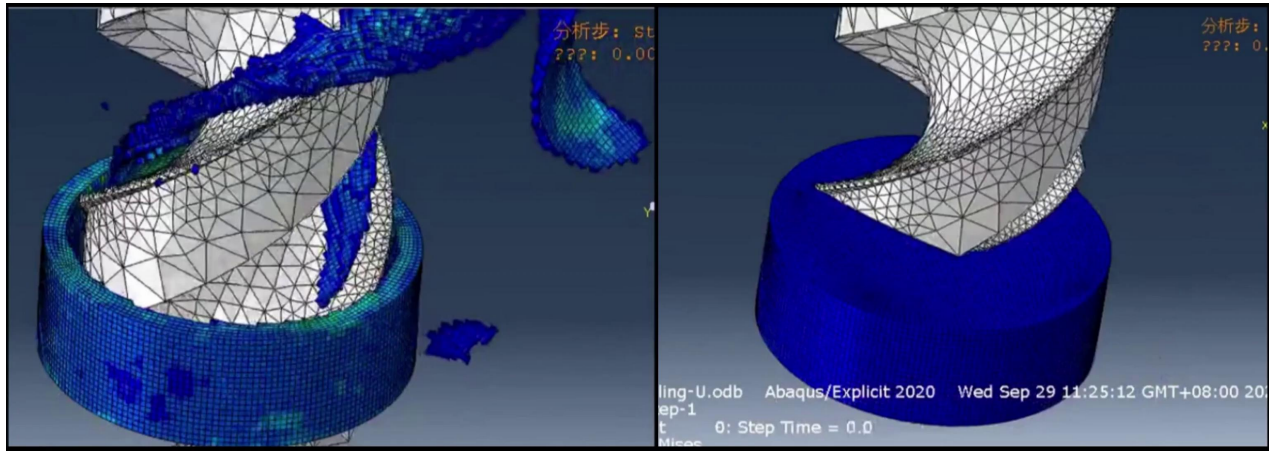
Benefits

+ Burr size of 1.245 mm with traditional cutting
+ No observable burrs with ultrasonic cutting

Comparison Between Traditional Drilling and Ultrasonic Drilling





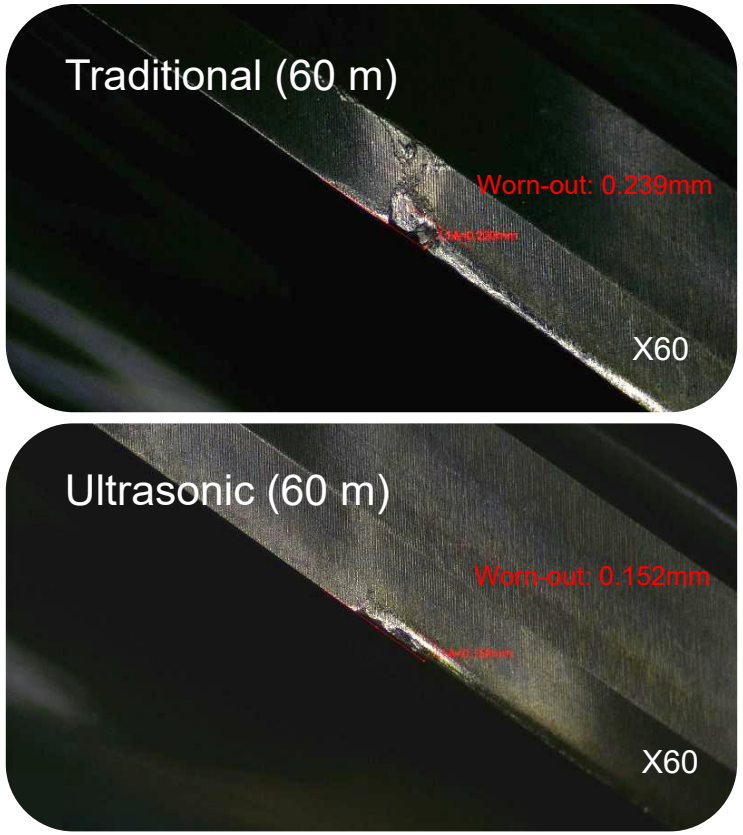


Benefits

+ Cutting force down by 46%
+ Better chip breakage and chip evacuation effect
+ Reduced tool wear rate, allowing for higher feeds and improved machining efficiency

4.2A.2.5 Ultrasonic Technology | Longer Tool Life

Superalloy (GH4169) Milling



Benefits

+ Drastically reduced cutting force
+ Tool wear down by 36%

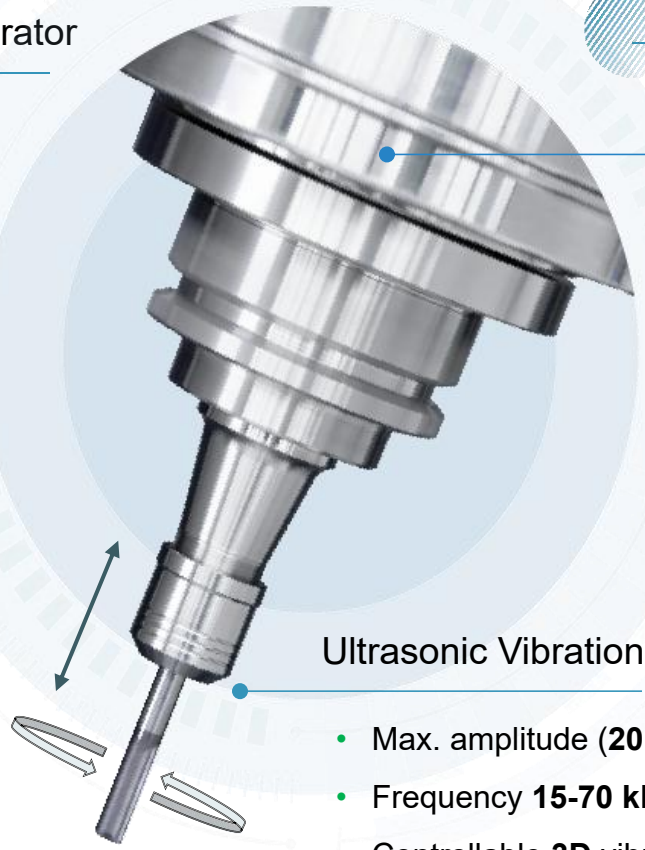
4.2A.3 Ultrasonic Technology | Highlight Technologies

Advantages of integrated ultrasonic system over add-on system **High intelligence | Stable structure | Better ultrasonic performance**

Intelligent Ultrasonic Generator

Five Highlight Technologies

- Max. power of **350W**
- Patented **sine wave drive**
- **Closed-loop** linear control of amplitude
- Adaptive control
- Communication of CNC controller



Ultrasonic System

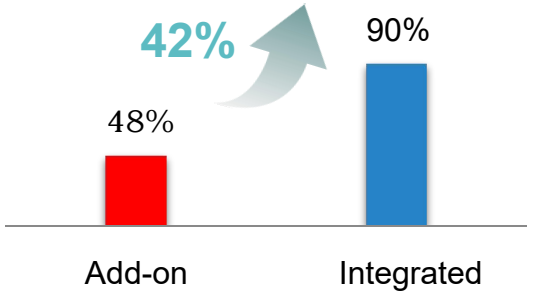
Integrated Structure

- Patented technology
- Gap of 0.5±0.1 mm
- Good interference resistance

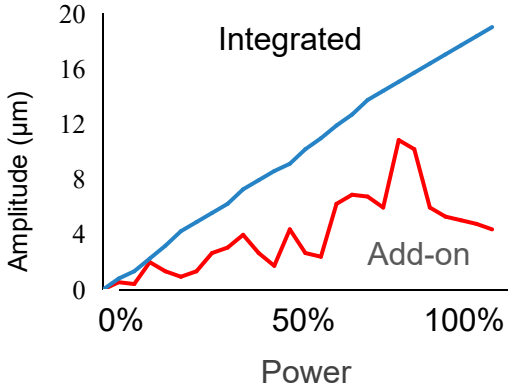
Ultrasonic Vibration

- Max. amplitude (**20μm**)
- Frequency **15-70 kHz**
- Controllable **3D** vibration

Comparison of Transmission Efficiency



Comparison of Amplitude Linearity



4.2A.4 Ultrasonic Technology | Hand-held Ultrasonic Pneumatic Drills

- Max. amplitude 18μm
- Frequency 15-50kHz
- Reduced cutting force
- Lower labor intensity

- Adjustable speed

Intelligent Ultrasonic Generator

- Max. power 200W
- DDS direct digital synthesis technology
- Dust-proof & explosion-proof

Tearing Length Comparison

4.2B.1 Green Technology | Product Series

The first company in the industry with five series of green technology products

Room temperature → Efficiency increase at room temperature → -78℃ → -90℃ → -196℃

MQL products

Minimum Quantity Lubrication MQL

Oil-on-Water Compositing OoW

Low-temperature cutting products

Supercritical CO2 Cooling System ScCO2

Cryogenic Air Blasting System Cryo-air

Cryogenic Liquid Nitrogen Cooling System Liquid N2

National **Key R&D Program Project "Key Generic Technologies of Clean Machining"**

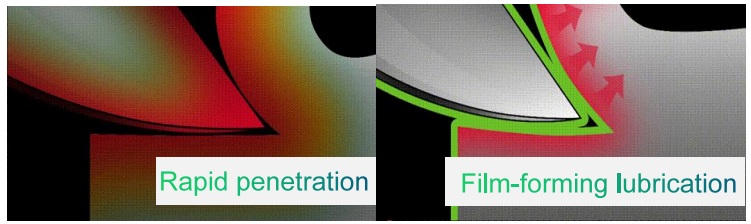
Chinese and International Patents **>60**

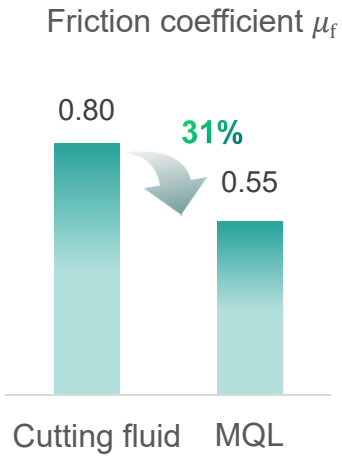
China Patent Excellence Award

4.2B.2 Green Technology | Technical Principles and Advantages

MQL cutting principle

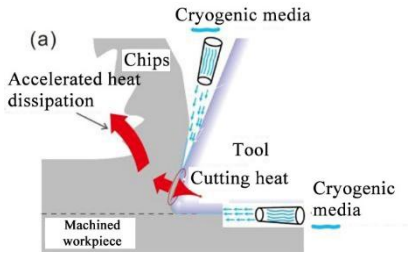
- Atomize the mixture of compressed air and **minimum lubricating oil** to **micron-sized aerosol particles**
- Aerosol particles rapidly penetrate the cutting interface to form a film for lubrication
- Effectively reduce the friction coefficient and realize **efficient cutting lubrication**

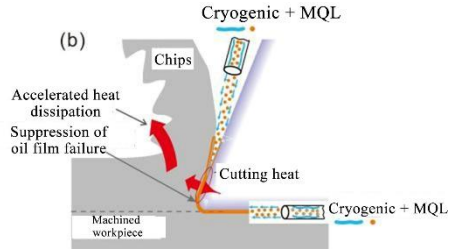


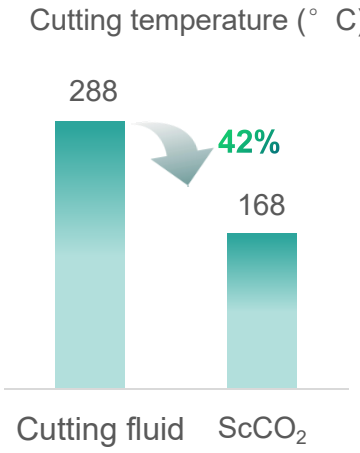


Principle of cryogenic cutting

- Use cryogenic or ultra-cold media to achieve efficient cooling
- **Accelerate heat dissipation in the cutting zone** to suppress tool wear







Five advantages of clean machining

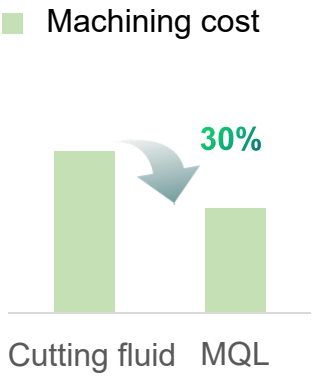
- Improve the cooling & lubrication effect
- Improve surface quality
- Extend tool life
- Reduce machining costs
- Achieve energy conservation and emission reduction

4.2B.3 Green Technology | MQL Cooling System

Aerosol particles **≥1 μm**
Aerosol response time **≤0.1s**
Oil quantity required for adaptation: **5~30 ml/h**

Precise minimum quantity lubrication
Zero liquid waste discharge
Biodegradable

Replace traditional cutting fluid to **achieve energy saving, cost reduction and efficiency improvement**



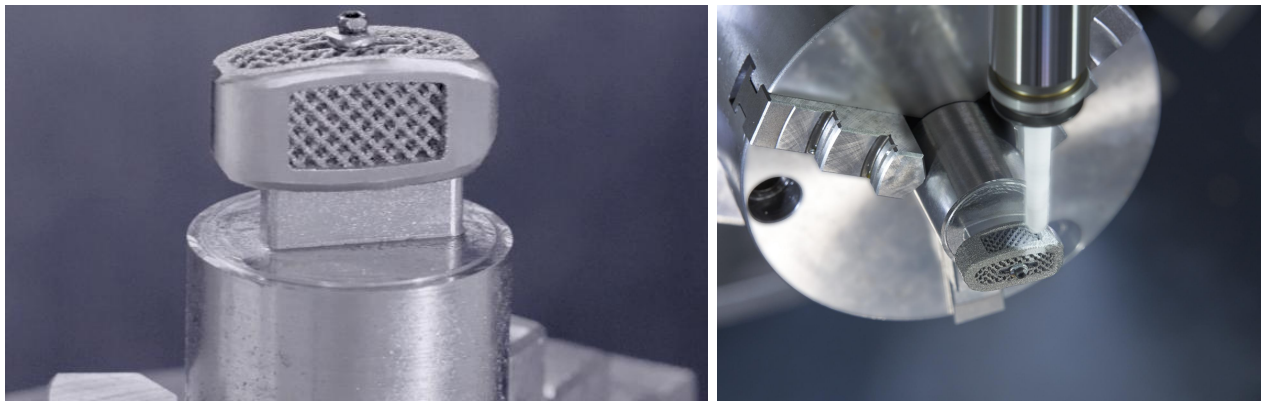
Total machining cost down by 30%, including

- Cutting fluid | Waste liquid treatment | Machining tools | Power consumption

4.2B.4 Green Technology | Supercritical CO_2 Cryogenic Cooling System

- PLC fully automatic control
- **Adaptive CO_2 internal spray pressure**
- **Precise transportation of supercritical CO_2fluid**
- Integrating MQL

- Efficient **cryogenic cooling**
- Inhibit **oxidative wear**
- Reduce machining burrs

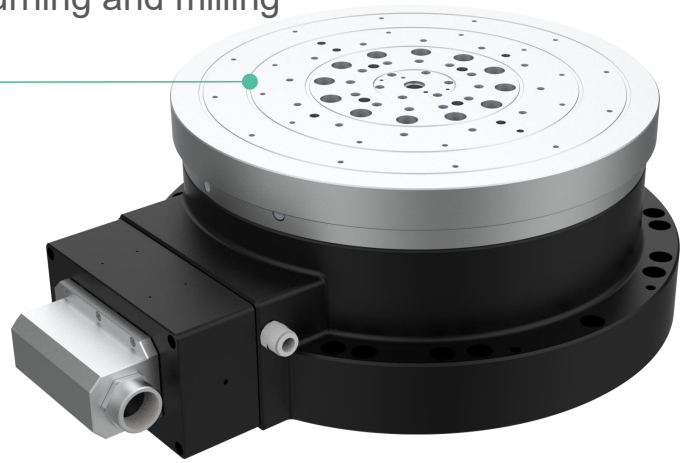


Medical implant parts and units, milling of 3D-printed titanium alloy spinal cage

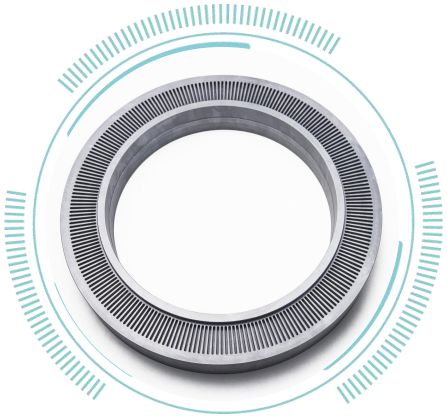
+ Cycle time **down by 52%**
+ Tool life **extended by 50%**
+ Burrs inhibition, requiring no manual removal
+ High-efficiency and high-quality green machining

4.2C.1 Precision Mechanical Units & Parts | DDR Vertical High-speed Rotary Table

High-speed turning and milling
1500 rpm



- The best choice for high-efficiency and high-quality milling and grinding of hard-brittle materials

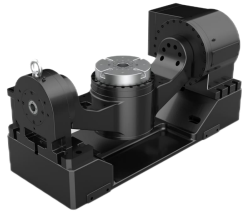


Polysilicon

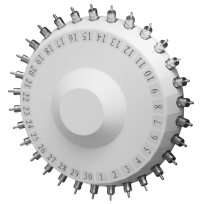
Labyrinth seal protection design, to cope with **extremely dusty** and harsh working conditions

Core patents
>100

Cumulative sales volume
>100,000 sets



5-axis rotary table

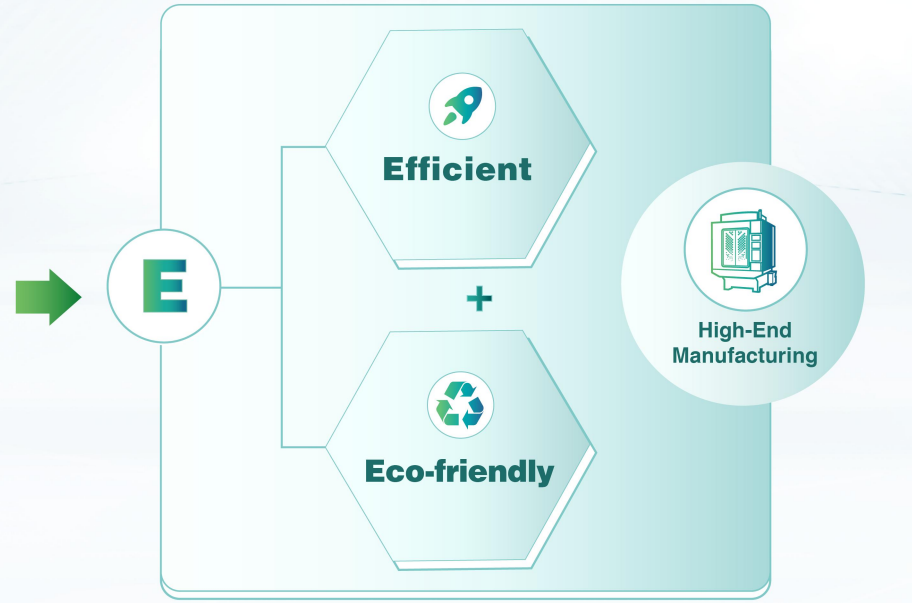


Disc-type tool magazine (DTM)

4.3 PART 4.3 Machines

Flexible combination of five core technologies

- **M** MQL (Minimum Quantity Lubrication)
- **U** Ultrasonic
- **S** $ScCO_2$ (Supercritical Carbon Dioxide)
- **C** Cryogenic Air Blasting
- **L** LN_2 (Liquid Nitrogen)



Achieving efficient and eco-friendly high-end manufacturing

The first CNC machine tool company in the industry
that perfectly integrates ultrasonic technology with green technology

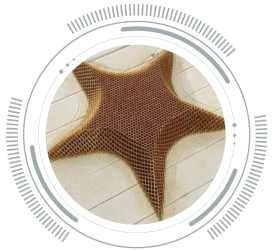
Conprofe Ultrasonic Machine Tool Series

10 Models 32 Series 188 Specifications

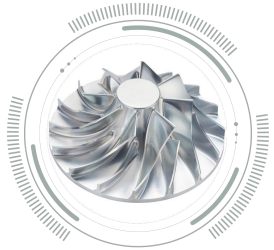
4.3.3 Advantageous Application Scenarios | 3+A

Hard-brittle Materials

Composite Material



Hard-to-cut Metals



3

Superior Machining performance for 3 Material Categories

Hole drilling (all materials)

PEEK | Cast iron | Aluminum Alloy | Titanium Alloy | HRC56 Mole Steel | Carbon-Ceramic Composite | Sapphire | Silicon Carbide

A

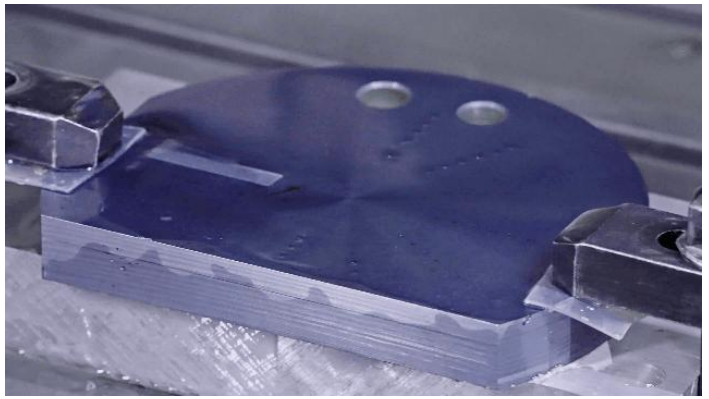
Superior Hole Drilling Performance In All Materials

Labyrinth structure
Three-layer protection

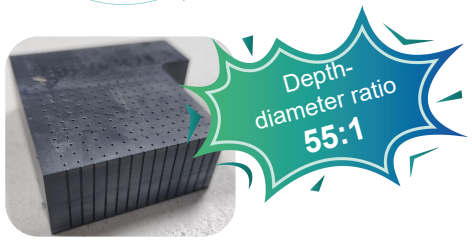
linear encoder
Fully closed control

Ultrasonic electrical spindle

On-machine measurement



Machining product



Single crystal silicon showerhead
D0.45x24.75mm blind hole

Integrated solution

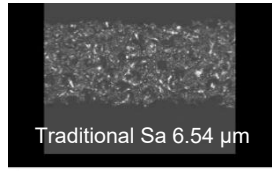
+ Ultrasonic machining system
+ Solid PCD micro drill

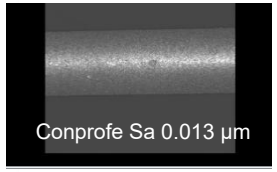
Machining advantages

+ Drill life ＞ 2000 holes
+ Hole roundness up to 0.003 mm
+ Hole wall roughness Sa ＜ 0.013 μm

Data comparison

Hole wall roughness Sa (μm)





4.3.4.2 Typical Machine Tools and Cases | Ultrasonic Rainbow-Finish Machining Center

Ultrasonic machining system

MQL

Unique highlight rainbow-finish machining system

Machining product

3C Logo

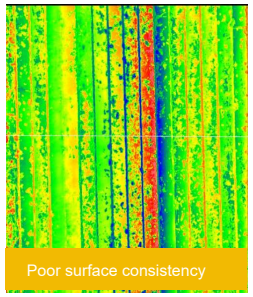
Integrated solution

+ Ultrasonic machining system
+ MCD cutting tool
+ High-frequency vibration scraping

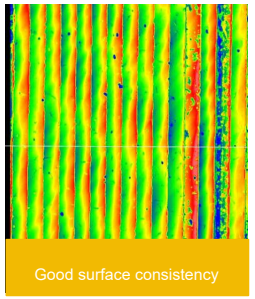
Machining benefits

+ Regular surface microstructure and fine tool marks
+ Unique highlight with rainbow-finish

Appearance comparison



Traditional

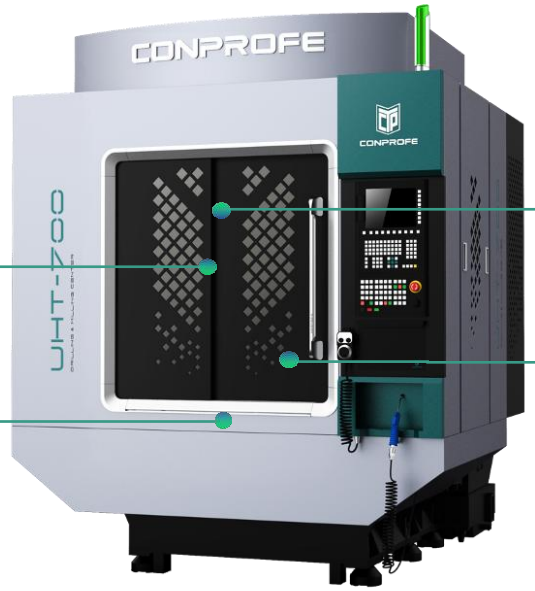


Conprofe

4.3.4.3 Typical Machine Tools and Cases | Ultrasonic Drilling and Milling Center

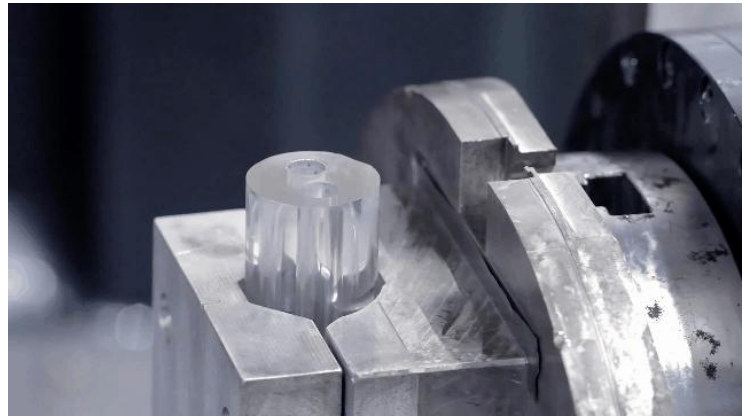
Max. ultrasonic spindle speed up to 30,000 rpm

Labyrinth structure
Three-layer protection



Original 36T tool magazine

Special rust-proof treatment



Machining product

Quartz glass optical fiber (D30)
2 through-holes drilling (D7.8x250mm)

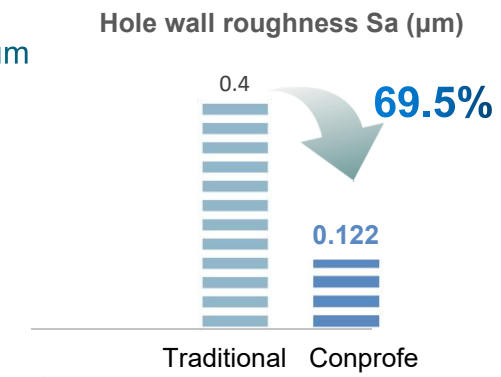
Integrated solution

+ Ultrasonic machining system
+ Coolant-through spindle

Machining benefits

+ Hole wall roughness Sa < 0.122 μm
+ Parallelism between two holes <0.013 mm
+ Straightness between two holes <0.008 mm

Data comparison



4.3.4.4 Typical Machine Tool and Case | Ultrasonic Precision Vertical Machining Center

Ultrasonic machining system

Labyrinth structure
Three-layer protection

HSK-A63 electric spindle
Max. speed up to 24,000 rpm

linear encoder
Fully closed control

Workpiece: AlSiC Brake Disc (D258×46mm)
Requirement: D4×44.5mm Hole Drilling **(Depth-to-Diameter: 11:1)**

Machining product

AlSiC brake disc
(Silicon content over 70%)
D4 × 45.5mm drilling

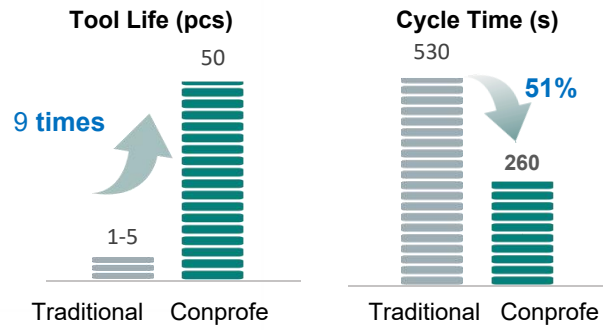
Integrated solution

+ Ultrasonic machining system
+ Solid PCD drill

Machining benefits

+ No burrs or flanging at hole edge
+ Tool life extended by 9 times
+ Machining efficiency increase by 51% per hole

Data comparison



4.3.4.5 Typical Machine Tool and Case | Ultrasonic Precision Graphite Machining Center

Labyrinth structure
Three-layer protection

linear encoder
Fully closed control

Ultrasonic machining system

Standard dust collection system

Machining product

Green ceramic watch

Integrated solution

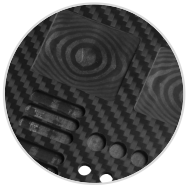
+ Ultrasonic machining system
+ Solid PCD cutting tool

Machining advantages

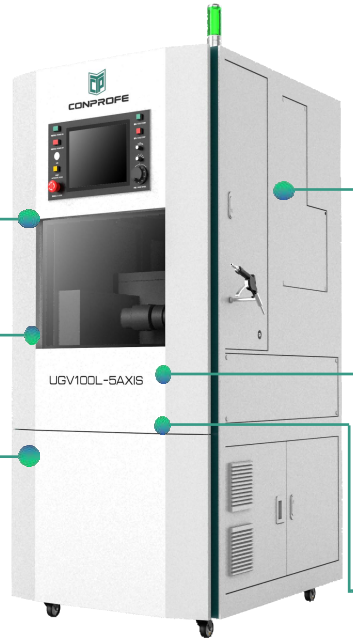
+ Even surface texture
+ Significant reduction of crack
+ Tool life extended by 2 times

Application scenarios

Graphite | Green ceramic ware | Carbon fiber composite



4.3.4.6 Typical Machine Tools and Cases | Ultrasonic Lightweight 5-axis Denture Machining Center



Ultrasonic machining system

Coolant-through MQL

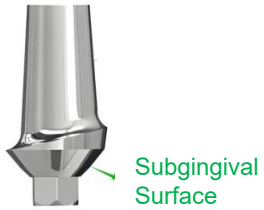
Built-in storage silo with 20 slots

Conprofe M30 controller

Original concealed
10T tool magazine

High-precision machining
Positioning accuracy to 0.005 mm
Repeatability of 0.003 mm

Machining product



Titanium alloy abutment

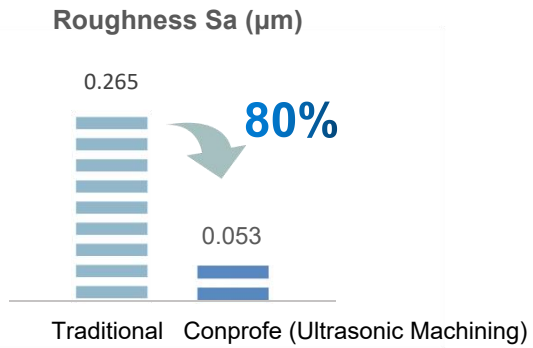
Integrated solution

+ Ultrasonic machining system
+ Minimum quantity lubrication (MQL)
+ Coolant-through ring spray cutting tool

Machining benefits

+ Polish-free subgingival abutment
+ Surface roughness Sa＜0.053 μm

Data comparison



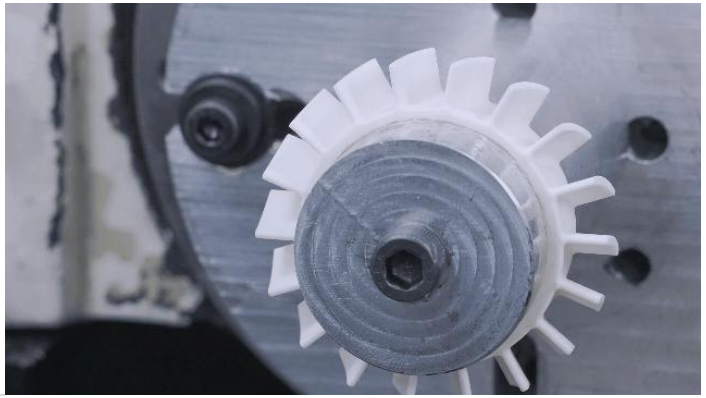
4.3.4.7 Typical Machine Tool and Case | Ultrasonic Graphite Vertical 5-axis Machining Center

Ultrasonic machining system

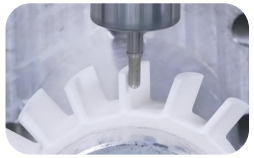
Labyrinth structure
Three-layer protection

Bridge gantry structure

Standard dust collection system



Machining product



AIO ceramic blisk

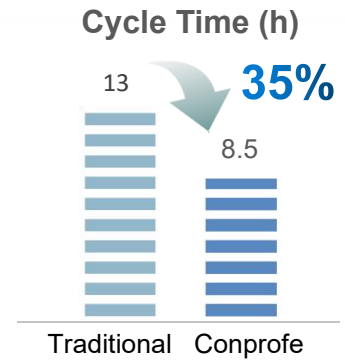
Integrated solution

+ Ultrasonic machining system
+ PCD micro-edge cutting tool

Machining benefits

+ Reduced ceramic sub-surface damage
+ Significantly reduction of crack
+ Tool life extended by 2 times
+ Cycle time down by 35%

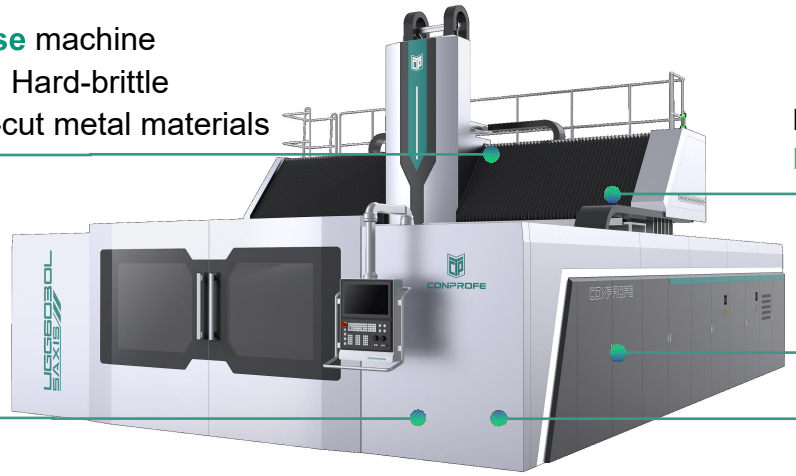
Data comparison



4.3.4.8 Typical Machine Tool and Case | Ultrasonic Gantry 5-axis Simultaneous Machining Center

Original **multi-purpose** machine
Composite materials | Hard-brittle materials | Difficult-to-cut metal materials

X\Y axis linear motor
Fast traversing speed
90m/min



High quality slip rings
No toner | Low impedance | Long life

Ultrasonic machining system
Super-large amplitude **50 μm**

Max. speed of ultrasonic cutting
4,000 rpm
(Competitor's max. speed 3,000 rpm)

Machining product

Nomex honeycomb

Small angle (<20 °) contour machining

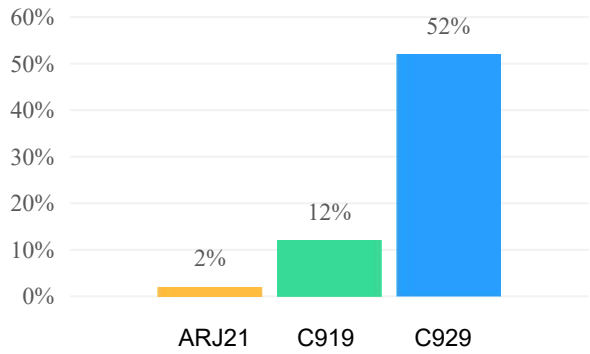
Integrated solution

+ Ultrasonic machining system
+ Ultrasonic shrink-fit tool holders
+ Professional post-treatment system

Machining benefits

+ Efficient machining of complex 3D contours
+ No observable burrs or dust
+ Smooth surface and neat cut

Proportion of composites



The first 3-in-1 ultrasonic machine tool in the industry

Ultrasonic | Supercritical CO_2 | MQL

46% cutting force ↓ | 42% cutting temperature ↓ | 31% friction coefficient ↓

40T-120T chain type tool magazine

Gantry frame structure

High accuracy | Large load DDR rotary table

Machining product

Superalloy blisk

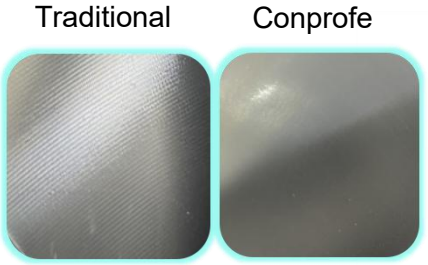
Integrated solution

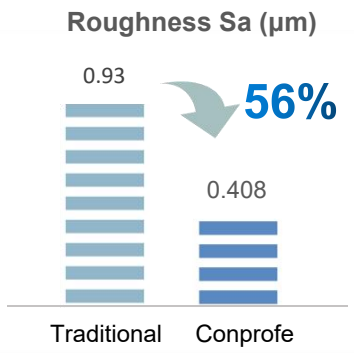
+ Ultrasonic machining system
+ Supercritical CO_2 Cryogenic Cooling System
+ Ultrasonic shrink-fit tool holders
+ MQL through-spindle cooling system

Machining benefits

+ Reduced chatter marks at thin wall of blade
+ Surface roughness Sa < 0.408 μm, reduced by 56%

Data comparison





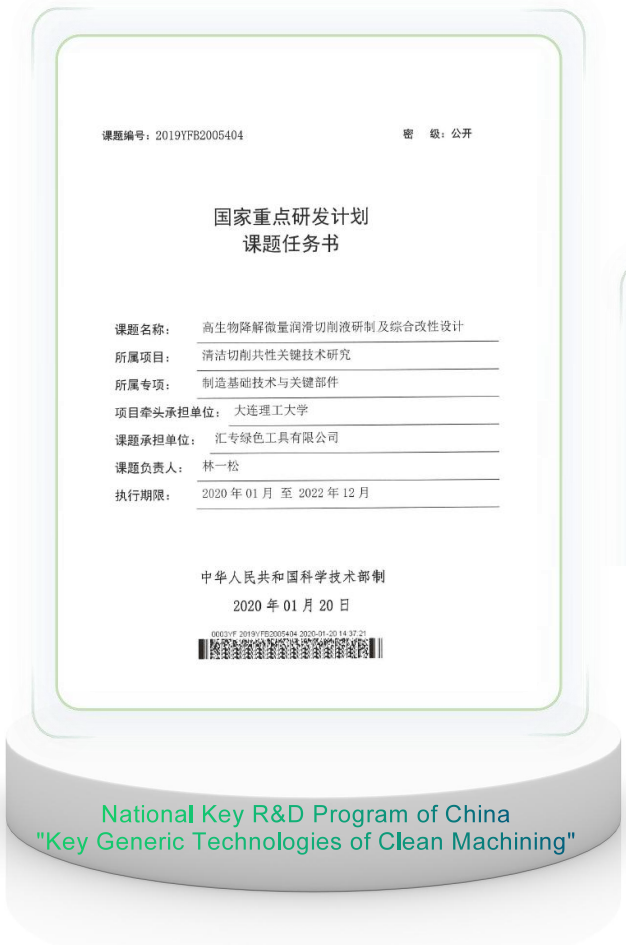
05 PART FIVE
Customers in Industries

5.1 Customers by Industries

Semiconductor	Aviation	Medical	Consumer Electronics	Automotive	Education	General Precision Manufacturing
SAMSUNG	CASC	mindray 迈瑞		HONDA	清华大学 Tsinghua University	GREE 格力
富创精密 FORTUNE PRECISION	COMAC 中国商飞	yuwell 鱼跃	Microsoft	TOYOTA	华南理工大学 South China University of Technology	美的 Midea
SK hynix	太平洋石英 PACIFIC QUARTZ	JUST MEDICAL	SAMSUNG	NISSAN	大连理工大学 DALIAN UNIVERSITY OF TECHNOLOGY	Haier 海尔
Dongbu HiTek	AVIC 中航工业	大博医疗 DOUBLE MEDICAL	HUAWEI	广汽埃安 GAC AION	中国石油大学 CHINA UNIVERSITY OF PETROLEUM	Hisense 海信
Kaide Quartz 凯德石英	中国工程物理研究院	爱康医疗 AKMEDICAL	LENS	BYD	北京科技大学 University of Science and Technology Beijing	DEC
KFMI	CSSC	乾晖医疗科技 QP MedTech	JABIL	理想	大连工业大学 Dalian Polytechnic University	LUXOTTICA
Hanntek	中国航发 AECC	Aipu 爱普	ASUS	小米汽车	长春工业大学 Changchun University of Technology	ASMPT enabling the digital world
orange	CASIC		FOXCONN	蔚来 NIO		
Heraeus	CETC 中国电科		LUXSHARE ICT 立讯精密	极氪		
			xiaomi	吉利汽车 GEELY AUTO		
				长城汽车		
				奇瑞汽车		

06 PART SIX CSR

Adhere to green development, focus on ultrasonic technology and green technology, strive for an **efficient, green and intelligent product matrix and production system**. The Company has been rated as a "Green +" enterprise and has participated in the National Key R&D Program of China (2004) and the State Key Research and Development Plan. The Company unswervingly advocates and implements the national strategy for achieving "peak carbon dioxide emissions" and "carbon neutrality".


课题编号：2019YFB2005404　　密　级：公开

国家重点研发计划
课题任务书

课题名称：高生物降解微量润滑切削液研制及综合改性设计
所属项目：清洁切削共性关键技术研究
所属专项：制造基础技术与关键部件
项目牵头承担单位：大连理工大学
课题承担单位：汇专绿色工具有限公司
课题负责人：林一松
执行期限：2020 年 01 月 至 2022 年 12 月

中华人民共和国科学技术部制
2020 年 01 月 20 日

National Key R&D Program of China
"Key Generic Technologies of Clean Machining"


附件

黄埔区、广州开发区 2021 年度第三批
“绿+”企业和绿色企业名单

“绿＋”企业名单

序号	名称	序号	名称
28	[redacted]	39	[redacted]
29	科益展智能装备有限公司	40	[redacted]

"Green +" Enterprise

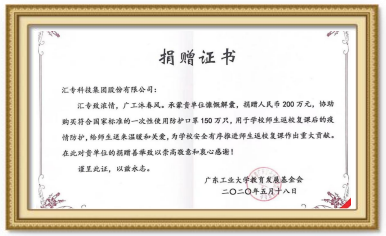
Peak carbon dioxide emissions
Carbon neutrality

6.2 CSR

Spreading positive energy. Start small and take the initiative to give back to the community as much as we can. Over the past three years, we have donated more than **RMB 20 million** in total.

Go all out to support the fight against COVID-19

- The Company produced anti-epidemic materials in response to the call of the People's Government of Guangdong Province, and was rated as an "Enterprise with Significant Contribution to Guangdong's Supplies for COVID-19 Prevention and Control".
- Donations were made to the Red Cross Society of China Hubei Branch, Guangdong University of Technology and other organizations to support the fight against COVID-19 and school resumption.



Promote talent cultivation in colleges and universities

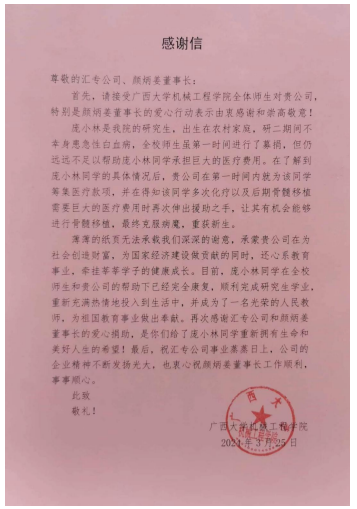
- Donations were made to Harbin Institute of Technology, Nanjing University of Aeronautics and Astronautics and other universities to promote talent cultivation in colleges and universities.

Support the development of education in remote areas

- Donations were made to Ningxia Charity Federation Guangdong Education Foundation and other units to support the development of education in remote areas.

Subsidize graduate students with leukemia

- Donations were made to graduate students with leukemia in IUR cooperation universities to fully fund surgical treatment.



The first CNC machine tool company in the industry that perfectly integrates ultrasonic technology and green technology

850+
Chinese and International Patents

6
CONTINENTS

70+
COUNTRIES & REGIONS

WeChat official account of Conprofe Group

WeChat video account of Conprofe Group