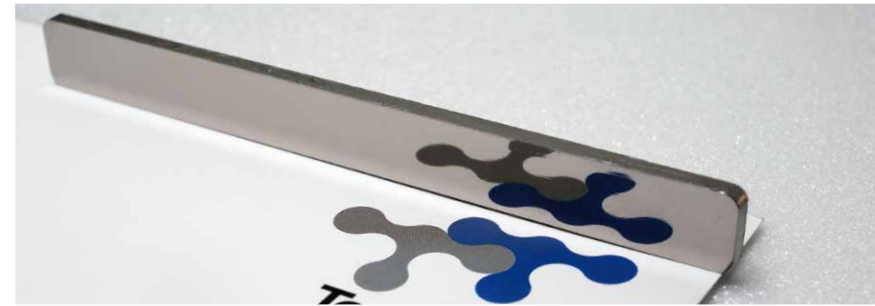
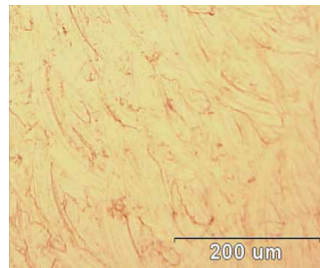


Machining examples of metal ▪ Machine dimensions

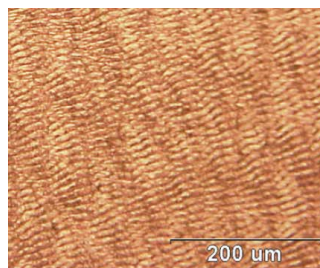
Liquid metal polishing



Roughness
Rmax 1.48 μm
Rz 1.28 μm
Ra 0.204 μm



AI-6061
Without ultrasonic
Rmax 3.28 μm
Rz 3.13 μm
Ra 0.44 μm



AI-6061
With ultrasonic
Rmax 1.28 μm
Rz 1.43 μm
Ra 0.204 μm

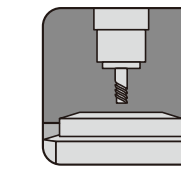
Machine dimensions

Unit : mm



Specifications

Item	Specification	Unit	VU-5
Table	Table size (L×W)	mm	600x400
	Max. table load	kg	250
	Table height from floor	mm	850
Spindle	T-slot (size×No.)	mm	18 x 3
	Spindle taper		7/24 Taper No.30
Stroke	Spindle speed	rpm	20,000
	X/Y/Z axis stroke	mm	510/400/350
Feed	Spindle nose to table	mm	178~528
	X/Y/Z axis rapid traverse	m/min	48/48/48
ATC	Cutting feedrate	mm/min	1~20,000
	Tool shank		BBT30
	Tool capacity	pc	20
	Max. tool diameter	mm	Ø68
Motor	Max. tool length	mm	200
	Max. tool weight	kg	3
	Spindle motor	kW	2.2/3.7
Machine size	X/Y/Z servo motor	kW	1.8/1.8/1.8
	Coolant motor	kW	0.19
	Wide × Depth × Height	mm	1,984 x 2,300 x 2,755
Controller	Weight	kg	2,900
			FANUC 0i-MD, SIEMENS 828D MITSUBISHI M70



Rotary type Ultrasonic assisted machining center

VU-5



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VU-5_2016.10.13


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Rotary type Ultrasonic assisted machining center VU-5

PZT vibrator and horn

The excellent ultrasonic control technology can ensure the stability of long-term machining. Frequency scanning and power setting can be completed automatically by controller to improve productivity.



ER11 collet

Tool

Max. speed 20,000 rpm

Vibration frequency 15~45 kHz

1. The excellent ultrasonic control technology can ensure the stability of long-term machining. Frequency scanning and power setting can be completed automatically by controller to improve productivity.
2. Periodical tool axial vibration (15-45 kHz) decreases the cutting resistance and increases the surface quality.
3. Modular design, equipped with BBT-30 tool holder and high speed spindle, allows high efficiency machining.
4. Coolant through spindle is available for chip disposal and to reduce tool wear caused by temperature rise and cutting resistance.
5. The roughness of metal cutting surface is around Ra 0.2 μm, it reduces the polishing procedure and achieves the quality of final finishing.
6. The ultrasonic machining technology not only reduces chipping but also has the ability to process microhole machining on hard and brittle materials.

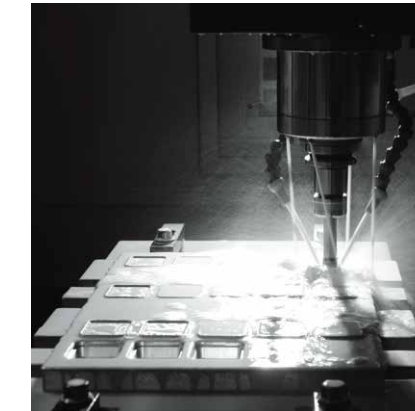
Medical industry
Artificial crown machining



Automotive industry
Valve deburring



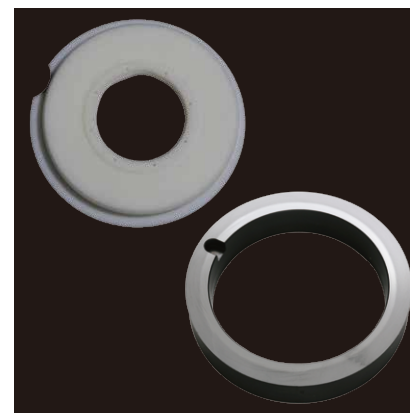
Die & mold industry
Surface finishing



Aerospace industry
Surface finishing



Precise ceramic industry
Roughing and finishing



Glass industry
Drilling, polishing, chamfering



Hard and brittle materials killer

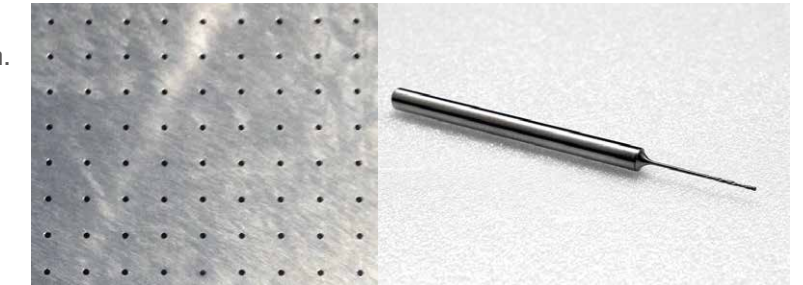
Sapphire, Zirconia, Ceramic, Glass, Hardened steel etc...

Silicon wafer drilling

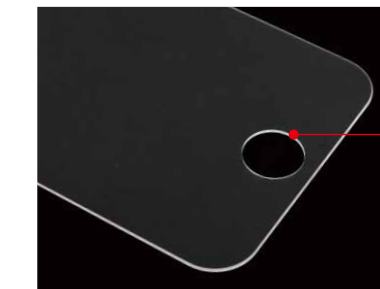
Tool diameter Ø0.5 mm, cutting depth 10 mm.

Tool life

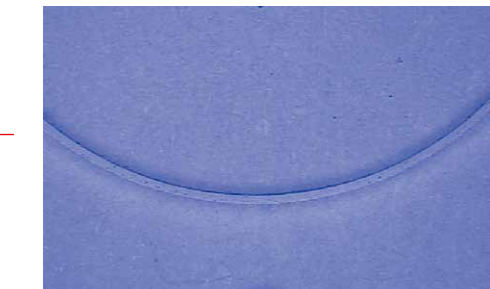
without ultrasonic : 3 holes
with ultrasonic : 236 holes



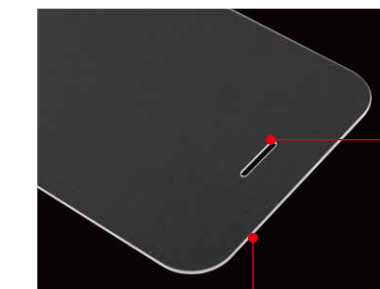
Sapphire glass machining



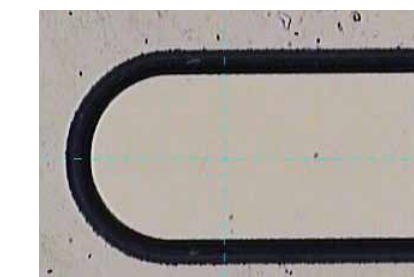
Circular hole



Machining method :
Drilling & Polishing
Workpiece spec. : Ø11 hole
Workpiece thickness : 0.4 mm
Cycle time : 17 sec



A Slot



Machining method :
Drilling & Polishing
Workpiece spec. : slot, Ø1 x L10 mm
Workpiece thickness : 0.4 mm
Cycle time : 77 sec

B Profile



Machining method : Polishing & chamfering simultaneously
Workpiece spec. : 4"
Workpiece thickness : 0.4 mm
Cycle time : 44 sec

No crush

Aluminium oxide ceramic machining

Rmax 12 μm
Rz 8.52 μm
Ra 1.28 μm

