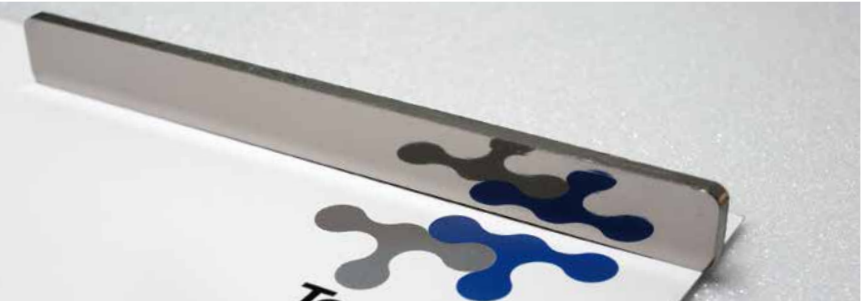
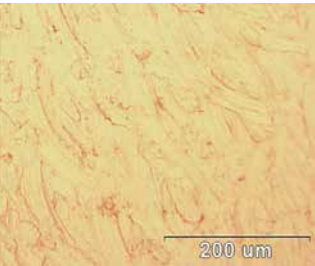


Machining examples of metal ▪ Machine dimensions

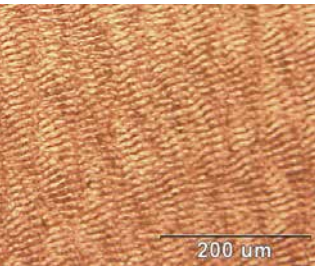
Liquid metal polishing



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



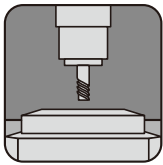
AI-6061
With ultrasonic
Rmax 1.28 μm
Rz 1.43 μm
Ra 0.204 μm

Machine dimensions



Specifications

Item	Specification	Unit	VU-5
Table	Table size (L×W)	mm	850x410
	Max. table load	kg	250
	Table height from floor	mm	900
	T-slot (size×No.)	mm	18 x 3
Spindle	Spindle taper		7/24 Taper No.30
	Spindle speed	rpm	20,000 (24,000)
Travel	X/Y/Z axis travel	mm	510/400/350
	Spindle nose to table	mm	200~550
Feed	X/Y/Z axis rapid traverse	m/min	48/48/48
	Cutting feedrate	mm/min	1~20,000
ATC	Tool shank		BBT30
	Tool capacity	pc	20 (30)
	Max. tool diameter	mm	Ø80
	Max. tool length	mm	200
	Max. tool weight	kg	3
Motor	Spindle motor	kW	3.7/2.2
	X/Y/Z servo motor	kW	1.8/3.0/3.0 [1.8/3.0/3.0] [1.8/3.0/1.8]
	Coolant motor	kW	0.37
Machine size	Wide × Depth × Height	mm	2,000 x 3,810 x 2,560
	Weight	kg	4,200
Controller	SIEMENS 840D [SIEMENS 828D] [Fanuc 0i-MF]		



Ultrasonic Assisted Machining Center

VU-5



Tongtai Tongtai Machine & Tool Co., Ltd.

Headquarters
No.3, Luke 3rd Rd., Luzhu Dist., Kaohsiung City 82151, Taiwan
TEL : 886-7-9761588 FAX : 886-7-9761589
www.tongtai.com.tw

Taoyuan Branch	TEL : +886-3-4551399	FAX : +886-3-4559730
Taichung Branch	TEL : +886-4-23589600	FAX : +886-4-23589993
Japan Branch	TEL : +81-047-712-0835	FAX : +81-047-712-0870
Europe Branch	TEL : +31-161-454639	
Malaysia Branch	TEL : +603-78597113	FAX : +603-78597115
Vietnam Branch	TEL : +84-24-62766090	
Thailand Branch	TEL : +66-2-3164708-10	FAX : +66-2-3164711
Indonesia Office	TEL : +62-21-45850875	FAX : +62-21-45850876

Members of TTGroup

Honor Seiki Co., Ltd.
TEL : 886-7-9759888
FAX : 886-7-9759999
www.honorseiki.com

Asia Pacific Elite Corp.
TEL : 886-4-23589313
FAX : 886-4-23588913
www.apecnc.com

Quick-Tech Machinery Co., Ltd.
TEL : 886-6-3841155
FAX : 886-6-3841177
www.quicktech.com.tw

PCI-SCEMM
TEL : 33-4-77426161
FAX : 33-4-77426023
www.pci.fr

ANGER Machining GmbH
TEL : 43-7229-71041-0
FAX : 43-7229-71041-199
www.anger-machining.com

MEMBER OF
TTGROUP

China Operation Center

Shuzhou Tong-yu Machine & Tool Co., Ltd.

No.555 Huahong Rd., Economic Development Zone of Wujiang,
Suzhou City, Jiangsu Province, China
TEL : 86-512-63430168 FAX : 86-512-63431622
E-mail : sales@tong-yu.com.cn
www.tongtai.com.tw/cn

Wuhan Branch	TEL : +86-27-84586587	
Chongqing Branch	TEL : +86-23-67865925	FAX : +86-23-67867717
Guandong Branch	TEL : +86-769-81158198	FAX : +86-769-81158108
Tianjin Branch	TEL : +86-22-24417640	FAX : +86-22-24416738
Shanghai Office	TEL : +86-21-24208138	FAX : +86-21-34073262
Shenyang Office	TEL : +86-24-24142968	FAX : +86-24-24115782



Official Website



Global Network

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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 $Ra\ 0.2\ \mu m$, 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.

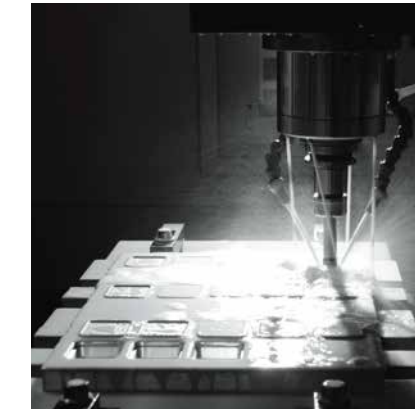
Medical industry
Artificial crown machining



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

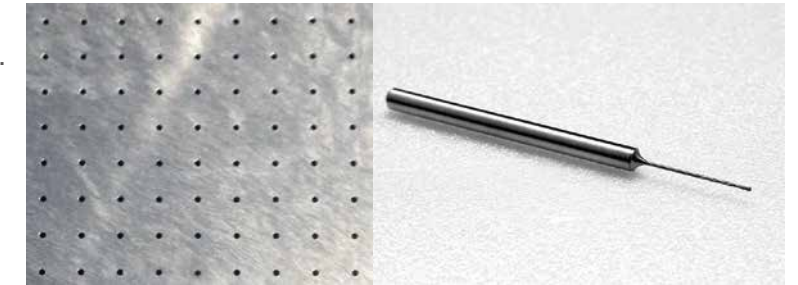
Sapphire, Zirconia, Ceramic, Glass, Hardened steel etc...

Silicon wafer drilling

Tool diameter $\varnothing 0.5\ mm$, cutting depth 10 mm.

Tool life

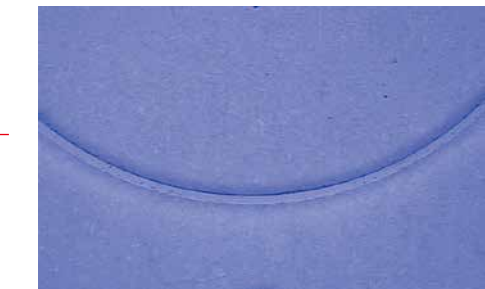
without ultrasonic : 3 holes
with ultrasonic : 236 holes



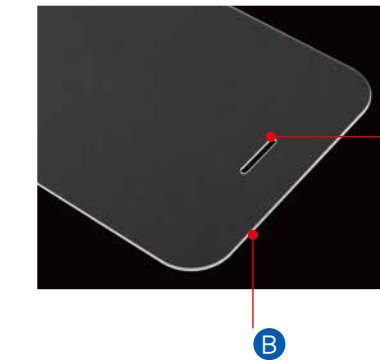
Sapphire glass machining



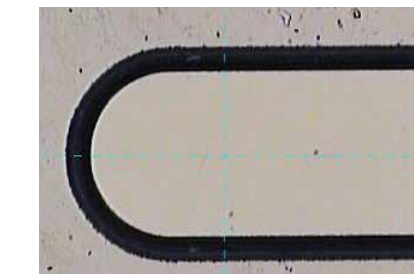
Circular hole



Machining method :
Drilling & Polishing
Workpiece spec. : $\varnothing 11\ hole$
Workpiece thickness : 0.4 mm
Cycle time : 17 sec

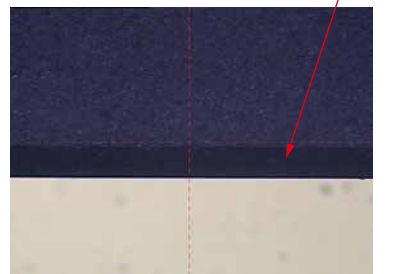


A Slot



Machining method :
Drilling & Polishing
Workpiece spec. : slot, $\varnothing 1 \times L10\ mm$
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

$R_{max}\ 12\ \mu m$
 $R_z\ 8.52\ \mu m$
 $R_a\ 1.28\ \mu m$

