

MODEL	UNIT	DMC-650
TRAVEL		
Right/left travel (X)	mm	600
Forward/backward travel (Y)	mm	550
Up/down travel (Z)	mm	350
Spindle nose to table surface	mm	150~500
AXES FEED RATES		
Screw specifications on X, Y, Z-axis	mm	R40-8
Rapid traverse rates X, Y, Z-axis	mm/min	20
Cutting feed rate	mm/min	1-10000
Positioning accuracy	mm	0.003 / 300
Repeatability accuracy	mm	0.003
TABLE		
Table sizes	mm	700 x 600
Max. table load	Kg	300
T-slot	mm	4T x 18

SPINDLE		
Spindle taper		BBT-30 / HSK E40 (Optional)
Spindle speeds	RPM	24000 / 30000 (Optional)
Spindle drive		Built-in type

COOLING SYSTEM		
Spindle cooling		

TOOL MAGAZINE		
Tool magazine type		Umbrella type, 16 tools
Max. tool weight	kg	3
Max. tool length	mm	200
Max. tool dia. (fully loaded)	mm	90
Max. tool dia. (adjacent empty tool)	mm	120

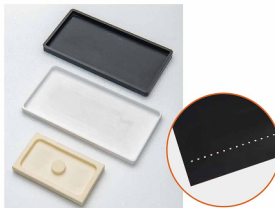
CONTROL SYSTEM		
FANUC OIMF(TYPE1)(STANDARD)		
FANUC 31I(OPTION)		
SIEMENS 828D (OPTION)		

MECHANICAL DIMENSIONS AND WEIGHT		
Machine weight	kg	6500
Machine dimensions (L x W x H)	mm	2700 x 2200 x 2580 (L x W x H)

■ Our company reserves the right to change product design.
If any modifications are made, actual conditions will prevail without prior notice.

STANDARD EQUIPMENT	OPTIONAL EQUIPMENT
Fully enclosed splash guard.	Grease lubrication system.
Air conditioner for electrical cabinet.	Automatic chip conveyor.
Spindle oil cooler.	Oil coolant separation device.
Pressure relief type lubrication system.	Oil mist collector.
LED Work lamp.	Linear scales on 3 axes
LED warning lamp.	
Network interface (R45).	STANDARD CONTROLLER
Coolant system.	FANUC Oi-MF PLUS.
Chip flushing system for bed.	AICC2.
Automatic power off function.	Smooth tolerance control.
Air blast device for machining.	Acceleration control.
Rigid tapping.	Selection of machining conditions.
Coolant gun.	OPTIONAL CONTROL FUNCTION
	Network transmission data server.

APPLICABLE MACHINING MATERIALS
Brittle Hard Materials: Silicon, quartz, aluminum oxide, glass, graphite, oxidized indium tin alloy steel, compound semiconductor parts and high hardness steels.
Machining Materials: Aluminum silicon carbide, zirconium dioxide, sapphire and stainless steel.



Material: Zirconium dioxide

Hole diameter: 0.4mm
Depth: 6mm



DMC-650 ULTRASONIC HIGH SPEED
GANTRY MACHINING CENTER



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ULTRASONIC MACHINING SYSTEM

The ultrasonic machining system includes ultrasonic spindle, tool, and ultrasonic generator.

BENEFITS OF ROTATING ULTRASONIC MACHINING TECHNOLOGY:

- It dramatically reduces cutting force (tool wear is reduced).
- Reduces the temperature of the cutting area.
- Efficiency of cutting fluid is fully realized.
- Fast chip removal.

BENEFITS OF ULTRASONIC SPINDLE:

- High frequency vibration machining features less drag force than that of conventional machining.
- The abrasive dust generated during high frequency vibration machining does not stick to the tool easily, thus the tool remains sharp and machining efficiency can be increased by 3 – 5 times.
- The workpiece is free of residual stress.
- It not only improves roughness on machining surface, but also extends the service life of the tool.

SPECIFICATIONS OF ULTRASONIC SPINDLE

- Max. machining speed: 20,000 rpm (standard)
- Max. power output of ultrasonic generator: 400 W
- Range of ultrasonic frequency: 19-28 KHz



MACHINE FEATURES :

- The rooksolid gantry type machine structure provides high precision and extremely seable machining.
- The cross beam is a stepped structure design for improved stability.
- Roller type linear guideways on all three axes in combination with three blocks on each linear guideway provide fast and stable machining capacity.
- The table is fully supported that helps to upgrade machining stability.
- One-piece fabricated base makes machine structure more stable.
- 24,000 rpm high speed built-in type spindle is excellent for high precision machining.
- Equipped with an ultrasonic spindle and tooling system.



Ultrasonic High Speed Gantry Machining Center DMC-650

ROTATING ULTRASONIC MACHINING VS TRADITIONAL MACHINING

Rotating ultrasonic machining exhibits many outstanding features:

- Long tool life
- Superb cutting efficiency
- Ideal for machining brittle and hard materials

LOW MACHINING COST HIGH EFFICIENCY

Production Cost: The machining cost of ultrasonic machining is only 1/3 that of laser machining.

High Efficiency: The machining efficiency of ultrasonic machining 3 – 5 times that of conventional grinding.

MACHINING PRINCIPLE OF ROTATING ULTRASONIC

- Employs a rotating tool in combination with high frequency vibration to perform cutting.
- During machining, the abrasives on the tool will collide with the workpiece, creating small particles through hammering, abrasive eroding and tearing, which are then removed from the workpiece.
- Coolant is also used for fast splashing the removed material from the machining area.

