

| MODEL | UNIT | DMC-650 |
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| 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 |

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| SPINDLE | | |
| Spindle taper | | BBT-30 / HSK E40 (Optional) |
| Spindle speeds | RPM | 24000 / 36000 (Optional) |
| Spindle drive | | Built-in type |

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| COOLING SYSTEM | | |
| Spindle cooling | | |

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| 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 |

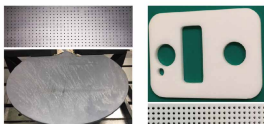
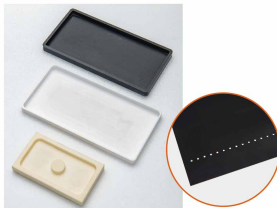
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| CONTROL SYSTEM | | |
| FANUC OIMF(TYPE1)(STANDARD) | | |
| FANUC 311(OPTION) | | |
| SIEMENS 828D (OPTION) | | |

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| 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) |

■ 本公司有保留產品設計更改之權利，如有修改，以實機為主，恕不另行通知。

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| 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. |

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| 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 robust gantry type machine structure provides high precision and extremely stable 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 is 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.

