

Aluminum

— High speed milling —

The T1 spindle produces high output levels through the wide rpm range. Continuous output of 56 kW is maintained from 1,000 rpm to its maximum 12,000 rpm, providing ample power for high metal removal rates in a variety of tool sizes.

The T1's large work piece envelope and unique 5 axis kinematic design create ideal five sided access for high speed machining of large components.

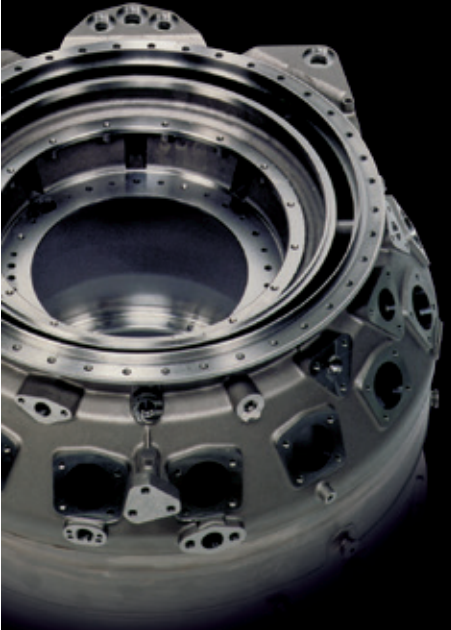
Material : Aluminum alloy (A6061) Tool (top face machining) : 63 mm diameter face mill



5-axis Machining Center

T1

Aluminum



5-axis Machining Center

T1

Titanium



M449Ea 1501/2 (V-T-F)

Any Shape,
Any Material

Titanium

— Heavy cutting —

The T1 spindle design originates from the Makino T Series (T2 & T4) high-torque spindle which was designed specifically for the challenges of titanium machining.

The highly rigid machine structure coupled with a unique active dampening system reduces cutting vibrations and assure stable machining during heavy roughing operations. High torque capabilities of the T1's rotary axes enable simultaneous 5 axis roughing cuts.

Material : Titanium alloy (Ti-6Al-4V) Tool (slotting) : 50 mm diameter insert end mill

Machine Specifications

X, Y, Z axis

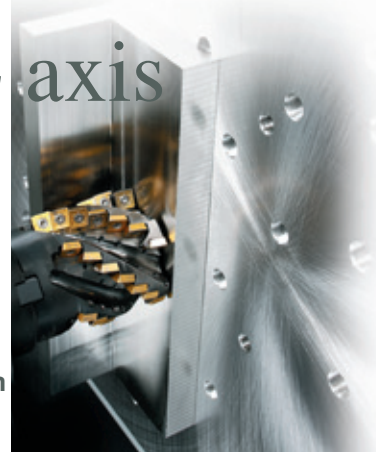
Travels

X axis : **1500 mm**

Y axis : **1300 mm**

Z axis : **2000 mm**

Cutting Feedrates — **25 m/min**



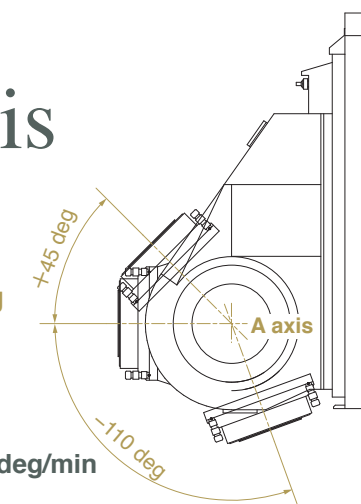
A, B axis

Travels

A axis : Spindle tilting
-110 deg ~ +45 deg

B axis : Table rotation
360 deg (cont.)

Cutting Feedrates — **3600 deg/min**



◎ Spindle

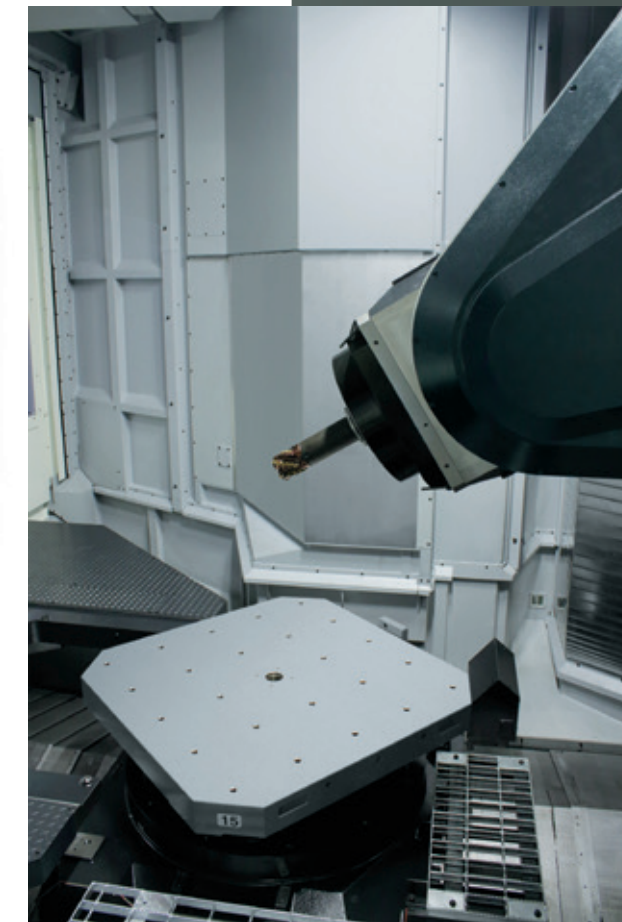
Speed range — **20 ~ 12000 min⁻¹**

Taper hole — **HSK-A100**

Torque characteristic — **1002 / 525 N·m** (S3 10%ED / cont.)

Output characteristic — **95* / 56 kW** (S3 10%ED / cont.)

* The value of power supply frequency : 50 Hz



◎ Table

Pallet size — **1000 x 1000 mm**

Maximum workpiece size — **1500 x 1500 mm** (diameter x height)

Maximum pallet loading weight — **3000 kg**

◎ Automatic tool changer

Number of tool storage capacity — **60** (standard)

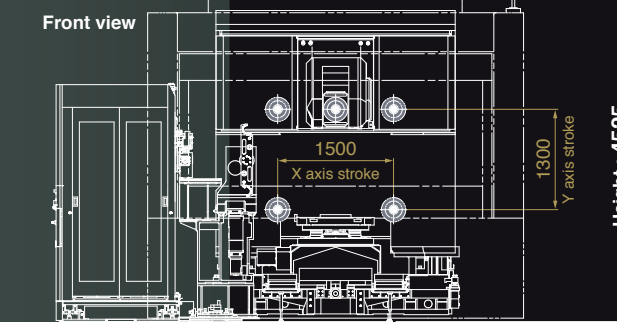
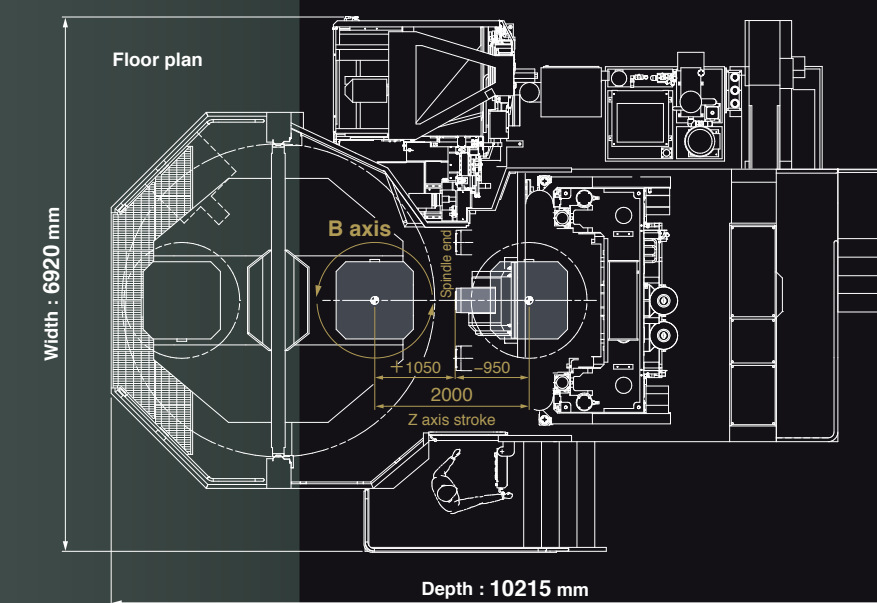
97, 137 (optional)

Maximum tool size — **300 x 600 mm** (diameter x length)

Maximum tool weight — **30 kg**

◎ Machine size

* When pallet changer specification (optional) and 137 tools magazine specification (optional) are selected.



Machine weight — **59000 kg**

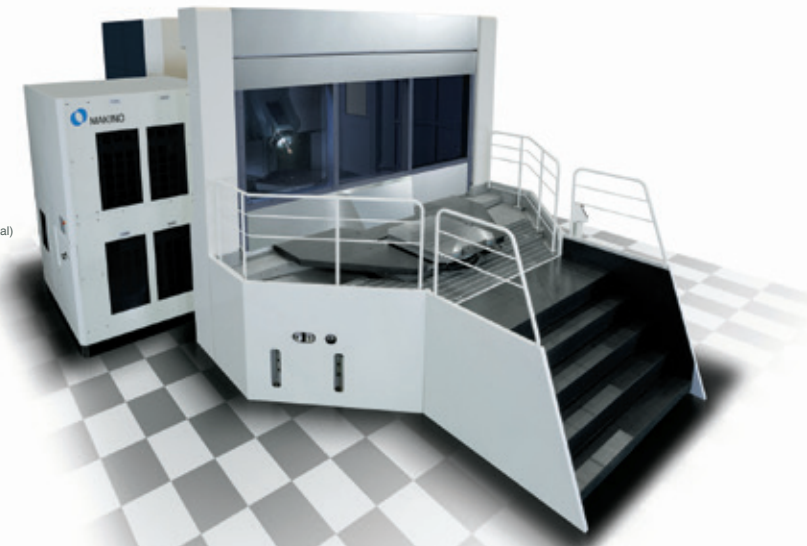
Standard Specification

- 12000 min⁻¹ spindle (HSK-A100)
- Spindle temperature controller
- Spindle condition monitoring function
- Spindle cooling oil flow detection sensor
- NC rotary table
- 1000 x 1000 mm pallet (tapped hole 1pc.)
- Moire scale feedback X, Y, Z-axis 0.01µm
- Rotary encoder (A, B axis)
- 60 tools magazine
- Tools magazine guard (with TLS doorlock)
- Air dryer
- Thermal stabilizer
- Internal chip conveyor (Hinge type)
- Lift up chip conveyor (with automatic washing function and filter broken detection sensor)
- Coolant tank (1000 L)
- Coolant nozzles at spindle end
- Through spindle coolant (1.5MPa)
- Terrace washing coolant
- Over head shower coolant
- Lighting in splash guard (LED)
- Operator door lock (Operation mode)
- Tools magazine door lock
- MTC door interlock
- Operation steps (inside splash guard, main operation panel side, and for maintenance behind the machine)
- Portable manual pulse generator with tool position display (with handle enable button)
- Signal light (3-layer)
- Professional 5 (CNC controller)

Optional specification

- Pallet changer
 - 97 or 137 tools magazine
 - High volume coolant package (Includes through spindle coolant (7MPa), additional coolant tank 1000L and others*)
- * For the details, please refer to the specification sheet.

Pallet changer specification (optional),
137 tools magazine specification (optional)



*The specifications, figures, and overviews of products, peripheral devices and accessories in this catalogue may be changed without prior notice to incorporate improvements resulting from ongoing R&D programs.
*The all products in this catalogue include the optional specifications and equipment.
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