TAKUMI

UB Series



5-Axis Double Column Machining Center

UB2222
UB3222

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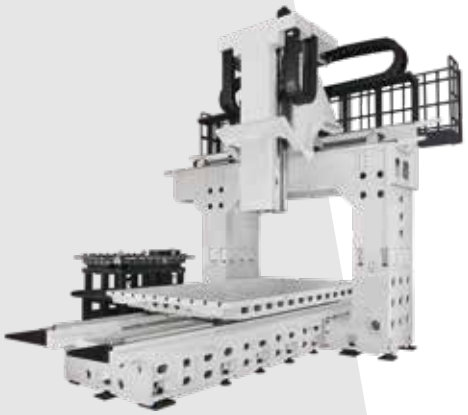


UB Series

The Takumi UB Series, 5-axis double column machining center, is designed with high torque 2-axis direct drive swiveling head on a robust double column frame. UB Series garuantees to enhance the accuracy of large size part in market such as dynamic die and mold, aerospace and automobile applications.



01 UB Series Basic Structure



Double column structure

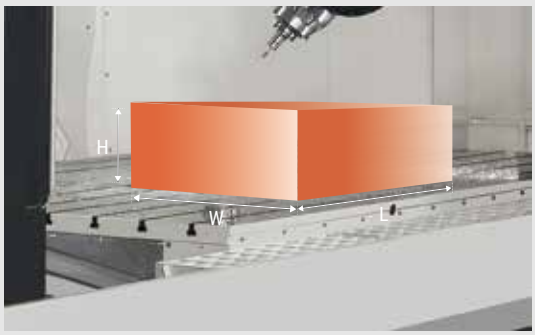
The one-piece design provides increased weight to absorb cutting vibration, and increased rigidity. The dual contact areas with the base eliminates pitch in the Y-axis and reduces the effect of machine leveling changes over time.

Powerful 2-Axis Head

HSD 2-axis head ensures high positioning accuracy. Secondary cooling in the C-axis minimizes the heat input in the headstock.

Dual direct torque motor-driven system on B-axis provides high dynamic characteristics at high swiveling speed.





Large door opening

Large door opening to the working area give the operator impressive freedom and loading and unloading space.

Maximum workpiece size (L x W x H)

UB2222	2300 x 2250 x 1200mm
UB3222	3200 x 2250 x 1200mm

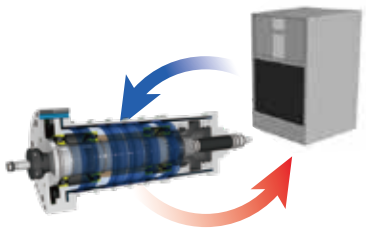
02 UB Series Spindle





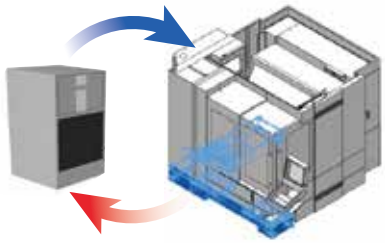
High Speed Built-in Spindle

The high-power built-in spindle limits vibration, noise and power loss during high speeds to achieve superior part finish. The helical cooling channel design minimizes thermal distortion and enables precision over extended cycle times.



Stable Spindle Cooling Circulation

Spindle temperature is constantly controlled by oil chiller. Our test result have proven that the temperature of the circulating oil is controlled within ±0.2°C. which minimizes thermal displacement during continuous operation at high speed.



Cutting Coolant Chiller option

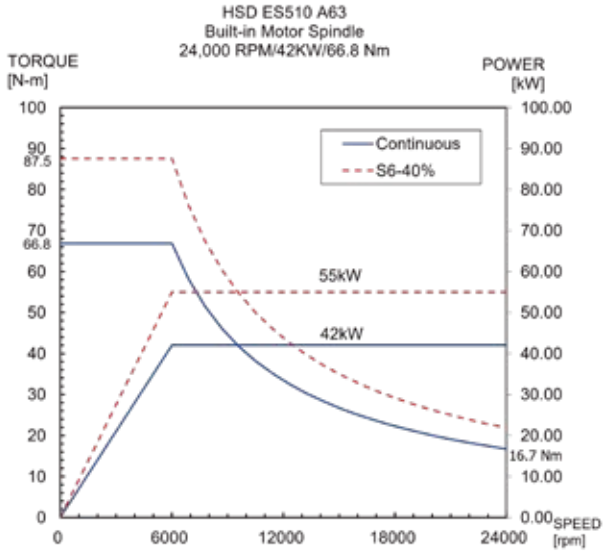
The coolant chiller reduces the temperature of the cutting fluid before it is circulated through the machine. The cooler has effectively reduced the deviation and leads to excellent accuracy of the workpieces and extends the life of cutting tool by stabilizing coolant temperature.

Spindle Power - Torque Curve

24,000rpm Built-in spindle (ST: UB2222, UB3222)

42/55 **kW** Power (Cont./S6-40%)

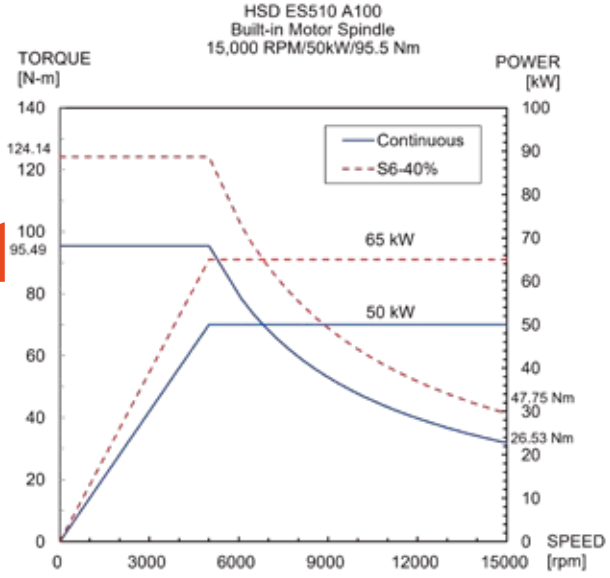
66.8/87.5 **N.m** Torque (Cont./S6-40%)



15,000rpm Built-in spindle (OPT: UB2222, UB3222)

50/65 **kW** Power (Cont./S6-40%)

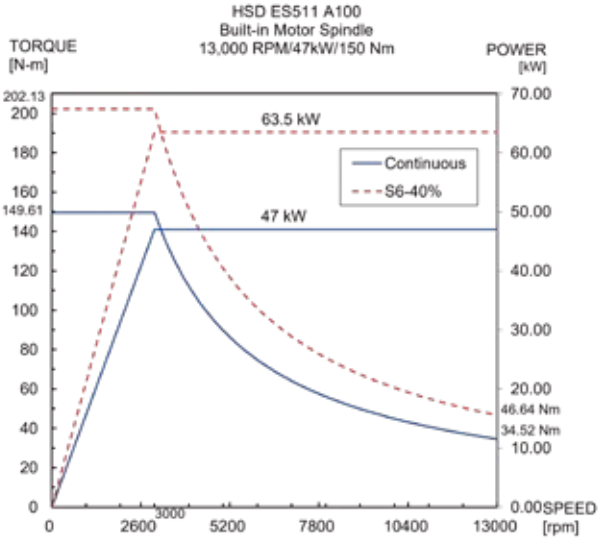
95.49/124.1 **N.m** Torque (Cont./S6-40%)



13,000rpm Built-in spindle (OPT: UB2222, UB3222)

47/63.5 **kW** Power (Cont./S6-40%)

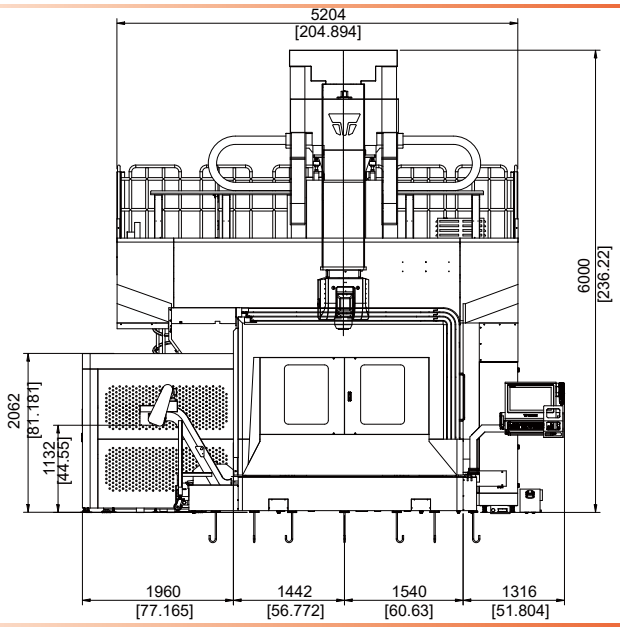
149.6/202.1 **N.m** Torque (Cont./S6-40%)

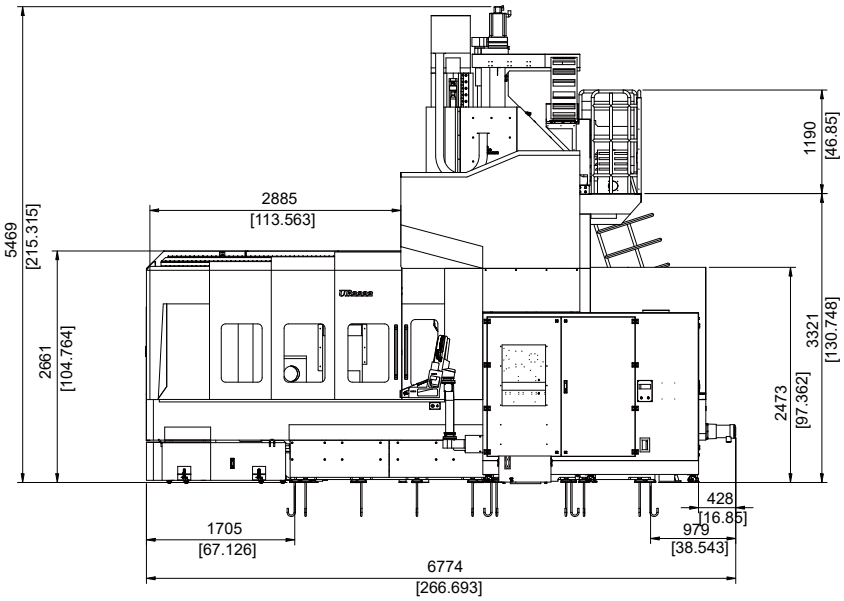


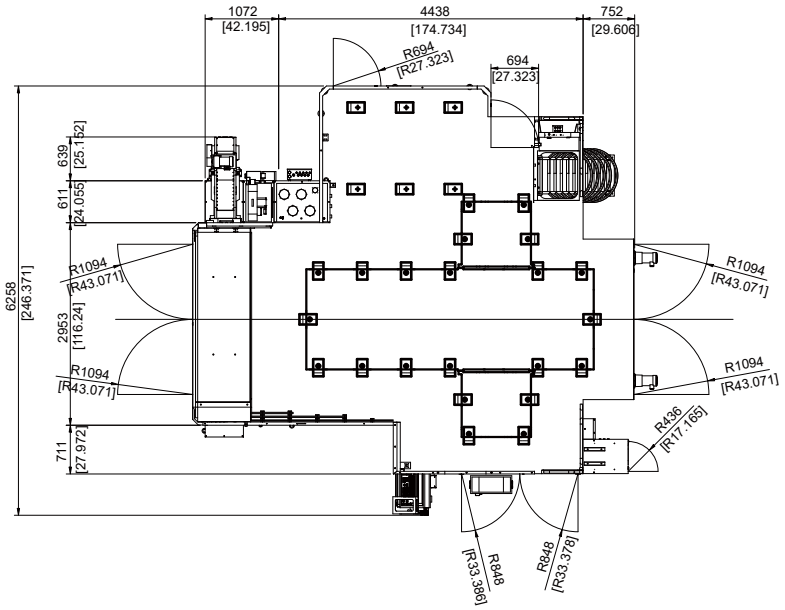
External Dimension

UB2222

Unit : mm



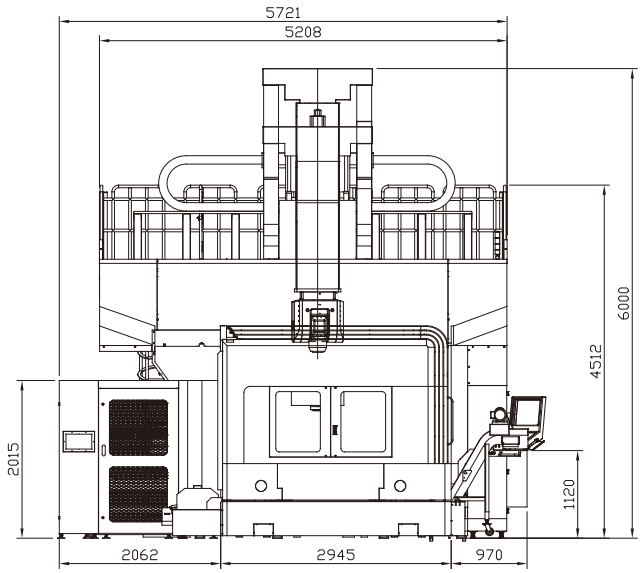


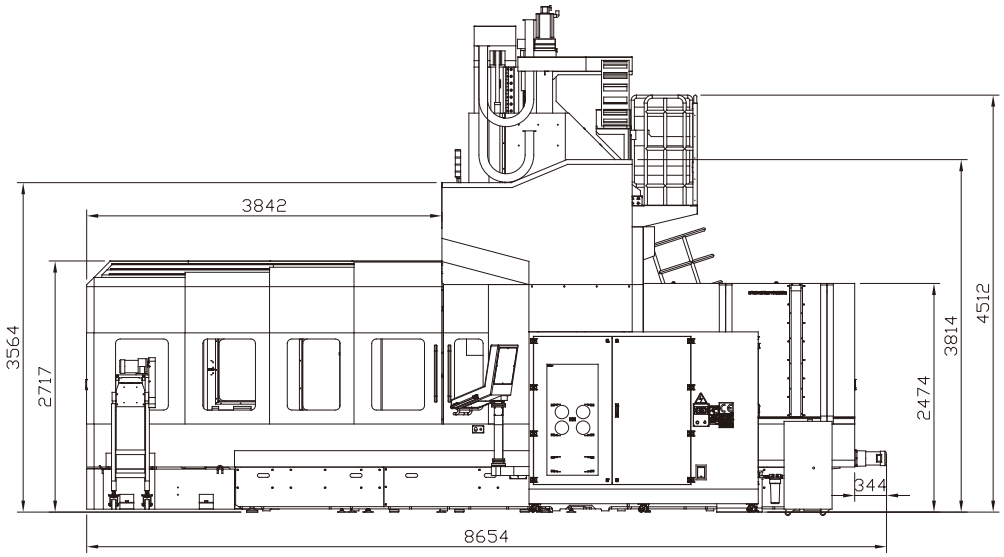


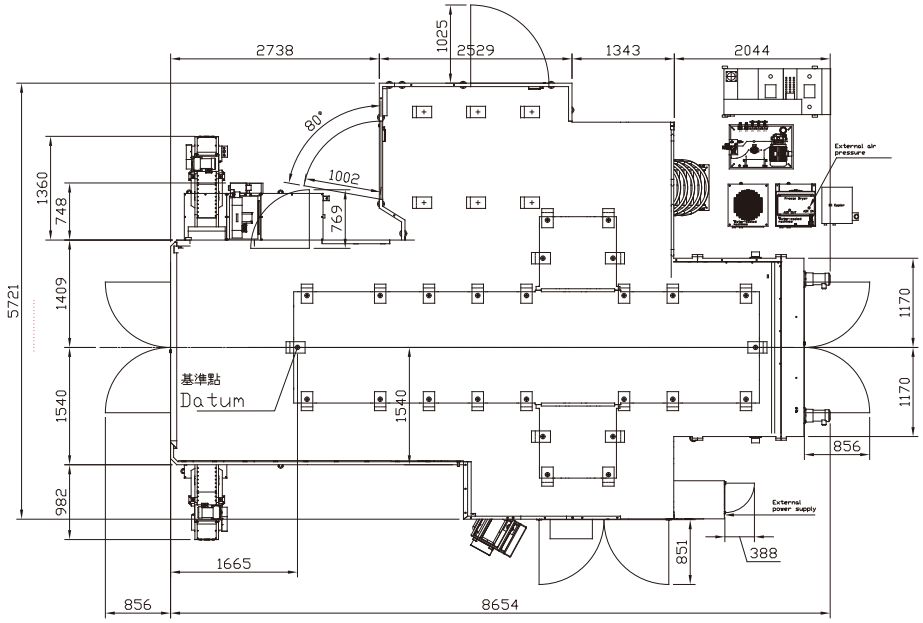
External Dimension

UB3222

Unit : mm



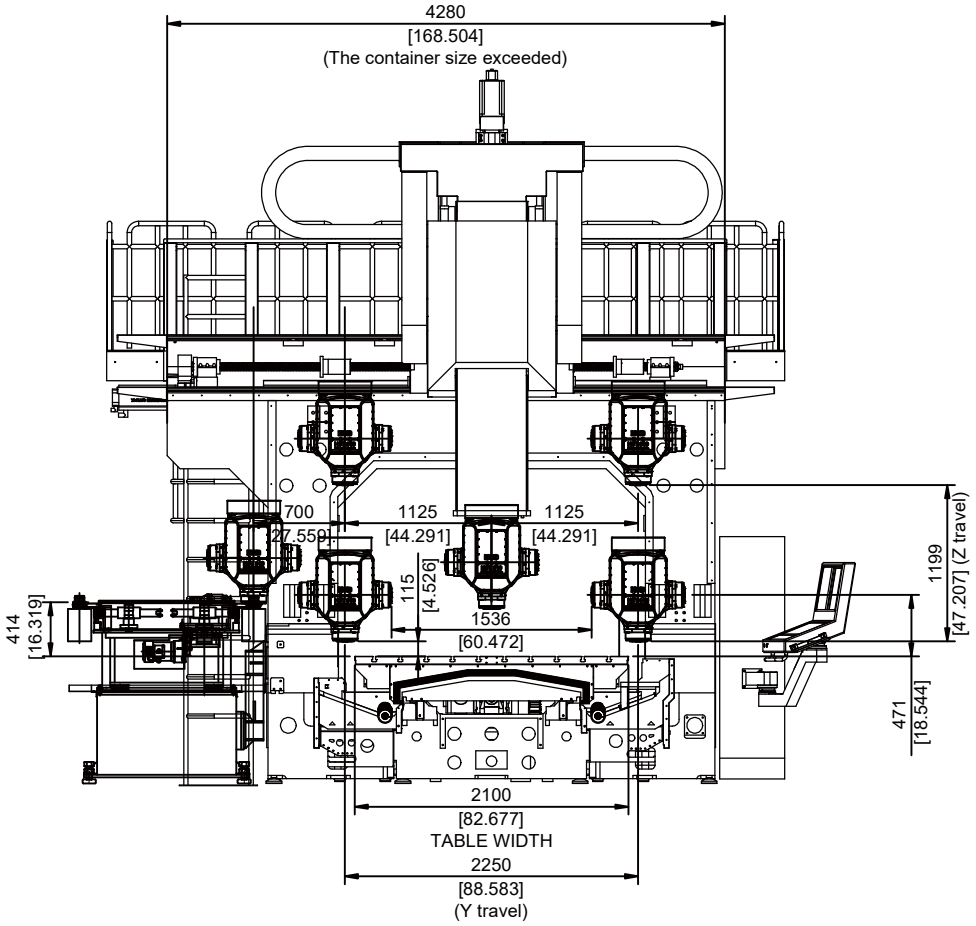


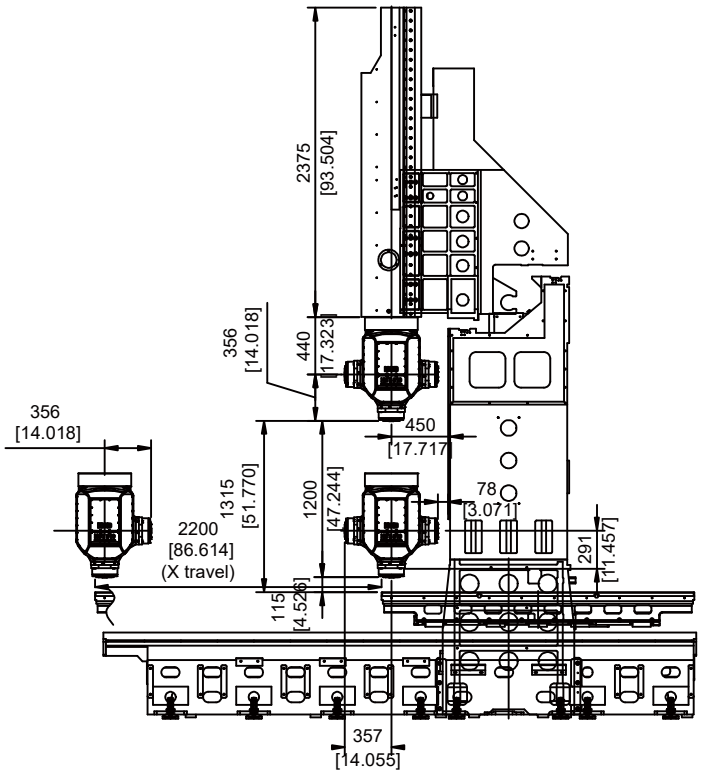


Machining Area

UB2222

Unit : mm

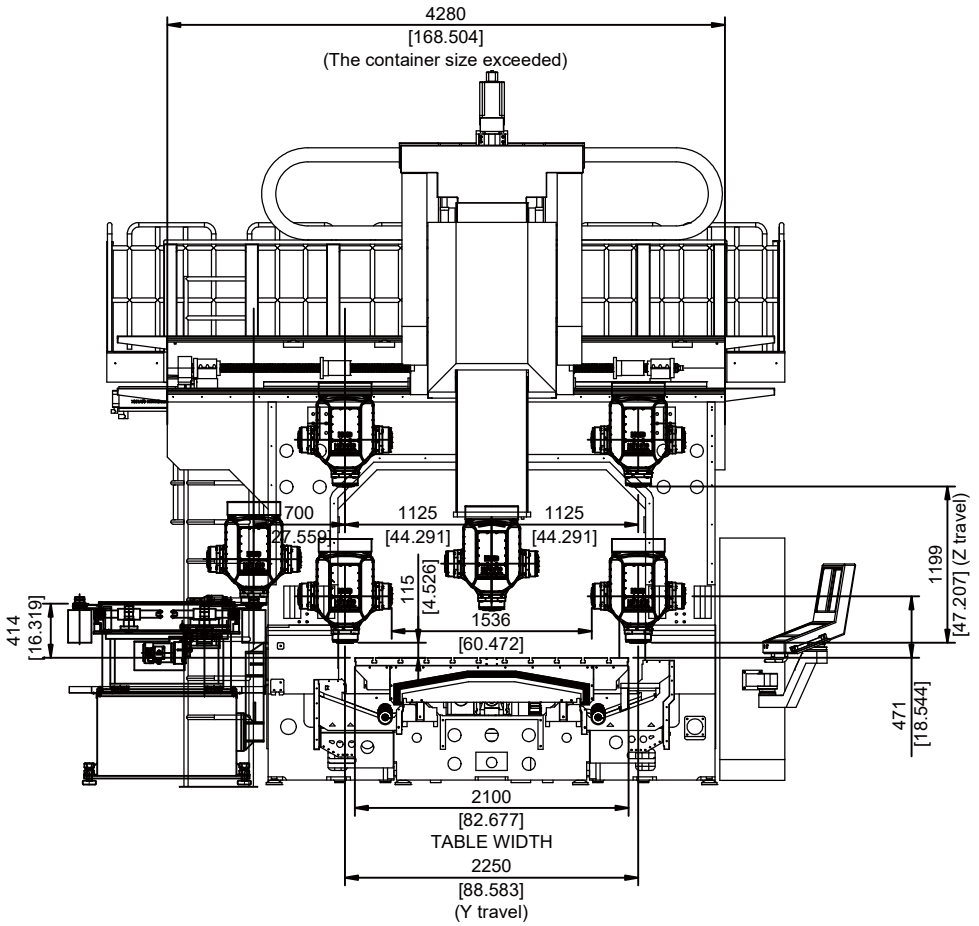


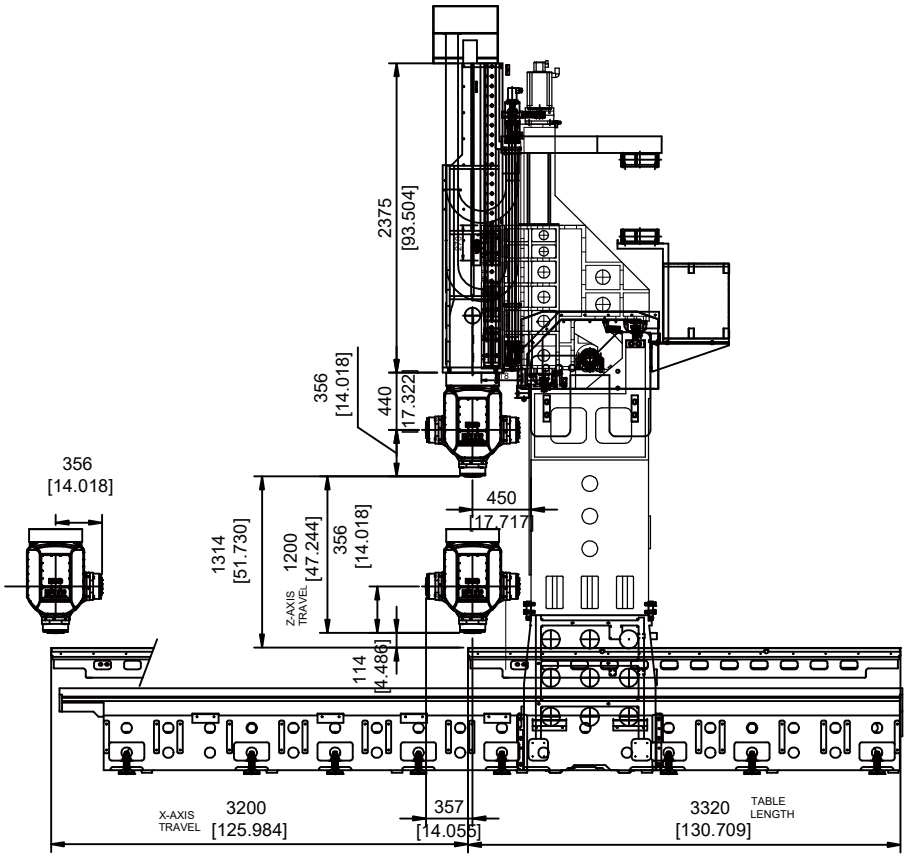


Machining Area

UB3222

Unit : mm





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Machine Specification

Travel	UB2222	UB3222
X/Y/Z-axis	2200 / 2250 / 1200mm	3200 / 2250 / 1200mm
Distance from spindle nose to table	130-1330mm (24krpm, side type) / 115-1315mm (24krpm, fork type) 180-1380mm (15krpm, fork type) / 113-1313mm (13krpm, fork type)	

Table		
Dimension	2400 x 2100mm	3320 x 2100mm
Max. load	8000kg	8500kg
T-slot	22 x 200 x 10mm	22 x 200 x 10mm

Spindle				
Spindle type	Built-in HST810 (ES510) Side type	Built-in HST810 (ES510) Fork type	Built-in HST810 (ES510) Fork type	Built-in HST810 (ES511) Fork type
Spindle speed	24000rpm	24000rpm	15000rpm	13000rpm
Spindle motor power	42kW/55kW (Cont./S6-40%)	42kW/55kW (Cont./S6-40%)	50kW/65kW (Cont./S6-40%)	47kW/63.5kW (Cont./S6-40%)
Spindle taper	HSK-A63	HSK-A63	HSK-A100	HSK-A100

Feed		
Rapid feed (X/Y/Z)	20 / 16 /16 m/min	16 / 16 / 16 m/min
Cutting feed	12000mm/min	12000mm/min
Motor power (X/Y/Z)	11 / 8.9 / 8.6 kW	11 / 8.9 /8.6kW

2-Axis Swivel Head				
Head type	Side type (A/C-axis)	Fork type (B/C-axis)	Fork type (B/C-axis)	Fork type (B/C-axis)
C axis rotation range	±220°	±220°	±220°	±220°
C axis positioning accuracy	±2"	±2"	±2"	±2"
C axis rotation speed	30rpm	30rpm	30rpm	30rpm
C axis rotation torque (cont.)	688Nm	688Nm	688Nm	688Nm
C axis rotation torque (max.)	1250Nm	1250Nm	1250Nm	1250Nm
A/B axis rotation range	±100°	±110°	±110°	±110°
A/B axis positioning accuracy	±5"	±5"	±5"	±5"
A/B axis rotation speed	30rpm	30rpm	30rpm	30rpm
A/B axis rotation torque (cont.)	391Nm	391Nm	782Nm	782Nm
A/B axis rotation torque (max.)	707Nm	1414Nm	1414Nm	1414Nm

ATC & Magazine		
ATC type	Armless (HSK-A63)	Armless (HSK-A100)
Number of tools	40pcs	32pcs
Max. tool diameter (next pockets epmty)	95 / 125mm	125 / 180mm
Max. tool length	300mm	300mm
Max. tool weight	8kg	15kg

Supply	
Air pressure	6kgf/cm^2
Electric power supply	125kVA

Net weight		
Machine weight	38000kg	44000kg

- The specifications and information may be changed without prior notice.

Standard & Optional

Standard:

HEIDENHAIN TNC7 controller, 24"LCD
24,000 rpm Built-in type spindle (HSK-A63), side type head
40T, armless type ATC
Rotary encoder for rotary axis
DCM-Dynamic Collision Monitoring
Kinematics Opt.
Spindle air blast
Cutting air blast
Spindle oil cooler
Automatic centralized lubrication system
3-axes absolute encoder motors
Fully enclosed splash guard
LED work light
Working lamp
Washing gun & air gun
Oil skimmer
Steel belt chip conveyer & coolant flushing system
3-axis linear scales
X-axis ballscrew cooling
Air conditioner for electrical cabinet
Tool kits
Leveling bolts & pads
Operation manuals
CE safety standard

Optional:

24,000 rpm Built-in type spindle (HSK-A63), fork type head
15,000 rpm Built-in type spindle (HSK-A100), fork type head
13,000 rpm Built-in type spindle (HSK-A100), fork type head
Armless type ATC 32T (HSK-A100)
Armless type ATC 48T (HSK-A100)
Y/Z-axis Ball screw cooling system
Oil mist device
Oil mist collector
Tool length measurement system
Workpiece measurement system
Scraper type chip conveyor
Spindle thermal compensation system
Coolant through spindle 30bar, 70bar
Transformer

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