



L.K. Machinery Corp.

PREMIUM EUROPEAN TECHNOLOGY
WITH ULTIMATE PERFORMANCE

A Global
MACHINING CENTER MANUFACTURER



EU-1000/2000/3000

**HIGH-SPEED BRIDGE-TYPE
MACHINING CENTER**



L.K. Machinery Corp. (TAIWAN)

40763 台中市西屯區科園路30號

No.30, Keyuan Rd., Xitun Dist. Taichung City 40763, Taiwan

TEL: +886-4-2461-9797 FAX: +886-4-2461-1555

E-mail: lktw_sales@lkmachinery.com.tw

www.lkmachinery.com.tw



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CE ISO 9001

HIGH RIGIDITY, HIGH PRECISION & HIGH EFFICIENCY

Rough cutting and finishing of mold production could be completed on one machine

L.K. EU series are based on a reliability concept, the high speed machining center model EU2000 has been developed using the latest generation of technologies, appropriate for High Speed Machining. As a result of an exceptional rigidity, this model offers a high dynamic performance with an excellent accuracy, everything at a competitive price.

Special stair beam design was designed to ensure rigidity of machine structure and reduce distortion and deformation.

Standard machine has 24 tools umbrella type automatic tool changer, such system provides stable and reliable fast tool change to improve the processing efficiency.

The structure of machine consists of box-type and cross-rib design to ensure no deformation under heavy load; with the best track ratio, and stable high-speed cutting performance.

Z-axis structure was designed without counterweight system to enhance the flexibility of Z-axis movement and provide particularly significant performance of the 3D mold.

Square structure of the table and the box-type structure of machine increase the load capacity of the table, guaranteed load weight provides reliable rigidity without possibility of deformation.

The box-shaped design of the spindle head, square rib layout of the structure effectively reduce the weight of the head unit, and increase the sensitivity of the processing reaction, but also show excellent processing rigidity.

High-power built-in spindle design combined by powerful servo motors effectively reduces the noise, vibration and thermal displacement.

3 axes Linear scale

Optimized cross-sectional area ratio (800mm x 420mm) of the column, can be supported the machine to absorbed the force while cutting.

Base cross rib design is not vulnerable to external shocks or intense vibration caused by the radial or axial flexural deformation, structural design provides strong stability.

EU-1000 High-speed Bridge-type Machining Center

Axis Travel : 1050/800mm



EU-2000 High-speed Bridge-type Machining Center

Axis Travel : 2000/1250mm

EU-3000 High-speed Bridge-type Machining Center

Axis Travel : 3000/1550mm



SPINDLE



Built-in spindle with high torque and high speed machining motor provide extremely low noise and vibration, thermal stability.

18000 rpm high-speed build-in spindle is equipped with oil and gas lubrication (imported), such feature extends the bearing wear during high-speed processing operation to achieve excellent cooling and reduce warm-up effect affecting on length accuracy.

Die casting mold processing is mainly required the long-time processing, at the same time requirement of high precision is highly valued, so the cooling effect of oil and gas lubrication is the necessary equipment.

Bearing of high speed build-in spindle is able to withstand high torque and high-speed characteristics, so rough milling and finishing processes of mold processing could be reached on the same spindle, with high efficiency and high profitability.

Spindle	KESSLER	KESSLER (OPT.)
Spindle speed (RPM)	18,000	24,000
Spindle Motor (kW)	25	16
Torque	160	67
Bearing lubrication	Oil lubrication	Oil lubrication
Bearing preloading	○	×

CONTROL PANEL & ATC

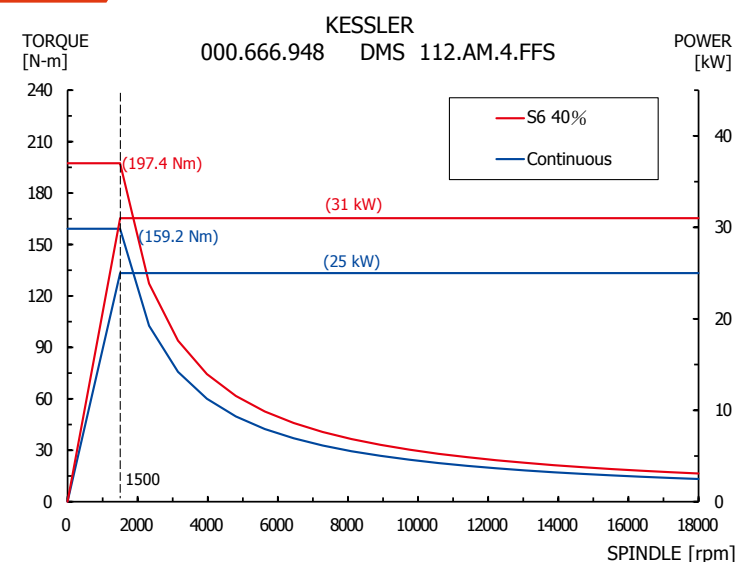


Umbrella type tool magazine, simple construction, easy to maintain, use employs indexing unit for tool indexing providing high stability and high speed tool change.



SIEMENS SINUMERIK CNC automation system 840D is used on the control panel, accessing the USB port and a 15" color display and a full keyboard.

POWER CHART



APPLICATIONS



1. Surface cutting test



2. Flatness & Thin pieces test



3. Roundness test

Applicable Industry

- Automotive mold industry
- Precision components processing
- Solar energy industry
- Wind power industry
- Aerospace Industry

Rubber mold

CUTTING PERFORMANCE



Surface cutting test

Tool specifications	D12R6 End mill
Actual F (mm)	6000 mm/min
Actual speed (rpm)	14000 rpm
Cutting depth	0.1mm
Chip removal method	Cutting Fluid
Workpiece material	AL 6061
Workpiece dimensions	500X40X120 mm



Roundness test

Tool specifications	D12 End mill
Actual F (mm)	3000 mm/min
Actual speed (rpm)	16000 rpm
Cutting depth	20 mm
Chip removal method	Blow dry cutting
Workpiece material	AL 6061
Workpiece dimensions	Diameter 280 mm
Measure the circle data	0.006 mm

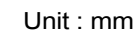


Pyramid cutting test

Tool specifications	D12 Ball end mill
Actual F (mm)	3000 mm/min
Actual speed (rpm)	3000 rpm
Cutting depth	0.1 mm Fine finishing
Chip removal method	Cutting Fluid
Workpiece material	AL 6061
Workpiece dimensions	80X80X200 mm
45° plane measurement	0.006 mm

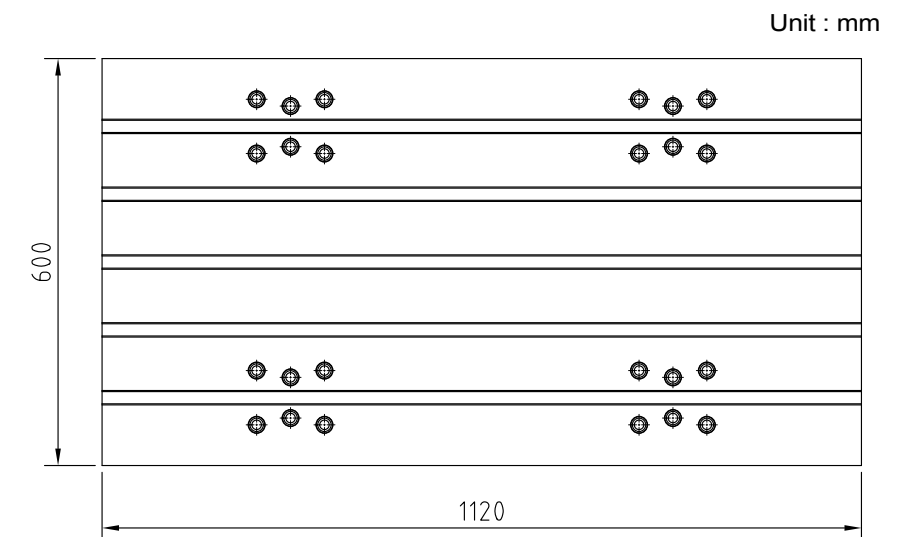


EU-1000



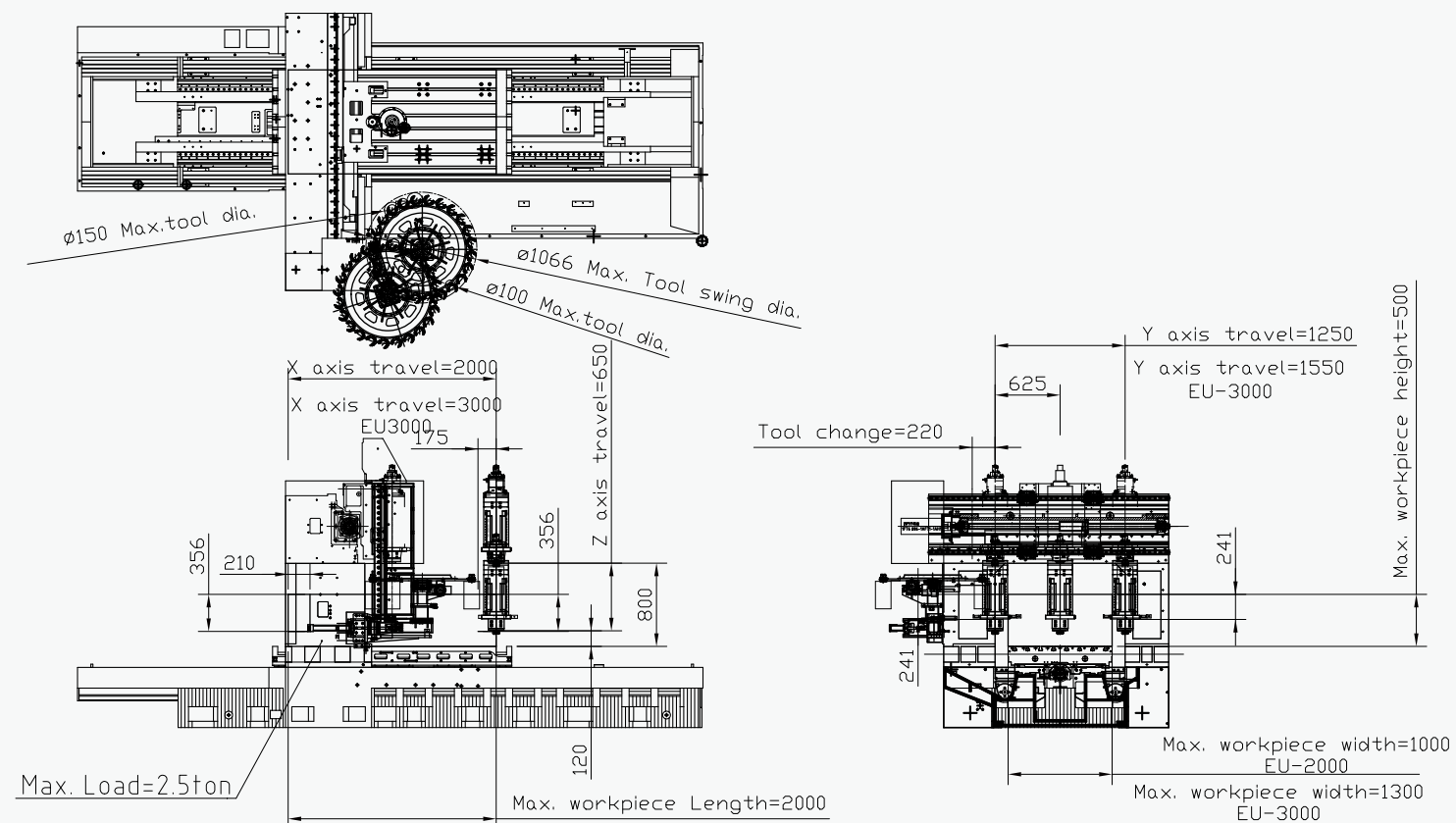
Unit : mm

EU-1000

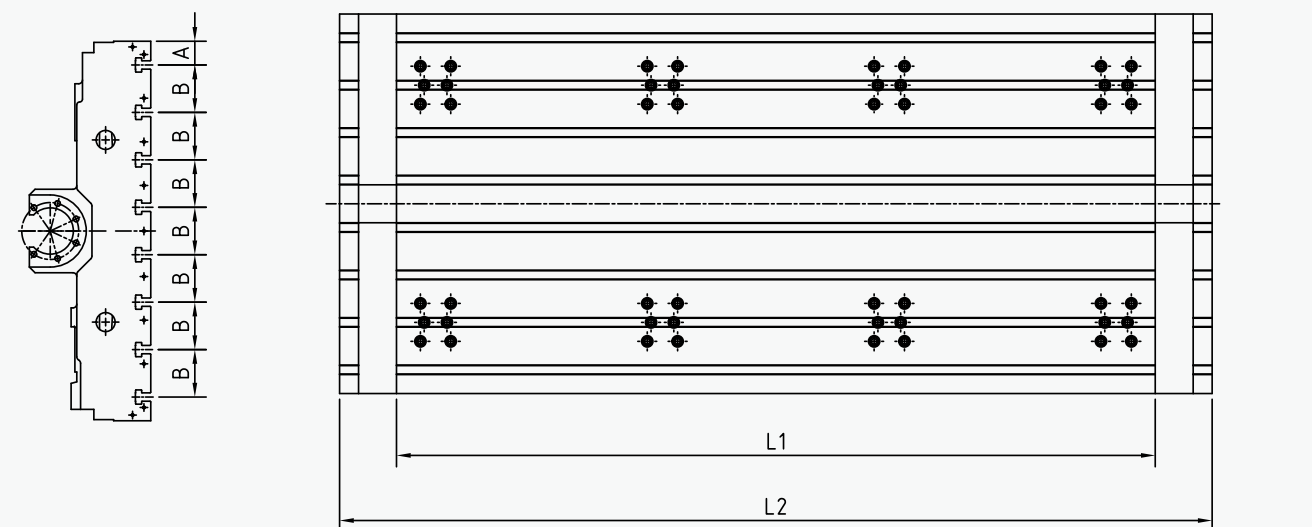


MODEL	Unit	EU-1000
Working Surface	mm	1120x600
Max. Table Load	Kg	1000
T-Slot(NumberxPitch)	mm	5x100
T-Slot Size	mm	18

EU-2000/3000

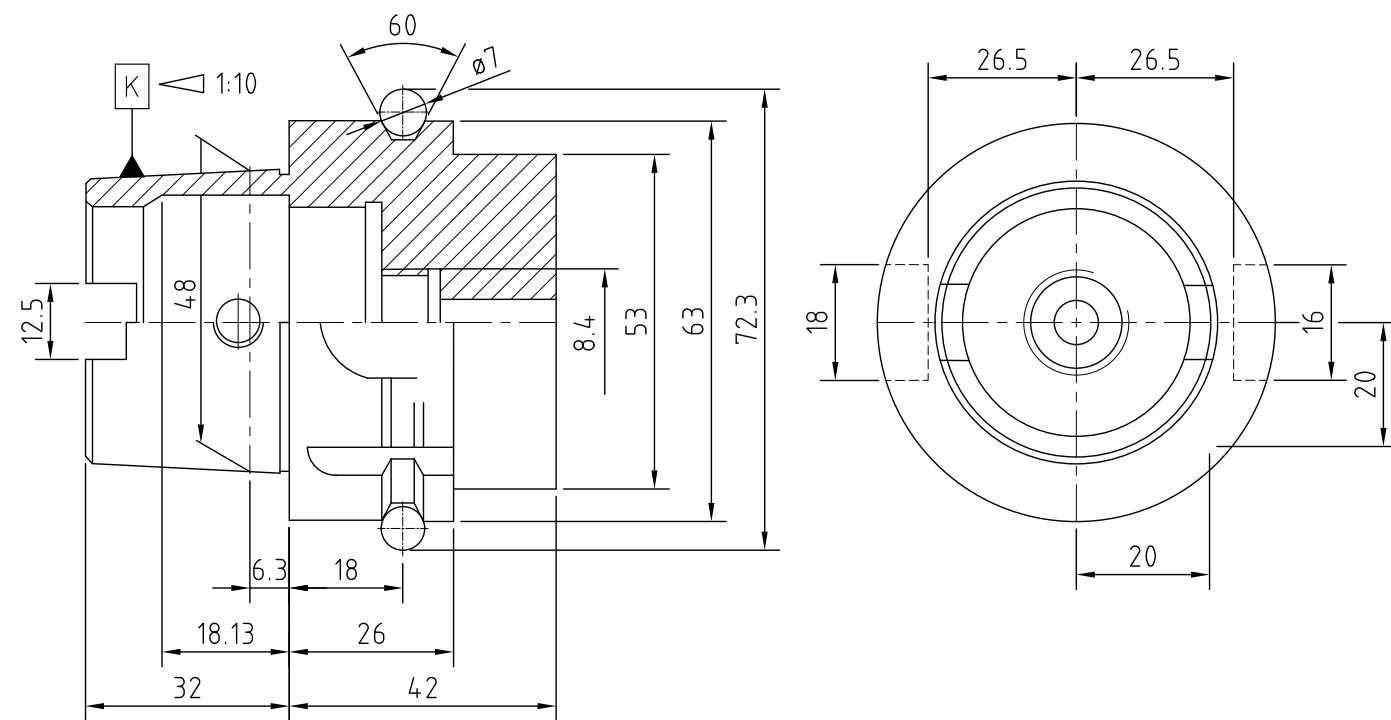


EU-2000/3000

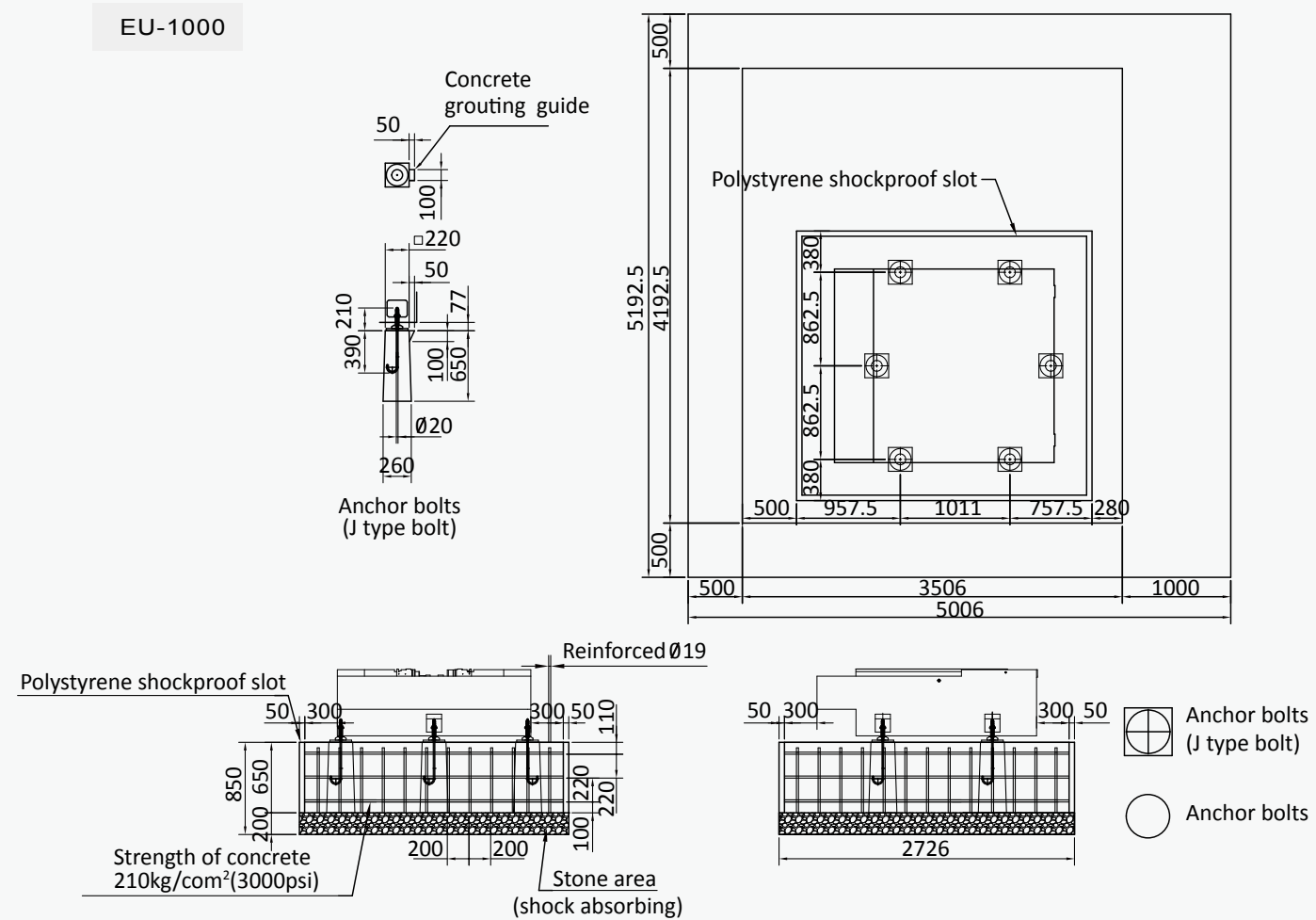


MODEL	T-slot number	W	L1	L2	A	B
EU-2000	8	1000	2000	2300	62.5	125
EU-3000	10	1300	3000	3300	87.5	125

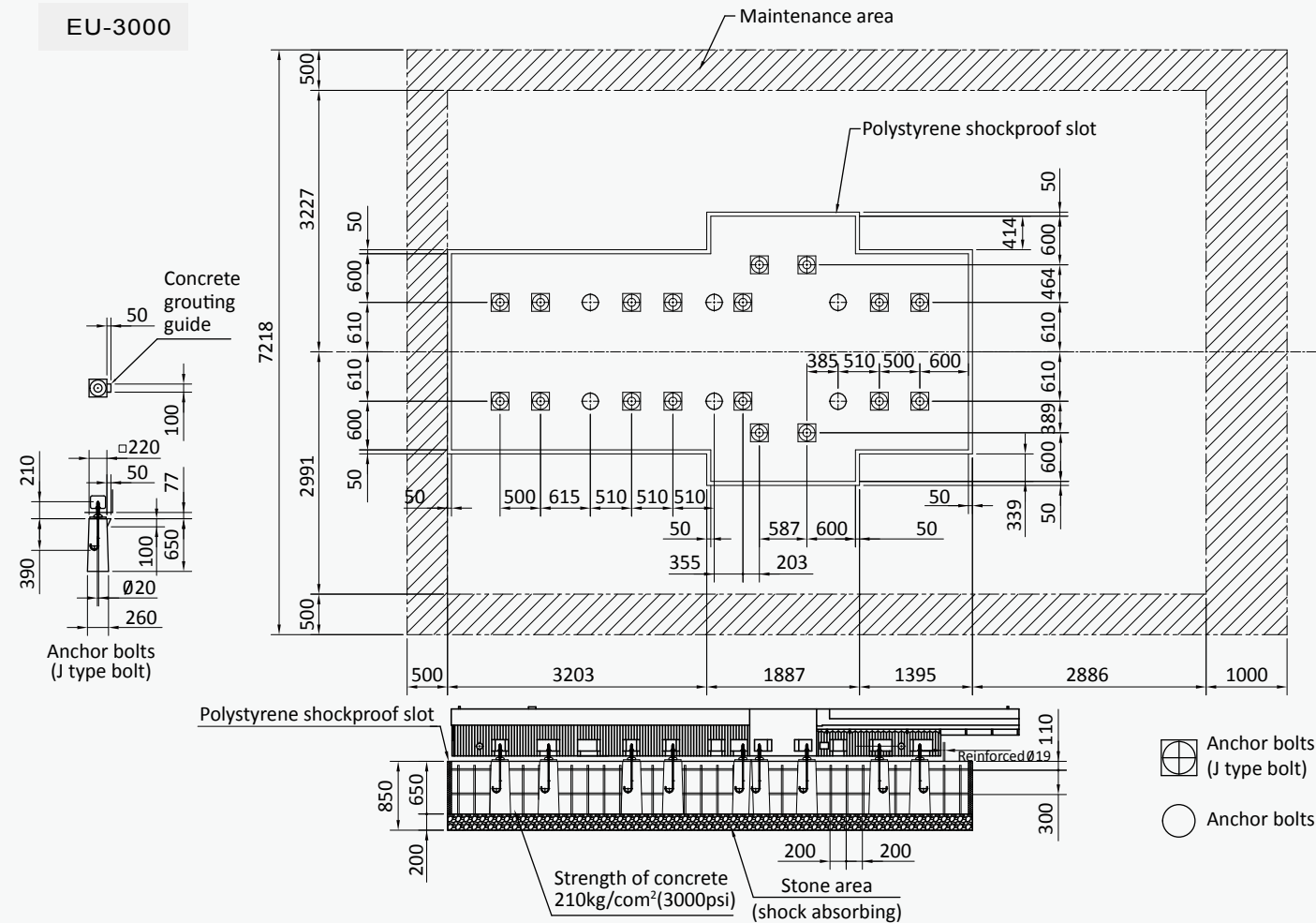
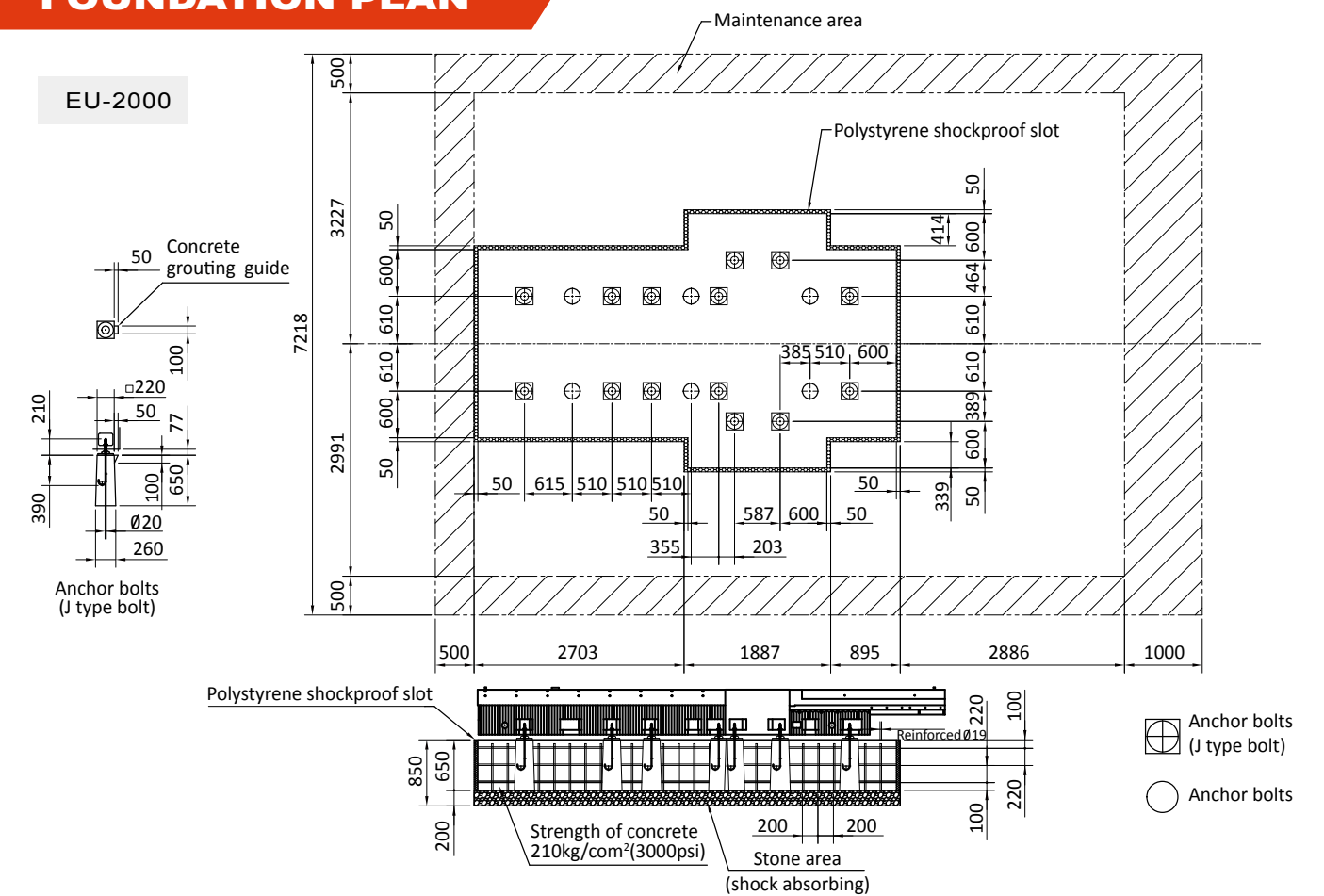
Unit : mm



Unit : mm



EU-2000



OPTIONAL EQUIPMENT



Tool Length Measurement system



CNC Tilting Rotary table

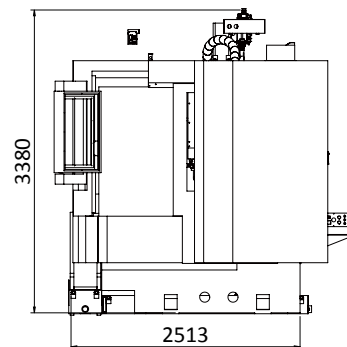
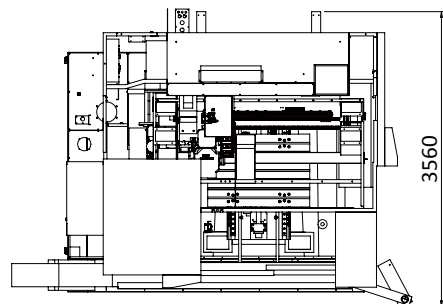
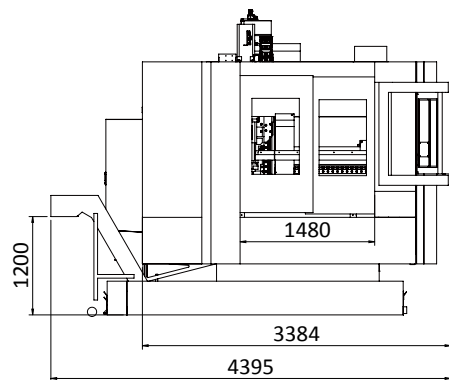


Chip conveyor

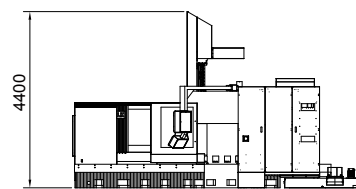
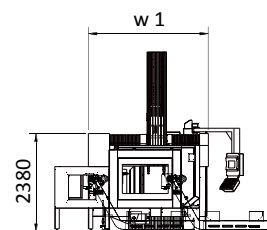
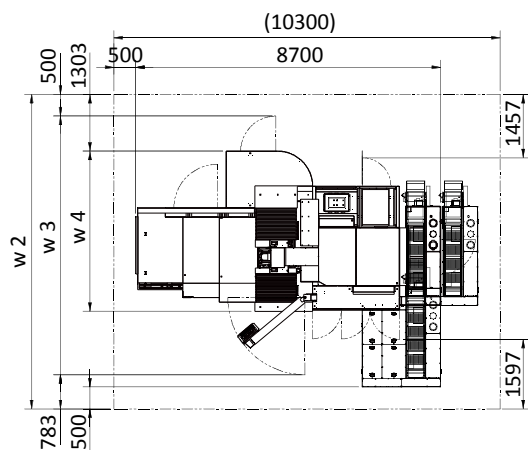
FLOOR SPACE

EU-1000

Unit : mm



EU-2000/3000



Unit : mm

MODEL	W1	W2	W3	W4
EU-2000	2875	7220	5940	3750
EU-3000	3325	7700	6450	4200

SPECIFICATION

Specification	Unit	EU-1000	EU-2000	EU-3000
Controller				
Controller		SIEMENS (828D)	SIEMENS (840D)	SIEMENS (840D)
3 Axes Travel				
X-axis Travel	mm (inch)	1050 (41.34)	2000 (78.74)	3000 (118.11)
Y-axis Travel	mm (inch)	800 (31.5)	1250 (49.21)	1550 (61.02)
Z-axis Travel	mm (inch)	600 (23.62)	650 (25.59)	650 (25.59)
Distance From Spindle Center To Table Surface	mm (inch)	145-745 (5.71~29.33)	150~800 (5.9~31.5)	150~800 (5.9~31.5)
Spindle				
Spindle		Built-in	Built-in	Built-in
Spindle Speed	rpm	18000	18000	18000
Spindle Nose		HSK-A63	HSK-A63	HSK-A63
Spindle Motor	Kw (hp)	25 (34)	25(34)	25(34)
Spindle max. torque	Nm	160	160	160
Table				
Table Size	mm (inch)	1120x600 (44.09x23.62)	2300x1000 (90.55x39.37)	3000x1300 (118.11x51.18)
T-Slot Size(Width×No.×Pitch)	mm (inch)	18x5x100 (0.71x0.2x3.94)	22×8×125 (0.87x0.31x4.92)	22x10x125 (0.87x3.94x4.92)
Max Table Capacity	kgs (lbs)	1000 (2204)	2500 (5511)	4000 (8818)
Rapid Travel				
Cutting Feedrate	m/min (ipm)	1~30000 (40~1181)	1~30000 (40~1181)	1~30000 (40~1181)
X/Y/Z Rapid Feedrate	m/min (ipm)	40/40/30 (1574/1574/1181)	30/30/30 (1181/1181/1181)	30/30/30 (1181/1181/1181)
X/Y/Z Axial Feed Motor	KW	4.87/4.87/4.87	10.47/5.65/7.96	10.47/5.65/7.96
Tool Magazine				
Tool Change Type		Chain	Umbrella type	Umbrella type
Tool Capacity	set	24	24	24
Tool Weight	kgs (lbs)	8 (17)	8 (17)	8 (17)
Max. Tool Length	mm (inch)	300 (11.81)	300 (11.81)	300 (11.81)
Max. Tool Diameter	mm (inch)	100 (3.94)	100 (3.94)	100 (3.94)
Tool Change Time(T-T)	sec	8	8	8
Tool Change Time(C-C)	sec	13	13	13
Others				
Compress Air Supply	kgs/cm ² (psi)	6 (100)	6 (100)	6 (100)
Machine Dimension (L×W×H)	mm (inch)	4800x3500x3200 (188.98x137.8x125.98)	7000x3750x4400 (275.6x147.64x173.23)	8700x4200x4400 (342.52x165.35x173.23)
Net Weight	kgs (lbs)	10500 (23148)	19000 (41887)	28000 (61729)
Cutting fluid tank capacity	Liter	460	550	550
Automatic lubricating tank capacity	Liter	4	4	8

STANDARD & OPTIONAL EQUIPMENT

■ Standard Equipment		■ Optional Equipment	
■ 828D (EU-1000)	■ Auto tool length measurement system (Marposs TS-30)	■ Electrical cabinet heat exchanger	■ Siemens controller 840D (EU-1000)
■ 840D (EU-2000 / EU-3000)	■ Auto lubrication system	■ Rigid tapping	■ Fanuc controller 31i-MB
■ Siemens controller 840D	■ Cutting coolant system	■ M30 automatic power-off function	■ Mitsubishi controller M830
■ HSK-A63 / 18,000rpm / Built-in spindle (Kessler)	■ Full splash guard	■ Working light	■ HSK-A63 / 18,000rpm / Built-in spindle (Kessler)
■ Umbrella type magazine 24 tools (EU-2000/EU-3000)	■ Twin screw-type chip conveyors	■ Tri-color indicator lamp	■ CTS
■ Chain type magazine 24 tools (EU-1000)	■ Scraper type chip conveyor & portable chip bucket	■ Internet & RS-322 interface	■ Oil mist cooling device
■ Spindle water cooling unit	■ Standard water tank	■ Tool box	■ Automatic work piece measurment system
■ Spindle air blast	■ Flushing device	■ Leveling bolts & blocks	■ Rotary table (Fourth axis)
■ 3 axes roller type linear guideway	■ Oil skimmer	■ Inverter	■ 4/5th axes table
■ Linear scale on X/Y/Z axes (Fagor)	■ Separate handwheel	■ Mechanical operation manual	■ Fourth axis reserved interface
	■ Air/water cleaning equipment	■ Bearing preloading	