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TAKISAWA TAIWAN

EX-2000 Series

EX-2000MT / EX-2000MS / EX-2000YT / EX-2000YS

CNC Turning Center

TAKISAWA TAIWAN

EX-2000 series

EX-2000 series is TAIWAN TAKISAWA new generation of high rigidity and high precision turning center capable of handling varieties of parts.
The space-saving design, and faster traverse rate to achieving high productivity. The box-type flat bed with oil cooling maintains accuracy stability.
All models equipped with milling turret. Y axis, tailstock or sub-spindle are available. A variety of high precision accessories and parts loder/unloader for automation.

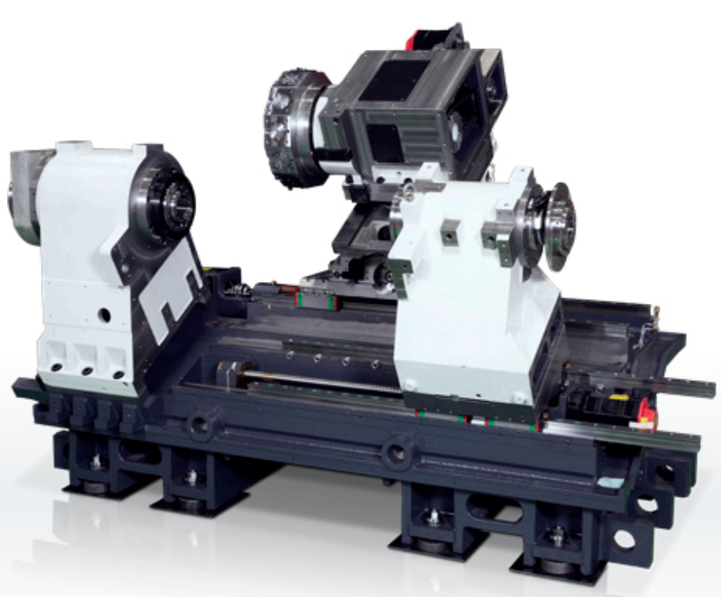
01 Specification Options

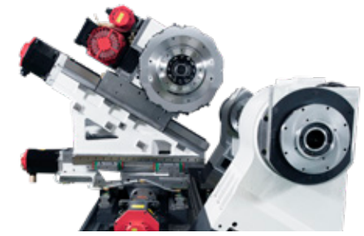
	EX-2000MT	EX-2000MS	EX-2000YT	EX-2000YS
Built-In Motor Spindle	●	●	●	●
Left C Axis	●	●	●	●
Right C Axis	-	●	-	●
T12 Milling Turret	●	●	●	●
Y-Axis	-	-	●	●
Servo Tailstock	●	-	●	-
Hydraulic Tailstock	◎	-	◎	-

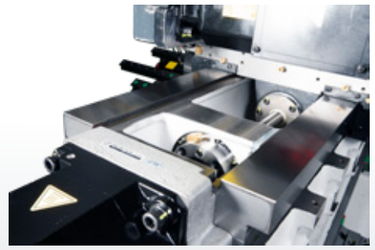
● Standard ◎ Optional – Nope

02 Workpiece Size

	EX-2000MT	EX-2000MS	EX-2000YT	EX-2000YS	
Max. Turning Diameter	390	390	390	390	mm
Max. Turning Length	510.5	510.5	510.5	510.5	mm
Max. Bar Work Capacity Diameter	65	65	65	65	mm







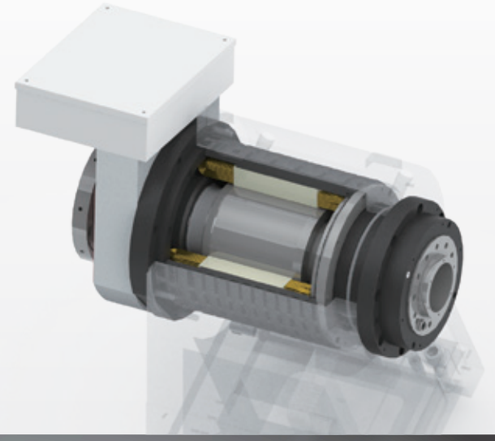
The guideways introduces the concept of hybrid design. The X-axis with box ways to provide good vibration attenuation and dynamic rigidity. The Y-axis, Z-axis and B-axis with roller linear guides to achieve high precision, high rigidity and high speed.

03 Travel & Rapid Traverse

	EX-2000MT	EX-2000MS	EX-2000YT	EX-2000YS	
X-Axis Travel	250	250	250	250	mm
X-Axis Rapid Traverse	30	30	30	30	m / min
Z-Axis Travel	590	590	590	590	mm
Z-Axis Rapid Traverse	36	36	36	36	m / min
Y-Axis Travel	-	-	± 50	± 50	mm
Y-Axis Rapid Traverse	-	-	10	10	m / min
B-Axis Travel	570	570	570	570	mm
B-Axis Rapid Traverse	36	36	36	36	m / min

Spindle

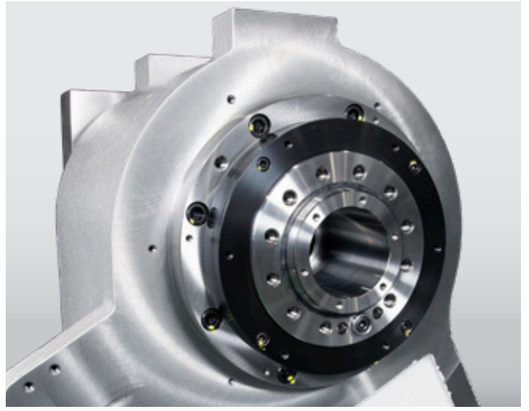
The left and right spindles are equipped with built-in motors for high precision, low vibration and low noise, which provide better surface roughness of the workpiece.

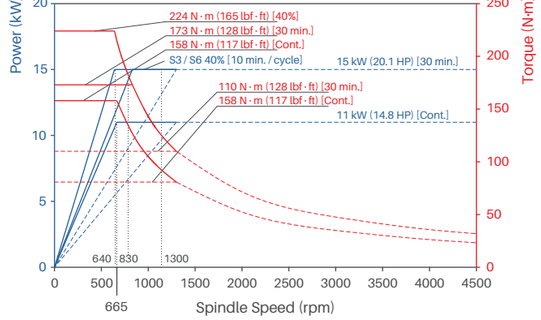


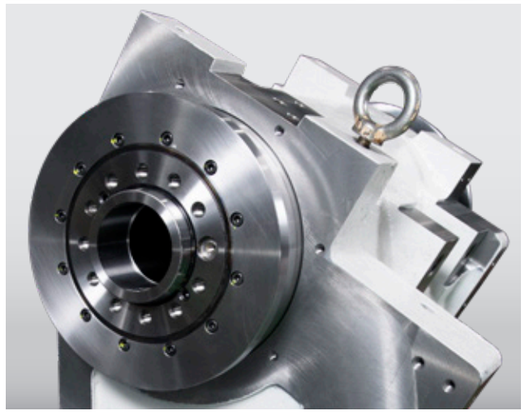
	Left Spindle	Right Spindle*	
Spindle Nose	A2-6	A2-5	
Spindle Speed	4500	5000	rpm
Through Hole Diameter	76	61	mm
Bearing Inside Diameter	110	80	mm
Motor Output	15 / 11	15 / 11	kW
Max. Torque	224	58.5	N·m
Standard Chuck Size	8	6	inch

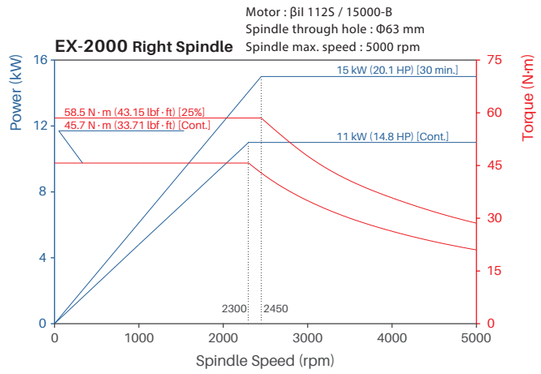
*For EX-2000MS / EX-2000YS Only

Spindle Output Diagram



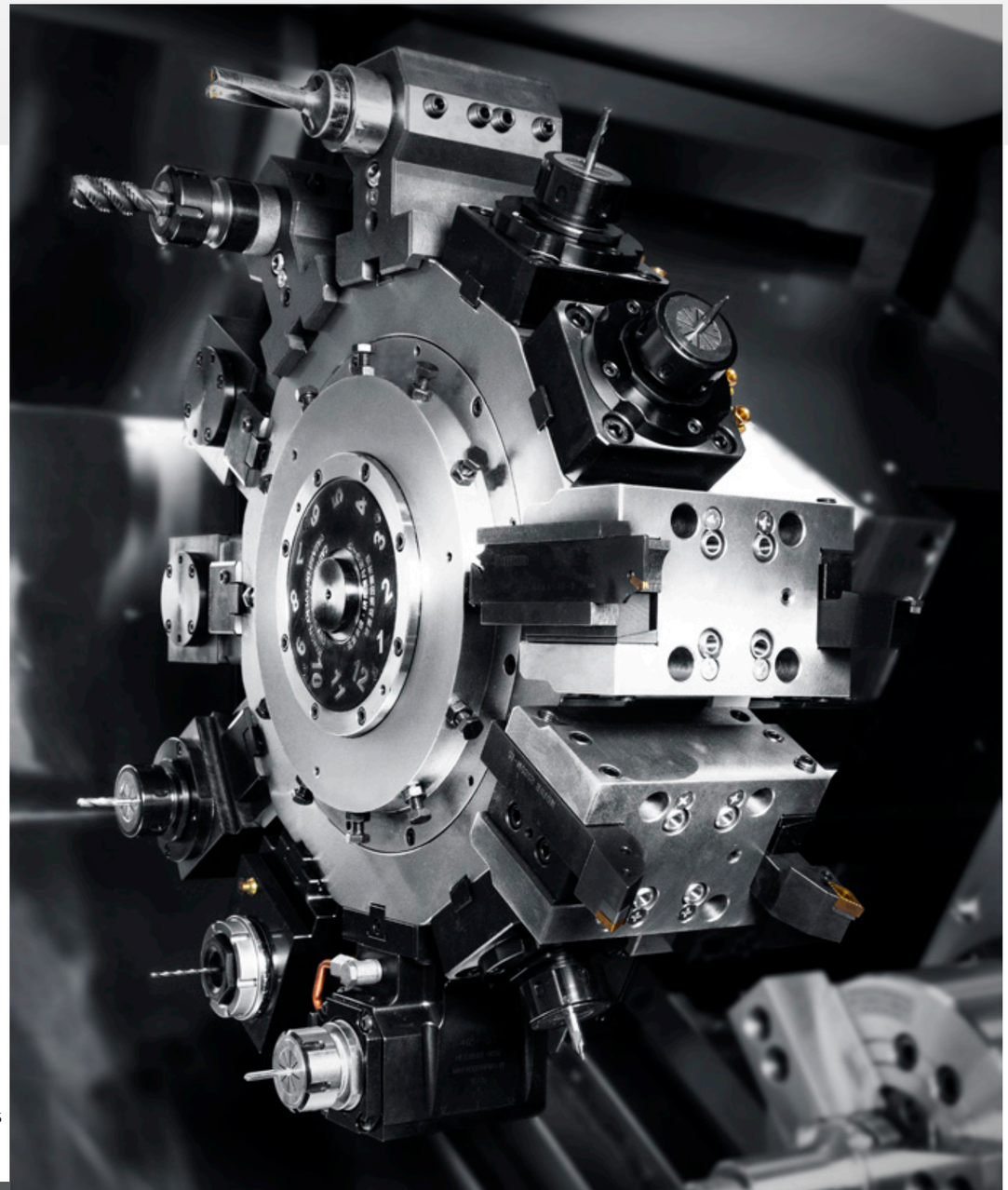






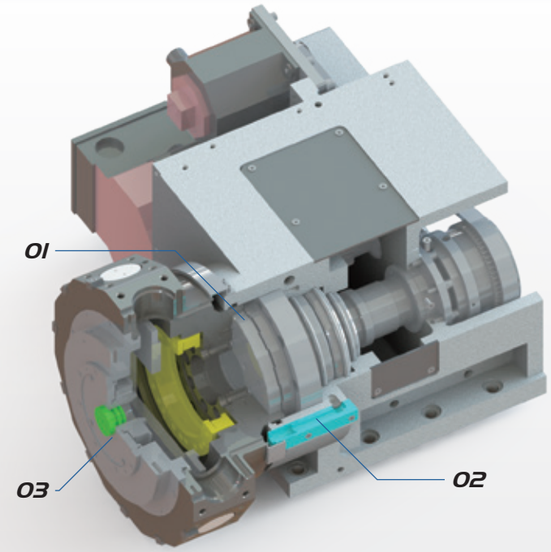
Turret

Euipped with a T12 power turret. It can handdle combined machining such as milling, drilling and tapping.
Inside the turret, the large diameter of coupling gear set with curvic tooth profile provides high rigidity and high accurcy.



Turret Structure

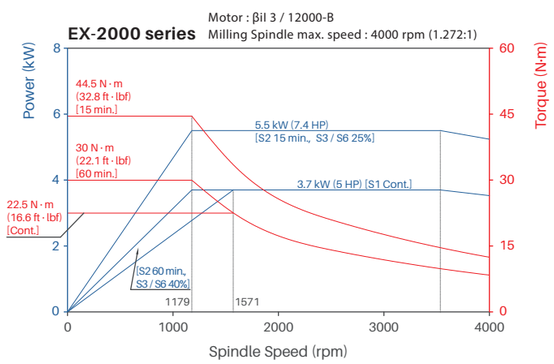
01	Curvic coupling O.D. 280 mm performs high rigidity and accuracy
02	Ready for 70 bar hi-pressure coolant
03	Easy to grease up



T12 Turret

Number of Tools	12	
OD Tool Shank Dimension	25	mm
ID Tool Shank Diameter	40	mm
Milling Shank Diameter	20	mm
Milling Spindle Speed	4000	rpm
Motor Output	5.5 / 3.7	Kw
Max. Torque	44.5	N.m

Spindle Output Diagram

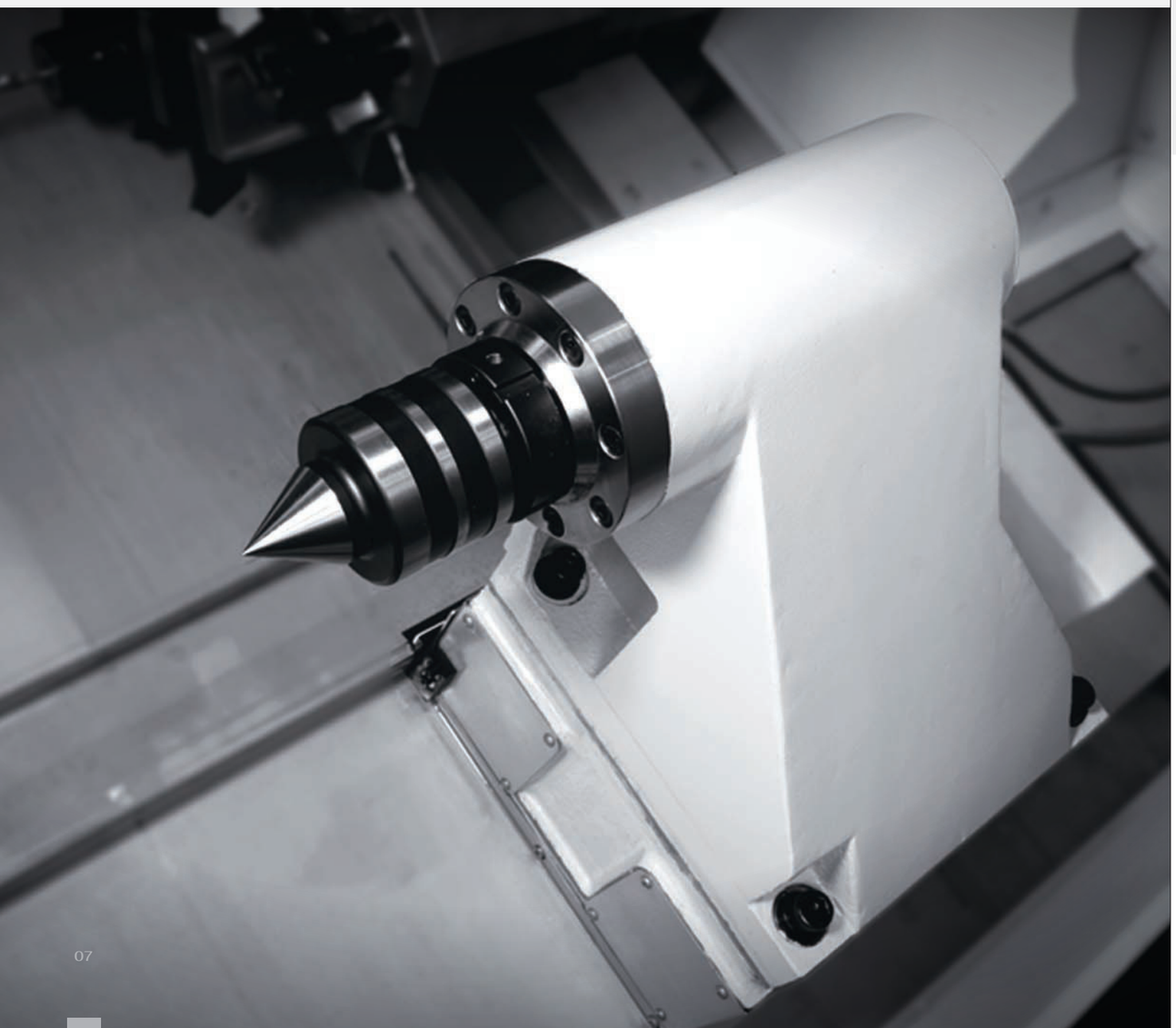


Special Tool Holders

01	Gear Hobbing
02	Broaching
03	Power Skiving
04	Adjustable Angle Milling

Tailstock

The EX-2000MT and EX-2000YT are equipped with a servo tailstock.
The tailstock is driven by a servo motor, which has the advantages of easy operation and fast movement. The movement speed is up to 36 meters per minute.
Under heavy load conditions, the rotary spindle tailstock with a fixed centre can be selected.

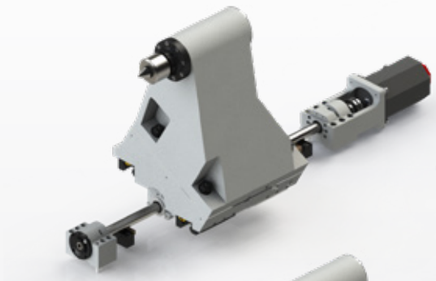


01 Servo Tailstock (Standard)

Tapered Bore Type	MT.5	
Tailstock Thrust	1 ~ 4	kN
Travel	570	mm
Rapid Traverse	36	m / mm
Approach	8 ~ 20	m / mm
Retract	36	m / mm

02 Hydraulic Tailstock (Option)

Tapered Bore Type	MT.5	
Tailstock Thrust	1 ~ 7.8	kN
Travel	570	mm



01

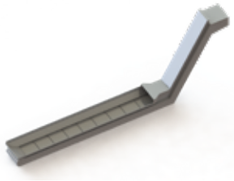
02

01 Tailstock with Rotary Spindle
Recommended for heavy-duty use.

02 Chip Conveyor Type
Depending on the part material and chip size,
the hinge type or scraper type can be selected.

03 Chip Conveyor Configuration
Optional right disposal type or rear disposal type .

Hinge Type
Chip Conveyor

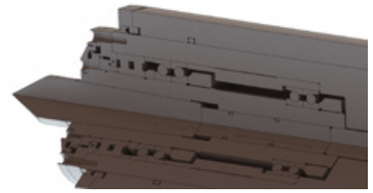


Scraper Type
Chip Conveyor

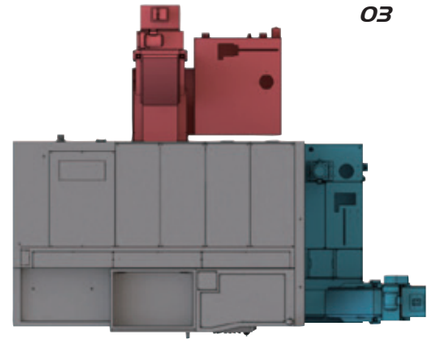
02

Chip Type	Curly Metallic Chip Steel / Aluminum	Power Metallic Chip Foundry / Aluminum / Brass	Non-Metallic
Hinge Type	○	×	○
Scraper Type	×	○	×

01

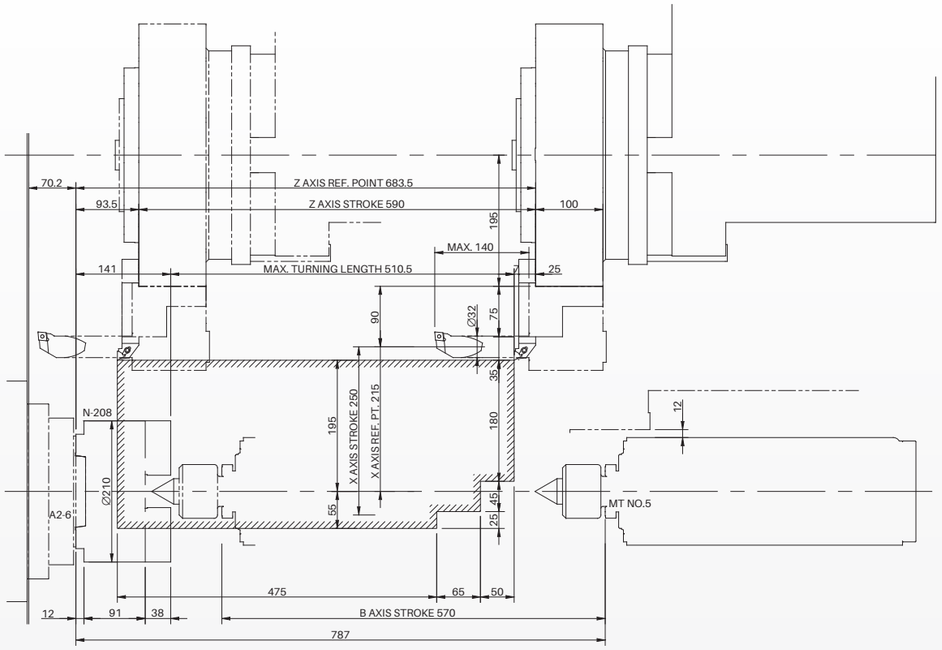


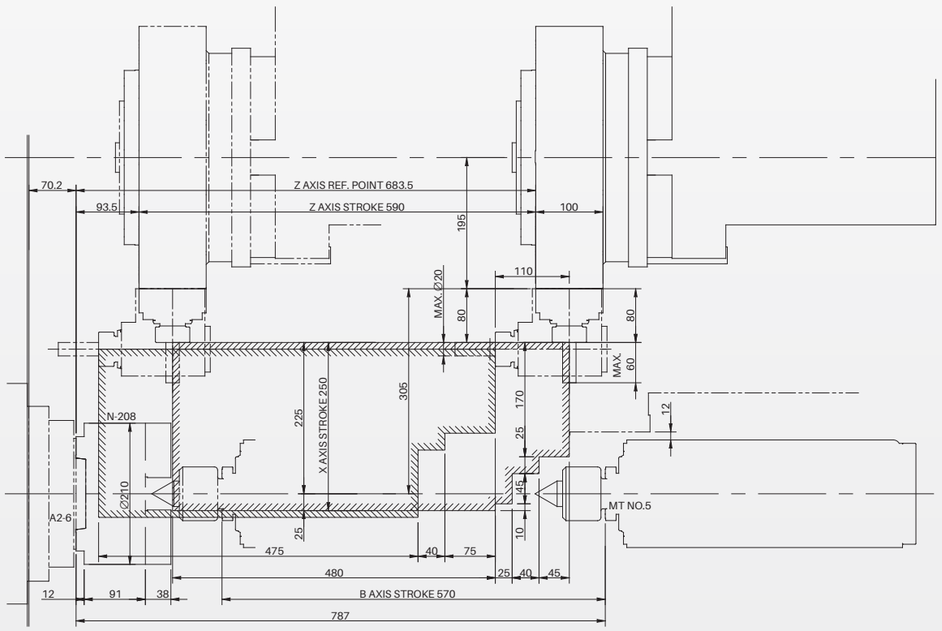
03



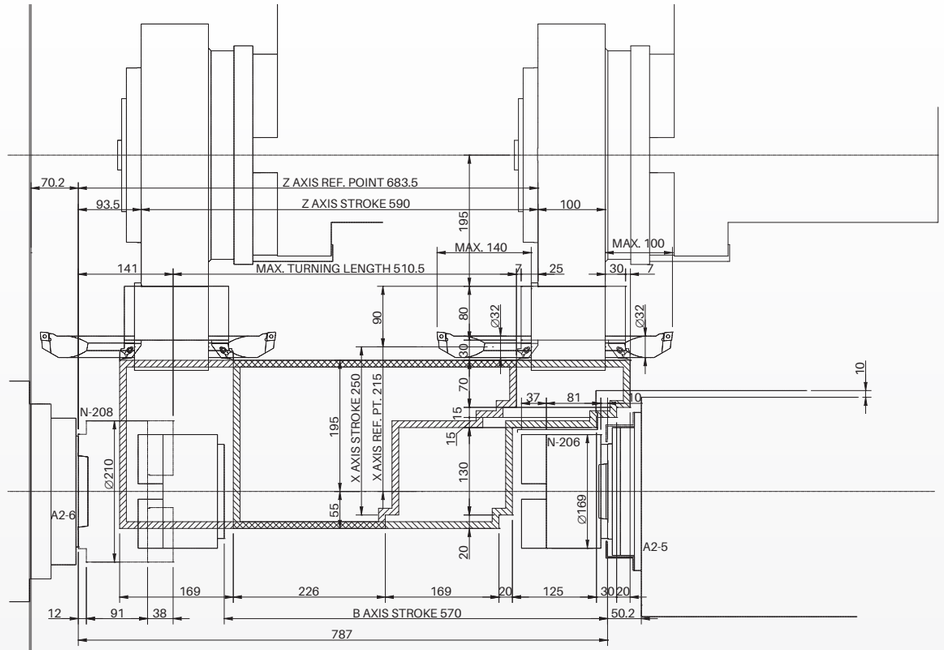
Travel Range

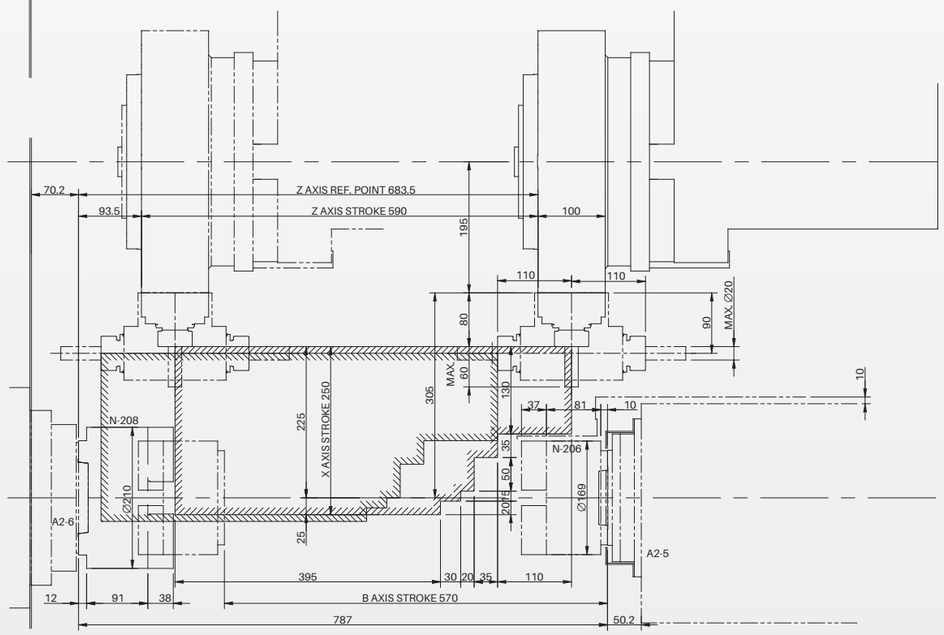
EX-2000MT / EX-2000YT





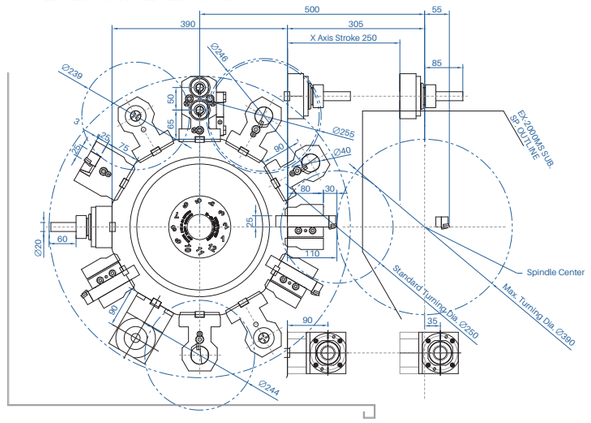
EX-2000MS / EX-2000YS



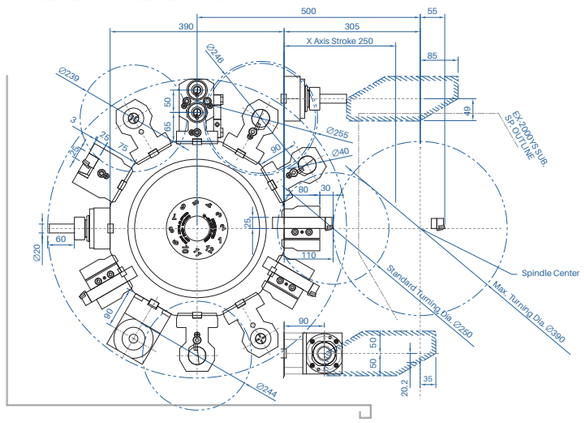


Interference

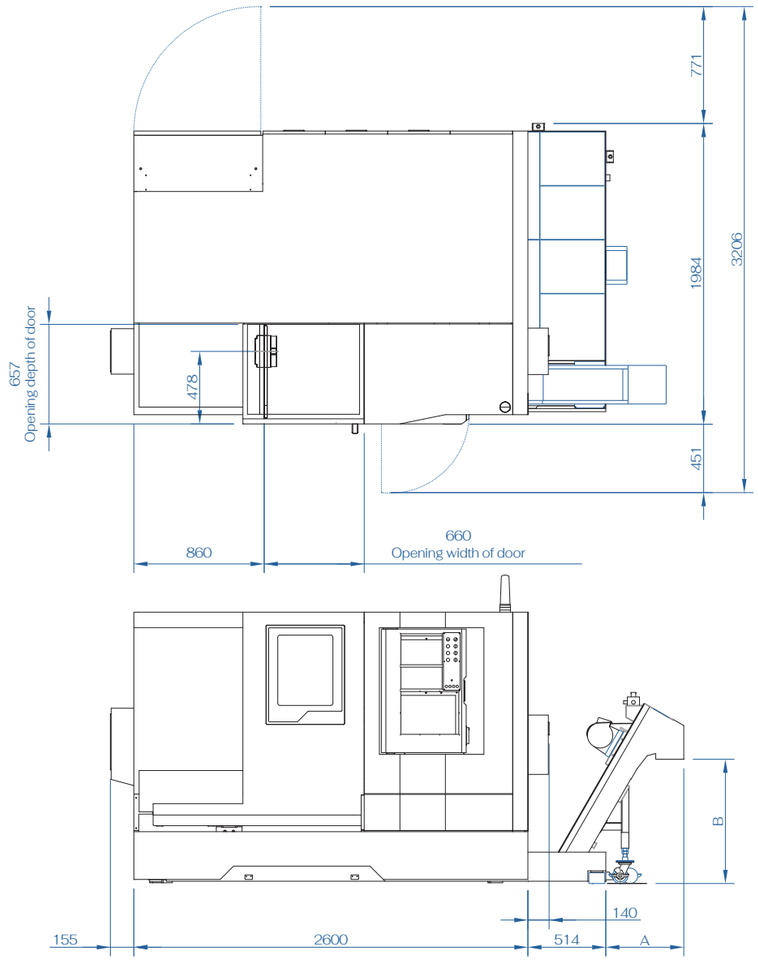
EX-2000MT / EX-2000MS

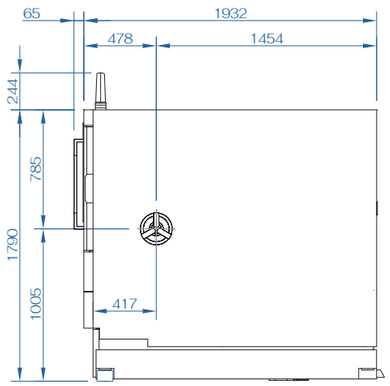


EX-2000YT / EX-2000YS



Machine Dimensions



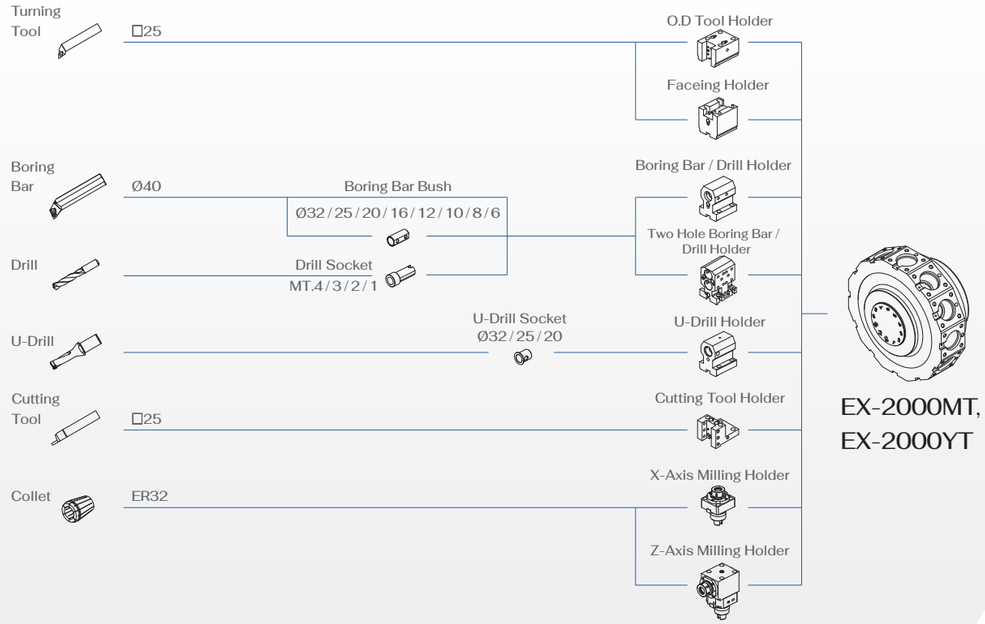


Chip Conveyor Dimension

	A	B
Standard	553	820
CE	553	820
Italy	578	1043
Switzerland	578	1123

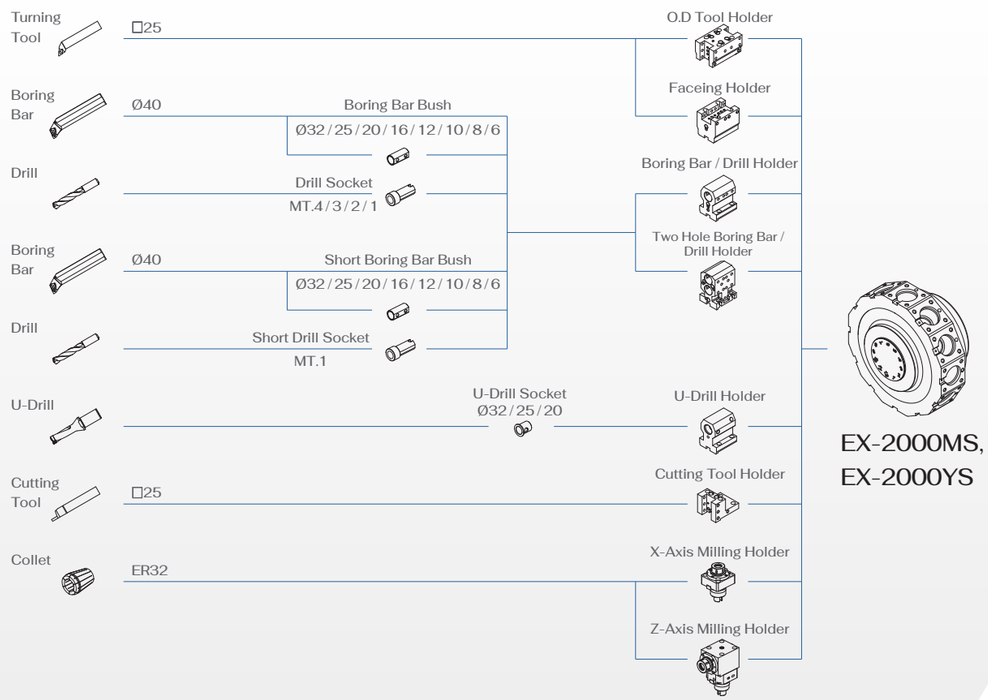
Tooling System

EX-2000MT / EX-2000YT



EX-2000MT,
EX-2000YT

EX-2000MS / EX-2000YS



EX-2000MS,
EX-2000YS

Machine Specifications

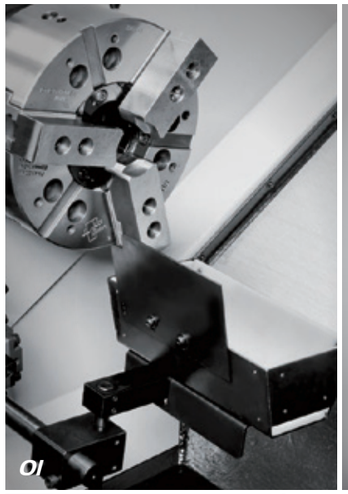
Item			EX-2000 MT	EX-2000 MS	EX-2000 YT	EX-2000 YS
Capacity	Max. Swing	mm	800	800	800	800
	Standard Turning Diameter	mm	250	250	250	250
	Max. Turning Diameter	mm	390	390	390	390
	Max. Turning Length	mm	510.5	510.5	510.5	510.5
	Max. Bar Work Capacity	mm	65	65 / 52	65	65 / 52
	Dist. Between Centers	mm	–	787	–	787
Travel	X-Axis Travel	mm	250	250	250	250
	Z-Axis Travel	mm	590	590	590	590
	Y-Axis Travel	mm	–	–	± 50	± 50
	B-Axis Travel	mm	570	570	570	570
Left Spindle	Spindle Speed	rpm	4500	4500	4500	4500
	Spindle Nose		A2-6	A2-6	A2-6	A2-6
	Through Hole Dia.	mm	76	76	76	76
	Bearing Diameter	mm	110	110	110	110
Right Spindle	Spindle Speed	rpm	–	5000	–	5000
	Spindle Nose		–	A2-5	–	A2-5
	Through Hole Dia.	mm	–	61	–	61
	Bearing Diameter	mm	–	80	–	80
Turret	Number of Tools		T12	T12	T12	T12
	OD Tool Shank Dim.		25	25	25	25
	ID Tool Shank Dia.	mm	40	40	40	40
	Milling Shank Dia.	mm	20	20	20	20
	Spindle Speed		4000	4000	4000	4000
Tailstock	Tailstock Type		Regular Ctr.	–	Regular Ctr.	–
			Rolling Ctr.	–	Rolling Ctr.	–
	Tapered Bore Type		MT.5	–	MT.5	–
Feedrate	X-Axis Rapid Traverse	m/min	30	30	30	30
	Z-Axis Rapid Traverse	m/min	36	36	36	36
	Y-Axis Rapid Traverse	m/min	–	–	10	10
	B-Axis Rapid Traverse	m/min	36	36	36	36
Motor	Left Spindle Motor	kW	15 / 11	15 / 11	15 / 11	15 / 11
	Right Spindle Motor	kW	–	15 / 11	–	15 / 11
	Milling Spindle Motor	kW	5.5 / 3.7	5.5 / 3.7	5.5 / 3.7	5.5 / 3.7
	Index Motor	kW	1.2	1.2	1.2	1.2
	X-Axis Servo Motor	kW	3	3	3	3
	Z-Axis Servo Motor	kW	3	3	3	3
	Y-Axis Servo Motor	kW	–	–	1.4	1.4
	B-Axis Servo Motor	kW	1.8	1.8	1.8	1.8
Machine Size	Height	mm	1795	1790	1790	1790
	Width	mm	2600	2600	2600	2600
	Depth	mm	1932	1932	1932	1932
	Weight	kg	4000	4200	4400	4600

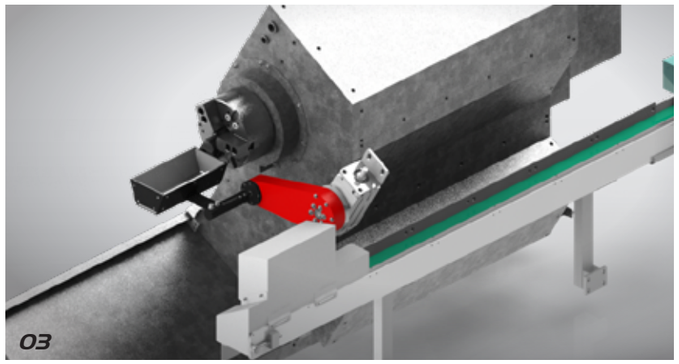
Standard and Optional Accessories

Accessories	EX-2000 MT	EX-2000 MS	EX-2000 YT	EX-2000 YS
Built-In Motor Left Spindle	●	●	●	●
Built-In Motor Right Spindle	-	●	-	●
Servo Tailstock with Regular Center	●	-	●	-
Servo Tailstock with Rolling Center	◎	-	◎	-
Hydraulic Tailstock with Regular Center	◎	-	◎	-
Hydraulic Tailstock with Rolling Center	◎	-	◎	-
O.D Tool Holder	●	●	●	●
Face Tool Holder	●	●	●	●
U-Drill Tool Holder	●	●	●	●
Boring Bar Tool Holder	●	●	●	●
Boring Bar Bush (Ø6 / Ø8 / Ø10 / Ø12)	●	●	●	●
Boring Bar Bush (Ø16 / Ø20 / Ø25 / Ø32)	●	●	●	●
Boring Bar Bush (Ø40)	●	●	●	●
U-Drill Bush (Ø16 / Ø20 / Ø25 / Ø32)	●	●	●	●
Drill Bush (MT.1 / MT.2 / MT.3 / MT.4)	◎	◎	◎	◎
X-Axis Milling Holder	●	●	●	●
Z-Axis Milling Holder	●	●	●	●
Automatic Tool Setter	◎	◎	◎	◎
Manual Tool Setter	◎	◎	◎	◎
Linear Scales	◎	◎	◎	◎
Coolant Pump (450W)	●	●	●	●
Coolant Pump (715W / 750W / 900W / 1400W)	◎	◎	◎	◎
Coolant Chiller	◎	◎	◎	◎
Nut Cooling Ball Screw	◎	◎	◎	◎
Hydraulic System	●	●	●	●
Hydraulic Oil Cooling	◎	◎	◎	◎
Hydraulic Pressure Sensor	●	●	●	●
Lubrication System	●	●	●	●
Hydraulic Chuck	●	●	●	●
Collet Chuck	◎	◎	◎	◎
Foot Switch	●	●	●	●
LED Interior Light	●	●	●	●
LED TAKISAWA Light	●	●	●	●
LED Signal Tower	●	●	●	●
Chip Cart	●	●	●	●
Right Side Chip Conveyor	◎	◎	◎	◎
Rear Side Chip Conveyor	◎	◎	◎	◎
Parts Catcher	◎	◎	◎	◎
Parts Conveyor	◎	◎	◎	◎
Automatic Bar Feeder and Interface	◎	◎	◎	◎
Auto Door	◎	◎	◎	◎
Safety Door Switch	◎	◎	◎	◎
Safety Light Curtain	◎	◎	◎	◎
Air Blow	◎	◎	◎	◎
Oil Skimmer	◎	◎	◎	◎
Oil Mist Collector	◎	◎	◎	◎
Parts Counter	◎	◎	◎	◎
Automatic Power-Off	◎	◎	◎	◎

● Standard ◎ Optional - Nope

Special Specification Example





01 Left Spindle Parts Catcher

Max. Parts Dia.	65	mm
Max. Parts Length	200	mm
Max. Parts Weight	3	kg

02 Parts Pusher

Pusher Stroke	95	mm

03 Right Spindle Parts Catcher

Max. Parts Dia.	65	mm
Max. Parts Length	200	mm
Max. Parts Weight	3	kg

Highly Accurate Optional Equipment

There are special requirements for precise machining accuracy and it is necessary to use approved high-precision optional equipment.

Please contact us for advice on these options.

01	Linear Scales
02	Automatic I Manual Tool Setter
03	Nut Cooling Ball Screw
04	Cutting Fluid Cooling
05	High Pressure Coolant
06	Hydraulic Oil Cooling

01

02

03

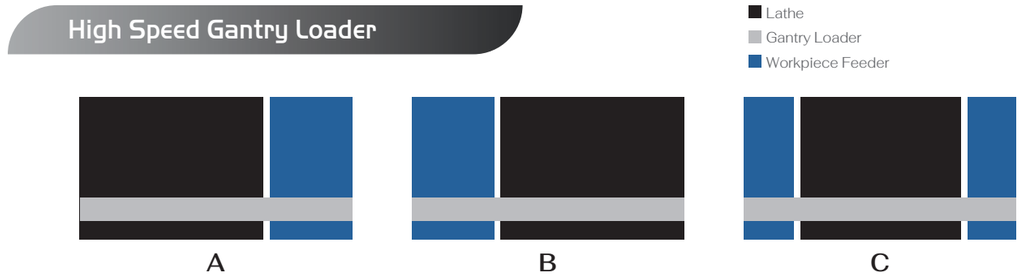
04

05

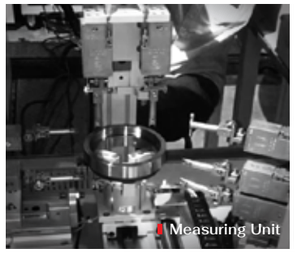
06

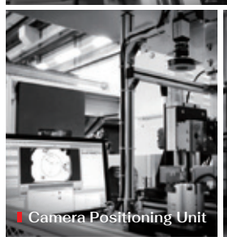
Gantry Loader

High Speed Gantry Loader



Peripheral Equipment





Gantry Loader Specifications

Gantry Loader Specifications

X-Axis	180	m / min
Z-Axis	150	m / min

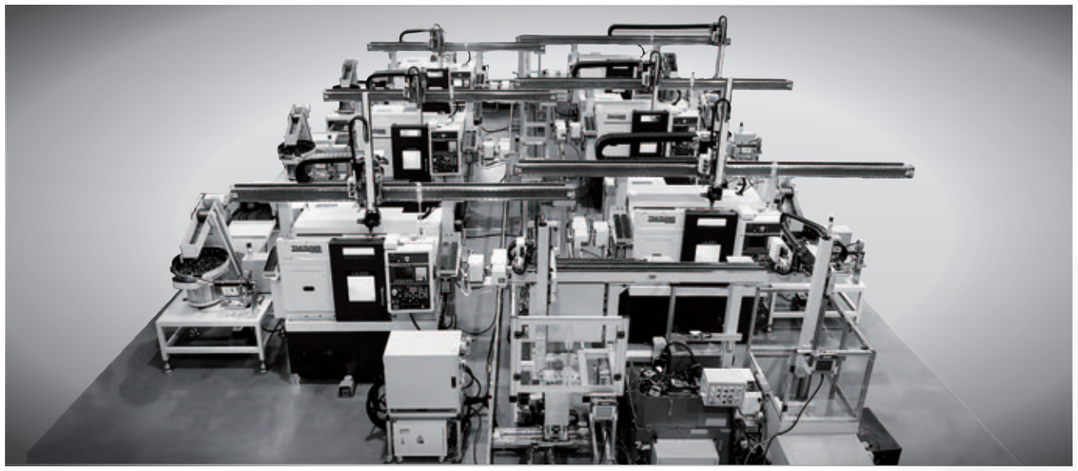
Working Size

O.D	160	mm
Length	100	mm
Weight	3 (x2)	kg

Work Feeder Specifications

Pallet	16	pcs
Loading Weight	40	kg
Max. Height	450	mm
Worker Feeder Width	610	mm

Turn-Key Solution



NC Unit Specifications

Specifications · Contents	EX-2000	MT	MS	YT	YS
Controller					
0i-TF		●	●	●	●
NC Unit					
8.4" Color LCD		●	●	●	●
10.4" Color LCD		◎	◎	◎	◎
15" Color LCD		◎	◎	◎	◎
Safety Device					
Front Door Interlock		◎	◎	◎	◎
Front Door Locking Mechanism		◎	◎	◎	◎
Safety Relay		◎	◎	◎	◎
Control Panel Breaker with Tripper		◎	◎	◎	◎
Controlled Axes					
Least Input Increment		●	●	●	●
Maximum Programmable Dimension (± 999999.999)		●	●	●	●
Least Input Increment C		▲	▲	▲	▲
Inch / Metric Selection		●	●	●	●
Interlock		●	●	●	●
Machine Lock		◎	◎	◎	◎
Emergency Stop		●	●	●	●
Stored Stroke Check 1		●	●	●	●
Stored Stroke Check 2, 3		●	●	●	●
Stroke Limit Check Before Movement		●	●	●	●
Chuck Tailstock Barrie		▲	▲	▲	▲
Mirror Image (Each Axis)		▲	▲	▲	▲
Chamfering ON / OFF		●	●	●	●
Overload Detection		●	●	●	●
Position Switch		●	●	●	●
Operation					
Auto Run (Memory)		●	●	●	●
MDI Run		●	●	●	●
DNC Run		●	●	●	●
DNC Run with Memory Card		●	●	●	●
Program Number Search		●	●	●	●
Sequence Number Search		●	●	●	●
Sequence Number Collation and Stop		●	●	●	●
Wrong Operation Preventive		▲	▲	▲	▲
Buffer Register		●	●	●	●
Dry Run		●	●	●	●
Single Block		●	●	●	●
Jog Feed		●	●	●	●
Manual Reference Point Return		●	●	●	●
Dogless Reference Point Setting		●	●	●	●
Manual Handle Feed, 1 Unit		●	●	●	●
Interpolating Functions					
Poitioning (G00)		●	●	●	●
Exact Stop Mode (G61)		●	●	●	●
Tapping Mode (G63)		●	●	●	●
Cutting Mode (G64)		●	●	●	●
Exact Stop (G09)		●	●	●	●
Linear Interpolation (G01)		●	●	●	●
Circular Interpolation (G02 / 03)		●	●	●	●
Dwell (G04)		●	●	●	●
Polar Coordinate Interpolation		●	●	●	●
Cylindrical Interpolation		●	●	●	●
Thread Cutting		●	●	●	●
Multiple Thread Cutting		●	●	●	●
Thread Cutting Cycle and Retraction		●	●	●	●
Continuous Thread Cutting		●	●	●	●
Variable Lead Thread Cutting		●	●	●	●
Reference Point Return (G28)		●	●	●	●
Reference Point Return Check (G27)		●	●	●	●
2nd Reference Point Return (G30)		●	●	●	●
3rd, 4th Reference Point Return		●	●	●	●

Specifications · Contents	EX-2000	MT	MS	YT	YS
Feed Function					
Rapid Traverse Override (F0, 25%, 50%, 100%)		●	●	●	●
Feed Per Minute		●	●	●	●
Feed Per Revolution		●	●	●	●
Constant Tangential Speed Control		●	●	●	●
Cutting Feedrate Clamp		●	●	●	●
Automatic Acceleration / Deceleration		●	●	●	●
Rapid Traverse Bell-Shaped Accel / Decel		●	●	●	●
Linear Accel / Decel After Feedrate Interpolation		●	●	●	●
Feedrate Override (15 Steps)		●	●	●	●
Jog Override (15 Steps)		●	●	●	●
Override Cancel		●	●	●	●
Manual Feed Per Revolution		▲	▲	▲	▲
Program Input					
Tape Code (EIA / ISO Auto Recognition)		●	●	●	●
Label Skip		●	●	●	●
Parity Check		●	●	●	●
Control In / Out		●	●	●	●
Optional Block Skip, 1 Piece		●	●	●	●
Optional Block Skip (2 to 9 Pieces)		⊕	⊕	⊕	⊕
Program Number O4 Digits		●	●	●	●
Program File Name 32 Characters		●	●	●	●
Sequence Number N5 Digits		–	–	–	–
Sequence Number N8 Digits		●	●	●	●
Absolute / Incremental Command		●	●	●	●
Decimal Point Input / Pocket Calculator Type Decimal Point Input		●	●	●	●
Diameter / Radius Programming (X-Axis)		●	●	●	●
Coordinate System Setting (G50)		●	●	●	●
Auto coordinate System Setting		●	●	●	●
Drawing Dimension Direct Input		●	●	●	●
G-Code System A		●	●	●	●
G-Code System B / C		▲	▲	▲	▲
Chamfering / Corner R Programming		●	●	●	●
Programmable Data Input		●	●	●	●
Sub Program Call (10 Levels)		●	●	●	●
Custom Macro		●	●	●	●
Additional Custom Macro Common Variables		●	●	●	●
Single Canned Cycle		●	●	●	●
Combined Canned Cycle		●	●	●	●
Combined Canned Cycle II		●	●	●	●
Drilling Canned Cycle		●	●	●	●
Arc Radius Programming		●	●	●	●
Macro Executor		◎	◎	◎	◎
Coordinate System Shift		●	●	●	●
Coordinate System Shift Direct Input		●	●	●	●
Miscellaneous Function / Spindle Functions					
M Function (M3 Digits)		●	●	●	●
Second Miscellaneous Function (B Function)		◎	◎	◎	–
Spindle Functions (S4 Digits)		●	●	●	●
Constant Surface Speed Control		●	●	●	●
Spindle Orientation		●	●	●	●
Rigid Tap (Spindle Center)		●	●	●	●
Rigid Tap (Rotary Tool)		●	●	●	●
Data I/O					
RS-232C Interface for 1 ch		●	●	●	●
Fast Data Server		⊕	⊕	⊕	⊕
External Message		●	●	●	●
External Workpiece Number Search		◎	◎	◎	◎
Memory Card I/O		●	●	●	●

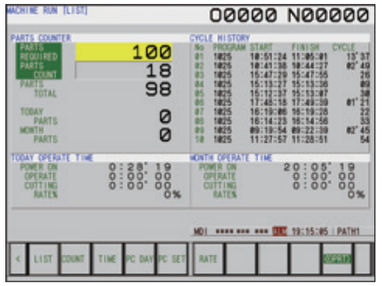
Specifications · Contents	EX-2000	MT	MS	YT	YS
Tool Functions / Tool Offset Functions					
T Function (T2 + 2 Digits)		●	●	●	●
Tool Offsets, 32 Pieces		–	–	–	–
Tool Offsets, 64 Pieces		–	–	–	–
Tool Offsets, 99 Pieces		●	●	●	●
Tool Offsets, 200 Pieces		◎	◎	◎	◎
Tool Offsets, 400 Pieces		–	–	–	–
Tool Geometry Size Data, 100 Pieces		◎	◎	◎	◎
Tool Position Offset		●	●	●	●
Tool Diameter / Nose R Compensation		●	●	●	●
Tool Geometry / Wear Compensation		●	●	●	●
Tool Offset Counter Input		●	●	●	●
Tool Offset Measured Value Direct Input		●	●	●	●
Tool Offset Measured Value Direct Input B		◎	◎	◎	◎
Tool Life Management		▲	▲	▲	▲
Accuracy Offset Functions					
Backlash Compensation		●	●	●	●
Backlash Compensation by Rapid Traverse / Feedrate		●	●	●	●
Editing					
Part Program Memory Capacity 128K byte (320m)		–	–	–	–
Part Program Memory Capacity 320K byte (800 m)		–	–	–	–
Part Program Memory Capacity 512K byte (1280 m)		●	●	●	●
Part Program Memory Capacity 1M byte		–	–	–	–
Part Program Memory Capacity 2M byte		◎	◎	◎	◎
Registrable Programs, 63 Programs		–	–	–	–
Registrable Programs, 400 Programs		●	●	●	●
Registrable Programs, 1000 Programs		◎	◎	◎	◎
Program Editing		●	●	●	●
Program Protection		●	●	●	●
Extended Program Editing		●	●	●	●
Background Editing		●	●	●	●

Specifications · Contents	EX-2000	MT	MS	YT	YS
Setting / Display					
Status Display		●	●	●	●
Clock Function		●	●	●	●
Current Position Display		●	●	●	●
Program Comment Display (31 Characters)		●	●	●	●
Parameter Setting and Display		●	●	●	●
Alarm Display		●	●	●	●
Alarm Log Display		●	●	●	●
Operator Message Log Display		●	●	●	●
Operation Message Log Display		●	●	●	●
Run Hours and Parts Count Display		●	●	●	●
Actual Speed Display		●	●	●	●
Actual Spindle Speed and T Code Display		●	●	●	●
Floppy Cassette Directory Display		●	●	●	●
Grouped Directory Display and Punching		●	●	●	●
Servo Adjustment Screen		●	●	●	●
Maintenance Information Screen		●	●	●	●
Data Protection Key, 1 Kind		●	●	●	●
Help Function		●	●	●	●
Self Diagnostic Function		●	●	●	●
Scheduled Maintenance Screen		●	●	●	●
Hardware & Software System Configuration Display		●	●	●	●
Graphic Display		●	●	●	●
Dynamic Graphic Display		◎	◎	◎	◎
Display Languages					
English		●	●	●	●
Japanese (Kanji)		▲	▲	▲	▲
Other Language		▲	▲	▲	▲
Display Language Dynamic Switching		●	●	●	●

● Standard ◎ Optional ⊕ Special
▲ Parameter setting is required – Nope

Smart Work Manager (Option)

01



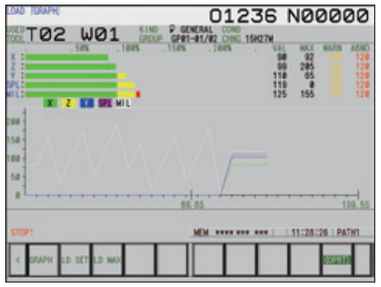
It provides simple operation and convenient function.

01 Tool Life Manager
This function can set tool life and wear limit to manage all tools.

02 Load Monitor
Detecting max load to check tool status.

03 Parts and Machine Manager
It offer parts counter, program history, operate time for today or this month.

02



03