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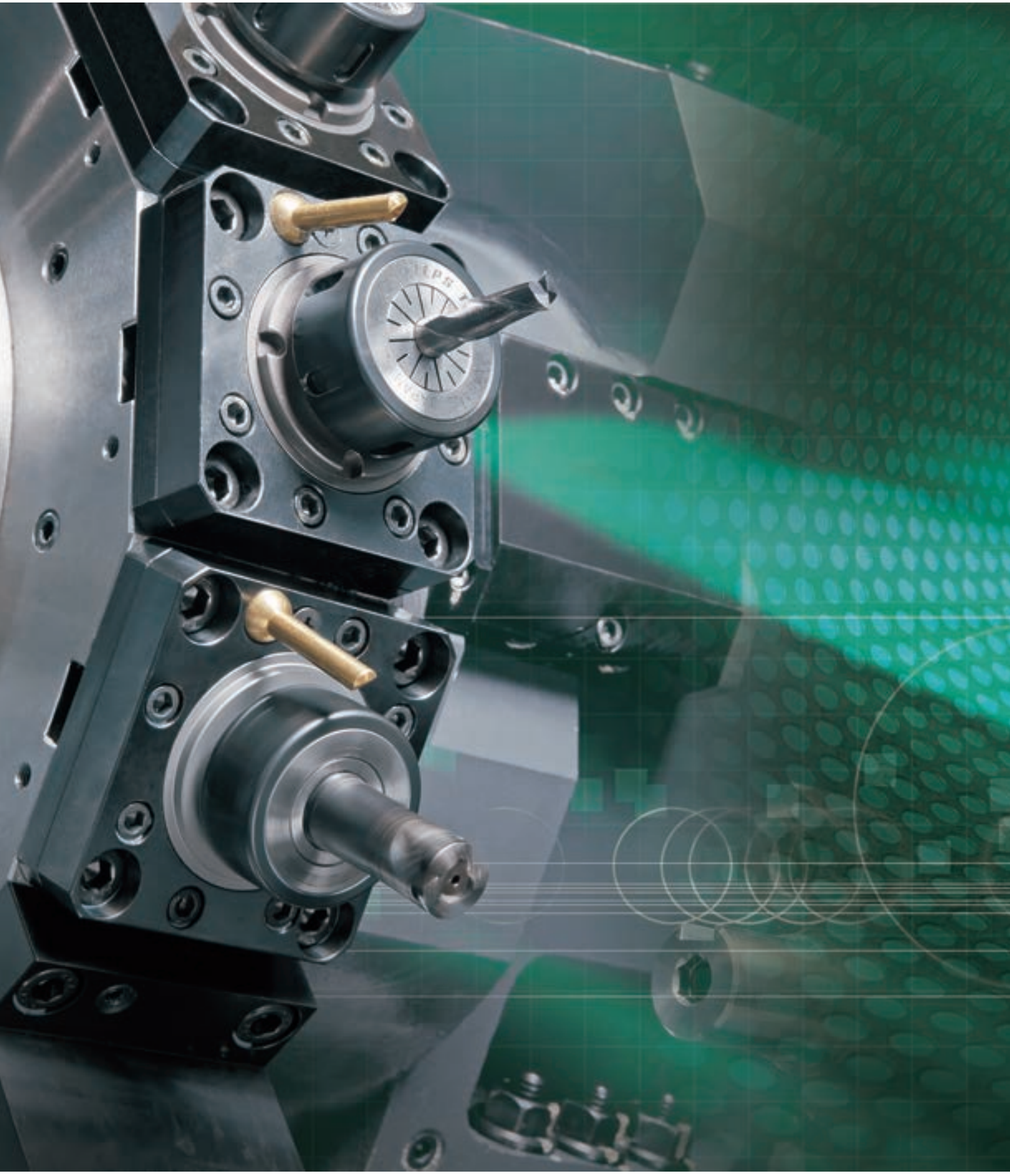
SC SERIES

NAKAMURA-TOME
PRECISION INDUSTRY CO.,LTD.



Multi-Tasking Turning Center for Production

From diversified small-lot production to mass production

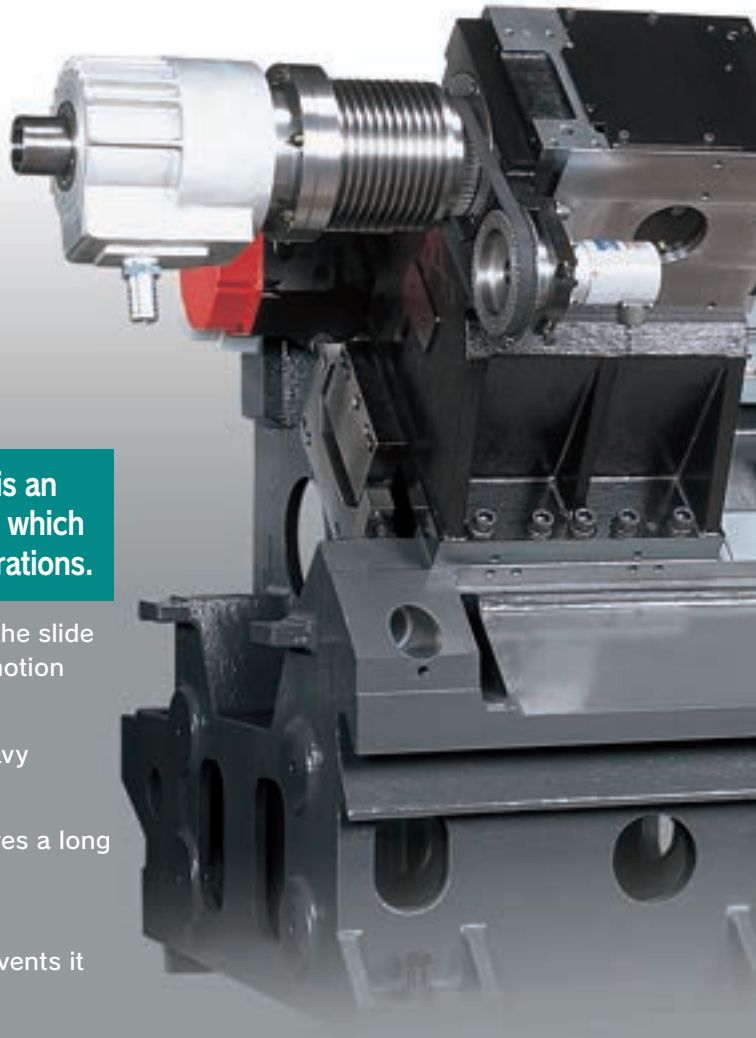
The slides of the SC-Series adopt the technology of “KISAGE” , a long-established tradition continued since the hydraulic-turret lathe era, which requires very high skills and strict quality control. In the “KISAGE” process, the slides are coated with Turcite B ®, then hand-scraped and mated with box-type guide-ways which are flame hardened and ground to precision. Coupled with slide rigidity, the high-power motors deliver powerful machining.

In addition to the low center of gravity design for more stability, the SC SERIES combine advanced capabilities and the latest technology, all packed in an ultimate turret-type multitasking machine.

All axes are equipped with high-rigidity

Traditionally hand-scraped and fitted slides

A tradition that has been kept since the automatic turret lathe era, “KISAGE” is a process, which prides itself for providing ultra-precision gliding qualities. Nakamura-Tome offers high-grade slide scraping for all machines.



Turcite-B ® used for coating the slide-ways, is an exceptionally low-wearing low-friction polymer, which increases slide life and rigidity, and reduces vibrations.

- By keeping a constant coefficient of friction, when the slide is static or moving, Turcite B ® prevents stick-slip motion and increases positional accuracy.
- Additionally, the low friction coefficient ensures heavy cutting even with increased loads.
- Turcite B ® has a high wear resistance, which ensures a long service life.
- Turcite B ® provides excellent vibration dampening properties. It absorbs cutting tool vibration and prevents it from migrating throughout the machine tool.
- This property is an essential factor for achieving the best surface finish, which is a prerequisite for a machine delivering the highest precision.

and high-resistance box-type slides

Spindle and slide units are mounted on the machine bed by high-qualified technicians, and each machine does not leave the production line before undergoing the most stringent quality control checks.
This machine does not only feature high capabilities, but also high performance and reliability, delivered from a machine-tool manufacturer fostering high accuracy and precision manufacturing technology over many years.

SC series are born with the merger of the cutting-edge

Techno center

Accumulated technique and know-how of many years. Investment of the latest CAD system. Engaged in the development of the most advanced multi-tasking machines.

Covering a range of processes that starts with structural design of a machine and includes everything from electrical design to software development, the Research and Development Division is engaged in the development of the most advanced multi-tasking machines that will save energy and labor, enable unmanned operations, and promote systematization.
Above all, basic research and test research are carried out under a strict responsibility-assuming system and 3D CAD systems and analysis systems have been introduced for the purpose of realizing perfect reliability in design. Moreover, by utilizing technologies of mechatronics, software and system engineering and by merging technological seeds and industrial needs, we are actively engaged in enriching and enhancing the Research and Development Division with the intention of making differentiated products which will be responsible for the next generation.

Research & Development

3D CAD design system

Development division in Techno center

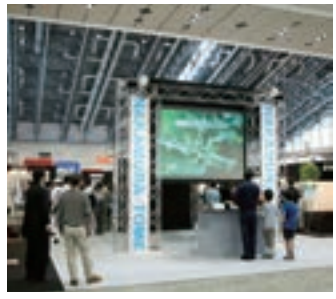
Conference room

The Nakamura-Tome Global Network established

Our machine development is based on the customers demand: We listen to the customers voice world-wide and exchange our latest technical information.

Nakamura-Tome Distributors Meeting

International show



Domestic show

technology and the advanced production facility.

Plant 11

We keep pursuing to achieve the ultimate in accuracy and reliability

Before any finished machine is dispatched to its customer, it will complete very stringent final inspection and quality procedures which exceed JIS standards at the assemble stage.

Production & Assembling & Quality Control

Bed Grinding machine

Nakamura-Tome Machine Line

Assembly adjustment

Roundness and Cylindrical profile Measuring Instruments

The forefront of machine-tool manufacturing starts from human skills.

In order to manufacture high-precision sophisticated machines, it is necessary to acquire unique technologies and skills.
Highly skilled technicians are given the title of "Meister", so that they can provide guidance to younger generations and keep the skill tradition.
Nakamura-Tome actively promotes self-education and skill-upgrade of individual employees, by encouraging them and supporting them to acquire official qualifications, which also aim to raise their awareness of quality improvement. Employees can obtain technical skills qualifications or “business career” qualifications.

Training of young people by Meister

Special grade and the class 1 and 2 technical skills quilifications

Less Fixtures! Less Set-up! Less Skills!

Necessary functions for multi-tasking are offered as standard features.

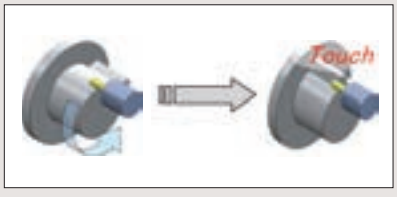
"NT-Nurse II", "NT Work Navigator" and "Overload detection/ Airbag" were developed to facilitate programming and set-up, to reduce fixture costs of complex parts, and to reduce machine-cell stops.

Nakamura-Tome safety Technology

NT Work Navigator
ACTIVE SAFETY

● Avoid a crash before it happens!
Material recognition function (G310/ G312) can be used not only to avoid collisions, but also to optimize the face turning process for forgings that have different lengths. In addition, it is also useful for part-loading status confirmation, machining datum shift, and distinguishing different parts.

● Fixtures no longer necessary
Before machining a complex or irregular part, the coordinate recognition of raw part geometry is necessary. It can be provided with less cost, less labor and more ease. A round bar mounted on turret head as a measurement tool contacts with the part and then triggers the coordinate values to be recorded in the CNC control. This is versatile software developed using torque control technology of servomotor. Consequently the high complex fixtures for chucks and stocker pallets are eliminated, the cost of positioning parts can be dramatically reduced.

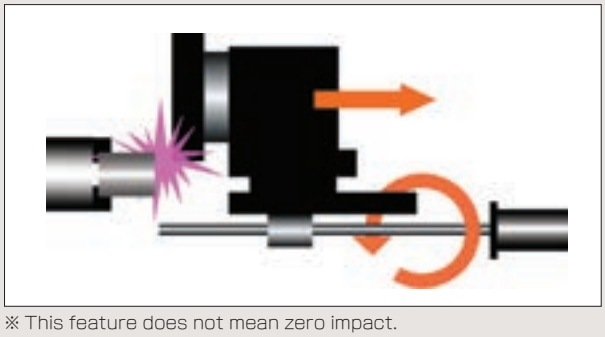


Overload detection
PASSIVE SAFETY

● A security feature to rely on when the worse happens.
When unavoidable human error results in a collision, the servo drive detects overload and drastically reduces the impact on the machine by reversing the slide movement direction within less than 8 milliseconds.
In addition to minimizing damage of the first impact*, fears that the tool will move to the next program block and cause a second impact, are reduced to zero. This standard feature is available on the X, Z, Y, C and B-Axes.

Without Overload Detection

With Overload Detection



※ This feature does not mean zero impact.

NT Nurse

● All-in-one Software package!
NT-Nurse is software that provides the operator with user-friendly environment for operation, programming, and production on the machine. Among vital features are coordinate recognition (a must for multi-tasking), direct chucking to prevent positioning error during transfer, and perfect synchronization of the left and right hand spindles. Other features include the load monitor for detecting tool breakage and tool wear, tool life management, operation condition monitoring, in addition to many other features to simply programming, set up, operation, and production, all offered in one single package.

Operator Full Support through Easy Operation and Reliability

SC-150 II

FANUC 0i-TC	Display	Standard	Monochrome 7.2" LCD	Part program storage length	Standard	640 m	Number of registered programs	Standard	400pcs
							Tool offset pairs	Standard	64pairs

SC-200 / 200L

Standard-Y-axis					Standard	80 m		Standard	125pcs
FANUC 21i-TB	Display	Standard	Monochrome 7.2" LCD	Part program storage length	Option	160 m	Number of registered programs	Option	200pcs
						320 m			400pcs
		Luck-bei II (op.)	Color 10.4" LCD			640 m	Tool offset pairs	Standard	32pairs
						1280 m		Option	64pairs
					Luck-bei II (op.)	320 m			
Sub-spindle					Standard	80 m		Standard	125pcs
FANUC 18i-TB	Display	Standard	Monochrome 7.2" LCD	Part program storage length	Option	160 m	Number of registered programs	Option	200pcs
						320 m			400pcs
		Luck-bei II (op.)	Color 10.4" LCD			640 m			1000pcs
						1280 m	Tool offset pairs	Standard	32pairs
					Luck-bei II (op.)	320 m		Option	64pairs

Super Mill SC-200L

Standard-Y-axis					Standard	80 m		Standard	125pcs
FANUC 21i-TB	Display	Standard	Monochrome 7.2" LCD	Part program storage length	Option	160 m	Number of registered programs	Option	200pcs
						320 m			400pcs
		Luck-bei II (op.)	Color 10.4" LCD			640 m	Tool offset pairs	Standard	32pairs
						1280 m		Option	64pairs
					Luck-bei II (op.)	320 m			
Sub-spindle					Standard	80 m		Standard	125pcs
FANUC 18i-TB	Display	Standard	Monochrome 7.2" LCD	Part program storage length	Option	160 m	Number of registered programs	Option	200pcs
						320 m			400pcs
		Luck-bei II (op.)	Color 10.4" LCD			640 m			1000pcs
						1280 m	Tool offset pairs	Standard	32pairs
					Luck-bei II (op.)	320 m		Option	64pairs

SC-250

Standard-Y-axis					Standard	80 m		Standard	125pcs
FANUC 21i-TB	Display	Standard	Monochrome 7.2" LCD	Part program storage length	Option	160 m	Number of registered programs	Option	200pcs
						320 m			400pcs
		Luck-bei II (op.)	Color 10.4" LCD			640 m	Tool offset pairs	Standard	32pairs
						1280 m		Option	64pairs
					Luck-bei II (op.)	320 m			
Sub-spindle					Standard	80 m		Standard	125pcs
FANUC 18i-TB	Display	Standard	Monochrome 7.2" LCD	Part program storage length	Option	160 m	Number of registered programs	Option	200pcs
						320 m			400pcs
		Luck-bei II (op.)	Color 10.4" LCD			640 m			1000pcs
						1280 m	Tool offset pairs	Standard	32pairs
					Luck-bei II (op.)	320 m		Option	64pairs

SC-300/300L

Standard-Y-axis					Standard	80 m		Standard	125pcs
FANUC 21i-TB	Display	Standard	Monochrome 7.2" LCD	Part program storage length	Option	160 m	Number of registered programs	Option	200pcs
						320 m			400pcs
		Luck-bei II (op.)	Color 10.4" LCD			640 m	Tool offset pairs	Standard	32pairs
						1280 m		Option	64pairs
					Luck-bei II (op.)	320 m			
Sub-spindle					Standard	80 m		Standard	125pcs
FANUC 18i-TB	Display	Standard	Monochrome 7.2" LCD	Part program storage length	Option	160 m	Number of registered programs	Option	200pcs
						320 m			400pcs
		Luck-bei II (op.)	Color 10.4" LCD			640 m			1000pcs
						1280 m	Tool offset pairs	Standard	32pairs
					Luck-bei II (op.)	320 m		Option	64pairs

SC-450

Standard-Y-axis					Standard	80 m		Standard	125pcs
FANUC 21i-TB	Display	Standard	Monochrome 7.2" LCD	Part program storage length	Option	160 m	Number of registered programs	Option	200pcs
						320 m			400pcs
		Luck-bei II (op.)	Color 10.4" LCD			640 m	Tool offset pairs	Standard	32pairs
						1280 m		Option	64pairs
					Luck-bei II (op.)	320 m			

DNC operation from memory card is available, which can be mounted internally or externally.

7.2inch Monochrome LCD

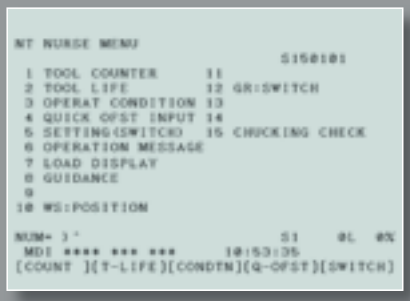
10.4inch Color LCD

The NT Nurse with its user-friendly features

A machine management feature that contributes to drastic reduction of set-up time!!

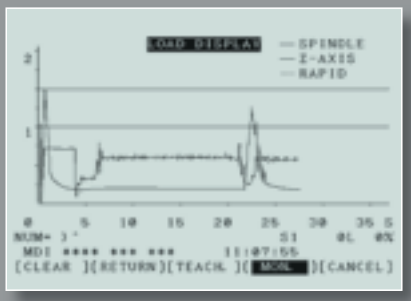
NT Nurse provides a user-friendly environment to achieve the best production results. Among NT Nurse vital features are Load Monitor for monitoring tool breakage and tool wear, the Soft Work Pusher for accurate transfer, as well as several other features to prevent errors and facilitate production.

(These screens are of 7.2" monochrome LCD)

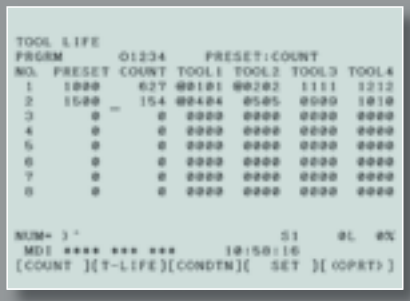


Menu display

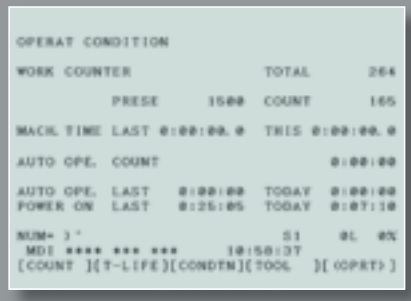
Tool counter



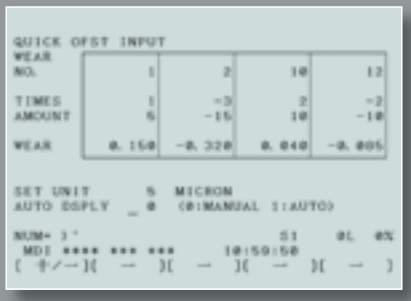
Load monitor



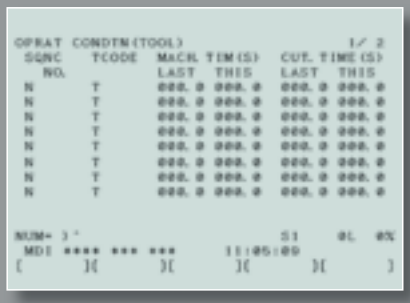
Tool life (Spare tool call-up)



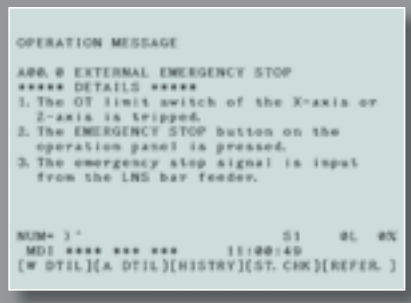
Operation condition



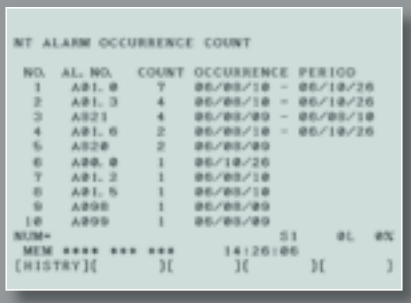
Quick offset input



Operation condition by tool number



Operation message



Alarm history display

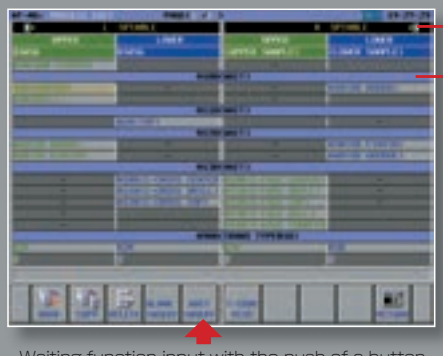
These are part of 24 functions.

Luck-bei II / NT Manual Guide i (Option)

A programming system with the ability of generating NC programs (ISO/EIA G-code programs) easily. Among its features are: Machining cycle creation (conversational function) for easy programming, NC Programming Support, which enables once-programmed machining processes to be cut, copied, pasted and moved, as well as NC program simulation using tool path or solid models.

●Process Editing

A function that automatically recognizes and extracts the name and order of all machining processes, then displays them in table layout. Machining processes can moved, copied or swapped easily. In addition, waiting M-codes can be added with the click of a button.



Separate display based on Spindle and turret.

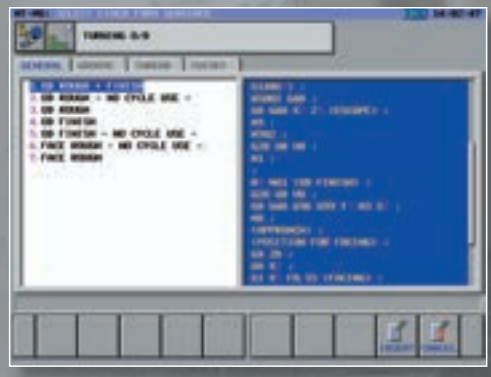
Displayed in a clear layout according to waiting functions

Waiting function input with the push of a button

Program Display

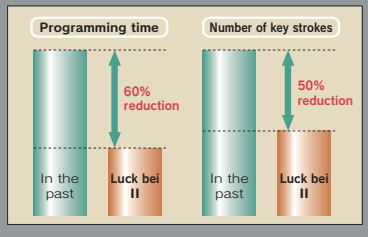
●Fixed Form Function

Abundant fixed forms with over 600 patterns (10 times more than before) are standard.
Easy selection of fixed forms from a menu.
Additional custom made programs can be registered.



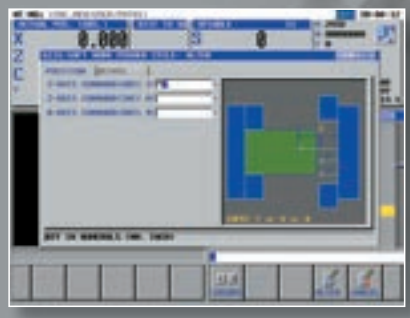
●Machining Cycle (conversational) Function

Complex machining accomplished with minimum input
Best guidance for Nakamura-Tome multitasking machine
Smooth input without confusion



In addition to Nakamura-Tome's original work navigator, which is essential for multi-tasking, programming of soft quill pusher and other features can be performed easily.

■ Work navigator programming screen



■ Soft work pusher programming screen

■ Soft quill pusher programming screen

※ NT Manual guide i is not available for SC-150II

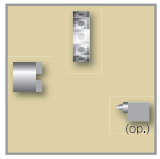
SC Series Lineup

SC-150 II

High-Rigidity Machine for Bar Work

※ This machine is not available for overseas market.

M Milling

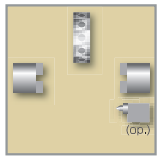


Control FANUC 0i-TC	Turning Milling(op.)	Chuck size 6"	Distance between centers 429mm
Max.turning diameter 220mm	Max.turning length 290mm	Bar capacity 42mm 51mm(op.)	Spindle motor 11/7.5kW 7.5/5.5kW(op.)
Spindle speed 6000min^{-1} /42mm 5000min^{-1} /51mm	No.of tool stations Dodecagonal/12st	Driven-tool motor 2.2/1.5kW 4000min^{-1}	Tailstock(op.) MT-3(Rotating center) 80mm(Quill st.)

SC-200 / SC-200L

Best Cutting/Milling Ability in its Class

M Milling | Y Y-axis | B Sub spindle | L Long bed



*1 control. FANUC 21i-TB	Turning Milling (op.)	Chuck size 8"	Distance between center and spindle 509mm 757.8mm/200L	Max.turning diameter 432mm 410mm/200L	
Max.turning length 370mm 530mm/200L	Bar capacity 65mm	Spindle motor 11/7.5kW	Max spindle speed 4500min^{-1}	*2 Number of tool stations Dodecagonal 12st	
Driven-tool motor 5.5/3.7kW 6000min^{-1}	Tail stock (op.) MT-4 (Rotating center) 80mm (Quill std.)	Y axis (op.) ± 41mm	*3 Sub spindle (op.) 5.5/3.7kW 5000min^{-1} 6" /34mm	*4 Sub spindle (op.) 7.5/5.5kW 6000min^{-1} 6" /42mm	C-axis for Sub spindle Rapid index speed 600min^{-1} Least command increment 0.001°

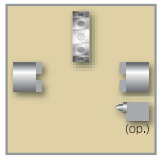
＊1) 18i-TB when Sub spindle is equipped. ＊2) 24 station turret is optionally available.
＊3) For SC-200 ＊4) For SC-200L

SC-200

Super mill SC-200L

Innovative milling system contributes to realization of most powerful cuts ever

M Milling | Y Y-axis | B Sub spindle | L Long bed



*1 Number of tool stations Dodecagonal 12st	Turning Milling	Chuck size 8"	Distance between centers 757.8mm	Max.turning diameter 410mm
Max.turning length 530mm	Bar capacity 65mm	Spindle motor 11/7.5kW	spindle speed 4500min^{-1}	Control FANUC 21i-TB
Driven-tool motor 7.5/3.7kW 6000min^{-1}	Tailstock (op.) MT-3 (Rotating center) 80mm (Quill std.)	Y axis (op.) ± 41mm	Sub spindle (op.) 7.5/5.5kW 6000min^{-1} 6"/42mm	

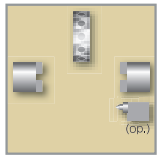
＊1) 18i-TB when Sub spindle is equipped.

Aeronautics industry | Medical industry | Automobile industry | Construction machine industry | General machine industry | Energy industry | Transfer equipment industry | Electrical Appliance industry | Home Appliance industry

SC-250

Powerful machine with High-rigidity box-type slides

M Milling | Y Y-axis | B Sub spindle



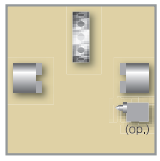
*1 Control FANUC 21i-TB	Turning Milling (op.)	Chuck size 8" /215mm 10" /254mm	Distance between center and spindle 689mm	Max.turning diameter 300mm
Max.turning length 500mm	Bar capacity 51mm 65mm (op.)	Spindle motor 15/11kW 18.5/15kW (op.)	Max spindle speed 5000min-1/51mm 4500min-1/65mm	Number of tool stations Dodecagonal turret 12st
Driven-tool motor 3.7/2.2kW 3600min-1	Tailstock (op.) MT-4 (Rotating center) 80mm (Quill std.)	Y axis (op.) ± 41mm	Sub spindle (op.) 11kW 5000min-1 8" /51mm	

＊1) 18i-TB when Sub spindle is equipped.

SC-300 / 300L

A High-Rigidity Powerful Multi-tasking Machine with Superior Basic Performance

M Milling | Y Y-axis | B Sub spindle | L Long bed



*1 Control FANUC 21i-TB	Turning Milling (op.)	Chuck size 10" /254mm	Distance between center and spindle 713.5mm 1213.5mm/300L	Max.turning diameter 350mm
Max.turning length 600mm 1100mm/300L	Bar capacity 71mm 80mm (op.) 89mm (op.)	Spindle motor 22/18.5kW 30/22kW(op.)	Max spindle speed 3500min-1	Number of tool stations Dodecagonal turret 12st
Driven-tool motor 5.5/3.7kW 3600min-1	Tailstock MT-5 (Rotating center) MT-4 (Built-in dead center) /300L	Y axis (op.) ±45mm	Sub spindle (op.) 11/7.5kW 3500min-1 8" /51mm	

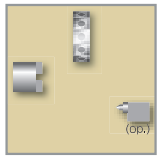
＊1) 18i-TB when Sub spindle is equipped.

SC-300

SC-450

Large-Swing Heavy-Duty Powerful Multi-tasking Machine

M Milling | Y Y-axis

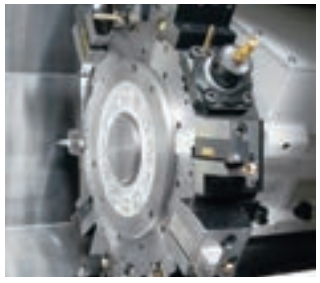


Control FANUC 21i-TB	Turning Milling (op.)	Chuck size 12" /15"	Distance between center and spindle 1035mm	Max.turning diameter 465mm
Max.turning length 785mm/12" 715mm/15"	Bar capacity 80mm	Spindle motor 30/22kW	Max spindle speed 2500min-1	Number of tool stations Dodecagonal turret 12st
Tailstock (op.) MT-4 (Buit-in dead center) 100mm (Quill std.)	Driven-tool motor 5.5/3.7kW 3600min-1	Y axis (op.) ± 70mm		

High-Rigidity Machine for Bar Work

※ This machine is not available for overseas market.

■ High-Rigidity Box-type Slides on All Axes.



Turret

- Dodecagonal 12-station turret
- Tool size(square shank) / □ 20
- Tool size(round shank) / dia.25

Tailstock(op.)

- Tailstock stroke / 200m
- Quill diameter / 50mm
- Quill taper / MT3
- Quill stroke / 80mm

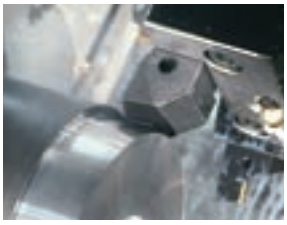
【Gantry Loader】 Multi-layer type work stocker WS-221 and Side outlet chip conveyor

SC-150II + GR-103

■ Material size / ϕ 80mm
■ Material / S45C
■ Feed / 0.6mm/rev
■ Cutting depth / 3mm
■ Load / 133%
■ Cutting chip / Heri Turn

Best Cutting/Milling Ability in its Class

■ High output·high rigidity powerful CNC multi-tasking precision machines



OD cutting

● Cutting depth:4.5mm ● Feed:0.3mm/rev
● Cutting speed:130m/min ● Material size: ϕ 120mm

Cross End Mill cutting

● Cutting depth:8mm ● Cutting width:16mm (End mill diameter)
● Feed:0.37mm/rev ● Cutting speed:110m/min
● Spindle speed:1,200min^{-1}

U drill

● Diameter: ϕ 50mm ● Feed:0.1mm/rev
● Cutting speed:110m/min ● Spindle speed:700min^{-1}

Straight End Mill cutting

● Tooling diameter: ϕ 16mm ● Cutting width:16mm
● Cutting depth:16mm ● Feed:0.25mm/rev
● Cutting speed:110m/min ● Spindle speed:2,190min^{-1}

OD grooving

● Grooving width : 8 mm ● Feed : 0.15mm/rev
● Cutting speed:110m/min

Straight End Mill cutting / Extreme coordinate interpolation

● Tool diameter: ϕ 16mm ● Cutting width:16mm
● Cutting depth (Z-axis direction):16mm
● Cutting depth (X-axis max direction):9mm
● Feed : 0.37mm/rev ● Cutting speed : 110m/min
● Spindle speed:2,190min^{-1}

【Gantry Loader】

SC-200 + GR-103

Multi-layer type stocker WS221/Chip conveyor right side outlet

	Standard hand	Mata-Bei hand
Work diameter	Φ20mm～Φ130mm	Φ20mm～Φ80mm
Work length	20mm～100mm	20mm～60mm
Work weight	3kg	

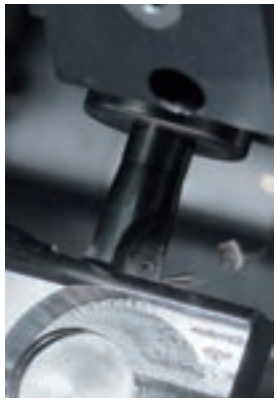
Innovative milling system contributes to realization of most powerful cuts ever

■ Innovative milling system

Metal removal rate
168ml/min

【Machining conditions】
- Tooling size : φ50
- Cutting speed : 235m/min
- Milling speed : 1500min^{-1}
- Feed : 2.8mm/rev
- Cutting depth : 0.8mm

High-output · High-torque Milling motor



Dia.25mm face milling cutter

Metal removal rate
120mL/min

Cutting speed	235m/min
Spindle speed	3000min^{-1}
Cutting depth	0.8mm
Feed	2mm/rev
	6m/min

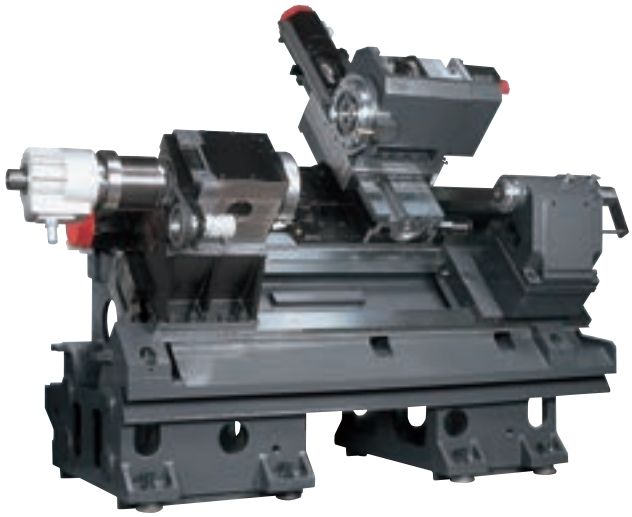
Dia.50mm face milling cutter

Metal removal rate
113mL/min

Cutting speed	235m/min
Spindle speed	1500min^{-1}
Cutting depth	3mm
Feed	0.5mm/rev
	750mm/min

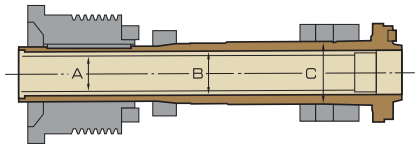
Powerful machine with High-rigidity box-type slides

■ High-speed high-precision spindle, high-accuracy slide unit



Maintain high-accuracy by Superior balanced big bore spindle, and ideally located bearings
Main spindle bar capacity 51mm(op.65mm), which is the largest available in its class, ensures a wider machining range, increased productivity and flexibility for diversified needs.

* Max spindle speed 4,500min-1, when spindle bar capacity 65mm



	Items	Standard	Option
A	Draw tube I.D.	52mm	66mm
B	Spindle I.D.	65mm	80mm
C	Front bearing I.D.	100mm	110mm

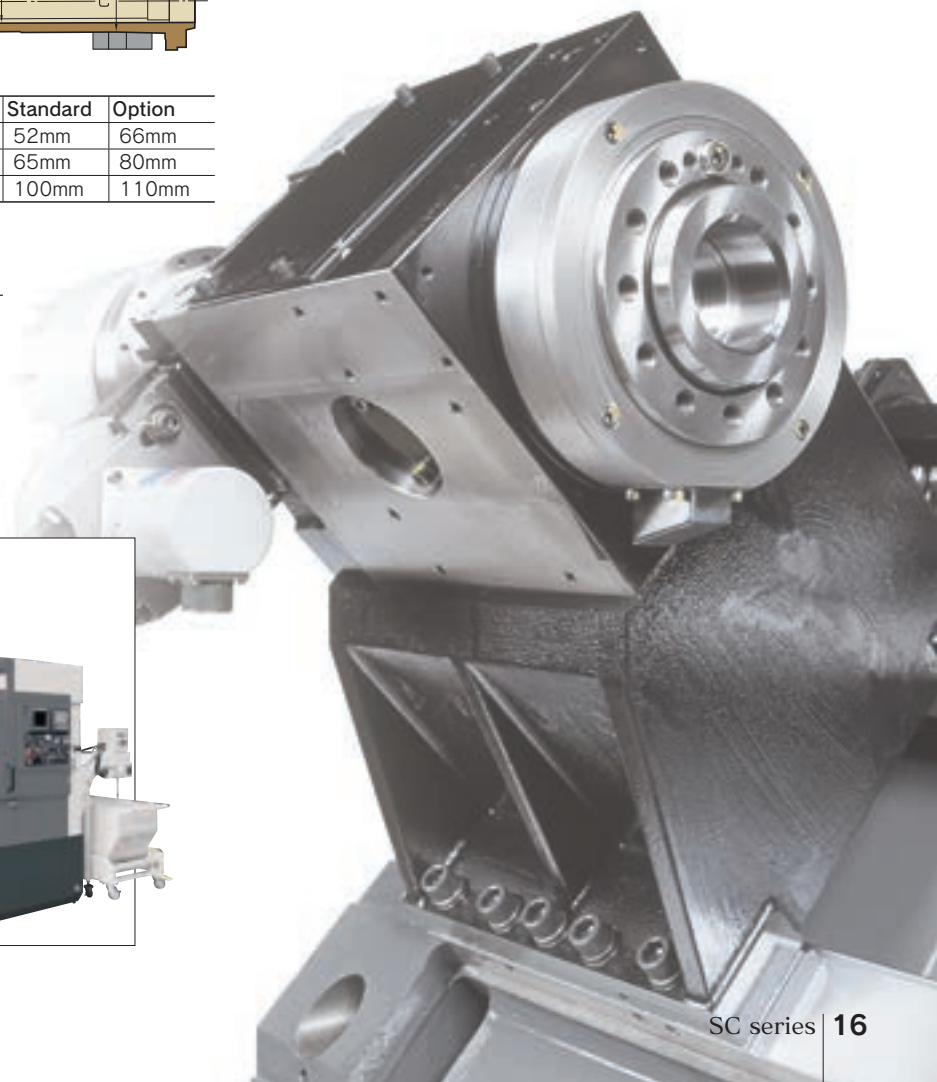
Tailstock(op.)

The manual positioning tailstock (rotating-center type) with diameter 80mm quill is positioned by a manual pulse generator after connecting it to the saddle.

- Quill taper : MT-4
- Quill stroke : 80mm
- Slide stroke : 400mm

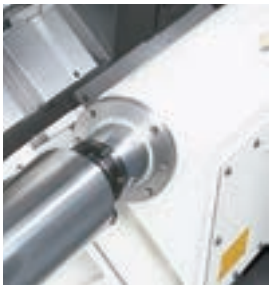
【Gantry Loader】
SC-250 + GR-103

A raw-part-hand and a finished-part-hand are equipped. In case of sub-spindle specification, a 180-degree-revolving Matabei-hand may be necessary.



A High-Rigidity Powerful Multi-tasking Machine with Superior Basic Performance

■ **Realizing both powerful cuts and better cost-performance.**



Tailstock(op.)

In addition to the standard manual positioning tailstock (rotating-center type), three other types are optionally available: Manual positioning tailstock (Built-in dead center), automatic positioning tailstock (rotating-center type), or automatic positioning tailstock (Built-in dead center)The tailstock is positioned by using the manual pulse generator, after manually connecting it to the saddle.

- Quill taper : MT-5
- Quill stroke : 100mm
- Slide stroke : 400mm

Milling function(op.)

The machine is equipped with 5.5/3.7kW (SC-300) high-output milling motor, Driven-tools can be mounted on max. 12 turret-stations. Driven-tools rotate independently. C-axis engagement time is only 1.5 sec. (from spindle to C-axis mode) The C-axis minimum command increment is 0.001 degrees, enabling complex machining.

- Driven-tool speed : MAX3,600min^{-1}
- Drill diameter : MAX ϕ 20mm
- Tap diameter : M16

Sub-spindle (op.)

The high-rigidity sub-spindle with a box-type slide features high-accuracy and high-efficiency machining. Furthermore, spindle phase synchronization makes it possible to transfer any type of flange or bar work from the main spindle to sub spindle, regardless of its shape.

SC-300L

Large-Swing Heavy-Duty Powerful Multi-tasking Machine

■ Medium to Large Size Heavy-Duty High-Precision Cutting.

Tailstock (op.)

Equipped with high-rigidity built-in center. The tailstock is positioned using the manual pulse generator, after manually connecting a knock to the Z-Axis saddle. Fully programmable automatic type (positioning with hydraulic cylinder) is optionally available.

- Quill taper : MT-4
- Quill stroke : 100mm
- Slide stroke : 760mm

Milling function (op.)

The machine can be optionally equipped with a 5.5/3.7kW high-output milling motor. Milling tools can be mounted on max. 12 stations. Driven-tools rotate independently. C-axis engagement time is only 1.5 sec. (from spindle to C-axis mode) C-axis minimum command increment is 0.001 degrees, enabling complex machining

- Driven-tool speed : MAX3,600min^{-1}
- Drill diameter : MAX ϕ 20mm
- Tap diameter : M16

Heavy cutting - Machining ability max.9mm2

- Cutting speed : 120m/min
- Cutting depth : 10mm
- Feed : 0.9mm/rev
- Type of material : S45C

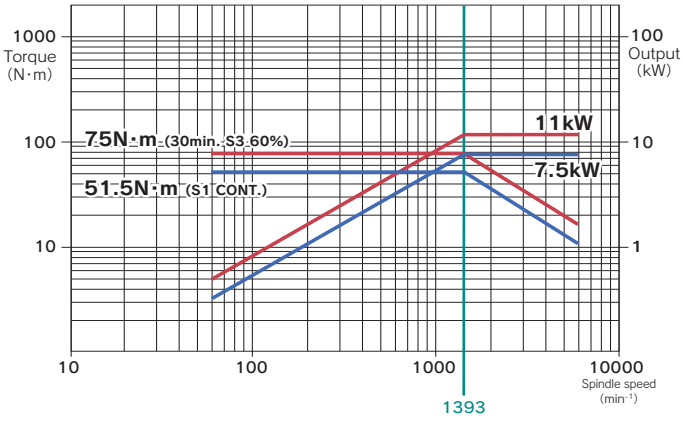
SC-450

High-Rigidity Machine for Bar Work

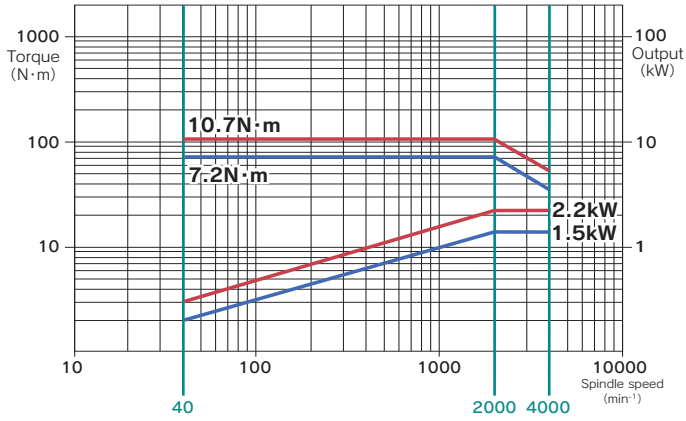
- ●High-rigidity box-type slides on all axes.
- ●Main spindle motor 11/7.5kW
- ●Spindle speed 6,000min^{-1}
- ●bar capacity dia.42mm, 51mm(op.)
- ●High-speed slides X-axis 24m/min, Z-axis 36m/min
- ●High-reliability all-FANUC control
- ●Dodecagonal 12-station turret
- ●High quality powder coating

※ This machine is not available for overseas market.

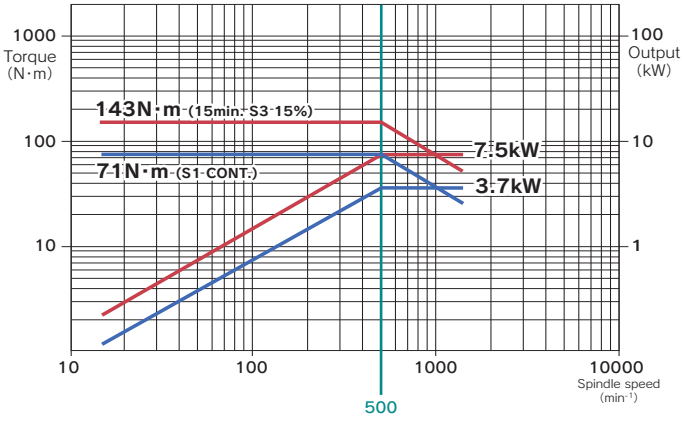
■ Spindle motor 11kW/7.5kW



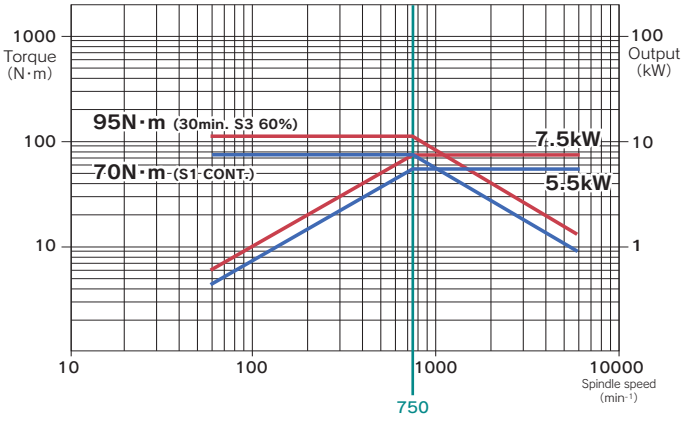
■ Driven-tool motor 2.2kW/1.5kW



■ Spindle motor (Wide range/) 7.5kW/3.7kW



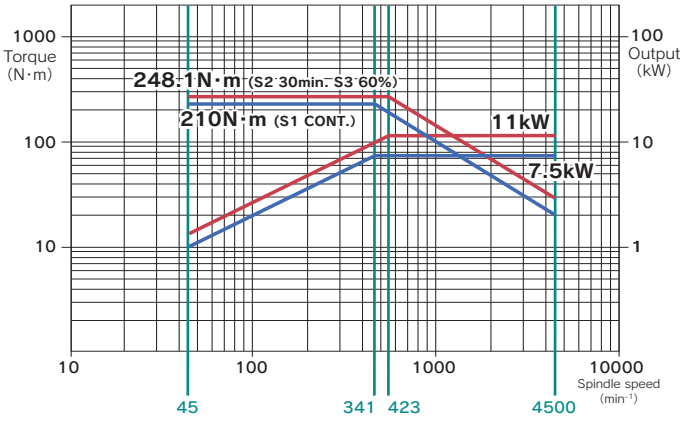
■ Spindle motor(Wide range) 7.5kW/5.5kW



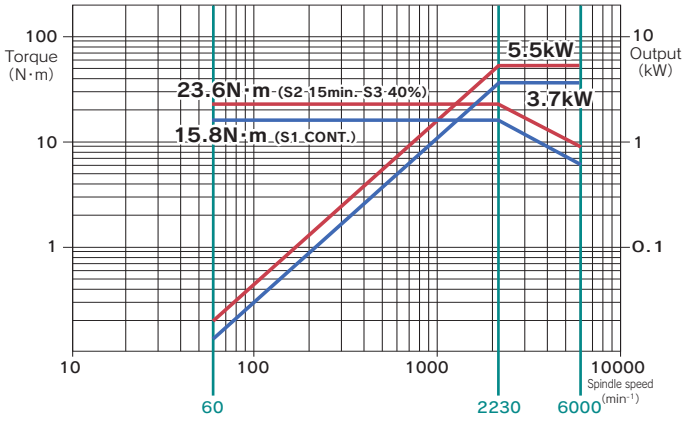
Highest-Class Drilling and Milling capabilities

- ●High-rigidity box-type slides on all axes
- ●Main spindle motor 11/7.5kW
- ●Spindle speed 4,500min^{-1}
- ●Bar capacity dia.65mm
- ●High-speed slides X-axis 24m/min, Z-axis 36m/min
- ●High-reliability all-FANUC control
- ●Dodecagonal 24-station turret
- ●High quality powder coating

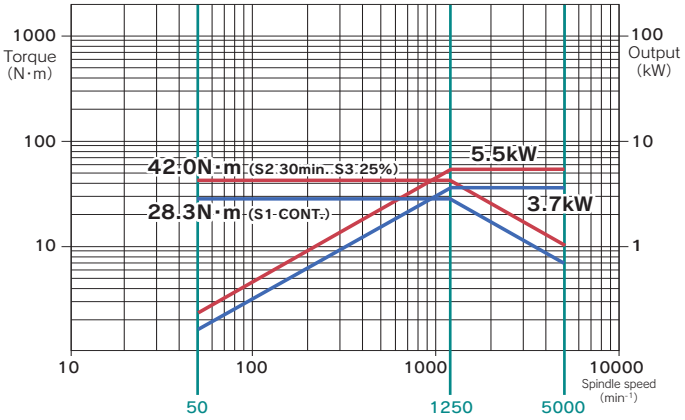
■ Spindle motor SC-200/200L 11kW/7.5kW



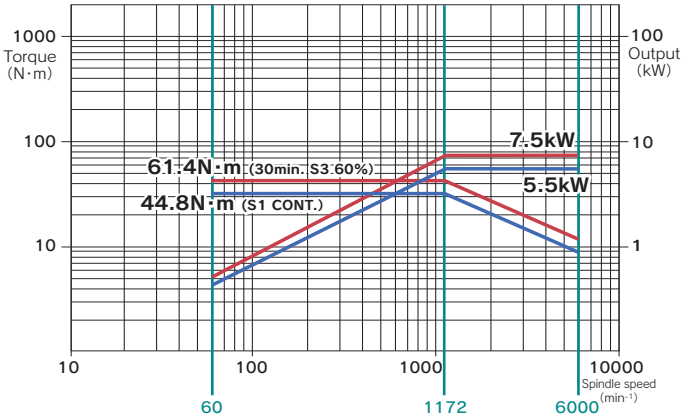
■ Driven-tool motor SC-200/200L 5.5kW/3.7kW

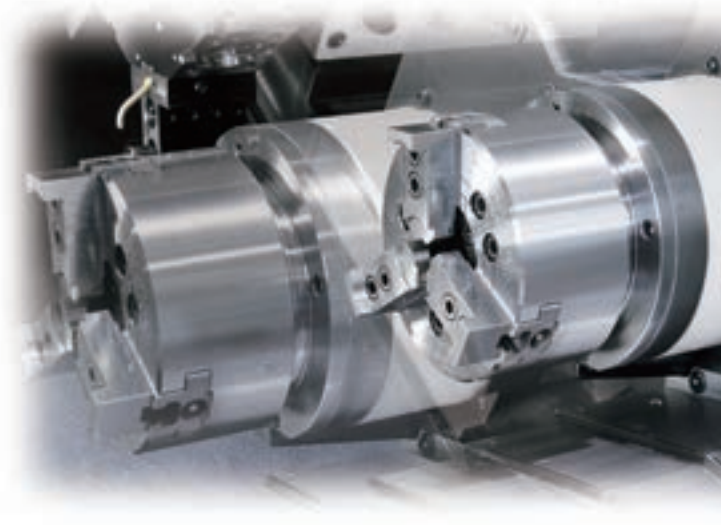


■ Sub spindle motor SC-200 5.5kW/3.7kW



■ Sub spindle motor (op.) SC-200L 7.5kW/5.5kW

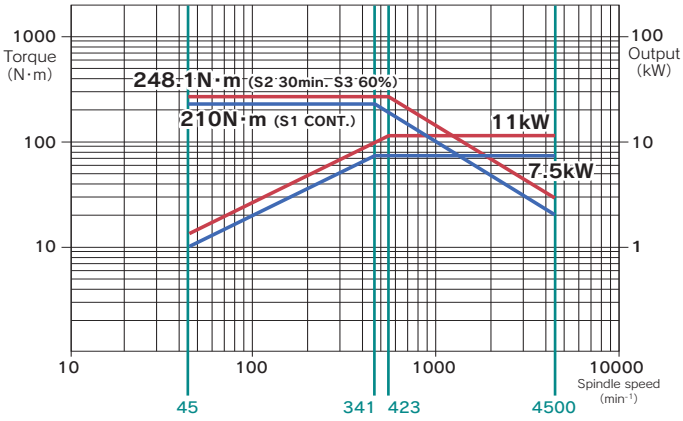




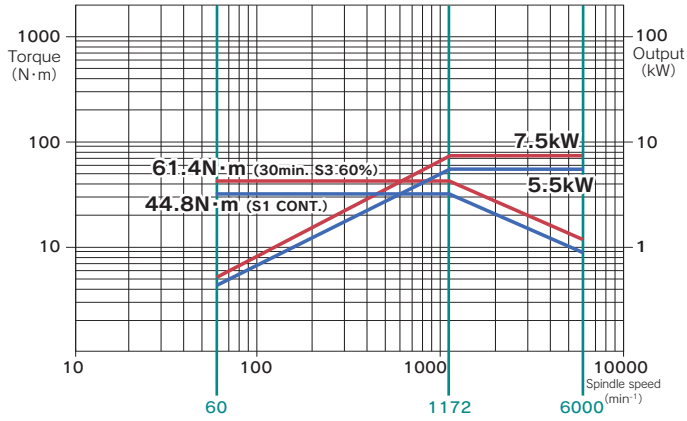
Innovative Milling System

- High-output, high-torque Driven-tool motor 7.5/3.7kW
- Max. turning diameter dia.410mm Max. turning length dia.530mm
- High-rigidity box type slides on all axes
- Main spindle motor 11/7.5kW
- Spindle/Driven-tool speed 6,000min^{-1}
- Bar capacity dia.65mm
- Dodecagonal 24-station turret
- High quality powder coating

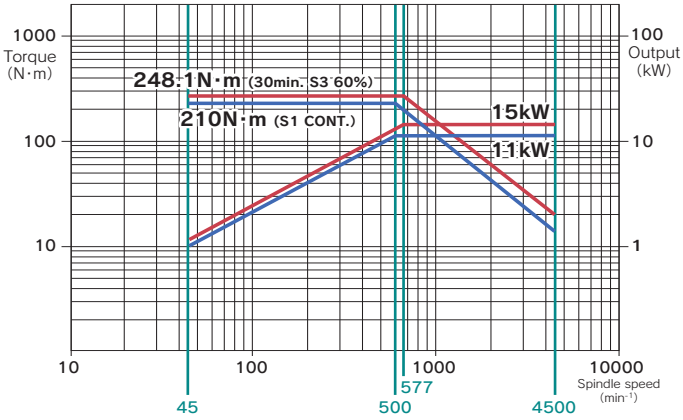
Spindle motor 11kW/7.5kW



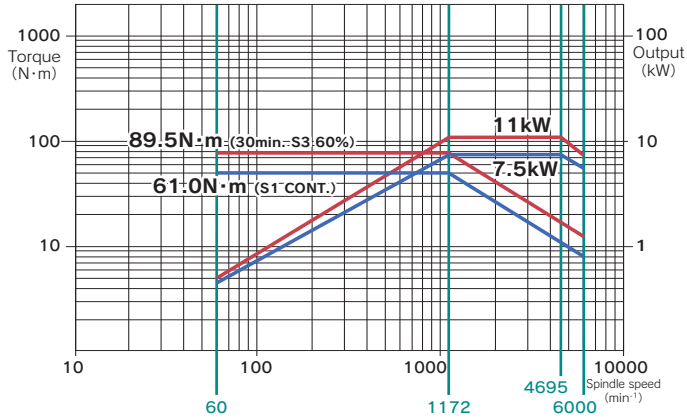
Sub spindle motor 7.5kW/5.5kW



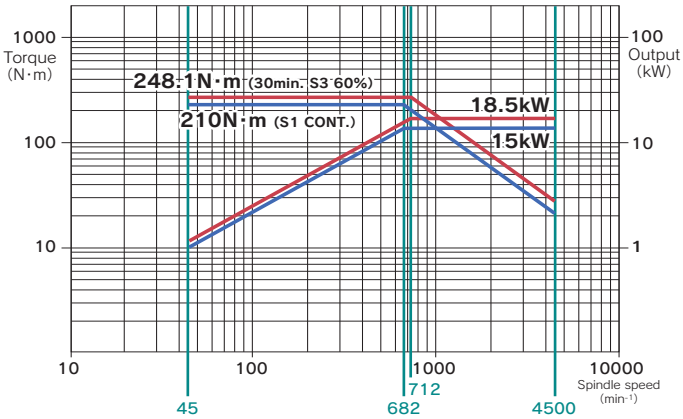
Spindle motor (op.) 15kW/11kW



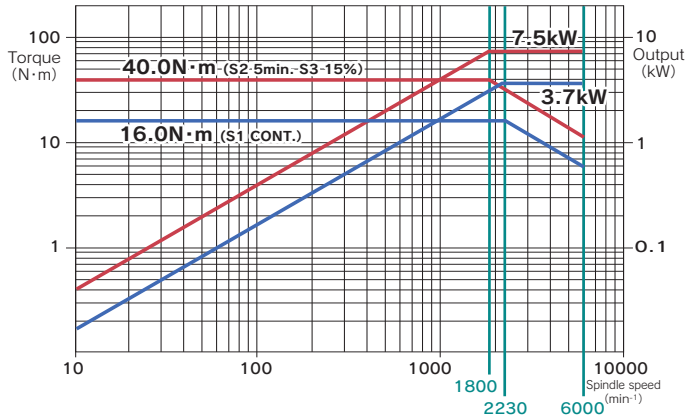
Sub spindle motor (op.) 11kW/7.5kW



Spindle motor (op.) 18.5kW/15kW



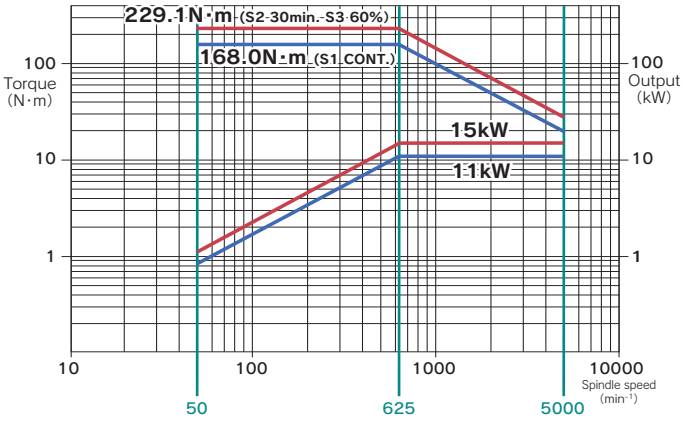
Driven-tool motor 7.5kW/3.7kW



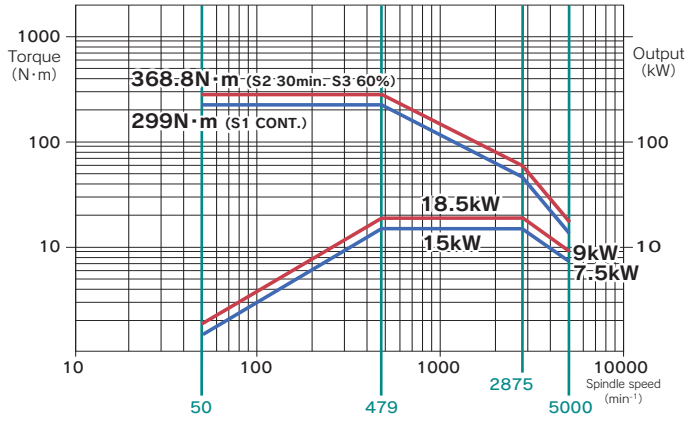
Powerful cutting with high-rigidity box-type slides

- High-rigidity box-type slide-ways on all axes
- Main spindle motor 15/11kW, 5000min^{-1}
- Driven-tool motor 5.5/3.7kW, 3600min^{-1}
- Max. turning diameter dia.300mm Max. turning length 500mm
- Bar capacity dia. 51mm(op.dia.65mm)
- High-speed servo-driven non-lift index (When with Y-axis)
- Dodecagonal 24-station turret
- Driven-Tools, Y-axis/±41mm, NC sub spindle are optionally available

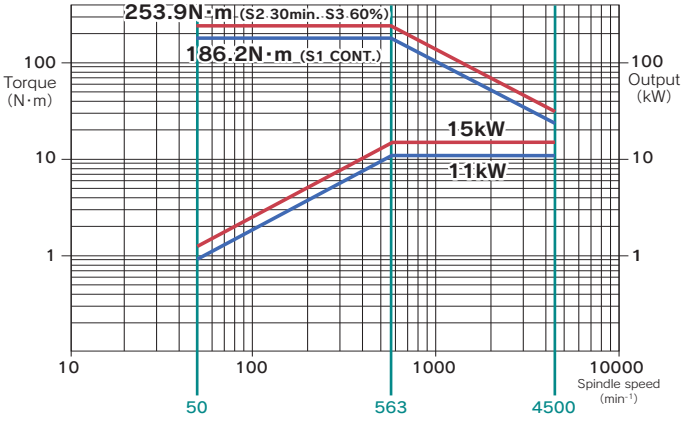
Dia.51mm Spindle motor 15kW/11kW



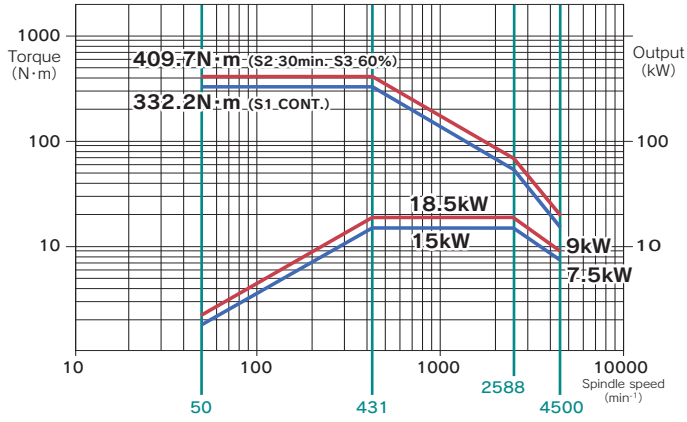
Dia.51mm Spindle motor (op.) 18.5kW/15kW



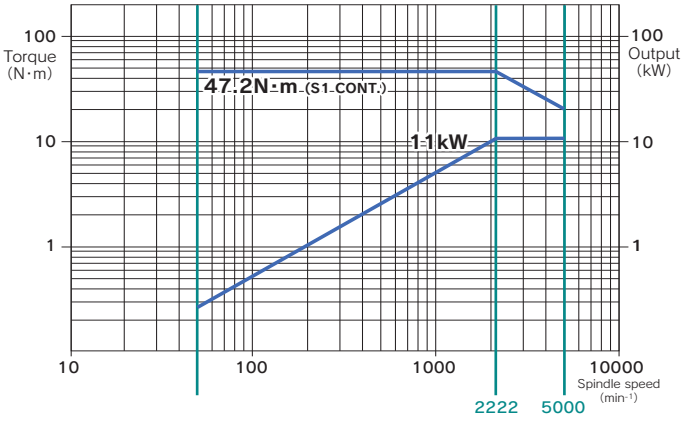
Dia.65mm Spindle motor 15kW/11kW



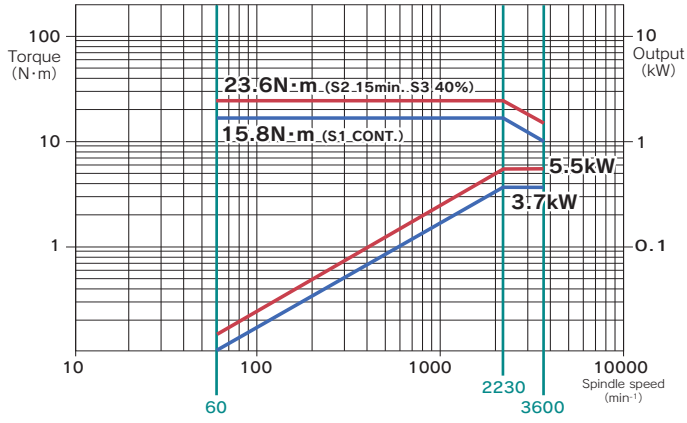
Dia.65mm Spindle motor (op.) 18.5kW/15kW



Sub spindle motor 11kW



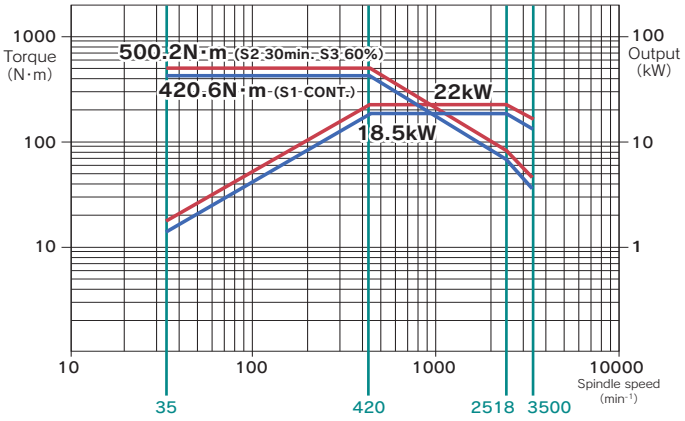
Driven-tool motor 5.5kW/3.7kW



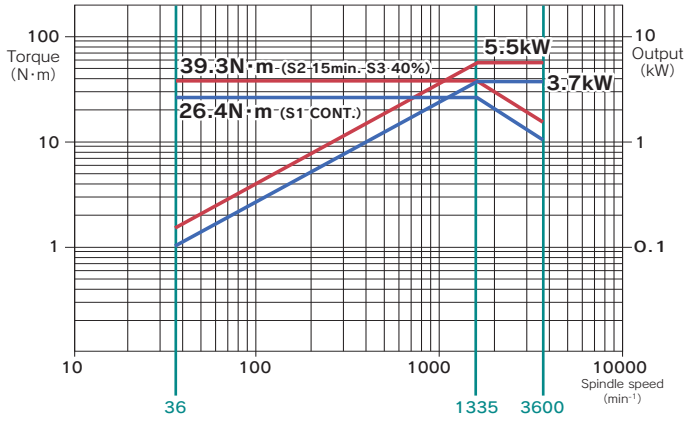
High-rigidity multi-tasking machine with superior basic performance

- High-rigidity box-type slide-ways on all axes
- Main spindle motor 22/18.5kW, 3500min^{-1}
- Driven-tool motor 5.5/3.7kW、3600min^{-1}
- Max. turning diameter 350mm Max. turning length 600mm/SC-300・1000mm/SC-300L
- Bar capacity dia.51mm,(op. dia.65mm)
- High-speed servo-driven non-lift turret (only when with Y-axis)
- Dodecagonal 24-station turret
- Driven-Tools, Y-axis/±41mm, NC sub spindle is optionally available

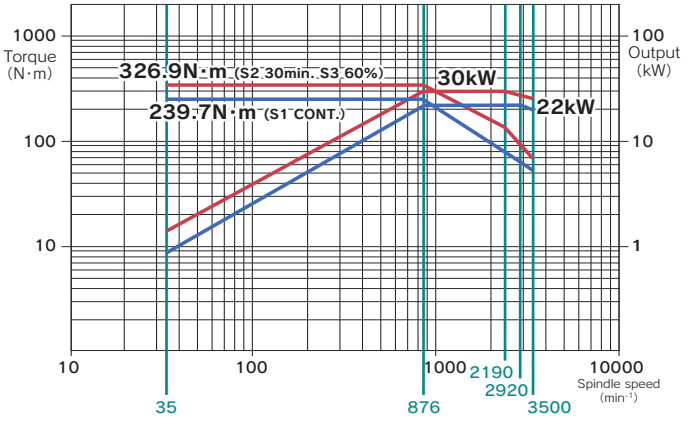
Spindle motor SC-300/SC-300L 22kW/18.5kW



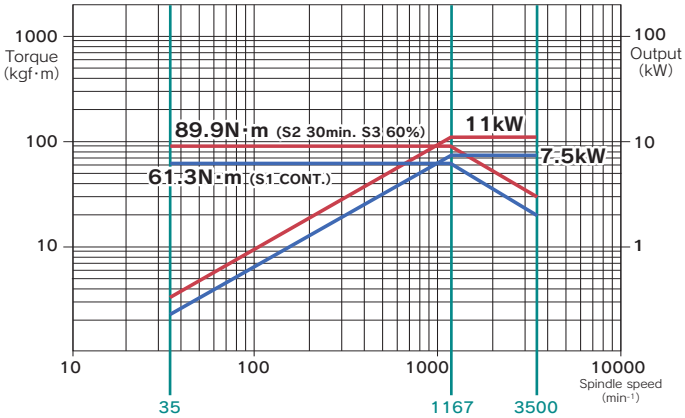
Driven-tool motor SC-300/SC-300L 5.5kW/3.7kW

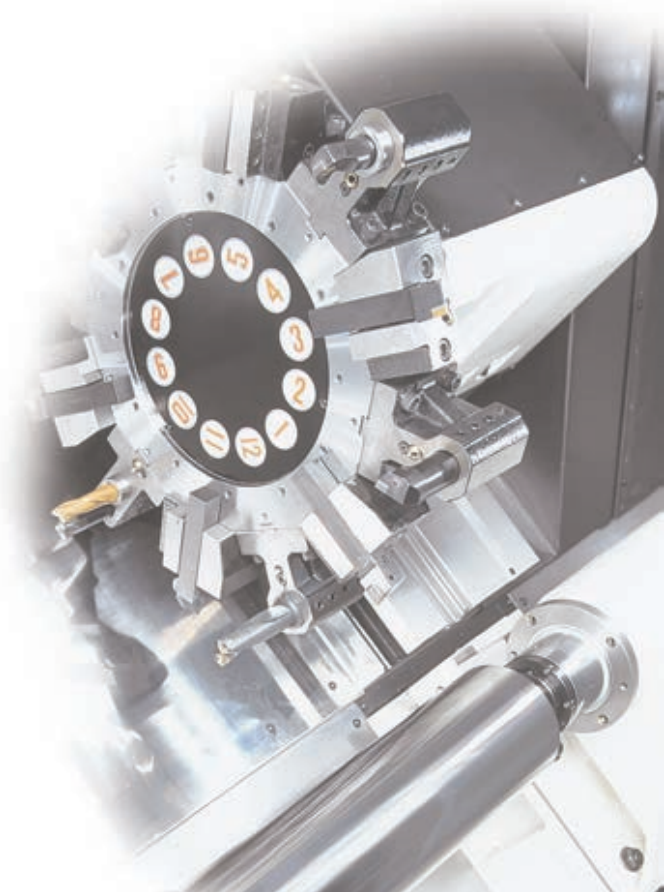


Spindle motor (op.) SC-300/SC-300L 30kW/22kW



Sub spindle SC-300/SC-300L 11kW/7.5kW



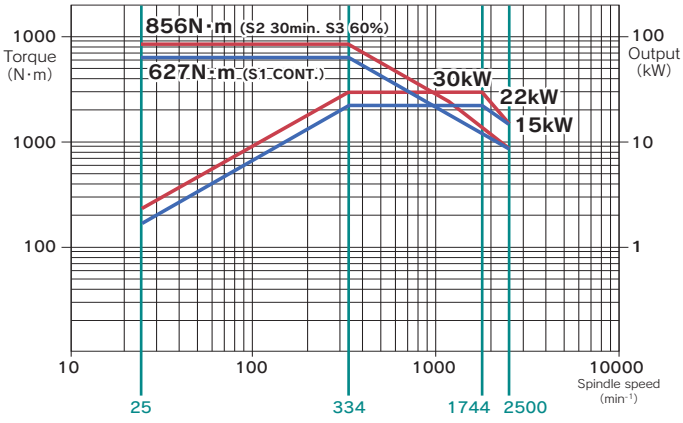


SC-450

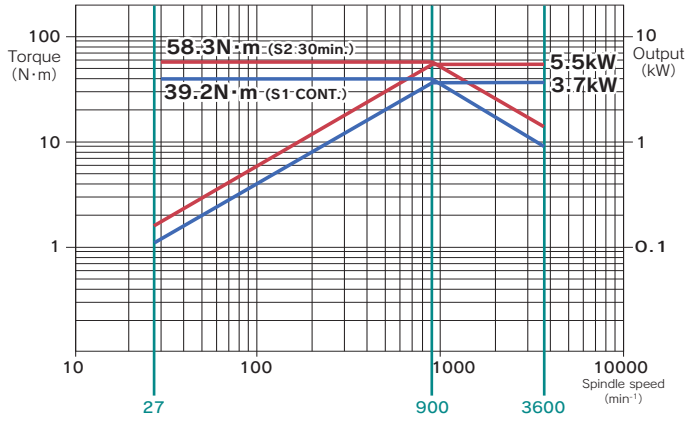
Large-Swing Heavy-Duty Powerful Multi-tasking Machine

- High-rigidity box-type slide-ways on all axes
- Spindle motor 30/22kW, 2500min^{-1}
- Driven-tool motor 5.5/3.7kW、3600min^{-1}
- Max. turning diameter 465mm　Max. turning length 785mm
- Bar capacity dia.80mm
- High speed servo-driven non-lift index (When with Y-axis)
- Dodecagonal 24-station turret
- Driven-Tools and Y-axis/±70mm are optionally available

Spindle motor　30kW/22kW



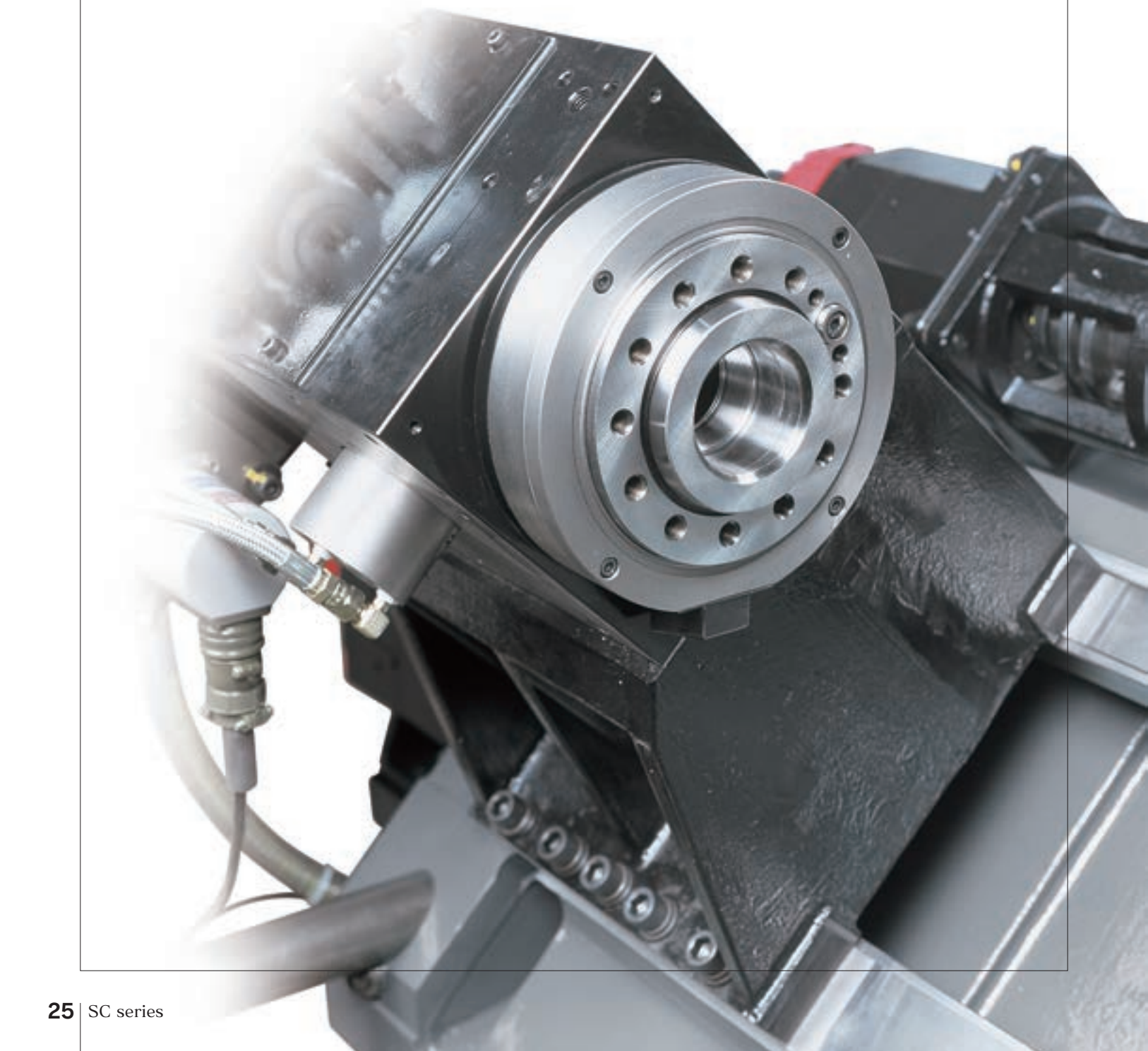
Driven-tool motor　5.5kW/3.7kW



The ultimate in high rigidity and accuracy

SC series

- Machine dimensions ····· P26 ~
- Stroke Interference ····· P30 ~
- Tooling system diagram ····· P35 ~
- Machine Specifications / Control Specifications ····· P41 ~

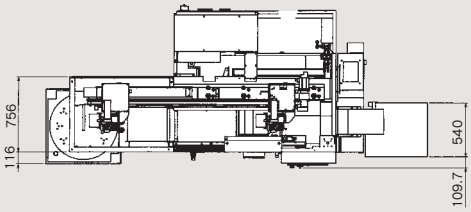


Machine dimensions

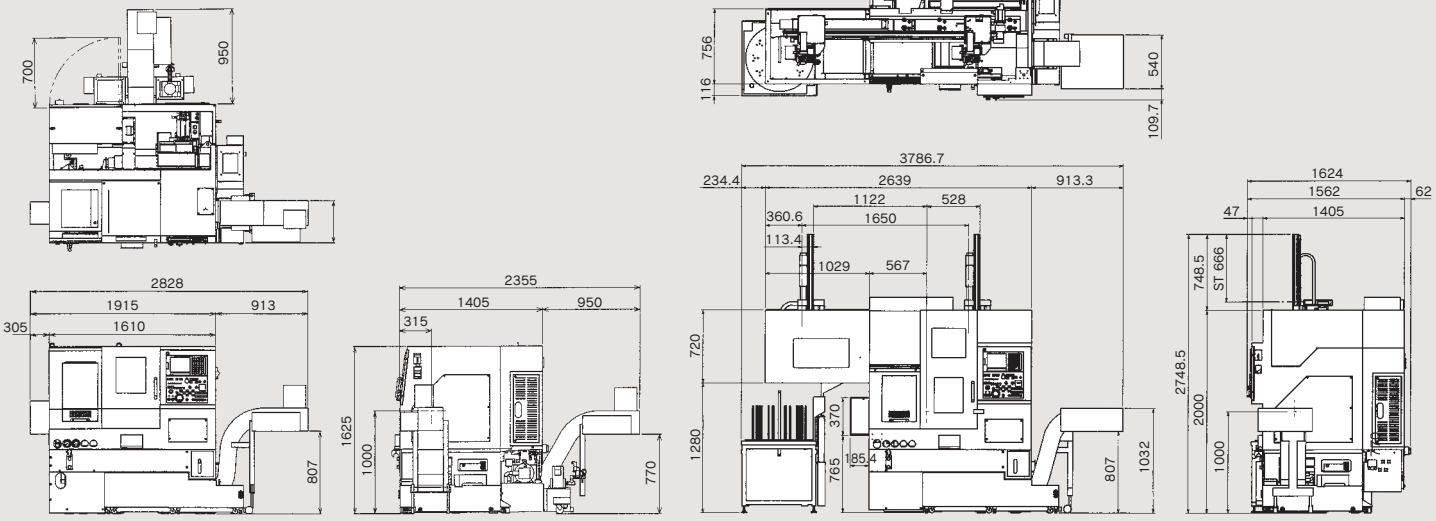
SC-150II

Floor Space

■ GR103+WS221+Side outlet chip conveyor



■ Side-outlet conveyor/ backside outlet conveyor specification

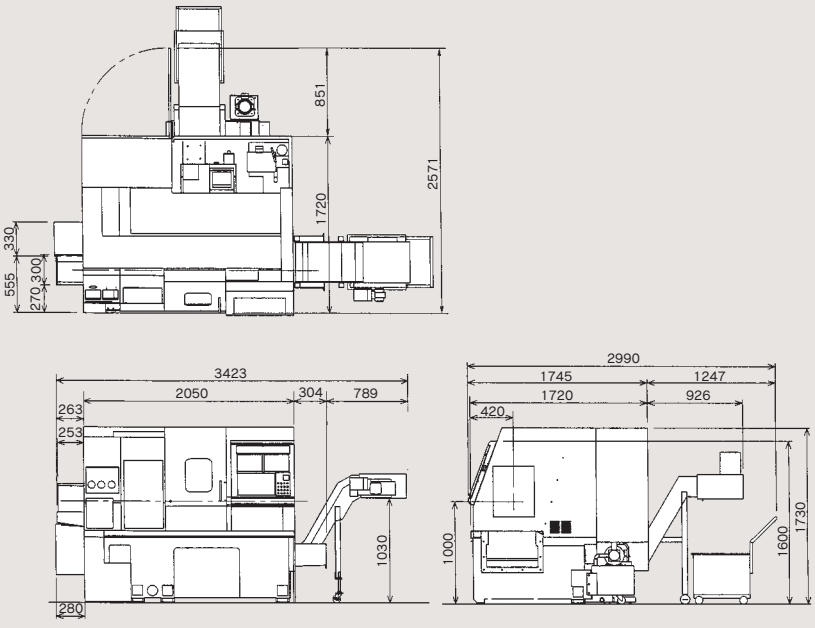


(unit: mm)

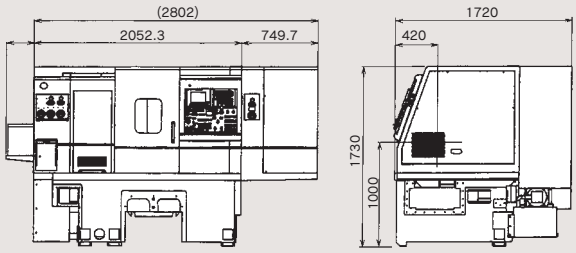
SC-200

Floor Space

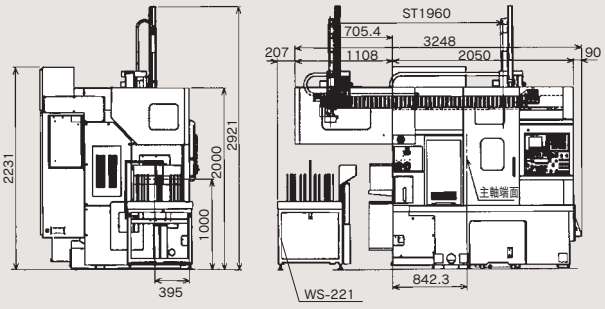
■ Side-outlet conveyor/ backside outlet conveyor specification



■ Sub spindle specification



■ GR-103 +WS-221 specification (Without CE cover)



(unit: mm)

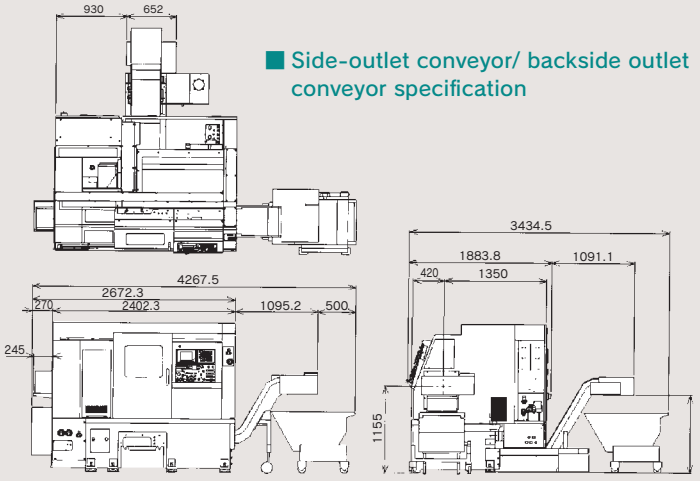
● The dimension is subject to change depending on the specifications.

Machine dimensions

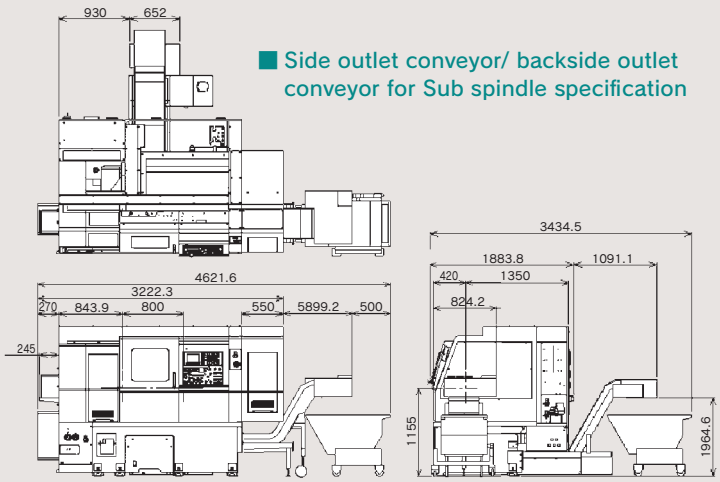
SC-200L

Floor Space

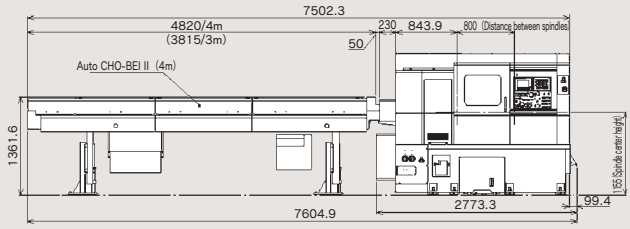
■ Side-outlet conveyor/ backside outlet conveyor specification



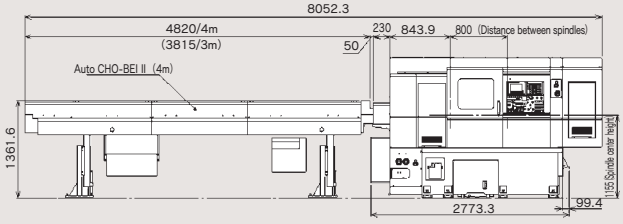
■ Side outlet conveyor/ backside outlet conveyor for Sub spindle specification



■ Standard Auto CHO-BEI II specification



■ Auto CHO-BEI II specification for Sub spindle

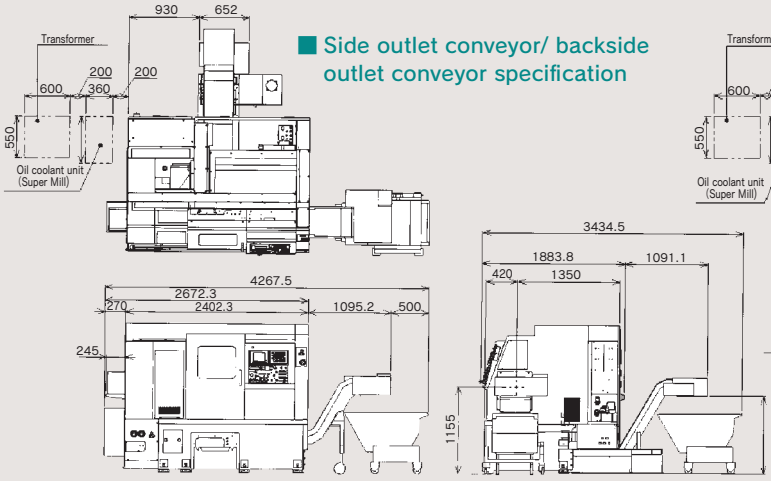


(unit: mm)

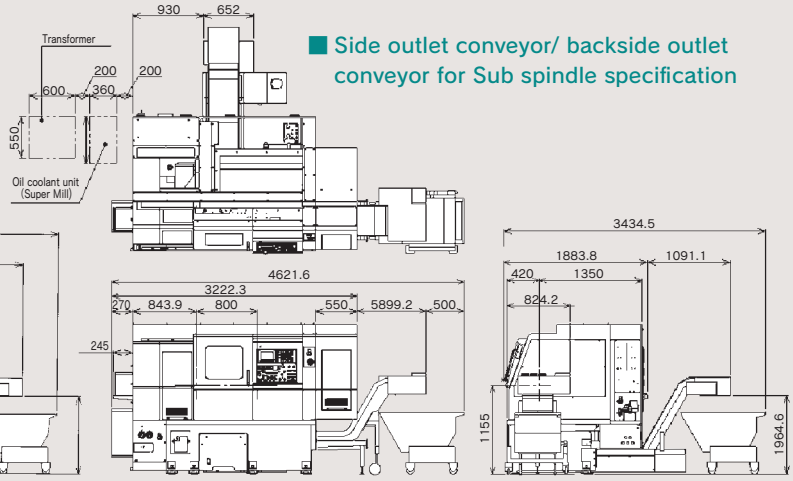
Super Mill SC-200L

Floor Space

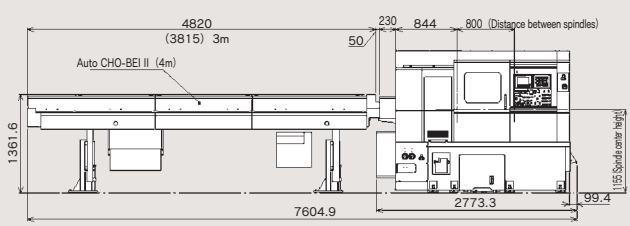
■ Side outlet conveyor/ backside outlet conveyor specification



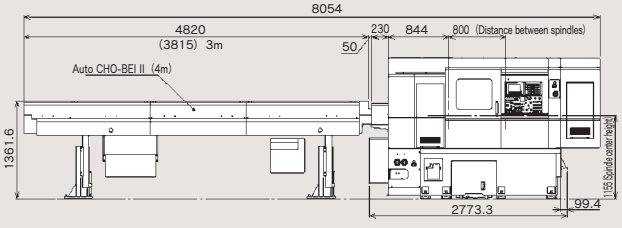
■ Side outlet conveyor/ backside outlet conveyor for Sub spindle specification



■ Auto CHO-BEI II specification



■ Auto CHO-BEI II specification for Sub spindle



(unit: mm)

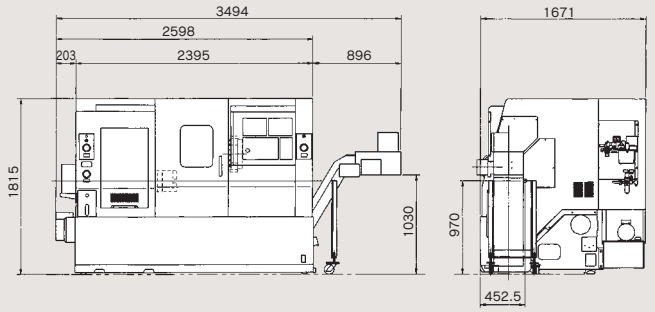
● The dimension is subject to change depending on the specifications.

Machine dimensions

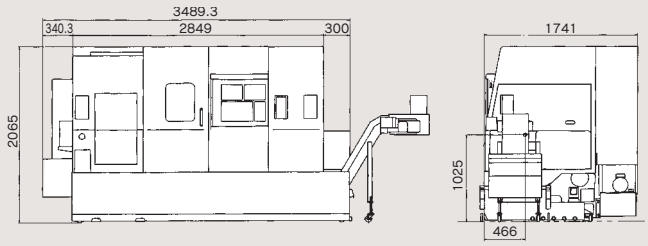
SC-250

Floor Space

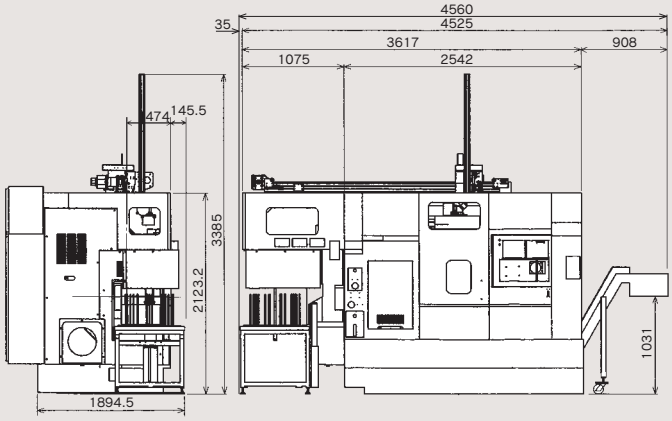
■ Chip conveyor specification



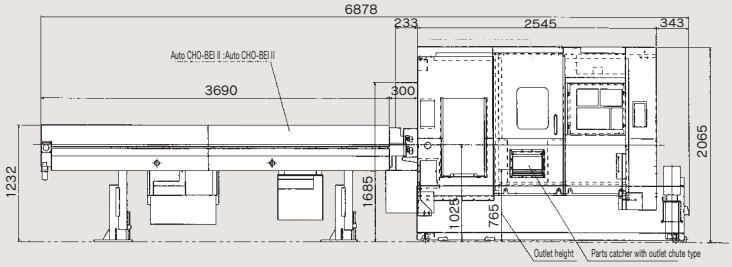
■ Sub spindle specification



■ GR-103 +WS-221 specification



■ Y-axis Auto CHO-BEI specification

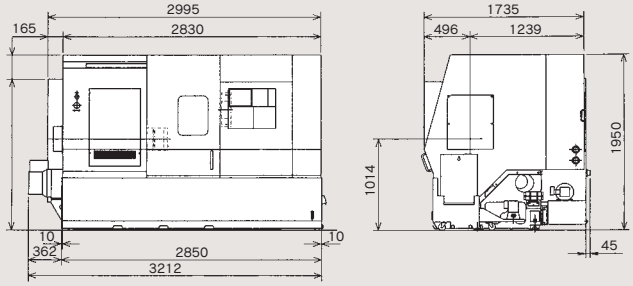


(unit: mm)

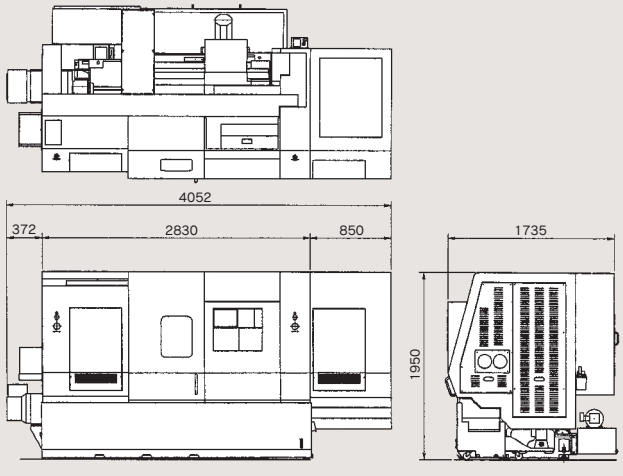
SC-300

Floor Space

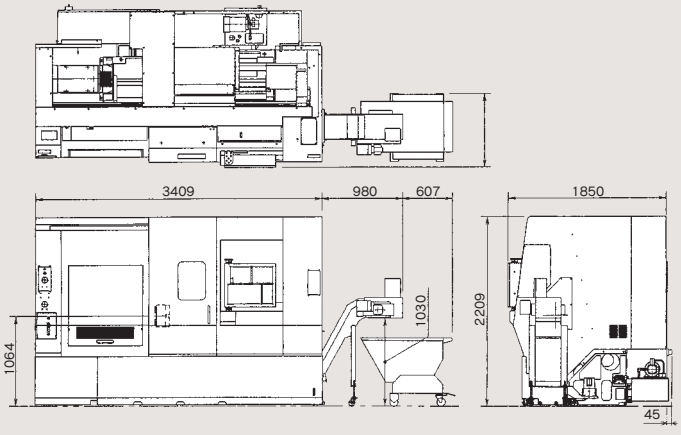
■ Standard specification



■ Sub spindle specification



■ Y-axis specification



(unit: mm)

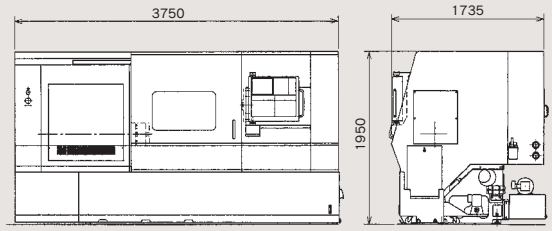
● The dimension is subject to change depending on the specifications.

Machine dimensions

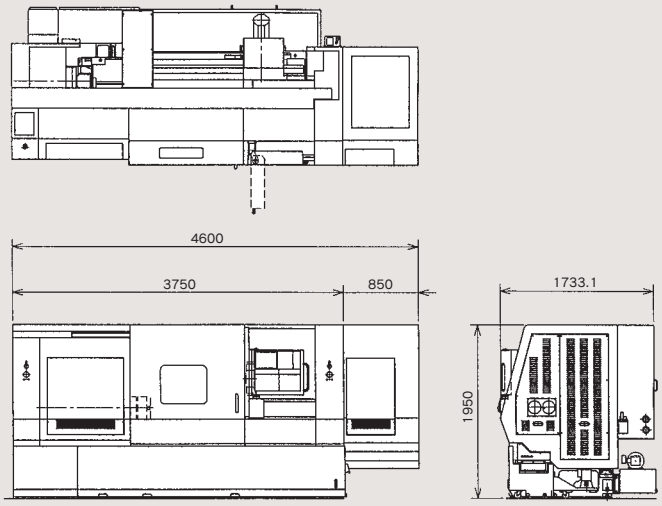
SC-300L

Floor Space

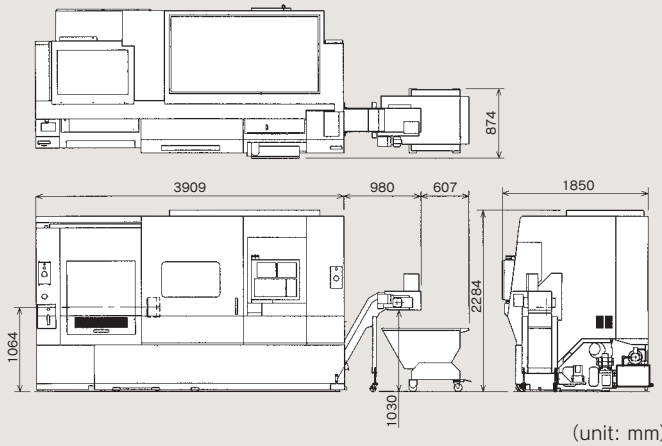
Standard specification



Sub spindle specification



Side outlet conveyor specification

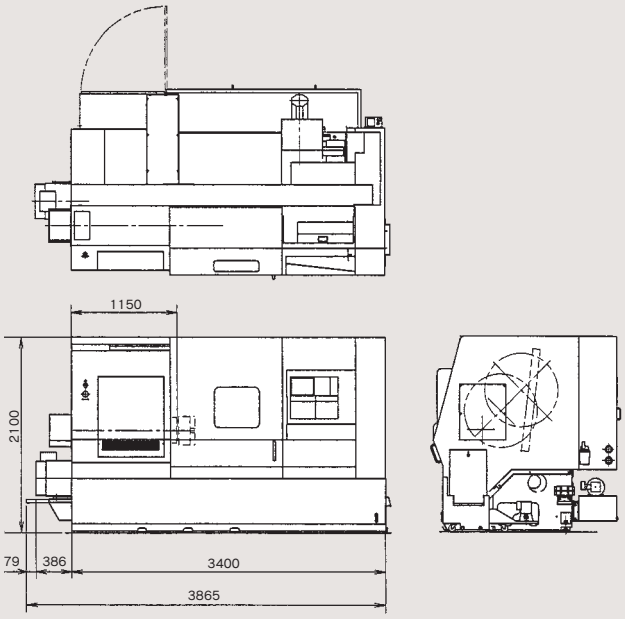


(unit: mm)

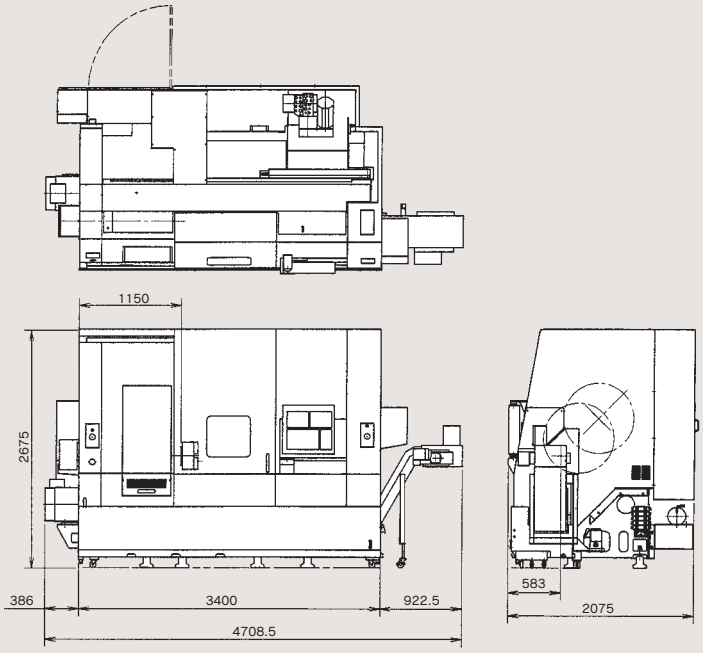
SC-450

Floor Space

Standard specification



Y-axis specification



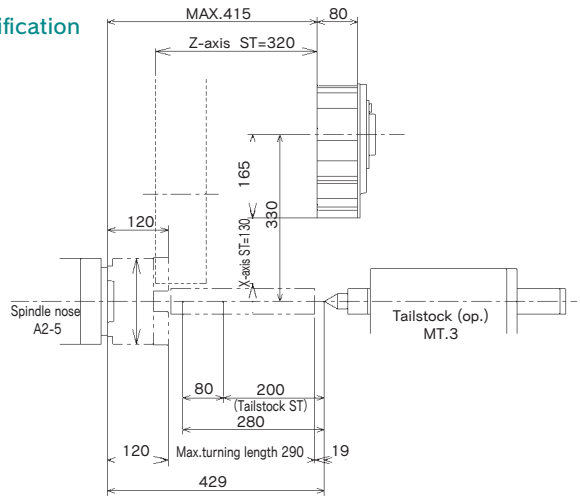
(unit: mm)

● The dimension is subject to change depending on the specifications.

Stroke Interference

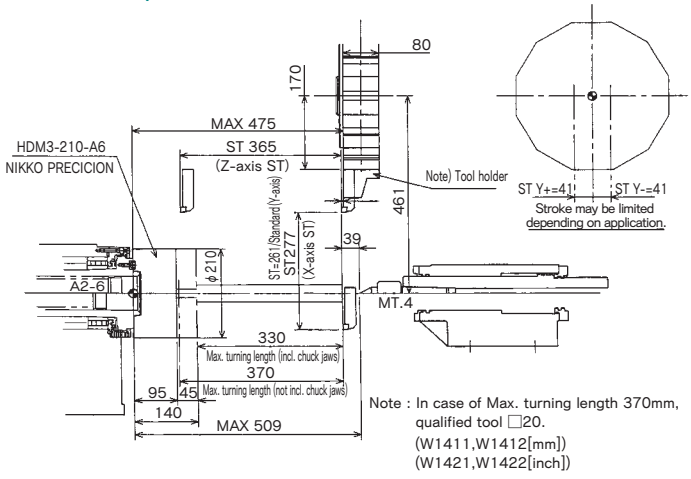
SC-150II

■ Standard specification



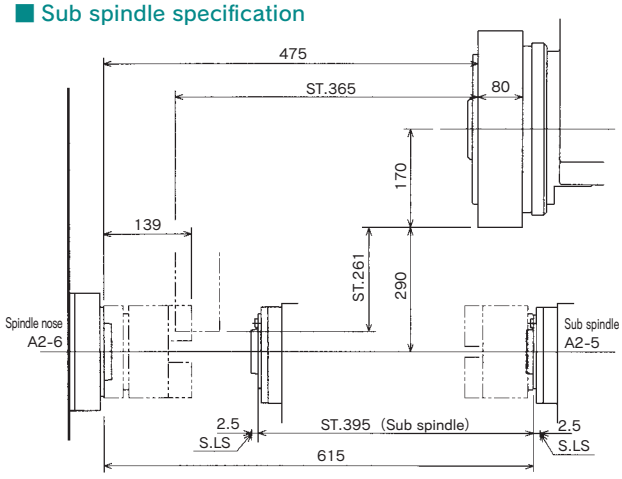
SC-200

■ Tailstock specification



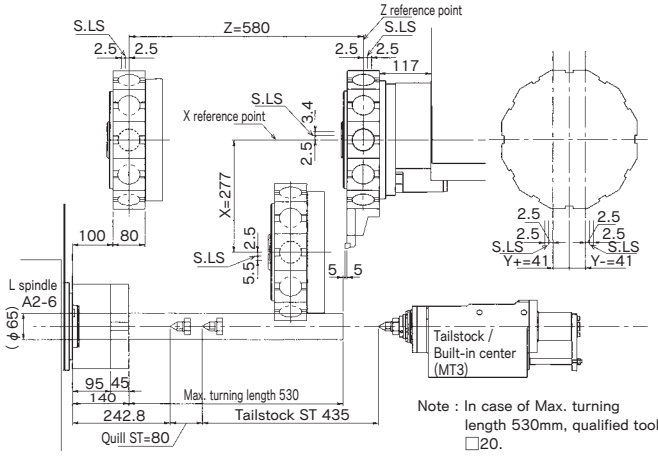
Note : In case of Max. turning length 370mm, qualified tool □20.
(W1411,W1412[mm])
(W1421,W1422[inch])

■ Sub spindle specification



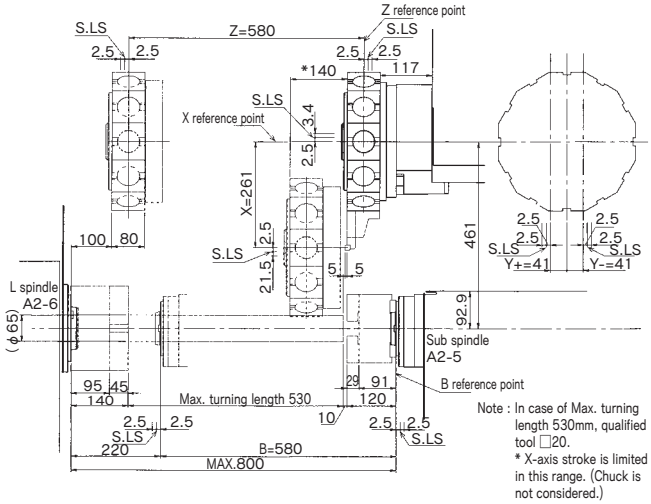
SC-200L

■ Tailstock specification



Note : In case of Max. turning length 530mm, qualified tool □20.

■ Sub spindle specification

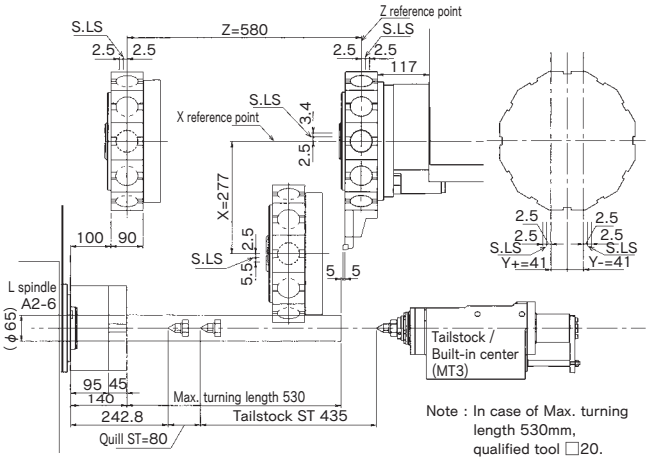


Note : In case of Max. turning length 530mm, qualified tool □20.
* X-axis stroke is limited in this range. (Chuck is not considered.)

Stroke Interference

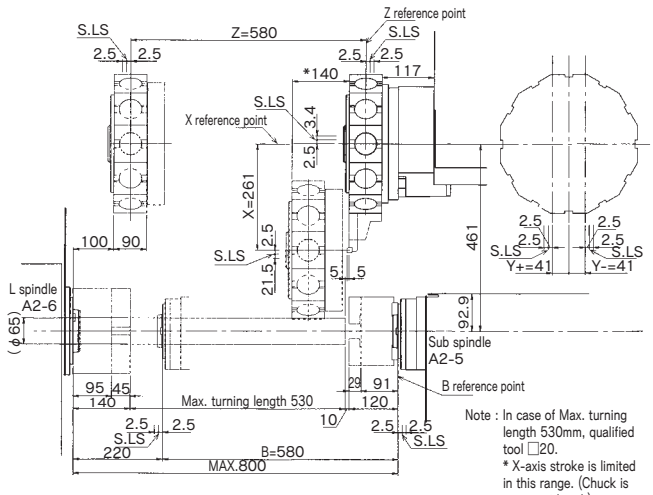
Super Mill SC-200L

■ Tailstock specification



Note : In case of Max. turning length 530mm, qualified tool □20.

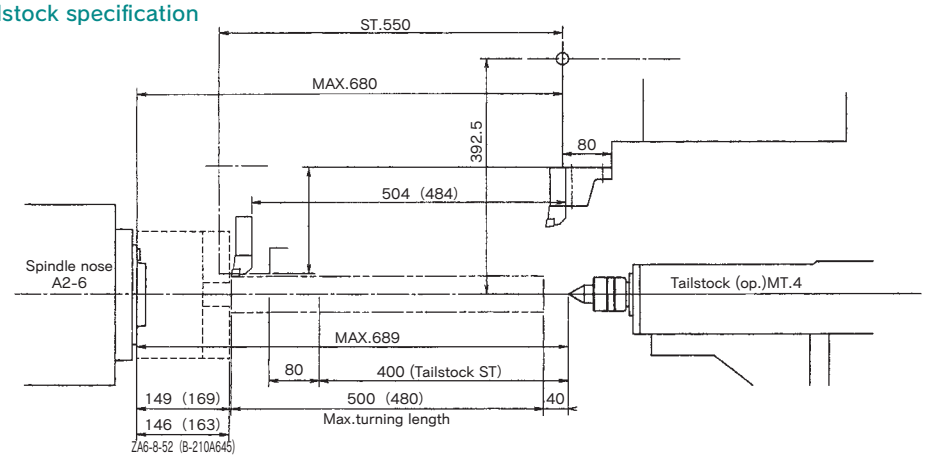
■ Sub spindle specification



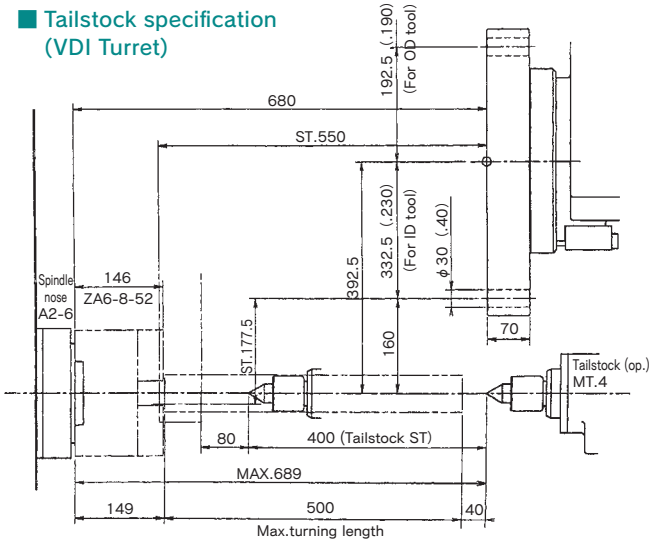
Note : In case of Max. turning length 530mm, qualified tool □20.
* X-axis stroke is limited in this range. (Chuck is not considered.)

SC-250

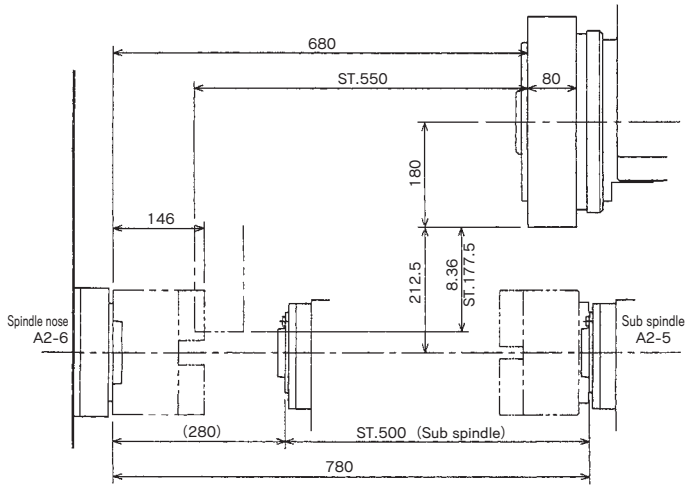
■ Tailstock specification



■ Tailstock specification (VDI Turret)

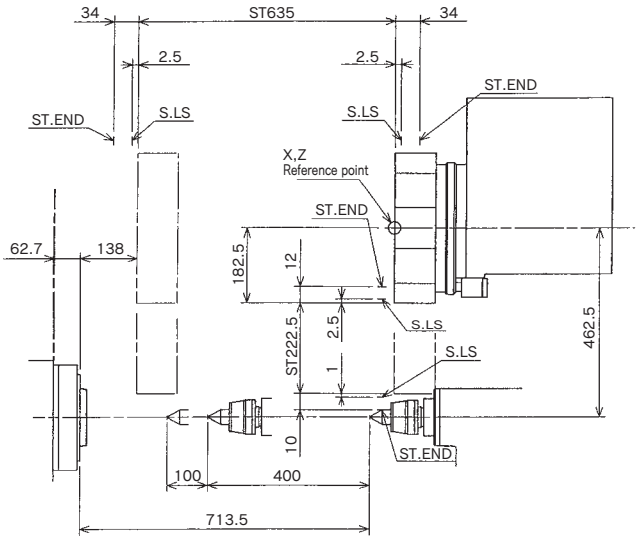


■ Sub spindle specification

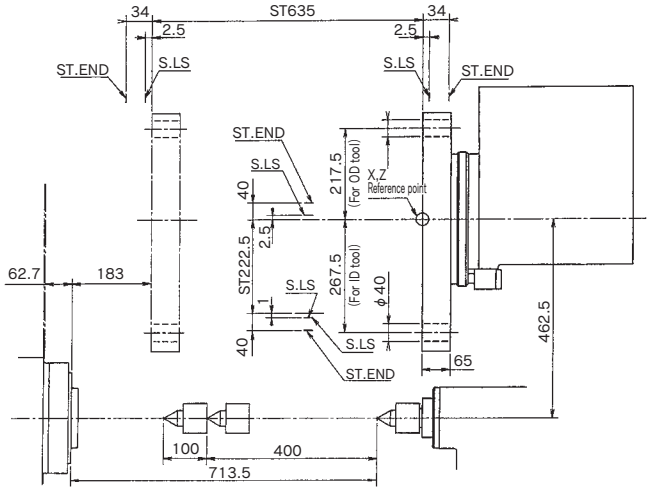


Stroke Interference

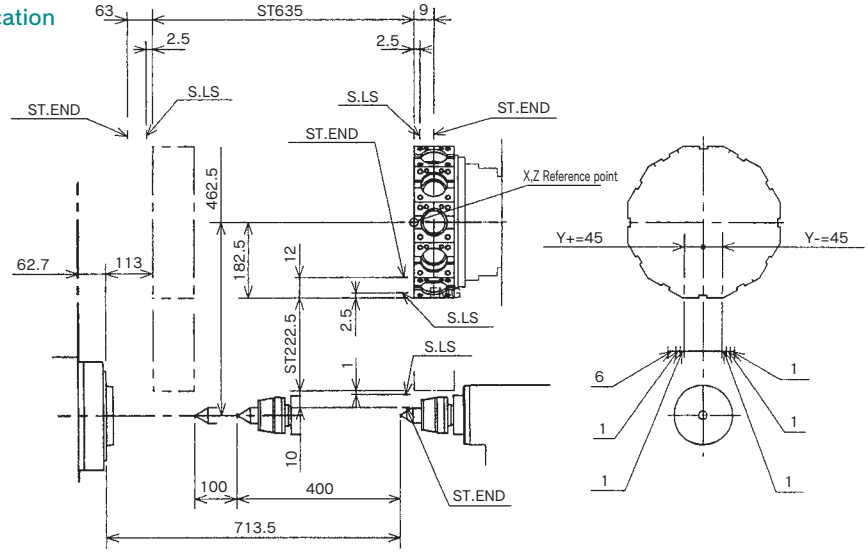
■ Standard specification



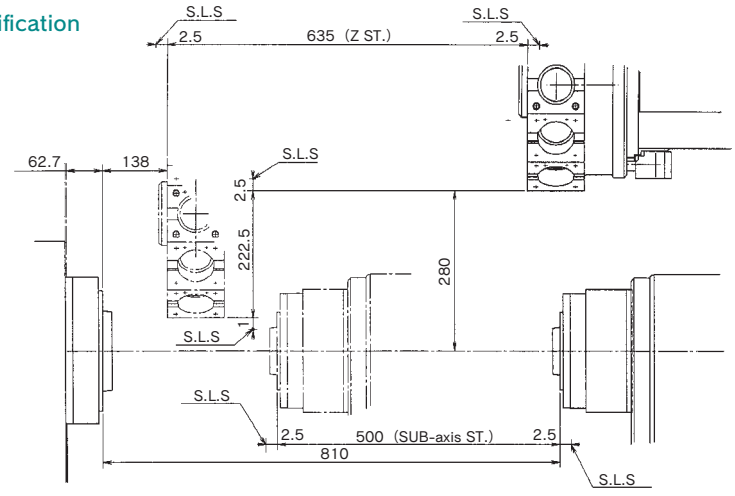
■ VDI specification



■ Y-axis specification



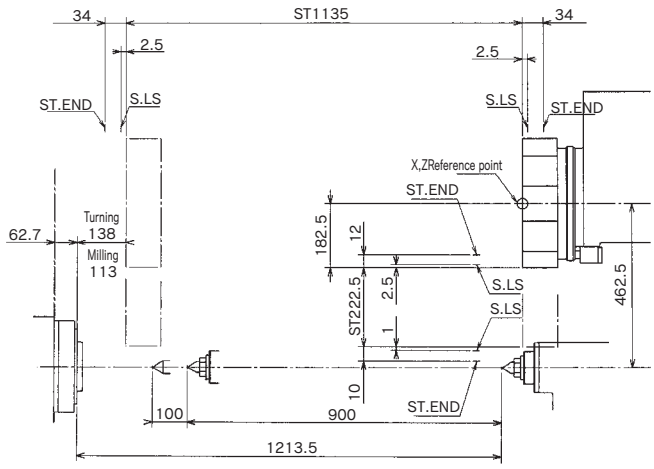
■ Sub spindle specification



Stroke Interference

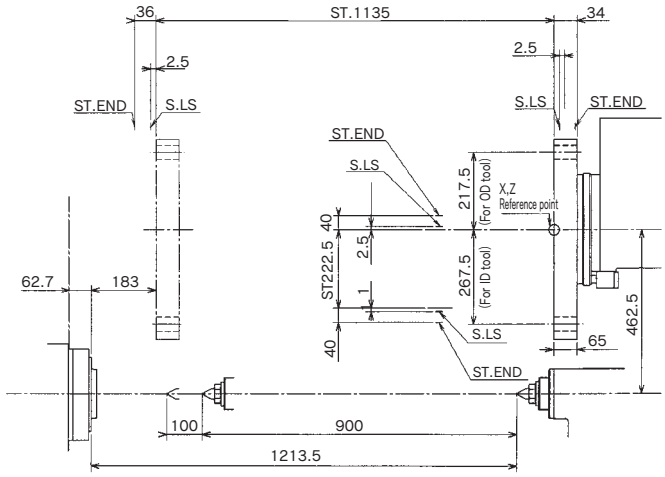
Dodecagonal drum turret

■ Driven-Tools / 12 stations

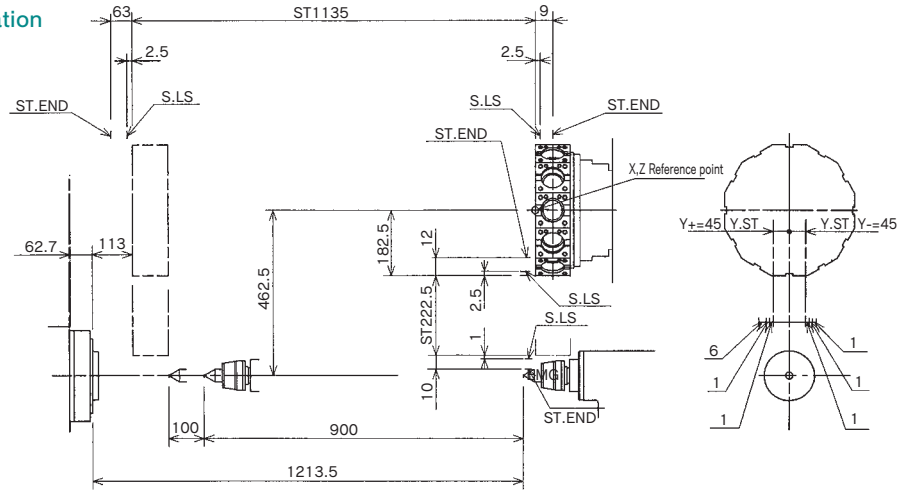


VDI turret

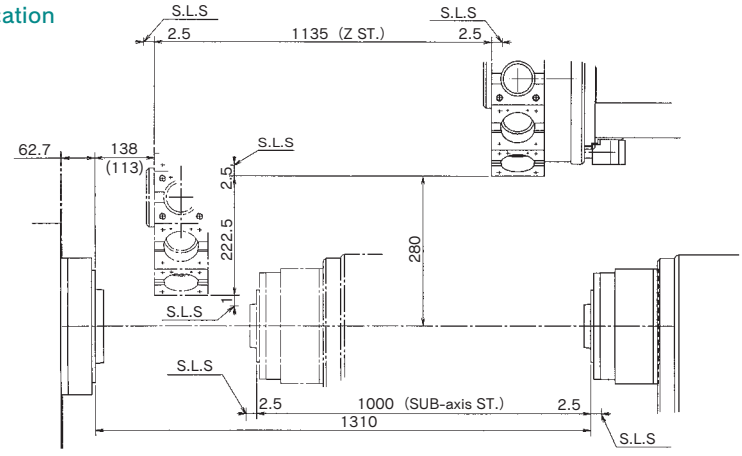
■ 12 station VDI



■ Y-axis specification



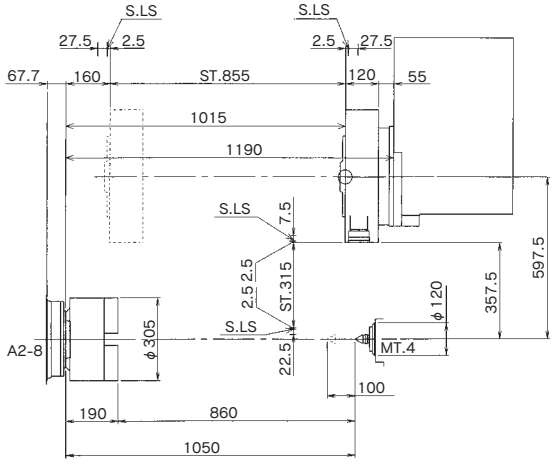
■ Sub spindle specification



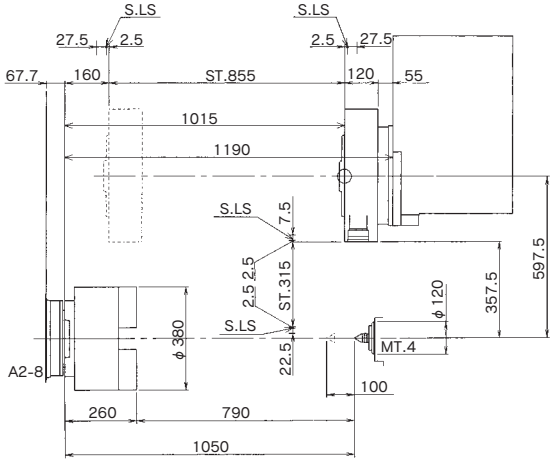
Stroke Interference

Dodecagonal drum turret

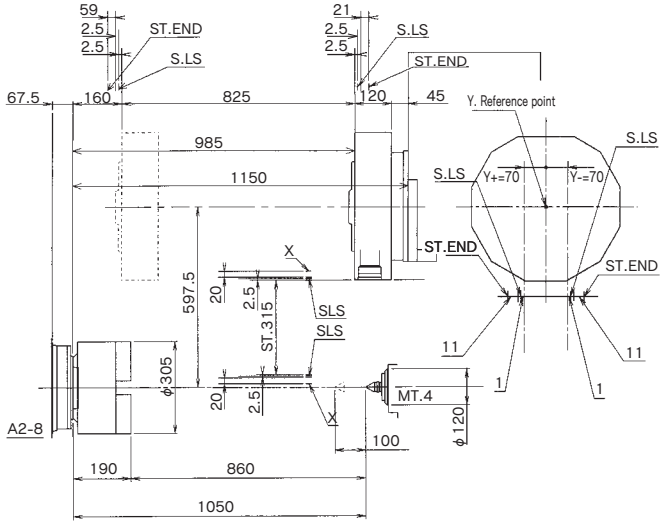
A Specification / Driven-Tools / 12 stations



B Specification / Driven-Tools/ 12 stations

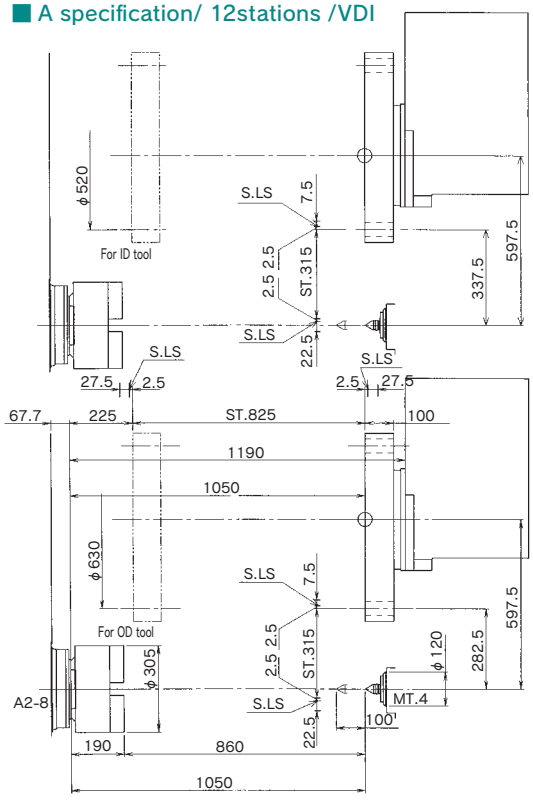


Y-axis specification

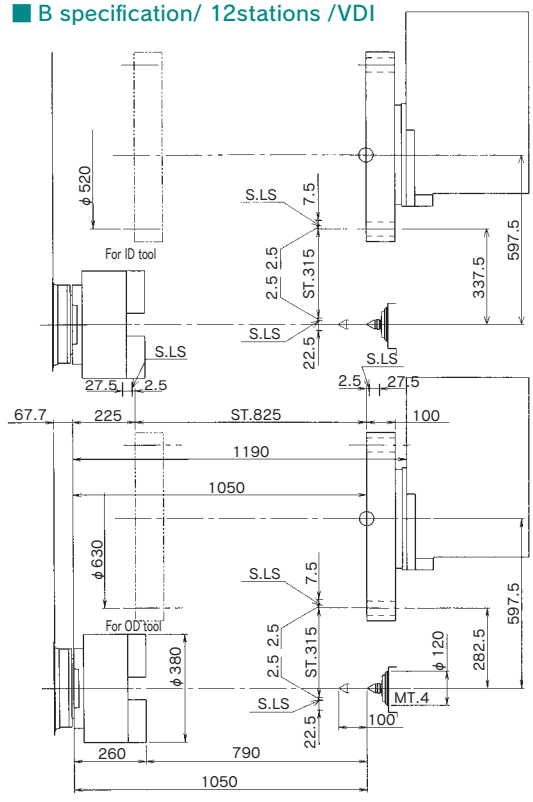


VDI Turret

A specification/ 12stations /VDI



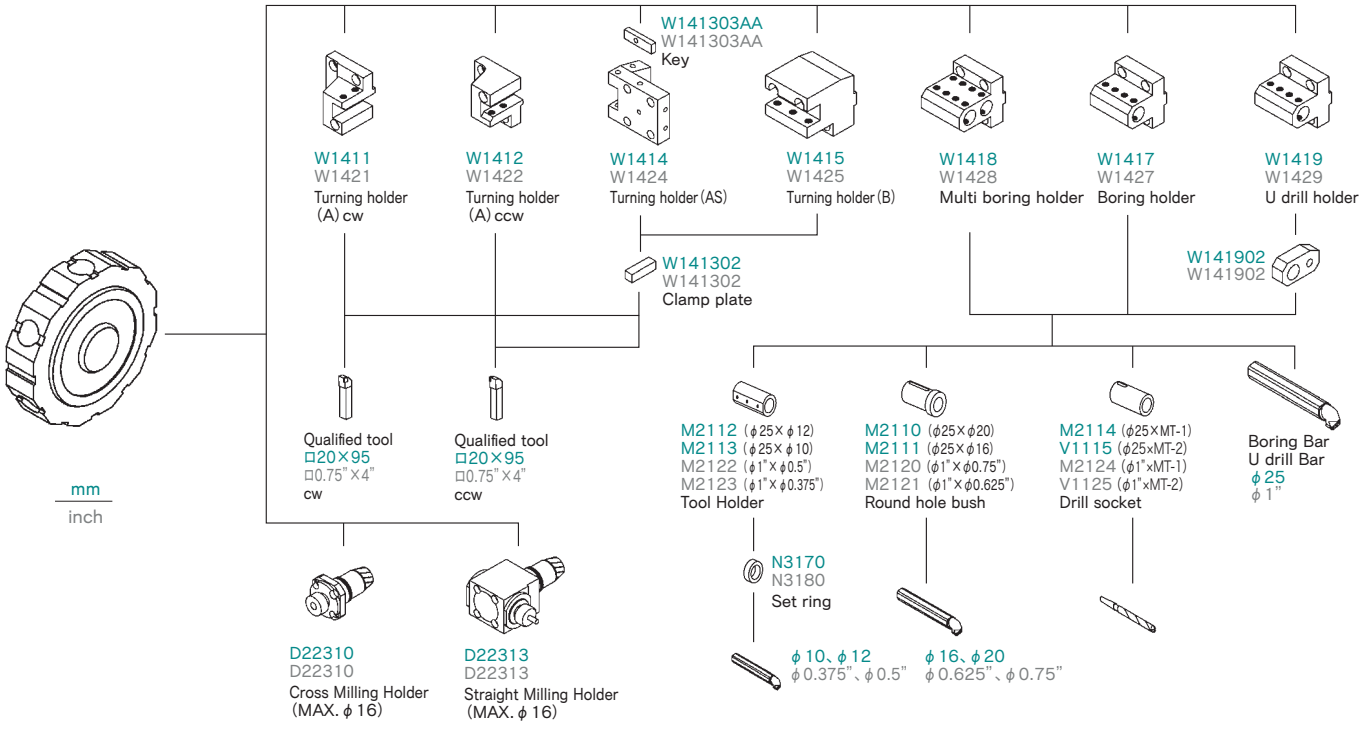
B specification/ 12stations /VDI



Tooling system diagram

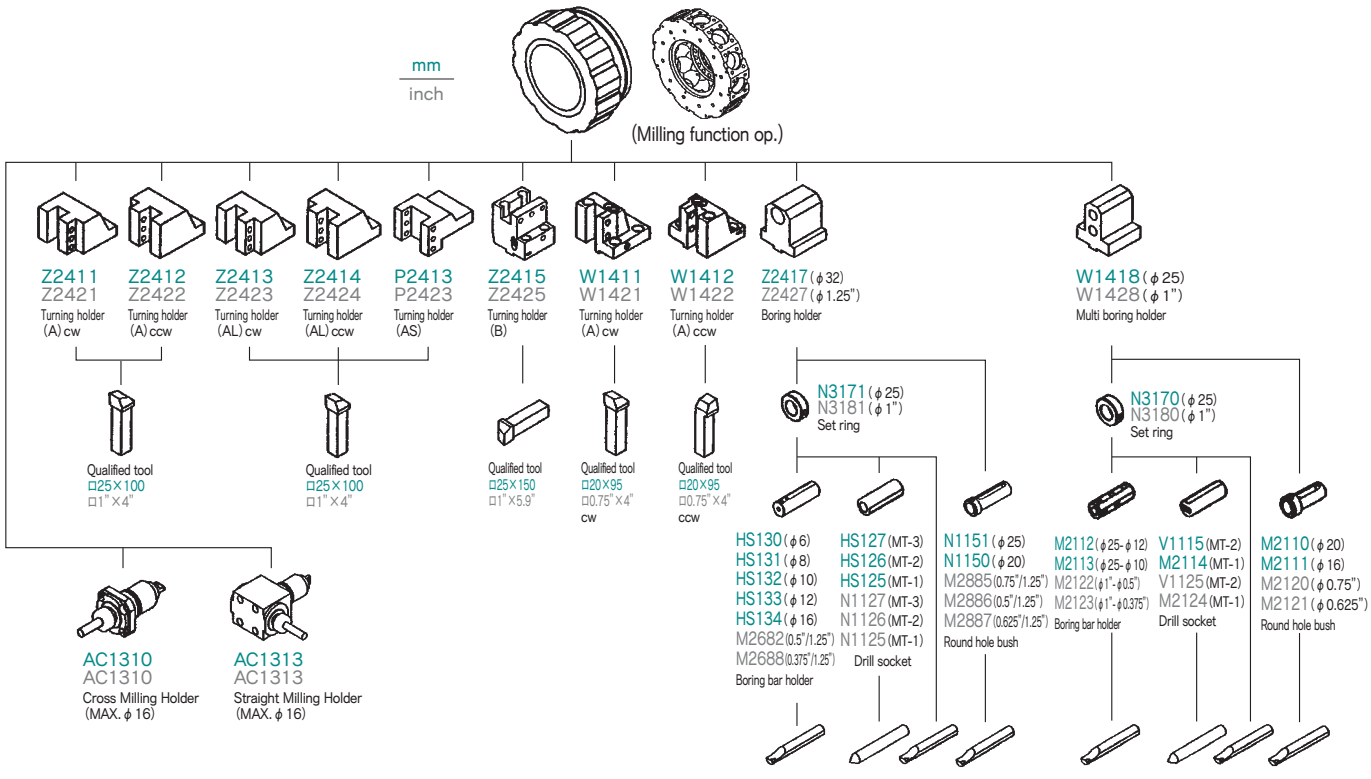
SC-150II

Tooling System



SC-200 / SC-200L

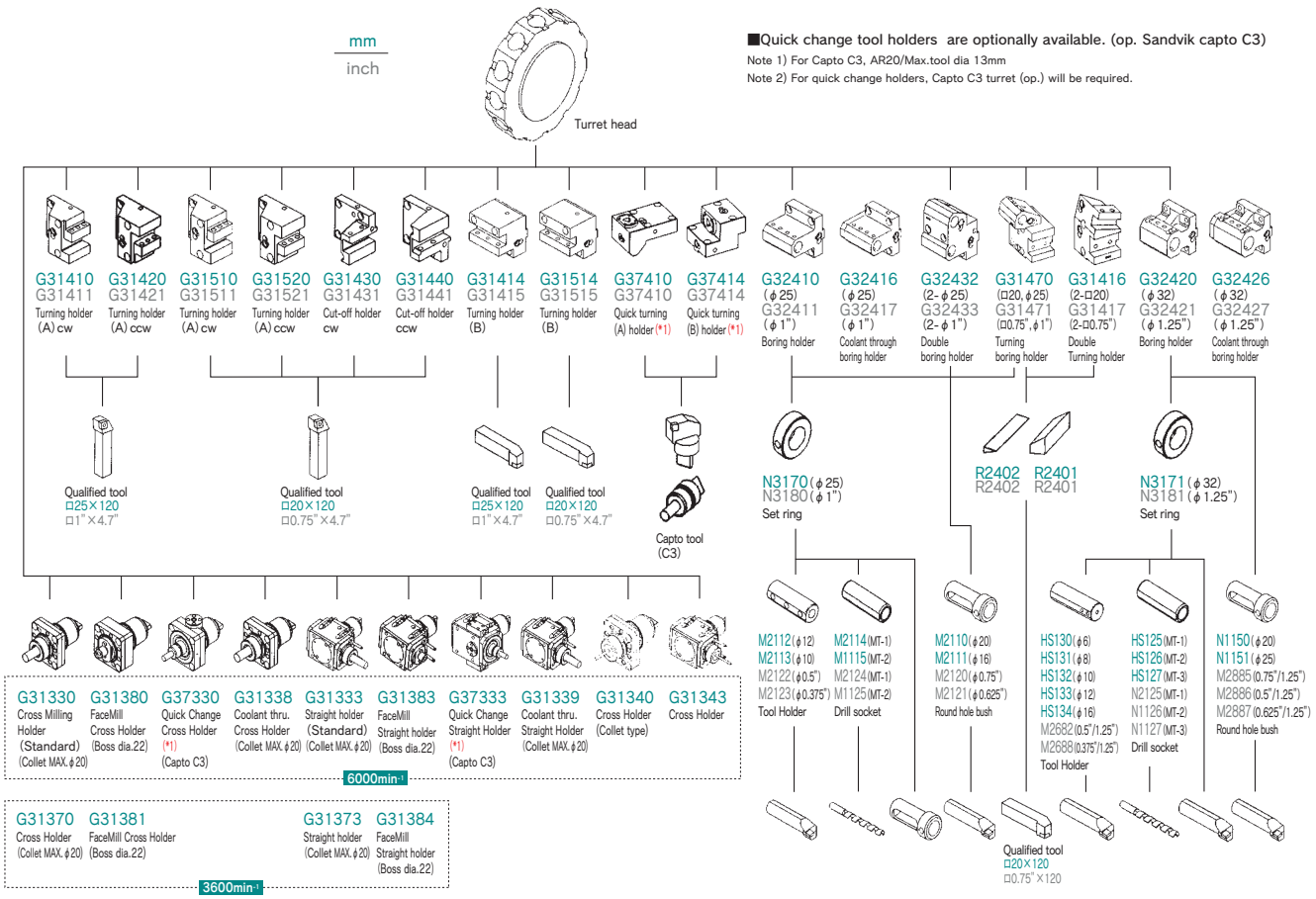
Tooling System



Tooling system diagram

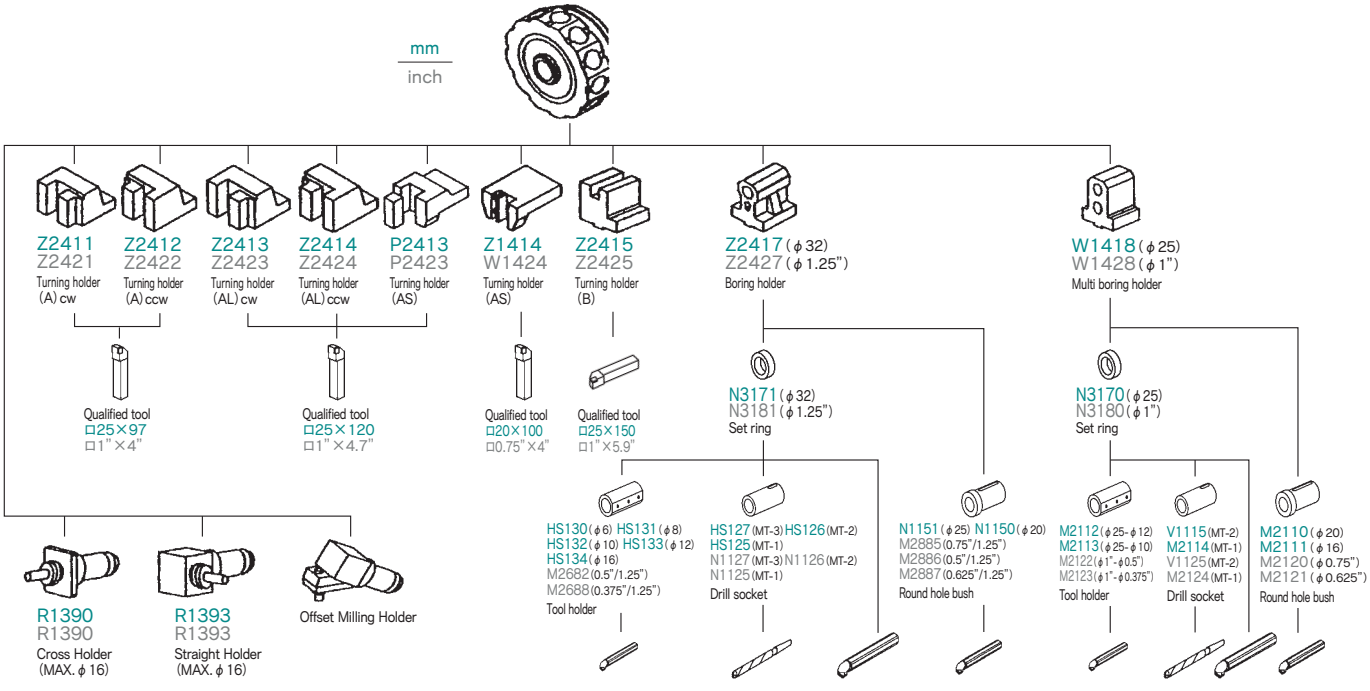
Super Mill SC-200L

Tooling System



SC-250

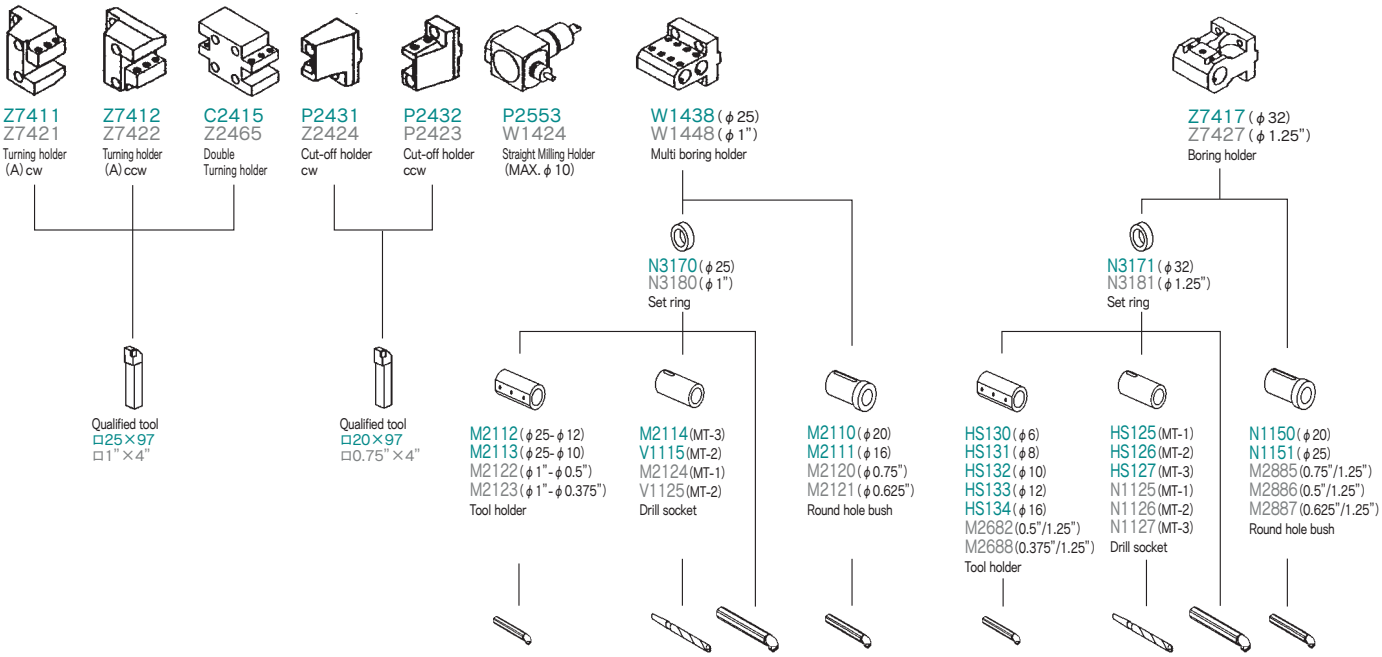
Tooling System



Tooling system diagram

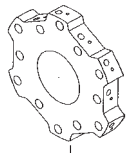
Sub spindle

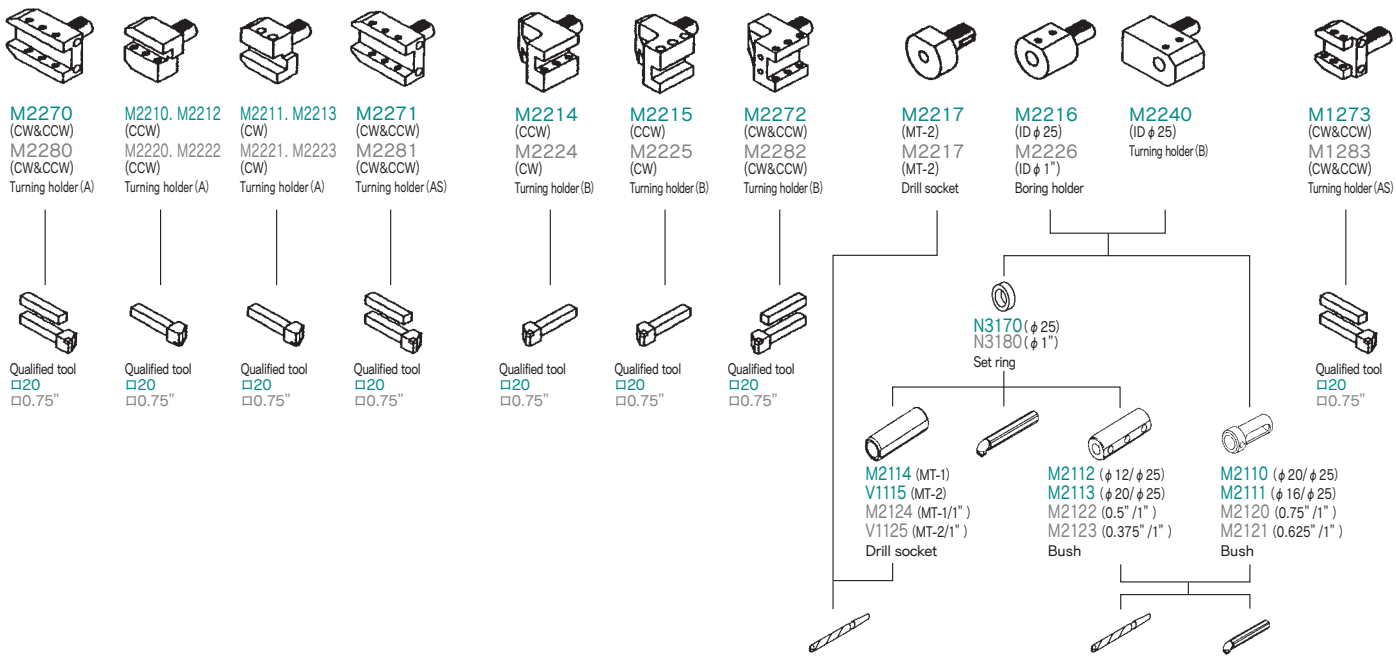
mm
inch



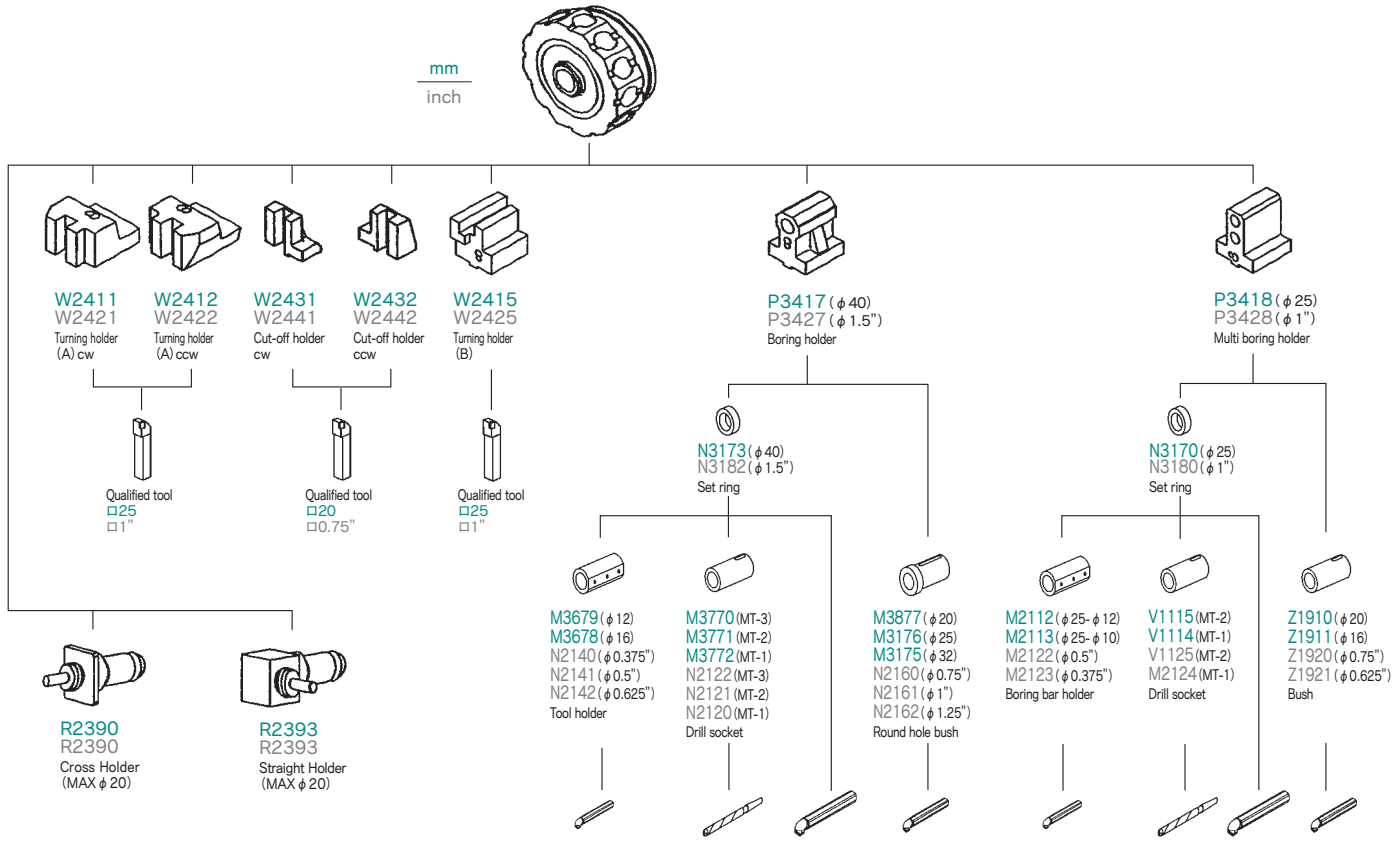
VDI turret

mm
inch

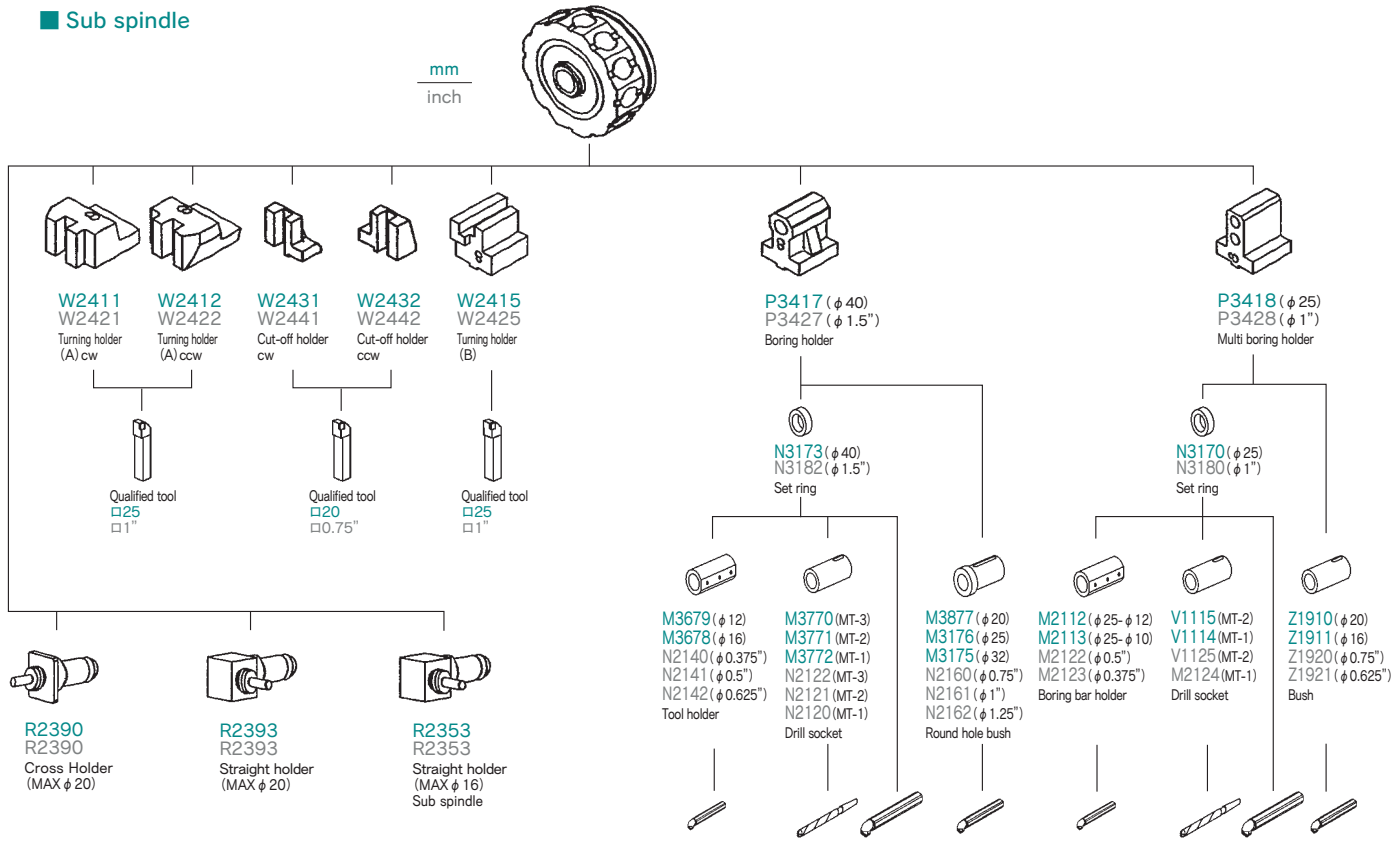




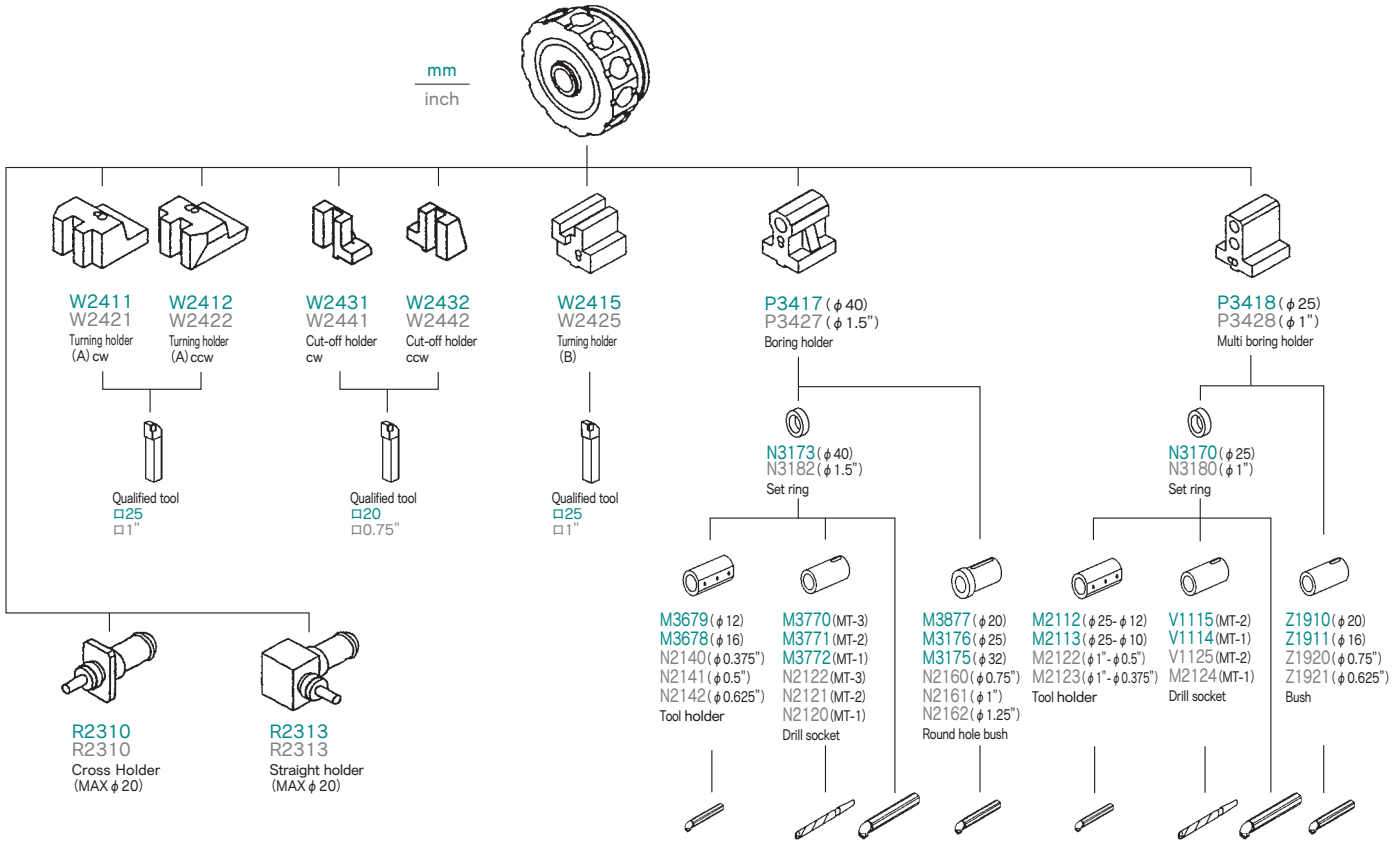
Tooling system diagram



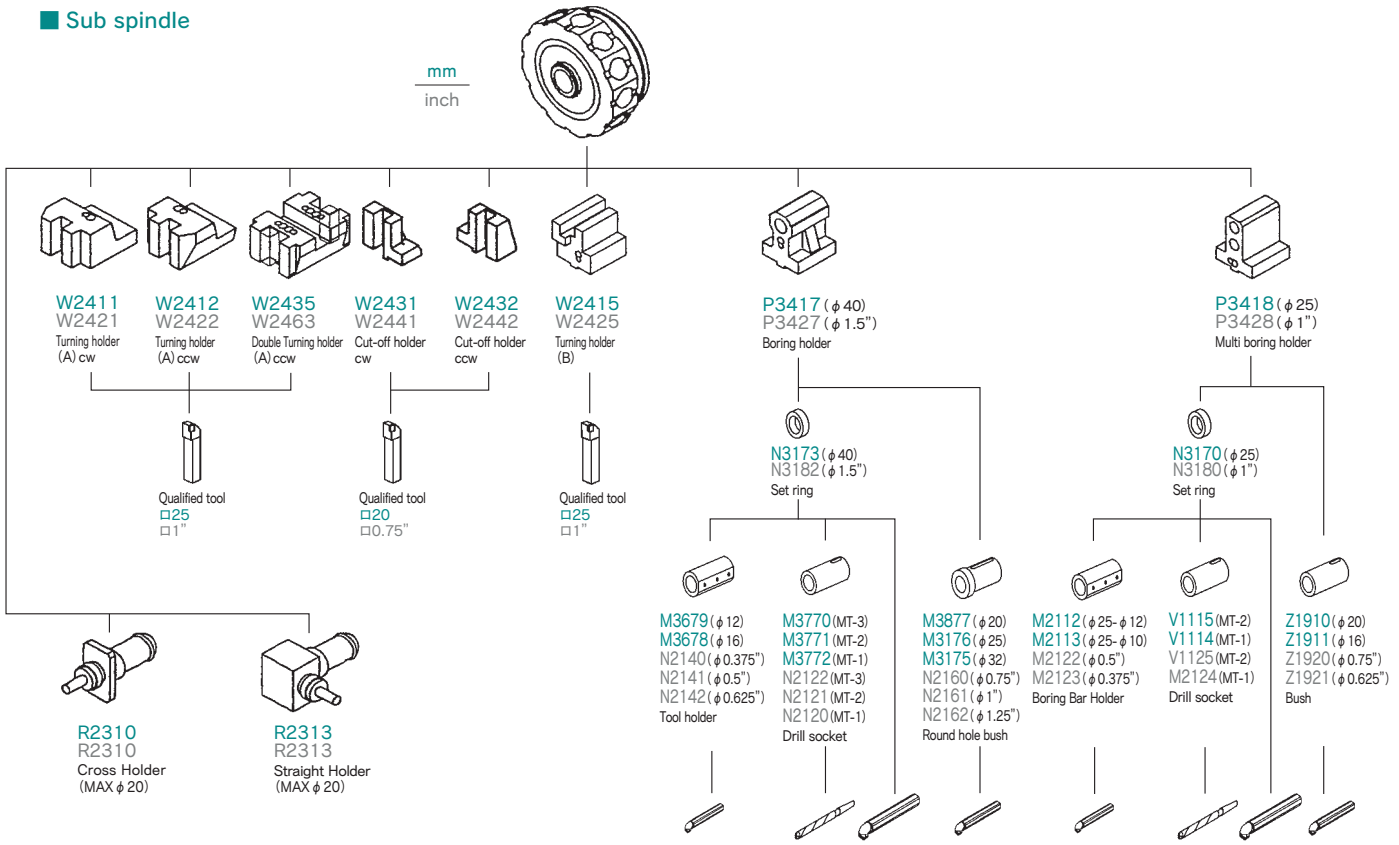
■ Sub spindle



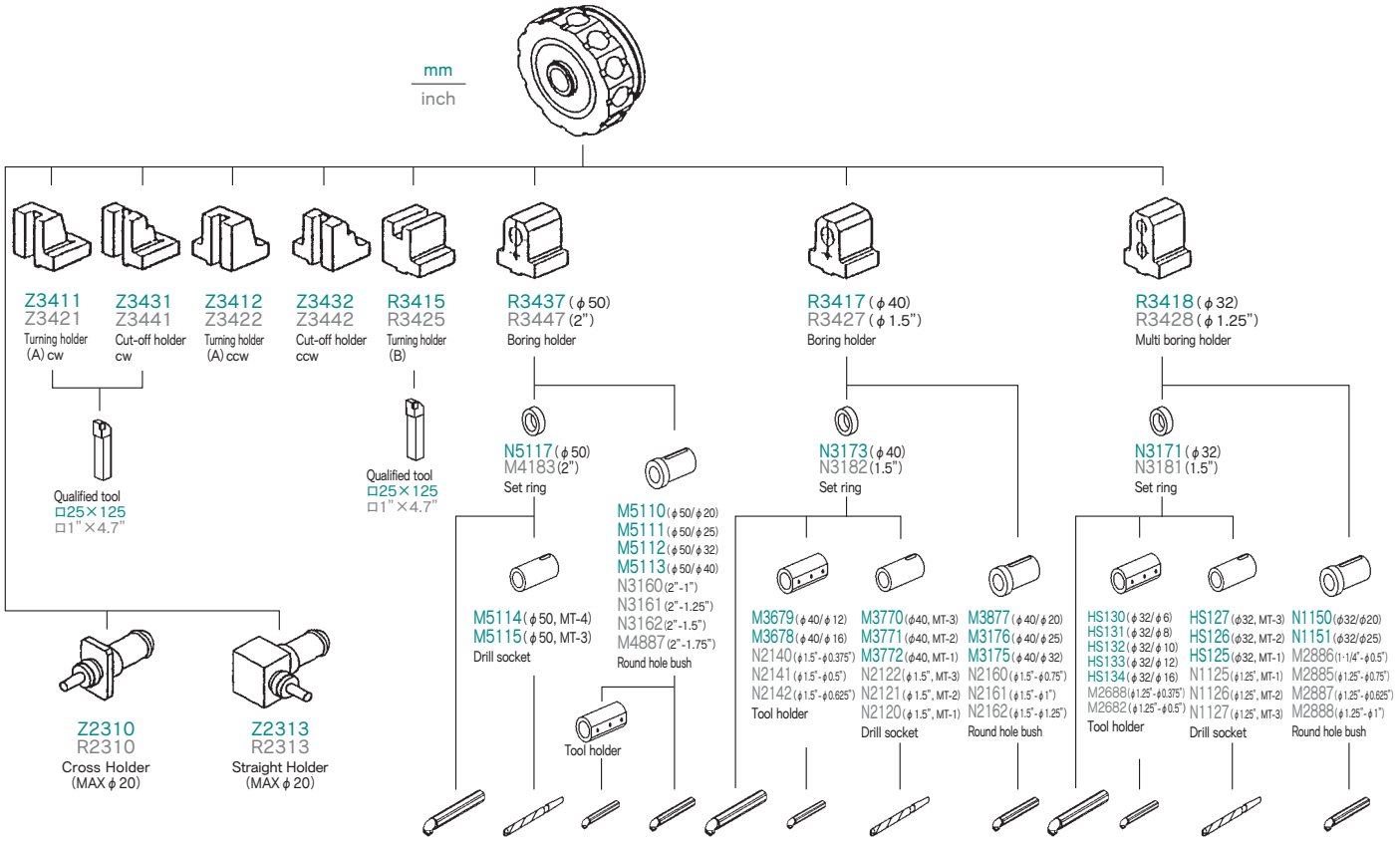
Tooling system diagram



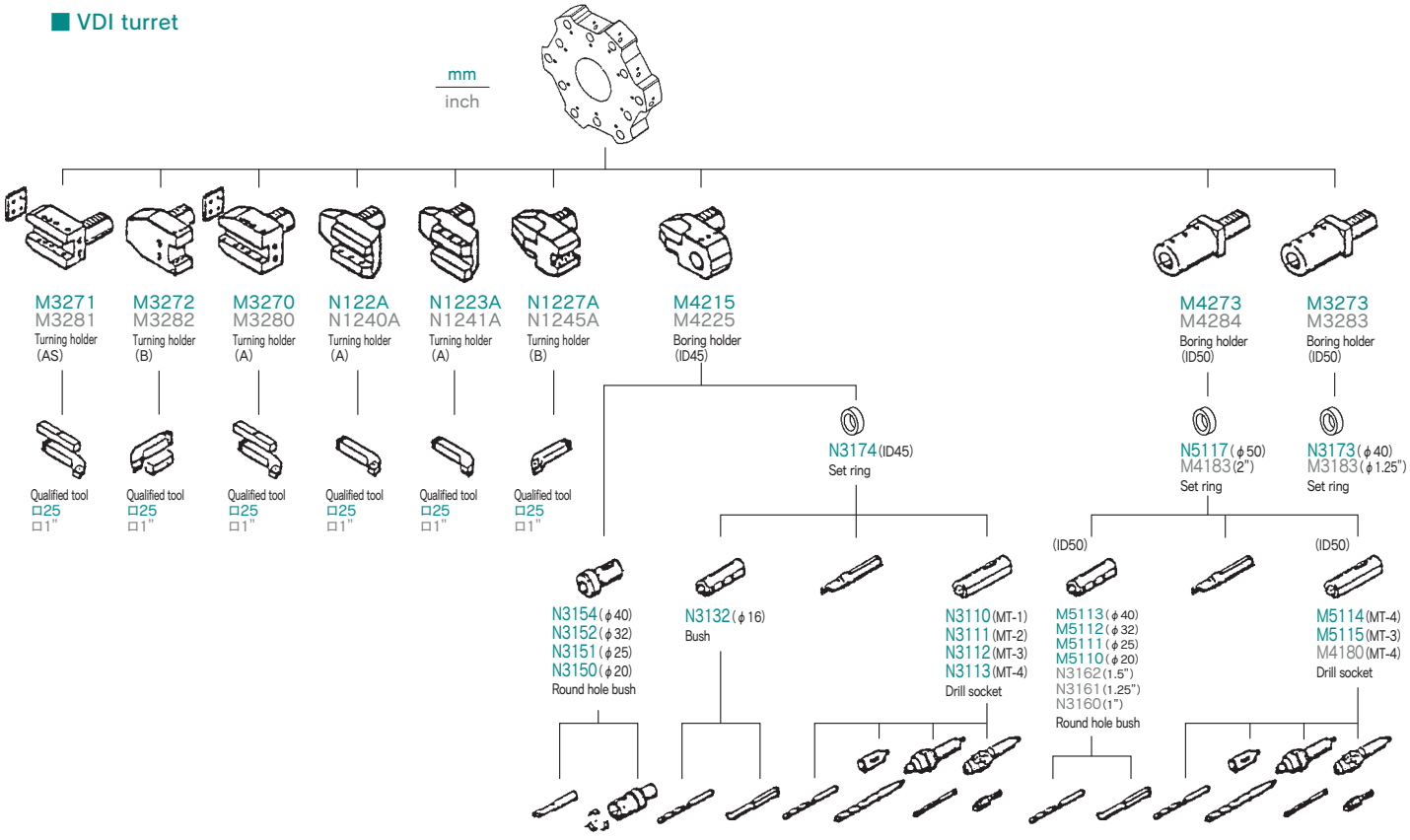
■ Sub spindle



Tooling system diagram



■ VDI turret



SC-150 II

※ This machine is not available for overseas market.

Machine Specification

■ Capacity	
Max. turning diameter	220mm
Standard turning diameter	130mm
Distance between centers	429mm
Max. turning length	290mm
Bar capacity	42mm
Chuck size	6"/165mm
■ Axis travel	
Slide travel (X)	130 mm
Slide travel (Z)	320 mm
Rapid feed (X)	24m/min
Rapid feed (Z)	36m/min
■ Spindles	
Spindle speed	6000min^{-1}
Spindle speed range	Stepless
Spindle nose	A2-5
Hole through spindle	56mm
I.D. of front bearing	80mm
Hole through draw tube	43mm
■ C-axis (op.)	
Least input increment	0.001°
Least command increment	0.001°
Rapid index speed	600min^{-1}
Cutting feed rate	1 - 4800° /min
C-axis clamp	Disk clamp
C-axis connecting time	1.5sec.
■ Turret	
Type of turret head	Dodecagonal drum turret
Number of Tool stations	12
Number of Indexing positions	12
Tool size (square shank)	□ 20mm
Tool size (round shank)	ϕ 25mm
■ Driven tools (op.)	
Rotary system	Simultaneous rotation
Spindle speed	4000min^{-1}
Spindle speed range	Stepless
Number of driven-tool stations	6
Collet size	AR25
Tool shank	Straight holder Φ 2 - 16mm
Cross holder	Φ 2 - 16mm
■ Tailstock (op.)	
Quill diameter	50mm
Quill taper	MT-3 Rotating center
Quill stroke	80mm
■ Drive motor power	
Main spindle	11/7.5kW
Driven-tool spindle (op.)	2.2/1.5kW
■ General	
Machine height	1625mm
Floor space	1795mm x 1405mm
Machine weight	2700kg
■ Power supply	
Power supply	30kVA
Air supply	150 ~ 200NL/min, 0.5 ~ 0.7MPa

● Safety specifications

Various safety devices such as interlocks, safety fences for automatic loaders, and automatic fire extinguishers, are available as options, which can be included in your purchase package.

Please contact our local distributor or agent for your specific requirements.

Control Specification

■ Items	
Control type	FANUC 0i-TC
■ Controlled axes	
Controlled axes	2 axes
Simultaneously controlled axes	2 axes
■ Input command	
Least input increment	0.001mm/0.0001inch (X in diameter)
Least command increment	X : 0.0005mm, Z : 0.001mm
Max. programmable dimension	± 99999.999mm/ ± 9999.9999in
Absolute / incremental programming	X, Z / U, W
Decimal input	standard
Program code	EIA/ISO automatic recognition
Inch / Metric conversion	G20/G21
Programmable data input	G10
■ Interpolation	
Positioning	G00
Linear interpolation	G01
Circular interpolation	G02/03, CW/CCW
Polar coordinate interpolation	standard for milling
Cylindrical interpolation	standard for milling
■ Feed function	
Cutting feed	X : 1 - 4800mm/min, 0.01 - 188inch/min Z : 1 - 4800mm/min, 0.01 - 188inch/min C : 1 - 4800degree/min 0.0001 - 500.0000mm/rev 0.000001 - 9.999999inch/rev
Dwell	G04
Feed per minute / Feed per revolution	G98/G99
Thread cutting	G32+F
Thread cutting retract	standard
Handle feed Manual pulse generator	Manual pulse generator x 1 (0.001/0.01/0.1mm)
Automatic acceleration/ deceleration	standard
Linear acceleration/ deceleration after cutting feed interpolation	standard
Rapid feed override	F0/25/100%
Cutting feed-rate override	0 - 150%
Look ahead control	G08
■ Program memory	
Part program storage length	640m (fixed)
Part program edit	Delete, insert, change
Program number search	standard
Sequence number search	standard
Address search	standard
Number of registerable programs	400programs (fixed)
Program storage memory	Backed up by battery
Multiple program simultaneous editing	standard(not available during automatic operation of PC-G/GR)
DNC operation through memory card	standard (not including memory card)
Extended part program editing	standard
■ Program support	
Circular interpolation R programming	standard
Direct drawing dimension programming or Chamfering and Corner R	standard (Direct drawing dimension programming is standard setting)
Canned cycle	G90, G92, G94
Multiple repetitive canned cycle	G70 - G76
Multiple repetitive canned cycle II	standard
Canned cycle for drilling	G80 - G89
Sub program	standard
Programmable data input	G10
Custom macro B	standard
NT Work Navigator (torque type)	standard
NT NURSE	standard

SC-200

Machine Specification

■ Capacity

Max. turning diameter	432mm
Standard turning diameter	185mm
Distance between spindles	615mm
Distance between centers	509mm
Max. turning length	370mm
Bar capacity	65mm
Chuck size	8"/215mm

■ Axis travel

Slide travel (X)	261mm
Slide travel (Z)	365mm
Slide travel (Y)	± 41mm (op.)
Slide travel (B)	395mm (op.)
Rapid feed (X)	24m/min
Rapid feed (Z)	36m/min
Rapid feed (Y)	6m/min (op.)
Rapid feed (B)	24m/min (op.)

■ Spindles

Spindle speed	4500min^{-1}
Spindle speed range	Stepless
Spindle nose	A2-6
Hole through spindle	80mm
I.D. of front bearing	110mm
Hole through draw tube	66mm

■ Sub spindle (op.)

Spindle speed	5000min^{-1}
Spindle speed range	Stepless
Spindle nose	A2-5
Hole through spindle	47mm
I.D. of front bearing	70mm
Hole through draw tube	35mm

■ C-axis (op.)

Least input increment	0.001°
Least command increment	0.001°
Rapid index speed	600min^{-1}
Cutting feed rate	1 - 4800° /min
C-axis clamp	Disk clamp
C-axis connecting time	1.5sec.

■ Turret

Type of turret head	Dodecagonal drum turret
Number of Tool stations	12
Number of Indexing positions	12
Tool size (square shank)	□ 25mm (□ 20mm)
Tool size (round shank)	ϕ 32mm

■ Driven tools

Rotary system	Individual rotation
Spindle speed	6000min^{-1}
Spindle speed range	Stepless
Number of driven-tool stations	12
Collet size	AR25
Tool shank	Straight holder Φ1 - 16mm Cross holder Φ1 - 16mm

■ Tailstock (op.)

Quill diameter	80mm
Quill taper	MT-4 Rotating center
Quill stroke	80mm

■ Drive motor power

Main spindle	11/7.5kW
Sub spindle (op.)	5.5/3.7kW
Driven-tool spindle (op.)	5.5/3.7kW

■ General

Machine height	1730mm
Floor space	2430mm x 1745mm
Machine weight	2700kg

■ Power supply

Power supply	27kVA
Air supply	200NL/min, 0.4MPa

● Safety specifications

Various safety devices such as interlocks, safety fences for automatic loaders, and automatic fire extinguishers, are available as options, which can be included in your purchase package.

Please contact our local distributor or agent for your specific requirements.

Control Specification

■ Items

Control type	FANUC 21i-TB (18i-TB for machine with sub spindle)

■ Controlled axes

Controlled axes	2 axes
Simultaneously controlled axes	2 axes

■ Input command

Least input increment	0.001mm/0.0001inch (X in diameter)
Least command increment	X : 0.0005mm, Z : 0.001mm
Max. programmable dimension	± 99999.999mm/ ± 9999.9999in
Absolute / incremental programming	X, Z / U, W
Decimal input	standard
Program code	EIA/ISO automatic recognition
Inch / Metric conversion	G20/G21
Programmable data input	G10

■ Interpolation

Positioning	G00
Linear interpolation	G01
Circular interpolation	G02/03, CW/CCW
Polar coordinate interpolation	standard for milling
Cylindrical interpolation	standard for milling

■ Feed function

Cutting feed	X : 1 - 4800mm/min, 0.01 - 188inch/min Z : 1 - 4800mm/min, 0.01 - 188inch/min C : 1 - 4800degree/min 0.0001 - 500.0000mm/rev 0.000001 - 9.999999inch/rev
Dwell	G04
Feed per minute / Feed per revolution	G98/G99
Thread cutting	G32+F
Thread cutting retract	standard
Handle feed Manual pulse generator	Manual pulse generator x 1 (0.001/0.01/0.1mm)
Automatic acceleration/ deceleration	standard
Linear acceleration/ deceleration after cutting feed interpolation	standard
Rapid feed override	F0/25/100%
Cutting feed-rate override	0 - 150%
Look ahead control	G08

■ Program memory

Part program storage length	80m
Part program edit	Delete, insert, change
Program number search	standard
Sequence number search	standard
Address search	standard
Number of registerable programs	125programs
Program storage memory	Backed up by battery
Multiple program simultaneous editing	standard(not available during automatic operation of PC-G/GR)
DNC operation through memory card	standard (not including memory card)
Extended part program editing	standard

■ Program support

Circular interpolation R programming	standard
Direct drawing dimension programming or Chamfering and Corner R	standard (Direct drawing dimension programming is standard setting)
Canned cycle	G90, G92, G94
Multiple repetitive canned cycle	G70 - G76
Multiple repetitive canned cycle II	standard
Canned cycle for drilling	G80 - G89
Sub program	standard
Programmable data input	G10
Custom macro B	standard
NT Work Navigator (torque type)	standard
NT NURSE	standard

Machine spec		Without sub spindle	With sub spindle
NC Control		21i-TB	18i-TB
Display	7.2" monochrome LCD	Standard	
	10.4" color LCD	When NT Manual guide i (op.) is installed	

SC-200L

Machine Specification

■ Capacity

Max. turning diameter	410mm
Standard turning diameter	185mm
Distance between spindles	800mm
Distance between centers	719mm
Max. turning length	530mm
Bar capacity	65mm
Chuck size	8"/215mm

■ Axis travel

Slide travel (X)	277mm (261mm for sub spindle)
Slide travel (Z)	580mm
Slide travel (Y)	± 41mm (op.)
Slide travel (B)	580mm (op.)
Rapid feed (X)	24m/min
Rapid feed (Z)	36m/min
Rapid feed (Y)	6m/min (op.)
Rapid feed (B)	24m/min (op.)

■ Spindles

Spindle speed	4500min^{-1}
Spindle speed range	Stepless
Spindle nose	A2-6
Hole through spindle	80mm
I.D. of front bearing	110mm
Hole through draw tube	66mm

■ Sub spindle (op.)

Spindle speed	6000min^{-1}
Spindle speed range	Stepless
Spindle nose	A2-5
Hole through spindle	56mm
I.D. of front bearing	80mm
Hole through draw tube	43mm

■ C-axis (op.)

Least input increment	0.001°
Least command increment	0.001°
Rapid index speed	600min^{-1}
Cutting feed rate	1 - 4800° /min
C-axis clamp	Disk clamp
C-axis connecting time	1.5sec.

■ Turret

Type of turret head	Dodecagonal drum turret
Number of Tool stations	24
Number of Indexing positions	24
Tool size (square shank)	□ 25mm
Tool size (round shank)	ϕ 32mm

■ Driven tools (op.)

Rotary system	Individual rotation
Spindle speed	6000min^{-1}
Spindle speed range	Stepless
Number of driven-tool stations	12
Collet size	AR25
Tool shank	Straight holder Φ1 - 16mm Cross holder Φ1 - 16mm

■ Tailstock (op.)

Quill diameter	80mm
Quill taper	MT-3 built-in center
Quill stroke	80mm

■ Drive motor power

Main spindle	11/7.5kW
Sub spindle (op.)	7.5/5.5kW
Driven-tool spindle (op.)	5.5/3.7kW

■ General

Machine height	1964.6mm
Floor space	2771mm × 1883.8mm
Machine weight	5000kg

■ Power supply

Power supply	39kVA
Air supply	200NL/min, 0.4MPa

※ Depends on equipped options and peripherals

Control Specification

■ Items

Control type	FANUC 21i-TB (18i-TB for machine with sub spindle)

■ Controlled axes

Controlled axes	2 axes
Simultaneously controlled axes	2 axes

■ Input command

Least input increment	0.001mm/0.0001inch (X in diameter)
Least command increment	X:0.0005mm, Z:0.001mm
Max. programmable dimension	± 99999.999mm/ ± 9999.9999in
Absolute / incremental programming	X, Z / U, W
Decimal input	standard
Program code	EIA/ISO automatic recognition
Inch / Metric conversion	G20/G21
Programmable data input	G10

■ Interpolation

Positioning	G00
Linear interpolation	G01
Circular interpolation	G02/03, CW/CCW
Polar coordinate interpolation	standard for milling
Cylindrical interpolation	standard for milling

■ Feed function

Cutting feed	X : 1 - 4800mm/min, 0.01 - 188inch/min Z : 1 - 4800mm/min, 0.01 - 188inch/min C : 1 - 4800degree/min 0.0001 - 500.0000mm/rev 0.000001 - 9.999999inch/rev
Dwell	G04
Feed per minute / Feed per revolution	G98/G99
Thread cutting	G32+F
Thread cutting retract	standard
Handle feed Manual pulse generator	Manual pulse generator x 1 (0.001/0.01/0.1mm)
Automatic acceleration/ deceleration	standard
Linear acceleration/ deceleration after cutting feed interpolation	standard
Rapid feed override	F0/25/100%
Cutting feed-rate override	0 - 150%
Look ahead control	G08

■ Program memory

Part program storage length	80m
Part program edit	Delete, insert, change
Program number search	standard
Sequence number search	standard
Address search	standard
Number of registerable programs	125programs
Program storage memory	Backed up by battery
Multiple program simultaneous editing	standard(not available during automatic operation of PC-G/GR
DNC operation through memory card	standard (not including memory card)
Extended part program editing	standard

■ Program support

Circular interpolation R programming	standard
Direct drawing dimension programming or Chamfering and Corner R	standard (Direct drawing dimension programming is standard setting)
Canned cycle	G90, G92, G94
Multiple repetitive canned cycle	G70 - G76
Multiple repetitive canned cycle II	standard
Canned cycle for drilling	G80 - G89
Sub program	standard
Programmable data input	G10
Custom macro B	standard
NT Work Navigator (torque type)	standard
NT NURSE	standard

Machine spec		Without sub spindle	With sub spindle
NC Control		21i-TB	18i-TB
Display	7.2" monochrome LCD	Standard	
	10.4" color LCD	When NT Manual guide i (op.) is installed	

● Safety specifications

Various safety devices such as interlocks, safety fences for automatic loaders, and automatic fire extinguishers, are available as options, which can be included in your purchase package.
Please contact our local distributor or agent for your specific requirements.

Machine Specification

■ Capacity

Max. turning diameter	410mm
Standard turning diameter	185mm
Distance between spindles	800mm
Distance between centers	757.8mm
Max. turning length	530mm
Bar capacity	65mm
Chuck size	8"/215mm

■ Axis travel

Slide travel (X)	277mm (261mm for sub spindle)
Slide travel (Z)	580mm
Slide travel (Y)	± 41mm (op.)
Slide travel (B)	580mm (op.)
Rapid feed (X)	24m/min
Rapid feed (Z)	36m/min
Rapid feed (Y)	6m/min (op.)
Rapid feed (B)	24m/min (op.)

■ Spindles

Spindle speed	4500min^{-1}
Spindle speed range	Stepless
Spindle nose	A2-6
Hole through spindle	80mm
I.D. of front bearing	110mm
Hole through draw tube	66mm

■ Sub spindle (op.)

Spindle speed	6000min^{-1}
Spindle speed range	Stepless
Spindle nose	A2-5
Hole through spindle	56mm
I.D. of front bearing	80mm
Hole through draw tube	43mm

■ C-axis

Least input increment	0.001°
Least command increment	0.001°
Rapid index speed	600min^{-1}
Cutting feed rate	1 - 4800° /min
C-axis clamp	Disk clamp
C-axis connecting time	1.5sec.

■ Turret

Type of turret head	Dodecagonal drum turret
Number of Tool stations	24
Number of Indexing positions	24
Tool size (square shank)	□ 25mm
Tool size (round shank)	φ 32mm

■ Driven tools

Rotary system	Individual rotation
Spindle speed	6000min^{-1}
Spindle speed range	Stepless
Number of driven-tool stations	12
Collet size	AR32
Tool shank	Straight holder Φ1 - 20mm Cross holder Φ1 - 20mm

■ Tailstock (op.)

Quill diameter	80mm
Quill taper	MT-3 built-in center
Quill stroke	80mm

■ Drive motor power

Main spindle	11/7.5kW
Sub spindle (op.)	7.5/5.5kW
Driven-tool spindle	7.5/3.7kW

■ General

Machine height	1964.6mm
Floor space	2771mm × 1883.8mm
Machine weight	5000kg

■ Power supply

Power supply	42kVA
Air supply	200NL/min, 0.4MPa

Control Specification

■ Items

Control type	FANUC 21i-TB (18i-TB for machine with sub spindle)

■ Controlled axes

Controlled axes	3 axes
Simultaneously controlled axes	3 axes

■ Input command

Least input increment	0.001mm/0.0001inch (X in diameter)
Least command increment	X:0.0005mm, Z:0.001mm
Max. programmable dimension	± 99999.999mm/ ± 9999.9999in
Absolute / incremental programming	X, Z / U, W
Decimal input	standard
Program code	EIA/ISO automatic recognition
Inch / Metric conversion	G20/G21
Programmable data input	G10

■ Interpolation

Positioning	G00
Linear interpolation	G01
Circular interpolation	G02/03, CW/CCW
Polar coordinate interpolation	standard for milling
Cylindrical interpolation	standard for milling

■ Feed function

Cutting feed	X : 1 - 4800mm/min, 0.01 - 188inch/min Z : 1 - 4800mm/min, 0.01 - 188inch/min C : 1 - 4800degree/min 0.0001 - 500.0000mm/rev 0.000001 - 9.999999inch/rev
Dwell	G04
Feed per minute / Feed per revolution	G98/G99
Thread cutting	G32+F
Thread cutting retract	standard
Handle feed Manual pulse generator	Manual pulse generator x 1 (0.001/0.01/0.1mm)
Automatic acceleration/ deceleration	standard
Linear acceleration/ deceleration after cutting feed interpolation	standard
Rapid feed override	F0/25/100%
Cutting feed-rate override	0 - 150%
Look ahead control	G08

■ Program memory

Part program storage length	80m
Part program edit	Delete, insert, change
Program number search	standard
Sequence number search	standard
Address search	standard
Number of registerable programs	125programs
Program storage memory	Backed up by battery
Multiple program simultaneous editing	standard(not available during automatic operation of PC-G/GR)
DNC operation through memory card	standard (not including memory card)
Extended part program editing	standard

■ Program support

Circular interpolation R programming	standard
Direct drawing dimension programming or Chamfering and Corner R	standard (Direct drawing dimension programming is standard setting)
Canned cycle	G90, G92, G94
Multiple repetitive canned cycle	G70 - G76
Multiple repetitive canned cycle II	standard
Canned cycle for drilling	G80 - G89
Sub program	standard
Programmable data input	G10
Custom macro B	standard
NT Work Navigator (torque type)	standard
NT NURSE	standard

Machine spec		Without sub spindle	With sub spindle
NC Control		21i-TB	18i-TB
Display	7.2" monochrome LCD	Standard	
	10.4" color LCD	When NT Manual guide i (op.) is installed	

● Safety specifications

Various safety devices such as interlocks, safety fences for automatic loaders, and automatic fire extinguishers, are available as options, which can be included in your purchase package.

Please contact our local distributor or agent for your specific requirements.

SC-250

Machine Specification

■ Capacity

Max. turning diameter	300mm	
Standard turning diameter	190mm	
Distance between spindles	max780/min280mm *with sub spindle (op.)	
Distance between centers	689mm	
Max. turning length	500mm	—
Bar capacity	51mm	65mm
Chuck size	8"/215mm	

■ Axis travel

Slide travel (X)	177.5mm	
Slide travel (Z)	550mm	
Slide travel (Y)	± 41mm (op.)	
Slide travel (B)	500mm (op.)	
Rapid feed (X)	16m/min	
Rapid feed (Z)	30m/min	
Rapid feed (Y)	6m/min (op.)	
Rapid feed (B)	30m/min (op.)	

■ Spindles

Spindle speed	5000min^{-1}	4500min^{-1}
Spindle speed range	Stepless	
Spindle nose	A2-6	
Hole through spindle	65mm	80mm
I.D. of front bearing	100mm	110mm
Hole through draw tube	52mm	66mm

■ Sub spindle (op.)

Spindle speed	5000min^{-1}
Spindle speed range	Stepless
Spindle nose	A2-5
Hole through spindle	62mm
I.D. of front bearing	90mm
Hole through draw tube	52mm

■ C-axis (op.)

Least input increment	0.001°
Least command increment	0.001°
Rapid index speed	400min^{-1}
Cutting feed rate	1 - 4800° /min
C-axis clamp	Disk clamp
C-axis connecting time	1.5sec.

■ Turret

Type of turret head	Dodecagonal drum turret
Number of Tool stations	12
Number of Indexing positions	12
Tool size (square shank)	□ 25mm(20mm)
Tool size (round shank)	ϕ 32mm

■ Driven tools (op.)

Rotary system	Individual rotation	
Spindle speed	3600min^{-1}	
Spindle speed range	Stepless	
Number of driven-tool stations	12	
Collet size	AR25	
Tool shank	Straight holder	ϕ 1mm - ϕ 16mm
	Cross holder	ϕ 1mm - ϕ 16mm

■ Tailstock (op.)

Quill diameter	80mm
Quill taper	MT-4 Rotating center
Quill stroke	80mm

■ Drive motor power

Main spindle	15/11kW
Sub spindle (op.)	11kW
Driven-tool spindle (op.)	5.5/3.7kW

■ General

Machine height	1815mm
Floor space	2598mm × 1671mm
Machine weight	3800 kg

■ Power supply

Power supply	31.43kVA
Air supply	150 ~ 200NL/min, 0.5 ~ 0.7MPa

Control Specification

■ Items

Control type	FANUC 21i-TB (18i-TB for machine with sub spindle)

■ Controlled axes

Controlled axes	2 axes
Simultaneously controlled axes	2 axes

■ Input command

Least input increment	0.001mm/0.0001inch (X in diameter)
Least command increment	X : 0.0005mm, Z : 0.001mm
Max. programmable dimension	± 99999.999mm/ ± 9999.9999in
Absolute / incremental programming	X, Z / U, W
Decimal input	standard
Program code	EIA/ISO automatic recognition
Inch / Metric conversion	G20/G21
Programmable data input	G10

■ Interpolation

Positioning	G00
Linear interpolation	G01
Circular interpolation	G02/03, CW/CCW
Polar coordinate interpolation	standard for milling
Cylindrical interpolation	standard for milling

■ Feed function

Cutting feed	X : 1 - 4800mm/min, 0.01 - 188inch/min Z : 1 - 4800mm/min, 0.01 - 188inch/min 0.0001 - 500.0000mm/rev 0.000001 - 9.999999inch/rev
Dwell	G04
Feed per minute / Feed per revolution	G98/G99
Thread cutting	G32+F
Thread cutting retract	standard
Handle feed Manual pulse generator	Manual pulse generator x 1 (0.001/0.01/0.1mm)
Automatic acceleration/ deceleration	standard
Linear acceleration/ deceleration after cutting feed interpolation	standard
Rapid feed override	F0/25/100%
Cutting feed-rate override	0 - 150%
Look ahead control	G08

■ Program memory

Part program storage length	80m
Part program edit	Delete, insert, change
Program number search	standard
Sequence number search	standard
Address search	standard
Number of registerable programs	125programs
Program storage memory	Backed up by battery
Multiple program simultaneous editing	standard (not available during automatic operation of PC-G/GR
DNC operation through memory card	standard (not including memory card)
Extended part program editing	standard

■ Program support

Circular interpolation R programming	standard
Direct drawing dimension programming or Chamfering and Corner R	standard (Direct drawing dimension programming is standard setting)
Canned cycle	G90, G92, G94
Multiple repetitive canned cycle	G70 - G76
Multiple repetitive canned cycle II	standard
Canned cycle for drilling	G80 - G89
Sub program	standard
Programmable data input	G10
Custom macro B	standard
NT Work Navigator (torque type)	standard
NT NURSE	standard

Machine spec		Without sub spindle	With sub spindle
NC Control		21i-TB	18i-TB
Display	7.2" monochrome LCD	Standard	
	10.4" color LCD	When NT Manual guide i (op.) is installed	

● Safety specifications

Various safety devices such as interlocks, safety fences for automatic loaders, and automatic fire extinguishers, are available as options, which can be included in your purchase package.
Please contact our local distributor or agent for your specific requirements.

SC-300

Machine Specification

■ Capacity

Max. turning diameter	350mm	
Standard turning diameter	205mm	
Distance between spindles	max810/min310mm *with sub spindle (op.)	
Distance between centers	713.5mm	
Max. turning length	600mm	
Bar capacity	71mm	80mm
Chuck size	10"/254mm	

■ Axis travel

Slide travel (X)	222.5mm
Slide travel (Z)	635mm
Slide travel (Y)	± 45mm (op.)
Slide travel (B)	500mm (op.)
Rapid feed (X)	20m/min
Rapid feed (Z)	30m/min
Rapid feed (Y)	6m/min (op.)
Rapid feed (B)	18m/min (op.)

■ Spindles

Spindle speed	3500min^{-1}	3500min^{-1}
Spindle speed range	Stepless	
Spindle nose	A1-8	A2-8
Hole through spindle	85mm	100mm
I.D. of front bearing	120mm	140mm
Hole through draw tube	72mm	82mm

■ Sub spindle (op.)

Spindle speed	3500min^{-1}
Spindle speed range	Stepless
Spindle nose	A2-5
Hole through spindle	62mm
I.D. of front bearing	90mm
Hole through draw tube	52mm

■ C-axis (op.)

Least input increment	0.001°
Least command increment	0.001°
Rapid index speed	200min^{-1}
Cutting feed rate	1 - 4800° /min
C-axis clamp	Disk clamp
C-axis connecting time	1.5sec.

■ Turret

Type of turret head	Dodecagonal drum turret
Number of Tool stations	12
Number of Indexing positions	12
Tool size (square shank)	□ 25mm
Tool size (round shank)	ϕ 40mm

■ Driven tools (op.)

Rotary system	Individual rotation	
Spindle speed	3600min^{-1}	
Spindle speed range	Stepless	
Number of driven-tool stations	12	
Collet size	AR32	
Tool shank	Straight holder	ϕ 1mm - ϕ 20mm
	Cross holder	ϕ 1mm - ϕ 20mm

■ Tailstock

Quill diameter	90mm
Quill taper	MT-5 Rotating center
Quill stroke	100mm

■ Drive motor power

Main spindle	22/18.5kW
Sub spindle (op.)	11/7.5kW
Driven-tool spindle (op.)	5.5/3.7kW

■ General

Machine height	1950mm
Floor space	3202mm × 1735mm
Machine weight	4600 kg

■ Power supply

Power supply	43kVA
Air supply	150 ~ 200NL/min, 0.5 ~ 0.7MPa

Control Specification

■ Items

Control type	FANUC 21i-TB (18i-TB for machine with sub spindle)

■ Controlled axes

Controlled axes	2 axes
Simultaneously controlled axes	2 axes

■ Input command

Least input increment	0.001mm/0.0001inch (X in diameter)
Least command increment	X : 0.0005mm, Z : 0.001mm
Max. programmable dimension	± 99999.999mm/ ± 9999.9999in
Absolute / incremental programming	X, Z / U, W
Decimal input	standard
Program code	EIA/ISO automatic recognition
Inch / Metric conversion	G20/G21
Programmable data input	G10

■ Interpolation

Positioning	G00
Linear interpolation	G01
Circular interpolation	G02/03, CW/CCW
Polar coordinate interpolation	standard for milling
Cylindrical interpolation	standard for milling

■ Feed function

Cutting feed	X : 1 - 4800mm/min, 0.01 - 188inch/min Z : 1 - 4800mm/min, 0.01 - 188inch/min 0.0001 - 500.0000mm/rev 0.000001 - 9.999999inch/rev
Dwell	G04
Feed per minute / Feed per revolution	G98/G99
Thread cutting	G32+F
Thread cutting retract	standard
Handle feed Manual pulse generator	Manual pulse generator x 1 (0.001/0.01/0.1mm)
Automatic acceleration/ deceleration	standard
Linear acceleration/ deceleration after cutting feed interpolation	standard
Rapid feed override	F0/25/100%
Cutting feed-rate override	0 - 150%
Look ahead control	G08

■ Program memory

Part program storage length	80m
Part program edit	Delete, insert, change
Program number search	standard
Sequence number search	standard
Address search	standard
Number of registerable programs	125programs
Program storage memory	Backed up by battery
Multiple program simultaneous editing	standard(not available during automatic operation of PC-G/GR)
DNC operation through memory card	standard (not including memory card)
Extended part program editing	standard

■ Program support

Circular interpolation R programming	standard
Direct drawing dimension programming or Chamfering and Corner R	standard (Direct drawing dimension programming is standard setting)
Canned cycle	G90, G92, G94
Multiple repetitive canned cycle	G70 - G76
Multiple repetitive canned cycle II	standard
Canned cycle for drilling	G80 - G89
Sub program	standard
Programmable data input	G10
Custom macro B	standard
NT Work Navigator (torque type)	standard
NT NURSE	standard

Machine spec		Without sub spindle	With sub spindle
NC Control		21i-TB	18i-TB
Display	7.2" monochrome LCD	Standard	
	10.4" color LCD	When NT Manual guide i (op.) is installed	

● Safety specifications

Various safety devices such as interlocks, safety fences for automatic loaders, and automatic fire extinguishers, are available as options, which can be included in your purchase package.
Please contact our local distributor or agent for your specific requirements.

SC-300L

Machine Specification

■ Capacity

Max. turning diameter	350mm	
Standard turning diameter	205mm	
Distance between spindles	max1310/min310mm *with sub spindle (op.)	
Distance between centers	1213.5mm	
Max. turning length	1100mm	
Bar capacity	71mm	80mm
Chuck size	10"/254mm	

■ Axis travel

Slide travel (X)	222.5mm	
Slide travel (Z)	1135mm	
Slide travel (Y)	± 45mm (op.)	
Slide travel (B)	1000mm (op.)	
Rapid feed (X)	20m/min	
Rapid feed (Z)	30m/min	
Rapid feed (Y)	6m/min (op.)	
Rapid feed (B)	18m/min (op.)	

■ Spindles

Spindle speed	3500min^{-1}	3500min^{-1}
Spindle speed range	Stepless	
Spindle nose	A1-8	A2-8
Hole through spindle	85mm	100mm
I.D. of front bearing	120mm	140mm
Hole through draw tube	72mm	82mm

■ Sub spindle (op.)

Spindle speed	3500min^{-1}
Spindle speed range	Stepless
Spindle nose	A2-5
Hole through spindle	62mm
I.D. of front bearing	90mm
Hole through draw tube	52mm

■ C-axis (op.)

Least input increment	0.001°
Least command increment	0.001°
Rapid index speed	200min^{-1}
Cutting feed rate	1 - 4800° /min
C-axis clamp	Disk clamp
C-axis connecting time	1.5sec.

■ Turret

Type of turret head	Dodecagonal drum turret
Number of Tool stations	12
Number of Indexing positions	12
Tool size (square shank)	□ 25mm
Tool size (round shank)	ϕ 40mm

■ Driven tools

Rotary system	Individual rotation
Spindle speed	3600min^{-1}
Spindle speed range	Stepless
Number of driven-tool stations	12
Collet size	AR32
Tool shank	Straight holder ϕ 1mm - ϕ 20mm Cross holder ϕ 1mm - ϕ 20mm

■ Tailstock

Quill diameter	90mm
Quill taper	MT-4 (built-in center)
Quill stroke	100mm

■ Drive motor power

Main spindle	22/18.5kW
Sub spindle (op.)	11/7.5kW
Driven-tool spindle (op.)	5.5/3.7kW

■ General

Machine height	1950mm
Floor space	3702mm × 1735mm
Machine weight	5200 kg

■ Power supply

Power supply	40kVA
Air supply	150 ~ 200NL/min, 0.5 ~ 0.7MPa

Control Specification

■ Items

Control type	FANUC 21i-TB (18i-TB for machine with sub spindle)

■ Controlled axes

Controlled axes	2 axes
Simultaneously controlled axes	2 axes

■ Input command

Least input increment	0.001mm/0.0001inch (X in diameter)
Least command increment	X : 0.0005mm, Z : 0.001mm
Max. programmable dimension	± 99999.999mm/ ± 9999.9999in
Absolute / incremental programming	X, Z / U, W
Decimal input	standard
Program code	EIA/ISO automatic recognition
Inch / Metric conversion	G20/G21
Programmable data input	G10

■ Interpolation

Positioning	G00
Linear interpolation	G01
Circular interpolation	G02/03, CW/CCW
Polar coordinate interpolation	standard for milling
Cylindrical interpolation	standard for milling

■ Feed function

Cutting feed	X : 1 - 4800mm/min, 0.01 - 188inch/min Z : 1 - 4800mm/min, 0.01 - 188inch/min 0.0001 - 500.0000mm/rev 0.000001 - 9.999999inch/rev
Dwell	G04
Feed per minute / Feed per revolution	G98/G99
Thread cutting	G32+F
Thread cutting retract	standard
Handle feed Manual pulse generator	Manual pulse generator x 1 (0.001/0.01/0.1mm)
Automatic acceleration/ deceleration	standard
Linear acceleration/ deceleration after cutting feed interpolation	standard
Rapid feed override	F0/25/100%
Cutting feed-rate override	0 - 150%
Look ahead control	G08

■ Program memory

Part program storage length	80m
Part program edit	Delete, insert, change
Program number search	standard
Sequence number search	standard
Address search	standard
Number of registerable programs	125programs
Program storage memory	Backed up by battery
Multiple program simultaneous editing	standard(not available during automatic operation of PC-G/GR)
DNC operation through memory card	standard (not including memory card)
Extended part program editing	standard

■ Program support

Circular interpolation R programming	standard
Direct drawing dimension programming or Chamfering and Corner R	standard (Direct drawing dimension programming is standard setting)
Canned cycle	G90, G92, G94
Multiple repetitive canned cycle	G70 - G76
Multiple repetitive canned cycle II	standard
Canned cycle for drilling	G80 - G89
Sub program	standard
Programmable data input	G10
Custom macro B	standard
NT Work Navigator (torque type)	standard
NT NURSE	standard

Machine spec		Without sub spindle	With sub spindle
NC Control		21i-TB	18i-TB
Display	7.2" monochrome LCD	Standard	
	10.4" color LCD	When NT Manual guide i (op.) is installed	

● Safety specifications

Various safety devices such as interlocks, safety fences for automatic loaders, and automatic fire extinguishers, are available as options, which can be included in your purchase package.
Please contact our local distributor or agent for your specific requirements.

SC-450

Machine Specification

■ Capacity

	type-A	type-B
Max. turning diameter	465mm	
Standard turning diameter	315mm	
Distance between centers	1050mm	
Max. turning length	785mm	715mm
Bar capacity	80mm	
Chuck size	12"/305mm	15"/380mm

■ Axis travel

Slide travel (X)	315mm
Slide travel (Z)	855mm (825mm for VDI)
Slide travel (Y)	± 70mm (op.)
Rapid feed (X)	12m/min
Rapid feed (Z)	18m/min
Rapid feed (Y)	6m/min (op.)

■ Spindles

Spindle speed	2500min^{-1}
Spindle speed range	Stepless
Spindle nose	A2-8
Hole through spindle	100mm
I.D. of front bearing	140mm
Hole through draw tube	82mm

■ C-axis (op.)

Least input increment	0.001°
Least command increment	0.001°
Rapid index speed	200min^{-1}
Cutting feed rate	1 - 4800° /min
C-axis clamp	Disk clamp
C-axis connecting time	1.5sec.

■ Turret

Type of turret head	Dodecagonal drum turret
Number of Tool stations	12
Number of Indexing positions	12
Tool size (square shank)	□ 25mm
Tool size (round shank)	ϕ 50mm

■ Driven tools (op.)

Rotary system	Individual rotation
Spindle speed	3600min^{-1}
Spindle speed range	Stepless
Number of driven-tool stations	12
Collet size	AR32
Tool shank	Straight holder ϕ 1mm - ϕ 20mm Cross holder ϕ 1mm - ϕ 20mm

■ Tailstock

Quill diameter	120mm
Quill taper	MT-4 (built-in center)
Quill stroke	100mm

■ Drive motor power

Main spindle	30/22kW
Driven-tool spindle (op.)	5.5/3.7kW

■ General

Machine height	2100mm
Floor space	3865mmx1975mm
Machine weight	5800kg

■ Power supply

Power supply	62.5kVA
Air supply	150 ~ 200NL/min, 0.5 ~ 0.7MPa

● Safety specifications

Various safety devices such as interlocks, safety fences for automatic loaders, and automatic fire extinguishers, are available as options, which can be included in your purchase package.

Please contact our local distributor or agent for your specific requirements.

Control Specification

■ Items

Control type	FANUC 21i-TB

■ Controlled axes

Controlled axes	2 axes
Simultaneously controlled axes	2 axes

■ Input command

Least input increment	0.001mm/0.0001inch (X in diameter)
Least command increment	X : 0.0005mm, Z : 0.001mm
Max. programmable dimension	± 99999.999mm/ ± 9999.9999in
Absolute / incremental programming	X, Z / U, W
Decimal input	standard
Program code	EIA/ISO automatic recognition
Inch / Metric conversion	G20/G21
Programmable data input	G10

■ Interpolation

Positioning	G00
Linear interpolation	G01
Circular interpolation	G02/03, CW/CCW
Polar coordinate interpolation	standard for milling
Cylindrical interpolation	standard for milling

■ Feed function

Cutting feed	X : 1 - 4800mm/min, 0.01 - 188inch/min Z : 1 - 4800mm/min, 0.01 - 188inch/min 0.0001 - 500.0000mm/rev 0.000001 - 9.999999inch/rev
Dwell	G04
Feed per minute / Feed per revolution	G98/G99
Thread cutting	G32+F
Thread cutting retract	standard
Handle feed Manual pulse generator	Manual pulse generator x 1 (0.001/0.01/0.1mm)
Automatic acceleration/ deceleration	standard
Linear acceleration/ deceleration after cutting feed interpolation	standard
Rapid feed override	F0/25/100%
Cutting feed-rate override	0 - 150%
Look ahead control	G08

■ Program memory

Part program storage length	80m
Part program edit	Delete, insert, change
Program number search	standard
Sequence number search	standard
Address search	standard
Number of registerable programs	125programs
Program storage memory	Backed up by battery
Multiple program simultaneous editing	standard(not available during automatic operation of PC-G/GR)
DNC operation through memory card	standard (not including memory card)
Extended part program editing	standard

■ Program support

Circular interpolation R programming	standard
Direct drawing dimension programming or Chamfering and Corner R	standard (Direct drawing dimension programming is standard setting)
Canned cycle	G90, G92, G94
Multiple repetitive canned cycle	G70 - G76
Multiple repetitive canned cycle II	standard
Canned cycle for drilling	G80 - G89
Sub program	standard
Programmable data input	G10
Custom macro B	standard
NT Work Navigator (torque type)	standard
NT NURSE	standard

Machine spec		All
NC Control		21i-TB
Display	7.2" monochrome LCD	Standard
	10.4" color LCD	Standard

Peripheral Devices for Automation

A New Era of Peripheral Devices that Contribute to Labor Saving.

Bar Feeder — Aoto Cho-bei II / Cho-bei

3m 4m Auto Cho-bei is a bar feeder with magazine for automatic bar loading. Cho-bei is a bar feeder for manual bar loading.

		Auto Cho-bei II NHF-CB-51(S.M.L) −(3M,4M)			Notes
Max. workpiece diameter [mm]		10 ~ 30	34 ~ 42	46 ~ 51	Hexagonal bar H8-H36
Max. rotation speed [min^{-1}]	Bar material	6,000	5,000	4,000	–
	Hexagonal material	3,000			–
Bar bending [mm/m]		less than 0.5			MAS level B
Bar length [mm]		3,000/4,000			Min. 1,500mm
Bar stock capacity [ϕ mm x pcs]		dia.30mm × 10pcs			Stocker length 300mm
Feeding speed [mm/sec]		Max.400mm/sec			adjustable
Feeding power [kg]		Max.40kg			adjustable
Machine dimension	Length 3M/4M [mm]	S : 3,790/4,795	M : 3,870/4,875	L : 4,165/5,170	–
	Width [mm]	733			–

Parts ejector

Below equipments are recommended for bar work.

This is required when bar feeder is equipped.

Parts catcher

Parts catcher A / Bucket type

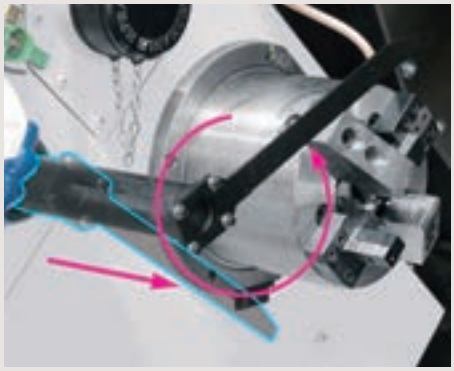
Parts catcher is a device to unload the workpiece into a bucket and bring it out of the machine.Parts catcher specifications such as Maximum part Diameter x length x weight vary from one model to another.
Besides parts catchers with standard specifications, special-made parts catchers can be offered. Please contact our local distributors for specific requirements. For high precision parts, a gripper type unloading device is recommended, such as Parts catcher G or Gantry loader. For such parts, where scratches are not allowed, part catcher A is not recommended.
Parts eject checker is necessary for Parts catcher A or B. Please discuss with your local distributor for more details.

This is required when Parts catcher A or B is equipped.

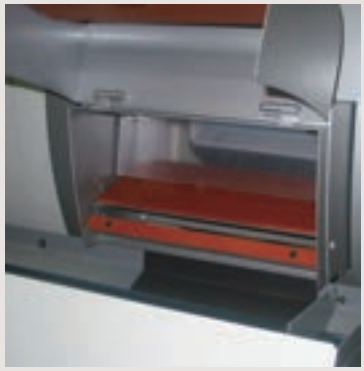
Parts eject checker

Parts eject checker (necessary)

It prevents collision by mistake during part transfer.
We can offer two kinds of parts confirmation :
1.Check if there is a part in left hand side chuck.
2.Check if the part was ejected from right hand side chuck.



Part off detection



Part eject detection

Parts eject checker is necessary when parts eject conveyor is equipped.

Parts outlet
Door pocket shape

Stocker type

Workpiece is stocked into a door-mounted box.

outlet chute type

Parts are unloaded through the door onto a conveyor or a bucket.
To prevent scratching the parts during unloading, a conveyor is recommended. (Op.)
To prevent scratching the parts during unloading, additional plastic plates on the chute can be specified.

Gantry Loader

3Kg

* Gantry loader for single spindle machine
Equipped with a raw-part-hand and finished-part-hand. In case of sub-spindle specification, a 180-degree-revolving Matabei-hand is necessary.

【GR-103】
Available: SC-200/200L/250
SuperMill SC-200L

【GR-110】
Available: SC-250/300

Multi-Layer Type Stocker

WS-221	Type	Multi-layer pallet type
	Workpiece diameter	dia.15-100mm
	Number of pallets	10
	Stack height	300mm
	Max. workpiece weight	18kg / pallet
WS-231	Type	Multi-layer pallet type
	Workpiece diameter	dia.20-150mm
	Number of pallets	10
	Stack height	300mm
	Max. workpiece weight	32kg / pallet

WS-442W	Type	Multi-layer pallet type
	Workpiece diameter	dia.20-220mm
	Number of pallets	20
	Stack height	450mm
	Max. workpiece weight	40kg / pallet
WS-445W	Type	Multi-layer pallet type
	Workpiece diameter	dia.20-220mm
	Number of pallets	14
	Stack height	450mm
	Max. workpiece weight	40kg / pallet

Flat Type Stocker

WS-121	Type	Flat pallet type
	Workpiece diameter	dia.20-80mm
	Number of pallets	30
	Max. workpiece weight	2kg / pallet
WS-122	Type	Flat pallet type
	Workpiece diameter	dia.20-80mm
	Number of pallets	60
	Max. workpiece weight	2kg / pallet
WS-124	Type	Flat pallet type
	Workpiece diameter	dia.20-80mm
	Number of pallets	120
	Max. workpiece weight	2kg / pallet

WS-132	Type	Flat pallet type
	Workpiece diameter	dia.20-150mm
	Number of pallets	20
	Max. workpiece weight	18kg / pallet

* If additional fixtures are needed, the price shall be quoted separately.

* To reduce gantry service time, 2 loading stations could be available.

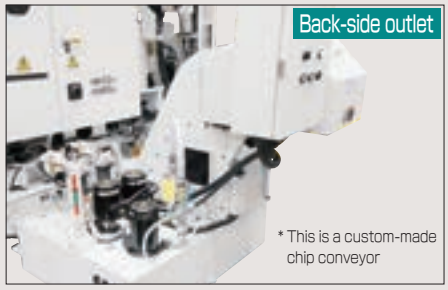
※ Max. diameter of a work-piece requires to be carefully checked considering the type of Gantry Loader and Work Stocker.

Cutting chips disposal system

Chip conveyor

Chip conveyor is essential for full automation. Nakamura-Tome's multi-tasking machines with their high capabilities for chip-removal ought to be taken into consideration. When using oil-through type tools, a filter shall be considered to remove fine cutting chips from coolant. When using water-soluble coolant, a coolant level float switch is necessary. When using oil-base coolant, auto extinguisher, fireproof dumper, and oil mist collector are indispensable.

Outlet direction



* This is a custom-made chip conveyor

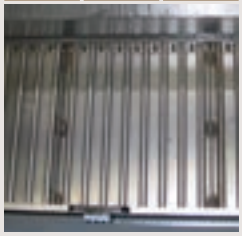
Conveyor type

Drum filter type conveyor / recommended

It prevents coolant related troubles, such as coolant overflow by clogged filters or coolant malfunction. A large-sized drum filter in the coolant tank cleans the coolant. With a rotating drum filter, the special pump washes out coolant from inside outwards, preventing cutting chips from accumulating on the filter outer diameter.

Hinge type conveyor

Steel | Aluminum | Brass gunmetal



It is suitable for fine chips, long and curled chips, short chips and wavy chips produced during cut-off, but not for powdery chips produced from machining cast iron, ···etc

Scraper type chip conveyor

Casting | Aluminum | Brass gunmetal

Not suitable for long cutting chips, because they get caught inside the rail, causing malfunctioning. In case of machining casting iron, filtering is improved by attaching a magnet to the bottom of the conveyor.

Coolant separator

Coolant separator is necessary to keep coolant performance. By separating collected lubrication oil from coolant, this minimizes bad odors, prevents coolant from rotting, and prolongs its life.

Coolant float level switch

* In the photo is a custom-made coolant float level switch

Coolant filter

In case of using tools with tiny oil-through holes, the filtering can be insufficient depending on the hole size. If the required filtering accuracy is more than 20-40 micrometers, it is recommended to use a maintenance-free type filter instead. Please contact our local distributors for details.