OKUMA

OPEN POSSIBILITIES

2-Spindle Horizontal CNC Lathe

2SP-2500H

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2SP-2500H

Intelligent Technology | Thermo-Friendly Concept | Machining Navi

4-Second Part Load/Unload Fastest in its Class

In the effort to mass produce parts in the machine shop, there is a battle for every 0.1 second, and higher throughputs are required by demands for shorter production lead times, process-intensive machining for higher accuracy of parts, lower costs with laborsaving and unattended operations and maximum floor-space utilization.

In response to the high demands of mass production, the 2SP-2500H shortens cycle times with powerful spindle capacity and achieves workpiece loading/unloading of 4 seconds* with an improved loader and turret. The machine configuration has been completely redesigned to eliminate interference between the turret and loader.

Okuma delivers with the highest production possible for manufacturers requiring innovative, mass-production applications.

2SP-2500H

Photographs used in this brochure may show optional equipment.
* The time to open and close the upper door is not included in the workpiece load/unload time.

Stable machining accuracy and high machining capacity

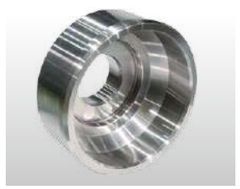
Higher throughput of mass produced parts

The 2SP-2500H combines 2 lathes on a single automation-friendly machine, and a standard parts loader which can be incorporated into production lines for auto load/unload and lateral transport. The combination of a machine with powerful, high accuracy machining capacity and a high-speed loader delivers the highest throughput for mass-production applications.

Ideal for mass production of parts up to ø250 mm

The 2SP-2500H can take on loader-delivered workpieces up to ø250 mm in size, and achieves minimum takt times for mass-produced parts. With M specifications, a powerful 7.1 kW milling tool spindle enables a greater diversity of process-intensive machining.

Final gear



Cylinder

Shortest production line takt times with new machine structure and high-speed loader

All loader movements have become faster, minimizing workpiece transport times. The new design allows the loader to enter the machine regardless of the turret position, and that made the 4-second part load/unload (actual time) possible.

Better productivity with highly rigid structure

Heavy cutting is handled with powerful integral spindle and slide guideway. The centers of gravity of the moving components (headstock, turret) are placed over the slide guideway, providing a highly rigid structure with no bending or distortion to achieve stable operation in mass production. The high output milling tool spindle also enables highly effective process-intensive machining with powerful milling similar to that of a machining center, including face milling, drilling, and tapping.

Long-run, stable machining with high accuracy

The 2SP-2500H uses the Thermo-Friendly Concept, which provides high dimensional accuracy even in long-run and continuous mass production machining. High accuracy integral motor/spindles and a new bed structure that minimizes the effect of machining vibration between spindles are also used for high machined surface quality.

A wealth of expandable systems meet a variety of requirements

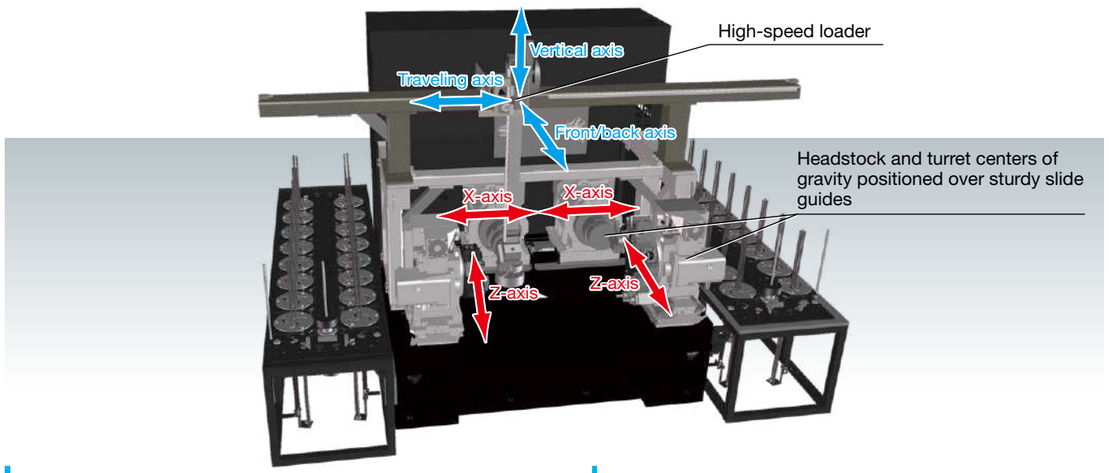
Flexible processes, such as continuous machining of 1st and 2nd operations with a built-in turnover device, are possible. Okuma offers systems matched to customer needs, such as production line layouts with the minimum installation space required stock blanks and finished parts with a single workpiece stocker, or highly automated lines with post-process gauging and air blowers incorporated.

Standard chuck size	8-inch
Max turning diameter	ø410 mm
Max transport part size	ø250 mm
Spindle speed	45 to 5,000 min^{-1}
No. of tools	V12 + V12
Rapid feed rate	X, Z: 25 m/min
Loader rapid traverse	X, Y, Z: 180, 110, 48 m/min

Cycle time minimized with high-speed loading and powerful machining

Machine structure for high-speed loading and powerful machining

Workpiece load/unload time has been reduced to 4 seconds, and machining-to-part transport line takt time has been minimized. Moving component (headstock, turret) centers of gravity have also been positioned over sturdy slide guides. Powerful, accurate machining has been achieved with the best machine structure possible for mass production, eliminating warpage and distortion from the effects of moving components.



Productivity improved with significantly stronger spindle

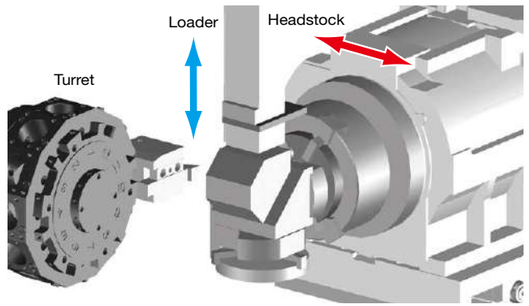
The spindles are faster and more accurate with integral motor/spindle drives. The milling tool spindles also have higher output of 7.1 kW, increasing torque to 1.25 times that of the previous machine and doubling end millling capacity to 65 cm^3/min. Process-intensive mill/turn operations have become possible.

The shortest production line takt times with a high-speed loader

During workpiece load/unload, the headstock moves to that position. The loader can enter the machine regardless of turret position. In addition, with servo-driven hand rotation and faster speeds of all movements, workpiece load/unload time of 4 seconds* has been achieved.

* Does not include upper door open/close time.
The load/unload time of 4 seconds is actual data; different operating conditions may require more time.

Transportable weight	4 kg × 2 pcs	8 kg × 2 pcs
Workpiece dimensions	ø200 × L120 mm	ø250 × L80 mm



Long-run, stable machining with high accuracy

Machine deformation accurately controlled

Thermo-Friendly Concept

Workpiece machining accuracy changes greatly depending on the temperature changes around the machine, heat generated by the machine, and heat generated in machining. The Thermo-Friendly Concept enables high-accuracy machining in regular factory environments without any special equipment or measures to deal with temperature changes. High dimensional stability is assured from the first to the last workpiece in mass production applications.

Machining dimensional change over time: ϕ10 μm

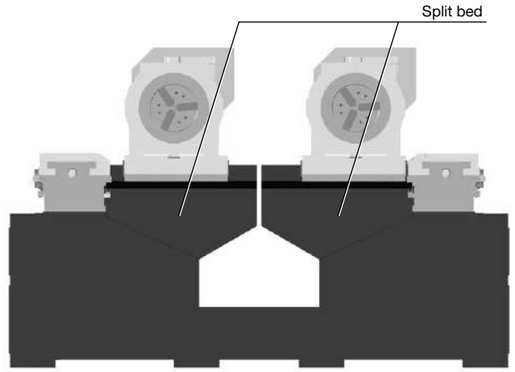
Actual data for 2SP-2500H
(ambient temperature: 8°C change)

Machine start-up time
Machining restart time
During room temperature change

High dimensional stability

Split bed for high-quality machining

A split construction is used for the bed. Transmission of vibration during cutting is inhibited by separating the right and left sides. This is also effective when superior surface roughness is required.

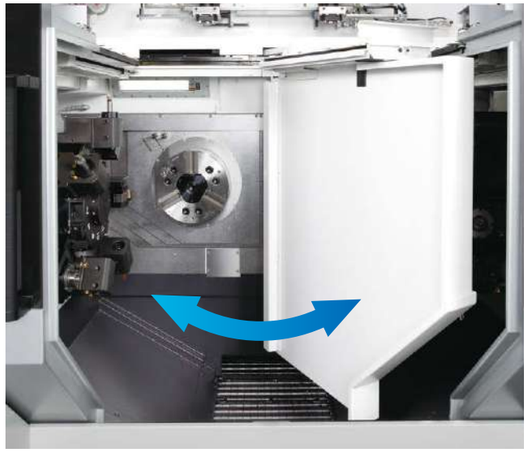


Highly visible workpiece stocker

A large acrylic window is used in the 16-station work table. Blanks or finished part quantities can be seen at a glance, and machining stoppages from insufficient material preparation are prevented.

Large machine width makes tool replacement easy

The divider in the center of the machining chamber can be angled out of the way when replacing tool inserts. Machining preparation time is reduced with smooth tool changing.



A full lineup of system applications ready for a variety of requirements

System solutions to meet the demand

Okuma offers systems that meet customer needs, such as production lines requiring a minimum of space with workpiece stockers for both materials and finished parts, or more advanced automated lines that include post-process gauging and air blowers.

■ Quality check station

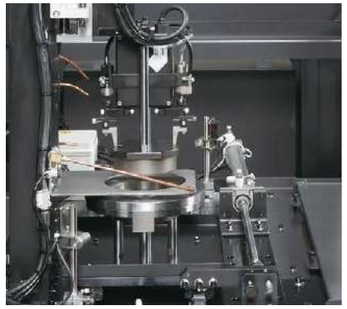
Spot checks can be done by taking a part from the finished work flow line and bringing it to the quality check station.

■ Air blower station

Air (blast) cleaning of finished parts can be done after machining. Chips still clinging to completed parts are blasted off.

■ Gauging station

Finished part dimensions are automatically gauged. Tolerance pass/fail and automatic compensation (feedback to machine) are possible.



Your choice of two great controls

Either the Okuma OSP or the FANUC control is available for the 2SP-2500H. And they are both ready to handle your existing part programs that match the selected system.

The Next-Generation Intelligent CNC

OSP suite OSP-P300LA

With revamped operation and responsiveness— ease of use for machine shops first!

Smart factories are using advanced digitization and networking (IIoT) in manufacturing to achieve enhanced productivity and added value. The OSP has evolved tremendously as a CNC suited to advanced intelligent technology. Okuma's new control uses the latest CPUs for a tremendous boost in operability, rendering performance, and processing speed. The OSP suite also features a full range of useful apps that could only come from a machine tool manufacturer, making smart manufacturing a reality.

Smooth, comfortable operation with the feeling of using a smart phone

Improved rendering performance and use of a multi-touch panel achieve intuitive graphical operation. Moving, enlarging, reducing, and rotating 3D models, as well as list views of tool data, programs, and other information can be accomplished through smooth, speedy operations with the same feel as using a smart phone. The screen display layout on the operation screen can also be changed to suit operator preferences and customized for the novice and/or veteran machinists.

"Just what we wanted."— Refreshed OSP suite apps

This became possible through the addition of Okuma's machining expertise based on requests we heard from real, machine-shop customers. The brain power packed into the CNC, built by a machine tool manufacturer, will "empower shop floor" management.

Increase utilization with advance tool preparation

Tool Life Predictor

When the program to be used is selected and the planned machining number is input, the number of tools that can be used in machining and whether they have the life is predicted and displayed. Advance tool preparation becomes possible and machine down time can be reduced.

Increased productivity through visualization of motor power reserve

Spindle Output Monitor

Monitoring operating status even when away from the machine

E-mail Notification

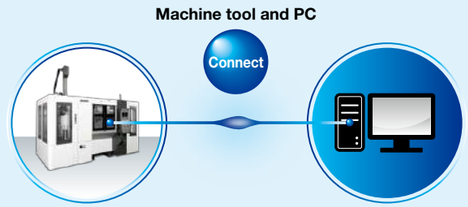
Easy programing without keying in code

Scheduled Program Editor

Get Connected, Get Started, and Get Innovative with Okuma "*Monozukuri*" ***Connect Plan***

Connect, Visualize, Improve

Okuma's Connect Plan is a system that provides analytics for improved utilization by connecting machine tools and visual control of factory operation results and machining records. Simply connect the OSP and a PC and install Connect Plan on the PC to see the machine operation status from the shop floor, from an office, from anywhere. The Connect Plan is an ideal solution for customers trying to raise their machine utilization.



Machine Specifications

Model		Unit	2SP-2500H (L)	2SP-2500H (M)
Capacity	Standard chuck size		8 [10]	
Travels	X- / Z-axis	mm (in)	210 (8.27) / 200 (7.87)	
	C-axis control angle	deg	—	360 (minimum control angle 0.001)
Spindles	Speed	min^{-1}	45 to 5,000	
	Speed ranges		2 auto ranges (2-speed motor coil switching)	
	Nose type		JIS A2-6	
	Bore dia/bearing dia	mm (in)	ø62 (2.44) / ø100 (3.94)	
Turrets	Type		V12 + V12	Multitasking V12 + Multitasking V12
	No. of tools	tools	12 + 12	For both L, M 12 + 12
	OD tool shank size	mm (in)	□25 (0.98)	
	ID tool shank diameter	mm (in)	ø40 (1.57)	
Milling tool	Spindle speed	min^{-1}	—	OSP: 6,000, FANUC: 6,000/4,500 (Intermittent/cont)
	Speed range		—	Infinitely variable
Feed rates	Rapid traverse	m/min (fpm)	X: 25 (82), Z: 25 (82)	
	Rapid traverse	min^{-1}	—	C: 200
Motors	Spindle drive	kW (hp)	15 (20) / 11 (15) (20 min/cont)	
	Milling tool spindle	kW (hp)	—	OSP: 7.1 (9) /4.1 (5) (25 min/cont) FANUC: 5.5 (7.5) (cont)
	Axis drive (X / Z)	kW (hp)	OSP: 3.0 (4) / 2.8 (4) FANUC: 2.7 (3.6) / 4.5 (6)	
	Coolant (50/60 Hz)	kW (hp)	0.55 (0.7) / 0.75 (1)	
Machine size	Machine height	mm (in)	3,257 (128.23) (maximum loader height)	
	Required floor space: length x width (including tank)	mm×mm (in × in)	2,200 × 2,734 (86.61 × 107.64) (w/o loader)	
	Machine weight	kg (lb)	8,000 (17,600) (w/loader)	
CNC			OSP-P300LA / FANUC 0i-TF [Loader with 2 carriers: FANUC 31i-B]	

[ ]: Optional

Loader Specifications

Model		Unit	2SP-2500H (L)	2SP-2500H (M)
Loader	Transportable parts size (dia x length)	mm (in)	ø200×120 (7.87 × 4.92), [8 kg specs: ø250×80 (9.84 × 3.15)]	
	Transportable parts weight × number	kg (ib) × pts	4 (8.8) × 2 [8 (17.6) × 2]	
	X-axis travel (traveling axis)	mm (in)	2,838 (111.73) (with work tables on right and left)	
	Y-axis travel (vertical axis)	mm (in)	750 (29.53)	
	Z-axis travel (front/back axis)	mm (in)	290 (11.42)	
	Rapid feed rate X, Y, Z-axis	m/min (fpm)	X: 180 (591), Y: 110 (361), Z: 48 (157)	
	Hand type		Swivel-type double hand, 3-jaw air chuck	
	Gripper open/close travel	mm (in)	ø30 (1.18) (effective travel: ø22 (0.87)) [8 kg specs: ø32 (1.26) (effective travel: ø24) (0.95)]	
	On-machine turnover device		○	
Work table	Loaded workpiece diameter	mm (in)	ø40 (1.57) to ø250 (9.84)	
	Loaded workpiece mass	kg (lb)	50 (110) /1 station	
	Stacking height	mm (in)	450 (17.72)	
	No. of stations		16	

[ ]: Optional

Standard Specifications

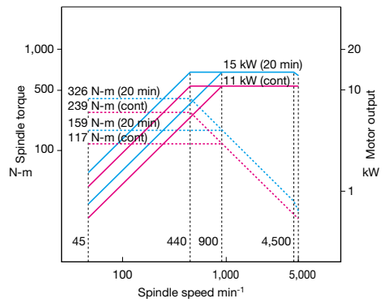
Spindles	A2-6 5,000 min^{-1} 15/11 kW
Turrets	V12 + V12
Coolant tank	
Front door interlock	
Lubrication monitor	
Chuck open/close button	
Chuck auto open/close confirm	
Chuck air bower (blast)	
Jack screws, foundation pads	
Work lamp	LED
Hand tools	

Optional Specifications

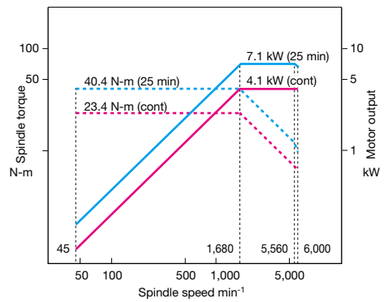
Hydraulic chuck		Mist collector	
Chip conveyor	Rear hinge type	Coolant gun	
Chip bucket	With tilt, without tilt	In-process work gauging	
Chucking miss detection		Touch Setter	Removable
Air blower (blast)	Spindle ID, turrets	Automatic extinguisher	
Shower coolant		Fire damper	
Spindle ID coolant discharge		Loader	Transportable weight: 8 kg
High pressure coolant		Loader point data (FANUC only)	No part program linkage: 10 types, 15 types Part program linkage: 5 types, 10 types, 15 types
Coolant pump	1.1 kW × 2, 2.2 kW × 2		
Coolant sensors			
Coolant high/low pressure switch			
Raised machine height	50 mm, 100 mm, 150 mm	Temperature regulator	Coolant (cooling only) Hydraulic oil (cooling only)

Spindle output / torque diagrams

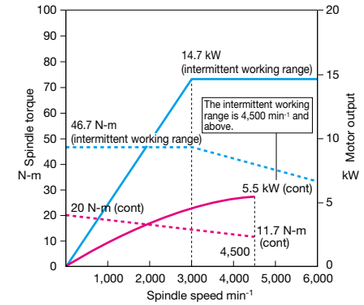
Turning spindle (OSP, FANUC)
- Spindle speed: 5,000 min^{-1}
- Output: 15/11 kW (20 min/cont)
- Torque: 326/239 N-m



Milling spindle (OSP)
- Spindle speed: 6,000 min^{-1}
- Output: 7.1/4.1 kW (25 min/cont)
- Torque: 40.4/23.4 N-m (25 min/cont)

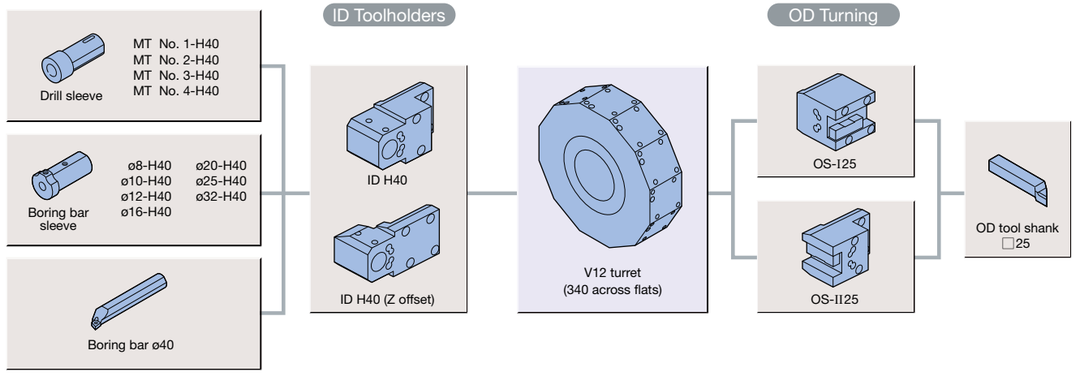


Milling spindle (FANUC)
- Spindle speed: 6,000 min^{-1}
- Output: 5.5 kW (cont)
- Torque: 20 N-m (cont)

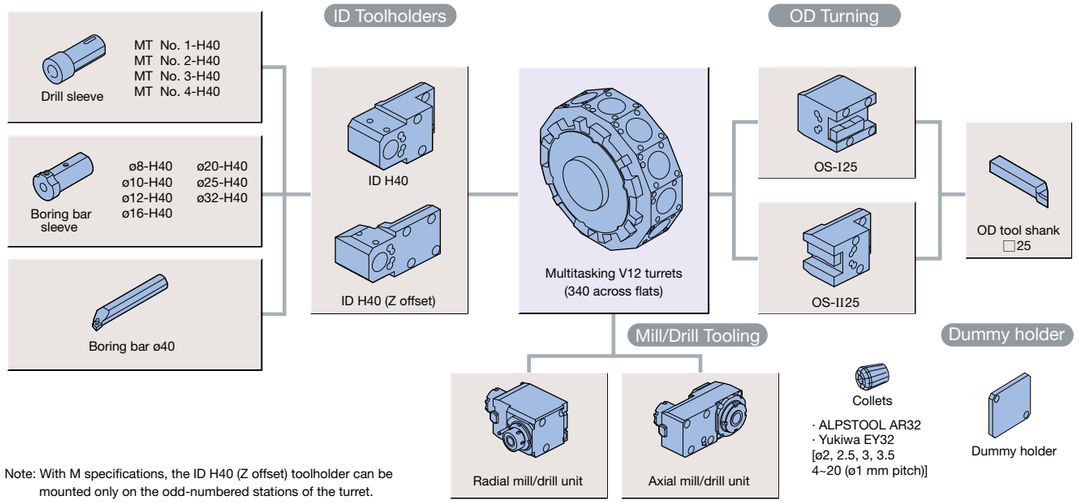


Tooling System

L (V12 turrets)



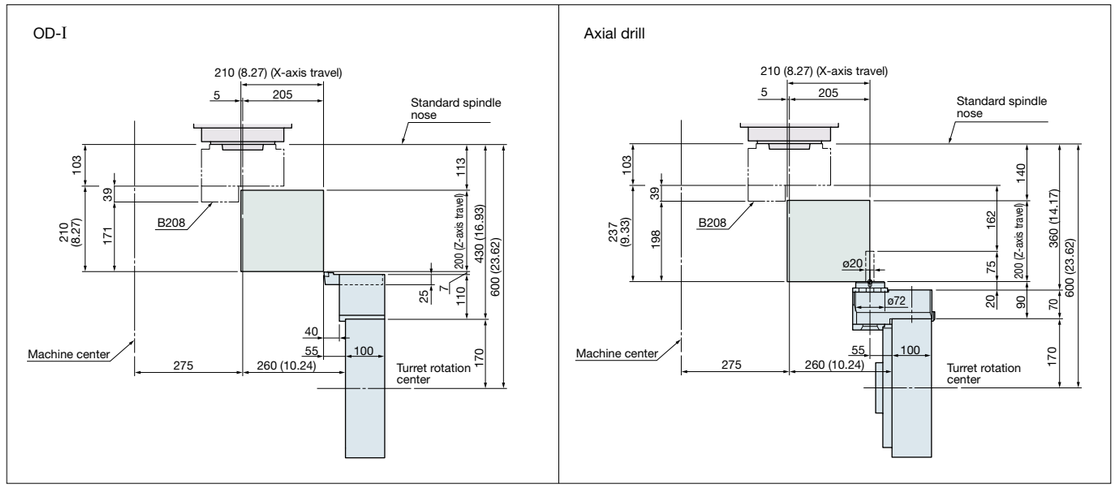
M (Multitasking V12 turrets)



Note: With M specifications, the ID H40 (Z offset) toolholder can be mounted only on the odd-numbered stations of the turret.

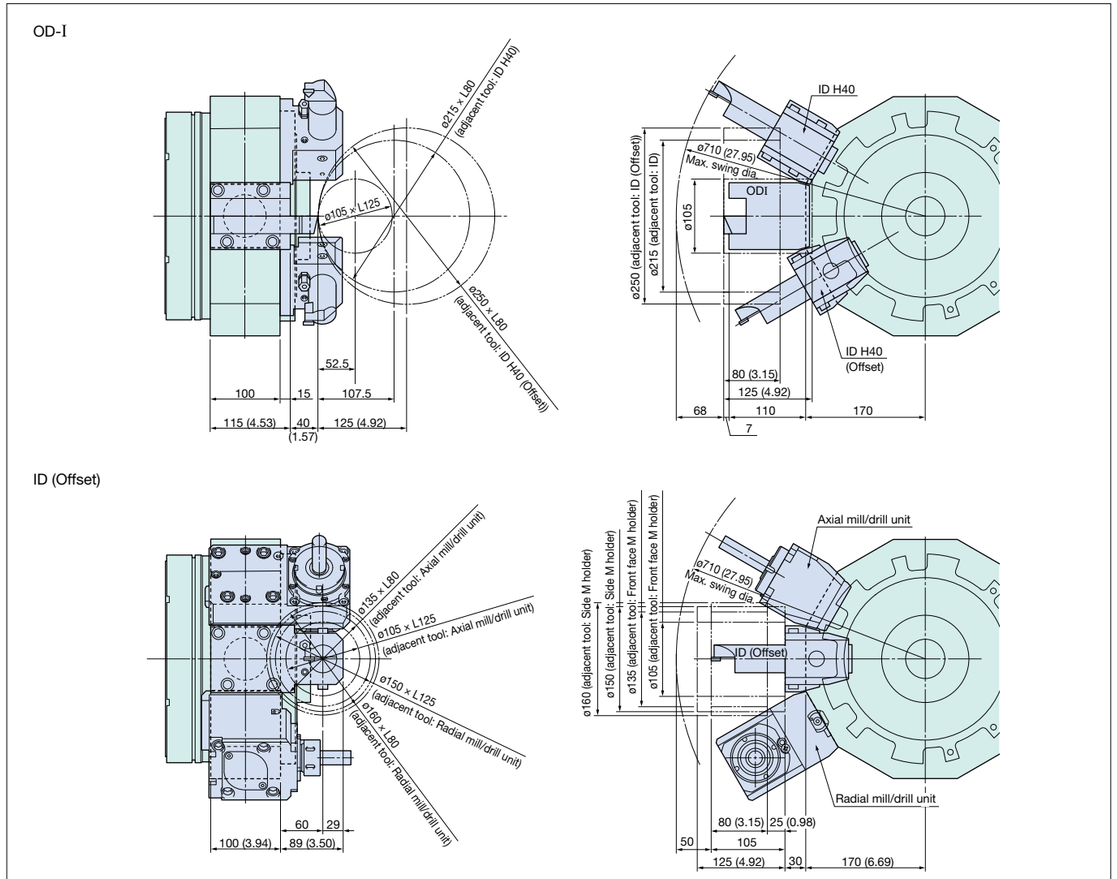
Working Ranges

Unit: mm (in)



Tool Interference Drawings

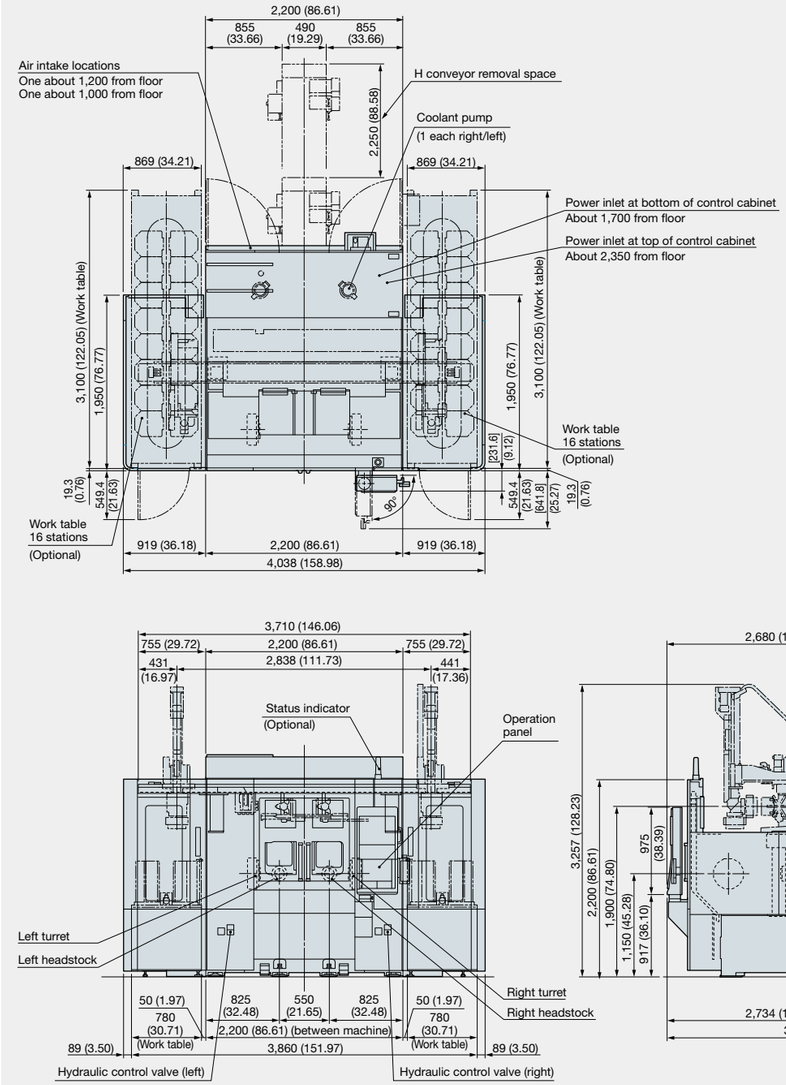
Unit: mm (in)



ID (Offset)

* When ID H40 and ID H40 (Z offset) are made adjacent, special tool is required.
* ID H40 (Z offset) units cannot be mounted next to each other.
* ID H40 and ID H40 (Z offset) cannot be mounted adjacent to an axial mill/drill unit

2SP-2500H (L, M)
Dimensional / Installation Drawings



Unit: mm (in)

The Next-Generation Intelligent CNC

OSP suite OSP-P300LA

Standard Specifications

Basic Specs	Control	Turning: X, Z simultaneous 2-axis, Multitasking: X, Z, C simultaneous 3-axis
	Position feedback	OSP full range absolute position feedback (zero point return not required)
	Min / Max command value	±99999.999, 8-digit decimal, command unit: 0.001 mm, 0.01 mm, 1 mm
	Feed	Override: 0 to 200%
	Spindle control	Direct spindle speed commands, override 50 to 200%, constant cutting speed, optimum turning speed designate
	Tool compensation	Tool selection: 32 sets, tool offset: 32 sets
	Display	15-inch color display operational panel, multi-touch panel operations
	Self-diagnostics	Automatic diagnostics and display of program, operation, machine, and NC system problems
	Program capacity	Program storage: 4 GB, operation buffer: 2 MB
Operations	"suite apps"	Applications to graphically visualize and digitize information needed on the shop floor
	"suite operation"	Highly reliable touch panel suited to shop floors. One-touch access to suite apps.
	Easy Operation	"Single-mode operation" to complete a series of operations. Advanced operation panel/graphics facilitate smooth machine control
	Programing	Program management, edit, multitasking, scheduled programs, fixed cycles, special fixed cycles, tool nose R compensation, fixed drilling cycles, arithmetic functions, logic statements, trig functions, variables, branch statements, auto programming (LAP4), programming help
	Machine operations	MDI, manual (rapid traverse, pulse handle), load meter, operations help, alarm help, sequence, return, manual interrupt & auto return, data I/O, spindle orientation (electric)
	MacMan	Machining Management: machining results, machine utilization, fault data compile & report, external output
Communications/Networks		USB ports, Ethernet
High speed/accuracy	Thermo Active Stabilizer–Construction (TAS-C)	Compensates for thermal deformation error in the machine structure due to ambient temperature changes
	High speed/accuracy	Hi-G control
Energy-saving function	ECO suite	ECO Idling Stop, ECO Power Monitor

Optional Specifications

Item		Kit specs *1 NML E	NML D	3D E	3D D	OT-IGF E	OT-IGF D	OTM E	OTM D
New Operations									
Advanced One-Touch IGF-L *2						●	●		
Advanced One-Touch IGF-L Multitasking *2								●	●
Programming									
Circular threading			●		●		●		●
Program notes			●		●		●		●
User task 2 I/O variables, 8 ea									
Work coordinate system select	10 sets								
	50 sets								
	100 sets								
Tool compensation (Std: 32 sets)	Tool compensation 64 sets								
	Tool compensation 96 sets								
Common variables 1,000 sets (Std: 200 sets)									
Thread matching (spindle orientation required)									
Threading slide hold (G34, G35)									
Variable spindle speed threading (VSST)									
Inverse time feed									
Milling machine specs	Coordinate convert	▲	▲	▲	▲			●	●
	Profile generate	▲	▲	▲	▲			●	●
Monitoring									
Real 3-D simulation				●	●	●	●	●	●
Cycle time over check		●	●	●	●	●	●	●	●
Load monitor (spindle, feed axis)				●	●	●	●	●	●
Load monitor no-load detection (load monitor ordered)									
Machine Data Logger									
AI machine diagnostics (Feed axes)									
Tool life management *6			●		●		●		●
Tool life warning									
Operation end buzzer									
Chucking miss detection		Included in machine specs							
Work counters	Count only								
	Cycle stop								
	Start disabled								
Hour meters	Power ON								
	Spindle rotation								
	NC operating								
NC operation monitor (counter, totaling)		●	●	●	●	●	●	●	●
NC work counter (stops at full count with alarm)									
Status indicator (triple lamp) Type C [Type A, Type B]		●	●	●	●	●	●	●	●
Measuring									
In-process work gauging		Included in machine specs							
Z-axis automatic zero offset by touch sensor									
C-axis automatic zero offset by touch sensor									
Gauge data output	File output								
Post-process work gauging interface	Set levels (5-level, 7-level)								
	BCD								
	RS-232C (dedicated channel)								
Touch Setter		Included in machine specs							

Item		Kit specs *1 NML E	NML D	3D E	3D D	OT-IGF E	OT-IGF D	OTM E	OTM D
External Input/Output and Communication Functions									
OSP-MTConnect *5									
RS-232C connector									
DNC link	DNC-T3								
	DNC-C/Ethernet								
	DNC-DT								
USB (additional)	2 additional ports possible								
Automation/Untended Operation									
Auto power shutoff M02, alarm									
Warmup function (by calendar timer)									
Tool retract cycle									
External program selections	A (pushbutton) 8 types								
	B (rotary switch) 8 types								
	C (digital switch) BCD, 2-digit								
	C2 (external input) BCD, 4-digit								
Third party robot and loader interface *3	Type B (machine)								
	Type C (robot and loader)								
	Type D								
	Type E								
Cycle time reduction *3	Operation time reduction	●	●	●	●	●	●	●	●
High-Speed/High-Accuracy Functions									
Pitch error compensation									
AbsoScale detection *3									
Hi-Cut Pro		▲	▲	▲	▲			●	●
1/10 µm control									
ECO suite (energy saving function)									
ECO Operation									
Other Functions									
One-Touch Spreadsheet									
Machining Navi L-*g*, T-*g* (threading)									
Harmonic spindle speed control (HSSC)		●	●	●	●	●	●	●	●
Spindle dead-slow cutting									
Spindle speed setting									
Manual cutting feed									
Spindle power peak cutting									
Short circuit breaker									
External M signals [2 sets, 4 sets, 8 sets, ( )]									
Edit interlock									
OSP-VPS (virus protection system)									
Illumination in control panel									
Air conditioning in control panel									
AC 100V 1A plug									

*1. NML: Normal, 3D: Real 3D simulation, OT-IGF: One-Touch IGF, OTM: One-Touch M
E: Economy, D: Deluxe
*2. Real 3D Simulation included
*3. Technical discussions required.
*4. ▲ Triangle items for M function (milling tool) machines only.
*5. API library 2 (THINC-API) is required to add OSP-MTConnect
*6. Includes Tool Life Predictor.

FANUC 0i-TF

Standard Specifications

No. of controlled axes	2 simultaneous axes with X and Z axes, 3 simultaneous axes with multitasking on X, Z, and C axes.
Interpolation system	Positioning, straight line, taper, arc, threading, taper
	Fine coordinate interpolation, Cylindrical interpolation
Command system	Parallel absolute incremental command
Minimum input increment	Both X, Z axes 0.001 mm
Min command value	±99999.999 mm, decimal point input
Operating panel	10.4 in color TFT
Monitoring	Display language: English / Japanese
	Portable pulse handle mounted
	Electronic buzzer
	Graphic display
	With Idling Stop
Machine operations	Constant peripheral speed control
	Spindle orientation (1 point, M19)
	Continuous threading
Program input	Program memory capacity 1MB
	No. registered programs: 800
	Chamfering/corner radius
	Complex shape fixed cycle (Ⅰ + Ⅱ)
	Extension program editing
	USB memory input/output (program input/output only)
	Custom macro
	Custom macros, common variables (total is 500)
	Programmable data input
	Program protection key switch
	RS-232C connector, 2 ch
	Fixed drilling cycle (M spec)
Compensation	Thermal deformation compensation
	Nose-radius comp
	Tool dimensions/wear compensation
	Tool compensations (L64/R64)
	AI contouring control Ⅰ

Optional Specifications

Monitor	Counter	Soft/hard, Full count hold
	Operating time, no. of parts display (Software)	
	Hour meters	
	Status indicator	3-step
	Tool life management	Okuma software, spare tool jump
	Abnormal load detection	Spindle + feed axes
Machine operations	Oriented spindle stop	4-point (M19, 119, 129, 139)
	Auto power shut-off	
	Circuit breaker	
	Operation history large capacity specs	
Program input	External program selection	Digital switch with 2-digit indicator
	System selection, tool compensation	G54 to G59
	Program restart	
	Spare M codes	2, 4, 8 pairs
	Memory type pitch error compensation	
	Background editing	
	Macro executor software capacity	2 MB, 3 MB, 4 MB
	Custom macros, common variables	Additional total 1,000
	Interrupt type custom macro	
	Automated software	
Automation	Robot loader interlock on/off switch	
	Robot interface	
Other	Turning spindle rigid tap	
	Post-process work gauging interface	Set levels (5-level, 7-level)
	Illumination in control panel	
	Air conditioning within control panel	Temperature regulator (cooler only), dehumidifier
	AC 100V 1A plug	

FANUC 31i-B (Loader with 2 Carriers)

Optional Specifications

No. of controlled axes	2 simultaneous axes with X and Z axes, 3 simultaneous axes with multitasking on X, Z, and C axes.
Interpolation system	Positioning, straight line, taper, arc, threading, taper
	Fine coordinate interpolation, Cylindrical interpolation
Command system	Parallel absolute incremental command
Minimum input increment	Both X, Z axes 0.001 mm
Min command value	±99999.999 mm, decimal point input
Operating panel	10.4 in color TFT
Monitoring	Display language: English / Japanese
	Portable pulse handle mounted
	Electronic buzzer
	With Idling Stop
Machine operations	Constant peripheral speed control
	Spindle orientation (1 point, M19)
	Continuous threading
Program input	Program memory capacity 64 KB
	No. registered programs: 63
	Extension program editing
	USB memory input/output (program input/output only)
	Programmable data input
	Program protection key switch
	RS-232C connector, 2 ch
Compensation	Thermal deformation compensation
	Nose-radius comp
	Tool dimensions/wear compensation
	Tool compensations (L16/R16)
	AI contouring control Ⅰ

Optional Specifications

Monitor	Counter	Software/hardware, Full count hold
	Operating time, no. of parts display (Software)	
	Hour meters	
	Status indicator	3-step
	Tool life management	Okuma software, spare tool jump
	Abnormal load detection	Spindle + feed axes
	Graphic display	
Machine operations	Oriented spindle stop	4-point (M19, 119, 129, 139)
	Auto power shut-off	
	Circuit breaker	
	Operation history large capacity specs	
Program input	Program memory capacity	128 KB, 256 KB, 512 KB, 1 MB, 2 MB, 4 MB, 8 MB
	No. registered programs	125 pairs
	External program selection	Digital switch with 2-digit indicator
	System selection, tool compensation	G54 to G59
	Chamfering/corner radius	
	Program restart	
	Spare M codes	2, 4, 8 pairs
	Memory type pitch error compensation	
	Background editing	
	Complex shape fixed cycle (Ⅰ + Ⅱ)	
	Macro executor software capacity	2 MB, 3 MB, 4 MB
	Custom macros	
	Custom macros, common variables	Total 600
	Interrupt type custom macros	
	Automated software	
	Fixed drilling cycle (M spec)	
Automation	Robot loader interlock on/off switch	
	Robot interface	
Other	Turning spindle rigid tap	
	Post-process work gauging interface	Set levels (5-level, 7-level)
	Illumination in control panel	
	Air conditioning within control panel	Temperature regulator (cooler only), dehumidifier
	AC 100V 1A plug	
	Tool compensations	L32/R32, L64/R64

2SP-2500H

When using Okuma products, always read the safety precautions mentioned in the instruction manual and attached to the product.

●The specifications, illustrations, and descriptions in this brochure vary in different markets and are subject to change without notice.
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