OKUMA

OPEN POSSIBILITIES

2SP-1500H

2-Spindle Horizontal CNC Lathe



2SP-1500H

2-Spindle Horizontal CNC Lathe

Intelligent Technology | Thermo-Friendly Concept | SERVONAVI

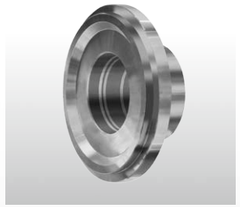
Achieving stable machining and shorter lead times with a smart machine capable of mass production

The 2SP-1500H 2-spindle CNC lathe combines two lathes into one and is standard equipped with an on-machine loader. It is an automation-compatible machine that enhances productivity improvement in mass production of automobile parts, etc. with continuous front/back machining in a minimum of floor space. Innovative production of mass-produced parts has been achieved with high machining accuracy and the shortest tact time.

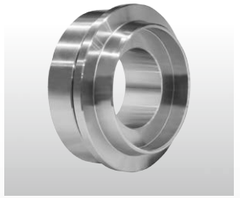


2SP-1500H

Ideal for workpieces from ø50 to 150 mm

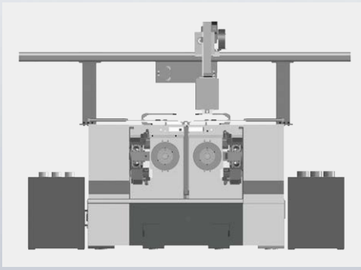

Front cover


Bearing

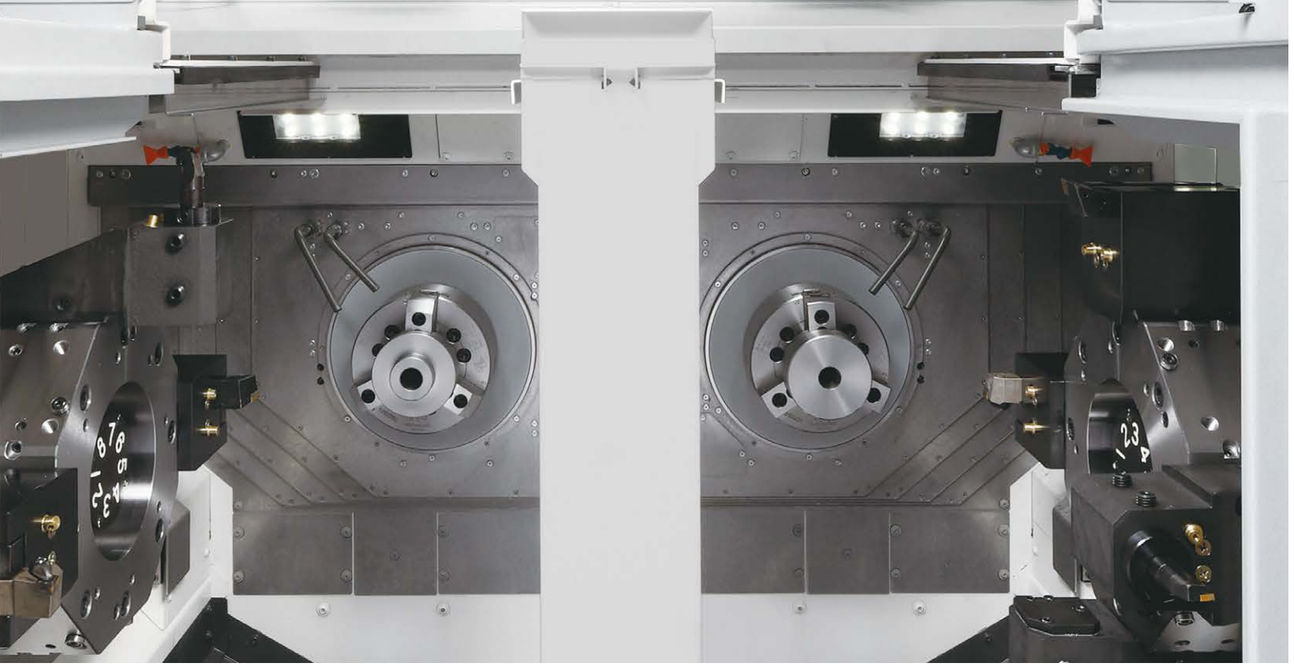

Gear blank

- Achieves the shortest tact time with the fastest part load/unload of 3.6 sec*, and the largest machining capacity in its class
- Stable continuous machining with excellent chip disposal
- High reliability with a machine structure faithfully designed with slide guides and other basic features
- High dimensional stability during temperature changes provided by the Thermo-Friendly Concept
- Full array of system deployment and peripheral devices that support various types of automation
- Major Specifications

Standard chuck size:	6-inch
Max machining dia:	ø290 mm
Transportable workpiece size:	ø150 mm
Spindle speed:	50 to 6,000 min^{-1}
Turret type:	V8 + V8
Rapid traverse:	X, Z: 25 m/min
Loader rapid feed rate:	X, Y, Z: 200, 150, 65 m/min



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



Agile movements and compact structure achieve high-speed and stable production

Non-cutting time is shortened with high-speed movements, resulting in increased productivity

Rapid traverse
X, Z: 25 m/min

Spindle start / stop
Start: 4.0 sec / Stop: 3.0 sec (0⇔6,000 min^{-1})

Turret rotate
0.18 sec/1 index

Workpiece load / unload
Load / unload: 3.6 sec

Loader tact: 17.7 sec (incl. oriented spindle stop & seating detection)

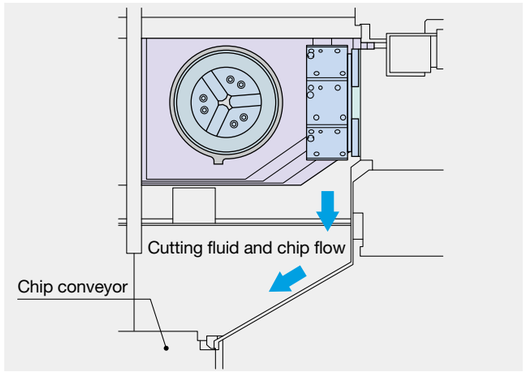
Fast loader
Horizontal: 200 m/min, vertical: 150 m/min

Note: The data mentioned in this brochure are “actual data” and do not represent guaranteed accuracies.

Stable continuous machining — Improved chip disposal

Turret design prevents chip tangling with tools
Turret rotation lets chips tangled with the tool to easily fall off

In-machine cover prevents chip accumulation in the machine
- Cover layout isolates slideways to the outside of the work chamber
- Vertical cover design facilitates chip discharge
- Distance to the chip conveyor is short and chip flow is smooth



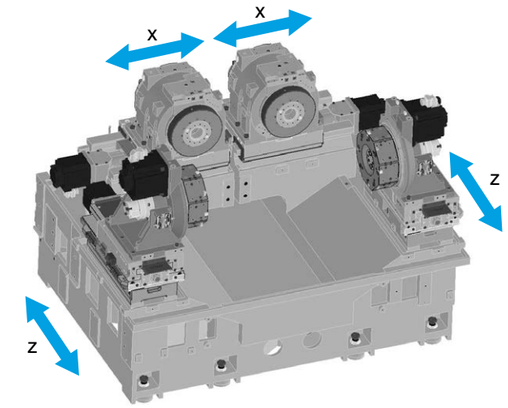
Speed, accuracy, quality — the structure leads to high productivity

Improved machining accuracy stability from a machine faithfully built to the basic structural design of the machine

With a machine structurally designed to minimize slideway to spindle/turret distance, powerful machining is possible without bending or twisting.

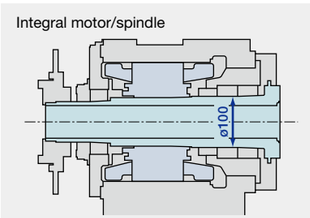
Thermo-Friendly Concept
- Equipped with the Thermo-Friendly Concept to deliver high dimensional stability during temperature changes. Stable cutting accuracy achieved from machining start.

V8 turret
- Minimized offset from slideway



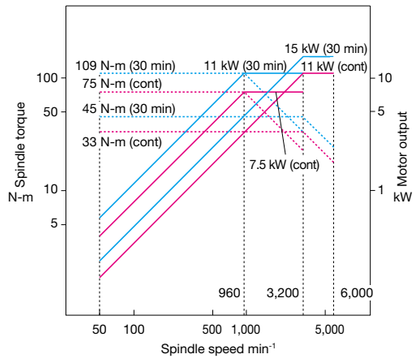
Axis configuration
- Turret move in Z, spindle head move in X-axis travels
  X: 150 mm
  Z: 160 mm
- The slideway is a slide guide with high damping, which improves cutting edge uniformity and makes possible highly accurate machining.

Integral motor/spindle
- Uses an integral motor/spindle without gears and belts. With a ø100 mm inner diameter spindle bearing, a spindle speed of 6,000 min^{-1} is achieved. High-speed machining and surface quality can be improved.



Spindle output/torque diagram

Standard spindle
- Spindle speed: 6,000 min^{-1}
- Output: 15/11 kW (30 min/cont)
- Torque: 109/75 N-m (30 min/cont)



Cutting capacities [Actual data]

Heavy-duty: 2.0 mm² (275 cm³/min)

Outside (S45C)
- Cutting speed: 150 m/min
- Cutting depth: 4.0 mm
- Feed rate: 0.5 mm/rev

Drilling (S45C)
- ø32 Throwaway drill
- Cutting speed: 120 m/min
- Feed rate: 0.15mm/rev

Note: The “actual data” referred to above for this brochure represent examples and may not be obtained due to differences in specifications, tooling, cutting conditions and others.

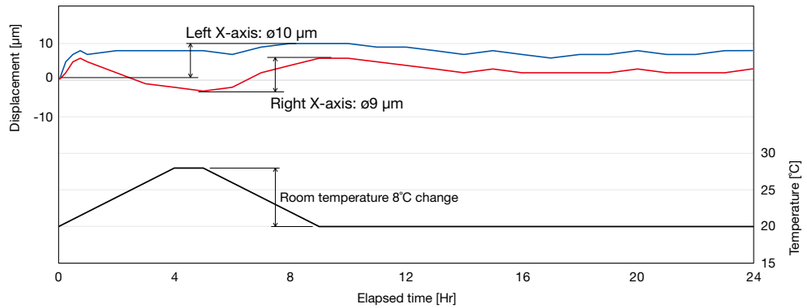
To support long and stable machining accuracies

Thermo-Friendly Concept
Machine deformation accurately controlled

Workpiece machining accuracy changes greatly depending on the temperature changes around the machine, heat generated by the machine, and heat generated in machining.

Okuma's "Thermo-Friendly Concept" enables remarkable machining accuracy through original structural design and thermal deformation control technology. This concept ensures high-accuracy machining in regular factory environments without any special equipment or measures to deal with temperature changes. High dimensional stability is achieved from the first to the last workpiece in mass production applications. Free from troublesome dimensional compensation and warm-up, it exhibits excellent dimensional stability even during consecutive operation over long periods and environmental temperature change in the plant.

Machining dimensional change over time (actual data) **ø10 µm** (ambient temperature: 8°C change) using TAS-C



[Operating conditions]

Workpiece material:	BsB
Cycle time:	60 sec
Spindle speed:	4,800 min^{-1}
Cutting depth:	0.05 mm
Feed:	0.05 mm/rev
Coolant:	ON

Note: The "actual data" referred to above for this brochure represent examples and may not be obtained due to differences in specifications, tooling, cutting conditions and others.

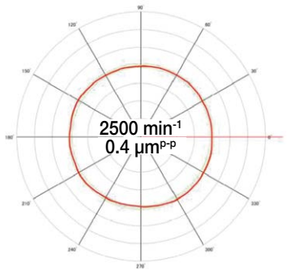
TAS-C (Thermo Active Stabilizer – Construction)

TAS-C, based on machine thermal characteristics, with appropriately placed temperature sensors and feed axis position data, will predict and accurately control thermal deformation in machine construction when ambient temperatures change.

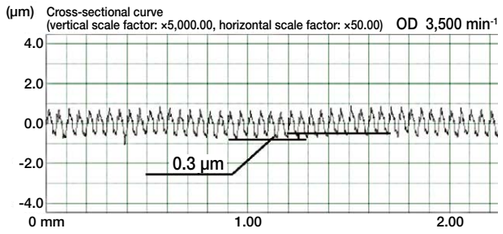
Machine start-up
Machining restart
Room temperature change
→ **High dimensional stability**

Machining accuracy

Roundness
0.4 µm/2,500 min^{-1}



Surface roundness (tool edge uniformity)
0.3 µm/3,500 min^{-1}



Note: The "actual data" referred to above for this brochure represent examples and may not be obtained due to differences in specifications, tooling, cutting conditions and others.

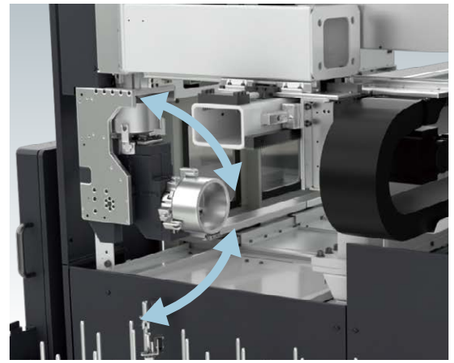
Simple & Flexible
Building optimal systems

Easy automation with loader on machine

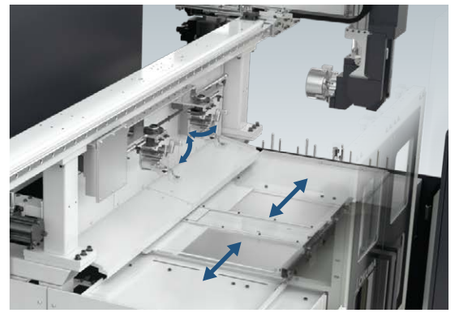
The machine sides are maintenance-free, making it easy for layouts with peripheral devices for automation. The part flipper mounted on the machine minimizes takt time. The 90° rotation type workpiece hand is compact and interference-free, making it ideal for small parts.



16-station workpiece stocker



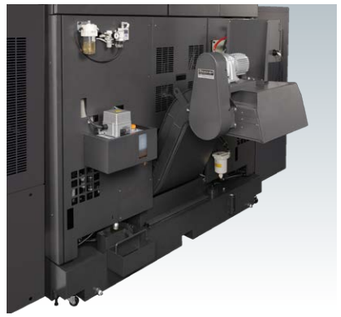
90° rotation type 3-position double-hand



Part flipper and slide sideways upper door

Maintenance

By separating and recovering lubricating oil and cutting fluid, degradation can be prevented and service life extended. Additionally, the large-capacity coolant tank reduces the man-hours needed for replenishment.



Sludgeless Tank (option)

Troublesome coolant tank cleaning work is dramatically reduced, increasing productivity. Furthermore, the environmental impact caused by the disposal of cutting fluid is reduced.

The Sludgeless Tank (option) circulates cutting fluid at a constant speed within the tank to effectively collect sludge even during non-machining periods, reducing defects, such as scratches on machined surfaces and cutter issues. Sludge accumulation is suppressed, drastically reducing the frequency of troublesome tank cleaning and enabling stable operation over long hours. In addition, the frequency of cutting fluid replacement can be greatly reduced, further reducing the environmental impact of disposal.

Contribution to the realization of a carbon-free society

Highly productive, accurate and eco-friendly

Green-Smart Machine

Okuma has worked to reduce energy consumption in order to achieve carbon neutrality at the three factories in Japan which are our main production bases.

We have realized high productivity through automation and process-intensive machining, in addition to high-accuracy machining, and we then introduced the use of green energy to transform the three domestic factories into carbon-neutral factories.
“Green-Smart Machines” is our definition of Okuma’s intelligent machine tools, which autonomously achieve stable dimensional accuracy and reduced energy consumption, to support environmentally friendly production. Our policy is to deploy “Green-Smart Machines” fully, to help achieve a carbon-free society.

Starting with products manufactured at those carbon-neutral factories and supplying them all over the world, we will work together with our customers to help solve the social issues faced by the manufacturing industry.

Green-Smart Machines are **environmentally friendly**
products that autonomously achieve stable dimensional accuracies and reduced energy consumption.

Green-Smart Machine Technology that achieves Green-Smart Machine

Thermo-Friendly Concept

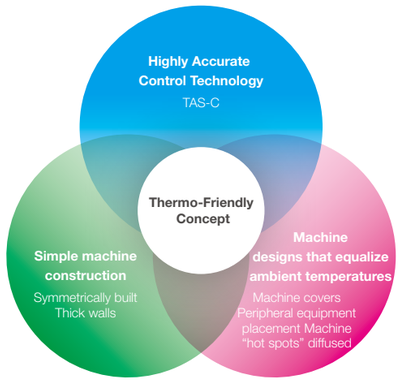
The Okuma Intelligent Technology that enables machines to autonomously maintain high accuracy stability

■ Reduction of warm-ups and dimensional compensation

Reduce the time needed for daily warm-ups and dimensional compensation to adjust to ambient temperature changes.

■ Reduction of power used for air conditioning

Maintain high stability of dimensional accuracy even if the air conditioning temperature range is expanded.



The unique concept of accepting temperature changes achieves consistent high accuracy without special coolers or excessive air conditioning.

ECO suite plus

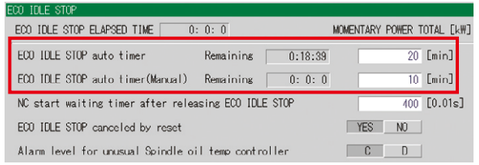
A system for an energy-saving society

A suite of energy saving applications for machine tools

■ ECO Idling Stop

Each unit operates only when required

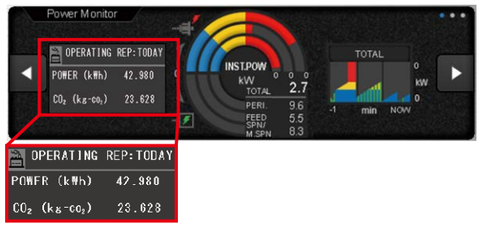
Auxiliary equipment consume a substantial portion of the power used in a factory. This function enables each of them to be turned off when not needed to reduce power consumption. In addition to when automatic operation is suspended, it is now possible to stop idling during manual operation. Power consumption and carbon dioxide emissions are reduced without conscious effort by the operator.



■ ECO Power Monitor

On-the-spot check of energy savings

Power is shown individually for spindle, feed axes, and auxiliaries on the OSP operation screen. In addition to regenerative power, the energy-saving benefits from auxiliary equipment stopped with ECO Idling Stop can be confirmed on the spot.



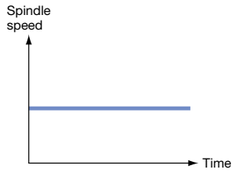
Okuma’s Intelligent Technology reduces operator burden

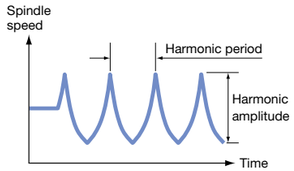
Intelligent Technology

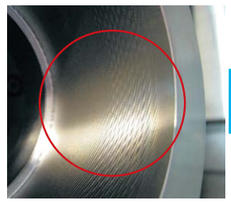
Machining Navi L-*g*Ⅱ (option)

Cutting condition search for turning
(Harmonic Spindle Speed Control)

Varying the spindle speed in accordance with the best amplitude and period makes it possible to suppress chatter during turning operations. Tool life can be extended and cycle times reduced by using the optimum cutting conditions, producing significant effects in deep-hole boring bar and grooving applications.







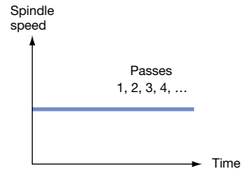
Machining Navi L-*g*Ⅱ

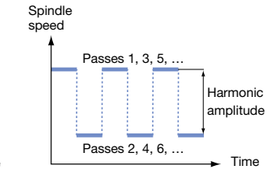


Machining Navi T-*g* Threading

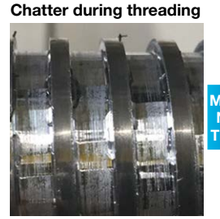
Cutting condition search for threading (option)

When chattering occurred during threading, it was common to lower the cutting conditions or use special tools that resist chattering. Okuma’s Machining Navi T-*g* (threading) breaks the vibration periodicity with a different spindle speed for each threading pass, and suppresses chatter growth. The machining capacity of your normally used tools can be maximized for stable machining.





Chatter during threading



Chatter marks

Machining Navi T-*g* Threading



Smooth surface

AI Machine Diagnosis Function (option)

Machine tool diagnostics technology with artificial intelligence (AI)

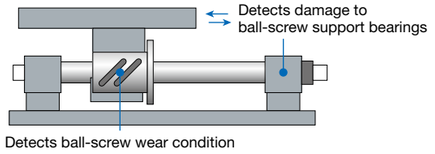
Detect signs of ball-screw failure, and reduce downtime

■ With predictive maintenance, prevent machine stoppages just in time

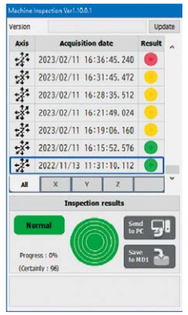
Machine tool self-diagnosis technology “AI machine diagnosis function” can detect signs of failure. Machine downtime can be reduced by preventing machine shutdown. The OSP-AI installed in the CNC identifies the presence or absence of any abnormality in the feed axis and the location of the abnormality and detects damage to the ball-screw support bearing and wear of the ball-screw*.

* With AbsoScale detection specs, ball-screw wear detection is possible.

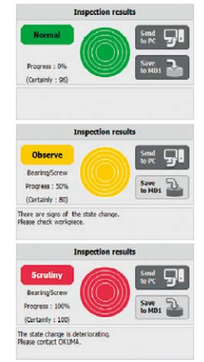
Notes: AI diagnostic models are already installed, and diagnoses can be performed by the machine itself. AI diagnostic models can be updated through Okuma’s Connect Plan.



Diagnosis by OSP-AI



Diagnostic results per lamp color



Machine Specifications

	Model	Unit	2SP-1500H
Capacity	Max turning dia	mm (in)	ø290 (11.42)
	Max work length	mm (in)	160 (6.30)
	Max workpiece mass (w/ chuck)	kg (lb)	145 (319) (L/D = 1.0) 115 (253) (L/D = 2.5)
Travel	X-axis (spindle left/right)	mm (in)	150 (5.91)
	Z-axis (turret front/back)	mm (in)	160 (6.30)
Spindle	Speed	min^{-1}	50 to 6,000
	Speed ranges		2 auto ranges (motor coil switching)
	Nose type		ø140 flat
	Bore dia	mm (in)	ø62 (2.44)
	Bearing dia	mm (in)	ø100 (3.94)
Turret	Type		V8 + V8
	No. of tools		8 + 8 tools
	OD tool shank	mm (in)	25 × 25 (1 × 1)
	ID tool shank dia	mm (in)	ø40 (1-1/2)
Feed rate	Rapid traverse X, Z-axis	m/min (ipm)	X: 25 (984), Z: 25 (984)
Motor	Spindle drive	kW (hp)	15/11 (20/15) (30 min/cont)
	Axis drive	kW (hp)	X: 2.2 (3), Z: 2.2 (3)
	Coolant (50 Hz/60 Hz)	kW (hp)	0.55/0.75 (0.7/1)
Machine size	Machine height (loader max height)	mm (in)	2,983 (117.44)
	Required floor space: length × width (excluding loader)	mm × mm (in × in)	1,900 × 2,605 (74.80 × 102.56)
	Mass (including loader)	kg (lb)	5,500 (12,100)
Loader	Transportable workpiece size (dia)	mm (in)	ø150 (5.91)
	Transportable workpiece size (length)	mm (in)	80 (3.15)
	Transportable workpiece mass × number	kg (lb) × pcs	3 kg (6.6) × 2 pcs
	X-axis travel (traveling axis)	mm (in)	2,348 (92.44)
	Y-axis travel (vertical axis)	mm (in)	670 (26.38)
	Z-axis travel (front/back axis)	mm (in)	240 (9.45)
	H-axis travel (rotation axis)	deg	180 (90+90)
	Rapid feed rate X, Y, Z-axis	m/min (ipm)	X: 200 (7,874), Y: 150 (5,906), Z: 65 (2,559)
	Rapid feed rate H-axis	min^{-1}	30
	Hand type		Vertical folding type 3-position double-hand, 3-jaw air chuck
	Gripper open/close travel	mm (in)	ø32 (1.26) (effective travel: ø24 (0.94))
Workpiece stocker	Loaded workpiece diameter	mm (in)	ø20 (0.79) to ø150 (5.91)
	Loaded workpiece mass	kg (lb)	30 (66)/1 stations
	Stacking height	mm (in)	450 (17.72)
	No. of stations		16 stations
CNC			OSP-P300LA

Standard Specifications

Spindle	Left/right common	ø140 flat 50 to 6,000 min^{-1}, 15/11 kW
Turret	Left/right common	V8
Standard Specification	Front door interlock	
	TAS-C (Thermo Active Stabilizer – Construction)	
	Chuck auto open/close confirmation	
	Chuck air bower (blast)	
Standard Accessory	Hydraulic unit (left and right)	
	Coolant system (tank, left and right pump motors)	
	Work lamp left and right	
	Foundation washers, leveling bolts	
	Hand tools	
Loader System	On-machine loader Numerical control 4-axis	
	Part flipper	
	Workpiece stocker	

Chucking Kit

N-06 solid chuck and drive	Left and right each 1 set

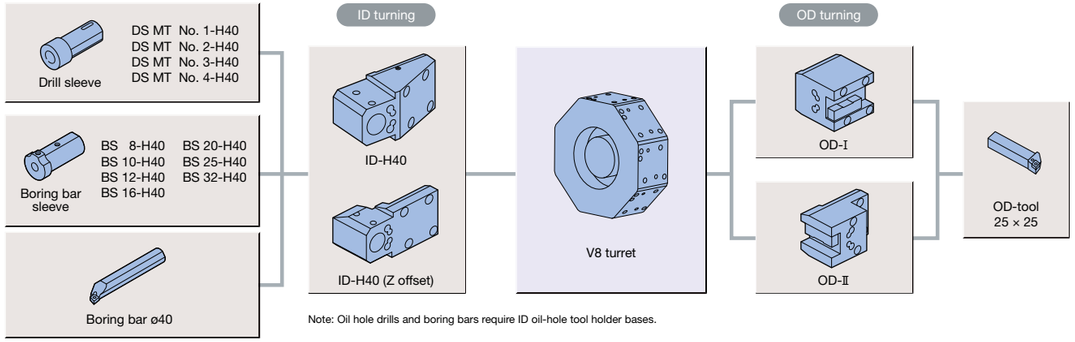
Tooling Kit

pcs

OD-Ⅰ wedge clamp	4
OD-Ⅱ wedge clamp	4
ID-H40	8
DS MT No. 2-H40	1
BS 16-H40	4
BS 20-H40	4

Tooling System

V8 turret



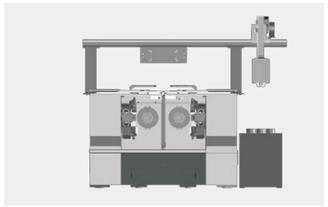
Note: Oil hole drills and boring bars require ID oil-hole tool holder bases.

Loader Kit

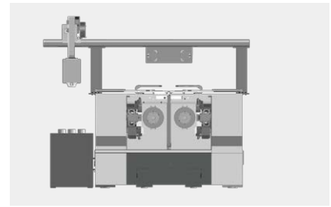
Loader Kit	Loader carrier	Workpiece stocker	
A kit 1M/1L, 2 lifts, Exits right side	1 carrier	1 stocker, right side	2 lift-tables
B kit 1M/1L, 2 lifts, Exits left side		1 stocker, right side	
C kit 1M/1L, 1 lift, Exits either side		2 stockers, left and right side	1 lift-table
D kit 1M/2L, 1 lift, Exits either side	2 carriers		
E kit 1M/2L, 2 lifts, Exits either side			2 lift-tables
G kit 1M/1L, 2 lifts, Exits either side	1 carrier		

Note: 1M/1L: 1-machine/1-loader, 1M/2L: 1-machine/2-loader

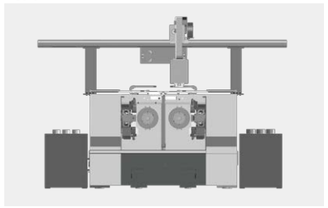
A kit



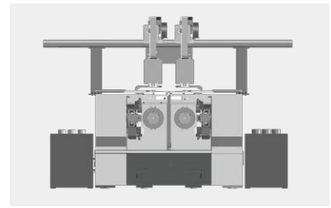
B kit



C/G kit



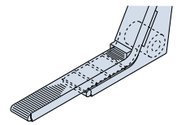
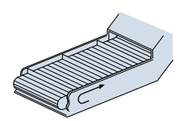
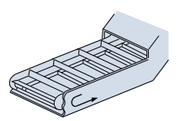
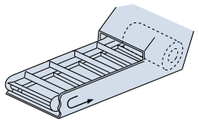
D/E kit



Optional Specs and Accessories

Hydraulic power chuck	Solid/hollow
Chip conveyor	Rear discharge, L/H, hinge type
Chip bucket	
Chuck open/close push button	
Chuck clamp direction switch	Key switch type (parameter type is standard)
Chucking miss detection	
Chuck pressure high/low switch	Re-clamping required
Air blower (blast)	Spindle ID
	Turret
Air blow gun	
Coolant blower	Shower coolant
	Spindle ID coolant
Coolant gun	
High pressure coolant	Coolant pump 1.1 kW x 2
Sludgeless Tank	
Coolant detection	Level, flow rate Level + flow rate
Coolant high/low switch	
Coolant sludge prevention	
Mist collector	
In-process workpiece gauging	
Touch Setter	Manually detachable
Hydraulic unit inverter type	
Automatic extinguisher	
High-precision specifications	0.1 µm control
	Pitch error compensation
Temperature regulator	Cutting fluid (cooling only)
	Hydraulic oil (cooling only)
Specs for easy maintenance	Normal kit
	Economy kit

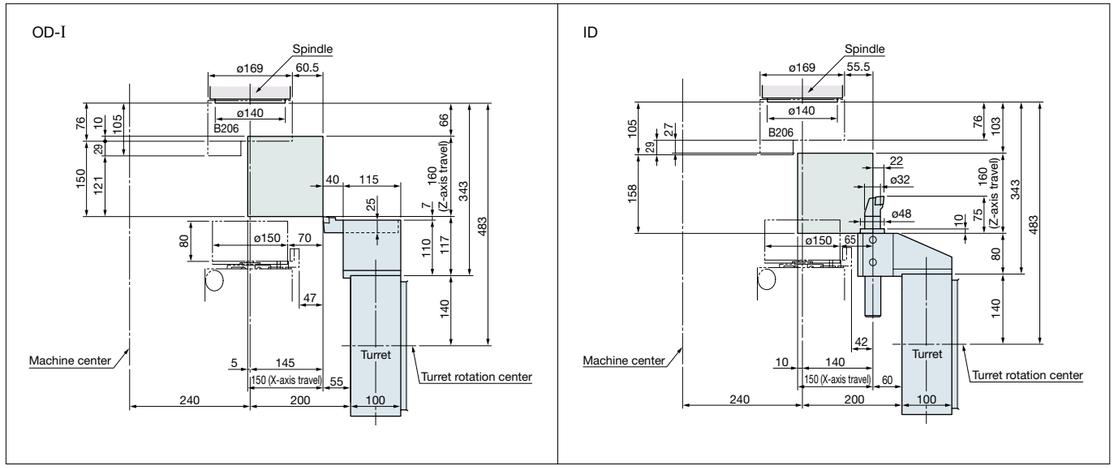
Off-machine lift-up chip conveyors

Type	Hinge + scraper with drum filter	Hinge	Scraper	Scraper with drum filter
Shape				

Note: It is necessary to select a chip conveyor with hinge + scraper (with drum filter) if Sludgeless Tank option is chosen.

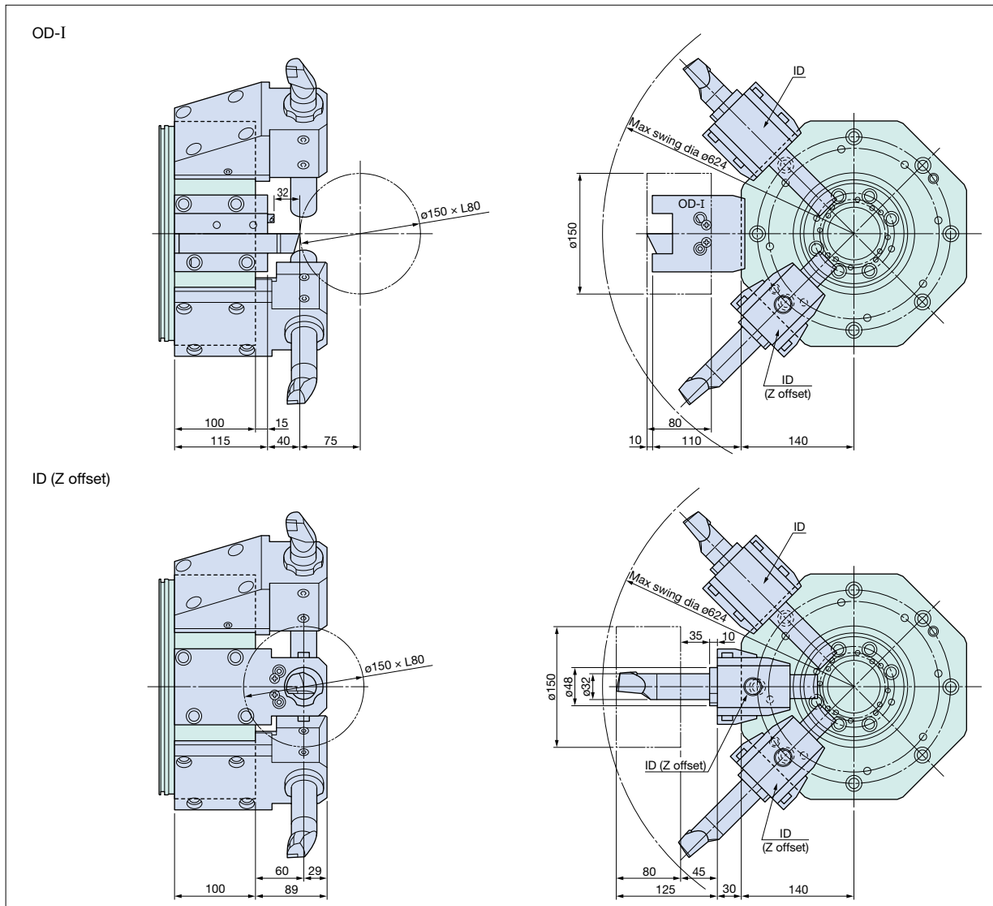
Working Ranges

Unit: mm



Turret Interference Diagrams

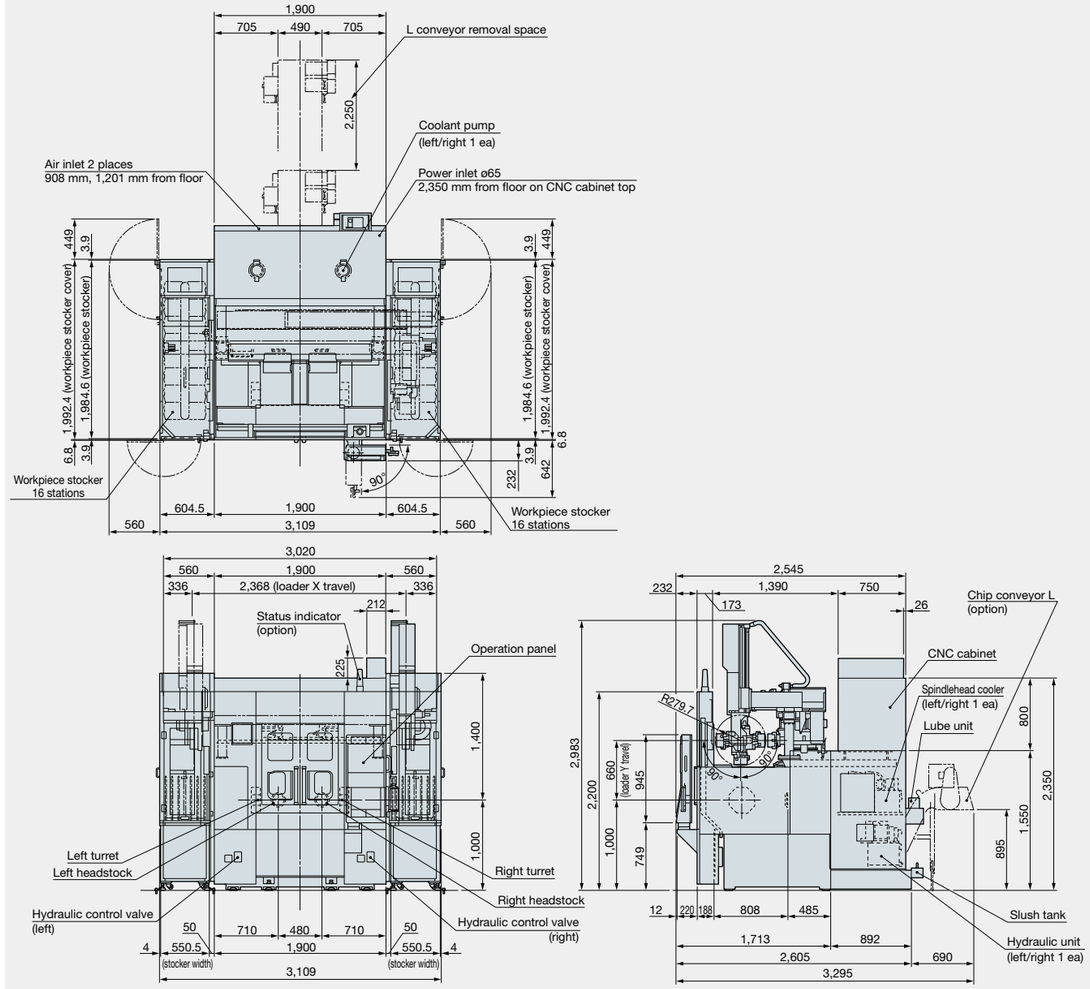
Unit: mm



When installing two ID-H40 (Z offset) or an ID-H40 (Z offset) and an ID-H40 adjacent to each other, use a special tool to replace the sleeve.
The special tool is included as standard accessory.

Dimensional / Installation Drawings

Unit: mm



OSP suite OSP-P300LA

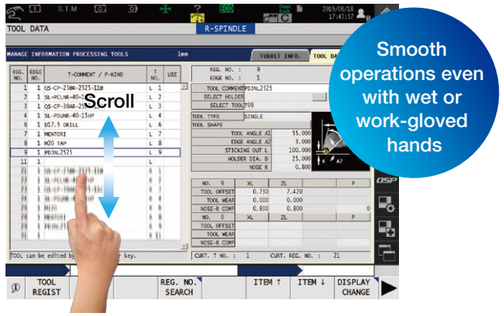
The Intelligent CNC

With excellent 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. Okuma's excellent control uses high-end CPUs for a significant 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 smartphone

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 smartphone. 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

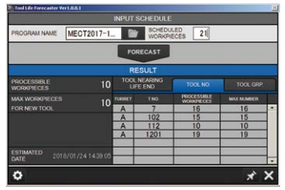
This became possible through the addition of Okuma's machining expertise based on requests we heard from real, machine-shop customers. The brain power packed into the CNC, built by a machine tool manufacturer, will "empower shop floor" management.

Tool Life Predictor

S22

Increase utilization with advance tool preparation

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.



Spindle Output Monitor

S11

Increased productivity through visualization of motor power reserve

E-mail Notification

S15

Monitoring operating status even when away from the machine

Scheduled Program Editor

S10

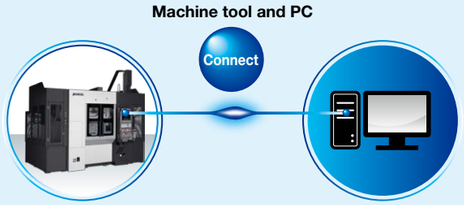
Easy programing without keying in code

Connect Plan

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

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.



OSP-P300LA Standard Specifications

Basic Spec	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
	Security	Operator authentication, lock screen, OSP-VPSII-STD (Virus Protection System)
	Program capacity	Program storage: 4 GB, operation buffer: 2 MB
Operation	"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
	Programming	Program management, edit, 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
Communication / Networking		USB ports, Ethernet, DNC-T1, Smart I/F
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, Cycle time reduction (machining time shortening, easy parameter setting)
Energy-saving function	ECO suite	ECO Idling Stop, ECO Power Monitor
	Power Regeneration System	Regenerative power is used when the spindle and feed axes decelerate to reduce energy waste.

OSP-P300LA Kit Specifications / Optional Specifications

Item		Kit specs *1 NML E	NML D	3D E	3D D	OT-IGF E	OT-IGF D
New Operation							
Advanced One-Touch IGF-L *2						●	●
Programming / Operation							
Circular threading			●		●		●
Program notes			●		●		●
User task 2 I/O variables, 8 each							
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)							
Harmonic Spindle Speed Control (HSSC)		●	●	●	●	●	●
Thread matching (spindle orientation required)							
Threading slide hold (G34, G35)							
Variable Spindle Speed Threading (VSST)							
Inverse time feed							
Manual cutting feed							
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 axis)*3							
Tool life management*4			●		●		●
Tool life warning							
Operation end buzzer							
Work counters	Count only						
	Cycle stop						
	Start disabled						
Hour meters	Power ON						
	Spindle rotation						
	NC operating						
NC operation monitor (counter, totaling)		●	●	●	●	●	●
Status indicator (triple lamp) Type C [Type A, Type B]		●	●	●	●	●	●
Measuring							
Z-axis automatic zero offset by touch sensor							
Gauge data output	File output						
Post-process workpiece gauging interface	Set levels (5-level, 7-level)						
	BCD						
	RS-232C (dedicated channel)						
ECO suite plus (energy-saving function)							
ECO Operation	Peripheral equipment intermit/link operation						
	Spindle Power Peak Limiter						

Item			Kit specs *1 NML E	NML D	3D E	3D D	OT-IGF E	OT-IGF 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 / Unattended 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 *6	Type B (machine)							
	Type C (robot and loader)							
	Type D							
	Type E							
High-Speed/High-Accuracy Functions								
Cycle time reduction *6	Operation time reduction		●	●	●	●	●	●
Pitch error compensation								
AbsoScale detection *6								
Hi-Cut Pro								
1/10 µm control								
Other Functions								
One-Touch Spreadsheet								
Machining Navi L-*g*II, T-*g* (threading)								
Spindle dead-slow cutting								
Spindle speed setting								
Short circuit breaker								
External M codes [2 sets, 4 sets, 8 sets, 16 sets]								
Edit interlock								
OSP-VPSII-EX (Virus Protection System)								
Lighting in CNC cabinet								
Air conditioning in CNC cabinet								
AC 100V 1A plug								

*1. NML: Normal, 3D: Real 3D simulation, OT-IGF: One-Touch IGF, E: Economy, D: Deluxe
*2. Real 3D Simulation included
*3. With AbsoScale detection spec, ball-screw wear detection is possible.
*4. Includes Tool Life Predictor.
*5. API library 2 (THINC-API) is required to add OSP-MTConnect
*6. Technical discussions required.

2SP-1500H

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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