

OPEN POSSIBILITIES







Intelligent Technology Machining Thermo-Friendly Concept

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.

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



25P-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

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

Long-run, stable machining with high accuracy

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 cm³/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.





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: $\phi 10 \mu m$

Actual data for 2SP-2500H (ambient temperature: 8°C change) Machine start-up time Machining restart time During room temperature change

High dimensional stability

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.



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.



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.







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.





With revamped operation and responsivenessease 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 Smooth of using a smart phone perations even with wet or Scroll work-gloved hands

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



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	d motor coil switching)				
	Nose type		JIS	42-6				
	Bore dia/bearing dia	mm (in)	ø62 (2.44) /	ø100 (3.94)				
Turrets	Туре		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	i) (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) F	ANUC: 2.7 (3.6) / 4.5 (6)				
	Coolant (50/60 Hz)	kW (hp)	0.55 (0.7)	/ 0.75 (1)				
Machine	Machine height	mm (in)	3,257 (128.23) (max	imum loader height)				
size	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 (17,60	0) (w/loader)				
CNC			OSP-P300LA / FANUC 0i-TF [Loa	der with 2 carriers: FANUC 31i-B]				

Loader Specifications

	Model	Unit	2SP-2500H (L)	2SP-2500H (M)				
Loader	Transportable parts size (dia x length)		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 wor	k tables on right and left)				
	Y-axis travel (vertical axis)	mm (in)	750 (2	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 h	nand, 3-jaw air chuck				
	Gripper open/close travel	mm (in)	ø30 (1.18) (effective travel: ø22 (0.87)) [8 kg s	pecs: ø32 (1.26) (effective travel: ø24) (0.95)]				
	On-machine turnover device		(2				
Work table	Loaded workpiece diameter	mm (in)	ø40 (1.57) to	o ø250 (9.84)				
	Loaded workpiece mass		50 (110) /	/1 station				
Stacking height		mm (in)	450 (*	17.72)				
	No. of stations		1	6				
				[]: Optional				

Standard Specifications

		_
Spindles	A2-6 5,000 min ⁻¹	ł
	15/11 kW	0
Turrets	V12 + V12	0
Coolant tank		0
Front door interlock		1
Lubrication monitor		S
Chuck open/close button		3
Chuck auto open/close		0
confirm		ł
Chuck air bower (blast)		(
Jack screws, foundation pads		0
Work lamp	LED	0
Hand tools		F

Optional Specifications

L	1.	Opu	

[]: Optional

A2-6 5,000 min ⁻¹	Hydraulic chuck		Mist collector	
15/11 kW	Chip conveyor	Rear hinge type	Coolant gun	
V12 + V12	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		Loader	Transportable weight: 8 kg
	discharge		Loader point data	No part program
	High pressure coolant		(FANUC only)	linkage:
	Coolant pump	1.1 kW × 2, 2.2 kW × 2		10 types, 15 types
	Coolant sensors			Part program
LED	Coolant high/low			5 types, 10 types, 15 types
	pressure switch		Temperature regulator	Coolant (cooling only)
· I	Raised machine height	50 mm, 100 mm, 150 mm	iomporatoro regulator	Hydraulic oil (cooling only)

Spindle output / torque diagrams



Working Ranges



Tool Interference Drawings



* 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**





Power inlet at bottom of control cabinet About 1,700 from floor

Power inlet at top of control cabinet About 2,350 from floor

Work table 16 stations (Optional)

203

Unit: mm (in)

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/Netw	orks	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

	Kit specs *1		ML	3	BD	OT	-IGF	0	MTC	_		Kit specs *1	NN	ЛL	3	D	OT-	IGF	4
em		<u> </u>	D	E	D	E	D	E	D	4	Item		E	D	E	D	E	D	1
ew Operations			<u> </u>	1		_	_	_	-	4	External Input/Outp	at and Communication Functions					ļ,		Ļ
Advanced One-To	puch IGF-L *2	-	_							4	OSP-MTConnec	t * ⁵		_		_	\vdash	-	4
Advanced One-To	ouch IGF-L Multitasking *2									1	RS-232C conne	ctor		<u> </u>	\square	<u> </u>		\vdash	_
rogramming		_			_	_		_		4	DNC link	DNC-T3		<u> </u>	\square	\vdash			_
Circular threading)		DNC-C/Ethernet							
Program notes										,		DNC-DT							
User task 2 I/O	variables, 8 ea										USB (additional)	2 additional ports possible							
Work coor-	10 sets										Automation/Untend	ed Operation							l
dinate system	50 sets										Auto power shut	off M02, alarm		1					
Select	100 sets									Τ	Warmup functio	n (by calendar timer)							
Tool compen-	Tool compensation 64 sets									1	Tool retract cycl	3							Ì
sation (Std: 32 set	ts) Tool compensation 96 sets									1	External	A (pushbutton) 8 types							
Common variable	s 1,000 sets (Std: 200 sets)									1	program	B (rotary switch) 8 types							
Thread matching	(spindle orientation required)		-					\square		1	selections	C (digital switch) BCD, 2-digit							Ì
Threading slide h	old (G34, G35)		1	1			\top	\vdash	+	1		C2 (external input) BCD. 4-digit					\vdash		
Variable spindle s	peed threading (VSST)		<u> </u>	1	1	1	1	\vdash	+	1	Third party robo	Type B (machine)	1				\vdash		
Inverse time feed		-	-			+	+	+	+	+	and loader	Type C (robot and loader)					++	<u> </u>	
Milling machine	Coordinate convert					-	+			-	interface *3	Type D	++	-	\vdash	-	+	<u> </u>	
specs	Profile generate					\vdash	+			H.		Type E	+ +	<u> </u>	\vdash	-	+	-	
Ionitoring	Trolle generate					-				Έ.	Cycle time								
Beal 3-D simulati	20		—							٦.	reduction *3	operation time reduction		-		-		-	
Cycle time over check										H.	High Speed/High A								i
Cycle time over c	neck	-	-							Η.	Right-Speed/Hight-A			—		—	μ η		1
Load monitor (spi	nule, leed axis)	+	+	-	-	-	-			4	AbasSaala data	tion *3	+	├──	+	├──	┝─┤	-	-
Load monitor no-	load detection (load monitor ordered)	-	+		-	-	-	+	-	-	Absoscale dete						\vdash	-	
Machine Data Log	Jger	-			-	-	-	+	-	-							\vdash	-	•
Al machine diagno	ostics (Feed axes)	-	-					-		-	1/10 µm control			<u> </u>					1
Tool life managem	ient ^o	-	•		•	-	•	+	-	4	ECO suite (energy s	aving function)		—		—	,		1
Tool life warning		-			-	-	-	+	-	-	ECO Operation								
Operation end bu	zzer	-	Ļ.	<u> </u>	<u> </u>	<u> </u>				4	Other Functions			_		—			
Chucking miss de	etection	-	Incl	ludeo	d in n	nach	ine s	pec	s	4	One-Touch Spre	adsheet		<u> </u>	\square	\vdash			_
Work counters	Count only	-	_			-		-	_	_	Machining Navi	L-g, T-g (threading)		└──		<u> </u>			_
	Cycle stop	-	<u> </u>							_	Harmonic spind	e speed control (HSSC)							
	Start disabled	<u> </u>	_					1			Spindle dead-sl	ow cutting							
Hour meters	Power ON		<u> </u>					\square			Spindle speed s	etting							_
	Spindle rotation										Manual cutting f	eed							
	NC operating										Spindle power p	eak cutting							ĺ
NC operation mo	nitor (counter, totaling)									,	Short circuit bre	aker							
NC work counter	(stops at full count with alarm)										External M signa	ls [2 sets, 4 sets, 8 sets, ()]							Î
Status indicator (f	riple lamp) Type C [Type A, Type B]									1	Edit interlock								
leasuring											OSP-VPS (virus	protection system)					\square		1
In-process work of	auging		Incl	ludeo	d in n	nach	ine s	pec	s	1	Illumination in co	ontrol panel							
Z-axis automatic	zero offset by touch sensor		Τ					<u> </u>		1	Air conditioning	in control panel	+	<u> </u>			\vdash	<u> </u>	
C-axis automatic	zero offset by touch sensor	<u> </u>	<u> </u>	1	1	1	+	+	+	1	AC 100V 14 plu	0	+-+	-	\vdash	-	+	_	
	File output	-	+	+		-	1	\vdash	+	+	t1 NML Normal OD:		unala 14			-			
Gauge data output	i no output	-	+	-	-	-	-	1	-	+	I. NML: Normal, 3D:	Real 3D simulation, OI-IGE: One- Io	ucn IC	ar, C	JIM:	One	3- IOU	cn N	A
Gauge data output	Sat lavals (5-laval 7-laval)	11	1	1	1		1	1		-	E: Economy, D: De	luxe							
Gauge data output Post-process work gauging	Set levels (5-level, 7-level)	-						1		- I									
Gauge data output Post-process work gauging interface	Set levels (5-level, 7-level) BCD		_				-	-		-	*2. Real 3D Simulation	included							
Gauge data output Post-process work gauging interface	Set levels (5-level, 7-level) BCD RS-232C (dedicated channel)	E	E								*2. Real 3D Simulation *3. Technical discussion	n included ons required.							

	-		•	
No. of controlled	2 simultaneous axes with X and Z axes, 3 simultaneous		Monitor	0
axes	axes with multitasking on X, Z, and C axes.			H
Interpolation	Positioning, straight line, taper, arc, threading, taper			Ľ
system	Fine coordinate interpolation, Cylindrical interpolation			S
Command system	Parallel absolute incremental command			T
Minimum input increment	Both X, Z axes 0.001 mm	-	Machine	A
Min command value	±99999.999 mm, decimal point input		operations	A
Operating panel	10.4 in color TFT			C
Monitoring	Display language: English / Japanese		Program input	E
	Portable pulse handle mounted			S
	Electronic buzzer			F
	Graphic display			S
	With Idling Stop			Ν
Machine	Constant peripheral speed control			E
operations	Spindle orientation (1 point, M19)		Ν	
	Continuous threading			C
Program input	Program memory capacity 1MB			I
	No. registered programs: 800			A
	Chamfering/corner radius		Automation	F
	Complex shape fixed cycle (I + II)			F
	Extension program editing		Other	Т
	USB memory input/output (program input/output only)			F
	Custom macro			Π
	Custom macros, common variables (total is 500)			A
	Programmable data input			A
	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)			
	Al contouring control I			
L		1		

Optional Specifications

Standard Specifications

C

No. of controlled axes2 simultaneous axes with X and Z axes, 3 simultaneous axes with multitasking on X, Z, and C axes.MonitorInterpolation systemPositioning, straight line, taper, arc, threading, taper Fine coordinate interpolation, Cylindrical interpolationSCommand systemParallel absolute incremental commandMinimum input incrementBoth X, Z axes 0.001 mmMin command value±99999.999 mm, decimal point inputAOperating panel10.4 in color TFTMonitoring Portable pulse handle mountedMachine operationsMachine operationsDisplay language: English / Japanese Portable pulse handle mountedProgram inputMachine operationsConstant peripheral speed controlSpindle orientation (1 point, M19) Continuous threadingSProgram memory capacity 64 KB No. registered programs: 63 Extension program editing USB memory input/output (program input/output only) Program motor, 2 chMachine RS-232C connector, 2 chCompensation Tool dimensions/wear compensation Tool dimensions/wear compensationAAutomation R RAutomation IMose-radius comp Tool dimensions/wear compensationAAutomation IAAutomation R RAutomation ICotherThermal deformation compensationTool compensation IAutomation IAutomation IAutomation IAutomation ICotherTool compensation IAutomation IAutomation IAutomation IAutomation IAutoma		opoolineatione		~ .						
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system 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 Program input Electronic buzzer With Idling Stop Machine operations Constant peripheral speed control Spindle orientation (1 point, M19) Continuous threading Program memory capacity 64 KB B No. registered programs: 63 K Extension program editing USB memory input/output (program input/output only) Program mote took example data input Mo Program and deformation compensation Mo Nos e-radius comp Tool dimensions/wear compensation Tool dimensions/wear compensation Fine Tool compensations (L16/R16) Automation R Automation	Interpolation	Positioning, straight line, taper, arc, threading, taper		н						
Command system Parallel absolute incremental command Minimum input increment Both X, Z axes 0.001 mm A Min command value ±99999.999 mm, decimal point input Machine operations Machine operations Operating panel 10.4 in color TFT Machine operations Machine operations Machine operations Machine operations Machine operations Machine operations Program input Program input Program input Program input Program input Program input Program input/output (program input/output only) Program memory capacity 64 KB S No. registered programs: 63 Extension program editing S S S VSB memory input/output (program input/output only) Program mediting M M VSB memory input/output (program input/output only) Modimensions/wear compensation M M Tool dimensions/wear compensation Tool dimensions/wear compensation F Automation R Tool compensation [Al contouring control I Tother T	system	Fine coordinate interpolation, Cylindrical interpolation		S						
Minimum input increment Both X, Z axes 0.001 mm A Min command value ±99999.999 mm, decimal point input Machine operating panel Machine operations Program input Program input Program input operations Program input operati	Command system	Parallel absolute incremental command		Т						
Min command value ±9999.999 mm, decimal point input Machine operations Operating panel 10.4 in color TFT Monitoring Machine operations Operating panel 10.4 in color TFT Color Monitoring Display language: English / Japanese Portable pulse handle mounted Color Color Electronic buzzer With Idling Stop No No Program input Program input Program input Program input for point, M19) Continuous threading So	Minimum input increment	Both X, Z axes 0.001 mm		A G						
Operating panel 10.4 in color TFT Monitoring Display language: English / Japanese Portable pulse handle mounted Electronic buzzer With Idling Stop N Machine operations Constant peripheral speed control Operating Xinguage: Spindle orientation (1 point, M19) Continuous threading P Program memory capacity 64 KB S No. registered programs: 63 N Extension program editing B USB memory input/output (program input/output only) N Program metors: 2 ch C Compensation Thermal deformation compensation Nose-radius comp Tool dimensions/wear compensation Tool compensations (L16/R16) Al contouring control I	Min command value	±99999.999 mm, decimal point input	Machine operations	0 A						
Monitoring Display language: English / Japanese Portable pulse handle mounted Portable pulse handle mounted Electronic buzzer Mith Idling Stop Machine operations Constant peripheral speed control Operations Spindle orientation (1 point, M19) Continuous threading Program memory capacity 64 KB No. registered programs: 63 No. Extension program editing USB memory input/output (program input/output only) Program memory capacity 64 KB No. No. registered programs: 63 No. Extension program editing No. USB memory input/output (program input/output only) No. Program protection key switch RS RS-232C connector, 2 ch CO Compensation Nose-radius comp Tool dimensions/wear compensation Automation Noil contouring control I R	Operating panel	10.4 in color TFT		С						
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No. registered programs: 63 M Extension program editing B USB memory input/output (program input/output only) C Programmable data input M Program protection key switch C RS-232C connector, 2 ch C Compensation Thermal deformation compensation Nose-radius comp A Tool dimensions/wear compensation F Tool compensations (L16/R16) Automation Al contouring control I T	Program input	Program memory capacity 64 KB		s						
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Other Ti		Al contouring control I		R						
			Other	Τι						

FANUC 0i-TF

*6. Includes Tool Life Predictor.

Optional Specifications

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
Oriented spindle stop	4-point (M19, 119, 129, 139)
Auto power shut-off	
Circuit breaker	
Operation history large capacity specs	
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	
Robot loader interlock on/off switch	
Robot interface	
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

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	
Oriented spindle stop	4-point (M19, 119, 129, 139)
Auto power shut-off	
Circuit breaker	
Operation history large capacity specs	
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)	
Robot loader interlock on/off switch	
Robot interface	
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



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> This product is subject to the Japanese government Foreign Exchange and Foreign Trade Control Act with regard to security controlled items; whereby Okuma Corporation should be notified prior to its shipment to another country.