VISION WIDE
Solution . Satisfaction . Smile

SM SERIES

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ISO9001 ISO14001

SM-E-202005

SM SERIES

High Efficiency Double Column Machining Center

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VISION WIDE TECH CO., LTD.

SM series

High Speed.
High Precision.
High Efficiency.

SM Machining Center

Vision Wide's SM is the 3rd generation in a family of top quality high performance bridge machines, the heavy duty structural design ensures years of incredible accuracies and cutting capacities for all types of industries.

- Large precision ground table work area
- Enhanced positioning and repeatability accuracies
- Larger Y-Axis travels
- Higher performance cutting and rapid feedrates
- Gear type spindle torque 1,163 Nm (15/18.5kW)
- Spindle speed: Gear type : 6,000rpm
  Direct driven: 10,000 / 15,000rpm

- X axis travel : 1.6 / 2.1 / 2.6 / 3.1 / 4.1 / 5.1 Meters
- Y axis travel : 1.3 / 1.8 / 2.2 / 2.3 / 2.7 Meters
- Z axis travel : 800 / 1,000mm

Model: SM-2113 and sheet metal guard without roof

High Speed.
High Precision.
High Efficiency.

SM Compact Structure

Z-axis Design

SM is designed with no mechanical or hydraulic counterbalance, this ensures axis movements that are highly responsive and stable guarantying better surfacing and machining accuracies.

High Strength Casting Structure

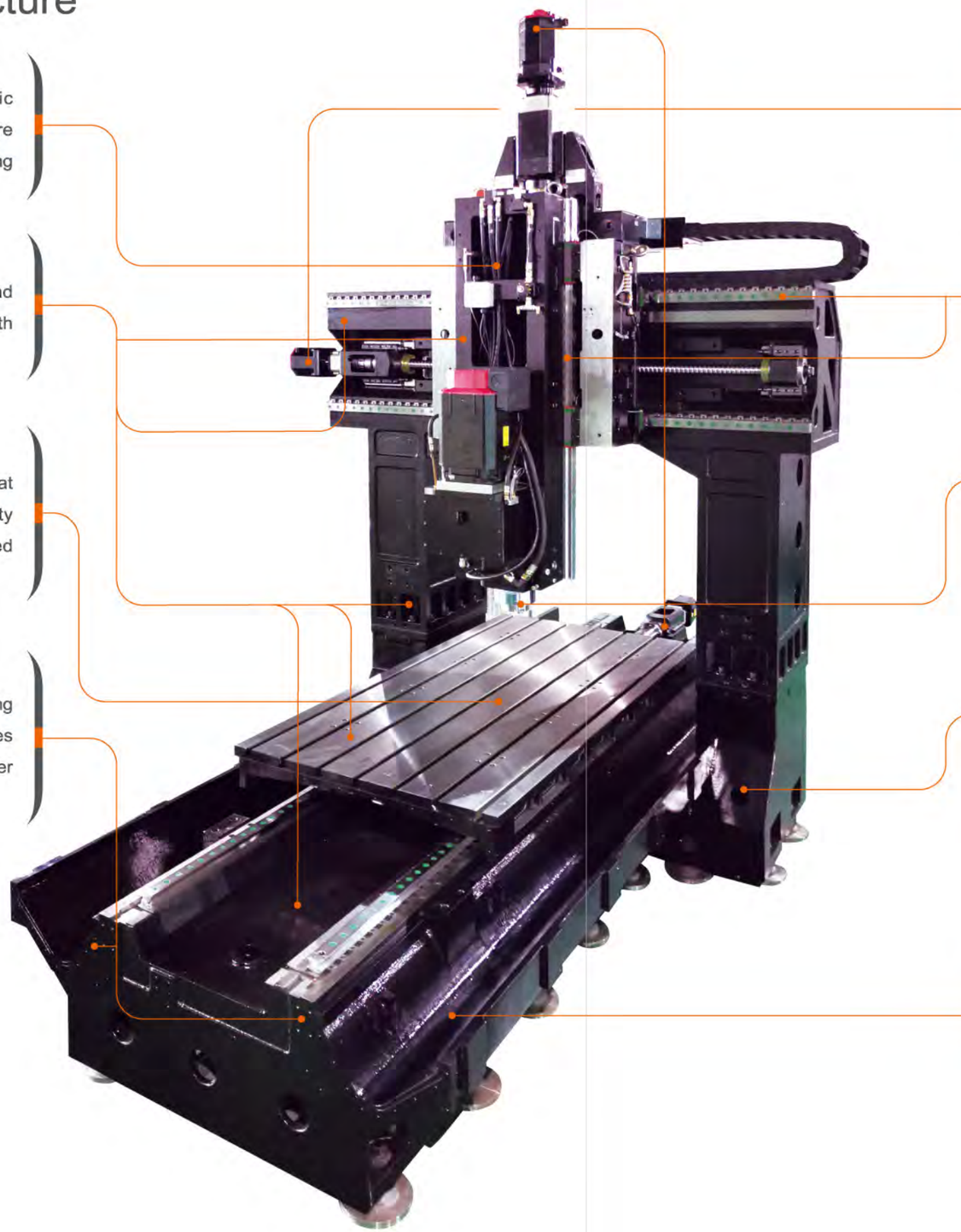
All Mechanical structural castings are heat treated and stress relieved, providing for a highly rigid machine with optimal machining performances.

Heavy Loading Capacity

Oversized heavy duty roller type linear way spaced at 500mm increments improves table loading capacity along with dynamic accuracy, rigidity and high feed cutting stability.

Inverted W-shaped Structure Base

Lowering the center of the gravity of the main base casting increases the anti-vibration performance, this provides for the highest level of structural dynamic rigidity under any cutting loads.



Direct Drive Design

All 3 axes ballscrews are directly driven by a zero backlash servo gear reducer for greater torque, better acceleration and deceleration and higher accuracies.

Cross Rail Design

Y axis utilizes 2 heavy duty roller ways with 6 roller trucks for superior performance.

Z axis utilizes 4 roller way system with 8 trucks for increased rigidity while head is at full extension.

Spindle Design

A long spindle nose is used for greater access and less interference to machine deep pockets.

Optimized Structure

The extra wide base and columns are built utilizing a wedge type design this ensures that there is no tilting of the columns during heavy machining resulting in a very stable and accurate machine.

The Base and lower columns structure are of one piece construction which improves the thermal deformation of the machine contributing to greater accuracies. (SM-xx13 / xx18 series)

High Efficiency Chip Removal

Integrated with larger chip chutes with high speed augers allow for a very efficient chip removal with no coolant leaks.
(SM-xx13 / xx18 series)

SM series

High Speed.
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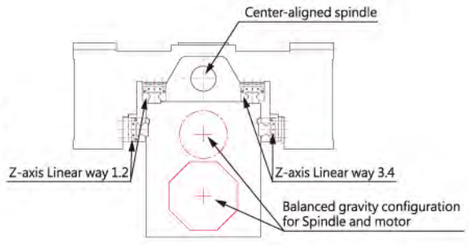
Symmetric Spindle System Design. Strong, Stable, Durable and Rigid.

- 4 linear roller guide ways with 8 sliding blocks: optimum Z-axis rigidity.
- Spindle centerline, the configuration of the Z-axis ballscrew, spindle gears and spindle motor in this box type structure create very little overhang ensuring that the cutting forces are kept as close to the ways as possible.
- Spindle Gears are made from Japan-made JIS-0 grade.
- 2-step gear transmission provides high torque and high speed characteristics to ensure heavy cutting and the ability of fine surface finishes.



Heavy Cutting Capacity

Face milling:
Tool dia.: 125mm
Cutting feed: 1,000mm
Cutting width: 100mm
Cutting depth: 5mm
Removal rate: 500cc/min

High feed milling:
Tool dia.: 40mm x 4
Cutting speed: 2,400rpm
Cutting feed : 10,000mm/min
Cutting depth: 1mm
Cutting width: 30mm
Removal rate: 300cc/min

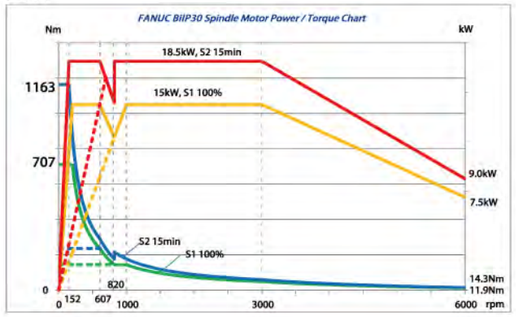
Indexable insert drilling:
Tool dia.: 32mm
Cutting speed: 1,500rpm
Cutting feed : 400mm/min
Removal rate: 320cc/min
Coolant through spindle

- **Spindle power=22/26 kW , Speed=6,000rpm, Material=S45C(mid carbon steel), Position=1/2x(Z axis travel)**

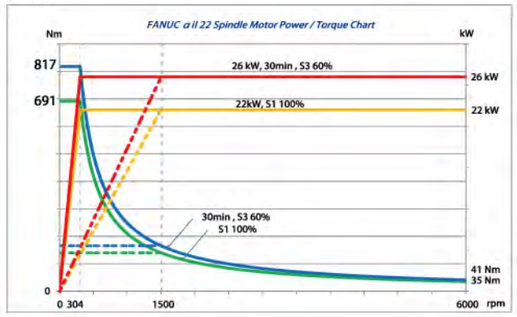
Spindle Power and Torque Charts (FANUC)

Pic. No.	Motor type	Spindle speed(rpm)	Drive type	Power(kW)	Torque(Nm)	Tool type	Note.
1	FANUC βiIP 30	6,000	2-step gear type	15/18.5	707/1,163	#50	●SM-xx13 STD. ●Only for SM-xx13 series
2	FANUC αi 22	6,000	2-step gear type	22/26	691/817	#50	●SM-xx18/22 STD.
3	FANUC βi 160LL	10,000	Built-in	L: 18.5/22/26 H: 26/30/45	L: 305/382/512 H: 99/115/153	#50	
4	FANUC αi 22 FANUC αiT 22	10,000	Direct driven	22/26	L: 140/166 H: 53/62	#50	●CTS. unavailable ●OPT.CTS. available
5	FANUC αi 26	10,000 15,000	Direct driven	L: 15/22 H: 26/30	L: 143/287 H: 140/191	#50 #40	
6	FANUC αiT 15	15,000	Direct driven	15/18.5	102/126	#40	

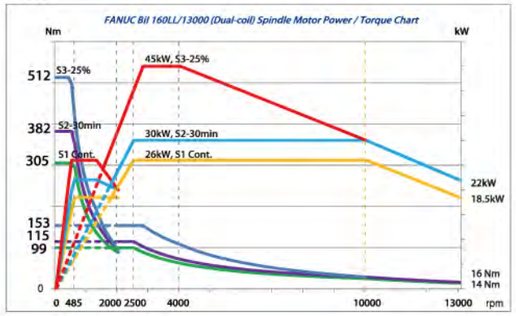
Pic.1



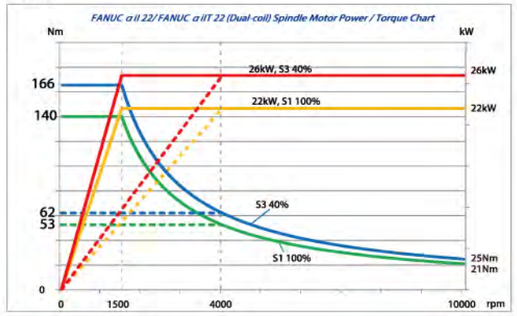
Pic.2



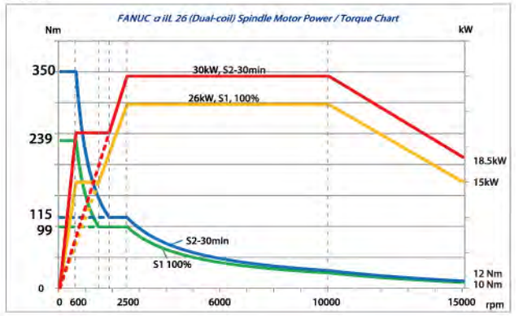
Pic.3



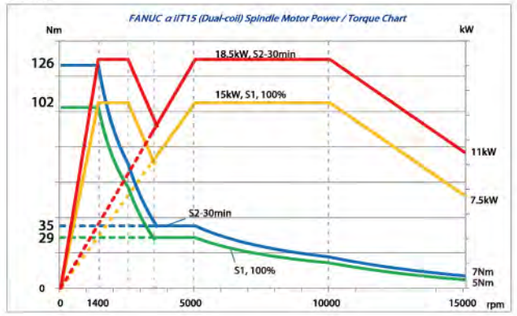
Pic.4



Pic.5



Pic.6



SM series

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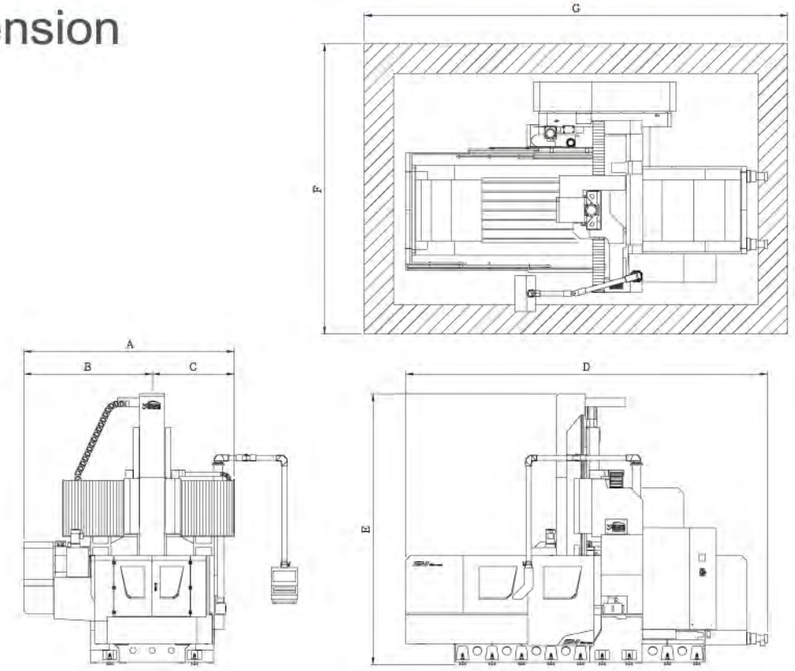
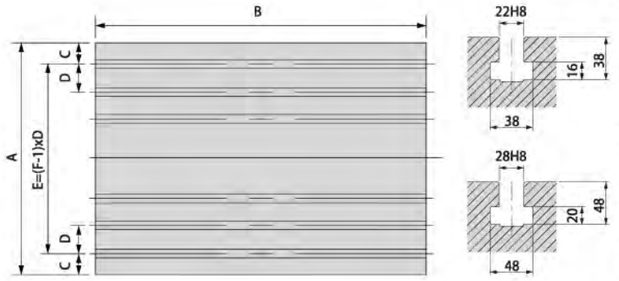
Machine Dimension



Unit:mm

Model	A	B	C	D	E	F	G
SM-1613	4,000	2,550	1,450	5,200	Z:800=4,300 Z:1,000=4,700	5,500	6,800
SM-2113				6,200			7,800
SM-2613				7,500			9,000
SM-1618	4,600	2,900	1,700	5,800		6,000	7,500
SM-2118				6,800			8,300
SM-2618				8,000			9,500
SM-3118				9,000			10,800
SM-2118Y	5,200	3,200	2,000	6,800		6,600	8,300
SM-2618Y				8,000			9,500
SM-3118Y				9,000			10,800
SM-2622	5,200	3,300	1,900	7,800		6,600	10,500
SM-3122				9,000			11,500
SM-4122				11,500			13,800
SM-5122				13,500			16,000
SM-2622Y	5,900	3,700	2,200	7,800		7,200	10,500
SM-3122Y				9,000			11,500
SM-4122Y				11,500			14,000
SM-5122Y				13,500			16,000
SM-2622E	5,900	3,700	2,200	7,800		7,200	10,500
SM-3122E				9,000			11,500
SM-4122E				11,500			14,000
SM-5122E				13,500			16,000

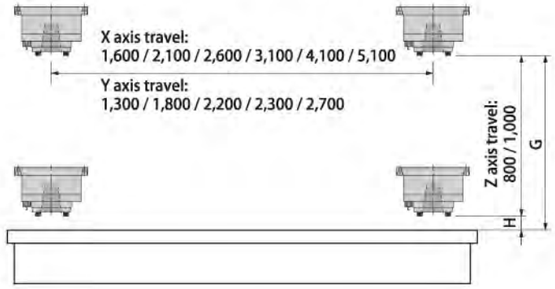
Dimension of Table & T-slot



Unit:mm

Model	T-slot	A	B	C	D	E	F
SM-1613	T22	1,100	1,800	70	160	960	7pcs
SM-2113	T22	1,100	2,300	70	160	960	7pcs
SM-2613	T22	1,100	2,800	70	160	960	7pcs
SM-1618	T22	1,600	1,800	160	160	1,280	9pcs
SM-2118(Y)	T22	1,600	2,300	160	160	1,280	9pcs
SM-2618(Y)	T22	1,600	2,800	160	160	1,280	9pcs
SM-3118(Y)	T22	1,600	3,300	160	160	1,280	9pcs
SM-2622(Y)/SM-2622E	T28	2,100	2,800	150	180	1,800	11pcs
SM-3122(Y)/SM-3122E	T28	2,100	3,300	150	180	1,800	11pcs
SM-4122(Y)/SM-4122E	T28	2,100	4,300	150	180	1,800	11pcs
SM-5122(Y)/SM-5122E	T28	2,100	5,300	150	180	1,800	11pcs

Working Range

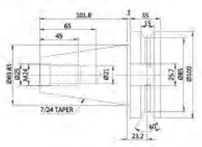


Unit:mm

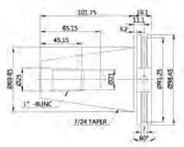
Z axis travel	Spindle	H	G
800	2-step gear 50#	200	1,000
	Built-in type 50#	160	960
	Direct-Driven 40#	215	1,015
	Direct-Driven 50#	200	1,000
1,000	2-step gear 50#	200	1,200
	Built-in type 50#	160	1,160
	Direct-Driven 40#	215	1,215
	Direct-Driven 50#	200	1,200

Tool Shank & Pull Stud

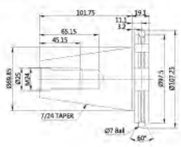
Tool shank
BT-50,MAS403



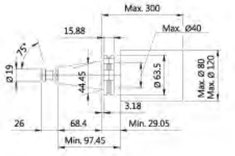
Tool shank
CAT-50,ANSI B5.50



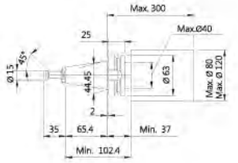
Tool shank
DIN-50,DIN 69871/ISO 7388/1



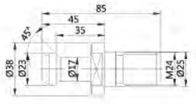
Tool shank
DIN-40



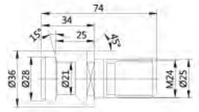
Tool shank
BT-40



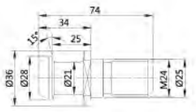
Pull stud bolt
MAS403 P50T-1



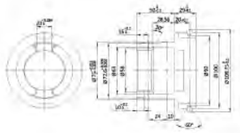
Pull stud bolt
DIN-50, DIN 69872



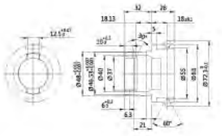
Pull stud bolt
DIN-50, ISO 7388/2/A



Tool shank
HSK-A100



Tool shank
HSK-A63



SM series

High Speed.
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Specification

Model			Unit	SM-1613	SM-2113	SM-2613	SM-1618	SM-2118(Y)	SM-2618(Y)	SM-3118(Y)	SM-2622(Y)	SM-3122(Y)	SM-4122(Y)	SM-5122(Y)	SM-2622E	SM-3122E	SM-4122E	SM-5122E
TRAVEL																		
X axis			mm	1,600	2,100	2,600	1,600	2,100	2,600	3,100	2,600	3,100	4,100	5,100	2,600	3,100	4,100	5,100
Y axis			mm	1,300			1,800	1,800 (2,300)			2,200 (2,700)				2,700			
Z axis			mm	800 / 1,000			800 / 1,000				800 / 1,000				800 / 1,000			
Distance from spindle nose to table	Gear type #50	Z=800	mm	200~1,000			200~1,000				200~1,000				200~1,000			
		Z=1,000	mm	200~1,200			200~1,200				200~1,200				200~1,200			
Distance from spindle center to column			mm	450			450				450				450			
Distance between columns (port width)			mm	1,400			1,840				2,400				2,800			
TABLE																		
Dimension			mm	1,800x1,100	2,300x1,100	2,800x1,100	1,800x1,600	2,300x1,600	2,800x1,600	3,300x1,600	2,800x2,100	3,300x2,100	4,300x2,100	5,300x2,100	2,800x2,100	3,300x2,100	4,300x2,100	5,300x2,100
T-slot (Width x Number x Pitch)			mm	22 x 7 x 160			22 x 9 x 160				28 x 11 x 180				28 x 11 x 180			
Max. table load			Kg	6,000	8,000	10,000	7,000	8,000	10,000	12,000	12,000	14,000	16,000	18,000	12,000	14,000	16,000	18,000
SPINDLE																		
Spindle motor power (cont. / 30 min.)			kW	15 / 18.5			22 / 26				22 / 26				22 / 26			
Spindle speed(2-step gear type)			rpm	6,000			6,000				6,000				6,000			
Spindle taper			-	BBT50			BBT50				BBT50				BBT50			
Spindle motor torque (cont. / 30 min.)			Nm	707 / 1,163			691 / 817				691 / 817				691 / 817			
FEED																		
Cutting feed rate			mm/min	1~15,000			1~15,000				1~15,000				1~15,000			
X / Y / Z Rapid traverse			m/min	20 / 20 / 15			20 / 20 / 15				20 / 20 / 15				20 / 20 / 15			
X / Y / Z axis motor power (FANUC)			kW	3 / 3 / 5.5			3 / 3 / 5.5			5.5/4.5/5.5	3/3/5.5	5.5 / 4.5 / 5.5			3/3/5.5	5.5 / 4.5 / 5.5		
ACCURY																		
Positioning(Refer to JIS-B6333)			mm	±0.006 / Full travel			±0.006/ Full travel	±0.006/Full travel(±0.010/Full travel)			±0.010 / Full travel				±0.010 / Full travel			
Positioning(Refer to VDI3441)			mm	P0.009			P0.009	P0.009(P0.012)			P0.012(P0.015)	P0.015			P 0.015			
Repeatability(Refer to JIS-B6333)			mm	±0.003			±0.002	±0.002(±0.003)			±0.003				±0.003			
Repeatability(Refer to VDI344)			mm	Ps0.005			Ps0.005	Ps0.005(Ps0.008)			Ps0.008(Ps0.012)	Ps0.012			Ps 0.012			
ATC																		
ATC acpaciry	Vertical type tool change		pcs	24 / 32 / 40			24 / 32 / 40				24 / 32 / 40				24 / 32 / 40			
Max. tool weight *1			kg	18*			18*				18*				18*			
Max. tool length			mm	400			400				400				400			
Max. tool size(full tools / next packet empty)			mm	Ø125 / Ø250			Ø125 / Ø250				Ø125 / Ø250				Ø125 / Ø250			
Pull stud			-	BBT50			BBT50				BBT50				BBT50			
OTHER																		
Power requirement			kVA	50			50				55				55			
Pneumatic requirement			kg/cm²	6			6				6				6			
Air pressure flow requirement			L/Min	900			900				900				900			
Machine net weight			kg	14,000	16,000	18,000	16,000	18,500 (19,000)	22,000 (22,500)	25,000 (25,500)	23,000 (23,500)	25,500 (26,000)	28,000 (28,500)	31,000 (31,500)	23,500	26,000	28,500	31,500
Machine gross weight			kg	17,000	18,500	21,000	19,500	22,500 (23,000)	25,500 (27,000)	29,500 (30,000)	28,000 (28,500)	32,000 (32,500)	35,000 (35,500)	39,000 (39,500)	28,500	32,500	36,000	40,000
Floor. space (LxWxH)*2			m	6.8x5.5x4.3	7.8x5.5x4.3	9.0x5.5x4.3	7.5x6.0x4.3	8.3x6.0x4.3 (8.3x6.6x4.3)	9.5x6.0x4.3 (9.5x6.6x4.3)	10.8x6.0x4.3 (10.8x6.6x4.3)	10.5x6.6x4.3 (10.5x7.2x4.3)	11.5x6.6x4.3 (11.5x7.2x4.3)	14x6.6x4.3 (14x7.2x4.3)	16x6.6x4.3 (16x7.2x4.3)	10.5x7.2x4.3	11.5x7.2x4.3	14x7.2x4.3	16x7.2x4.3

*1 Max. tool length(#40): 300 mm, Max. support torque: 0.8 kgf-m

*2 Max. tool length(#50): 400 mm, Max. support torque: 2.5 kgf-m

※ All specifications and designs are subject to change without notice.

Standard Accessory

1. FANUC 0i MF Plus controller
2. 6,000 rpm, 50# gear type spindle
3. Z axis travel 800mm
4. Spindle cooling system
5. 24 tools magazine
6. Centralized auto lubrication system
7. Independent lubrication oil collector
8. Air blast through spindle
9. Wash gun and pneumatic interface
10. Cutting fluid cooling system
11. Enclosed splash guard (without roof)
12. Screw type chip conveyor on table sides
13. Caterpillar type chip conveyor / Water tank
14. Heat exchanger for electrical cabinet
15. Swiveling arm type operation panel
16. Working lamp
17. Operation cycle finish and alarm light
18. Movable manual pulse generator
19. RJ45 interface
20. Footswitch for tool clamping
21. XYZ -axis absolute pulse coder feedback
22. Remote monitoring software-standard
    (Not available for SIEMENS contoller)
23. Auto power off
24. Spindle cutting load software protection
25. Vision Wide FX-100 graphical user interface
26. XYZ-axis travel hard limits protection
27. Foundation pads and bolts kits
28. Adjustment tool and tool kits
29. Technical manuals
    (Operation, maintenance manual and circuit diagram)

Optional Accessory & Function

1. FANUC 31 iB controller
2. SIEMENS / HEIDENHAIN controller
3. 10,000rpm, 50# built-in spindle
4. 10,000rpm, 50# direct-driven spindle
   15,000rpm, 40# direct-driven spindle
5. Z axis travel 1,000mm
6. SM-xx13 / SM-xx18(Y) series 200mm higher column
   SM-xx22(Y)(E) series 200/300/400/500mm higher column
7. Spindle ring cutting coolant device
8. Coolant through spindle system 20/70bar
9. Coolant through spindle system interface
10. Oil skimmer
11. Oil mist cooling device
12. 32T/40T tools magazine with arm type ATC
13. Enclosed splash guard (with roof)
14. Helical bladed screw conveyor on table sides
15. Chip cart
16. Air conditioner for electrical cabinet
17. Transformer
18. Interface preparation for fourth axis
19. Auto tool length measurement
20. Auto workpiece measurement
21. Spindle load hardware protection
22. Auto warm up
23. Anti-collision and process simulation software
24. XYZ-axis linear scale
25. Remote monitoring software- profession
    (Not available for SIEMENS controller)
26. Thermal compensation System
27. CE Certification
28. Z-axis retract function at power failure
29. Vision Wide FX-100 graphical user interface

Manual Head Attachments

● Over 20 different head attachment options, please contact sales for more details.