- Heavy-duty cutting performance.
- Excellent and stable accuracy.
- User-friendly ergonomic design.
- High precision and rigidity.
- Wider door open range.
- High efficiency.
- Fully enclosed splashguard.



SADDLE AND Z AXIS

 The enlarged saddle in 14000mm and with 6 blocks at Z axis reinforce cutting rigidity.



TRIPLE GUIDEWAYS FOR Y AXIS MOVEMENT

 2 roller type linear guideways are on the face of bridge, and the 3rd is loacted on the top to offer excellent holding of headstock.



STANDARD SPINDLE

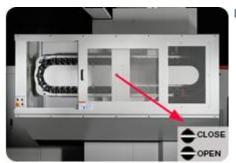
- Easy for after service.
- High accuracy.
- Cool jet around spindle.



BIG PRELOADED BALL SCREWS

- Double nut C3 class precision ball screws are used on all three axes.
- Direct drive from servo motor to ball screw.
- Ball screws diameter: X:63mm / Y: 40mm / Z: 50mm.
- Ripid traverse speed: X:30mm / Y: 30mm / Z: 16mm.
- Table size: 2200x1100 mm.
- Max. table loading: 3000 kgs.

• One-piece base with two slots for chip auger at both sides minimizes cleaning time.



MAGAZINE

 Loading and un-loading tools can be done during machining. Tool change or tool selection will not be executed while door open for safety consideration.



Rotary
 window can
 rid the liquid
 on the front
 door. It's the
 best solution
 for user who
 needs to
 monitor
 machining
 frequently.



COOLANT GUN



ELECTRICAL MODULARITY



 Perpendicular and swing design for user friendly.

SPECIFICATION

MODEL	V2000				
Travel					
X-Axis	2050 mm(80.7")				
Y-Axis	1150 mm(45.27")				
Z-Axis	700 mm(27.55")				
Spindle nose to table	200 - 900 mm(8.87-35.43")				
Table					
Table size	2200mm x 1000mm(86.61x39.97")				

Max. table loading capacity T-slot (no x Width x Pitch) Spindle center to column During double columns: 1200 mm (47.2")								
T-slot (no x Width x Pitch) 6 x 22mm x 160 mm (6 x 0.86" x 6.29") Spindle center to column During double columns: 1200 mm(47.2") Feed system Rapid traverse speed X/Y/Z: 30 / 30 / 16 M/min Feed motor(FANUC) X/: Ahpha 30-3000 Y/Z: Ahpha 22-3000 Ball screw diameter & X: 63mm/12mm(2.48/0.47") Y: 40mm/10mm(1.57/0.39") pitch Z: 50mm/10mm(2/0.39") Cutting feedrate 1-10,000 mm/min (0.04 - 393.7/Min") Direct Drive Spindle Type of transmission Direct Drive Direct Drive Spindle motor 15/18.5 kW 22/26 kW Type of transmissiop Direct Drive	Floor to table		830 m	m(32.67")				
Spindle center to column	_	3000 kgs (6600 Lbs)						
Feed system X/Y/Z: 30 / 30 / 16 M/min Rapid traverse speed X/Y/Z: 30 / 30 / 16 M/min Feed motor(FANUC) X/: Ahpha 30-3000i Y/Z: Ahpha 22-3000i Ball screw diameter & pitch X: 63mm/12mm(2.48/0.47") Y: 40mm/10mm(1.57/0.39") Cutting feedrate 1-10,000 mm/min (0.04 - 393.7/Min") Type of transmission Direct Drive Spindle Type of tool shank BT40/CAT40/DIN 69871A BT50/CAT50/DIN 69871A Max. spindle speed 10,000 / (Op) 12,000 / 15,000 rpm 10,000 rpm Spindle motor 15/18.5 kW 22/26 kW Type of transmissiop Direct Drive Direct Drive / ZFGear Box (Op) ATC Tool storage capacity 30 / (Op) 40 / 60T (Op) 90 / 120T 32 / (Op) 40 / 60T (Op) 90 / 120T ATC type Max. tool diameter 76 mm (2.99") 90 mm (3.54") 127 mm (5") 127 mm (5") Without adjacent tool 127 mm (5") 180 mm (7.08") 228 mm (8.97") 228 mm (8.97") Max. tool length 350 mm (13.77") (13.77") (15.74/15.74/13.77") 40	T-slot (no x Width x Pitch)	6	x 22mm x 160 m	m (6 x 0.86" x 6.29")			
Rapid traverse speed X/Y/Z: 30 / 30 / 16 M/min Feed motor(FANUC) X/: Ahpha 30-3000i Y/Z: Ahpha 22-3000i Ball screw diameter & pitch X: 63mm/12mm(2.48/0.47") Y: 40mm/10mm(1.57/0.39") pitch 2: 50mm/10mm(2/0.39") Cutting feedrate 1-10,000 mm/mir (0.04 - 393.7/Min") Cutting feedrate 1-10,000 mm/mir (0.04 - 393.7/Min") Type of transmission Direct Drive Spindle motor 15/18.5 kW 22/26 kW Type of transmissiop Direct Drive Direct Drive / ZFGear Box (Op) ATC Type of transmissiop Direct Drive Direct Drive / ZFGear Box (Op) ATC Type of transmissiop Direct Drive Direct Drive / ZFGear Box (Op) ATC Type of transmissiop Direct Drive Direct Drive / ZFGear Box (Op) ATC Type of transmissiop Direct Drive Direct Drive <td colsp<="" td=""><td>Spindle center to column</td><td>D</td><td>uring double colu</td><td>mns: 1200 mm(47.2")</td><td>)</td></td>	<td>Spindle center to column</td> <td>D</td> <td>uring double colu</td> <td>mns: 1200 mm(47.2")</td> <td>)</td>	Spindle center to column	D	uring double colu	mns: 1200 mm(47.2"))		
Seed motor(FANUC) X/: Ahpha 30-3000i Y/Z: Ahpha 22-3000i	Feed system							
Ball screw diameter & X: 63mm/12mm(2.48/0.47") Y: 40mm/10mm(1.57/0.39") Cutting feedrate 1-10,000 mm/min (0.04 - 393.7/Min") Type of transmission Direct Drive Spindle Type of tool shank BT40/CAT40/DIN 69871A BT50/CAT50/DIN 69871A Max. spindle speed 10,000 / (Op) 12,000 / 15,000 rpm 10,000 rpm Spindle motor 15/18.5 kW 22/26 kW Type of transmissiop Direct Drive Direct Drive Direct Drive / ZFGear Box (Op) ATC Tool storage capacity 30 / (Op) 40 / 601 (Op) 90 / 120T 32 / (Op) 40 / 60T (Op) 90 / 120T ATC type Max. tool diameter 76 mm (2.99") 90 mm (3.54") 127 mm (5") 127 mm (5") 127 mm (5") 228 mm (8.97") Max. tool length 350 mm (13.77") 350 mm (13.77") 400 mm (15.74") Max. tool weight 7 kg (15.43Lbs) 7 kg (15.43Lbs) 15 kg (33.06Lbs) 15 kg (33.06Lbs) Tool changing time (Tool to Tool) Tool Changing time (Chip to Chip) 2.5 sec 9.6 sec 6.8sec 11.57 sec Random selection Method of tool selection Tool display Yes Special tool management Yes Coolant system Coolant tank size 600 L Coolant capacity 105 L / min Chip Flush capacity Screw type	Rapid traverse speed	X/Y/Z: 30 / 30 / 16 M/min						
Ditch Ditch Ditch	Feed motor(FANUC)	X/: Ahpha 30-3000i Y/Z: Ahpha 22-3000i						
Spindle Type of tool shank BT40/CAT40/DIN 69871A BT50/CAT50/DIN 69871A Max. spindle speed 10,000 / (Op) 12,000 / 15,000 rpm 10,000 rpm Spindle motor 15/18.5 kW 22/26 kW Type of transmissiop Direct Drive Direct Drive / ZFGear Box (Op) ATC ATC Tool storage capacity 30 / (Op) 40 / 60T (Op) 90 / 120T 32 / (Op) 40 / 60T (Op) 90 / 120T ATC type Armless type Max. tool diameter 76 mm (2.99") 90 mm (3.54") 127 mm (5") 127 mm (5") Without adjacent tool 127 mm (5") 180 mm (7.08") 228 mm (8.97") 228 mm (8.97") Max. tool length 350 mm (13.77") 350 mm (13.77") 400/400/350 mm (15.74/15.74/13.77") 400 mm (15.74") Max. tool weight 7 kg (15.43Lbs) 7 kg (15.43Lbs) 15 kg (33.06Lbs) 15 kg (33.06Lbs) Tool changing time (Tool to Tool) 2.5 sec 1.6 sec 3.5 sec 3.57 sec Method of tool selection Random selection Method of tool selection Family discording t								
Spindle Type of tool shank BT40/CAT40/DIN 69871A BT50/CAT50/DIN 69871A Max. spindle speed 10,000 / (Op) 12,000 / 15,000 rpm 10,000 rpm Spindle motor 15/18.5 kW 22/26 kW Type of transmissiop Direct Drive Direct Drive / ZFGear Box (Op) ATC Tool storage capacity 30 / (Op) 40 / 60T (Op) 90 / 120T 32 / (Op) 40 / 60T (Op) 90 / 120T ATC type Armisstype Max. tool diameter 76 mm (2.99") 90 mm (3.54") 127 mm (5") 127 mm (5") Without adjacent tool 127 mm (5") 180 mm (7.08") 228 mm (8.97") 228 mm (8.97") Wax. tool length 350 mm (13.77") 350 mm (13.77") 15 kg (33.06Lbs) 15 kg (33.06L	Cutting feedrate	1-10,000 mm/min (0.04 - 393.7/Min")						
Type of tool shank Max. spindle speed 10,000 / (Op) 12,000 / 15,000 rpm 10,000 rpm 10,	Type of transmission	Direct Drive						
Max. spindle speed 10,000 / (Op) 12,000 / 15,000 rpm 10,000 rpm Spindle motor 15/18.5 kW 22/26 kW Type of transmissiop Direct Drive Direct Drive / ZFGear Box (Op) ATC Tool storage capacity 30 / (Op) 40 / 60T (Op) 90 / 120T 32 / (Op) 40 / 60T (Op) 90 / 120T ATC type Armuless type Max. tool diameter 76 mm (2.99") 90 mm (3.54") 127 mm (5") 127 mm (5") Without adjacent tool 127 mm (5") 180 mm (7.08") 228 mm (8.97") 228 mm (8.97") Max. tool length 350 mm (13.77") 350 mm (13.77") 400/400/350 mm (15.74/15.74/13.77") 400 mm (15.74") Max. tool weight 7 kg (15.43Lbs) 7 kg (15.43Lbs) 15 kg (33.06Lbs) 15 kg (33.06Lbs) Tool changing time (Tool to Tool) 2.5 sec 1.6 sec 3.5 sec 3.57 sec Random selection Method of tool selection bi-directional magazine rotation Tool display Yes Special tool management Yes Coolant	Spindle							
Spindle motor 15/18.5 kW 22/26 kW Type of transmissiop Direct Drive Direct Drive / ZFGear Box (Op) ATC Tool storage capacity 30 / (Op) 40 / 60T (Op) 90 / 120T 32 / (Op) 40 / 60T (Op) 90 / 120T (Op) 90 / 120T 32 / (Op) 40 / 60T (Op) 90 / 120T ATC type Armless type Max. tool diameter 76 mm (2.99") 90 mm (3.54") 127 mm (5") 127 mm (5") 228 mm (8.97") 228 mm (8.97") 228 mm (8.97") 228 mm (8.97") 400 mm (15.74") 400 mm (15.74") (15.74/15.74/13.77") 400 mm (15.74") (15.74/15.74/13.77") 400 mm (15.74") (15.74/15.74/13.77") 400 mm (15.74") (15.74) 57 sec Tool changing time (15.74) 5 sec 3.57 sec 3.57 sec Tool changing time (Chip to Chip) 5.5 sec 9.6 sec 6.8sec 11.57 sec Method of tool selection Tendom selection Method of tool selection Di-directional magazine rotation Tool display Yes Special tool management Yes Coolant system Coolant tank size 600 L Coolant capacity 105 L / min	Type of tool shank	BT40/CAT40/DIN 69871A		BT50/CAT50/DIN 69871A				
Type of transmissiop Direct Drive Direct Drive / ZFGear Box (Op) ATC Tool storage capacity 30 / (Op) 40 / 60T (Op) 90 / 120T 32 / (Op) 40 / 60T (Op) 90 / 120T ATC type Armless type Max. tool diameter 76 mm (2.99") 90 mm (3.54") 127 mm (5") 127 mm (5") 127 mm (5") 228 mm (8.97") 228 mm (8.97") 228 mm (8.97") 228 mm (8.97") 400 mm (15.74") 15 kg (33.06Lbs) 15 kg (33.0	Max. spindle speed	10,000 / (Op) 12,000 / 15,000 rpm		10,000 rpm				
ATC Tool storage capacity	Spindle motor	15/18.5 kW		22/26 kW				
Tool storage capacity 30 / (Op) 40 / 60T (Op) 90 / 120T 32 / (Op) 40 / 60T (Op) 90 / 120T ATC type ArmIess type Max. tool diameter 76 mm (2.99") 90 mm (3.54") 127 mm (5") 127 mm (5") Without adjacent tool 127 mm (5") 180 mm (7.08") 228 mm (8.97") 228 mm (8.97") Max. tool length 350 mm (13.77") 350 mm (13.77") 400 / 400 / 350 mm (15.74") 400 mm (15.74") Max. tool weight 7 kg (15.43Lbs) 7 kg (15.43Lbs) 15 kg (33.06Lbs) 15 kg (33.06Lbs) Tool changing time (Chip to Tool) 2.5 sec 1.6 sec 3.5 sec 3.57 sec Method of tool selection 5.5 sec 9.6 sec 6.8 sec 11.57 sec Method of tool selection bi-directional magazine rotation Tool display Yes Special tool management Yes Coolant system 600 L Coolant capacity 105 L / min Chip Flush capacity 50 L / min	Type of transmissiop	Direct Drive		Direct Drive / ZFGear Box (Op)				
ATC type Max. tool diameter 76 mm (2.99") 90 mm (3.54") 127 mm (5") 127 mm (5") Without adjacent tool 127 mm (5") 180 mm (7.08") 228 mm (8.97") 228 mm (8.97") Max. tool length 350 mm (13.77") 350 mm (15.74/15.74/13.77") 400 mm (15.74") Max. tool weight 7 kg (15.43Lbs) 7 kg (15.43Lbs) 15 kg (33.06Lbs) 15 kg (33.06Lbs) Tool changing time (700l to Tool) Tool changing time (Chip to Chip) Method of tool selection Method of tool selection Tool display Yes Special tool management Coolant system Coolant tank size Coolant capacity Chip Flush capacity Armless type 400 mm (15.74") 401 mm (15.74") 402 mm (15.74") 403 mm (15.74") 404 mm (15.74") 405 mm (15.74") 406 mm (15.74") 407 mm (5") 408 mm (8.97") 409 mm (15.74") 400 mm (15.74") 400 mm (15.74") 400 mm (15.74") 401 mm (15.74") 402 mm (15.74") 403 mm (15.74") 404 mm (15.74") 405 mm (15.74") 407 mm (5") 407 mm (5") 408 mm (8.97") 409 mm (15.74") 400 mm (15.74") 400 mm (15.74") 400 mm (15.74") 401 mm (15.74") 402 mm (15.74") 403 mm (15.74") 404 mm (15.74") 405 mm (15.74") 407 mm (5") 407 mm (5") 408 mm (10.5") 409 mm (15.74") 400 mm (АТС				,			
Max. tool diameter 76 mm (2.99") 90 mm (3.54") 127 mm (5") 127 mm (5") Without adjacent tool 127 mm (5") 180 mm (7.08") 228 mm (8.97") 228 mm (8.97") Max. tool length 350 mm (13.77") 350 mm (13.77") 400/400/350 mm (15.74") 400 mm (15.74") Max. tool weight 7 kg (15.43Lbs) 7 kg (15.43Lbs) 15 kg (33.06Lbs) 15 kg (33.06Lbs) Tool changing time (Chip to Tool) 2.5 sec 1.6 sec 3.5 sec 3.57 sec Random selection Method of tool selection Tool display Yes Special tool management Yes Coolant system Coolant tank size 600 L Coolant capacity 105 L / min Chip Flush capacity screw type	Tool storage capacity	30 / (Op) 40 / 60T	(Op) 90 / 120T	32 / (Op) 40 / 60T	(Op) 90 / 120T			
Without adjacent tool 127 mm (5") 180 mm (7.08") 228 mm (8.97") 228 mm (8.97") Max. tool length 350 mm (13.77") 350 mm (15.74") 400/400/350 mm (15.74") 400 mm (15.74") Max. tool weight 7 kg (15.43Lbs) 7 kg (15.43Lbs) 15 kg (33.06Lbs) 15 kg (33.06Lbs) Tool changing time (Chip to Tool) 2.5 sec 1.6 sec 3.5 sec 3.57 sec Method of tool selection 8.8 sec 11.57 sec 11.57 sec Method of tool selection 9.6 sec 6.8 sec 11.57 sec Special tool management Yes Yes Coolant system Coolant tank size 600 L Coolant capacity 105 L / min Chip Flush capacity screw type	ATC type		Arml	ess type				
Max. tool length 350 mm (13.77") 350 mm (13.77") 400/400/350 mm (15.74") 400 mm (15.74") Max. tool weight 7 kg (15.43Lbs) 7 kg (15.43Lbs) 15 kg (33.06Lbs) 15 kg (33.06Lbs) Tool changing time (Tool to Tool) 2.5 sec 1.6 sec 3.5 sec 3.57 sec Tool changing time (Chip to Chip) 5.5 sec 9.6 sec 6.8sec 11.57 sec Random selection Wethod of tool selection Tool display Yes Special tool management Yes Coolant system Coolant tank size 600 L Coolant capacity 105 L / min Chip Flush capacity screw type	Max. tool diameter	76 mm (2.99")	90 mm (3.54")	127 mm (5")	127 mm (5")			
Max. tool length 350 mm (13.77") (13.77") (15.74/15.74/13.77") 400 mm (15.74") Max. tool weight 7 kg (15.43Lbs) 7 kg (15.43Lbs) 15 kg (33.06Lbs) 15 kg (33.06Lbs) Tool changing time (Tool to Tool) 2.5 sec 1.6 sec 3.5 sec 3.57 sec Tool changing time (Chip to Chip) 5.5 sec 9.6 sec 6.8sec 11.57 sec Method of tool selection bi-directional magazine rotation Tool display Yes Special tool management Yes Coolant system 600 L Coolant capacity 105 L / min Chip Flush capacity screw type	Without adjacent tool	127 mm (5")	180 mm (7.08")	228 mm (8.97")	228 mm (8.97")			
Tool changing time (Tool to Tool) Tool changing time (Chip to Chip) Method of tool selection Tool display Special tool management Coolant system Coolant capacity Chip Flush capacity 2.5 sec 1.6 sec 3.5 sec 3.57 sec 3.57 sec 3.57 sec 3.57 sec 4.8 sec 11.57 sec	Max. tool length	350 mm (13.77")			400 mm (15.74")			
(Tool to Tool) Tool changing time (Chip to Chip) Method of tool selection Method of tool selection Tool display Special tool management Coolant system Coolant tank size Coolant capacity Chip Flush capacity 1.6 sec 3.5 sec 3.57 sec 3.57 sec 4.8 sec 6.8 sec 11.57 sec 11.57 sec 11.57 sec 6.8 sec 6.8 sec 11.57 sec	Max. tool weight	7 kg (15.43Lbs)	7 kg (15.43Lbs)	15 kg (33.06Lbs)	15 kg (33.06Lbs)			
(Chip to Chip) 5.5 sec 9.6 sec 6.8sec 11.57 sec Random selection bi-directional magazine rotation Yes Special tool management Yes Coolant system Coolant tank size 600 L Coolant capacity 105 L / min Chip Flush capacity screw type	Tool changing time (Tool to Tool)	2.5 sec	1.6 sec	3.5 sec	3.57 sec			
Method of tool selection bi-directional magazine rotation Yes Special tool management Yes Coolant system Coolant tank size Coolant capacity Chip Flush capacity bi-directional magazine rotation Yes Yes Yes 105 L / min Screw type		5.5 sec	9.6 sec	6.8sec	11.57 sec			
Tool display Yes Special tool management Yes Coolant system Coolant tank size Coolant capacity Chip Flush capacity bi-directional magazine rotation Yes 600 L 105 L / min screw type		Random selection						
Special tool management Coolant system Coolant tank size Coolant capacity Colant capacity Chip Flush capacity System Yes 600 L 105 L / min Screw type	Method of tool selection	bi-directional magazine rotation						
Coolant system Coolant tank size 600 L Coolant capacity 105 L / min Chip Flush capacity screw type	Tool display	Yes						
Coolant tank size 600 L Coolant capacity 105 L / min Chip Flush capacity screw type	Special tool management	Yes						
Coolant capacity 105 L / min Chip Flush capacity screw type	Coolant system							
Chip Flush capacity screw type	Coolant tank size	600 L						
	Coolant capacity	105 L / min						
Machine size	Chip Flush capacity		scre	ew type				
	Machine size							

Machine height	3481 mm (137")				
Floor space	5865x3474 mm	5865x3474 mm	5865x3474 mm	6865x3474 mm	
	(230.9x136.7")	(230.9x136.7")	(230.9x136.7")	(270.2x136.7")	
weight	19500 kgs	22942 kgs	22110 kgs	23600 kgs	
	(8845Lbs)	(10406Lbs)	(10029Lbs)	(10732Lbs)	
Power source					
Electrical power supply	60 KVA/3PH/220V 50/60HZ				
Compressed air supply	6.0 kgf/cm² (85psi) (0.6MPa)				
Controller					
	FANUC / HEIDENHAIN / SIEMENS				

Edition / A01

Standard accessories

- (#40) Arm type ATC (30tools)
- (#50) Arm type ATC (32tools)
- Spindle chiller
- Automatic lubrication system
- Sprial & flat type chip conveyor
- Heidenhain 3-Axis rotary table
- Portable electronic handwheel (FANUC)
- Working light
- Alarm light
- Fully enclosed splash guard
- Coolant gun (control by panel)
- 10,000 rpm spindle (Direct drive)
- Spindle coolant system
- Spindle temperature compensation (HEIDENHAIN)
- Preparation for "Spindle temperature compensation" (FANUC)

Optional accessories

- Arm type ATC 40/60 Tools
- (#40) 15,000 rpm spindle (Direct drive) / 20,000 rpm spindle (Built-in)
- (#50) 6,000 rpm spindle (ZF Gear Box)
- Bigger spindle motor
- Coolant through spindle system
- Spindle air blow
- 4th or 4+5th axis rotary table
- Working piece measurement system
- Tool length measurement system
- Heat exchanger on electrical cabinet
- Vacumn dust collector
- Power transformer
- CE (Safety door interlock)
- Air gun
- Rotary Window
- Rapper fillter system
- Mist collection system
- Spindle temperature compensation (FANUC)

^{*} Specifications may different according to option accessories and are subject to change without notice.