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Roller Guide System

V2000

VERTICAL
MACHINING
CENTER

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LONG CHANG MACHINERY CO., LTD.

NEW DOUBLE COLUMN

VERTICAL MACHINING CENTER

- 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.



HIGH
RIGIDITY
CONSTRUCTION

- MEEHANITE cast iron for all major machine parts.
- Double column design provides stable conditions while heavy-duty cutting.
- Enlarged saddle and rigid head structure.
- 3-Axes high precision linear guideways.
- All ball screws are preload for excellent accuracy.
- Twin screw chip conveyors by table; flat chip conveyor aside.
- Efficient and stable tool change.

MAIN STRUCTURE



SADDLE AND Z AXIS

The enlarged saddle in 1400mm and with 6 blocks at Z axis to reinforce cutting rigidity.



TRIPLE GUIDEWAYS FOR
Y AXIS MOVEMENT

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



- 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
- Rapid traverse speed:
X:30 M/min / Y:30 M/min / Z:16 M/min



HEAVY DUTY LINEAR GUIDE WAYS

- Linear guide ways are 55mm roller bearing type.
- Blocks with automatic central lubrication system.



BIG PRELOADED BALL SCREWS



- Table size: 2,200x1,000 mm.
- Max. table loading: 3,000 kgs.
- One-piece base with two slots for chip auger at both sides minimizes cleaning time.

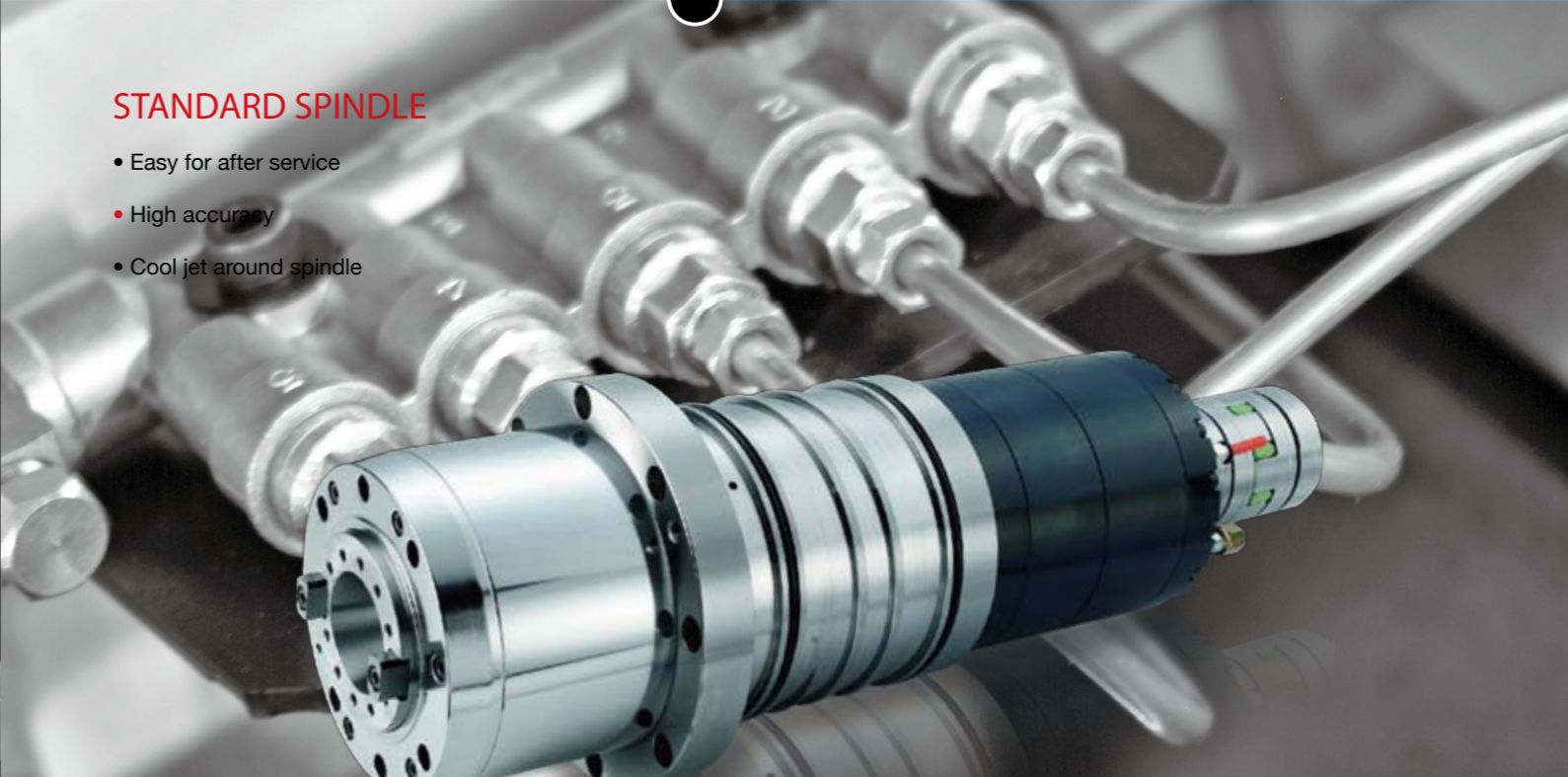


SPINDLE CHILLER

Spindle cooling system dissipates running induced heat generation in order to maintain accuracy and prolong life.

STANDARD SPINDLE

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





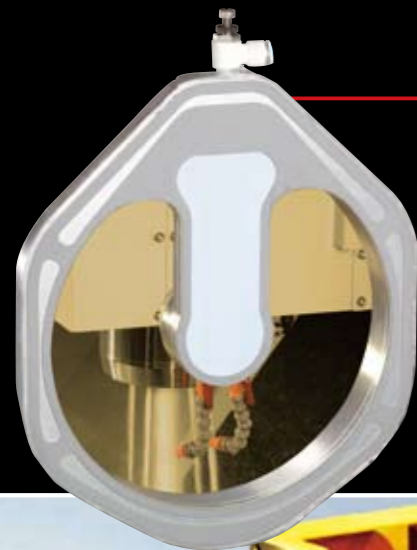
MAGAZINE

- 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.



ELECTRICAL MODULARITY

- Perpendicular and swing design for user friendly.

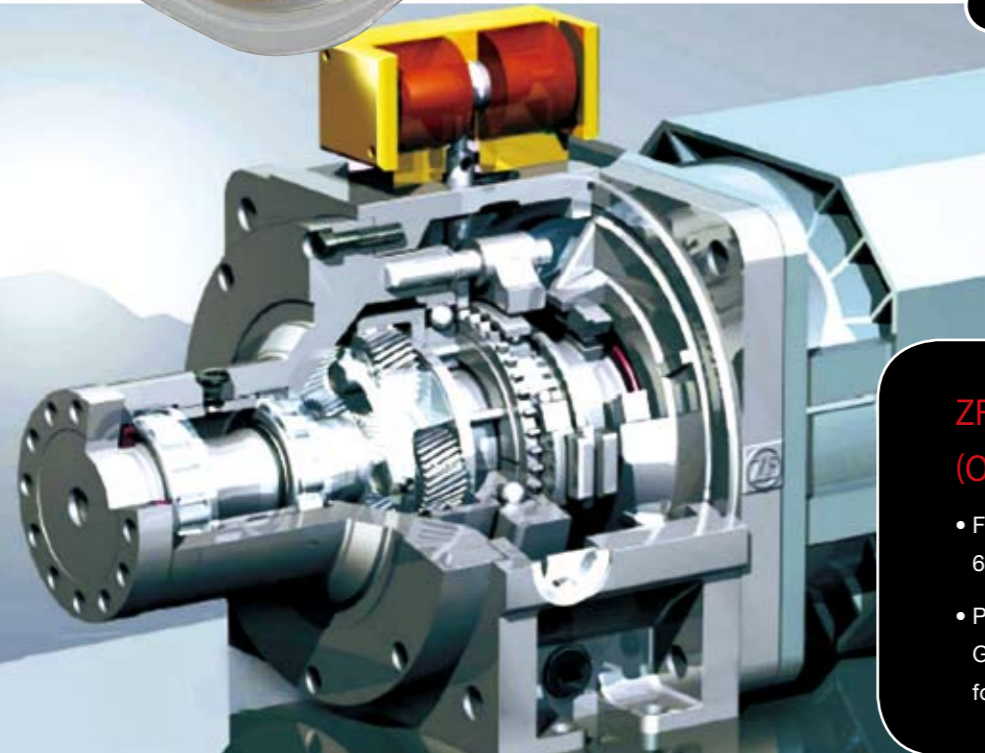


ROTARY WINDOW (OPTION)

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



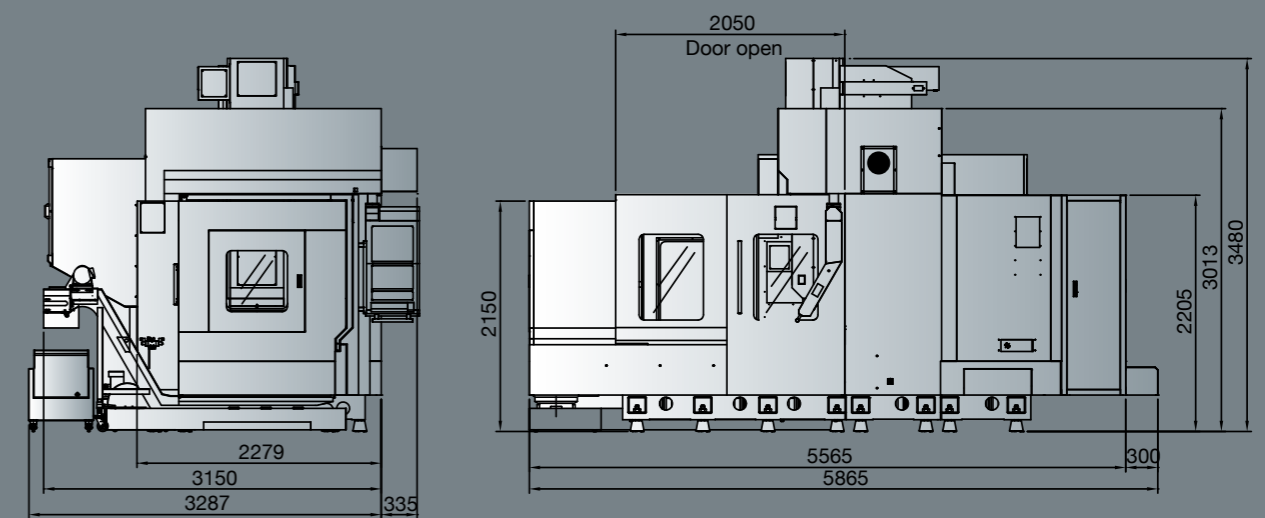
COOLANT GUN



ZF GEAR BOX (OPTION)

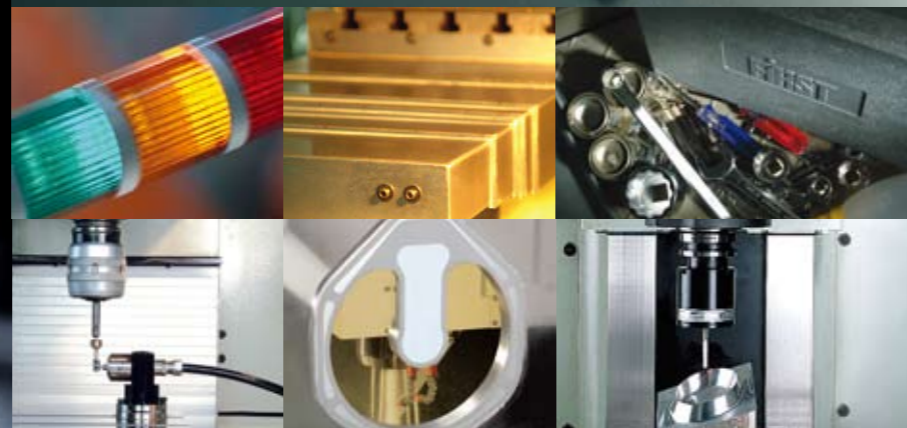
- For ISO 50 direct drive 6000rpm.
- Precision and powerful German ZF brand gear box for heavy cutting solution.

MACHINE DIMENSION



STANDARD ACCESSORIES

- #40 30 tools Arm type ATC
- #50 32 tools Arm type ATC
- Fully enclosed splash guard
- Spindle chiller
- Coolant system
- Coolant tank & chip collector
- Automatic lubrication system
- Telescopic covers
- Spiral & flat type chip conveyor
- High precision linear scale
- Portable electronic handwheel (FANUC)
- Working light
- Alarm light
- Tool box
- Operator's manual and parts list
- Leveling bolts, pads and nuts



OPTIONAL ACCESSORIES

- Arm type ATC 40/60/90/120 tools
- #40 High-speed Spindle 12,000 / 15,000 rpm
- #50 Spindle 6,000 rpm (Gear Box)
- Bigger spindle motor
- Coolant through spindle system
- Air blow system for dry cutting
- 4th or 4+5th axis rotary table
- Working piece measurement system
- Tool length measurement system
- Heat exchanger on electrical cabinet
- Vacuum dust collector
- Power transformer
- CE (Safety door interlock)
- Rotary Window



Machine Specification	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 (7.87 ~ 35.43")			
Table				
Table size	2200 mm x 1000 mm (86.61 x 39.37")			
Floor to table	830 mm (32.67")			
Max. table loading capacity	3,000 kgs (6600 Lbs)			
T-slot (number x width x pitch)	6 x 22mm x 160mm (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 / : Alpha 30-3000i Y / Z : Alpha 22-3000i			
Ball screw diameter & pitch	X : 63 mm / 12 mm (2.48/0.47") Y : 40 mm / 10 mm (1.57/0.39") Z : 50 mm / 10 mm (2/0.39")			
Cutting feed rate	1 ~ 10,000 mm/min(0.04 ~ 393.7"/min)			
Type of transmission	Direct Drive			
Spindle				
Type of tool shank	BT 40 / CAT 40 / DIN 69871A		BT 50 / CAT 50 / DIN 69871A	
Max. spindle speed	10000 / (Op)12000 / 15000 rpm		10000 rpm	
Spindle motor	15/18.5KW		22/26KW	
Type of transmission	Direct Drive		Direct Drive/ ZFGear Box (Op)	
ATC				
Tool storage capacity	30 / (Op)40 / 60 T	(Op)90 / 120 T	32 / (Op)40 / 60 T	(Op) 90 / 120 T
ATC type	Arm 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 (15.43 Lbs)	7 kg (15.43 Lbs)	15 kg (33.06 Lbs)	15 kg (33.06 Lbs)
Tool changing time (Tool to Tool)	2.5 sec	1.6 sec	3.8 sec	3.57 sec
Tool changing time (Chip to Chip)	5.5 sec	9.6 sec	6.8 sec	11.57 sec
Method of tool selection	Random selection bi-directional magazine rotation			
Tool display	Yes			
Special tool management	Yes			
Coolant system				
Coolant tank size	600 L			
Coolant capacity	105 L / min			
Chip Flush capacity	screw type			
Machine size				
Machine height	3481 mm (137")			
Floor space	5865 x 3474 mm (230.9" x 136.7')	5865 x 3474 mm (230.9" x 136.7')	5865 x 3474 mm (230.9" x 136.7')	6865 x 3474 mm (270.2" x 136.7')
weight	19500 kgs(8845 Lbs)	22942 kgs(10406 Lbs)	22110 kgs(10029 Lbs)	23660 kgs(10732 Lbs)
Power source				
Electrical power supply	60 KVA / 3PH + 220V 50/60HZ			
Compressed air supply	6.0 kgf/cm ² (85psi) (0.6MPa)			
Controller				
FANUC / HEIDENHAIN / SIEMENS				

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

Edition/ A00