Eumach

Always A Step Ahead

UMC-1600

EMC / CE / ISO CERTIFIED

5 AXES

A PROFESSIONAL CNC MACHINES MANUFACTURER

THE MOST EFFICIENT & INTELLIGENT MACH
PERFORMANCE MACHINING, INCREASE PRO

UMC-1600 5 AXES SIMULTANEOUS MILLING CENTER:

- Latest innovation of combination of both bridge type machine and traveling column type machine design advantage

- large 1620mm x 1260mm x 1050mm three linear axis travel

- ϕ1320mm CNC continuous torque rotary table with 4000kg load

- 0.001° swivel milling head with torque motor driven

- Standard 3 axis linear scales & 2 axis absolute rotary encoder

- Powerful motor spindle HSK-A100 / 29.6KW&54.2KW / 128Nm&320Nm / 8000RPM with ϕ100mm ceramic bearings

- Patented X axis 4 slide ways design (M417981) with maximum rigidity to ensure heavy cutting

INING CONCEPT FOR MULTI-SIDED HIGH DUCTIVITY, FLEXIBILITY AND REPEATABILITY

Sliding front & side doors with a super wide top opening, this make very easily for straight forward loading awkard shaped workpiece.

NEXT GENERATION

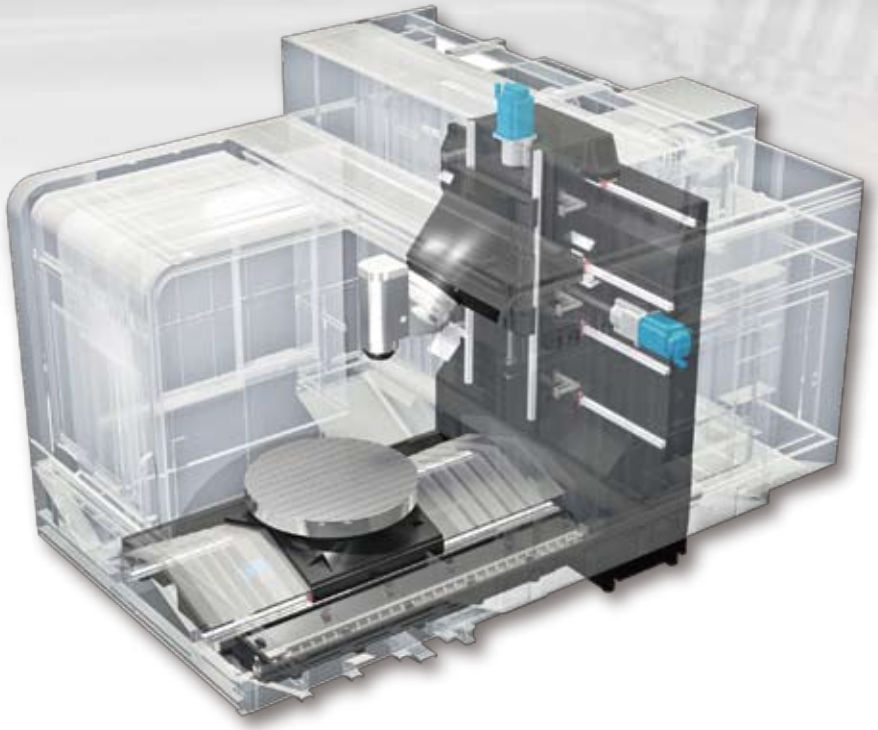
BALL SCREWS

- The high precise & rigid Φ55/55/63mm diameter ballscrews on 3 axes, driven by powerful AC servo motors, directly coupled by couplings provides the utmost results in high speed cutting for the very fine accuracy and finishing.

ROLLER GUIDEWAYS

- The high rigid & heavy duty 55mm roller type linear motion guideways on 3 axes to provide low starting inertia, low friction and high acceleration, rates optimizing servo drive and ensure machine response immediately & precisely for high speed cutting requirements, especially in rapid positioning and contouring cutting.

TECHNOLOGY DESIGN

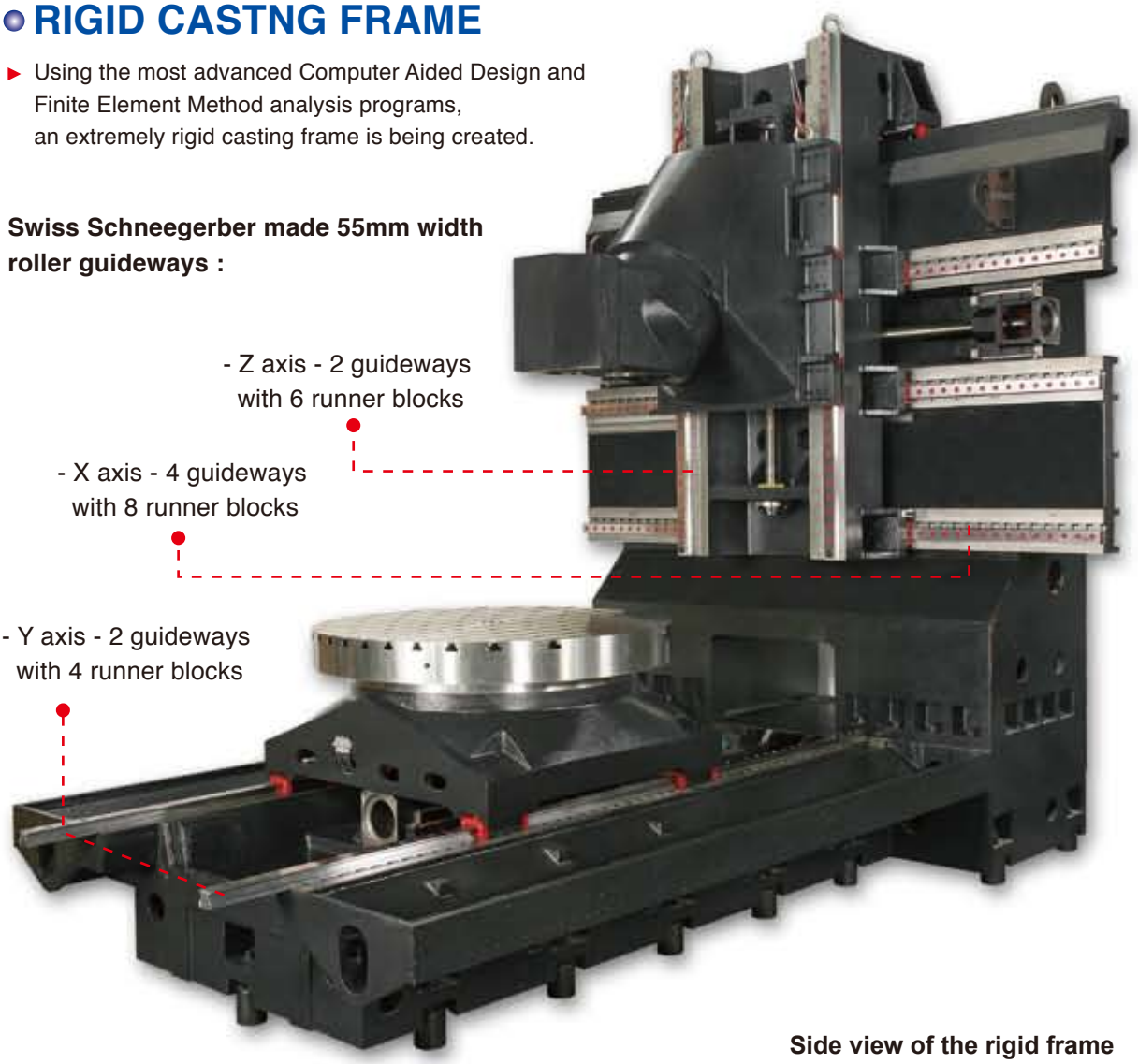


RIGID CASTNG FRAME

- Using the most advanced Computer Aided Design and Finite Element Method analysis programs, an extremely rigid casting frame is being created.

Swiss Schneegerber made 55mm width roller guideways :

- Z axis - 2 guideways with 6 runner blocks
- X axis - 4 guideways with 8 runner blocks
- Y axis - 2 guideways with 4 runner blocks



Side view of the rigid frame

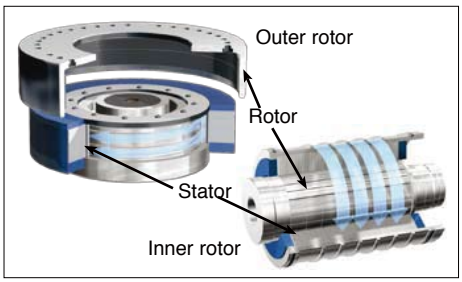
B AXIS INNOVATIVE SWIVEL MILLING HEAD

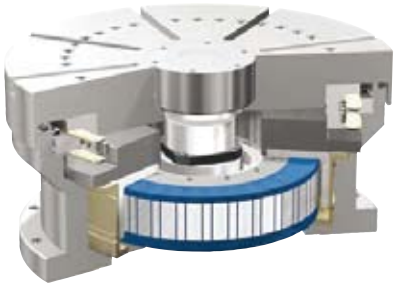
► The latest technology torque motor manages the B axis continuous swivel milling head , it guarantees maximum movement dynamic and linearity and thanks to the absence of those traditional mechanical kinematics parts, it results a much higher performance on finishing surface. The direct reading system by a high precision angular encoder is being integrated for maximum precision.

► Offers an extra flexibility; the fully automatic 0.001° indexing from vertical to horizontal positions by means of torque motor, this gives operator an extra flexibility: multi-sided machining without re-setting the workpiece; manufacture of complex components with a single set-up; 5 sided machining without additional fixture.

C AXIS DURABLE CNC TORQUE TABLE

► The latest technology torque motor drive rotary table manages the C axis continuously, it provides the maximum dynamics and extremely short time & highest accuracy for table positioning (+-5" absolute encoder included as standard), zero backlash and high performance due to no gearing, also very high and very low uniform rotational speeds (30 RPM for milling and 300RPM for mill-turn).

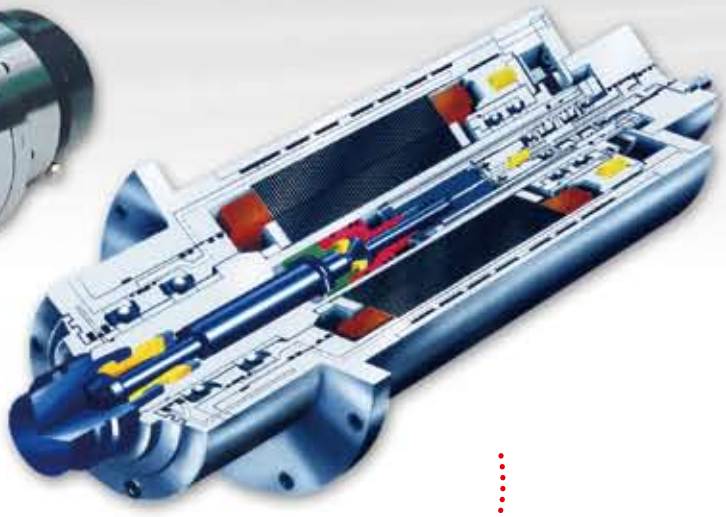




	Milling table	Milling turning table
Dimension	ϕ1320mm	ϕ1320mm
Rotation speed	30 RPM	300 RPM
Transmission	Torque motor	
Rated / maximum torque	1700 / 3940 Nm	2583 / 4540 Nm
Brake torque	10000Nm	
Maximum loading	4000kg	Milling-4000kg, turning-1500kg

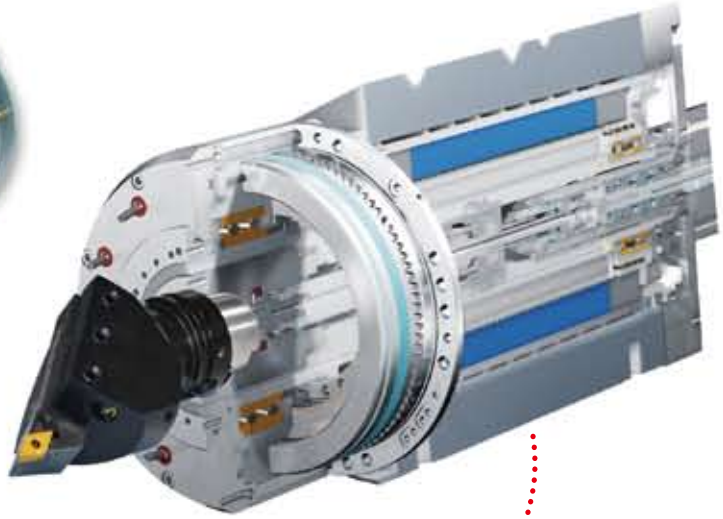
POWERFUL MOTOR SPINDLES

N320 standard



C42-238 optional
C50-238 optional

P320 optional

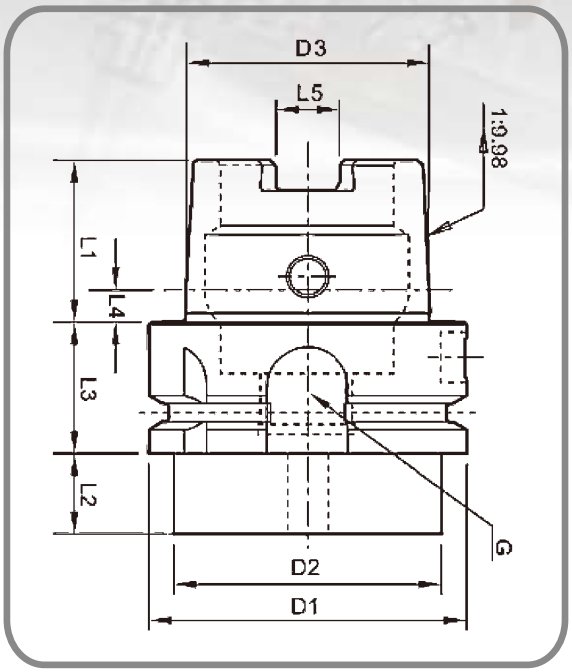


MILL TURN

Applications	Milling				Mill turn
Model	N320	P320	C42-238	C50-238	C42-238T
Max. speed RPM	8000	8000	7000	15000	8000
Power S1/S6 KW	29.6/54.2	36/45	42/52	50/63	42 / 53
TorqueS1/S6 Nm	128/ 320	349/428	400/525	248/315	392 / 506
Taper	standard HSK-A100 / optional #50				HSK-T100
Front bearing ϕ	100mm	110mm	100mm		
In Use	standard	optional			
Country made	Taiwan	Italy	Germany		

AUTOMATIC TOOL CHANGER

HSK-A100 tool holder



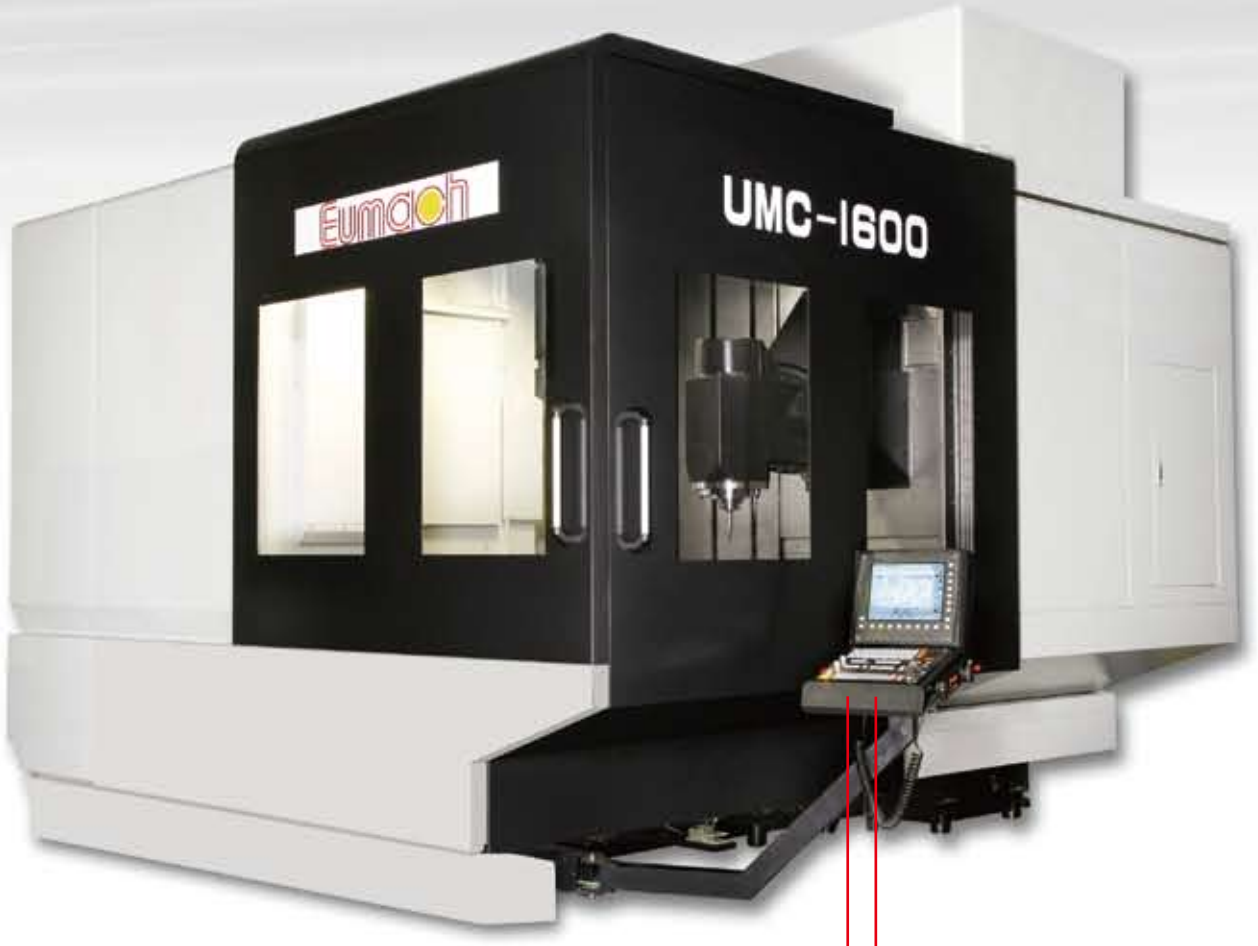
Length	D1	D2	D3	L1	L2	L3	L4	L5	G
HSK-A100	100	88	75.013	50	16	29	10	20.02	M24x1.5

Standard 60 stations automatic tool changer with maximum 150mm diameter / 350mm length / 20 KG tool.

Tools exchange automatically when spindle at horizontal position.

Tools can be inserted at side door where a small control panel for easy tool selection.

DIGITAL CNC CONTROLS



Heidenhain iTNC-530 HSCI or 640 newest control :

1. MC 7522 1.8GHz more powerful CPU than before
2. 32G SSDR storage media resistance to vibration
3. New HEROS 5 operating interface with PDF viewer
4. TE 630 key board & MB 720 panel & 15" XGA screen

Siemens 840Di Solution Line newest control :

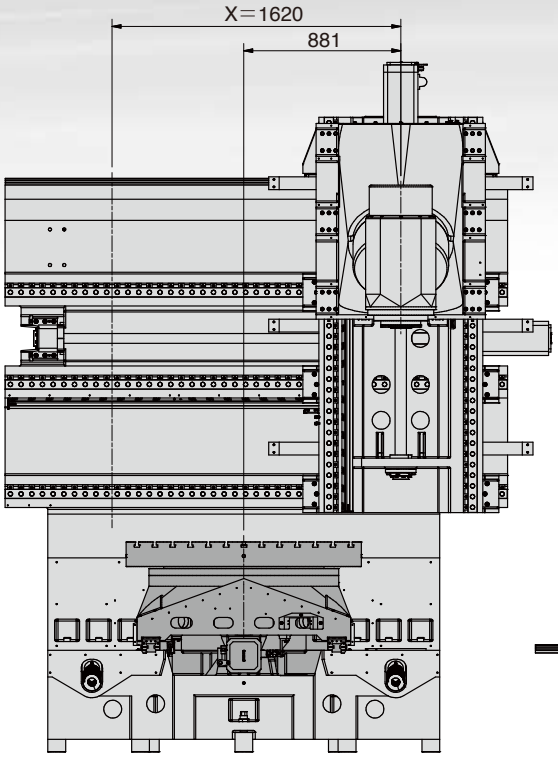
1. NCU 730.2 with PLC 317 - 2DP + 40GB HD
2. PCU 50.3 1.5Ghz , 512Mb, WinXP/Pro interface
3. Shopmill + 3D simulation 1 & HMI Advanced
4. MCP483C panel + OP 015A 15" TFT screen

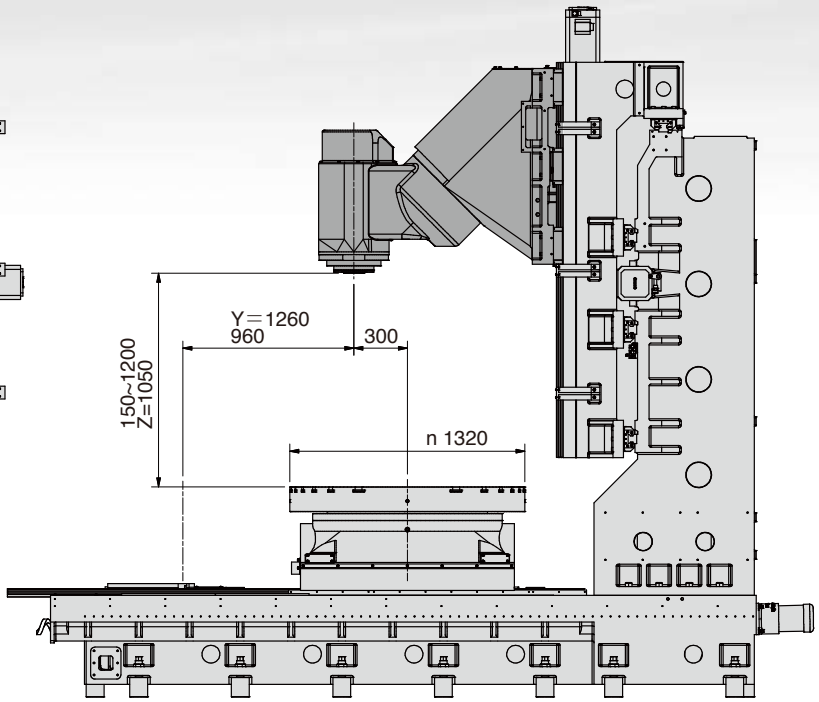
FULL SPLASH GUARDING

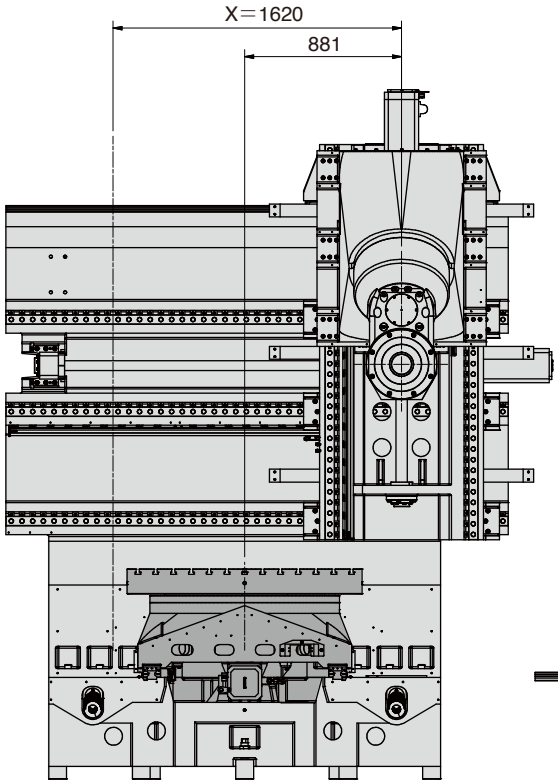
Totally covered full splash guard.

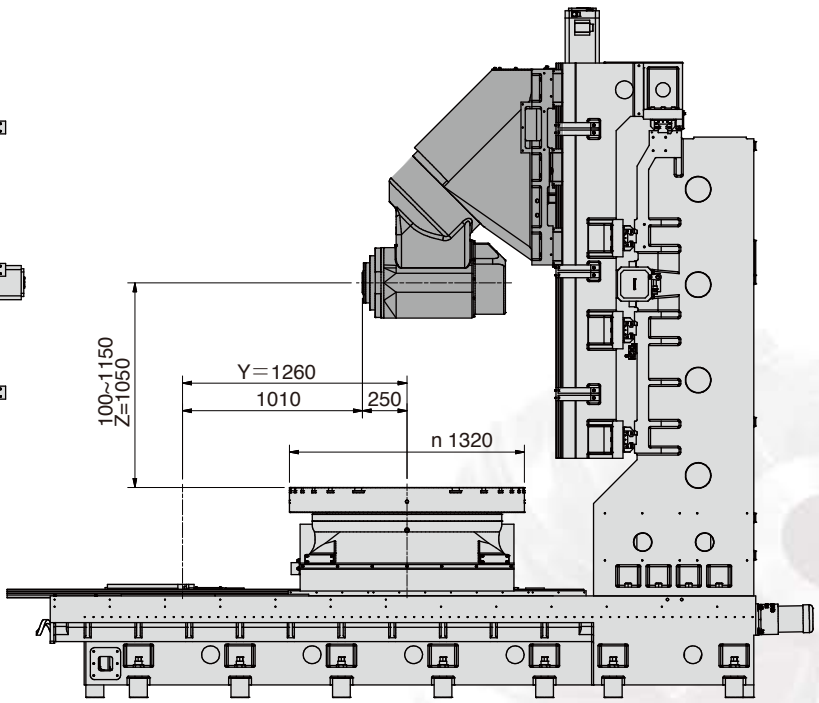
**ATC, hydraulics, pneumatics,
lubrication and spindle cooler etc. all well
protected and covered around machine, easy maintenance and service.**

WORKING CAPACITY



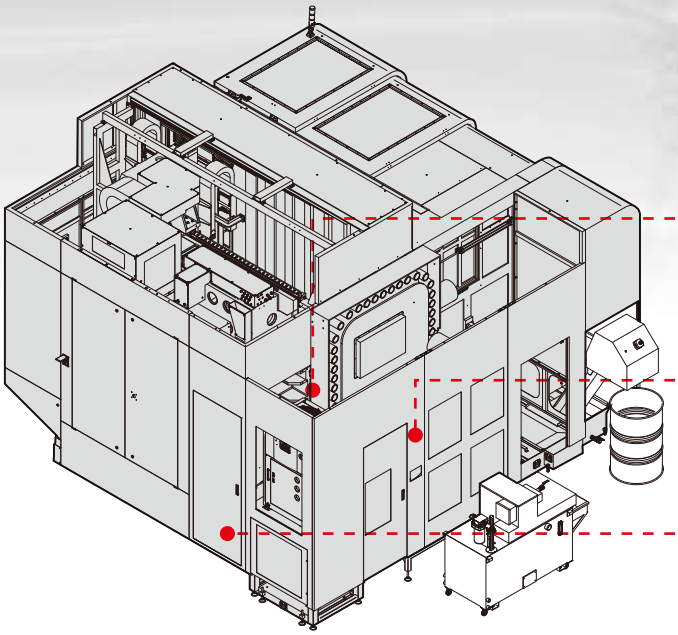






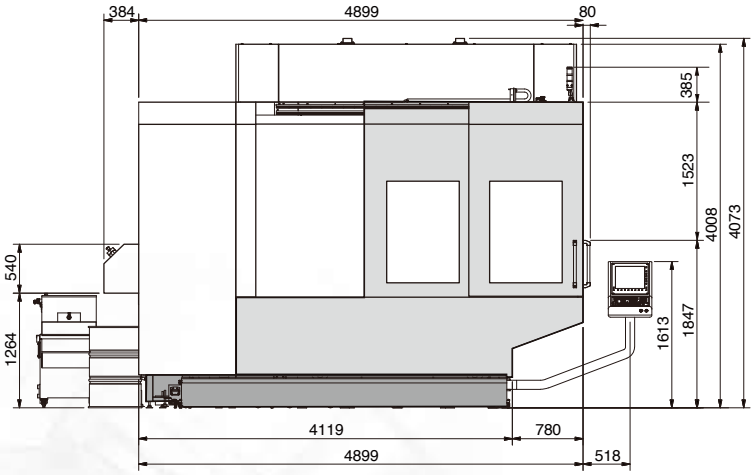
Note : Above distance is with standard spindle and will be different if using optional spindles !

MACHINE DIMENSION

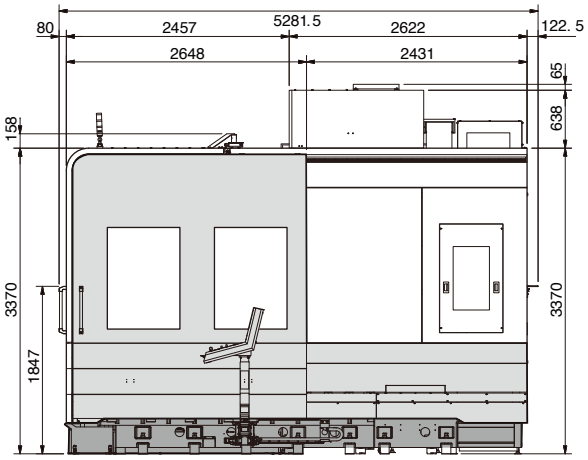


- hydraulics, spindle water cooler all in machine back for easy maintenance with safety door
- manual tool loading from automatic tool changer magazine side door with transparent window
- centrally arranged for all solenoids, pneumatics and lubrication device in one area

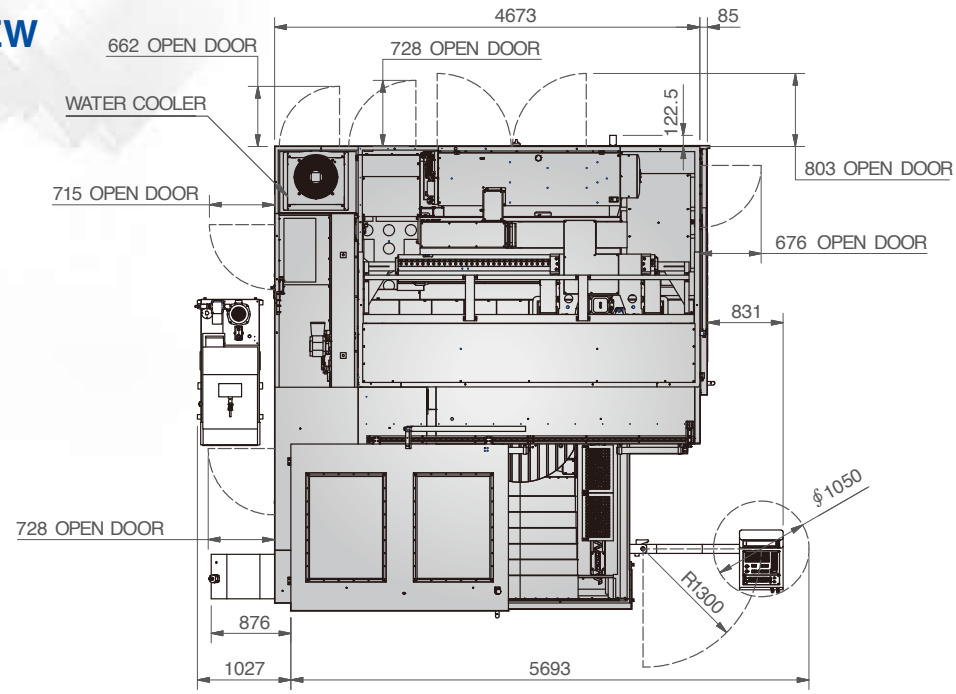
1. FRONT VIEW



2. SIDE VIEW



3. TOP VIEW

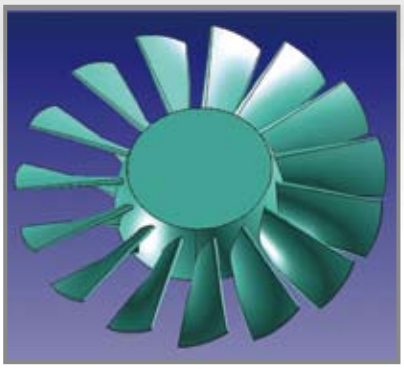


Note : Above dimension is standard and will be different if with different options !

APPLICATIONS - MILLING

► The milling center can be used not only the typical various turbo impeller industries but also servicing aerospace aviation, automotive and mould industries etc.

1. TURBINE DISK



2. BLISK

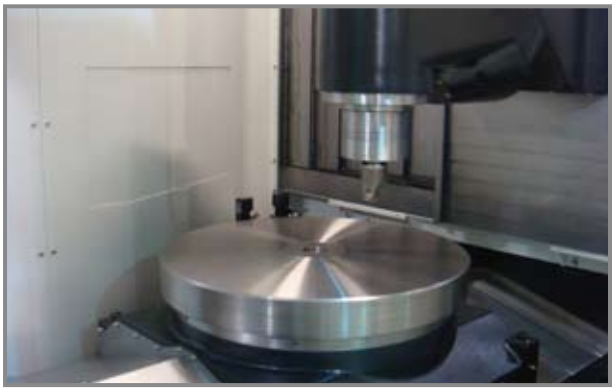
3. GEAR CUTTING

4. TIRE MOULD

5. TURBO IMPELLERS

6. MOULD

MILLING & TURNING



MACHINE SPECIFICATIONS

Model	Specifications	UMC-1600 mill	UMTC-1600 mill turn
Travel	X axis	1620mm	
	Y axis	1260mm	
	Z axis	1050mm	
Swivel head (B axis)	Vertical to horizontal	3 seconds	
	Transmission	DD torque motor	
	Rotary angle	0°~180°	
	Continuous / peak torque	1640 / 2120 Nm	1824 / 3548 Nm
Rotary table (C axis) (see page 6)	Table dimension	ϕ1320mm	
	Table to floor	1085mm	1110mm
	Maximum loading	4000KG	Mill/turn-4000/1500kg
	Maximum rotation	30 RPM	300 RPM
	Transmission	DD torque motor	
	Indexing increment	0.001°	
	T slots	13×18H×P100	
	Continuous / peak torque	1700 / 3940 Nm	2583 / 4540 Nm
Motor spindle (see page 6)	Maximum spindle speed	8,000 RPM	
	Spindle power S1/S6	29.6/ 54.2 KW	42 / 53 KW
	Spindle torque S1/S6	128 / 320 Nm	392 / 506 Nm
	Spindle taper	#50 / HSK-A100	HSK-T100
	Front bearing diameter	100mm	
Ball screws	X/Y/Z Diameter x pitch	ϕ55 / 55 / 63mm x 16 / 12 / 12mm	
X/Y/Z axis Roller guide	Number x width	4 / 2 / 2 ways x 55mm	
	Runner blocks number	8 / 4 / 6	
	Rapid feed X/Y/Z	24 / 24 / 24 m/min	
A T C	Tool holder type	HSK-A100	HSK-T100
	Tools number	60 pieces	
	Maximum tool dia./length/weight	ϕ150mm / 350mm / 20kgs	
	Tools exchanging position	horizontal	
Weight	Before packing	32000KG	33000KG

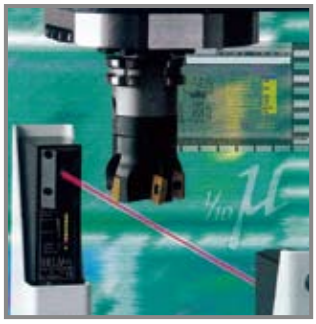
Note : above based on standard spindles.

STANDARD FEATURES & ACCESSORIES

1. FULL SPLASH GUARD WITH TOP ROOF
2. PROGRAMMABLE COOLANT SYSTEM
3. AUTOMATIC LUBRICATION SYSTEM
4. SPINDLE AIR BLAST SYSTEM
5. WORK ALARM, INDICATON LAMPS
6. SPINDLE WATER COOLER
7. LEVELLING BOLTS & PADS
8. RS-232 TERMINAL INTERFACE PORT
9. MACHINE & CONTROL MANUALS
10. TOOLBOX WITH SPANNERS & WRENCHES
11. CHAIN TYPE CHIP CONVEYORS + 2 SCRCW CHIP AUGERS
12. **3 AXIS LINEAR SCALES + 2 AXIS ROTARY ENCODERS**

OPTIONAL ACCESSORIES :

TOOL PROBE



TOOL LASER MEASUREMENT

WORK PLECE PROBE

COOLANT THUR SPINDLE DEVICE

EUMACH FAMILIES

- **VMC-2150**
  Vertical machine center
  400MM ~ 3200MM X axis travel

- **TVMC-2000 / 3000**
  Moving column machine center
  2320MM & 3320MM X axis travel

- **LBM-1500**
  High speed bridge type machine center
  1100MM ~ 2200MM X axis travel

- **MH-500**
  Horizontal machine center
  720MM x 650MM x 650MM travel

- **EBM-2150**
  5 Face machine center
  1400MM ~ 3200MM X axis travel

- **MB-1500**
  Moving column horizontal machine center
  1100MM ~ 2200MM X axis travel

- **DVM-4025**
  5 Face & double column machine center

- **FBE-1500**
  Universal milling machine
  1500MM ~ 4000MM X axis travel

- **FBM-10040**
  Floor type milling center
  4M~20M X axis travel

FMS-A5070202 886-4-2235-2288

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★Specifications subject to change without notice.
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