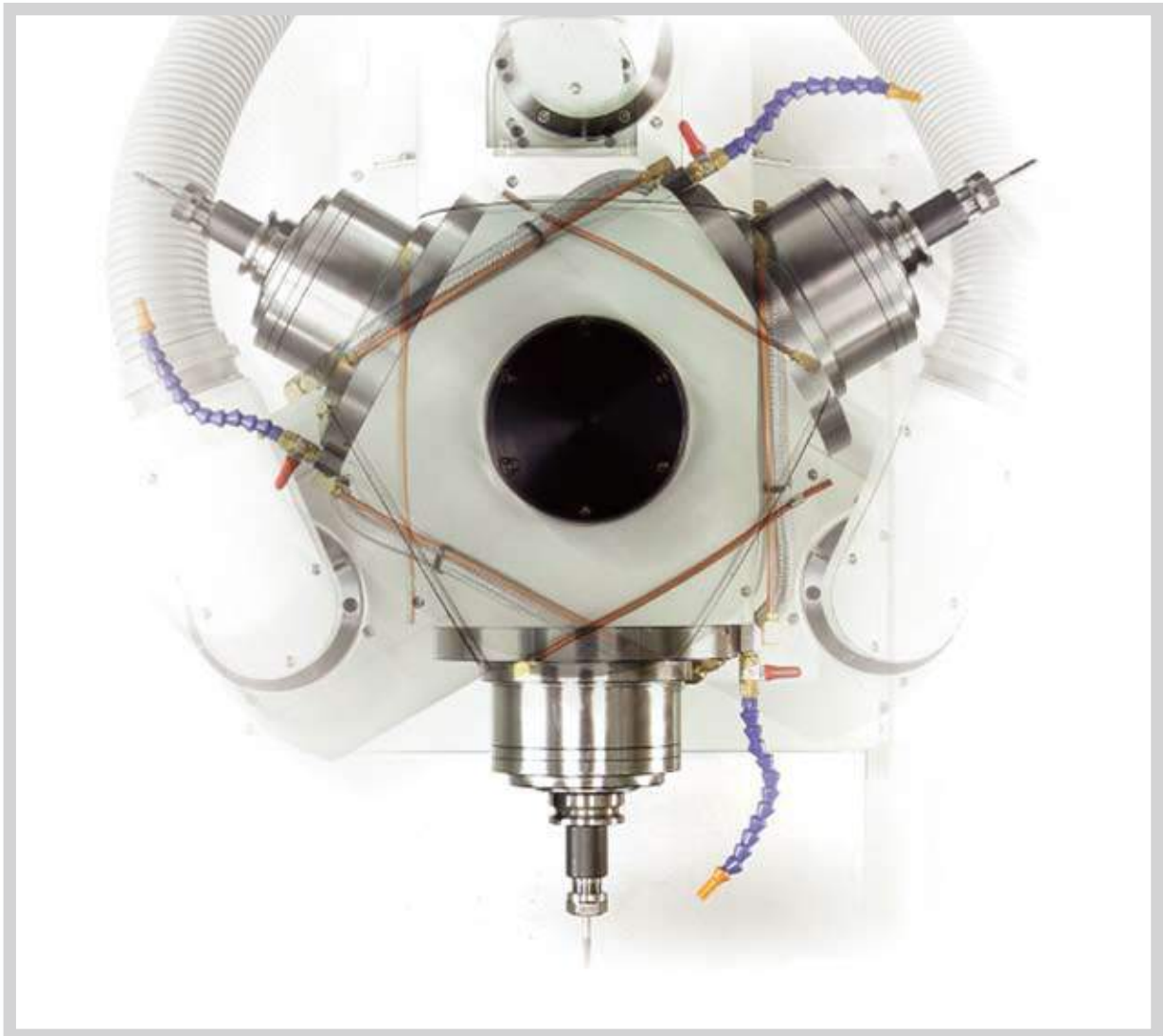


Eumach

Always Step Ahead



HSM-5X

5 AXIS MACHINING CENTER

A PROFESSIONAL CNC MACHINES MANUFACTURER

HSM-5X

- ▶ Eumach's newest universal milling center HSM-5X for 5 axis simultaneous operations, besides 3 linear axis, it is with a standard B axis swivel milling head and either an add on type A axis rotary table & tail stock (HSM-5XA) or a built in integrated C axis rotary table (HSM-5XC).



- ▶ HSM-5X series is the newest machine with universal applications, a perfect response to the increasing demand for CNC 5 axis & 5 face machining and the orientation of the work-piece in space in relation to the tool axis provides a vast range of applications for the machining of complex parts.



- ▶ with standard $\Phi 610\text{mm}$ round rotary table

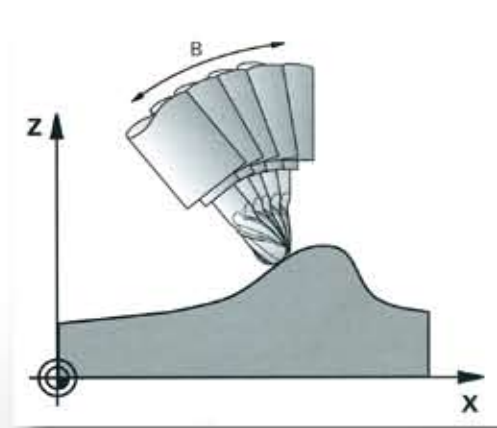


- ▶ with optional $\Phi 610\text{mm}$ torque motor rotary table integrated into 1000mm x 600mm plain table

B AXIS SWIVEL MILLING HEAD



- ▶ B axis - the highest dynamic swivel milling head with a large swivel range for the negative angles up to 30 degree and it rotates about the tool tip according to work piece, which has several obvious advantages such as greater accuracy, exceptional stiffness and shorter cutting distances, tools & part programs than those by using 2 axis tilting-rotary table or milling head; the separation of the swivel head and rotary table is a better solution with almost no space interference for cutting complex work piece !



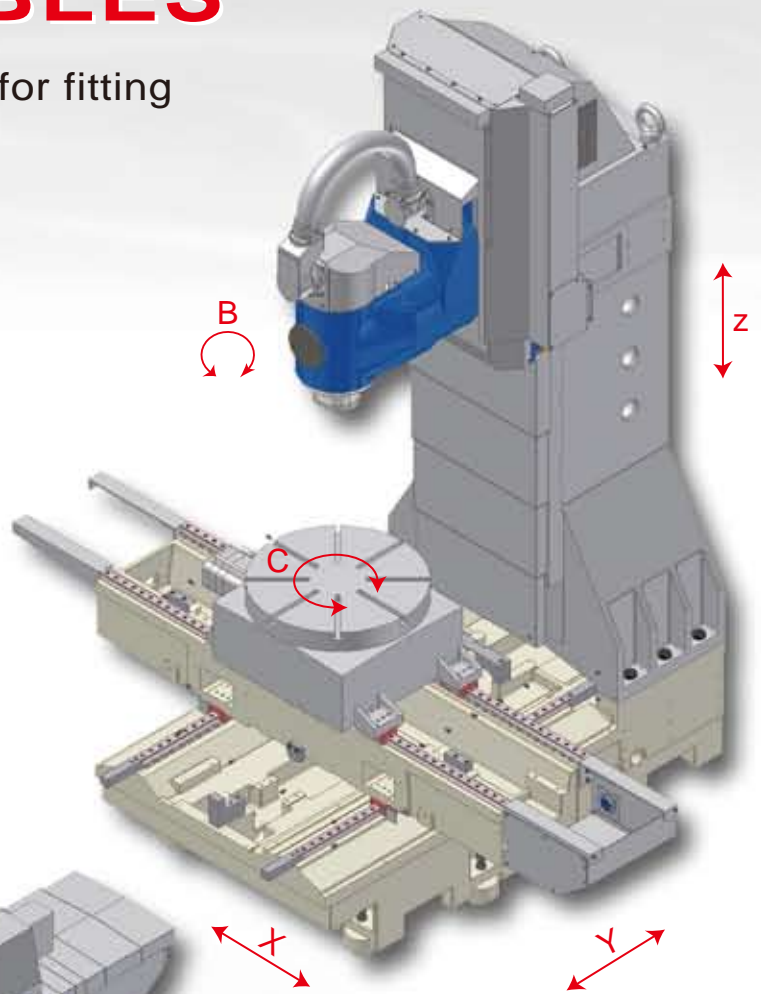
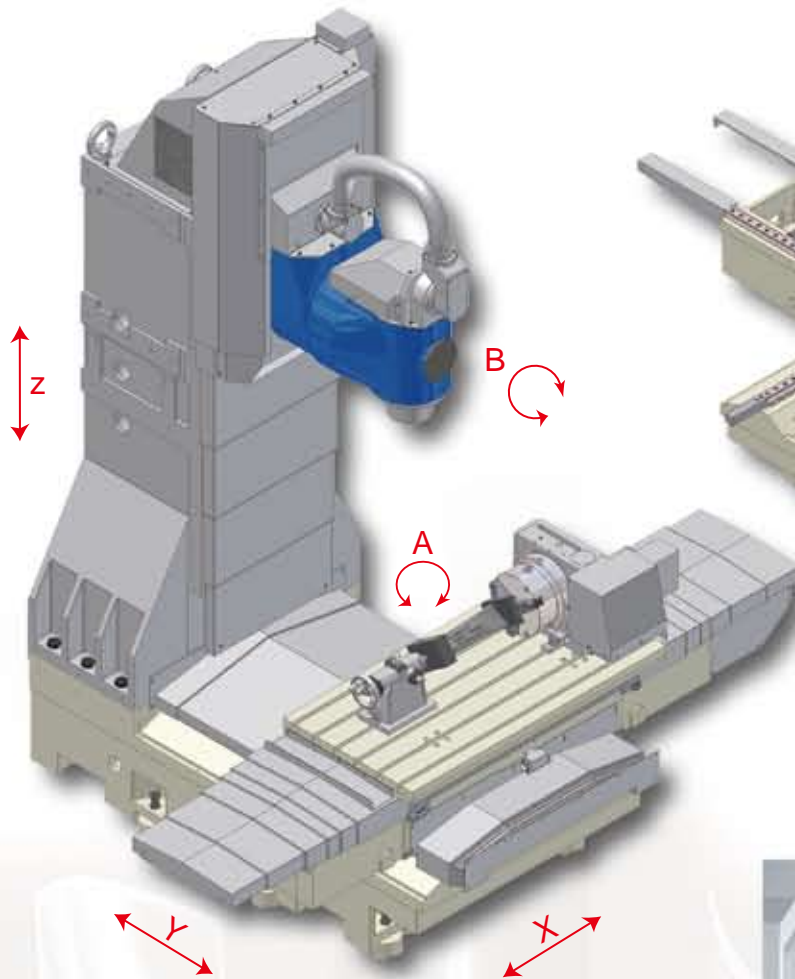
5-axis machining

- ▶ 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.
- ▶ **Tool Center Point Management (TCPM)**
The offset of the swivel axes is compensated so that the tool tip remains on the contour. Handwheel commands can also be superimposed during machining without the tool tip being moved from the programmed contour.

ROTARY TABLES

- ▶ Two type CNC rotary tables for fitting various applications

HSM-5XA



HSM-5XC

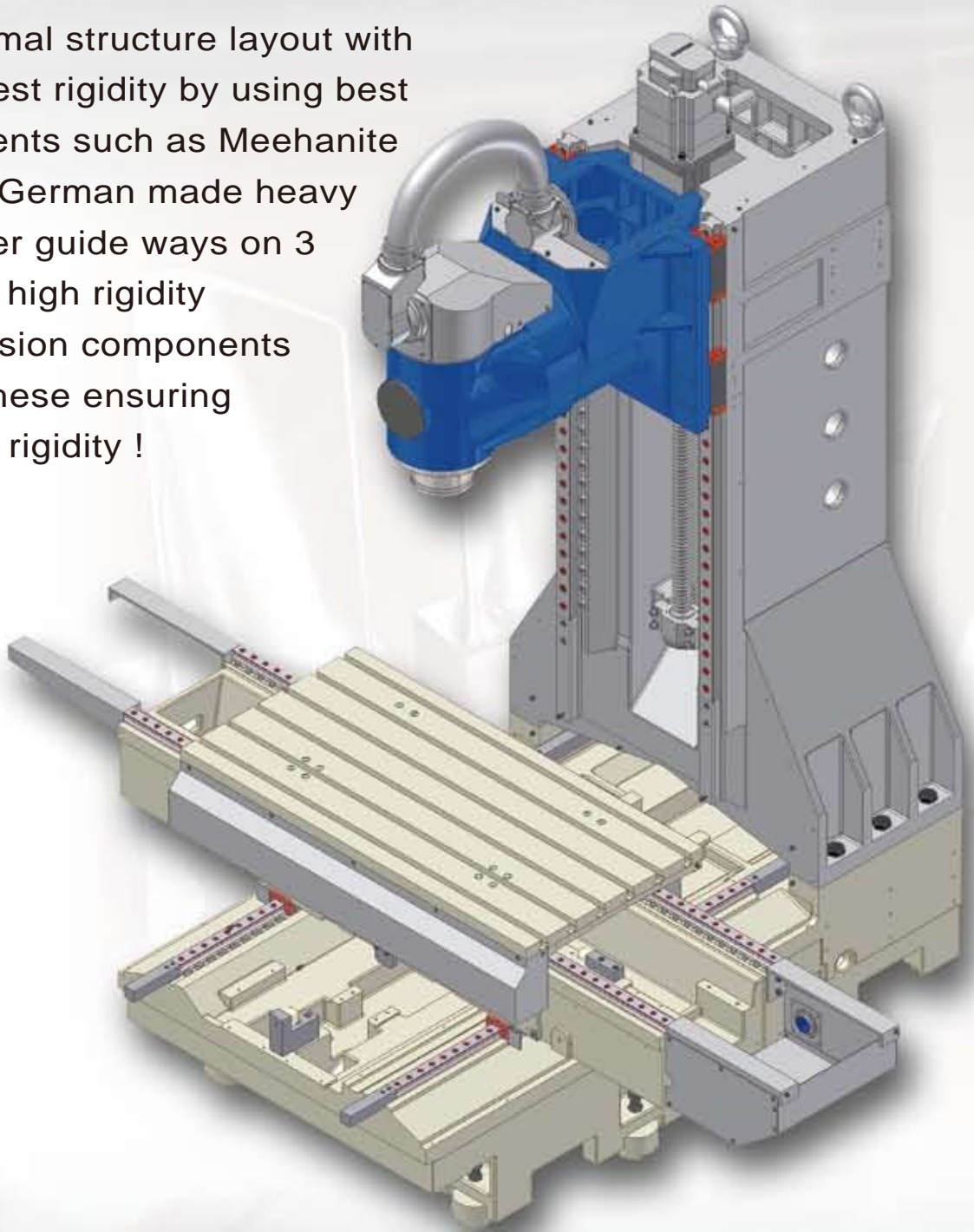
HSM-5XC is possibly with following two options:

- ▶ 1. square type motor spindle + fixed ATC
- ▶ 2. 50RPM torque motor drive rotary table which built into plain table, this can machine either 5 axis jobs or long work piece as a 3 axis machine.



RIGID FRAME

- ▶ The optimal structure layout with the highest rigidity by using best components such as Meehanite casting, German made heavy duty roller guide ways on 3 axis and high rigidity transmission components etc. all these ensuring machine rigidity !



- ▶ The 3 axis guide rails have bearings recirculating roller enabling feed rates up to 30/30/24M/min., the measurement feedback uses linear scales; the heaviest in its range of the Z axis with parallelepiped guides 45mm enables very good machining with vibration damping in its Z axis 810mm travel.



RETRACTABLE AUTOMATIC TOOL CHANGER

- ▶ A marvelous intelligent automatic tool changer with standard 32 tools stations to suit the unique swivel head, it can move forward 430mm travel from parking position to the tools changing position; maximum tool dimension is $\Phi 150\text{mm}$ diameter / 300mm length / 7kg weight, tool to tool time takes about 2.5 second; optional 40 stations ATC is available on request.



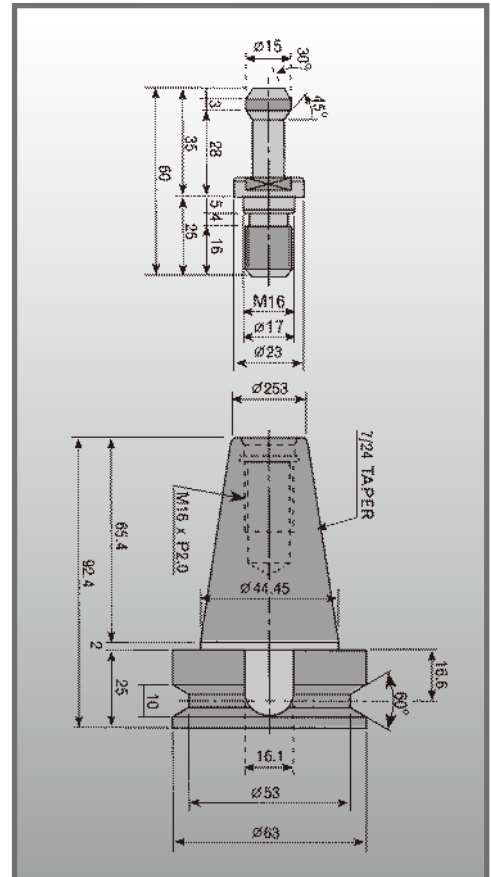
▶ PARKING POSITION



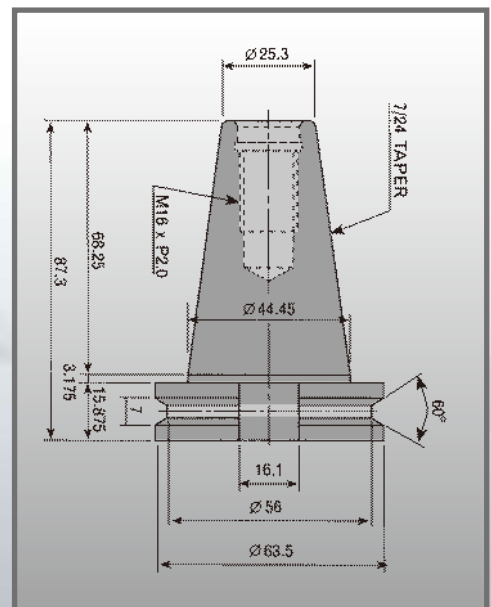
▶ MOVING 430MM FORWARD TO TOOLS CHANGING POSITION



▶ TOOLS CHANGING



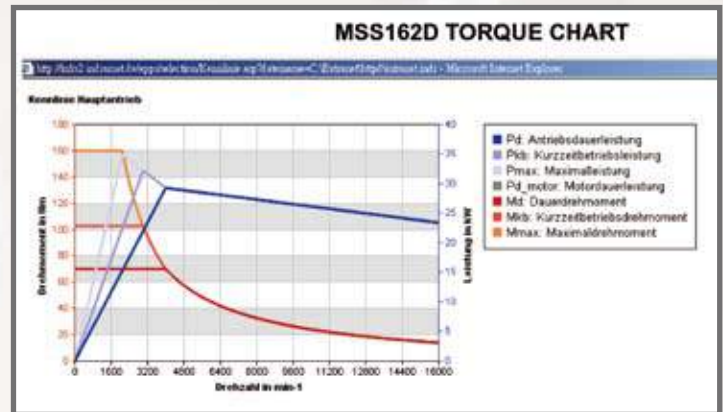
▶ TOOL SHANK(STD)
BT-40



▶ TOOL SHANK(OPT)
CAT-40/DIN69871

POWERFUL MOTOR SPINDLE

- ▶ The standard spindle with BT#40 / 14000RPM / 29.3KW & 35KW / 70Nm & 160Nm satisfy most of various applications, from roughing to finishing even in very tough materials such as tool steels.



LATEST ADVANCED DIGITAL CNC CONTROLS



Heidenhain smart iTNC-530

- ▶ 1.MC6222 main computer with CC6106 6 axis controller loop
- 2.15.1 TFT color screen
- 3.workshop or DIN-ISO programming
- 4.3D-workpiece representation
- 5.graphic programming
- 6.coordinate transformation
- 7.wide range of available cycles
- 8.TCPM (tool center point management)
- 9.1024 blocks look ahead



Siemens 840D solution line

- ▶ 1.NCU 730.2 system software
- 2.PCU 50.3 hard disk 40GB
- 3.10.4" TFT color screen & OP010C
- 4.Shop mill with Windows XP
- 5.3D simulation
- 6.Fast network access
- 7.Job processing directly from HD
- 8.Quick editing of large programs
- 9.Multi axis interpolation
- 10.NURBS interpolation

APPLICATIONS

- ▶ The milling center can be used not only the typical various steam blade industries but also servicing aerospace aviation, automotive, medical and communication etc.



1. FUEL PUMP INDUCER



2. STRIP MILLING OF JET BLADE



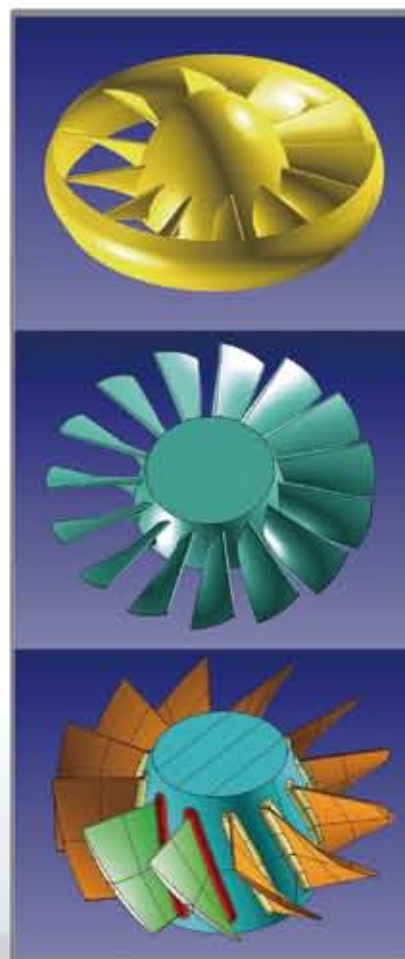
3. HEART VALVE



4. TYRE MOULD



5. STEAM TURBINE BLADE



6. BLISK



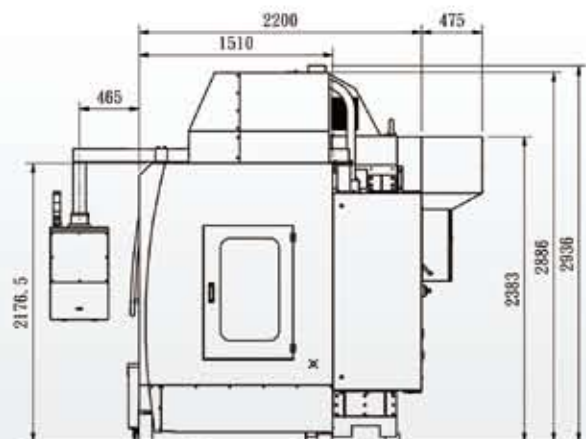
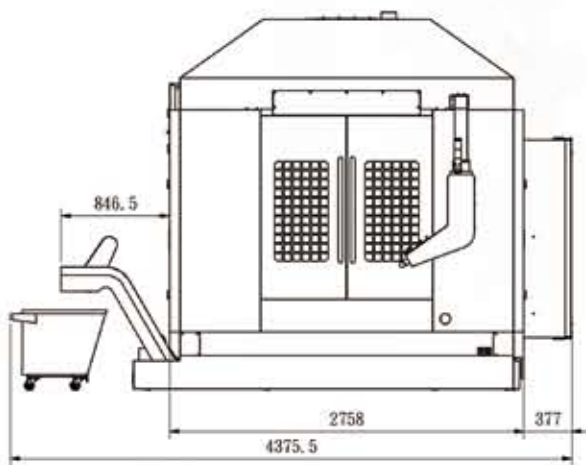
7. TURBO CHARGER IMPELLER

GUARDING

- ▶ The guarding provides protection for the whole of machine, operator and environment, has been considering as the most ergonomics of the working area which offers an ease of use & maintenance, as well as practical accessibility and visibility for the operator and also the very compact floor space required compares with traditional 5 axis machine.



FLOOR SPACE



▶ Standard accessories & features

1. full splash guard without roof
2. 14000RPM motor spindle & water cooler
3. programmable coolant 6 bars
4. 32 stations swing arm automatic tool changer
5. $\Phi 255\text{mm}$ rotary table + 3 jaw + manual tail stock (5XA), $\Phi 610\text{mm}$ rotary table (5XC)
6. 3 axis linear scales + 2 axis rotary encoders
7. chain type chip conveyor & bucket

▶ Optional accessories & features

1. 20 bar coolant thru spindle & roof
2. 24000RPM HSK-A63 spindle
3. other specs. Motor spindle
4. $\Phi 320\text{mm}$ rotary table (5XA)
5. 40 station automatic tool changer
6. BLUM laser tool probe
7. work piece probe
8. Z axis thermo compensation device

SPECIFICATIONS

MODEL	UNIT	HSM-5XA	HSM-5XC
T slotted plain table:			
Size / T slot / maximum load	MM / KG	1200x610 / 18x6X100 / 800	xxx
Spindle to plain table	MM	0 - 940	xxx
Rotary tables:			
Type		Add on main plain table	Integrated built in saddle
Diameter	MM	Φ 255 (320)	Φ 610
Center bore diameter	MM	Φ 40 H7	Φ 50 H7
Center height	MM	160 (210)	xxx
T slots size	MM	12 (14) H7	18 H7
Rotation speed	RPM	16.6	10
Hydraulic pressure	KG/CM ²	50kg/cm ²	
Positioning accuracy		8" with encoder used	
Repeatability		4" with encoder used	
Maximum load	KG	250 (350) with tail stock used	500
Accessories		3 jaws & manual tail stock	None
DISTANCES:			
Spindle to rotary table center	MM	0 - 780	0 - 715
Tail stock height to plain table	MM	160	xxx
Spindle nose to rotary table top	MM	xxx	105 - 715
Maximum load	KG	250 with tail stock	500
TRAVEL:			
X / Y / Z linear axis	MM	1020 / 610 / 810	1020 / 610 / 610
B - rotary head axis	DEG.	+30°-120°	
A or C - rotary table axis	DEG.	0.001° x 360,000	
DISTANCES:			
Spindle to column cover	MM	629	
Spindle to plain table	MM	130 - 940	xxx
Floor to table	MM	882	947
SPINDLE:			
Taper	BT#	40	
Speed	RPM	14000	
Front bearing diameter	MM	§ 70 ceramic bearings	
Motor power & Torque	KW & Nm	29.3 / 35 & 70 / 160	
AXIS MOTORS:			
X / Y / Z axis motor model & static torque	MODEL & NM	1FK7100 / 1FK7100 / 1FK7101 & 18 / 18 / 27	
B axis motor model & max. torque	MODEL & NM	1FW6130 & 1320	
A or C axis motor model & static torque	MODEL & NM	1FK7063 & 11	1FK7083 & 16
FEED RATE (X / Y / Z linear axis):			
Rapid feed rate	M / MIN	36 / 36 / 24	
Cutting feed rate	MM / MIN	1 - 20000	
AUTOMATIC TOOL CHANGER:			
Type of ATC		Swing arm with 430mm travel	
Number of ATC	TOOLS	32	
Maximum tool (diameter / length / kg)	MM	150 / 300 / 7	
BALLSCREWS ON 3 AXIS:			
Diameter x pitch (XY/Z)	MM x MM	40 x 16 / 50 x 12	
Precision class	MM / 300MM	C3, 0.008	
COOLANT & LUBRICATION & HYDRAULIC:			
Coolant motor power	KW	0.86	
Coolant tank volume	L	250	
Coolant motor capacity	L / MIN	20	
Lubrication motor / tank volume	WATT / L	25 / 2	
Hydraulic tank capacity & volume	KG/CM ²	50	
ACCURACY:			
Positioning (XYZ linear axis)	MM	JIS 6338: ±0.005MM / 300MM	VDI 3441:P0.012MM
(B & A or C rotary)	SEC.	With Heidenhain RCN226 8"	
Repeatability (XYZ linear)	MM	JIS 6338: ±0.003MM	VDI 3441:PS0.008MM
(B & A or C rotary)	SEC.	With Heidenhain RCN226 4"	
Roundness (XYZ linear axis)	MM	JIS 6338: ±0.01MM / 300MM	diameter
MISCELLANEOUS:			
Machine net weight	KG	9000	
Total power requires	KVA	75	



EUMACH FAMILIES



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



◦ **HSM-5X**
5 Axis machine center
1020MM x 610MM x 810MM 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



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



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



◦ **UMC-1000**
5 Axis machine center
1000MM x 800MM x 700MM travel

Eumach Co.,LTD.

新衛電腦機械股份有限公司

★ Specifications subject to change without notice.

規格更改，恕不另行通知。

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