

# Eumach

*Always A Step Ahead*



## **UMC-1000**

**5 AXES MACHINING CENTER**

**5 AXES**

**A PROFESSIONAL CNC MACHINES MANUFACTURER**

# ***THE MOST EFFICIENT & INTELLIGENT MACH PERFORMANCE MACHINING, INCREASE PRO***

## **• UMC-1000 5 AXIS SIMULTANEOUS MILLING CENTER :**

- 1000mm x 800(or 1150)mm x 700mm  
three axis travel
- 1000mm x 800mm working rotary  
table with 1500kg load
- 0.001 degree swivel milling head  
and rotary table :  
Torque motor driven B axis swivel  
milling head Worm gear driven  
C axis rotary table
- Standrard 3 axis linear scales +  
2 axis rotary encoders
- BT#40 / 14000RPM / 29.3KW  
motor spindle
- Time saving thanks to  
multi-sided machining  
without having re-set
- Maximum productivity thanks  
to rapid movement and  
high acceleration
- Unlimited flexibility &  
versatility when manufacturing  
individual part
- Maximum stability thanks to  
optimum load distribution
- Highest machine precision  
repeatability thanks to the  
avoidence of any axis overlapping



# ***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 awkward shaped workpiece.



# NEXT GENERATION



Automatic swiveling milling head

## ● ROLLER GUIDEWAYS

- ▶ The high rigid & heavy duty 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.

## ● BALL SCREWS

- ▶ The high precise & rigid 50mm 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.

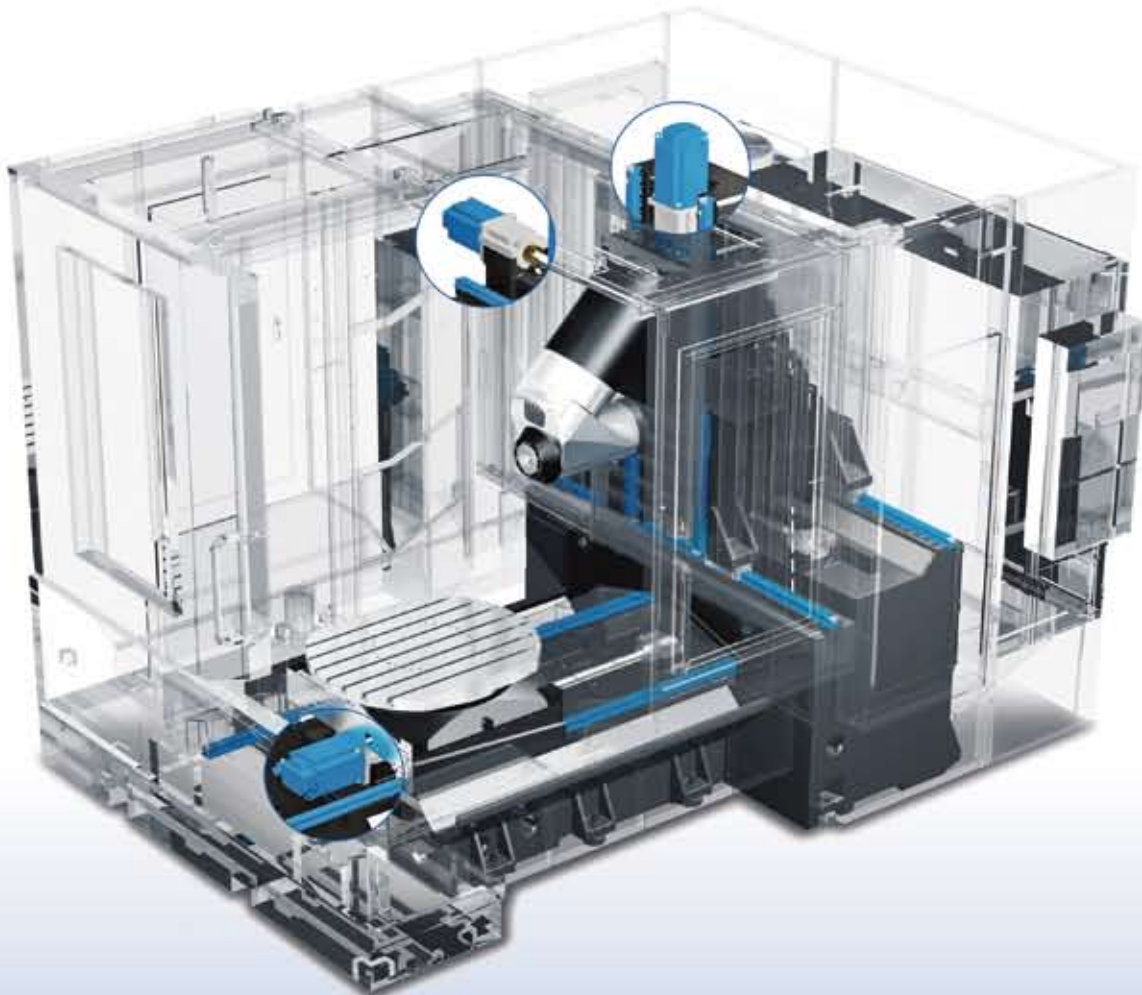
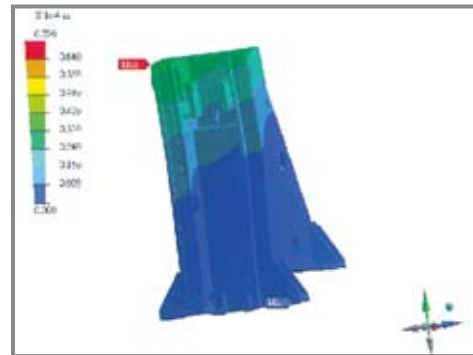
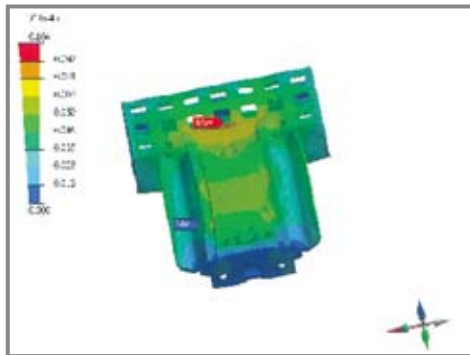
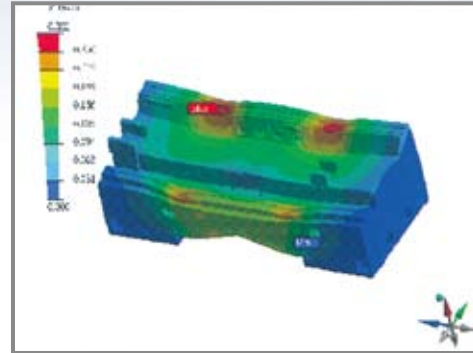
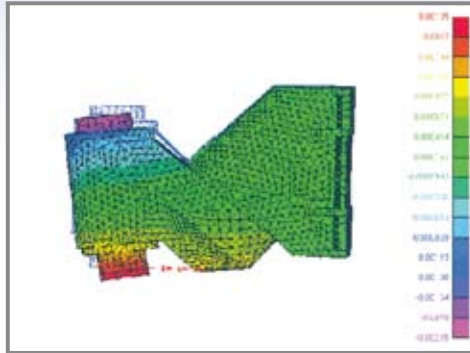


Hi-Lo ladder bed design to increase column resistant rigidity.

# TECHNOLOGY DESIGN

## ● RIGID CASTING FRAME

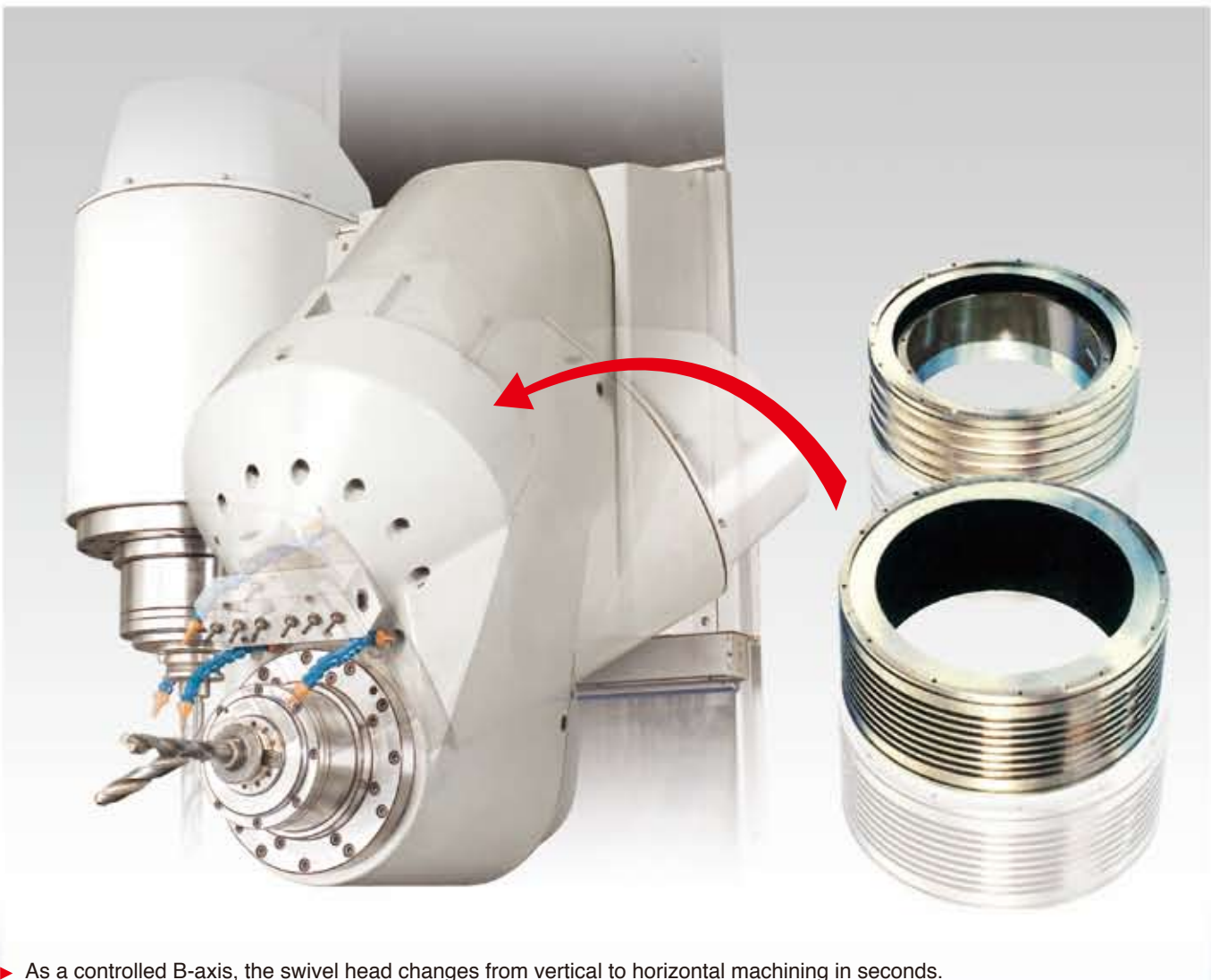
- Using the most advanced Computer Aided Design and Finite Element Method analysis programs, an extremely rigid casting frame is being created.



# ***B AXIS INNOVATIVE SWIVEL MILLING HEAD***



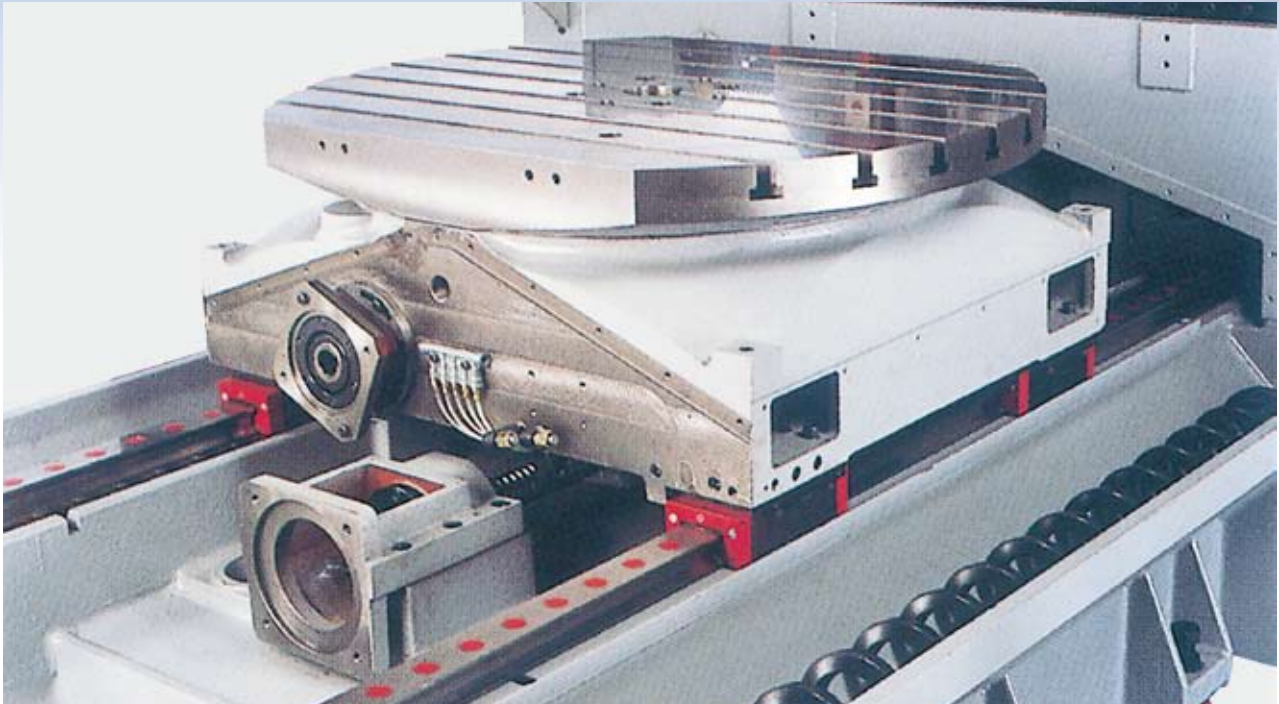
- The latest technology torque motor manages the B axis continuous swivel milling head , it guarantees maximum movement dynamic and linearity and thanks to the absence of those traditional mechanical kinematics parts, it results a much higher performance on finishing surface. The direct reading system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



- As a controlled B-axis, the swivel head changes from vertical to horizontal machining in seconds.
- 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; 5 axis machining in combination of rotary table.

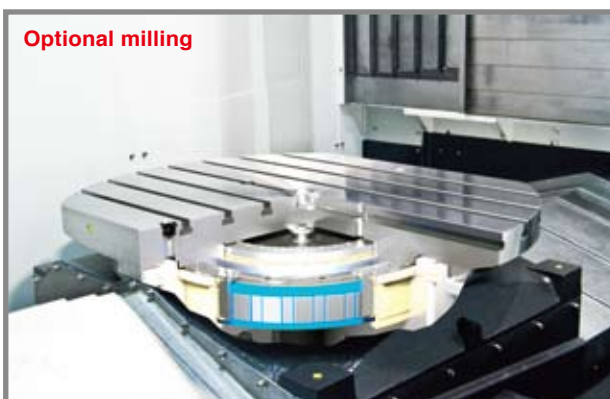


# C AXIS DURABLE CNC ROTARY TABLE



## ● STANDARD:

- ▶ 1000mm x 800mm dimension with 1500kg load driven by AC servo motor, it can be indexing  $0.001^\circ$  by high precision worm gear, clamping force up to 9000kg, positioning by hydraulic cylinder; a high precision rotary encoder is included.



	Standard milling	Optional milling	Optional mill & turn
Transmission	Worm gear	Torque motor	Torque motor
Table surface size mm	1000 x 800	§ 1000	§ 900
Max. speed RPM	11	60	800
Maximum load kg	1500	1200	2000mill / 1000turn
Country made	Taiwan	Germany	Germany

# OPERATOR WORKING



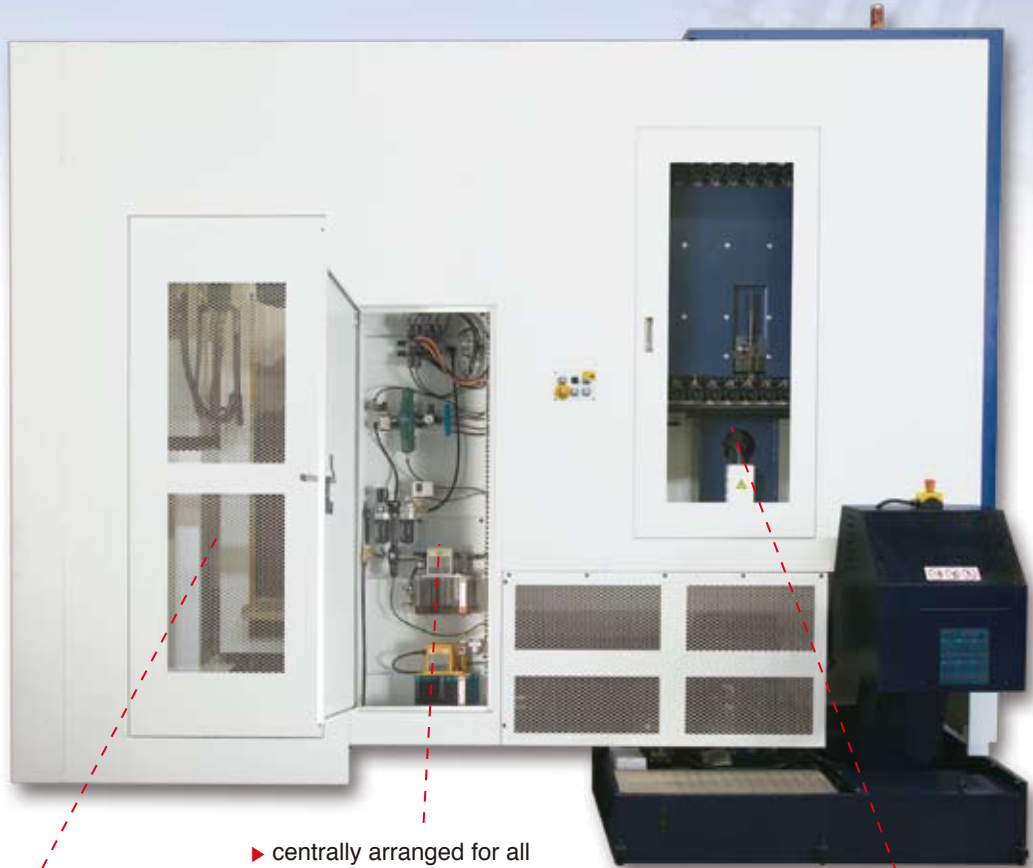
▲ user friendly swivel CNC control panel



▲ air conditioner on electric cabinet to protect all the inside electric components



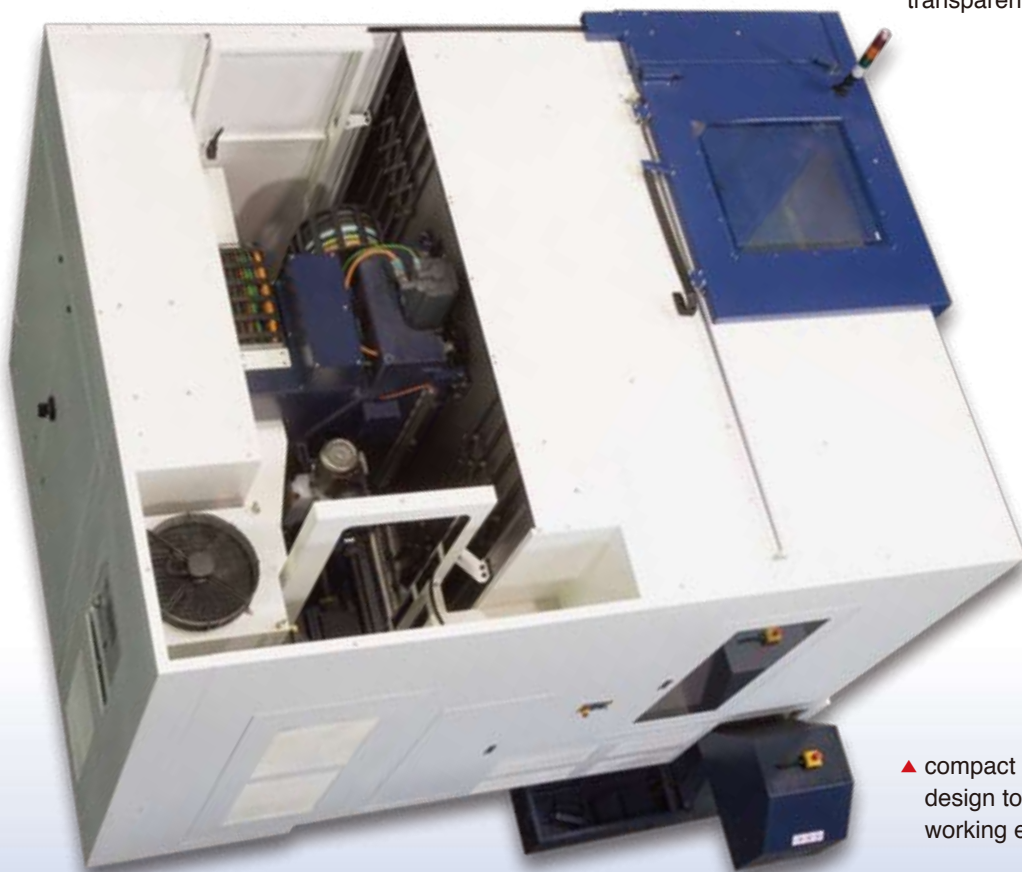
# CONSIDERABLE ORIENTATION



► hydraulics, spindle water cooler all in machine back for easy maintenance with safety door

► centrally arranged for all solenoids, pneumatics and lubrication device in one area

► manual tool loading from automatic tool changer magazine side door with transparent window



▲ compact & space saving design to get a clean working environment

# POWERFUL MOTOR SPINDLE



Taiwan made milling



Italy made milling



German made milling

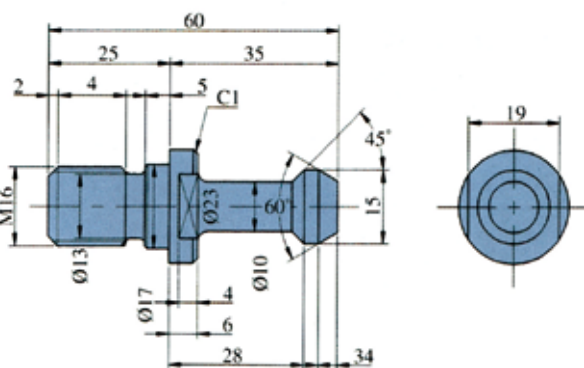
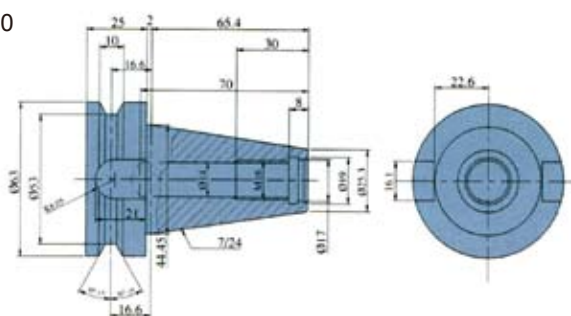


German made mill turn

Models	RPM	Taper	KW	Nm	In use	Made	Remarks
N14	14000	BT#40	29.3 / 35	70 / 160	Milling	Taiwan	Standard
P18	18000	HSK-A63	26 / 32	124 / 154	Milling	Italy	Optional
C34	24000	HSK-A63	34 / 43	72 / 91	Milling	Germany	Optional
C34B	12000	HSK-A63	34 / 42	160 / 200	Milling	Germany	Optional
P12	12000	HSK-A100	30 / 39	227 / 295	Milling	Italy	Optional
C40	15000	HSK-A100	40 / 50	160 / 200	Milling	Germany	Optional
C50	8000	HSK-A100	50 / 64	240 / 300	Milling	Germany	Optional
C27T	12000	HSK-T63	27 / 34	130 / 170	Mill turn	Germany	Optional
C34T	10000	HSK-T100	34 / 43	160 / 200	Mill turn	Germany	Optional

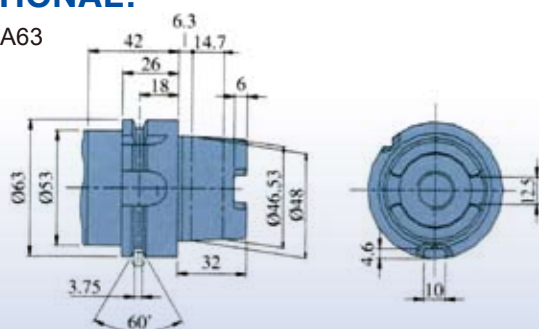
## STANDARD:

BT#40

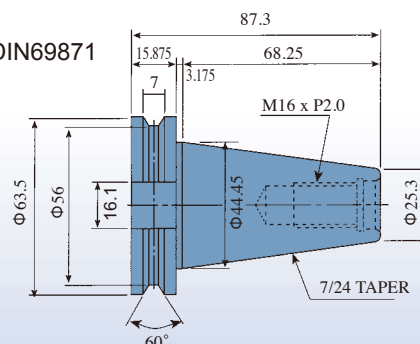


## OPTIONAL:

HSK-A63



CAT-40 / DIN69871



# DIGITAL CNC CONTROL

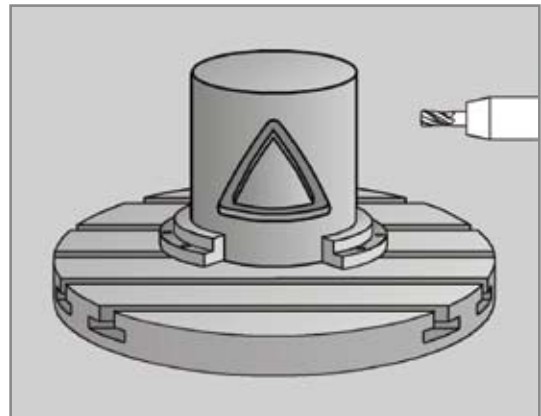


## Heidenhain iTNC-640 HSCI newest control :

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 730 key board & MB 720 panel & 15" XGA screen



Inspecting and optimizing machine accuracy by calibrating rotary axes with kinematics

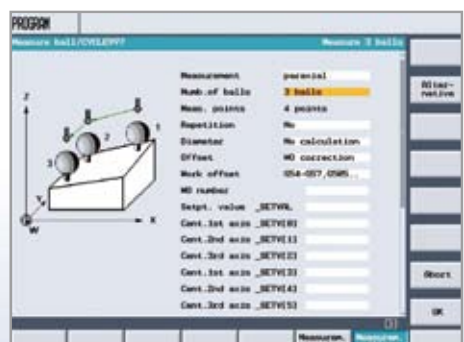
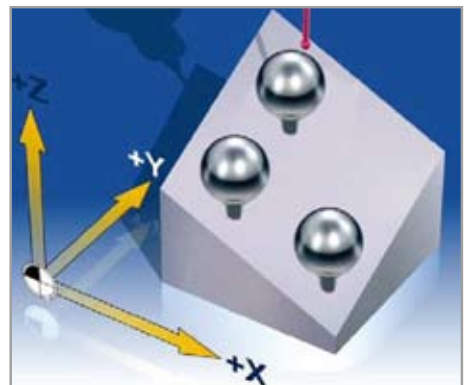


Cylindrical surface interpolation



## 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



MEASURING 3 SPHERE



# APPLICATIONS-MILLING

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



**1.** Engine block



**2.** Gear wheel



**3.** Mould



**4.** Mould



**5.** Casting machine part



**6.** Precision part



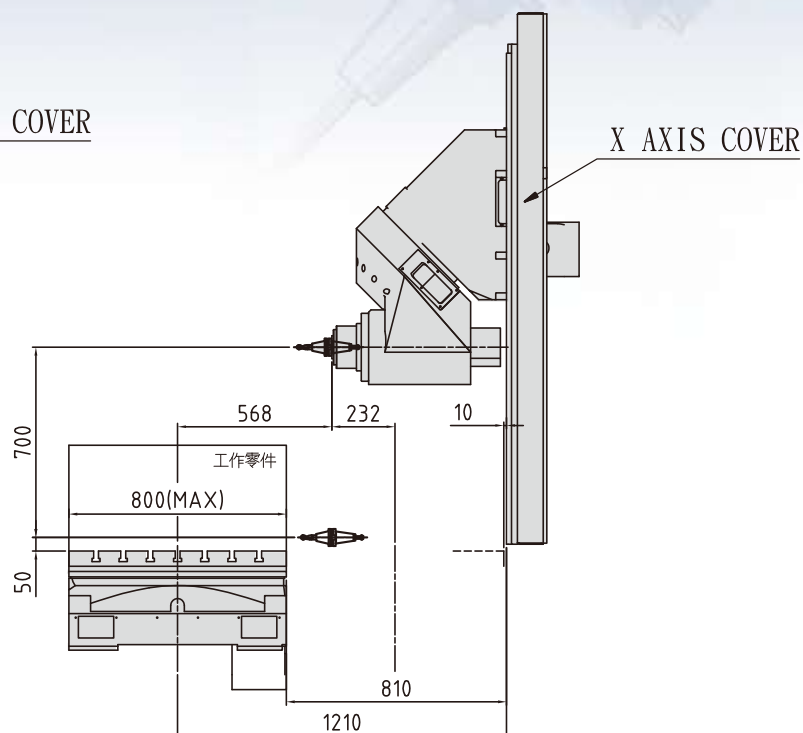
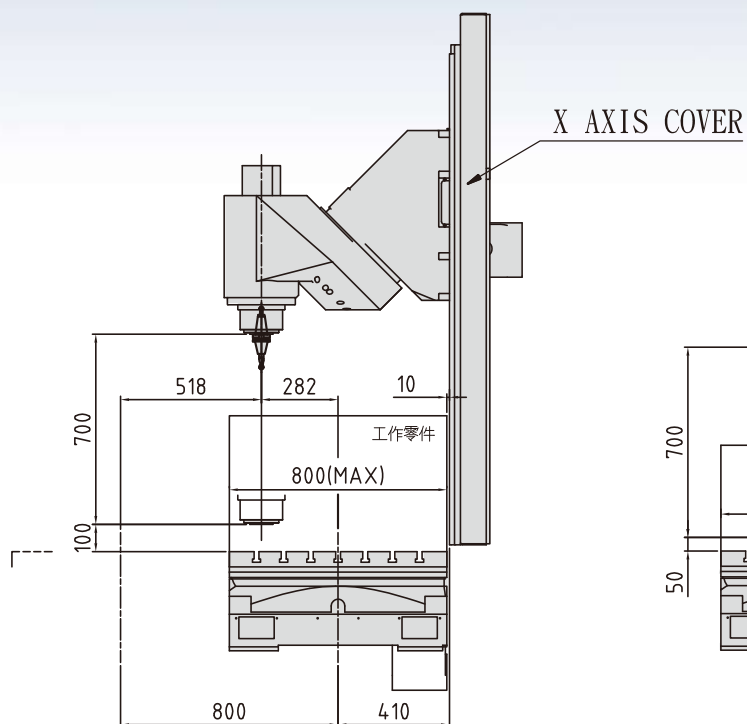
**7.** Turbo impeller

# ***APPLICATIONS-MILLING & TURNING :***



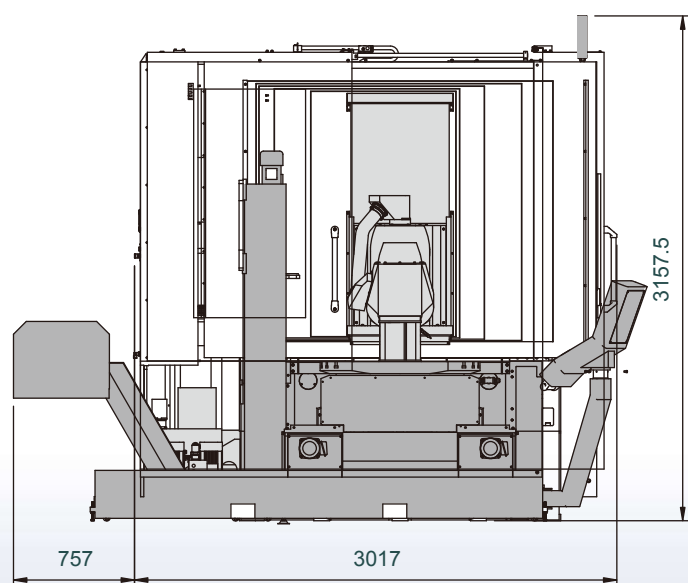
# WORKING ENVELOPE

With standard spindle N140D

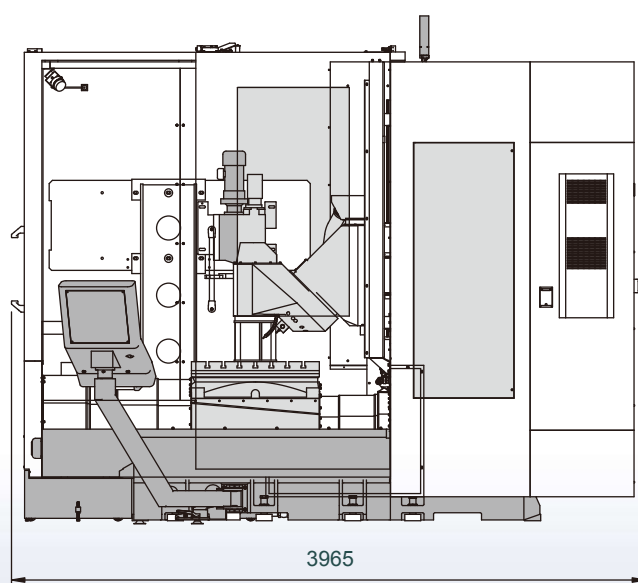


# MACHINE DIMENSION

FRONT VIEW



SIDE VIEW





# MACHINE SPECIFICATIONS

unit : mm

Item	Model Description	Milling center	Mill-turn center
Travel	Linear axis X / Y / Z	1000 / 800 (or 1150) / 700	1000 / 800 (or 1150) / 610
	Swivel head B axis	0° ~ 180°	
	Rotary table C axis	0.001 degree x 360,000	
Swivel head ( B axis )	Maximum spindle speed	14000 (18000,24000) RPM	10000 ~ 12000 RPM
	Spindle power & torque	29.3 & 35KW, 70 & 160Nm (S1&S6) see page 9	
	Spindle taper	#40 (#50, HSK-A63,100)	HSK-T63 (100)
	Front bearings diameter	70 (100)	
	Vertical spindle nose to table	100 ~ 800	29 ~ 729
	Hor.spindle center to table top	50 ~ 750	9 ~ 709
	Hor.spindle nose to table center	-230 ~ 570	-262 ~ 538
Rotary table ( C axis )	Table dimension	800 x 1000	φ800
	Maximum loading	1500kg	1000kg
	Indexing increment	0.001 degree	
	T slots ( size x No.x pitch )	18 x 7 x 100	18 x 7 x 120
	Table top to floor	1000	1036
Feed rate	Rapid linear axis X/Y/Z	24M / 24M / 24M / Min	
	rotary axis B/C	10 (60) RPM	800 RPM
	Cutting feed	20 m/min	
Transmission	Linear axis XYZ	φ50 C3 ball screw	
	Swivel head B axis	Torque motor	
	Rotary table C axis	Worm wheel (Torque motor)	Torque motor
Axis Accuracy (VDI3441)	Positioning linear axis XYZ / BC	12 microns / 10 "	
	Repeatability linear axis XYZ / BC	8 microns / 5 "	
ATC	Tools number	40 (52, 60, 80) stations	
	Max.tool dia./length/weight	120 / 300 / 7kg ~ 150 / 300 / 20kg	
	Tools exchanging	vertical position	
Weight	Net ( before packing )	15 ton	16 ton

( ) OPTION

## STANDARD FEATURES & ACCESSORIES

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

## OPTIONAL ACCESSORIES :



TOOL PROBE



TOOL LASER MEASUREMENT



WORK PLECE PROBE



COOLANT THUR SPINDLE



**WORLDWIDE SALES**

## **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



• **GVM-800U**  
5 Axes gantry type machining center



• **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

**Eumach Co.,LTD.**

★ Specifications subject to change without notice.  
Catalogue No.A7070102

2, YING LIN LANE, HE-SHENG STREET, SHI-GANG DISTRICT,  
TAICHUNG CITY 422, TAIWAN,  
TEL:886-4-25810031 FAX:886-4-25810003  
E-mail:eumach.coltd@msa.hinet.net ; eumach@ms8.hinet.net  
<http://www.eumach.com>

