VictorTaichung

Management System
ISO 9001:2015
ISO 14001:2015
OHSAS 18001:2007

www.tuv.com
ID 0091003197

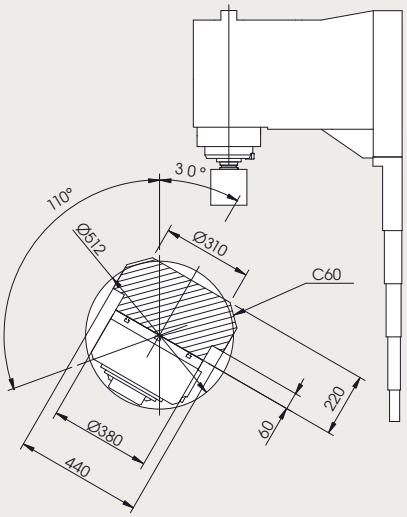
Vcenter - AX380/AX630/AX800

5-AXIS machining centers

Victor Taichung - an established ISO-9001 & 14001 company

Vcenter-AX380

- *Trunnion type tilting table (A+C axes) with innovative non-backlash rollercam mechanism offers excellent solution for small part machining.*
- *Higher rotating speed and machining accuracy than conventional worm gear mechanism shorten cycle time.*
- *Higher clamping rigidity than DD motor facilitates 4+1 axis heavy cutting.*
- *BIG-PLUS BT-40 (BBT-40) spindle 12000rpm (15kW).*

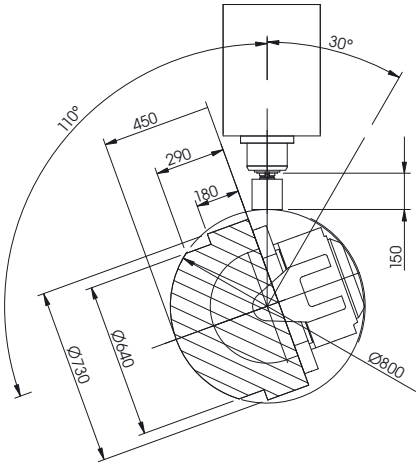


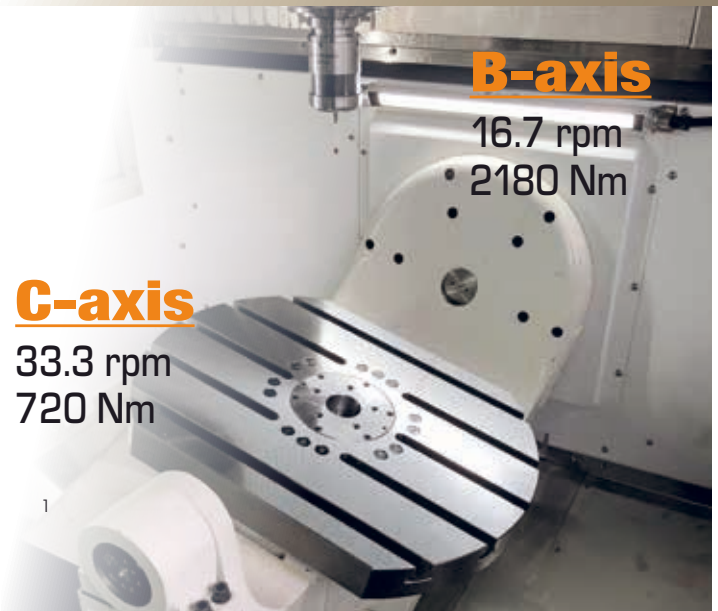
A-axis
33.3 rpm
2452 Nm

C-axis
40 rpm
2158 Nm

Vcenter-AX630

- *High rapid feed 48 m/min with roller type linear motion guideways for 3 axes.*
- *Trunnion type tilting table (B+C axes) fixed on machine base enhances structure stiffness. Backlash-less roller-cam drive mechanism rotated at higher speed further reduce the cycle time.*
- *BIG-PLUS BT-40 (BBT-40) spindle 12000rpm (15kW).*





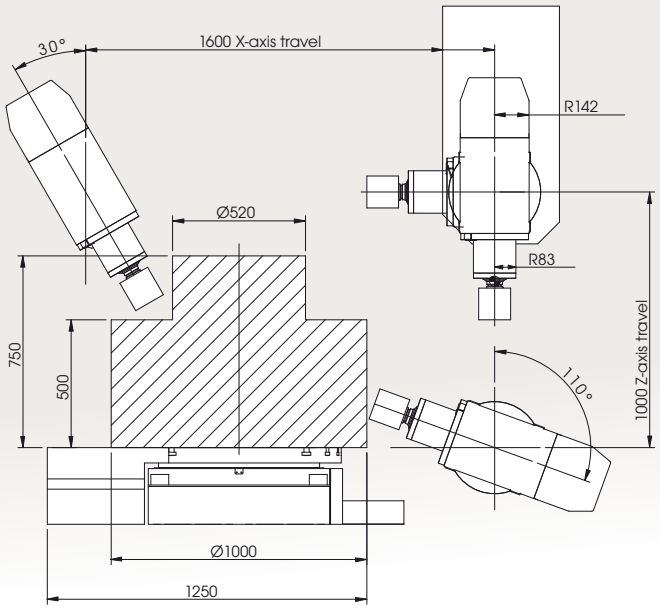
B-axis
16.7 rpm
2180 Nm

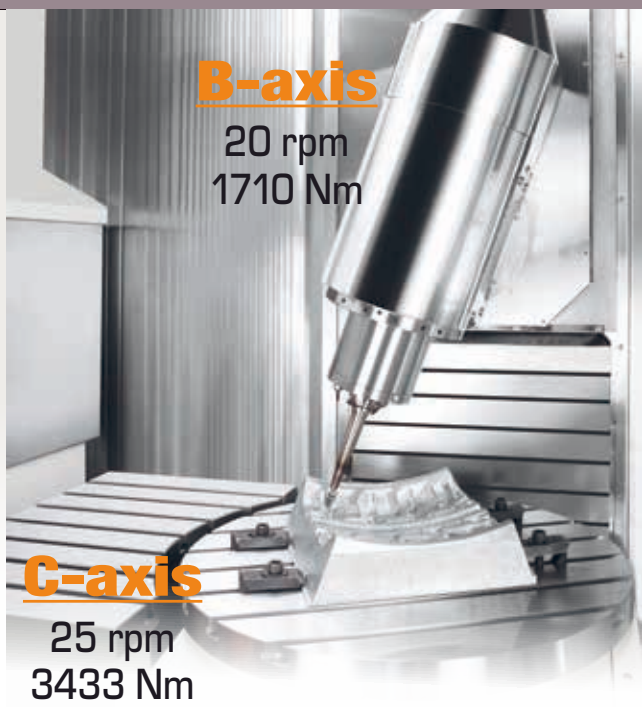
C-axis
33.3 rpm
720 Nm

Vcenter-AX800

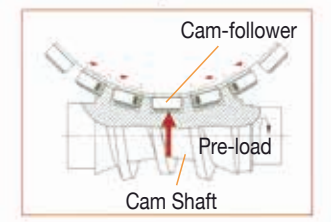
VICTOR-TAICHUNG

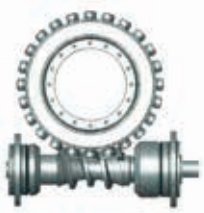
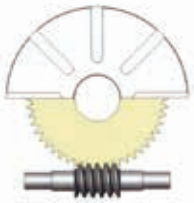
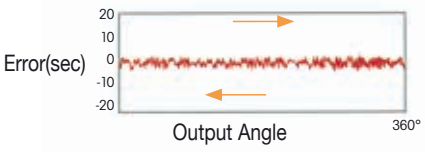
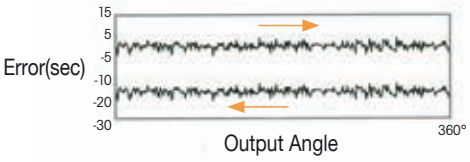
- *Swivel head (B-axis) and rotary table (C-axis) facilitate 5-axis machining of large parts, up to 1000mm in diameter.*
- *C-axis table is clamped at high torque 3433Nm for heavy cutting.*
- *The B-axis swivel head includes a Hirth coupling with 1˚ increment further enhancing the rigidity, and 4 + 1 axis machining capability.*
- *BBT-40 spindle 15000rpm (22kW).*





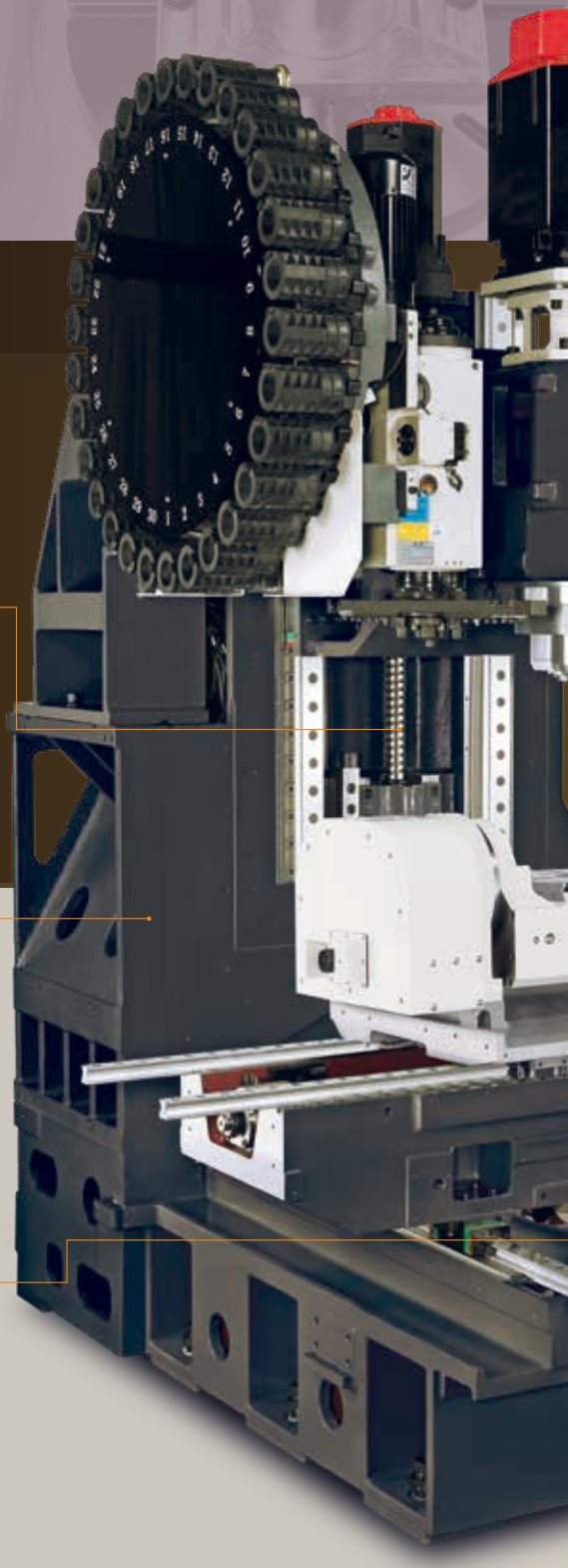
Roller Cam Drive – No backlash



	Roller CAM drive	Worm gear drive
		
	Non-Backlash	With backlash
		
Contact status	Rolling contact	Sliding contact
Materials	Cam shaft: Steel HRC 60 Cam follower: Steel HRC 60	Worm shaft: Steel HRC 60 Worm gear: Bronze HB 90
Indexing accuracy	< 15 sec. (CW & CCW)	< 20 sec. (CW or CCW)
Backlash	Non (preloaded)	Exist (No pre - loading)
Backlash adjustment	Not required	Required.
Rapid feeds (Rotation speed)	A/C: 12 / 14.4 m/min (33.3 / 40 rpm)	A/C: 2~4 m/min (5~12 rpm)

Vcenter-AX380

With an extremely rigid and tough column, the C-framed Vcenter-AX380 presents high feed rate 48m/min and high Z-axis acceleration 0.75G to minimize spindle non-cutting time. Coupled with powerful 12000 rpm spindle and trunnion type rotary table, Vcenter-AX380 effectively upgrades the cutting performance with higher accuracy and efficiency.



Tool change only 6 seconds!

- Twin arm type ATC with bi-directional random selection for 30 tool magazine offers quick tool change and optimal reliability.
- Upgraded SK-40/BBT-40 tooling system linked with the stronger tool pull stud (Ø14mm) enhances the heavy cutting capability and outputs more CTS coolants than conventional BBT-40 tooling with Ø10mm pull studs.

High rigidity dynamic structure

- Heavy-duty Meehanite® castings from Victor's licensed foundry are used in the bed and column for maximum damping and strength.
- Extremely rigid and tough column with a heavily ribbed design enables the high Z-axis acceleration for high speed movement.
- CAE (computer aided engineering) design with span 700mm in Y-axis results in a maximum stiffness to ensure the minimum overhang distortion for whole X-axis traveling range.

Linear Guideways are designed to ensure maximum rigidity and vibration damping characteristics

- Ballscrew holders are directly cast into the machine for even higher rigidity and strength. This ensures a constant support for the ballscrews over the entire machine life.
- The Large diameter ball screws and **roller-type** linear guides ensure the high maximum structural rigidity during machining.
- Direct coupled servo motors eliminate motor backlash and noise caused by misalignment.

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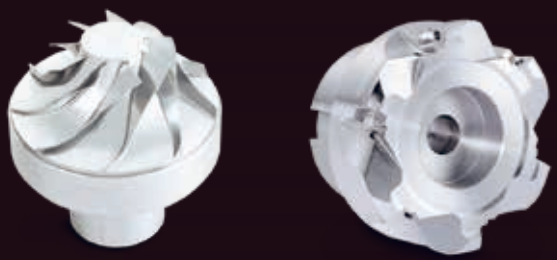
Directly Coupled Spindle (DCS) 15kW / 12000rpm

- Spindle motor is directly coupled to the spindle avoiding the vibration resulting from belt drives thus enhancing the surface finish on components.
- 12000rpm spindle speed with high torque output accommodates both heavy cutting at low rpm and high speed machining.
- **Oil-air lubrication** with filtration system is used for cooling to cool and lubricate the spindle bearings to ensure maximum service life.
- **Air curtain** is included to constantly provide the spindle with additional protection to cool and lubricate the spindle bearings to ensure maximum service life.
- Two types of spindle motors meet the power requirement for milling steel and speed requirement for milling Aluminum.

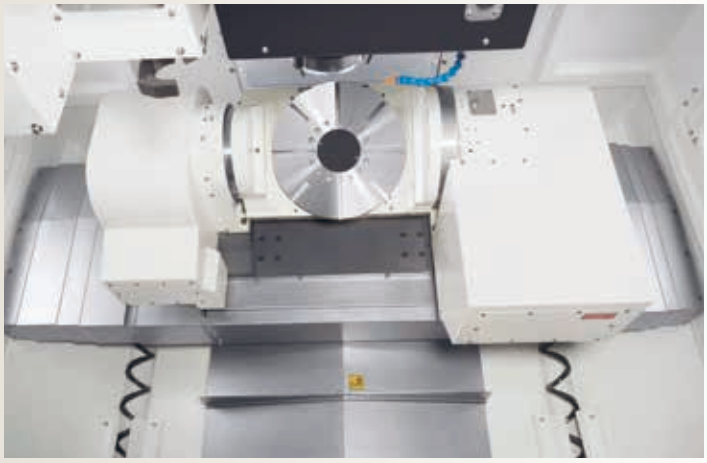


Roller-Cam-Drive® Rotary Table Ø380mm (C-axis)

- Innovative roller cam mechanism ensures high accuracy less than 15 seconds (0.004 degree).
- High rotating speed shortens cycle time and high resistance to tool crash.
- Rotary table diameter 380mm with loading capacity 200kg suitable for loading small and cubic parts.

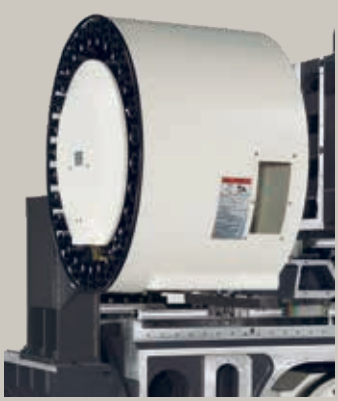
Chips & Coolant Disposal Upgrade

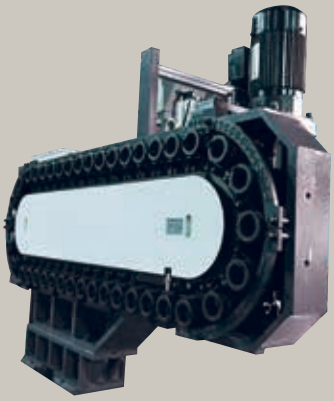
- **Two screw type removers** removers push swarf or chips continuously to the machine front further reduces chip accumulation inside machine.
- High pressure coolants by Grundfos® MTH4-40 (5 bars/60Hz) offer strong flow (150 liters/min) to flush the swarf away.
- Large coolant tank minimums heat build-up for higher machining accuracy.
- Dual layer design on the machine base and bottom guarding minimize the coolant leakage to assure a clean and clear working environment.

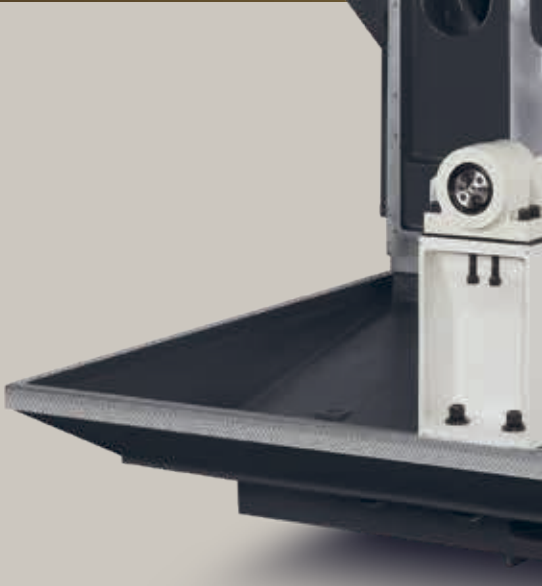


Vcenter-AX630

- *Traveling column VMC coped with trunnion type rotary table (Ø 630x500mm) implements 5-axis machining on middle size part at compact floor space.*
- *Tilting table is seated on the machine base for high rigidity.*
- *Roller type linear motion guideways.*
- *High rapid feed 48m/min, high speed BBT-40/12000rpm spindle and high rotary speed minimizes overall cycle time.*

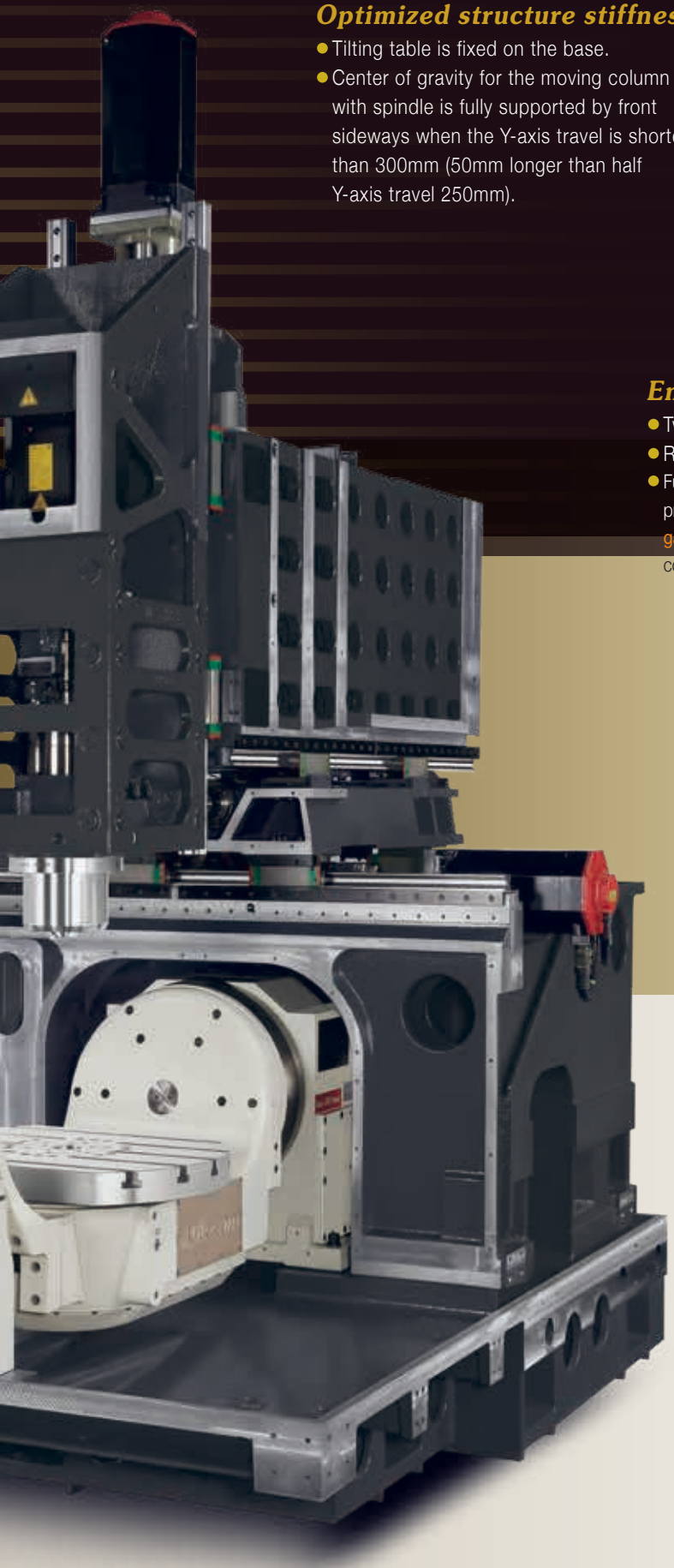






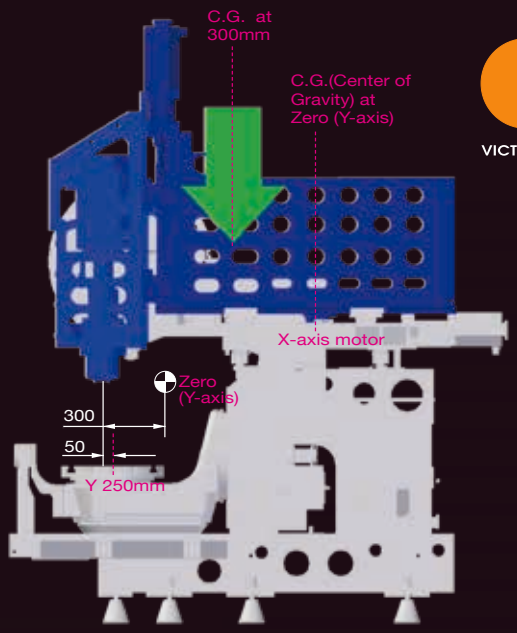
ATC 30 tools

- Twin arm type for quick tool exchange 5.5 seconds (chip-chip).
- 30 tools as standard and available with 40 or 48 tools.



Optimized structure stiffness

- Tilting table is fixed on the base.
- Center of gravity for the moving column with spindle is fully supported by front sideways when the Y-axis travel is shorter than 300mm (50mm longer than half Y-axis travel 250mm).



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Enhanced ergonomics

- Two door design (without top covers) for easy part loading/unloading.
- Rotary control panel for easy operation.
- Fully enclosed Top Bellows Covers (opt.) are available to cope with CTS for high pressure cutting. Workpiece can be lifted by rope and moved to the table thru the gap on the top covers when front door is open. (Right door is not available when top covers are mounted.)

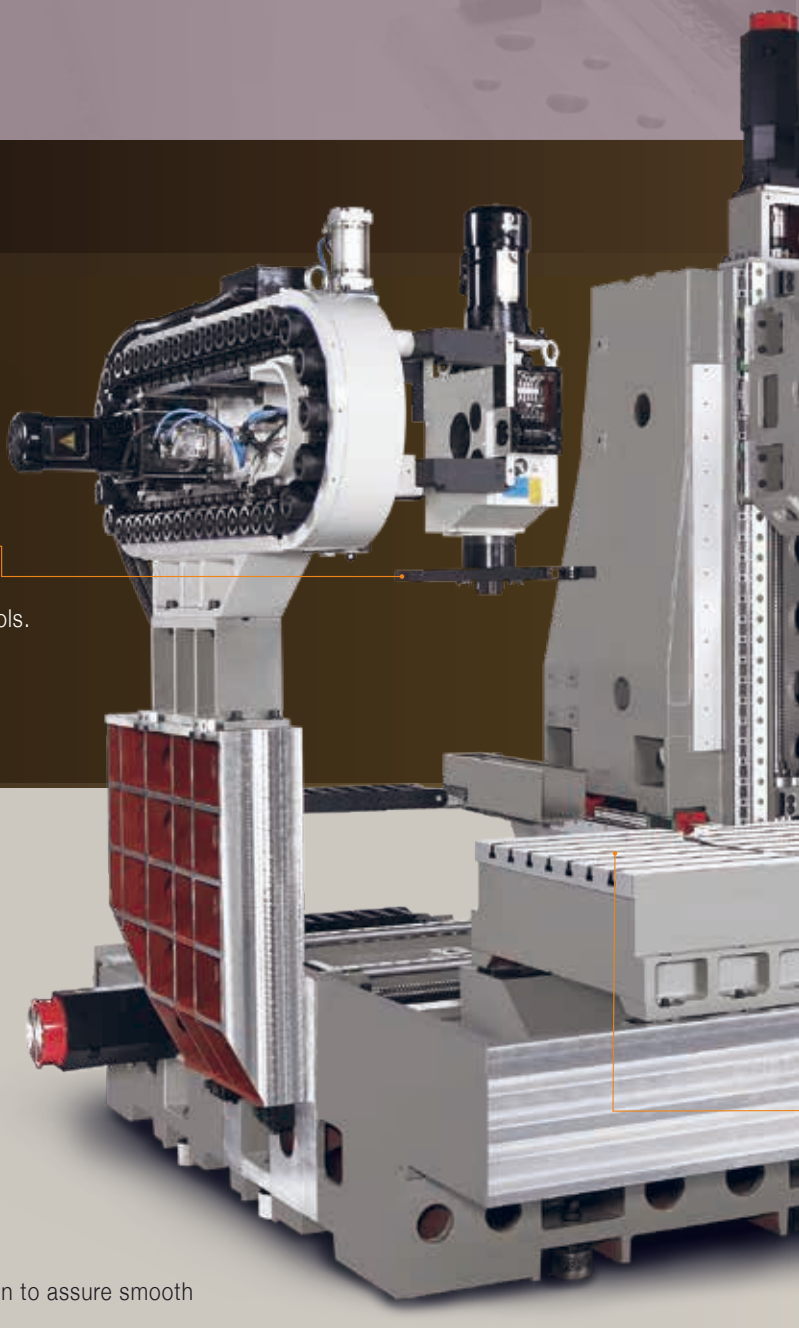
Top bellows covers (opt.)

Chips & coolants disposal

- Bottom guarding flush (by high flow pump).
- Auger conveyor (screw chip remover) removes chips effectively.

Vcenter-AX800

With the rotary table built next to the fixed table, this innovative model Vcenter-AX800 is equipped with a swivel head on the traveling column to implement 5-axis machining on large part (diameter up to 1000mm). Roller-cam-drive® mechanism for both rotary axes ensures sufficient rigidity for 4+1 axis heavy machining, and high rotation speed helps shorten overall cycle time compared as conventional worm gear mechanism.



ATC 40 tools

- Twin arm type ATC performs quick and reliable tool changeover.
- 40 tool magazine is included as standard and available with 60 tools.

Rigid machine structure

- Three linear guides with built-in rollers support the traveling column to assure smooth moving along X-axis for minimal variation .
- Large diameter ball screws coupled with servo motor assures sufficiently high rigidity.

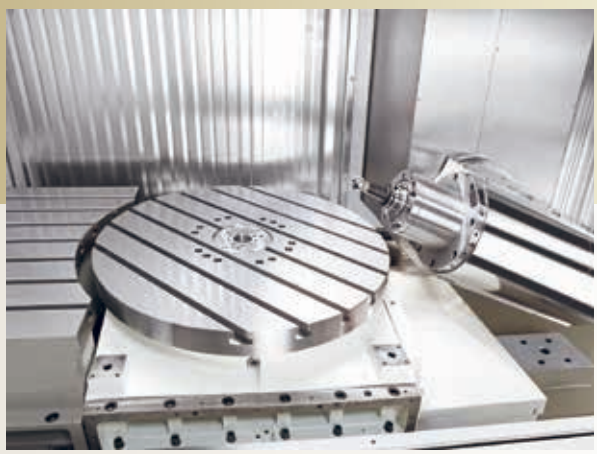
VICTOR-TAICHUNG

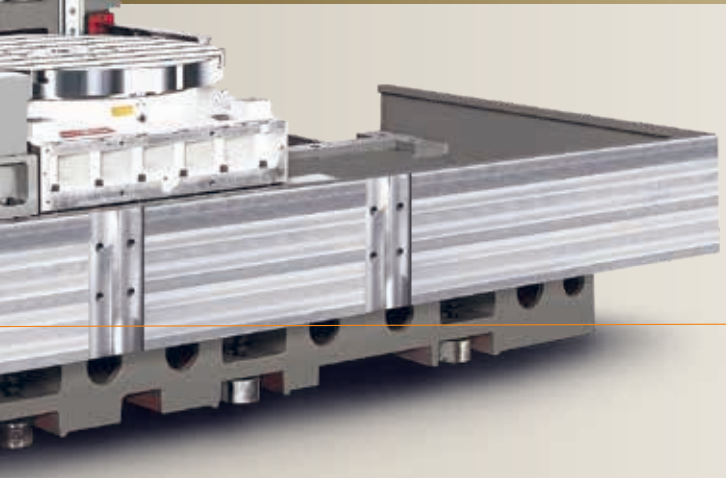
Swivel head (B-axis) with built-in spindle 22kW/15000rpm

- **Roller gear** mechanism minimizes the backlash and guarantees high accuracy at an arbitrary angle.
- **Hirth Coupling** is included as standard to clamp the swivel spindle at every 1˚ indexing to enhance structure rigidity for heavy milling & drilling.
- **Built-in 15000rpm spindle** offers 22kW/167Nm output at a low base speed 1060rpm.
- Oil-air lubrication with filtration system is used for spindle bearing.
- BBT-40 tooling system offers additional clamping to reduce spindle run-out at high rpm. HSK-A63 tooling system is also available as an option.

Roller-Cam-Drive Rotary Table Ø800mm (C-axis)

- Innovative roller cam mechanism ensures high accuracy less than 15 seconds (0.004 degree).
- High clamping torque 3433Nm enables heavy 4+1 axis heavy milling.
- No fixed table at the right side allows swivel head to move down vertically for largest machining area and better chip disposal and coolants as well.
- Rotary table diameter 800mm with loading capacity 1200kg suitable for loading big or heavy parts.
- 8+1 hydraulic/pneumatic ports are available as an option to direct the power through C-axis and pallet for multiple point clamping. Air sealing detecting can be also implemented to assure clamping quality.





Fixed Table 1250 x Ø800mm

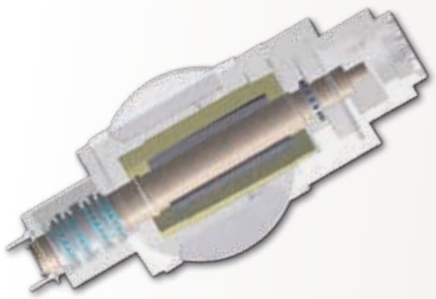
- Fixed table extends the application on 3 or 4 axis machining.
- With C-axis clamped by brake, the fixed table and rotary table afford heavy part up to 2400kg.
- Longer fixed table 2100x800mm is available as an option to load another rotary table (A-axis) with tailstock for alternative application.

Victor's own Spindle

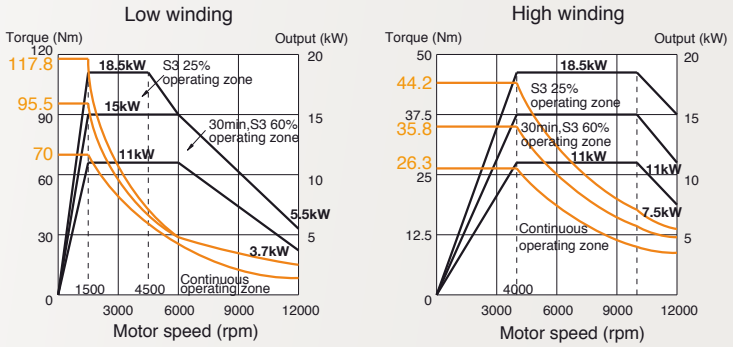
- BIG-PLUS® BT-40 spindle (BBT-40 spindle) with additional contact on spindle for higher face milling.
- All spindles are manufactured in-house by Victor Taichung, and each carries its own unique I.D. code to facilitate future servicing requirements.
- 12000/15000rpm spindle with oil/air lubricated spindle bearings ensures sufficient lubrication and longer service life .

12000/15000 rpm spindle (Vcenter-AX380/AX630)

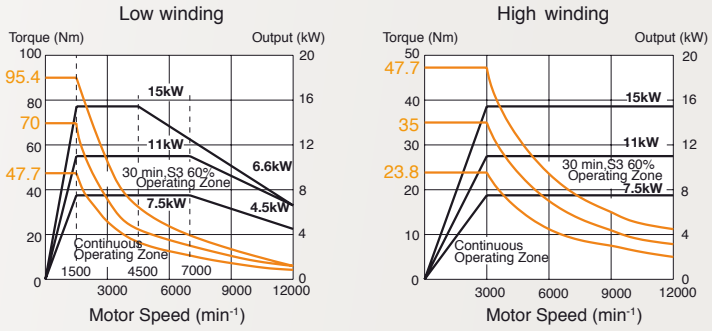
15000 rpm spindle (Vcenter-AX800)



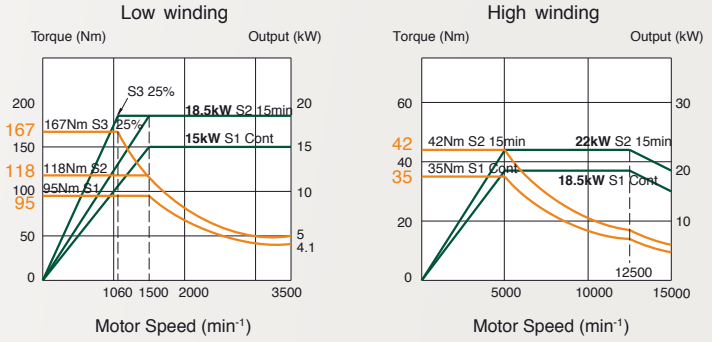
- **Fanuc αi I12/12000 (std. without CTS)**



- **Fanuc αi T8/12000 (opt. with CTS)**



- **Fanuc Bi 112L/15000 (Standard)**



Oil Cooler for Spindle

While the spindle structure is built for maximal rigidity, the spindle oil cooler is installed to circulate coolants around cooling jacket of built-in spindle to ensure longer service life for spindle bearings. This oil cooler is also included for DCS (Directly Coupled Spindle) to prolong service life of spindle bearings.

Machine Options

Chip conveyor

Different type of chip conveyors are required for various part materials. Victor's offer chip conveyor takes chip flushed by the high pressure coolants to the machine front and disposes to the left side of machine.

Coolant Though Spindle (CTS)

For improved deep hole drilling and boring capability, coolants can be forced through the center of the spindle under the high pressure (20-70 bars by different brands of pumps) directly to the cutting area. Victor Taichung's customized cleaning system by centrifugal dispersion or replaceable filter cores is far more reliable with less maintenance than conventional system.

Hydraulic / Pneumatic ports on rotary table

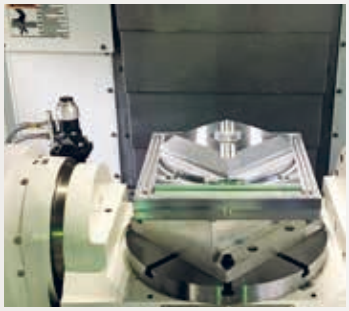
- The rotary coupling can be installed inside the rotary table to offer the hydraulic or pneumatic powers through the rotary table for fixture un/clamping.
- With the air supplied, this option help detect clamping quality for unmanned operation (air sealing detection).

Linear scales / Angular encoders

- Linear scales for 3 axes offer exceptional accuracy up to 0.005mm over full stroke before machine is warmed up.
- Angular encoders for rotary axes guarantee high accuracy for every indexing during the long time machining.
- Heidenhain® or Fagor® scales available.

Auto tool length measurement

To reduce the tool setup time, auto tool length measuring system upgrades machining efficiency and accuracy.



- Renishaw® TS-27R or Heidenhain® TT-160 tool touch probe captures tool length and radius when probing the tool.
- Non contact probing system is also available by Renishaw® OTS/RTS or Heidenhain® TT-460 measuring system.

Auto part measuring

To reduce time spent setting part position and manually inspecting finished parts, auto part measuring is available with the use of Rensishaw® RMP/OMP-60 or Heidenhain TS-460 with infrared transmission.

VICTOR Taichung's NC PACKAGE

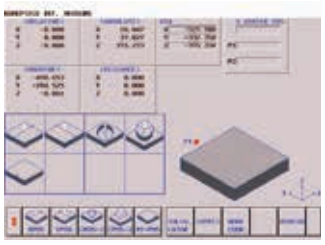
Fanuc 0i/32i/31i controls

With 10.4" color display included as standard, Victor Taichung's Fanuc control package includes conversational function MANUAL GUIDE I to reduce the programming time for easier operation. Through the latest technology for AI contouring control (AICC), Fanuc 0i-MF control is capable of addressing lookahead up to 200 blocks to offer optimal reliability with the highest level of machine integration.

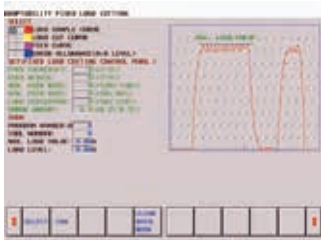
For higher speed and precision, the control option Data Server board can be installed to extend the memory length for upgrading the data transfer rate. The machine controller can be upgraded to 31i-B control which is capable of addressing 600 blocks as standard and optionally 1000 blocks available by the so-called AICC-2 with HSP function (High Speed Processing) to further reduce the block addressing time for better surface finish.

VSS (Victor Software System) -Victor GUI

With exclusive software developed in-house by highly experienced engineers, VSS macros enhance not only machine operation to reduce tool set-up time but also safety features to protect costly spindle. Productivity can be further increased when the adaptive controlled cutting is implemented.



Smart workpiece measurement



Adaptive cutting at constant loading

Precision level selector

Renishaw® GUI

Control features for fast contour milling

Feature \ Controller	Fanuc			Heidenhain	
	0*i*-MF	32*i*-B	31*i*-B	TNC-620	TNC-640
Block addressing time	2 ms* (with AICC-2)	2 ms	1 ms (Opt. 0.4 ms by HSP)	1.5 ms	0.5 ms
Preview contouring (look ahead blocks)	200* (with AICC-2) (Opt. 400)	200 (Opt. 400)	600 (Opt. 1000 by HSP)	5000	5000
Graphic display	10.4" (Opt. 15")	10.4" (Opt. 15")	10.4" (Opt. 15")	15"	15" (opt. 19")
Data storage	1280m (512kB) Opt. 5120m (2MB)	1280m (512kB) Opt. 5120m (2MB)	2560m (1MB) Opt. 10240m (8MB)	Min. 2 GB	Min. 2 GB
Data server (Memory extension)	Opt. (by CF Card)	Opt. (by CF card)	Std. (with CF card)	N.A. (8 GB with CFR)	Std. 21 GB (by SSRD) Opt. 144 GB (by HRD)
Ethernet link	Std.	Std.	Std.	Std.	Std.
Conversational function	Manual guide i + VSS macros	Manual guide i	Manual guide i	Std.	Std.
Data transfer interface	PCMCIA + USB	PCMCIA + USB	PCMCIA + USB	USB	USB

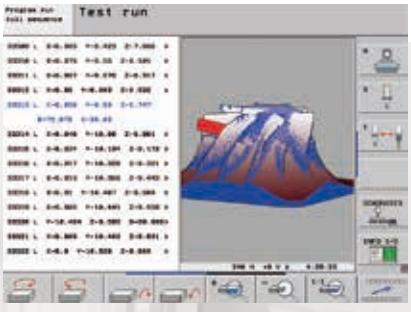
*Victor Taichung's standard

VICTOR-TAICHUNG

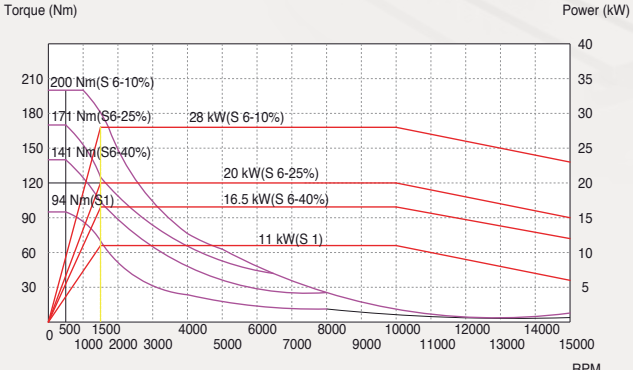
Heidenhain TNC-620/640 controls

With 15" monitor included as standard, machine operation becomes an easy and pleasant job. Powerful dialogue programming SmartSelect® with fully alphanumeric keyboard, Heidenhain TNC-620 control is capable of addressing 5000 blocks for 4+1 axis machining and TNC-640 control is perfect for full 5 axis machining.

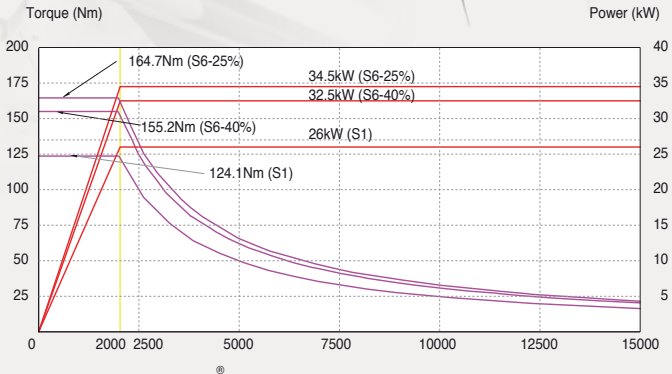
Regardless what type of 5-axis programs, TNC-640 control makes all the compensating movements in the linear axes resulted from the titling axes. The unique feature **TCPM (Tool Center Point Management)** provides an optimal tool guidance and prevents contour gouging. With TCPM included, the interpolation between the start and end positions can be defined, so the face milling and peripheral milling can be implemented. The programmed feed rate and inclination angle for the milling tools can be also defined so as to obtain better surface quality during large compensating movement.



Spindle Output (Heidenhain)



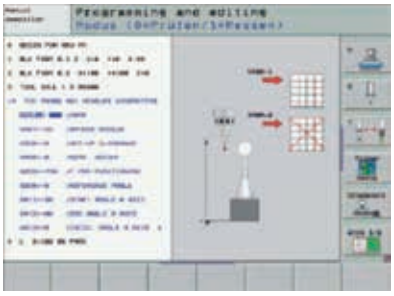
Siemens motor 1PH8131
Vcenter-AX380/AX630



ATE® motor DC 170/250/4
Vcenter-AX800

Calibrating Rotary Axis with KinematicsOpt

With the Heidenhain touch probe (TS-460 or TS-740) inserted and this **hardware option KinematicsOpt**, a 3D touch probe cycle measures machine rotary axes fully automatically. A calibration ball is fixed at any position of machine table, the rotary axes can be measured and data will be calibrated to minimize the spatial error caused by the titling movement. Similar facility is also available on Fanuc 31-B5 control coped with Renishaw® AxiSet and touch probe OMP-60 or RMP-600.



Machine Specification

Item		Unit	Vcenter-AX380	Vcenter-AX630	Vcenter-AX800	Vcenter-AX800II
Travel	X axis travel	mm	700	700	1600	1600
	Y axis travel	mm	500	500	700	700
	Z axis travel	mm	540	500	600 (vertical milling) 1000 (horizontal milling)	400 (vertical milling) 740 (horizontal milling)
Distance	Spindle center to column (vertical milling)	mm	547	300	190 ~ 890	190 ~ 890
	Spindle nose to table surface (or table center)	mm	60 ~ 600	100 ~ 600	50 ~ 650	50 ~ 450
	Spindle center line to table surface (horizontal milling)	mm	-	-	0 ~ 1000	0 ~ 740
	Height from table surface (or table center) to floor	mm	1085.5	766	930	1130
Table	Table work area	mm	Ø380	Ø630 x 500	1250 x Ø800	Ø800
	Dimension of T-slot	mm	12H7	5 x 18H7 x 100	7 x 18H7 x 100	7 x 18H7 x 100
	Max. table load (rotary)	kg	200	300	1200	1200
	Max. table load (fixed + rotary)	kg	-	-	2400	-
Spindle	Spindle taper		BBT-40	BBT-40	BBT-40	BBT-40
	Spindle motor - cont./30/10min	kW	11 / 15 / 18.5 (w/t CTS) 7 / 11 / 15 (w. CTS)	11 / 15 / 18.5 (w/t CTS) 7 / 11 / 15 (w. CTS)	15 / 18.5 / 22	15 / 18.5 / 22
	Spindle speed	rpm	12000 (opt. 15000)	12000 (opt. 15000)	15000	15000
Linear feed rate	Rapid feed rate - X/Y/Z	m/min	48 / 48 / 48	48 / 48 / 48	30 / 30 / 30	30 / 30 / 30
	Axis feed motor - X/Y/Z	kW	4 / 4 / 7	7 / 4 / 7	9 / 7 / 9	9 / 7 / 9
	Cutting feedrate by table	m/min	20 (opt. 30)	20 (opt. 30)	20	20
	Linear guide width (X/Y/Z)	mm	30 / 35 / 45	45 / 45 / 45	45 / 55 / 55	45 / 55 / 55
	Ballscrew dia x pitch (X/Y/Z)	mm	Ø40 x 16 (X/Y/Z)	Ø40 x 16 (X/Y/Z)	Ø55 x 12 (X) / Ø45 x 12 (Y) / Ø50 x 12 (Z)	Ø55 x 12 (X) / Ø45 x 12 (Y) / Ø50 x 12 (Z)
Rotary feed rate	Tilting (swivel) / rotary angles	deg.	-120 ~ 30 / 360	-30 ~ 110 / 360	-30 ~ 110 / 360	-110 ~ 30 / 360
	Rotary rapid feed rate	rpm	33.3 / 40 (A/C)	16.7 / 33.3 (B/C)	20 / 25 (B/C)	20 / 25 (B/C)
	Axis feed motor	kW	3 / 1.6 (A/C)	3 / 1.6 (B/C)	4 / 4 (B/C)	4 / 4 (B/C)
	Continuous indexing resolution	deg.	0.001 (roller cam drive)	0.001 (roller cam drive)	0.001 (roller cam drive)	0.001 (roller cam drive)
	Continuous torque output	N-m	1060 / 588 (A/C)	2180 / 720 (B/C)	1580 / 2640 (B/C)	1580 / 2640 (B/C)
	Braked torque (clamping)	N-m	2452 / 2158 (by brake, A/C)	5880 / 1960 (B/C)	1710 (1° by coupling), 960 / 3433 (by brake, B/C)	1710 (1° by coupling), 960 / 3433 (by brake, B/C)
Tools	Max. tool length	mm	300	300	300	300
	Max. tool weight	kg	7	7	7	7
	Magazine capacity		30 (opt. 40)	30 (opt. 40)	40 (opt. 60)	40 (opt. 60)
	Max. tool diameter (without adjacent tools)	mm	76 (125)	76 (125)	76 (125)	76 (125)
	Tool exchange time	sec.	2.3 (T-T), 6.0 (C-C)	2.5 (T-T), 5.5 (C-C)	2.8 (T-T), 7.7 (C-C)	2.8 (T-T), 7.7 (C-C)
	Pull stud angle	deg.	15 (JIS 40P)	15 (JIS 40P)	15 (JIS 40P)	15 (JIS 40P)
	Tool selection method		Random	Random	Random	Random
Accuracy	Positioning accuracy (ISO 230-2)	mm/deg	001 (X/Y/Z), 0.0056° (A/C)	0.01 (X/Y/Z), 0.0056° (B/C)	0.02 (X/Y/Z), 0.01° (B/C)	0.02 (X/Y/Z), 0.01° (B/C)
	Repeatability (ISO 230-2)	mm/deg	007 (X/Y/Z), 0.003° (A/C)	0.007 mm (X/Y/Z), 0.003° (B/C)	0.015 mm (X/Y/Z), 0.005° (B/C)	0.02 mm (X/Y/Z), 0.005° (B/C)
Machine	Power requirement	KVA	36 (excl. CTS) Fanuc 42 (excl. CTS) Heidenhain	33 (excl. CTS) Fanuc 42 (excl. CTS) Heidenhain	44 (excl. CTS) Fanuc 64 (excl. CTS) Heidenhain	44 (excl. CTS) Fanuc 64 (excl. CTS) Heidenhain
	Min/Max. air pressure	kg/cm²	5.5 ~ 6.5	5.5 ~ 6.5	5.5 ~ 6.5	5.5 ~ 6.5
	Coolant tank capacity	L.	400	400	450	450
	Std. NC controller (Fanuc)		0i-MF (10.4")	0i-MF (10.4")	0i-MF (10.4")	0i-MF (10.4")
	Floor space requirement (with conveyor)	mm	3200 x 2848	3581 x 4475	5575 x 4321	5575 x 4621
	Max. machine height	mm	2962 (αil12) 3084 (αT8i)	3038	3433	3433
	Machine weight	kg	6000	9000	15500	16000

Standard accessories:

- Spindle oil cooler
- Fully enclosed splash guard
- Rigid tapping
- Remote MPG (handwheel)
- 1° positioning indexing by coupling (for Vcenter-AX800)
- Hand tools and toolbox
- T nuts for table slot
- Built-in work light
- Auto power off system
- Leveling pads
- A/C for electrical cabinet (Vc-AX800)
- Fanuc e-book (CD)
- Auger conveyor (Screw type chip remover)

Optional accessories:

- A/C for electric cabinet (for Vc-AX380/AX630)
- Chip conveyor with cart
- Coolant Through Spindle (CTS)
- Air dryer
- Linear scales in X/Y/Z axes
- Angular encoder (in A/C or B/C or B/A axes)
- Auto tool length measurement
- Part measurement
- HSK-A63 tooling
- Table shower system
- Auto door
- Oil hole coolant
- Fanuc manuals
- Top covers (for Vc-AX630)
- Hydraulic/pneumatic ports on table:
  - 4 ports for Vcenter-AX380
  - 5 ports for Vcenter-AX630
  - 8+1 ports for Vcenter-AX800
- 5-axis simultaneous control (by Fanuc 31i-B5 or Heidenhain 640 controls)
- 5-axis accuracy calibrating tool:
  - Renishaw® AxiSet (working with OMP-60 or RMP-600)
  - Heidenhain® KinematicsOpt (working with TS-460, included for Heidenhain TNC-640 with full 5-axis control)

VICTOR's FANUC 0i-MF (Type 1)/32i-B/31i-B Control Specifications

Standard

ITEM	SPECIFICATION	DESCRIPTION
Controlled Axes		
1.	Controlled Axes	3 Axes (X, Y, Z)
2.	Simultaneous Controlled Axes	Position / Linear interpolation / Circular interpolation (3 / 3 / 2)
3.	Least Input Increment	0.001 mm / 0.0001 inch / 0.001 deg.
4.	Least Input Increment 1 / 10	0.0001 mm / 0.00001 inch / 0.0001 deg.
5.	Max. command value	±99999.999mm (±9999.9999in)
6.	Fine Acceleration & Deceleration Control	Std.
7.	High Speed HRV Control	Std.
8.	Inch / Metric Conversion	Std. (G20 / G21)
9.	Interlock	All Axes / Each Axis / Cutting Block Start
10.	Machine Lock	All Axes / Each Axis
11.	Emergency Stop	Std.
12.	Over-travel	Std.
13.	Stored Stroke Check 1 and Check 2	Std.
14.	Mirror Image	Each Axis
15.	Mirror Image M73, M74, M75, M76	X, Y Axes
16.	Follow-up	Std.
17.	Position switch (with Victo's own PLC)	Std.
Operation		
1.	Automatic Operation	Std.
2.	MDI Operation	MDI B
3.	DNC Operation	Reader / Puncher Interface is Required
4.	DNC Operation with Memory Card	PCMCIA Card Attachment is Required
5.	Program Number Search	Std.
6.	Sequence Number Search	Std.
7.	Sequence Number comparison and stop	Std.
8.	Buffer Register	Std.
9.	Dry Run	Std.
10.	Single Block	Std.
11.	JOG Feed	Std.
12.	Manual Reference Position Return	Std.
13.	Manual Handle Feed	1 Unit / Each Path
14.	Manual Handle Feed Rate	X1, X10, X100
15.	Z Axis Neglect	Std.
Interpolation		
1.	Positioning	G00
2.	Single Direction Positioning	G60
3.	Exact Stop Mode	G61
4.	Exact Stop	G09
5.	Linear Interpolation	G01
6.	Circular Interpolation	G02, G03 (multi-quadrant is possible).
7.	Dwell	G04
8.	Helical interpolation	Std.
9.	Skip Function	G31
10.	Reference Position Return	G28
11.	Reference Position Return Check	G27
12.	2nd / 3rd / 4th Reference Position Return	Std.
Feed		
1.	Rapid Traverse Rate	Std.
2.	Rapid Traverse Override	F0, 25%, 50%, 100%
3.	Feed Per Minute	G94 (mm / min)
4.	Tangential Speed Constant Control	Std.
5.	Cutting Feed rate Clamp	Std.
6.	Automatic Acceleration / Deceleration	Rapid traverse: linear; Cutting feed: exponential
7.	Rapid traverse Bell–shaped Acc. / Deceleration	Std. (G00)
8.	Bell–shaped Acc. / Deceleration Before & After Cutting Feed Interpolation	Std. (G01)
9.	Automatic Corner Deceleration	Std. (G64)
10.	Linear Acc / Deceleration Before & After Cutting Feed Interpolation	Std. (G01)
11.	Feed rate Override	0 ~ 150%
12.	Jog Override	0 ~ 100%
13.	Automatic Corner Override	G62.
14.	Feed Stop	Std.
15.	AI contour control (AICC, G05.1) (in total)	200 blocks (0i/32i with AICC-2)
16.	AICC-2 + High speed processing (G05.1) (in total)	600 blocks (31i)
17.	Jerk Control	Std. (31i)
18.	Rigid Tapping Bell–Shaped Acc./Deceleration	Std.
19.	Feed rate clamp by arc radius (G02/G03)	Std.
Program Input		
1.	EIA / ISO Automatic Recognition	Std.
2.	Label Skip	Std.
3.	Parity Check	Std.
4.	Control In / Out	Std.
5.	Optional Block Skip	1
6	Max. Programmable Dimension	±8-Digit
7.	Program Number	O4-Digit
8.	Sequence Number	N5-Digit
9.	Absolute / Incremental Programming	G90 / G91
10.	(Pocket Calculator Type) Decimal Point Programming	Std.
11.	Input Unit 10 Time Multiply	Std.
12.	Plane Selection	G17, G18, G19
13.	Rotary Axis Designation	Std.
14.	Rotary Axis Roll-Over Function	Std.
15.	Polar coordinate Command	G16
16.	Coordinate System Setting	Std.
17.	Automatic Coordinate System Setting	Std.
18.	Work piece Coordinate System	G52, G53, G54 ~ G59
19.	Addition of Workpiece Coordinate System Pair	48 Pairs
20.	Manual Absolute On And Off	Std.
21.	Optional Chamfering / Corner R	Std.
22.	Programmable Data Input	G10
23.	Sub Program Call	4 (0i/32i) or 10 (31i) folds nested
24.	Custom macro B	Std.
25.	Addition of Custom Macro Common Variables	#100~#199,#500~#999
26.	Canned Cycles For Milling	G73 / G74 / G76, G80-G89, G98 / G99
27.	Small hole peck drilling cycle	G83
28.	Circular Interpolation by R Programming	Std.
29.	Program Format	FANUC std. format
30.	Program Stop / Program End	M00 / M01 / M02 / M30
31.	Reset	Std.
32.	Scaling	G51
33.	Coordinate System Rotation	G68
34.	Tilted work plane command	G68.2
Auxiliary Spindle Speed Function		
1.	Auxiliary Function Lock	Std.
2.	High Speed M / S / T Interface	Std.
3.	Spindle Speed Function	Std.
4.	Spindle Override	50 ~ 120%
5.	1st Spindle Orientation	Std.
6.	M Code Function	M3 digit
7.	S Code Function	S5 digit
8.	T Code Function	T2 digit
9.	Rigid tapping	Std.
Tool Function & Tool Compensation		
1.	Tool Function	T8 digit
2.	Tool Offset Pairs	±6-digit, 400 (0i/32i), 999 (31i)
3.	Tool Offset Memory C	Std. (D/H codes are separated)
4.	Tool Length Compensation	G43-G44, G45-G48, G49
5.	Cutting Compensation C	Std.
Accuracy Compensation		
1.	Backlash Compensation	Rapid Traverse / Cutting Feed
2.	Stored Pitch Error Compensation	Std.
Edit Operation		
1.	Part Program Storage Length (in total)	1280m (512KB) (0i/32i), 2560m (31i)
2.	Number of Registerable programs (in total)	400 (0i/32i),1000 (31i)
3.	Part Program Editing / Protect	Std.
4.	Background Editing	Std.
Setting and Display		
1.	Status Display	Std.
2.	Clock Function	Std.
3.	Current Position Display	Std.
4.	Program Display	Program name 31 characters
5.	Parameter Setting and Display	Std.
6.	Self Diagnosis Function	Std.
7.	Alarm Display	Std.
8.	Alarm History Display	25
9.	Operation History Display	Std.
10.	Help Function	Std.
11.	Run Hour and Parts Count Display	Std.
12.	Actual Cutting Feedrate Display	Std.
13.	Display of Spindle Speed and T Code At All Screens	Std.
14.	Graphic Function	Std.
15.	Dynamic graphic display	Std.
16.	Servo Setting Screen	Std.
17.	Spindle Setting Screen	Std.
18.	Display of Hardware and Software Configuration	Std.
19.	Multi-Language Display	Std.
20.	Data Protection Key	Std.
21.	Erase CRT Screen Display	Std.
22.	Machining Condition Selecting Screen	Std.
23.	Color LCD / MDI	10.4"(0i/32i/31i)
Data Input / Output		
1.	Reader / Puncher Interface	RS-232 interface
2.	External Work piece number search	9999
3.	Memory Card Interface	Std.
4.	Embedded Ethernet (10Mbps)	Std.
5.	USB device	Std.

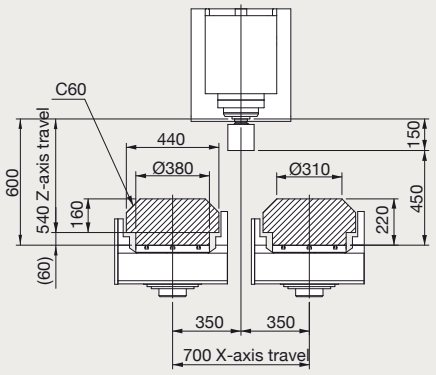
OPTIONS

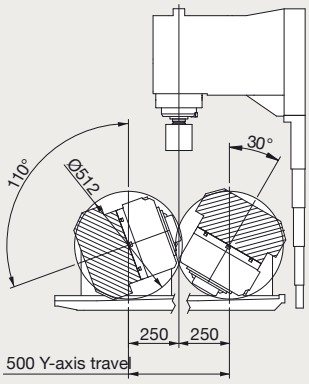
ITEM	SPECIFICATION	DESCRIPTION		
With hardware included		**0i-M**	**32i-B**	**31i-B**
1.	Conversational programming (Manual Guide i)	Std.	Std.	Std.
2	Conversational programming (Super Cap i)	N.A.	N.A.	N.A.
3.	Data server (with PCB and CF card 1GB)	□	□	Std.
4.	Fast Ethernet (100Mbps, available in Data server)	□	Std.	Std.
5.	Tool life management (2 buttons on control panel)	□	□	□
6.	Part Program Storage Length 5120m (2MB in total)	□	□	□
7.	Part Program Storage Length 8MB in total	N.A.	N.A.	□
8.	Program restart	□	□	□
9.	Optional block skip 9 blocks	□	□	□
10.	High Precision Contour Control (HPnanoCC, with RISC board)*1	N.A.	N.A.	Std.
11.	Profibus	□	□	□
12.	5-axis simultaneous control	N.A.	N.A.	□ (31i-B5)
Without hardware included				
13.	AI contour control II (AICC-2, G05.1, 200 blocks) *2	Std.	Std.	Std.
14.	Look ahead block expansion (1000 blocks in total) *2	N.A.	N.A.	□
15.	Tool load monitoring (with Victor own PLC)	□	□	□
16.	Programmable mirror image (G50.1)	□	□	□
17.	Bi-directional Pitch Error Compensation	□	□	□
18.	Addition of tool pairs for tool life management 512 sets	N.A.	□	□
19.	Cylindrical interpolation (G7.1) (used on 4th-axis)	Std.	□	□
20.	Interruption type custom macro	N.A.	□	□
21.	Addition of work-piece coordinate systems 300 sets	N.A.	N.A.	□
22.	Exponential interpolation (G2.3)	N.A.	N.A.	□
23.	Smooth interpolation	N.A.	N.A.	□
24.	Spiral/conical interpolation	N.A.	N.A.	□
25.	Polar coordinate interpolation	N.A.	□	□
26.	Floating reference position return	N.A.	N.A.	□
27.	Hypothetical axis interpolation (G07)	N.A.	N.A.	□
28.	Tool retract and return (G10.6 with Victor own PLC)	N.A.	N.A.	□
29.	NURBS interpolation (only avail. in HPCC/RISC)	N.A.	N.A.	□

*1. Block addressing time:
- 2 ms for AICC-2 (0i-F/31i-B)
- 1ms for HPCC (max. cutting feed 60 m/min) (31i-B)
- 0.4ms for AI HPCC and AI nano HPCC (150m/min) (31i-B) and AICC-2+ High speed processing (31i-B)

Vcenter-AX380

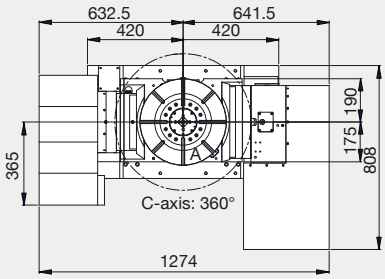
Machining Range (Assuming tool length 150mm)

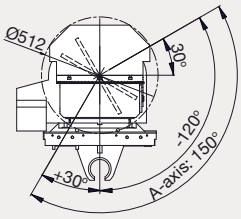


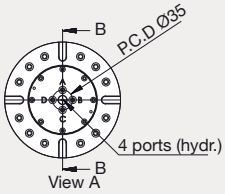


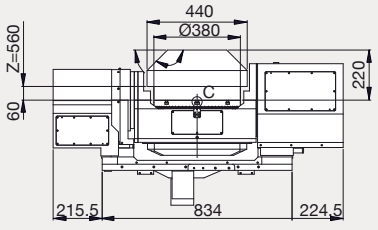
Unit: mm

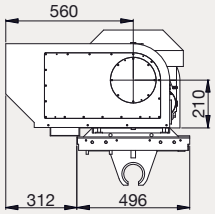
Table Dimension

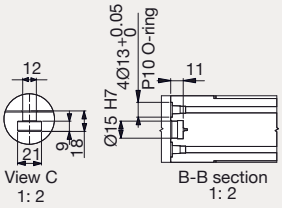






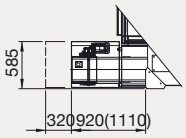


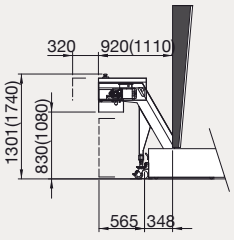




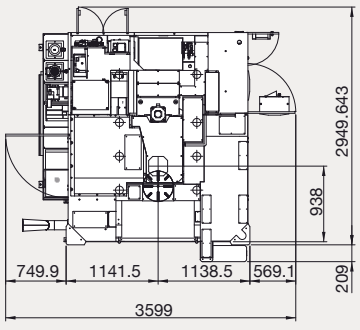
Unit: mm

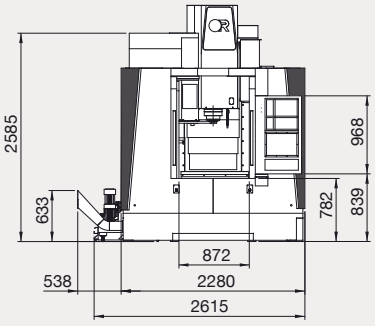
Machine Layout



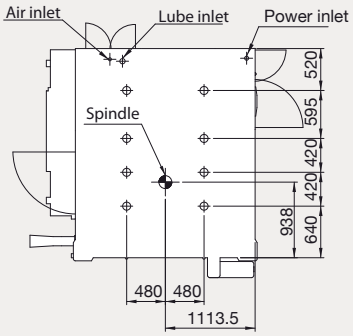


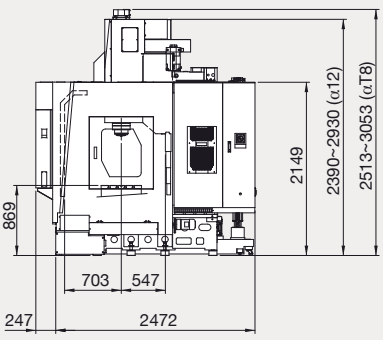
Equipped with chip conveyor (opt.)





Equipped with screw chip remover (std.)



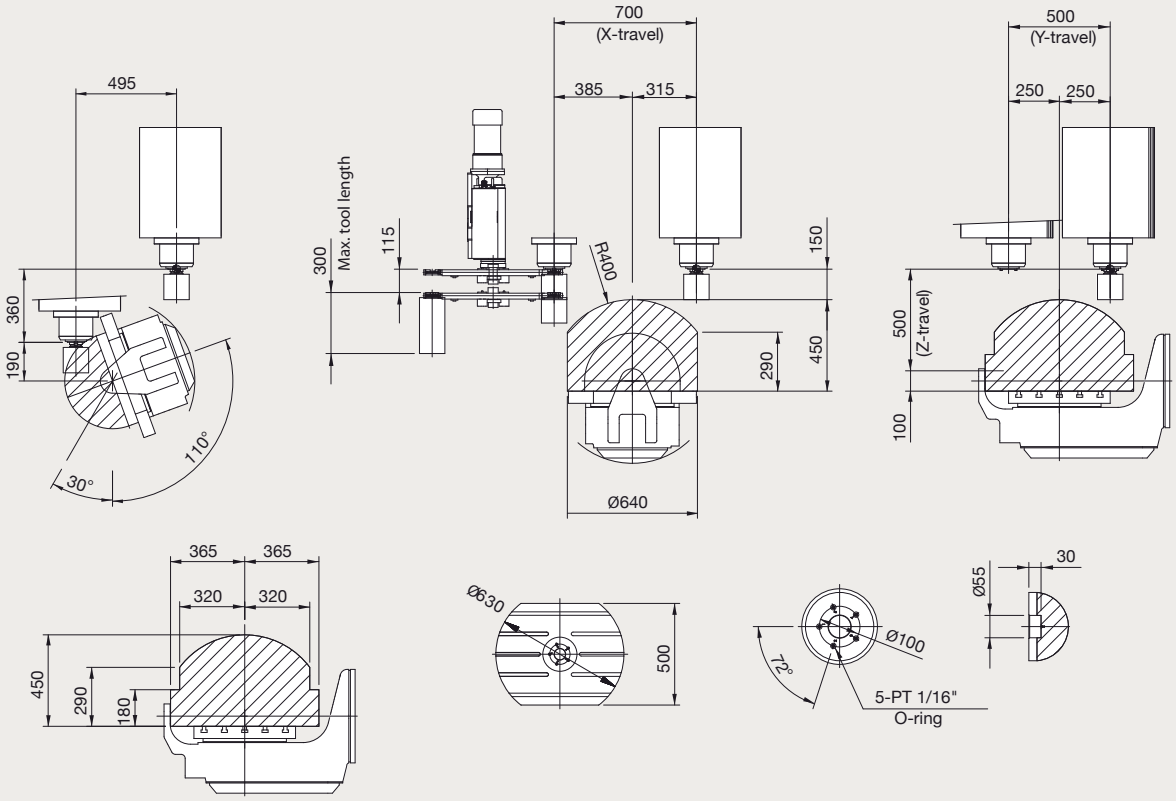


Unit: mm

Vcenter-AX630

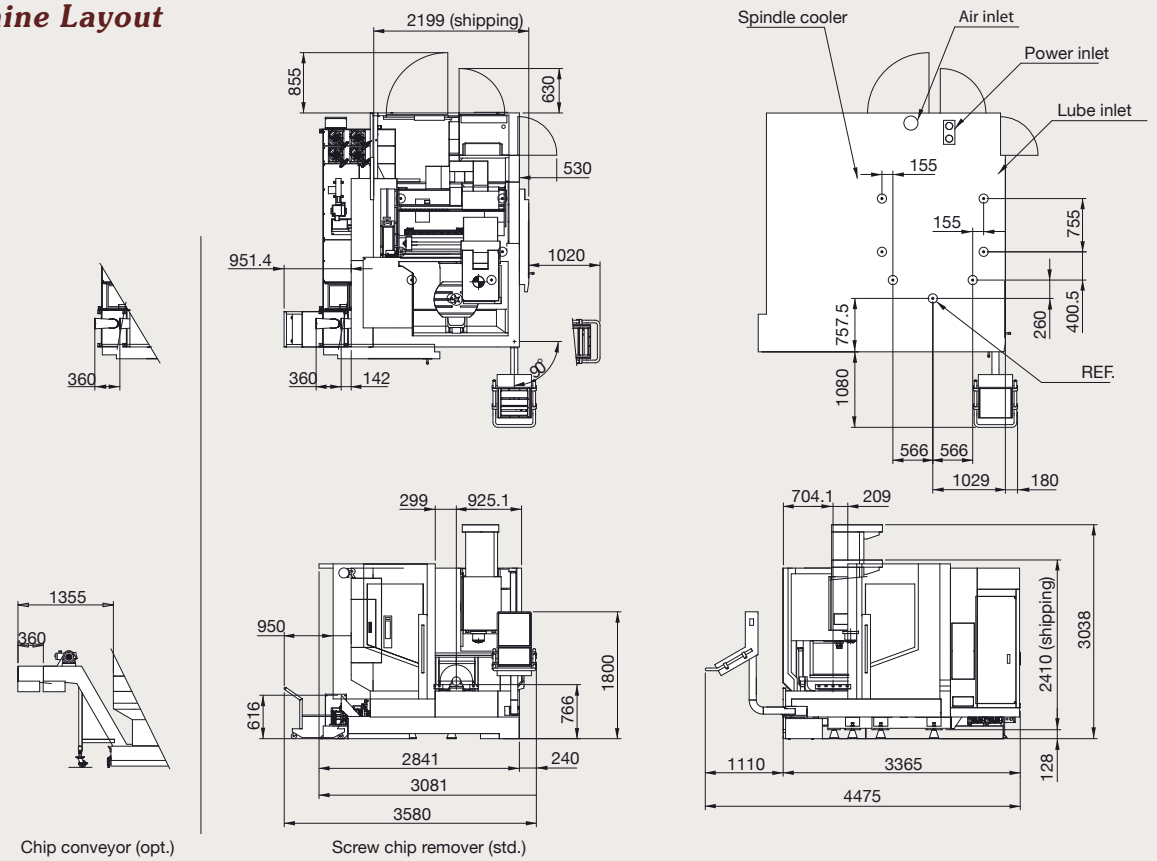
VICTOR-TAICHUNG

Machining Range (Tool length 150mm)



Unit: mm

Machine Layout



Chip conveyor (opt.)

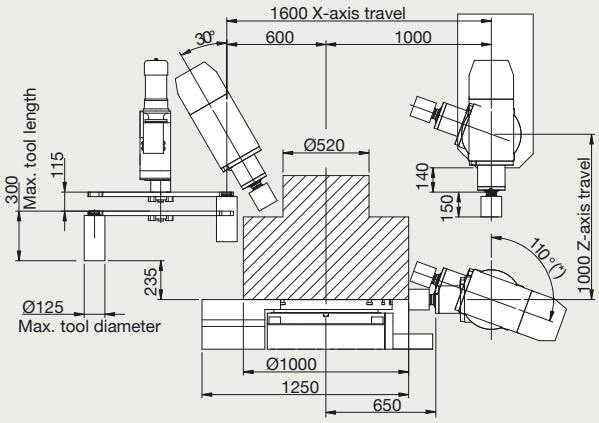
Screw chip remover (std.)

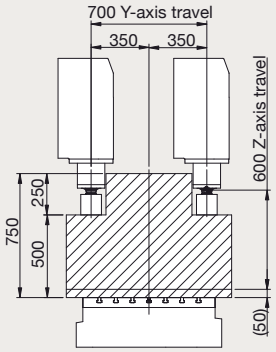
Unit: mm

Vcenter-AX800 II

With C-axis rotary table moved forward by 100mm (3.93"), the maximum machining range has been increased from 1000mm (39.4") to 1200mm (47.24"), This allows the Vcenter-AX800II to increase the maximum dimensions of a component up to Ø1200xH300 mm (Ø47.24"xH11.8").

Vcenter-AX800

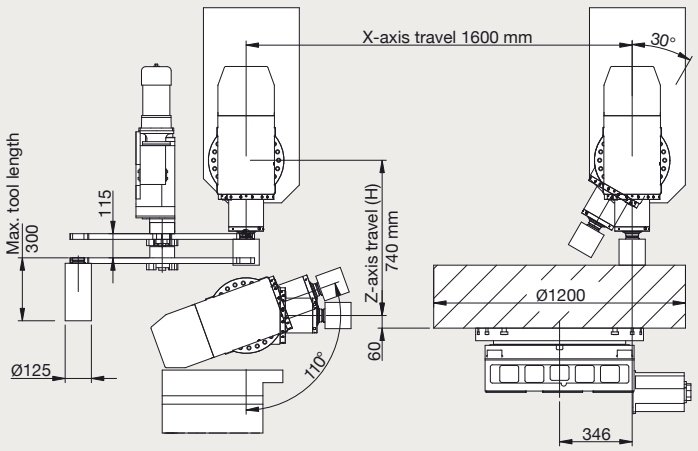


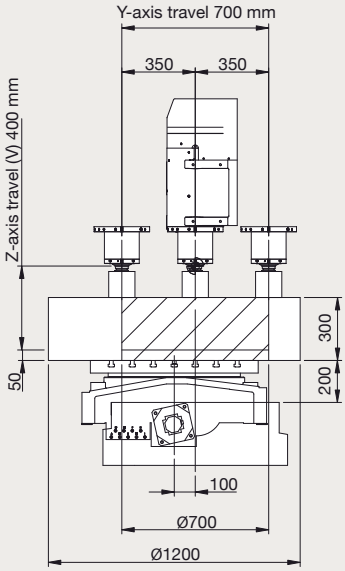


*105˚for Heidenhain control

Unit: mm

Vcenter-AX800 II

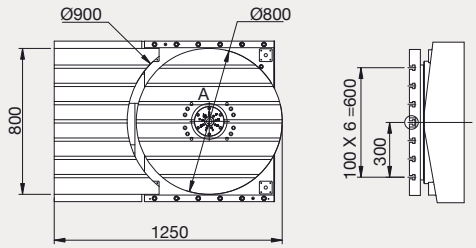


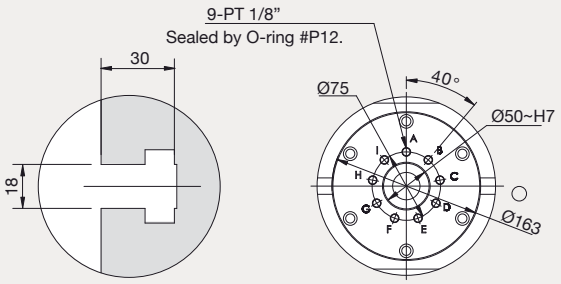


Unit: mm

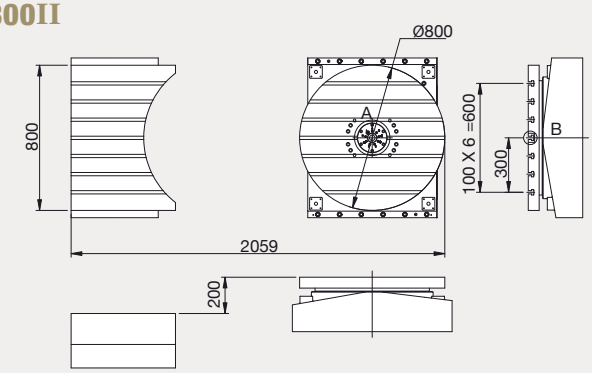
Table Dimension

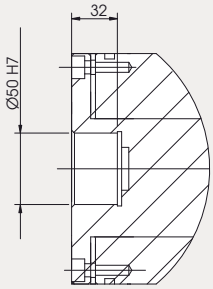
AX800





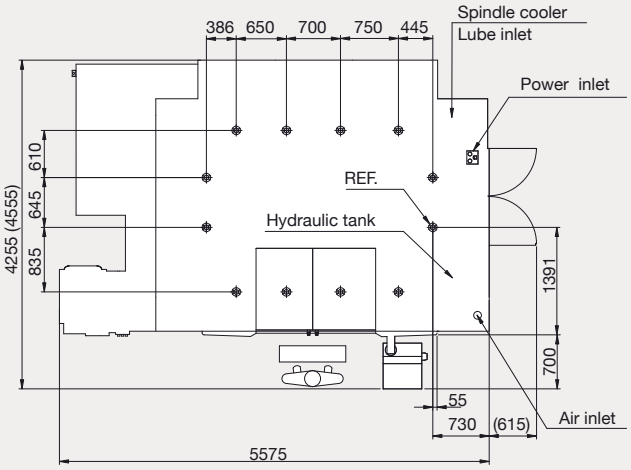
AX800II

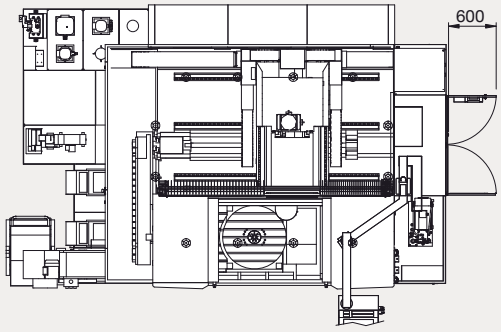


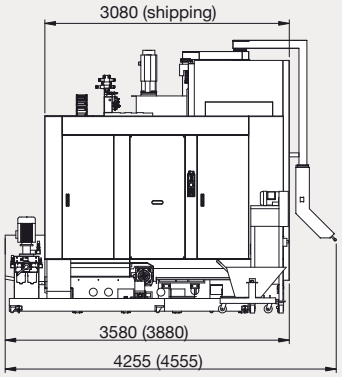


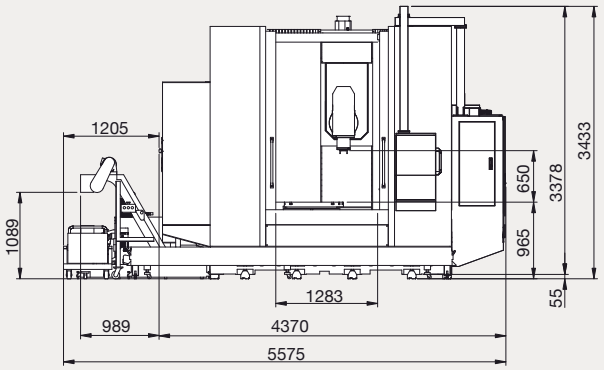
Unit: mm

Machine Layout





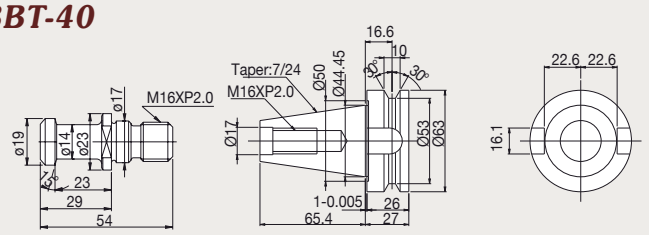




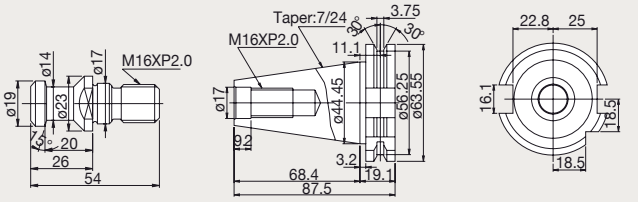
Vc-AX800 (AX800II) Unit: mm

Tool Shank

BBT-40

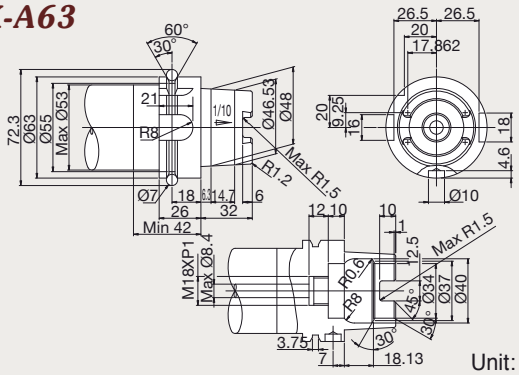


SK-40



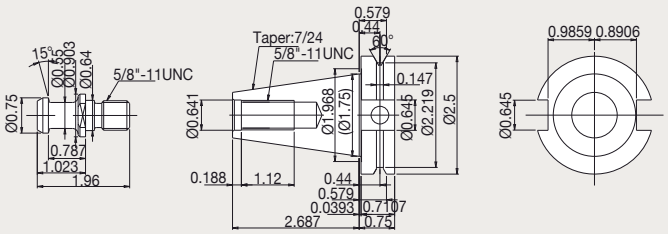
Unit: mm

HSK-A63



Unit: mm

BCV-40



Unit: inch

VMT-X400

Vcenter-205

Vcenter-H630HS

VictorTaichung profile:
Sales turnover: USD 142 mil's (in 2019)*
No. of employees: 836
*Exchange rate: 1 USD=30 TWD.

HTL VTL **VMC** HMC **XMT** PIM

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