VictorTaichung

Vturn - P16 / P20

Pursuit of Productivity

- Genuine slant bed
- 30/30 m/min rapid feed
- Servo driven turret
- Double roller spindle bearing
- Compact design ready for unmanned operation

Victor Taichung – an established ISO 9001 & 14001 company

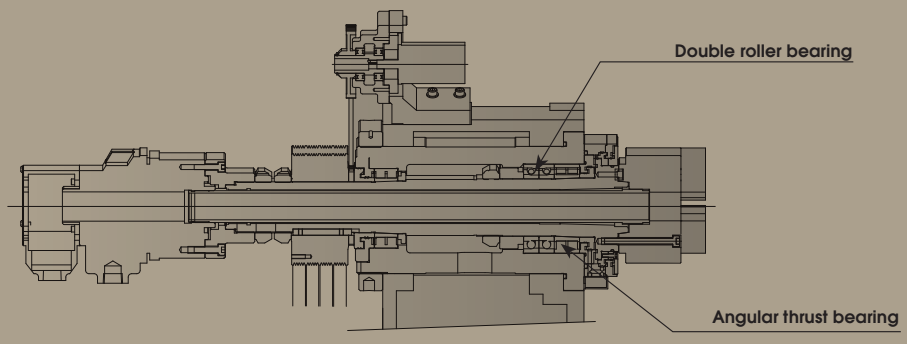
Pursuit of Performance

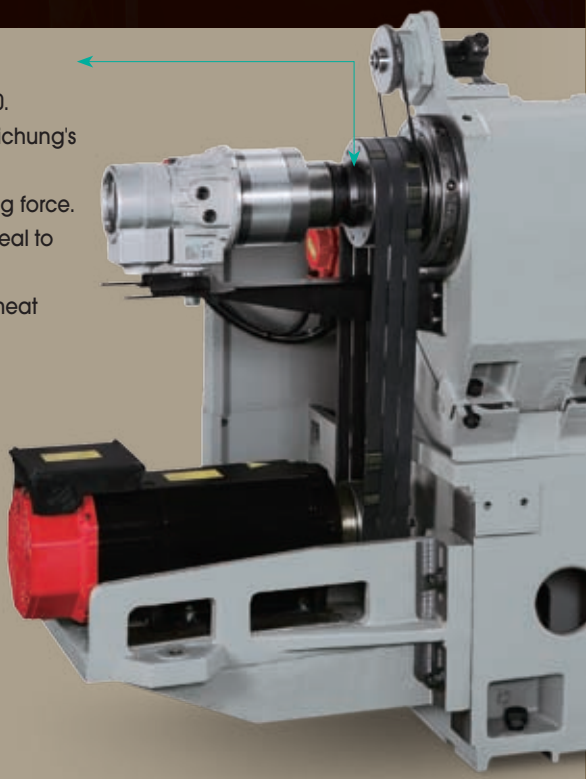
With 6 decades of experience in machine manufacturing, Victor Taichung has, not only enhanced the structure of the Vturn P-series lathes slant bed and turret, but also upgraded the rapid feed rates in order to improve productivity.

4-layer labyrinth design

High Power Spindle with High Rigidity

- 11kW (15HP) for Vturn-P16 and 15kW (20HP) for Vturn-P20.
- Double roller bearings (NN type) are used on Victor Taichung's own spindle to facilitate heavy cutting.
- Angular thrust bearings are used to absorb axial cutting force.
- The Spindle cover is designed with a 4 layer labyrinth seal to protect the spindle bearings.
- Encased in a heavily ribbed headstock for maximum heat dissipation.

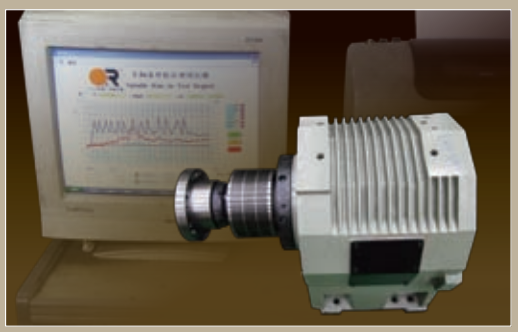




Victor Taichung's Own Spindle Assembly

- Spindle and headstock are both in-house designed and manufactured in the air conditioned assembly room to assure high quality and reliability.
- Every spindle has been inspected and tested with her own test record.

Run-up Testing



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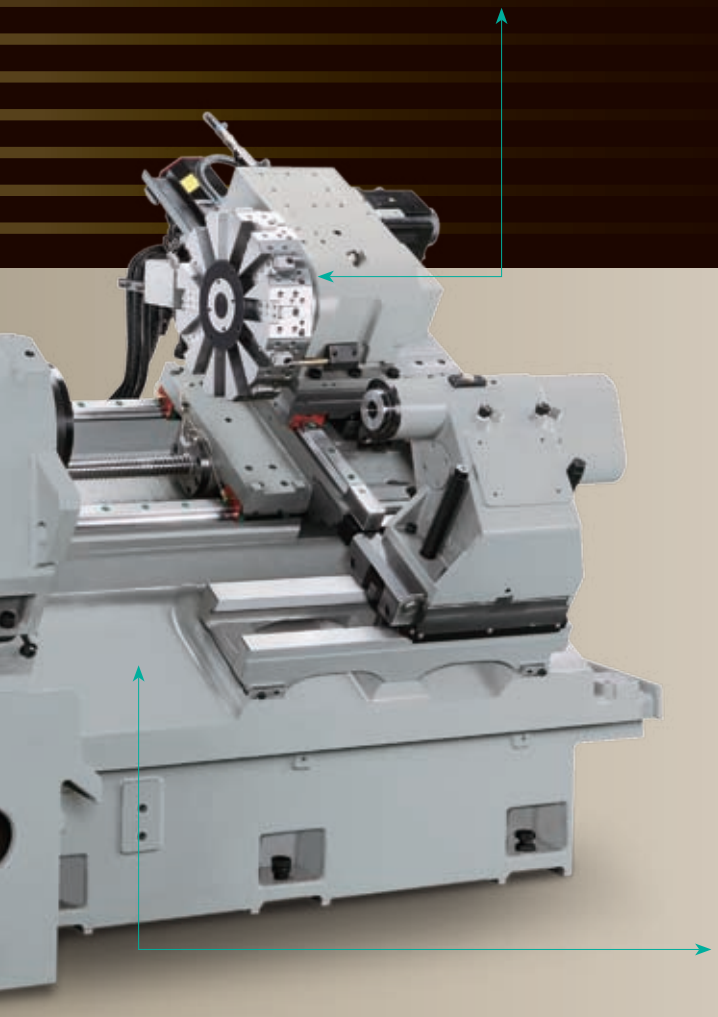
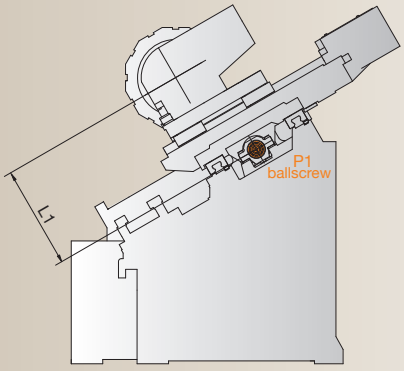
Servo Driver Turret with High Rapid Feed 30/30 m/min

- The servo driven turret is hydraulically clamped by a curvic coupling facilitating fast tool indexing times.
- Linear guides (LM slideways width 35mm) bolted on the slant bad reduces friction for high rapid feed 30/30 m/min in X/Z axes.
- Pre-tensioned double anchored ballscrews directly coupled with the servo motors allow heat absorption without displacement.

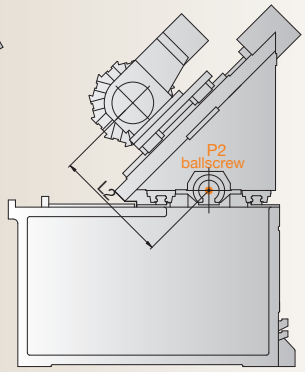


Genuine Slant Bed by ONE PIECE Casting

- A one piece homogeneous Meehanite® cast slant bed distributes stress throughout the structure.
- The Z-axis ballscrew is mounted directly onto the slant bed (P1) instead of the flat machine base (P2), which minimizes the distance from the ballscrew to the turret enhancing the cutting stiffness.



Genuine



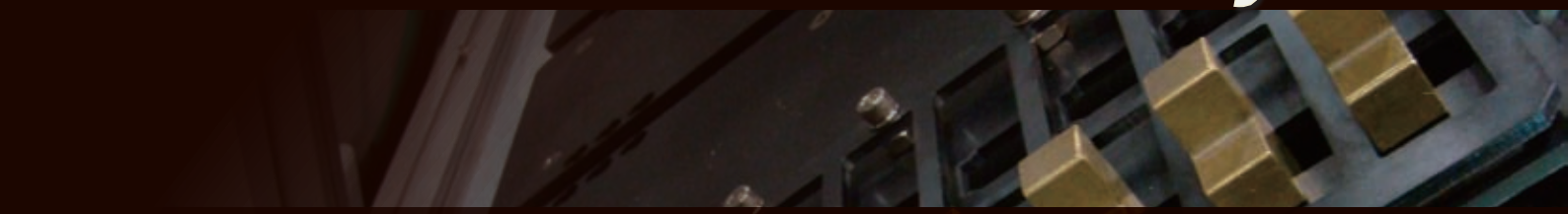
Pseudo (By triangular carriage)

Dynamic Balancing

GB Gauging

Spindle Assembly

Pursuit of Productivity



With 2 decades of experience in factory automation, Victor Taichung's Vturn P-series lathes have been compactly designed and built enabling them to be integrated with either articulated or gantry robots for maximum productivity.

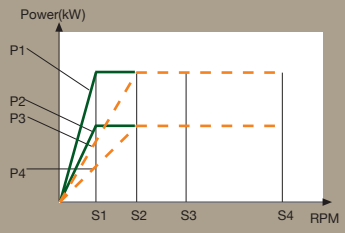
Coolant flush onto cover

Minimum Chip Build-up

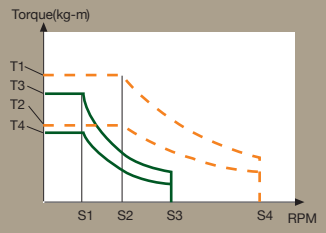
- A Coolant flush onto the Z-axis cover reduces chip accumulation.
- The High volume L-Shaped coolant tank reduces heat build-up enhancing machining accuracy.
- The coolant tank is removed from the front of the machine reducing the overall machine footprint.

**Photo: Single pallet work feeder*

Spindle Output



P1 (*30 min. in low winding) S1 (base RPM in low winding)
P2 (cont. in low winding) S2 (base RPM in high winding)
P3 (*30 min. in high winding) S3 (max. RPM in low winding)
P4 (cont. in high winding) S4 (max. RPM in high winding)



T1 (*30 min. in low winding) S1 (base RPM in low winding)
T2 (cont. in low winding) S2 (base RPM in high winding)
T3 (*30 min. in high winding) S3 (max. RPM in low winding)
T4 (cont. in high winding) S4 (max. RPM in high winding)

Model	Spindle Motor	Base Speed (rpm)		Max. Speed (rpm)	P. _ Cont. kW (HP)	P. kW (HP)
Vturn-P16	α8i	Single winding	1312	6000	7.5 (10)	11 (14.7) -30 min.
Opt.	αP12i Good for low speed turning	Low winding	500	1500	3.7 (5)	7.5 (10) -15 min.
		High winding	750	6000	5.5 (7.4)	7.5 (10) -30 min.
Vturn-P20	α12i	Single winding	1000	4200	11 (14.7)	15 (20) -30 min.
Opt.	αP15i Good for low speed turning	Low winding	350	1050	5 (6.7)	9 (12) -15 min.
		High winding	525	4200	7.5 (10)	9 (12) -30 min.

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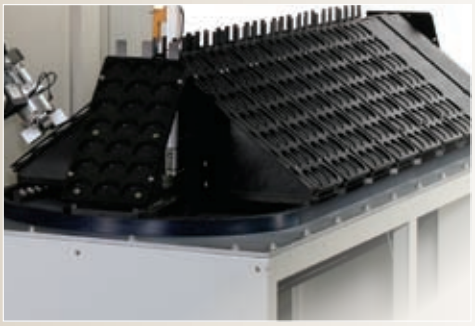
Built in articulated robot EWR-03 for unmanned cell

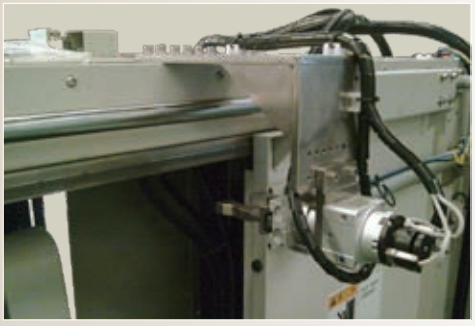
- Maximum part weight: 3 kg.
- Maximum part size: D. 120 x L.100mm.
- Part changeover time is only 7 second.
- The robot is built inside of the machine which has a lateral auto door. Three servo motors are included in the robot to rotate the arms and grippers to transport the parts between pallet and chuck.
- The spindle keeps turning during part loading/unloading on feeder to minimize the idle time. The lateral door is designed to be open when chuck is about to stop to further reduce the cycle time.
- An unmanned cell comprises of one lathe with one robot and multi-pallet work feeder.
- Several lathes with their own single pallet work feeder (shown in the photo) can be managed by one operator for highest productivity.

Robot can exist with tailstock

Robot with grippers



Work feeder (multiple pallets)



Turnover station

Tor. _Cont. Kg-m (ft-lbf)	Tor. kg-m (ft-lbf)
5.57 (40.2)	8.16 (56.3) -30 min.
7.2 (52.1)	14.6 (105.6) -15 min.
7.13 (51.6)	9.73 (70.4) -30 min.
10.7 (77.4)	14.6 (105.6) -30 min.
13.9 (100.5)	25 (180.8) -15 min.
13.9 (100.5)	16.7 (120.6) -30 min.

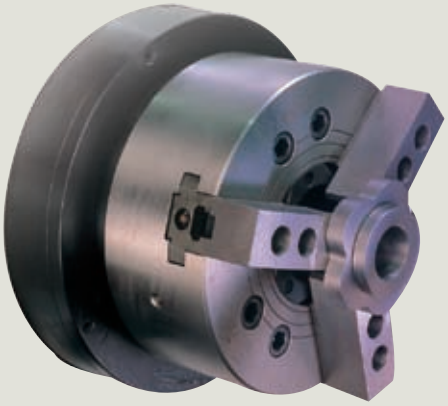
Standard Accessories

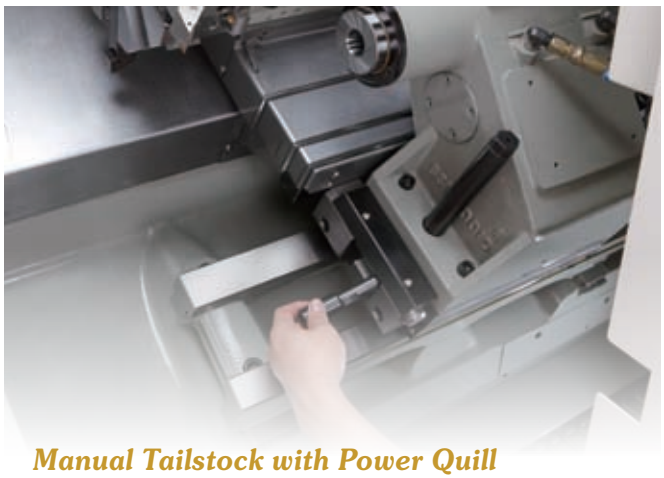
Ergonomic design for safe & easy operation

- **Fully enclosed guarding** with the chip conveyor fitted into the machine bed ensures no access to the machine during operation and no coolant leakages.
- **Hydraulic gauges on the front** so they can be easily monitored during operation.
- **Coolant tank is accessed from the front of the machine** and **High pressure coolant** by Grundfos® SPK2-3 improves the machining quality on part surface. The **oil skimmer (option)** can be installed on the coolant tank to separate wasted lube oil from coolants.
- Electrical cabinet is equipped with **heat exchanger** for efficient heat removal.

Reliable Power Chuck

- Hydraulic 3 jaw hollow chuck is foot operated for safe and easy operation.





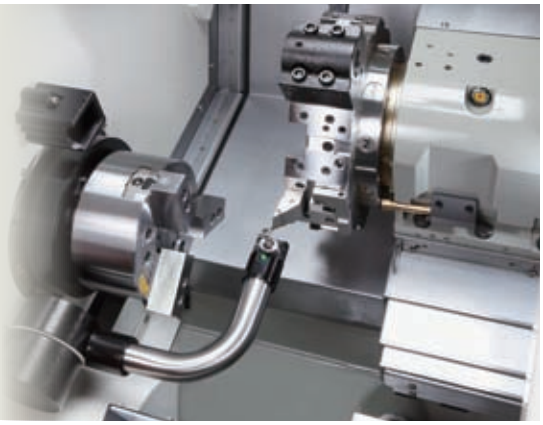
Manual Tailstock with Power Quill

- The robust cast tailstock with hydraulic quill provides positive engagement to minimize vibration.
- Tailstock is towed by the turret and moved to the specified location by rotating handwheel manually.

Optional Accessories

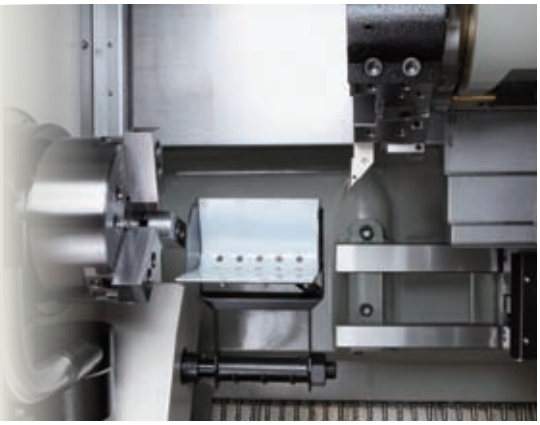
Tool Presetter (Renishaw®)

- No longer to perform tedious time consuming cuts to determine tool geometry, the operator needs only to touch the tool tip to the tool presetter sensor to get the tool geometries not only reducing tool set-up time, but reducing down time due to tool breakage.
- Manual tool presetter (MTP): Arm is rotated manually.
- Auto tool presetter (ATP): Arm is rotated automatically by programming.



Parts catcher

- To enhance the machine's productivity, a parts catcher is available to work in conjunction with bar feed.
- This type of fully programmable parts catcher is mounted next to the chuck with a hydraulic actuator to rotate the extending rod bolted with the catching bucket which rests against the door of the machine during machining.

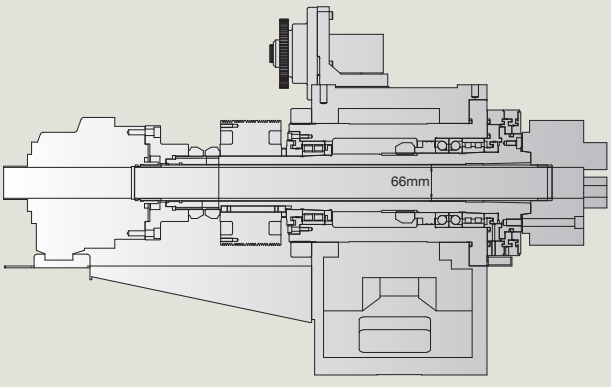


Bar Feeder Interface

- For automatic loading of workpieces, the bar feeder provides a simple yet highly effective system. Interfaces are available on the Vturn lathes so that a number of different barfeeding systems can be worked in conjunction with the lathe for an efficient turnkey.

Large Spindle Bore 66mm/4500rpm

- Through the new layout on the upgraded spindle bearings, Large Spindle Bore (LSB) for larger bar capacity 66mm is available on Vturn-P20 to reduce the expense and floor space demanded by an oversized machine. The spindle speed is even increased to 4500rpm because of bearing upgrade.



VICTOR Taichung's FANUC 0i/32i Control SPECIFICATIONS

Standard:

ITEM	SPECIFICATION	DESCRIPTION
Controlled Axes:		
1.	Controlled Axes	2 Axes (X, Z)
2.	Simultaneous Controlled Axes	Position / Linear interpolation / Circular interpolation (2/2/2)
3.	Least Input Increment	0.001mm / 0.0001inch / 0.001deg.
4.	Least Input Increment 1/10	0.0001mm / 0.00001inch / 0.0001deg.
5.	Max. command value	±99999.999mm (±9999.9999in)
6.	Fine Acceleration & Deceleration Control	Std.
7.	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	Std.
14.	Mirror Image	Each Axis
15.	Chamfering on/off	Std.
16.	Follow-up	Std.
17.	Unexpected disturbance torque detection function	Std. (to be used to tool load monitoring)
18.	Position switch (with Victor's own PLC)	Std. (to be used for security)
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
Interpolation:		
1.	Positioning	G00
2.	Threading synchronous cutting	Std.
3.	Multiple threading	Std.
4.	Threading retract	Std.
5.	Continuous threading	Std. (G76)
6.	Variable threading	Std. (G34)
7.	Linear Interpolation	G01
8.	Circular Interpolation	G02, G03 (multi-quadrant is possible)
9.	Dwell	G04
10.	Skip Function	G31
11.	Reference Position Return	G28
12.	Reference Position Return Check	G27
13.	2ND Reference Position Return	Std.
Feed:		
1.	Rapid Traverse Rate	Std.
2.	Rapid Traverse Override	F0, 25%, 50%, 100%
3.	Feed Per Minute	G98 (mm/min)
4.	Feed Per Revolution	G99 (mm/rev)
5.	Tangential Speed Constant Control	Std.
6.	Cutting Feed rate Clamp	Std.
7.	Automatic Acceleration / Deceleration	Rapid traverse: linear; Cutting feed: exponential
8.	Linear accel / deceleration after cutting feed interpolation	Std.
9.	Feed rate Override	0~150%
10.	Jog Override	0~100%
11.	Feed Stop	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	±9-Digit
7.	Program Number	O4-Digit
8.	Sequence Number	N5-Digit
9.	Absolute / Incremental Programming	G90/G91 (G code System B, C)
10.	Decimal Point Programming / Pocket Calculator Type Decimal Point Programming	Std.
11.	Input Unit 10 Time Multiply	Std.
12.	Diameter/radius programming	Std.
13.	Plane Selection	G17, G18, G19
14.	Automatic Coordinate System Setting	Std.
15.	Work piece Coordinate System	G52~G59
16.	Direct Drawing Dimension Programming	Std.
17.	G code System A	Std.
18.	Chamfering/corner R	Std.
19.	Programmable Data Input	G10
20.	Sub Program Call	10 folds nested
21.	Custom Macro B	Std.
22.	Canned Cycles	Std.
23.	Multiple Repetitive Cycle	Std. (G70~G76)
24.	Multiple Repetitive Cycle 2 (Pocket profile)	Std. (G70~G76 type II)
25.	Canned Cycle for Drilling	Std.
26.	Program Format	FANUC std. format
27.	Program Stop / Program End	M00 / M01 / M02 / M30
28.	Circular interpolation by 9-digit R designation	Std.
29.	Program number O8-digit	Std. (32i-B)

Auxiliary Spindle Speed Function:		
1.	Auxiliary Function Lock	Std.
2.	High Speed M / S / T Interface	Std.
3.	Spindle Speed Function	Std.
4.	Constant Surface Speed Control	Std.
5.	Spindle Override	50~120%
6.	Actual Spindle Speed Output	Std.
7.	1st Spindle Orientation	Std.
8.	1st Spindle Output Switching Function	Std.
9.	M Code Function	M3 digit
10.	S Code Function	S5 digit
11.	T Code Function	T2 digit
12.	Rigid Tapping (Spindle)	Std.
Tool Function & Tool Compensation:		
1.	Tool Function	T7+1/T6+2digits
2.	Tool Offset Pairs	±7-digit 64 pairs
3.	Tool Nose Radius Compensation	Std. (G40/G41/G42)
4.	Tool Geometry/wear Compensation	Std.
5.	Number of Tool Offsets (in total)	64 (0i-D). 99 sets (32i-B)
6.	Automatic Tool Offset	Std.
7.	Direct Input of Tool Offset Value Measured B	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-D/32i-B)
2.	Number of Registerable programs (in total)	400 (0i-D)/1000 (32i-B)
3.	Part Program Editing	Std.
4.	Program Protect	Std.
5.	Background Editing	Std.
Setting and Display:		
1.	Status Display	Std.
2.	Clock Function	Std.
3.	Current Position Display	Std.
4.	Program Display	Program name 32 characters
5.	Parameter Setting and Display	Std.
6.	Self Diagnosis Function	Std.
7.	Alarm Display	Std.
8.	Alarm History Display	50 (0i), 60 (32i-B)
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 Spindle Speed and T Code At All Screens	Std.
14.	Dynamic Graphic Display	Std. (Available in MGI by another function)
15.	Servo Setting Screen	Std.
16.	Display of Hardware and Software Configuration	Std.
17.	Multi-Language Display	Std.
18.	Data Protection Key	Std.
19.	Erase CRT Screen Display	Std.
20.	Spindle Setting Screen	Std.
21.	Color LCD / MDI	8.4" (0i-D), 10.4" (0i-D*1/32i-B)
Data Input / Output:		
1.	Reader / Puncher Interface	RS-232 interface
2.	Memory Card Interface	Std.
3.	External Work piece number search	9999
4.	Embedded Ethernet (10Mbps)	Std.

OPTIONS:

With hardware included:		**0i-TD**	**32i-B**
1.	Conversational programming (Manual guide i)*1	☐	Std.
2.	Conversational programming (Cap i)	N.A.	N.A.
3.	Data server (with PCB and ATA card)	☐	☐
4.	Fast Ethernet (100Mbps, available in Data server)	☐	☐
5.	Tool life management	☐	☐
6.	Part Program Storage Length 2560m/1MB (in total)	N.A.	☐
7.	Part Program Storage Length 5120m/2MB (in total)	N.A.	☐
8.	Program restart (std. on CE-marked machine)	☐	Std
9.	Optional block skip 2-9 blocks	☐	☐
10.	Manual handle feed 2 (2nd MPG)	☐	☐
11.	Reader/Puncher interface 2 (2nd RS232 interface)	☐	☐
12.	External data input	☐	☐
13.	Profibus	☐	☐
14.	USB port	☐	Std.
Without hardware included:			
15.	Type format for FS 10/11	Std.	☐
16.	Play back	Std.	☐
17.	3-dimensional coordinate system conversion	N.A.	☐
18.	Direct input of offset value measured for 2 spindle lathe	N.A.	☐
19.	AI contour control II (G5.1 Q1)	☐	☐
20.	JERK control	N.A.	☐

*1. Manual Guide i is available on 0i-D when the monitor is upgraded to 10.4" LCD.

Machine Specifications

Item \ Model		Vturn-P16	Vturn-P20
Capacity			
Swing over bed dia.	mm	Ø520	Ø520
Standard turning dia.	mm	Ø210	Ø210
Maximum turning dia.	mm	Ø280	Ø280
Swing over carriage dia.	mm	Ø310	Ø310
Between centers	mm	440	440
Bar capacity (Hole thru draw bar)	mm	Ø42	Ø52 (66 for LSB)
Axis Feeds			
X axis travel	mm	20 + 140	20 + 140
Z axis travel	mm	370	370
Rapid feed - X / Z axis	m/min	30 / 30	30 / 30
Feed motor - X / Z axis	kW	1.6 / 3.0	1.6 / 3.0
Cutting feed	m/min	X/Z: 0~1260	X/Z: 0~1260
Ball screw dia x pitch	mm	X: Ø32 × P10 Z: Ø40 × P10	X: Ø32 × P10 Z: Ø40 × P10
Spindle			
Spindle speed	rpm	6000	4200
Spindle nose (chuck)	inch	A2-5 (6")	A2-6 (8")
Spindle motor power (30min/cont.)	kW	7.5 / 11	11 / 15
Spindle bearing inside dia.	mm	Ø90	Ø100
Spindle taper		1/20	1/20
Turret			
No. of tools		12	10 (opt. 8)
Tool shank size	mm	□20	□25
Max. boring bar dia.	mm	Ø32 (VDI-30)	Ø40 (VDI-30)
Turret coupling dia.	mm	Ø180	Ø180
Thickness of turret disc	mm	85	85
Exchange time (T-T)	sec	0.2 (opposite)	0.2 (opposite)
Tailstock			
Tailstock quill dia.	mm	Ø75	Ø75
Quill stroke	mm	80	80
Quill taper		M.T. #4	M.T. #4
Machine			
NC controller	Fanuc	0i-TD	0i-TD
Coolant tank capacity	L	250	250
Power requirement	kVA	24.9	29.4
Machine dimension L x W x H (with chip conveyor)	mm	3333 x 1741 x 2021	3333 x 1741 x 2021
Net weight	kgs	3900	3950

* Machine and controller specifications are subject to change without notice.

VICTOR-TAICHUNG

Standard accessories:

- Hydraulic chuck with soft jaws
- Manual tailstock with power quill
- Chip conveyor
- Fully enclosed splash guarding
- Hand wheel
- Tool holders (only for standard turret)
- SHOWA® lubrication pump
- Coolant flush on Z-axis cover
- 3 step warning light

Optional accessories:

- Hard jaws
- Tailstock center
- Manual tool presetter
- Auto tool presetter
- Parts catcher (swing type)
- KITAGAWA® power chuck
- Air conditioner for electrical cabinet (Panel cooler)
- Higher pressure coolants
- Bar feeder interface
- Air blow
- Oil skimmer
- Oil mist collector
- Auto door
- Robot system
- Large spindle bore 66mm/4500rpm
- Fanuc 0i-TD (10.4") with Manual Guide i

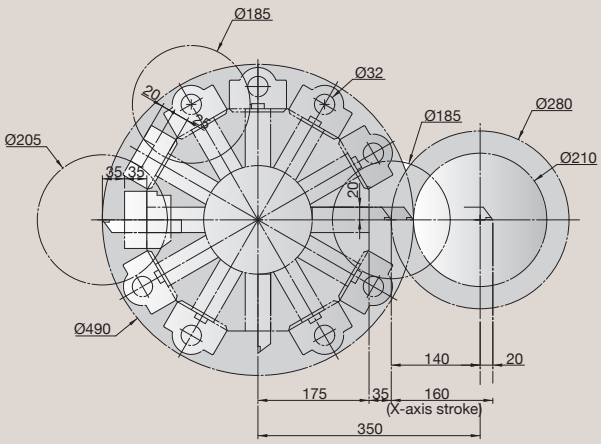
Machine Color Options

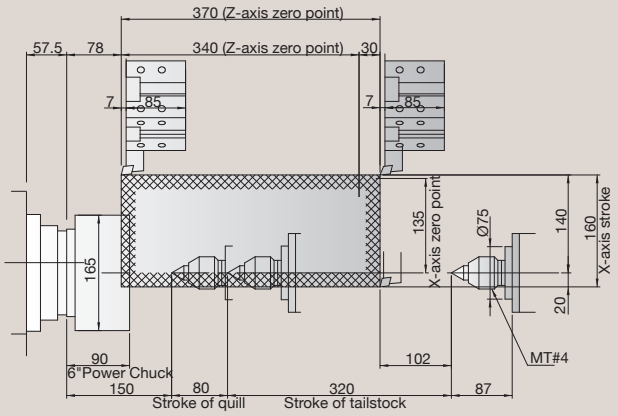
RAL 2008 (Victor's orange)

RAL 7024 (Graphite grey)

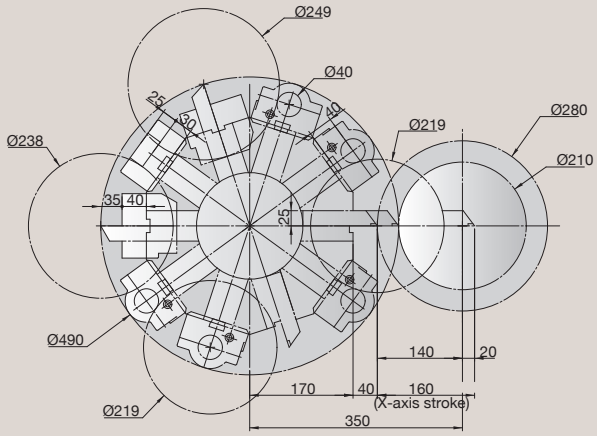
Technical Drawings

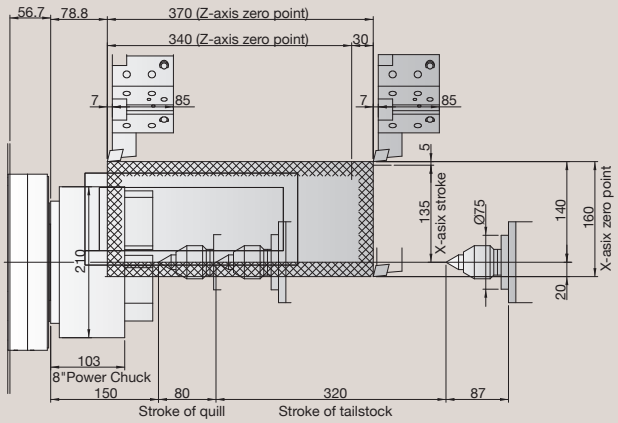
Vturn-P16



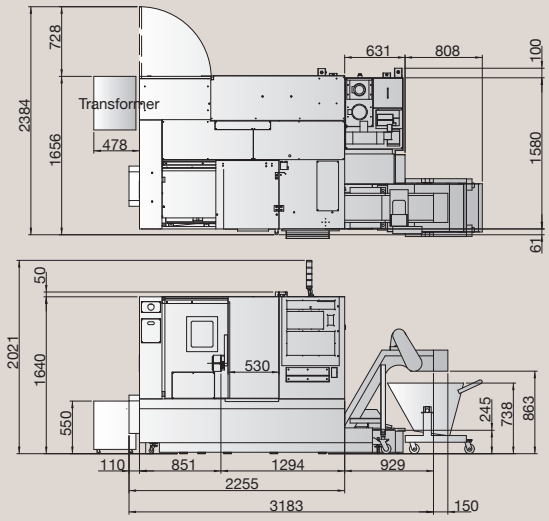


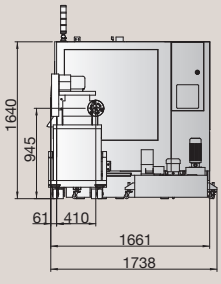
Vturn-P20





Machine Layout

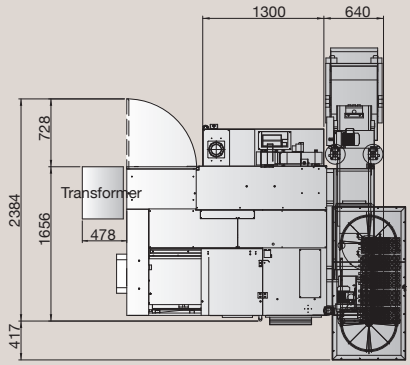




Unit: mm

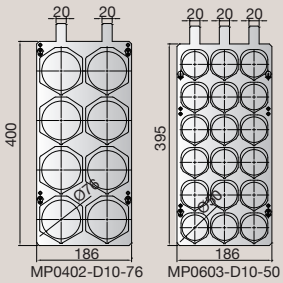
VICTOR-TAICHUNG

Vturn-P16/P20 with articulated robot EWR-03 (10 pallet work feeder)

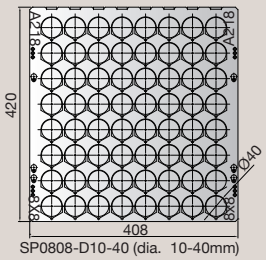


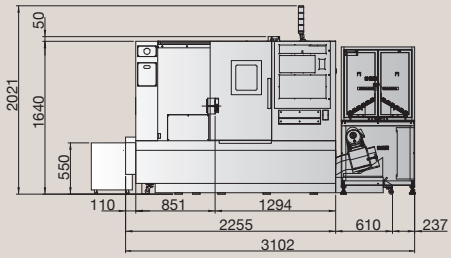
Pallet Options:

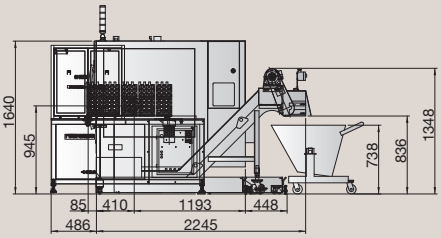
Multiple Pallets:



Single Pallet:

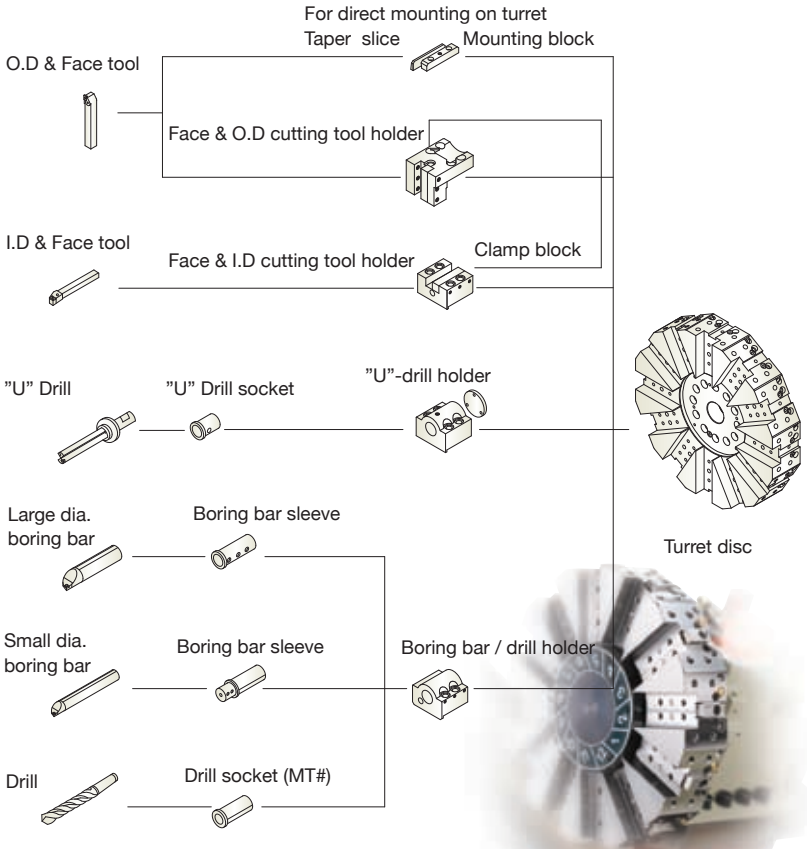




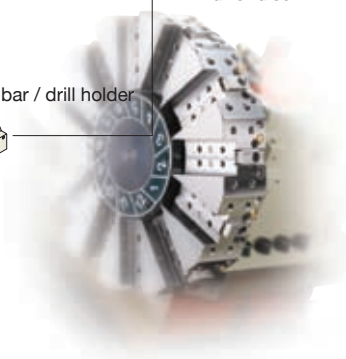


Unit: mm

Tooling accessories (Excl. VDI Turret)



Turret disc



TOOLS \ MODEL	Vturn-P16	Vturn-P20
Tool shank for turret disk	20 mm (3/4")	25 mm (1")
Maximum boring bar Dia.	32 mm (1 1/4")	40 mm (1 1/2")
Face + OD cutting tool holder	2	1
Face + ID. cutting tool holder	1	1
Boring bar holder		
32 mm (1 1/4")	6	-
40 mm (1 1/2")	-	5
Boring bar sleeve		
8 mm (5/16")	1	-
10 mm (3/8")	2	2
12 mm (1/2")	2	2
16 mm (5/8")	2	2
20 mm (3/4")	2	2
25 mm (1")	2	2
32 mm (1 1/4")	-	2
Drill socket		
MT1	Opt.	Opt.
MT2	1	1.
MT3	Opt.	Opt.
U drill holder		
32 mm (1 1/4")	1	-
40 mm (1 1/2")	-	1
U drill socket		
20 mm (3/4")	1	-
25 mm (1")	1	1
32 mm (1 1/4")	-	1

VictorTaichung — Taichung, the home of Machine Tool Manufacturing

Quality Meehanite Castings-The backbone of VICTOR TAICHUNG machines.

Being both ISO 9001 approved and a Meehanite cast member, our foundry produces over 1000 tons of castings a month for both our own use and export to Japan.

Modern machining facilities-65% of components manufactured in house.

To ensure greater control over the quality of our machined parts, VICTOR TAICHUNG has introduced 3 giant 5-side machining centers, 1 CIM line for sheet metal manufacturing and 2 complete FMS lines developed in house.

Overseas subsidiaries solely dedicated to service of our own products.

To ensure a market for our products, VICTOR TAICHUNG has invested considerably in setting up a global distribution network. As well as numerous agents around the world, VICTOR TAICHUNG has 8 overseas subsidiaries in USA, England, France, Germany, South Africa, Malaysia, Thailand and China to provide our customers efficient after-sales service and technical supports.

Vturn-X200 Multitasking lathe

Vturn-V24W for wheel turning

Vturn-V560 vertical lathe

VictorTaichung profile:
Sales turnover: USD 230 mil's (in 2011)*
No. of employees: 1091
*Exchange rate: 1 USD=30 TWD.

HTL VTL VMC HMC XMT PIM

THE VICTOR-TAICHUNG COMPANIES

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FAX : 86-21-59768008

VictorTaichung was also marketed under the brand names VICTOR (outside North America) and FORTUNE

GSGE12EA

12101606 acts TEL: 04-24733326