

Art of **P**recision & **P**erformance

# Vcenter - P106

## Vertical machining center

- **Rapid feeds 48/48/32 m/min**
- **12000rpm spindle output 18.5 KW(s3)**
- **BBT-40 / 30 tools**
- **Roller guideways**
- **Bottom guarding flush**
- **Screw chip removers**



Victor Taichung - an established ISO-9001 & 14001 company



# Vcenter-P106 High Performance VMC

- X-travel 1060 mm
- High rapid feed 48 m/min
- High speed 12000rpm spindle
- Electrical counterbalance

ATC

**2.1(6.0) sec.**

T-T (chip-chip)

**30**

Tools

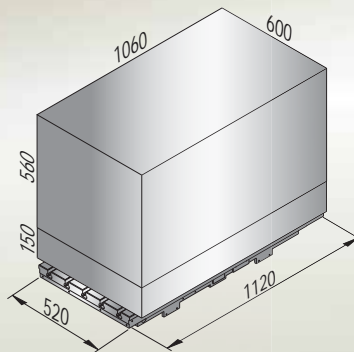
## Feeds & Travels

**48/48/32**

X/Y/Z (m/min)

**1060/600/560**

X/Y/Z (mm)

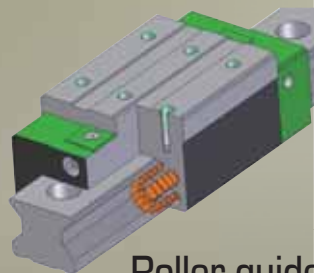


## Table & Guideways

600 kg

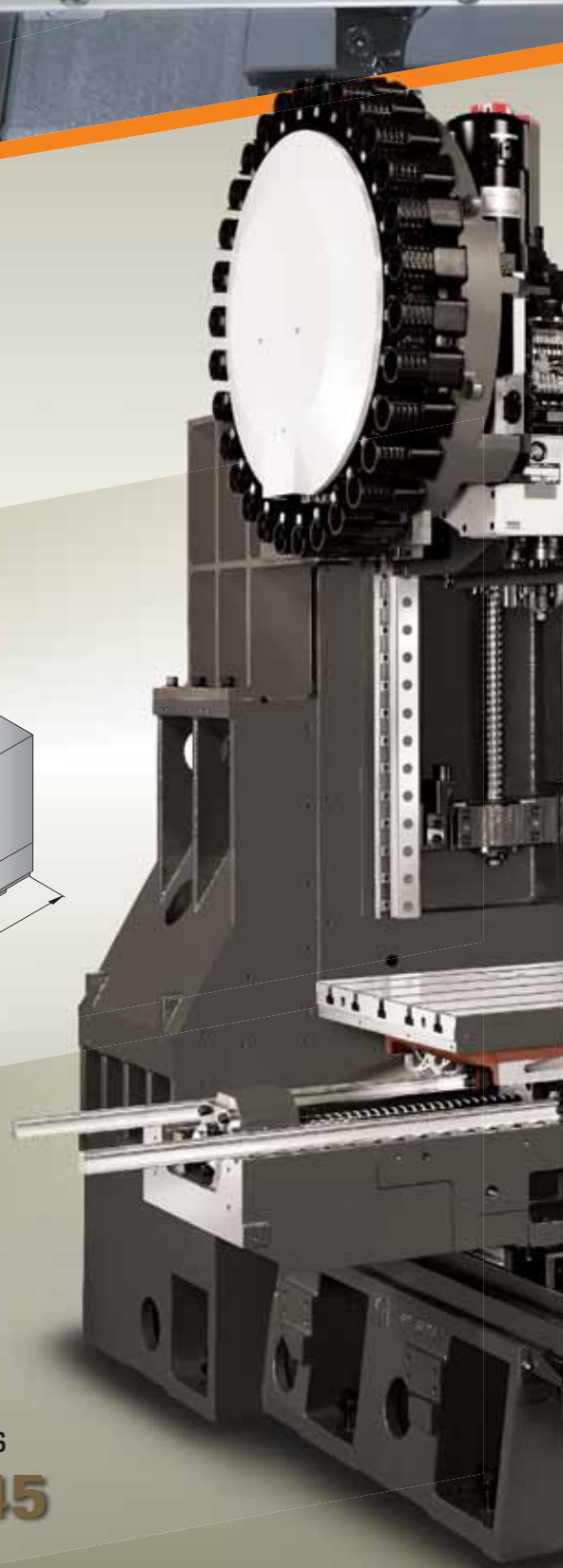


**1120x520**



Roller guides

**35/45/45**



# Spindle BBT-40

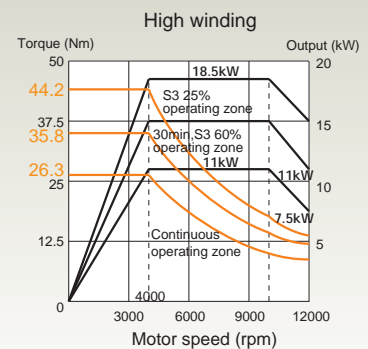
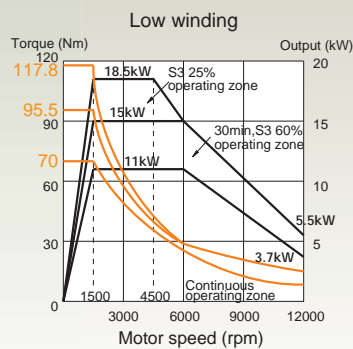
## 18.5 kW\* (S3-25%)

12000rpm

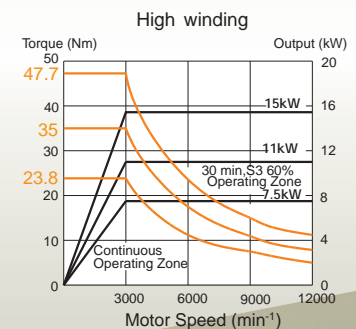
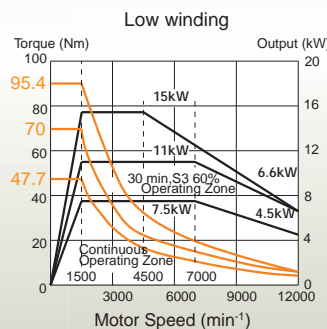
(\* opt. 15 kW with CTS)



Fanuc  $\alpha$ i12/12000 (std. without CTS)



Fanuc  $\alpha$ T8/12000 (opt. with CTS)



## Structure



Certificated Casting

# GM400 GA350



Wide column

# 1270 mm

# Vcenter-P106

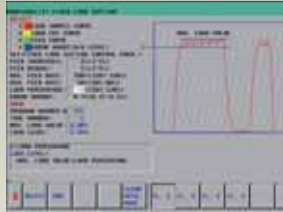
## Standard Accessories

Fanuc Oi-MF (10.4") with Manual Guide I (MGI)  
+ AICC-2 (200 blocks) for user friendly operation

Victor Taichung's GUI "VSS macros"



Smart workpiece measurement



Adaptive cutting at constant loading



Air Bag (abnormal load monitoring)



Renishaw® GUI

Spindle oil cooler



Arm type ATC + Auto door for magazine +  
Coolant ring + LED lights



Heat exchanger + Enclosed rear guarding

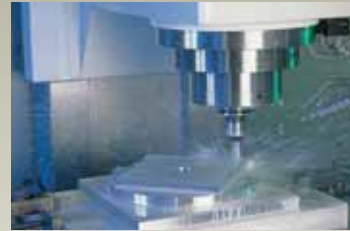


Bottom guarding flush + screw chip remover



## Optional Accessories

CTS (Coolants Thru. Spindle)



Auto tool length measurement



Auto part measuring



4<sup>th</sup> axis interface for rotary table



Chip conveyor



Linear scales



# Machine Specification

Item	Unit	Vcenter-P106	
<b>Travel</b>	X axis travel	mm	1060
	Y axis travel	mm	600
	Z axis travel	mm	560
<b>Distance</b>	Spindle center to column	mm	627
	Spindle nose to table surface	mm	150 ~ 710
<b>Table</b>	Table work area	mm	1120 x 520
	Dimension of T-slot	mm	5 x 18 x 100
	Max. table load	kg	600
<b>Spindle</b>	Spindle taper		BBT-40
	Spindle motor - cont/30/10min	kW	11 / 15 / 18.5 (w/t CTS) 7.5 / 11 / 15 (for CTS)
	Spindle speed	rpm	12000 (opt. 15000)
<b>Feed rate</b>	Rapid feed rate - X/Y/Z	m/min	48 / 48 / 32
	Axis feed motor - X/Y/Z	kW	3 / 3 / 3
	Cutting feedrate by table	m/min	20
	X/Y/Z ballscrew (dia. x pitch)	mm	45 x P16 (X) 40 x P16 (Y/Z)
<b>Tools</b>	Linear guide width (X/Y/Z)	mm	30 / 45 / 45
	Max. tool length	mm	300
	Max. tool weight	kg	7
	Magazine capacity		30 (Opt. 40)
	Max. tool diameter (without adjacent tools)	mm	75 (150)
	Tool exchange time	sec.	2.1 (T-T), 6 (C-C)
	Pull stud angle	deg.	15 (JIS 40P)
	Tool selection method		Random
	Power requirement	KVA	23 (excl. CTS)
	Min/Max. air pressure	kg/cm <sup>2</sup>	5.5 ~ 6.5
<b>Machine</b>	Coolant tank capacity	L.	300
	Std. NC controller (Fanuc)		0i-MF (10.4")
	Floor space requirement	mm	3363 x 2812
	Max. machine height	mm	2841
	Machine weight	kg	6850

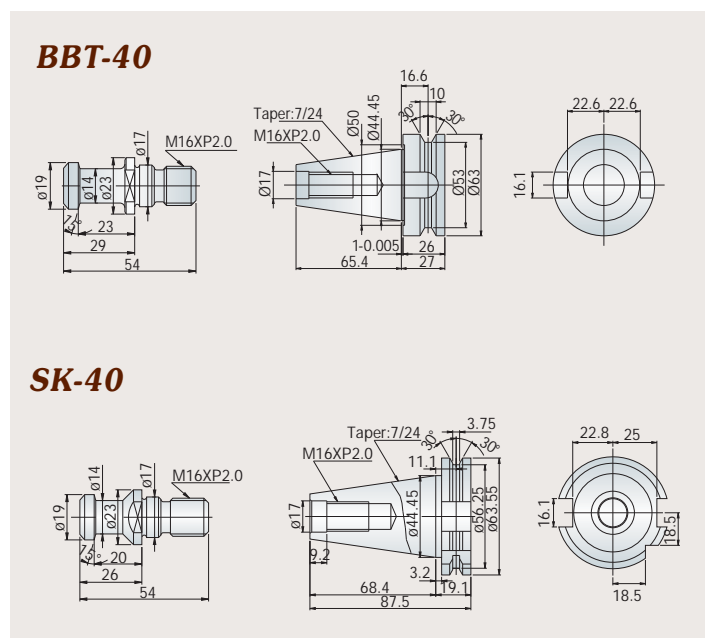
## Standard Accessories:

- Fully enclosed splash guard
- Fanuc 0i-MF (10.4") control
- Spindle oil cooler
- Screw-type chip remover (left disposal)
- Bottom guarding flushing coolants
- Rigid tapping
- Remote MPG
- Hand tools and toolbox
- T nuts for table slot
- 3-step warning light
- Auto power off
- Leveling pads

## Optional Accessories:

- Air conditioner for electric cabinet
- Chip conveyor
- Coolant through spindle (CTS)
- 40 tool magazine
- Auto tool length measurement
- Auto part measuring
- Stop block for special tools
- 4th/5th axis interface
- Auto door
- Oil skimmer
- Air gun
- Coolant gun
- 15000 rpm spindle (DCS)
- Linear scales
- Rotary tables

## Tool Shank



## Machine Color Option



Standard



RAL-7024

# VICTOR's FANUC Oi-MF/32i-B/31i-B Control Specification

## Standard

ITEM	SPECIFICATION	DESCRIPTION
<b>Controlled Axes</b>		
1.	Controlled Axes	3 Axes (X, Y, Z)
2.	Simultaneous Controlled Axes	4 Axes
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	± 99999.999 mm (± 9999.9999 in)
6.	Inch / Metric Conversion	Std.(G20/G21)
7.	Interlock	All Axes / Each Axis / Cutting Block Start
<b>Operation</b>		
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.	Manual Handle Feed	1 Unit / Each Path
6.	Manual Handle Feed Rate	X1, X10, X100
<b>Interpolation</b>		
1.	Positioning	G00
2.	Exact Stop Mode	G61
3.	Exact Stop	G09
4.	Linear Interpolation	G01
5.	Circular Interpolation	G02, G03 (multi-quadrant is possible)
6.	Dwell	G04
7.	Helical Interpolation	Std.
8.	Skip Function	G31
<b>Feed</b>		
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 Corner Deceleration	Std. (G64)
7.	Feed rate Override	0-150%
8.	Jog Override	0-100%
9.	Automatic Corner Override	G62
10.	Feed Stop	Std.
11.	AI contour control (AICC, G05.1) (in total)	200 blocks (0i/32i with AICC-2)
12.	AICC-2 + High speed processing (G05.1) (in total)	600 blocks (31i)
<b>Program Input</b>		
1.	A / 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.	Workpiece 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.	Programmable mirror image	G50.1
35.	Manual Guide I (MG) conversational programming	Std.

## 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 / S Code / T code Function	M3 / S5 / T2 digit
7.	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), 5120m (31i-B5)
2.	Number of Registered programs (in total)	400 (0i/32i), 1000 (31i)
3.	Part Program Editing / Protect	Std.
4.	Background Editing	Std.
5.	Memory Card Editing	Std (0i)

## Setting and Display

1.	Clock Function	Std.
2.	Current Position Display	Std.
3.	Program Display	Program name 31 characters
4.	Parameter Setting and Display	Std.
5.	Self Diagnosis Function	Std.
6.	Alarm Display / Operation History Display	Std.
7.	Alarm History Display	25
8.	Help Function	Std.
9.	Run Hour and Parts Count Display	Std.
10.	Actual Cutting Feedrate Display	Std.
11.	Display of Spindle Speed and T Code At All Screens	Std.
12.	Graphic Function	Std.
13.	Dynamic graphic display	Std. (in MG)
14.	Data Protection Key	Std.
15.	Erase CRT Screen Display	Std.
16.	Machining Condition Selecting Screen	Std.
17.	Color LCD / MDI	10.4 *

## Data Input / Output

1.	Reader / Puncher Interface	RS-232 Interface
2.	Memory Card Interface	Std.
3.	Embedded Ethernet (10Mbps)	Std.
4.	USB Device	Std.

## OPTIONS

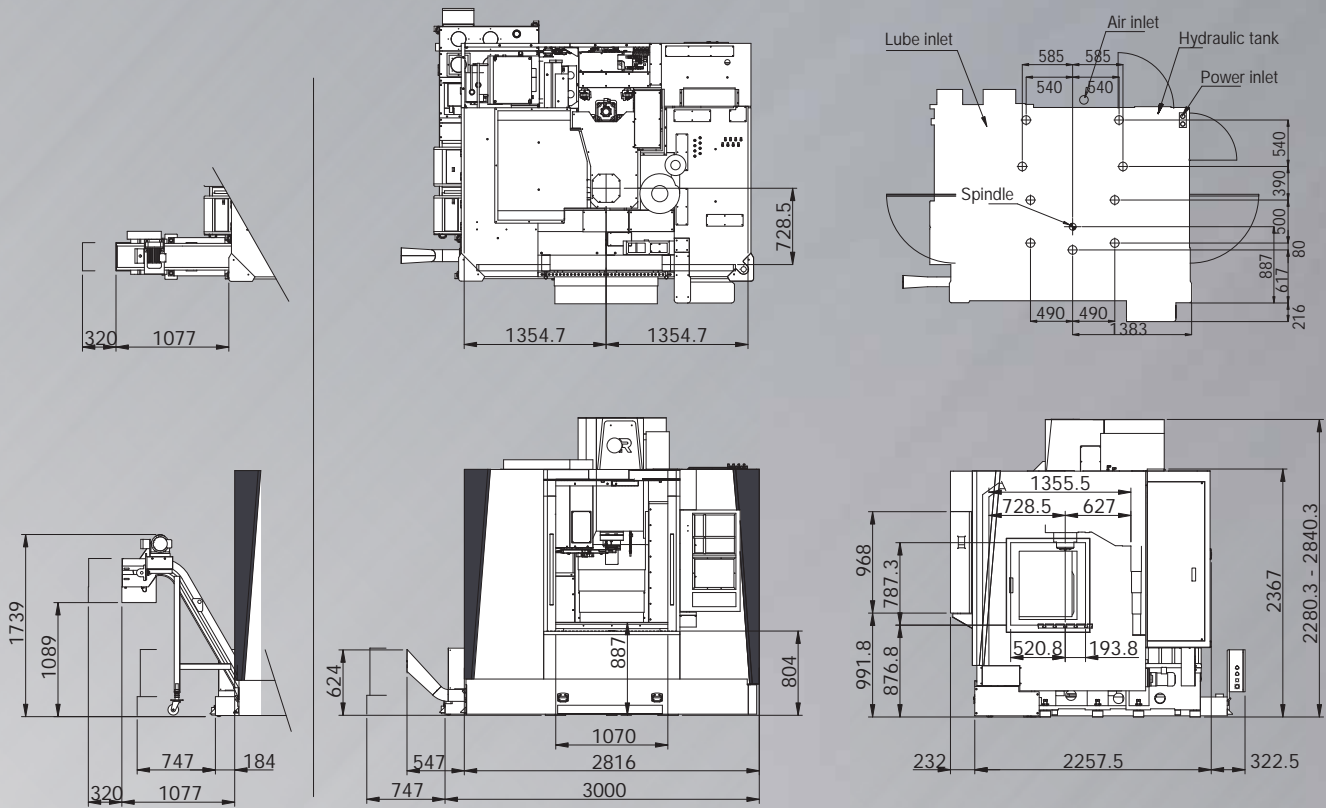
ITEM	SPECIFICATION	DESCRIPTION		
		0i-M	32i-B	31i-B
<b>With hardware included</b>				
1.	Conversational programming (Manual Guide I) *1	Std.	Std.	Std.
2.	Data server (with PCB and CF card 1GB)	□	Std.	Std.
3.	Fast Ethernet (100Mbps, available in Data server)	□	Std.	Std.
4.	15" Screen	□	□	□
5.	Part Program Storage Length 5120m (2MB in total)	□	□	□
6.	Part Program Storage Length 8MB in total	N.A.	N.A.	□
7.	Quick program restart	□	□	□
8.	Optional block skip 9 blocks	□	□	□
9.	Profibus	□	□	□
10.	5-axis simultaneous control	N.A.	N.A.	□(31i-B5)
<b>Without hardware included</b>				
11.	Look ahead block expansion (1000 blocks in total)	N.A.	N.A.	□
12.	Tool load monitoring (with Victor own PLC)	□	□	□
13.	Bi-directional Pitch Error Compensation	□	□	□
14.	Cylindrical interpolation (G7.1) (used on 4th axis)	Std.	□	□
15.	Interruption type custom macro	N.A.	□	□
16.	Addition of work-piece coordinate systems 300 sets	N.A.	N.A.	□
17.	Exponential interpolation (G2.3)	N.A.	N.A.	□
18.	Smooth interpolation	N.A.	N.A.	□
19.	Spiral/conical interpolation	N.A.	N.A.	□
20.	Polar coordinate interpolation	N.A.	□	□
21.	Floating reference position return	N.A.	N.A.	□
22.	Hypothetical axis interpolation (G07)	N.A.	N.A.	□
23.	NURBS interpolation	N.A.	N.A.	□
24.	Jerk Control	N.A.	N.A.	□

# Control features for fast contour milling

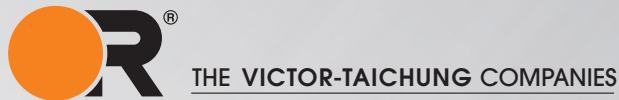
Feature \ Controller	Fanuc		
	0i-MF (10.4")	32i-B	31i-B
<b>Block addressing time</b>	2 ms (with AICC-2)	2 ms	0.4 ms
<b>Preview contouring(look ahead blocks)</b>	200* (with AICC-2)	200	600(Opt. 1000 by HSP)
<b>Graphic display</b>	10.4" (opt. 15")	10.4" (Opt. 15")	10.4" (Opt. 15"/19")
<b>Data storage</b>	512 KB (1280m), Opt. 2MB	512 KB (1280m), Opt. 2MB	1 MB (2560m), Opt. 8MB
<b>Data server (Memory extension)</b>	Opt. (by CF Card)	Opt. (by CF card)	Std. (with CF card)
<b>Ethernet link</b>	Std.	Std.	Std.
<b>Conversational function</b>	Manual guide i + VSS macros	Manual guide I + VSS macros	Manual guide I + VSS macros
<b>Data transfer interface</b>	PCMCIA + USB	PCMCIA + USB	PCMCIA + USB

\*Victor Taichung's standard

# Machine Layout



Unit: mm



## TAIWAN

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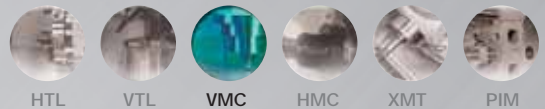
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**Victor Taichung profile:**  
Sales turnover: USD 155 mil's (in 2014)\*  
No. of employees: 1079  
\*Exchange rate: 1 USD=30 TWD.



HTL

VTL

VMC

HMC

XMT

PIM