

VB Series



CNC Double Column Vertical Machining Center

Casting Structure / 3-Axis Box Way

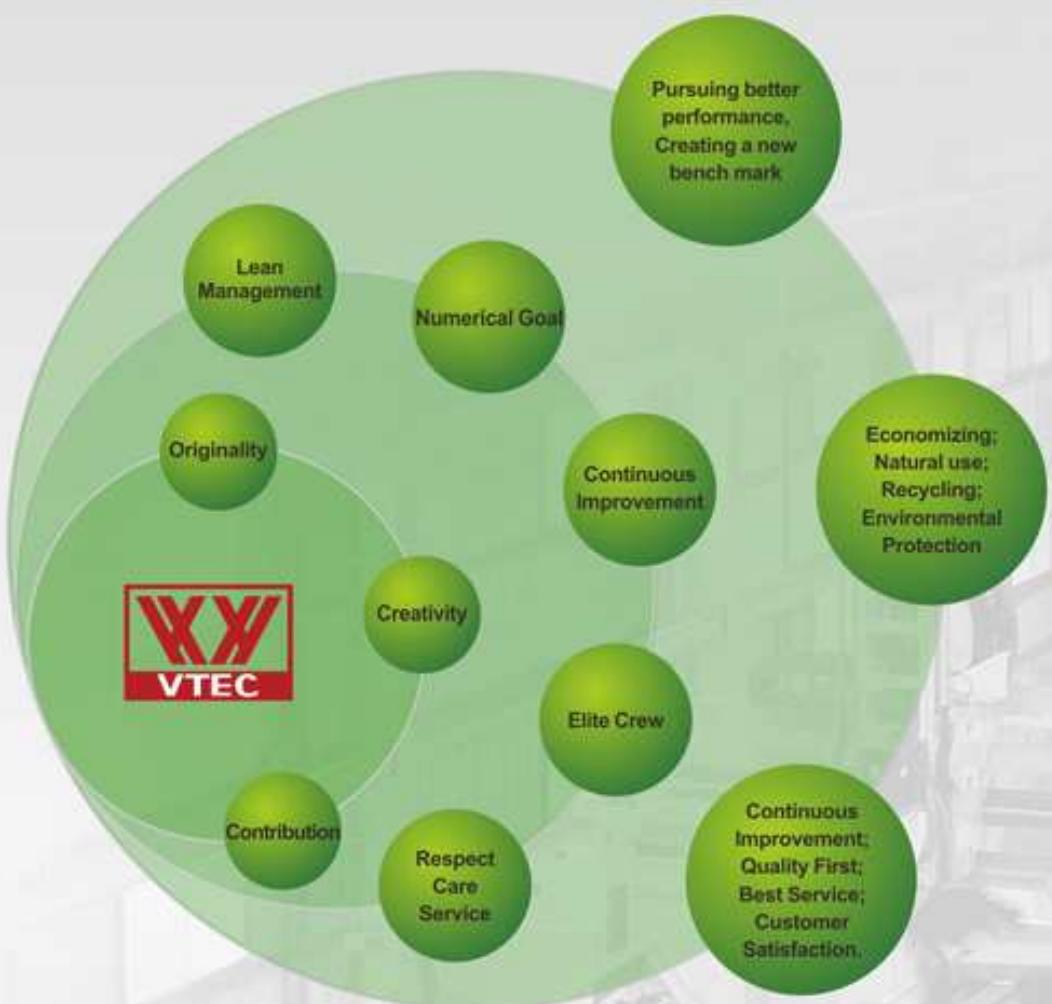
Step Square Beam

Ball Screw Cooling System (Opt.)

800 mm Z Stroke



VISION WIDE TECH CO., LTD.



Pursuing better performance, Creating a new bench mark!

Vision Wide offers high quality and competitive priced products, our advantages are derived from customer-oriented machine designs, utilizing reliable high quality components and suppliers, integrating our precise process control during production, assembly and testing.

Pursuing better performance, Creating a new bench mark! We solidify our commitment to the company motto of "Originality", "Creativity", and "Contribution" for best performance and organizational enhancements from a professional team-based environment.

From the little improvements to the future new products, we have the technology for today's industries. We continue to make us more competitive nowadays and afterwards in the CNC machining centers.

High Value. High Precision. High Reliability Products



VISION WIDE
WIDEN YOUR CUTTING VISION

1. SF series

X: 2.1 - 4.1m (Linear way)
Y: 1.2 / 1.6 / 2.0m (Linear way)
Z: 800 / 1,000mm (Linear way)
Z: 800mm (Box way)



2. VB series

X: 2.0 - 4.0m
Y: 1.6 / 2.0m
Z: 800 / 1,020mm (Box way)



3. VF series

X: 2.0-5.0m
Y: 2.3 / 2.6m
Z: 920 / 1,020mm (Box way)



4. NF series

X: 2.2 - 10.2m
Y: 2.3 / 2.6m
Z: 920 / 1,020mm (Box way)
Z: 1,000 / 1,200mm (Linear way)



5. VH series

X: 4.2 - 10.2m
Y: 3.0 / 3.5 / 4.0m
Z: 1,000 (Box way)
Z: 1,000 / 1,200mm (Linear way)



6. BM series

X: 4.2m-10.2m
Y: 3.0 / 3.5 / 3.7 / 4.2m
Z: 1,000 / 1,200mm
W: 1,000 / 1,200mm



7. Attachment Heads

Manual Attachment Heads (not available for BM)



90° angular head



Universal head



Extended head

Automatic Attachment Heads semi-auto 5-face machining (AC)
fully-auto 5-face machining (AH)



AC 90° angular head



AC 2-axis head



AC extended head
(not available for SF and VB)

Casting Structure 3 Axis Box Way

Rigid, Reliable, High Performance !

Machine Features

- All made of casting structure: base, columns, beam, saddle, and headstock
- 3 axis box ways with hard-wearing surface
- Distance between columns: 1.7 / 2.1m
- Cutting length: 2.0m-4.0m
- Z stroke: 800mm (optional: 1,020mm)
- Extra wide front door opening
- Fast cam-type ATC (3 second tool-to-tool)
- Max. exchanging tool: Ø180mm x L380mm
- Pendulum type operation panel
- Attachment heads (Opt.): 90 degree / extended / universal / 2-axis
- Enhanced Vision Wide graphical user interface
(for FANUC 0iMD / 31iB)



- Optimal center-line layout of the spindle system
- Columns and beams made of casting with larger cross-section area
- Rigid step square beam
- Grinded table surface as datum plane
- Precision and smoothness in motion based on dual nitrogen cylinders, which are closed to spindle head and make a weight balance
- Feeding designed for high precision and high stability
- Pre-tensioned ball screws with C3 grade
- Unique damping and supporting design for ball screws at X and Y axis (stroke > 5m)





VISION WIDE
WIDEN YOUR CUTTING VISION



Best center-line layout of spindle system provides powerful and reliable performance!



Box way

Design Feature of Spindle System

- Least thermal deformation based on box structure, and spindle centered at the interception point of motor, ball screw, and dual balancing weight
- Durable and stable gear box based on one piece casting design and short shaft
- High efficient power transmission with low noise are produced by Japanese JIS 0 grade gears
- Spindle made by the first class supplier
- Floating tool release mechanism
- Temperature cooling system for gears, bearings, and spindle
- Various spindle selections for versatile applications: 4,500 6,000 8,000 10,000rpm

■ Gear type spindle (4,500 / 6,000rpm)



■ Belt-driven type spindle (8,000 / 10,000rpm)

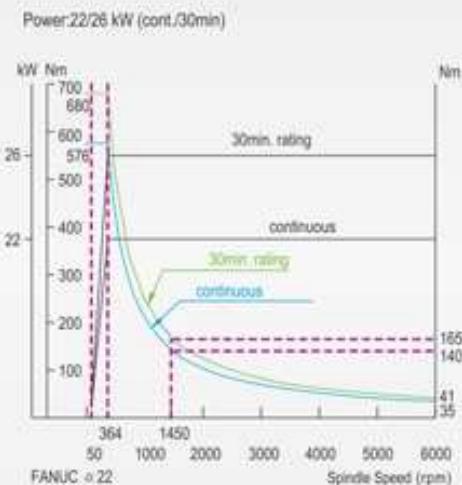
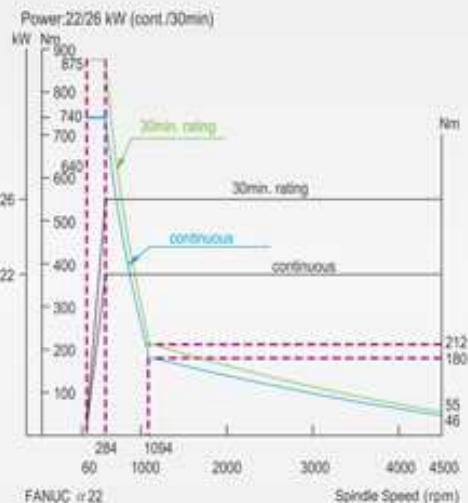
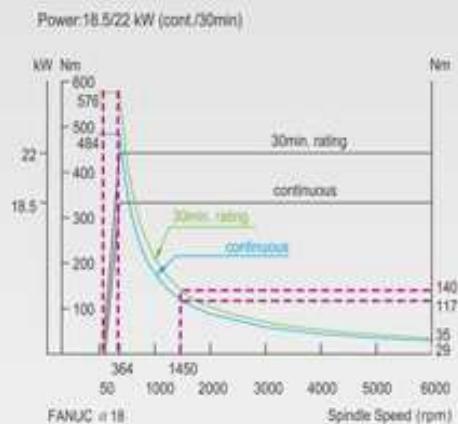
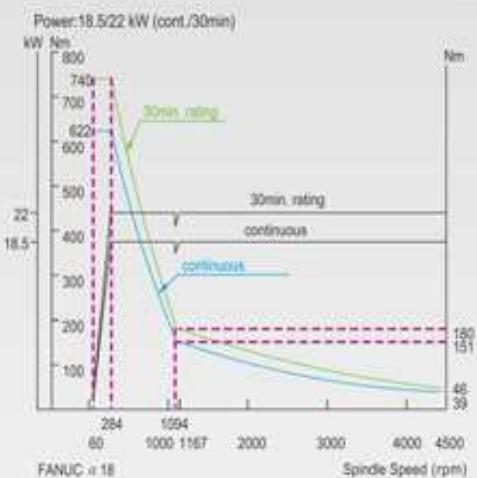


Twin Hydraulic cylinders plus pressured nitrogen accumulator balancing design provides smooth & accurate feeding performance. Cylinders are self-alignment, balancing force is set optimally by adjustable pressure valve. (SF/VB/VF/NF/VH)

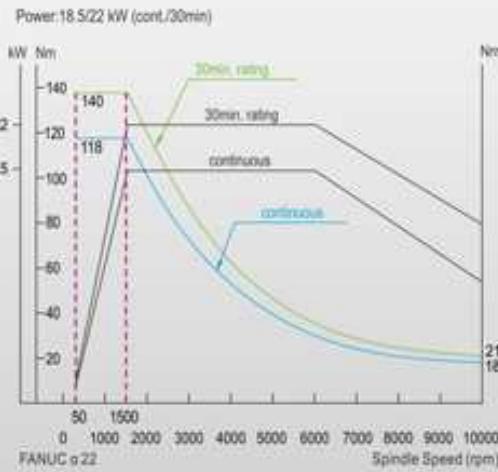
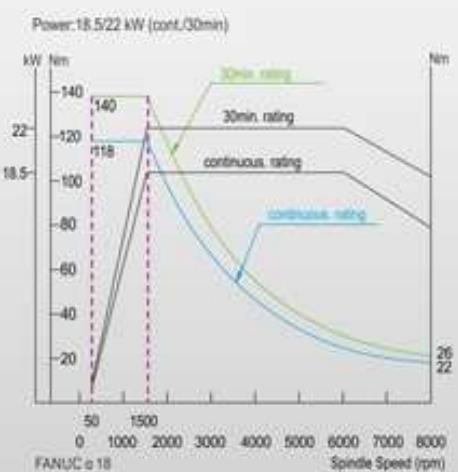


Spindle Power and Torque Chart

Gear type



Belt-driven type



Vision Wide convenient software for safe and easy operations

Concept of Software Development

Background of co-growing by experience sharing with customers. Design concept of simple, quick and convenient operation. Customer satisfaction from quick service and working process shortening. Win-win by supporting customers for productivity management.

VW FX

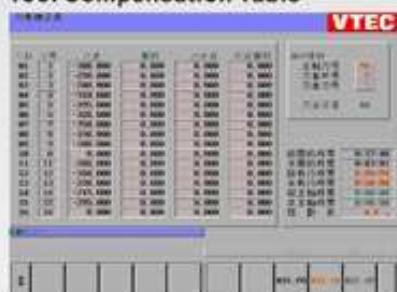
Tool Table



Tool table data

Tools status refer to ATC

Tool Compensation Table



Tool compensation data

Duty rate information

Tool Load Manager



Over load alarm for each tool

Setting range 0~120%

No need any further external hardware

Manual Tool Compensation & Measurement



Fast tool compensation

Manual tool compensation

Machine Status

X00	X01	Y00	Y01
000.0	000.0	000.0	000.0
000.1	000.1	000.1	000.1
001.0	001.0	001.0	001.0
001.1	001.1	001.1	001.1
010.0	010.0	010.0	010.0
010.1	010.1	010.1	010.1
011.0	011.0	011.0	011.0
011.1	011.1	011.1	011.1
100.0	100.0	100.0	100.0
100.1	100.1	100.1	100.1
101.0	101.0	101.0	101.0
101.1	101.1	101.1	101.1
110.0	110.0	110.0	110.0
110.1	110.1	110.1	110.1
111.0	111.0	111.0	111.0
111.1	111.1	111.1	111.1

Fast mappings of I/O and program comment

Quick maintenance

Calculator Function



+, -, ×, ÷ arithmetic operations

Sine, cosine and tangent function

10 sets memory registering

Machining Parameter



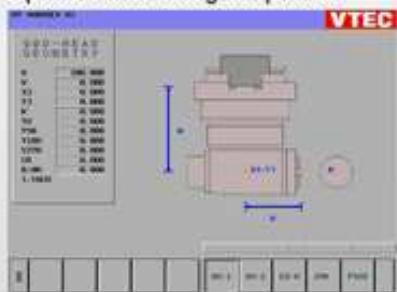
Additions 3 parameters for machining

The best efficiency machining modules

The highest precision machining modules

The smoothest machining modules

Optimal machining adaptation



V/H Tool length and diameter compensation

Working coordinates affine transformation

and compensation (between different faces)

Automatic horizontal spindle center finding

V/H rigid tapping

V/H manual interrupting

V/H manual feeding

(V/H = vertical/horizontal)

Work Piece Coordinate Searching



Get the middle point of a rectangle geometry

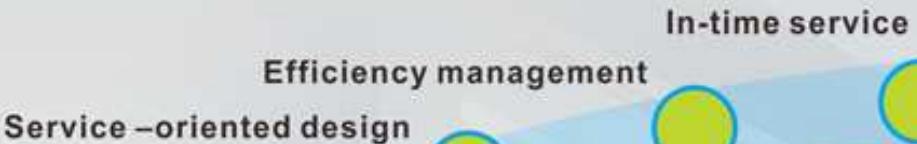
Get the radius and center of a circular geometry

Calculate the tilted angle between a line and X axis

Get the corner of the included angle



VISION.WIDE
WIDEN YOUR CUTTING.VISION



Machine Status Monitor



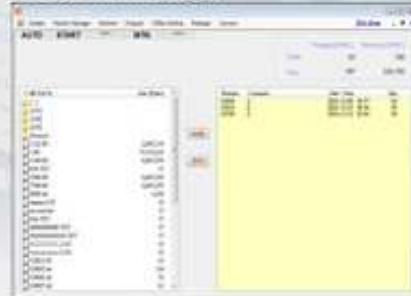
Tools status refer to ATC
Duty rate information
Coordinates display
Running program display
Running function display

Machine Parameter



Built-in e-book for quick lookup
Easy parameter backup

Program Manager



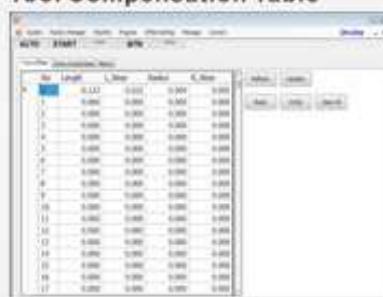
NC memory file manager
Data Server file manager
Simple and quick transfer

Factory Manager



Operation time counter
Duty rate counter
Machined parts counter

Tool Compensation Table



Tool compensation data
Variable value setting in Macro

Machine Status Detecting



Quick checking of machine status by a
remote PC (Timer/Keep relay/Counter/Data)

Productivity Analysis



Machine productivity analysis
Factory productivity analysis

Numerical Controller



SIEMENS 840D



FANUC 0iMD / 31iB



HEIDENHAIN iTNC530 HSCI

With More Standard / Optional Accessories

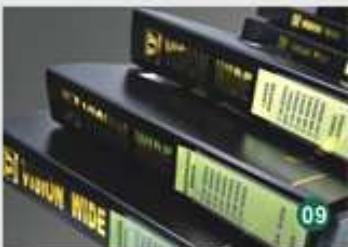
- 01 Auto. tool length measurement (Opt.)
- 02 Ring & nozzle type flood coolant (incompatible with attachment heads)
- 03 X axis ball screw supporter (4m above)
- 04 Screw type chip conveyor
- 05 Ball screw cooling system (Opt.)
- 06 Heat exchanger for electrical cabinet
- 07 Splash water gun & air outlet
- 08 Cam type ATC
- 09 Operation manual
- 10 Pressured air assist balancing
- 11 Spindle cooling system
- 12 Caterpillar chip conveyor & cart (Opt.)



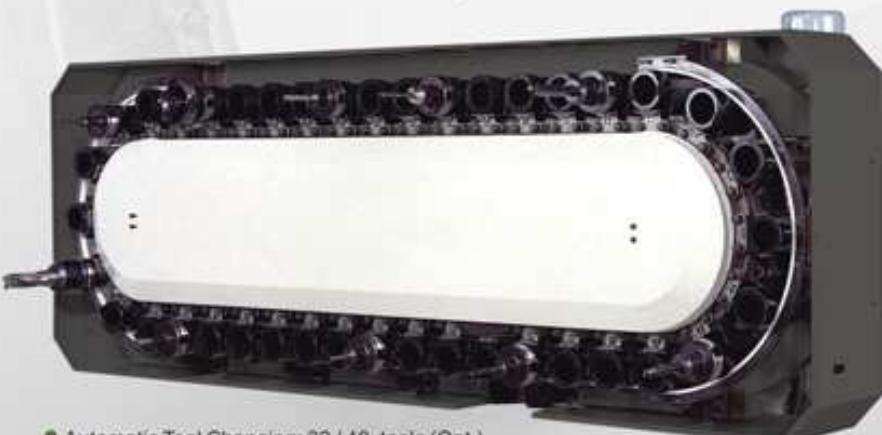


VISION WIDE
WIDEN YOUR CUTTING-VISION

Multi-layer front door design provides
the widest door opening



- Fast Cam-type Automatic Tool Changer
- 3 second tool-to-tool



- Automatic Tool Changing: 32 / 40 tools (Opt.)
- Tool Size (Max) : Ø180 x L380 mm



TPS Management

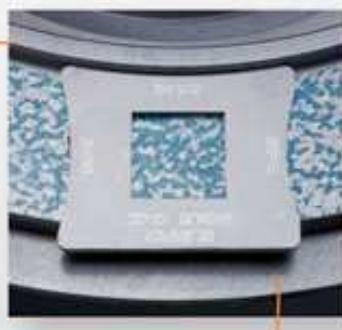
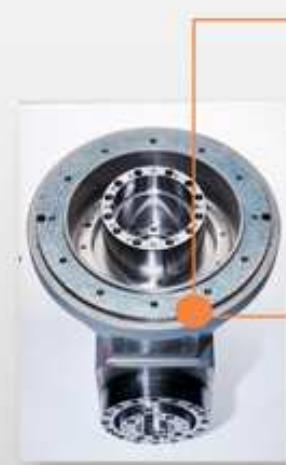
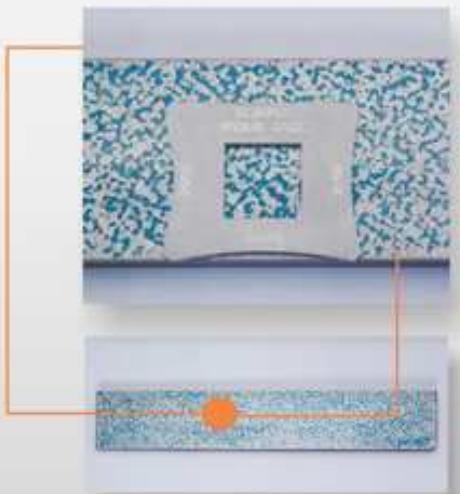
Under the guideline of constructing a thinking-active environment, while in the RD process, we set up the management of production quality. By imposing the necessary training in every key task and keeping continuous improvement, we pursue the best performance of technology and quality.



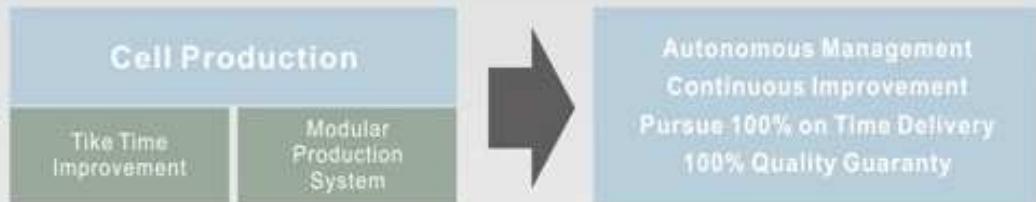
Modular Production – After components assembled and tested, they will be combined with the main production line.



Craft of realization for high rigidity concerning assemble.



Sliding face: 15~20 scrapping spots, 70% contact rate
Fixed face: 25~30 scrapping spots, 70% contact rate



Autonomous Management
Continuous Improvement
Pursue 100% on Time Delivery
100% Quality Guaranty

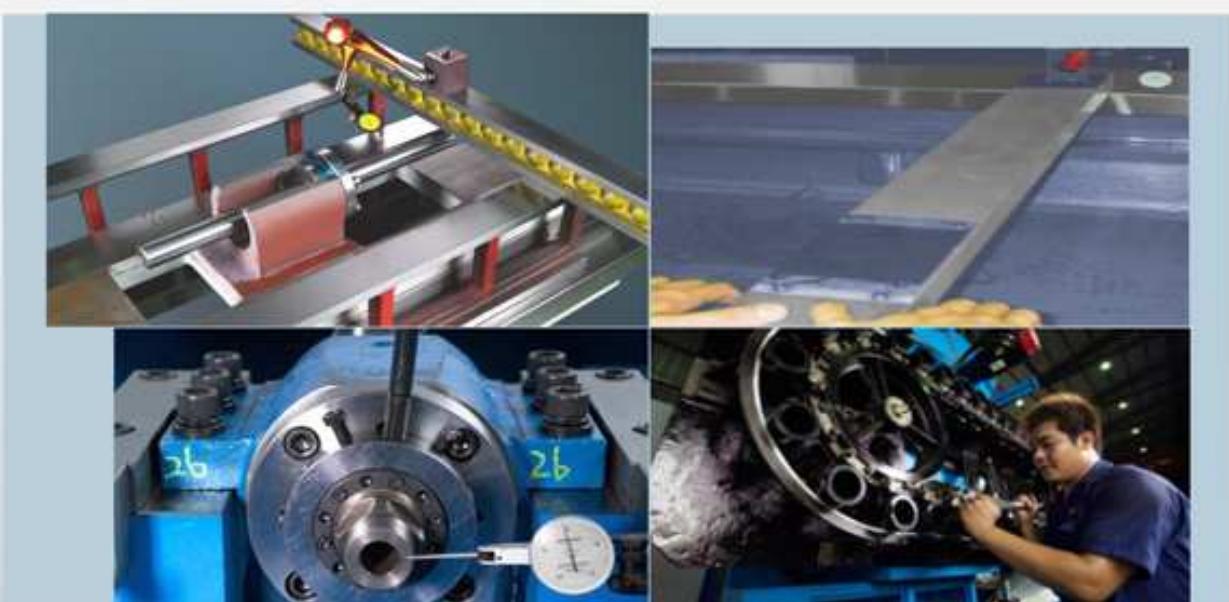
CNC software test and development



Max. measurement travel 20 m. Straightness is inspected by optical instruments.



Precision adjustment in every manufacturing process



ISO 9001:2008 Quality Management



Dynamic accuracy
(ISO 10791-7)



CMM inspection

Continual Improvement

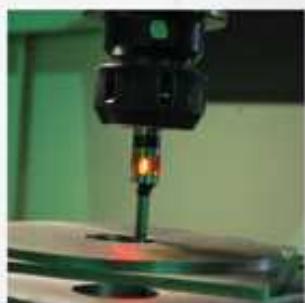
We commit for
“Quality First”
by following P-D-C-A
process in every
production segment,
using the advanced
instruments and strict
quality standards.

Quality plan

Supplier self-inspection

Materials inspection

Straightness inspection
with collimator



3D mold cutting

Reliability test

Cutting test

Positioning
accuracy
inspection

Function test

Assembly
inspection

Geometric
accuracy
inspection



Vibration inspection



Heavy cutting



Circularity by ball bar test
(ISO 230-4)

High quality technology service

Annual maintenance and service



Frequent overseas service training given to agents so that profession and service are delivered



With FANUC e-handbook and remote control, the operator can query and monitor anywhere immediately.



Complete record

CAD/CAM analysis service

The CAD/CAM application team offers the best proposal according to customers' machining requirements.

Optimal accuracy cutting and tool path planning

單號	日期	製表
顧客名稱: KEY	2010.06.08	
刀號: 加工步驟: 加工	圖號: 10405463	序號:
Tool No.: Cutting No.:	直徑: 轉速:	切削速度
T1: KEY-A-1: 精孔加工	mm:	rpm:
T2: KEY-A-2: 精孔加工	mm:	rpm:
T3: KEY-A-3: 錫孔加工	mm:	rpm:
T4: KEY-B-1: 外形精銑	攻牙: M2	直徑: 轉速:
T5: KEY-B-2: 錫削圓孔	鑄鐵孔: M2	直徑: 轉速:
T6: KEY-B-3: 精鏘基準孔	鑄孔刀: 30	直徑: 轉速:
T7: KEY-B-4: 錫孔加工	鑄孔刀: 6	直徑: 轉速:
T8: KEY-B-5: 鑄削免退孔	鑄孔刀: 10	直徑: 轉速:

CAD/CAM application service team

Tool selection
Machining condition

Machining time & Productivity analysis

工藝分析

Optimal tool path analysis

Machining simulation

Real cutting processing

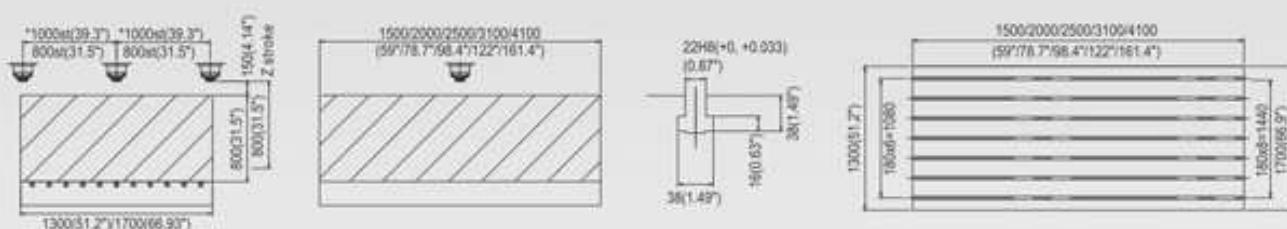
1. 以上為程式 CYCLE TIME 不含換刀、翻面等時間。*

2. 僅計算工作上下面加工，未計算側邊面加工部位。**

3. 總計時間為 2.5mm 上述時間為軟體計算時間與實際機台上加工時間約有 20% 誤差。***

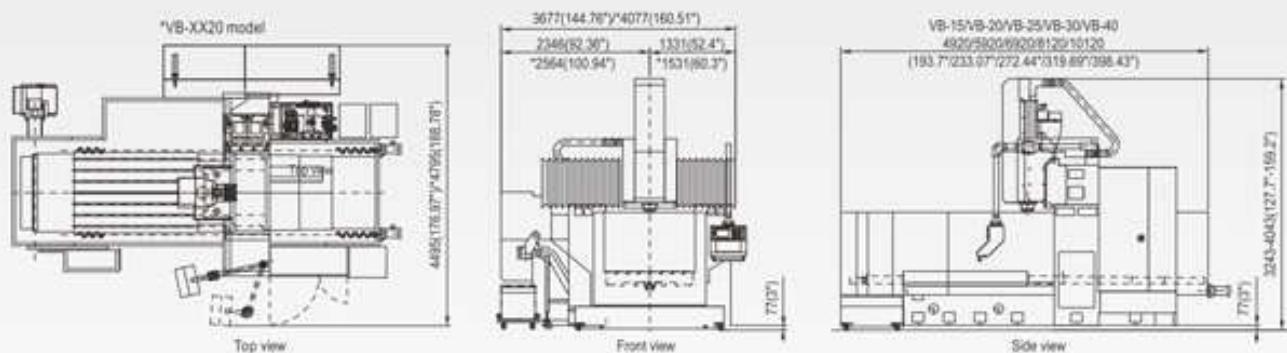
Table and T-slot Dimension

unit: mm(inch)



Major Machine Dimension

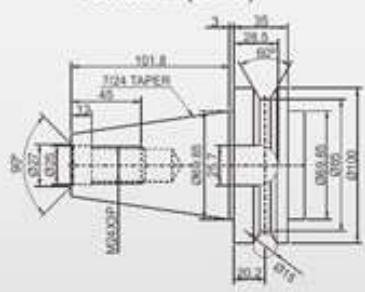
unit: mm(inch)



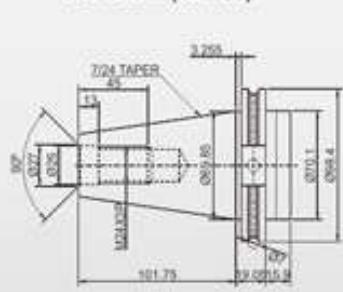
Tool Shank & Pull Stud Dimension

unit: mm

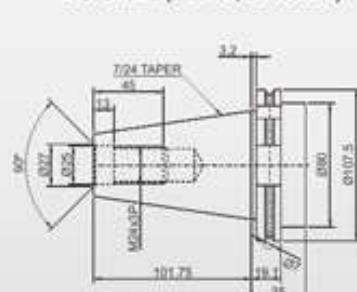
Tool shank (BT-50)



Tool shank (CAT-50)



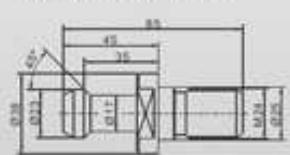
Tool shank (DIN-50, DIN69871)



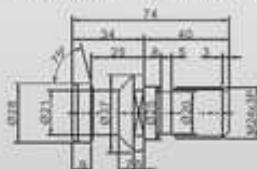
Pull stud bolt (P50T-1)



Pull stud bolt (CAT-50)



Pull stud bolt (DIN-50, DIN69872B, ISO7388/2-4A)



Attachment Heads

Head Attachment

Manual Attachments Heads



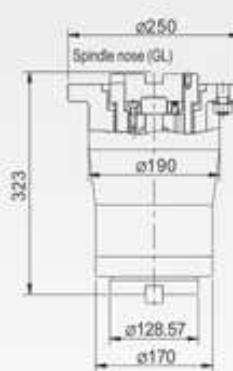
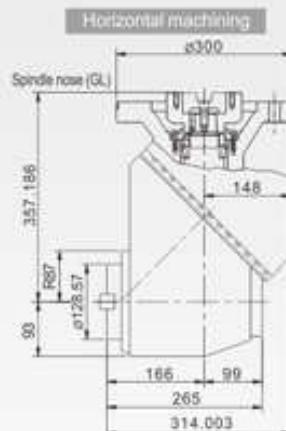
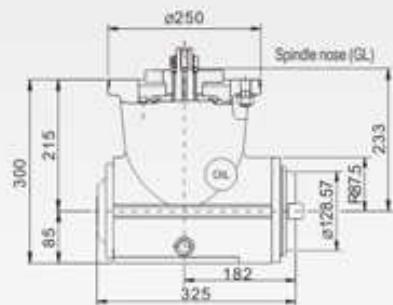
90° angular head



Universal head



Extended head



Max. power	11kW
Max. speed	2,000rpm
Spindle taper	#50
Head clamping	Manual
Axis indexing	Manual at C-axis

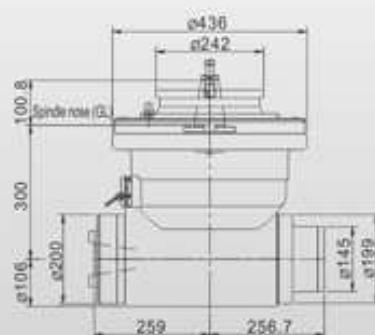
Max. power	11kW
Max. speed	1,200rpm
Spindle taper	#50
Head clamping	Manual
Axis indexing	Manual at A and C-axis

Max. power	11kW
Max. speed	2,000rpm
Spindle taper	#50
Head clamping	Manual
Axis indexing	Not available

Hydraulic Attachment Heads



AC 90° angular head



Max. power	26kW
Max. speed	3,000rpm
Spindle taper	#50
Head clamping	Hydraulic

Axis indexing Auto angular indexing (1°, C-axis)

VB series

SPECIFICATION	UNIT	VB-2016	VB-2516
TRAVEL			
X axis	mm	2,000	2,500
Y axis	mm	1,600	1,600
Z axis	mm	800 / 1,020 (opt.)	800 / 1,020 (opt.)
Distance from spindle nose to table (Z=800mm standard column) (STD.)	mm	150-950	150-950
Distance from spindle nose to table (Z=1,020mm column+200) (OPT.)	mm	130-1,150	130-1,150
Distance from spindle center to column	mm	430	430
Distance between columns	mm	1,700	1,700
TABLE			
Dimension	mm	2,000 x 1,300	2,500 x 1,300
T-slot (Width x Number x Pitch)	mm	22 x 7 x 180	22 x 7 x 180
Max. table load	kg	8,000	9,000
SPINDLE			
Spindle motor (Continuous / 30 minutes rated)	kW	18.5 / 22 (22 / 26 opt.)	
Spindle speed (2-step gear box)	rpm	4,500 / 6,000 (opt.)	4,500 / 6,000 (opt.)
Spindle speed (Belt-driven)	rpm	8,000 / 10,000 (opt.)	8,000 / 10,000 (opt.)
Spindle taper		ISO NO. 50	ISO NO. 50
FEED			
Cutting feed rate	mm/min	1-7,000	1-7,000
Rapid traverse	mm/min	X Y Z: 15	X Y Z: 15
X, Y, Z Motor capacity (FANUC)	kW	X: 4.5, Y: 3.5, Z: 3.5	X: 4.5, Y: 3.5, Z: 3.5
ACCURACY (X, Y, Z) (Measured by laser instrument)			
Positioning accuracy	mm	± 0.005 / 300, ± 0.015 / Full Travel	
	mm	P0.025	P0.025
Repeatability	mm	± 0.003	± 0.003
	mm	Ps0.02	Ps0.02
ATC			
Tool storage capacity	pcs	32 / 40 (opt.)	32 / 40 (opt.)
Max. tool weight	kg	18	18
Tool size (D x L) (Full tools)	mm	Ø125 x 380L	Ø125 x 380L
Max. tool size (D x L) (next pockets empty)	mm	Ø180 x 380L	Ø180 x 380L
Tool shank		BT 50 / CAT 50	BT 50 / CAT 50
Pull stud bolt		P50T-1	P50T-1
OTHERS			
Electric power consumption	kVA	55	55
Machine net weight	kg	21,500	24,500
Machine gross weight	kg	25,000	28,000
Max. space volume (standard column)	mm	7,580 x 5,355 x 4,043	8,580 x 5,355 x 4,043
Max. space volume (+200mm column)	mm	7,580 x 5,355 x 4,243	8,580 x 5,355 x 4,243

Standard Accessory & Function

- 01. Fanuc 0i MD controller
- 02. 4,500 rpm two-step gear spindle (box way)
- 03. Spindle and gear box cooling system
- 04. Twin hydraulic cylinders with pressured air assistance balance system
- 05. X-axis ball screw supporter (4m above)
- 06. 32 tool magazine with arm type ATC
- 07. Centralized auto lubrication system
- 08. Independent lubrication oil collector for 3 axes (X/Y/Z)
- 09. Enclosure splash guard (without roof)
- 10. Working light
- 11. 3-color signal lamp
- 12. Air blast through spindle
- 13. Moveable manual pulse generator
- 14. Wash gun & pneumatic interface
- 15. RS232 interface
- 16. Absolute pulse coder feedback
- 17. Vision Wide VW-FX graphical user interface
- 18. Flood coolant system (Ring & Nozzle) (without AC interface)
- 19. Heat exchanger for electrical cabinet
- 20. Twin chip screws on table side
- 21. Caterpillar type chip conveyor
- 22. Foundation pads & bolts kits
- 23. Tool kits
- 24. Operation manual, PLC & electrical circuit diagram



VISION WIDE
WIDEN YOUR CUTTING VISION

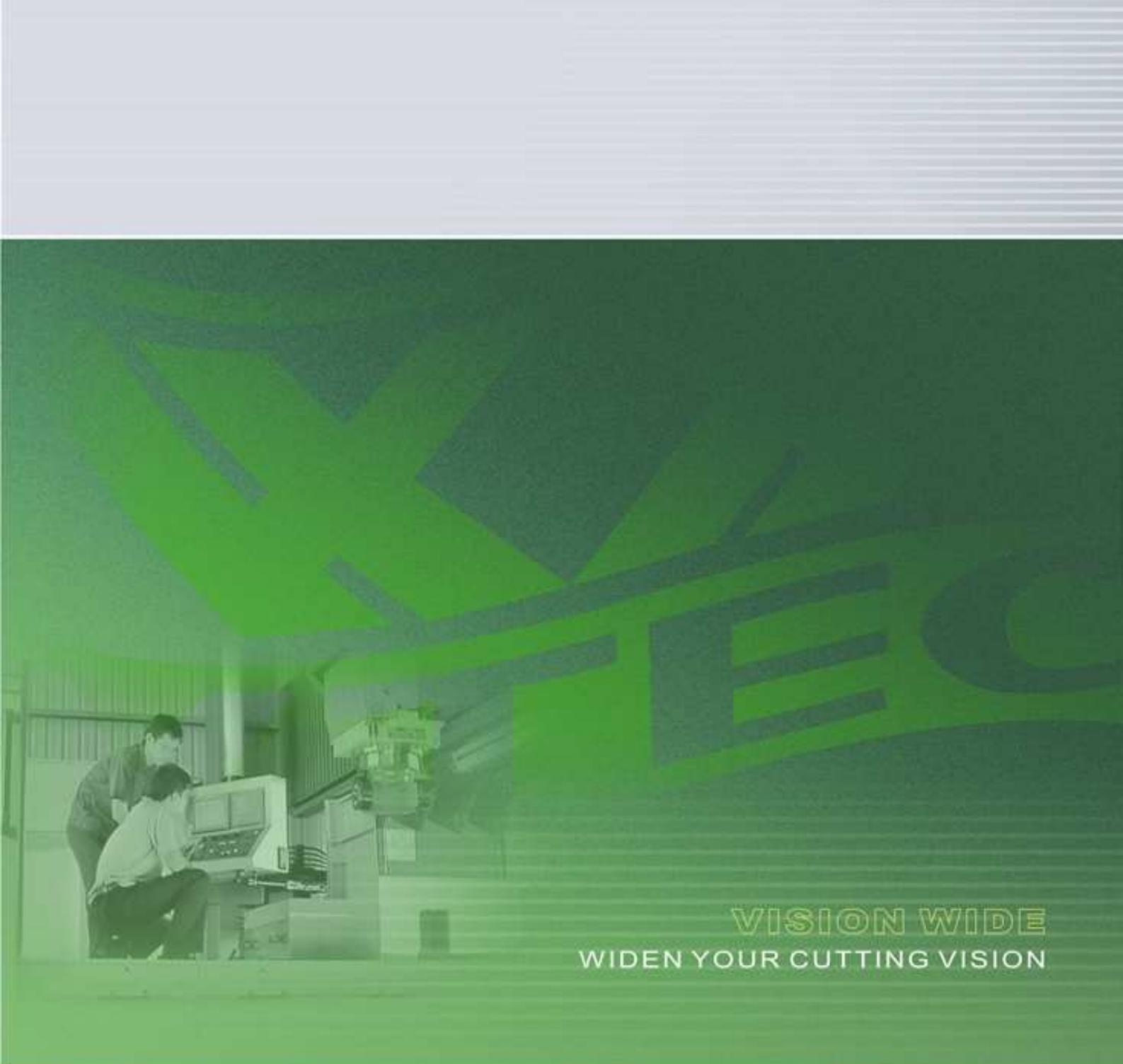
Specifications

VB-3016	VB-2020	VB-2520	VB-3020	VB-4020
3,100	2,000	2,500	3,100	4,100
1,600	2,000	2,000	2,000	2,000
800 / 1,020 (opt.)	800 / 1,020 (opt.)	800 / 1,020 (opt.)	800 / 1,020 (opt.)	800 / 1,020 (opt.)
150-950	150-950	150-950	150-950	150-950
130-1,150	130-1,150	130-1,150	130-1,150	130-1,150
430	430	430	430	430
1,700	2,100	2,100	2,100	2,100
3,100 x 1,300	2,000 x 1,700	2,500 x 1,700	3,100 x 1,700	4,100 x 1,700
22 x 7 x 180	22 x 9 x 180	22 x 9 x 180	22 x 9 x 180	22 x 9 x 180
10,000	9,000	10,000	11,000	12,000
18.5 / 22 (22 / 26 opt.)				
4,500 / 6,000 (opt.)	4,500 / 6,000 (opt.)	4,500 / 6,000 (opt.)	4,500 / 6,000 (opt.)	4,500 / 6,000 (opt.)
8,000 / 10,000 (opt.)	8,000 / 10,000 (opt.)	8,000 / 10,000 (opt.)	8,000 / 10,000 (opt.)	8,000 / 10,000 (opt.)
ISO NO. 50	ISO NO. 50	ISO NO. 50	ISO NO. 50	ISO NO. 50
1-7,000	1-7,000	1-7,000	1-7,000	1-7,000
XY: 12, Z: 15	XY: 12, Z: 15	XY: 12, Z: 15	XY: 12, Z: 15	XY: 12, Z: 15
X: 4.5, Y: 3.5, Z: 3.5	X: 4.5, Y: 3.5, Z: 3.5	X: 4.5, Y: 3.5, Z: 3.5	X: 4.5, Y: 3.5, Z: 3.5	X: 7, Y: 3.5, Z: 3.5
± 0.005 / 300, ± 0.015 / Full Travel				
P0.03	P0.025	P0.03	P0.03	P0.03
± 0.003	± 0.003	± 0.003	± 0.003	± 0.003
Ps0.025	Ps0.02	Ps0.02	Ps0.025	Ps0.025
32 / 40 (opt.)	32 / 40 (opt.)	32 / 40 (opt.)	32 / 40 (opt.)	32 / 40 (opt.)
18	18	18	18	18
Ø125 x 380L	Ø125 x 380L	Ø125 x 380L	Ø125 x 380L	Ø125 x 380L
Ø180 x 380L	Ø180 x 380L	Ø180 x 380L	Ø180 x 380L	Ø180 x 380L
BT 50 / CAT 50	BT 50 / CAT 50	BT 50 / CAT 50	BT 50 / CAT 50	BT 50 / CAT 50
P50T-1	P50T-1	P50T-1	P50T-1	P50T-1
55	55	55	55	55
27,500	23,500	26,500	29,500	32,500
32,000	27,000	30,000	34,000	35,000
9,780 x 5,355 x 4,043	7,580 x 5,755 x 4,043	8,580 x 5,755 x 4,043	9,780 x 5,755 x 4,043	11,780 x 5,755 x 4,043
9,780 x 5,355 x 4,243	7,580 x 5,755 x 4,243	8,580 x 5,755 x 4,243	9,780 x 5,755 x 4,243	11,780 x 5,755 x 4,243

All specifications are subjected to change without prior notice.

Optional Accessory & Function

- 01. 6,000 rpm two-step gear spindle
- 02. 8,000 rpm / 10,000 rpm belt-driven spindle
- 03. 40 tool magazine
- 04. Coolant through tool holder interface
- 05. Coolant through spindle system
- 06. Ball screw cooling system
- 07. HEIDENHAIN linear scale feedback
- 08. 200 / 300 / 400 mm higher column extension
- 09. Sub working table
- 10. Oil skimmer
- 11. Oil mist cooling device
- 12. Rotary table
- 13. Interface preserved for rotary table
(Machine contains within the hose and oil tank)
- 14. 3-axis manual pulse generator
- 15. Automatic tool length measurement
- 16. Automatic work piece measurement
- 17. Manual clamping heads: 90 degree / extended / universal
- 18. Semi-auto clamping heads: 90 degree
- 19. Transformer
- 20. Chip cart
- 21. Z-axis retract function at power failure
- 22. Full enclosure splash guard



VISION WIDE
WIDEN YOUR CUTTING VISION



VISION WIDE TECH CO., LTD.

No.43, 17th Industrial Rd., Taiping,
Taichung 41154, Taiwan
TEL: 886-4-2271 2000
FAX: 886-4-2271 2009
E-mail: info@visionwide.com.tw

Representative:

[http:// www.visionwide-tech.com](http://www.visionwide-tech.com)