

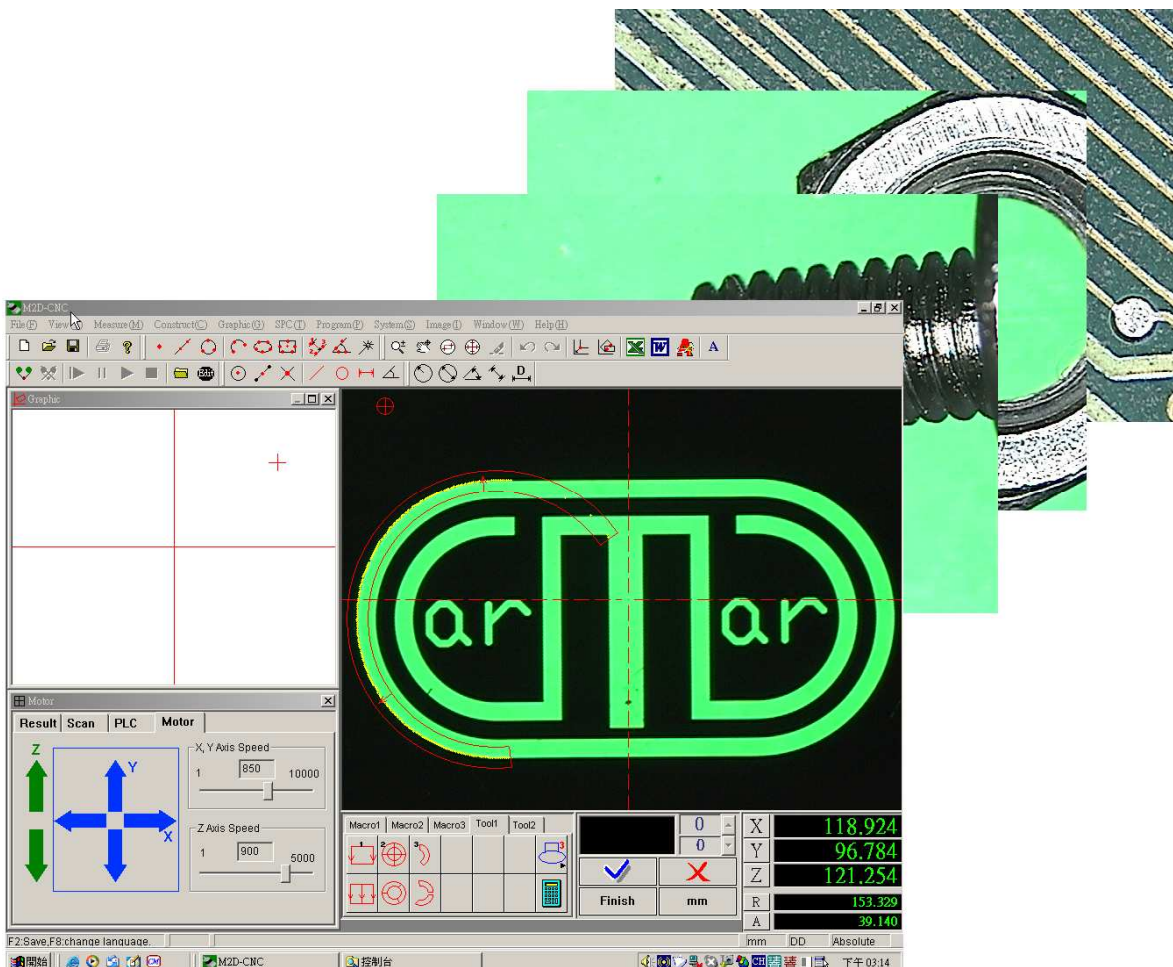


Video Measuring Machine

Non-contact Vision Measuring System performs the art of accuracy and the experiences of metrology of Carmar. We offer measuring instruments with high accuracy and excellent affordability. Functioning as traditional microscopes and projectors, VMM series can satisfy all kinds of 2D and 3D measurements with powerful software and additional tools.

All series designed with granite structure.

- Cantilever CNC Type VMM-C series
- Cantilever Manual Type VMM-S/D series
- Bridge Type VMM-AM/C series





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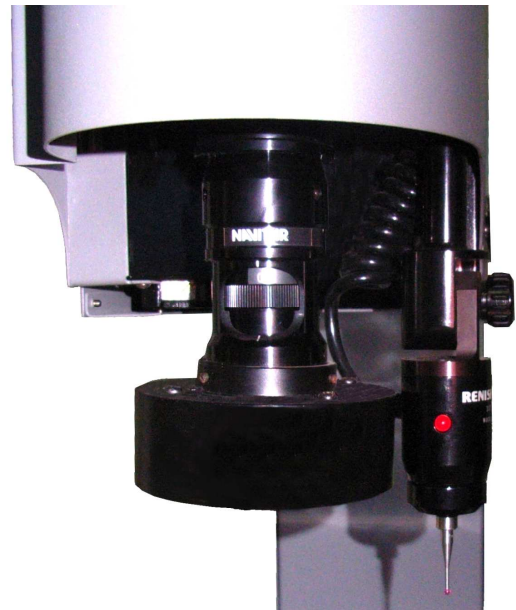
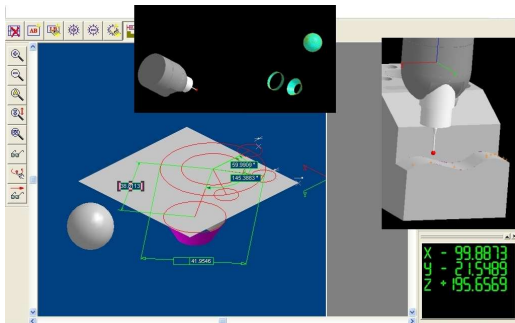
All New Features

■ Leading technology of applying linear encoder with $0.5 \mu\text{m}$ resolution to enhance accuracy of the positioning and graphic gathering.

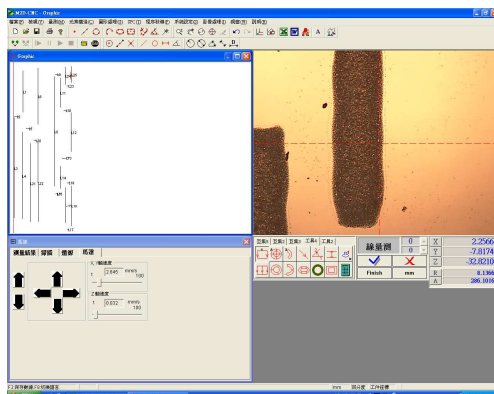
X	3.8720
Y	12.2995
Z	61.3630
R	12.8946
A	72.5255



■ Powerful touch probe supporting 2D and 3D measurements and offering total solution for customers.



■ Powerful zoom lens with high resolution linear encoder providing accurate micro image inspection for precision parts.





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CNC Type Video Measuring Machine

Features:

1. All Systems are Probe-Ready , Auto focus function, joystick control;
2. High accuracy with fixed working table and granite pedestal;
3. Fast servo motor controlling;
4. High resolution Sony 1/2" color CCD camera and NAVITAR Zoom lens with sharp images;
5. USB interface linear exchanger can connect with professional measuring software;
6. Surface cold-light source is used to enhance the performance of illumination;
7. Applying MS Windows XP with CNC software with analysis abilities ensures the best performance.



VMM-3020C



VMM-C Series Specifications :

Model		VMM-2515C	VMM-3020C	VMM-4030C
Stage Size (mm)		450 x 280	500 x 300	606 x 466
Glass Size (mm)		306 x 196	350 x 280	450 x 350
Travel (mm)	X	220	270	370
	Y	120	170	270
	Z	150 (for focusing)		
Driving System		Servo Motor Control		
Speed		200 mm/s		
Resolution of X/Y/Z-axis		0.0005 mm (0.5 μ m)		
Positioning Accuracy		0.001 mm (1 μ m)		
Accuracy		$\leq 3.0 + L/75$ (μ m)		
Software		QIM-5008& USB		
Video System		<ul style="list-style-type: none"> ● CCD Camera : SONY Color 1/2" CCD Camera ● Lightening System : <ul style="list-style-type: none"> ➤ Cold-light source Surface and Transmission illumination ● Zoom Lens : NAVITAR Zoom Lens, <ul style="list-style-type: none"> ➤ Magnification of field lens : 0.7X - 4.5X ➤ Total Magnifications : 30X - 190X ➤ Object View : 10.6mm - 1.6mm 		
Weight (kg)		145	170	270
Power Supply		AC220V/110V 50/60 Hz		

Function-enhanced options as below , please refer to accessories of video measuring machine.

■ **Standard Zoom Lens Option**

■ **Precision Zoom Lens Option**



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Manual Type Video Measuring Machine

Standard VMM-D Series
Enhanced VMM-S Series

VMM-S/D series are one of the best developed products in Carmar's product lines. Providing customers with precise, cost effective equipments and good service are our business philosophy. VMM series satisfy all kinds of two dimensional measurements with M2D software.

Features:

1. High accuracy with fixed working table and granite pedestal;
2. RS-232 interface can do communication between measuring software and computer.
3. High resolution Sony 1/2" color CCD camera and NAVITAR zoom lens with sharp images;
4. The user can manage and output the graphs as bmp or DWG format by connecting with PC and running the M2D program.
5. One-click edge detection.



VMM-2515S



Specifications :

Model	VMM-1510S/D	VMM-2010S/D	VMM-2515S/D	VMM-3020S/D	VMM-4030S/D
Stage Size (mm)	354 x 228	404 x 228	450 x 280	500 x 330	606 x 466
Glass Size (mm)	210 x 160	260 x 160	306 x 196	350 x 280	450 x 350
X/Y Travel (mm)	150 x 100	200 x 100	250 x 150	300 x 200	400 x 300
Weight (kg)	100	110	120	140	240
Dimensions (mm)	540 x 560 x 860		760 x 600 x 900		970 x 670 x 940
Z axis travel (mm)	200 mm				
Z working range (mm)	VMM-S series: 92 mm		VMM-D series: 105 mm		
Accuracy	$\leq (3 + L/200) \mu\text{m}$; L: measuring length (mm)				
Digital Display & Resolution of X/Y/Z-axis	Digital Display : DC3000 (Optional) Resolution : 0.0005 mm				
Measuring Software	M2D series				
Video System	VMM-S series				
	<ul style="list-style-type: none"> ● CCD Camera : Colour 1/2" SONY CCD Camera ● Zoom Lens : NAVITAR Zoom Lens, <ul style="list-style-type: none"> ➢ Magnification of field lens 0.7X - 4.5X ➢ Total Magnifications 30X - 190X ➢ Object View 10.6mm - 1.6mm <p style="text-align: center;">(High precision zoom lens is optional)</p>				
	VMM-D series				
Video System	<ul style="list-style-type: none"> ● CCD Camera : Colour 1/3" CCD Camera ● Zoom Lens : Standard Zoom Lens, <ul style="list-style-type: none"> ➢ Magnification of field lens 0.7X - 4.5X ➢ Total Magnifications 40X - 255X ➢ Object View 7mm - 1.1mm 				
Lightening System	Adjustable LED Surface and Transmission illumination				
Power Supply	AC220V/110V 50/60 Hz				

Function-enhanced options as below , please refer to accessories of video measuring machine.

- **Standard Zoom Lens Option**
- **Precision Zoom Lens Option**
- **Touch Probe Option**



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Bridge Type Video Measuring Machine

VMM-AM Series

Bridge type VMM-AM designs with granite structure and guidance of air bearing that provides rapid movement and accurate position for high traverse. VMM-AM is the ideal model for larger LCD and PCB inspection. Working with professional CNC software satisfies various sizes measurements.

Features:

1. High accuracy with fixed working table and granite pedestal;
2. High resolution Sony 1/2" color CCD camera and U.S. made NAVITAR zoom lens;
3. Air bearing design for X and Y-axis and table structure of granite ensures geometric accuracy and vibration resistance.
4. Illumination : adjustable LED illumination for surface and contour.
5. Software compatible with MS WindowsXP provides powerful measuring ability and comprehensive measurement analysis.
6. One-click edge detection.



VMM-5030AM



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Specifications :

Model	VMM-5030AM	
Stage Size (mm)	700 x 450	
Glass Size (mm)	550 x 350	
Travel (mm)	X	500
	Y	300
	Z	150
Resolution of X/Y/Z-axis	0.0005 mm (0.5 μ m)	
Accuracy	$\leq (3 + L/200) \mu$ m ; L: measuring length (mm)	
Video System	<ul style="list-style-type: none">● CCD Camera : Color 1/2" SONY CCD Camera● Lightening System : Adjustable LED Surface and Transmission illumination● Zoom Lens : NAVITAR Zoom Lens,<ul style="list-style-type: none">➢ Magnification of field lens 0.7X - 4.5X➢ Total Magnifications 30X - 190X➢ Object View 10.6mm - 1.6mm(High precision zoom lens is optional)	
Measuring software	USB & M2D-AT	
Weight (kg)	800	
Power Supply	AC220V/110V 50/60 Hz	
Air Supply	Pressure: ≥ 0.5 Mpa ; Consumption: 120L/min at 0.4Mpa	
Environment requirements	(20 \pm 2) $^{\circ}$ C 55% ~ 65%	
Dimensions (mm)	1,600 x 800 x 1,660	

Function-enhanced options as below , please refer to accessories of video measuring machine.

■ **Standard Zoom Lens Option**

■ **Precision Zoom Lens Option**

■ **Touch Probe Option**



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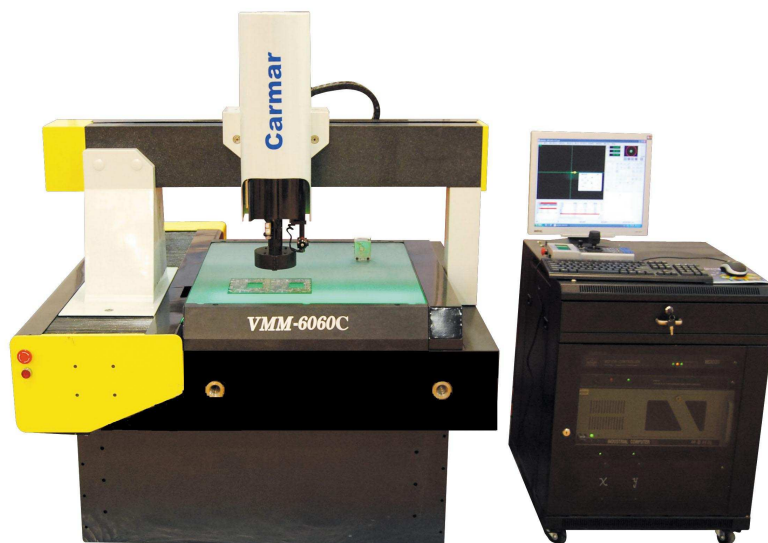
Bridge Type CNC Video Measuring Machine

VMM-C Series

Bridge type VMM-6060C designs with granite structure and guidance of air bearing that provides rapid movement and accurate position for high traverse. VMM-6060C is the ideal model for larger LCD and PCB inspection. Working with professional CNC software: QIM5008 satisfies various sizes measurements.

Features:

1. All Systems are probe-ready , auto focus function, joystick control;
2. Powerful controller used for Auto-focus to perform high repeatability;
3. Fast servo motor controlling;
4. High resolution Sony 1/2" color CCD camera and NAVITAR zoom lens;
5. Air bearing design for X and Y-axis and table structure of granite ensures geometric accuracy and vibration resistance.
6. Surface cold-light source is used to enhance the performance of illumination.
7. Special treatment glass table to avoid deformation. Max glass size can go up to 3,000mm.



VMM-6060C



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Specifications :

Model	VMM-6060C	
Stage size	640 x 740	
Travel (mm)	X	600
	Y	600
	Z	150
Resolution of X/Y/Z-axis	0.0005 mm (0.5 μ m)	
Positioning Accuracy	0.001 mm (1 μ m)	
Speed	400 mm/s	
Accuracy	$\leq (3 + L/75) \mu$ m L (measuring length) :mm	
Video System	<ul style="list-style-type: none">● CCD Camera : Color 1/2" SONY CCD Camera● Lighting System : Adjustable LED Surface and Transmission illumination● Zoom Lens : NAVITAR Zoom Lens<ul style="list-style-type: none">➢ Magnification of field lens : 0.7X - 4.5X➢ Total Magnifications : 34X - 220X	
Measuring software	QIM-5008	
Weight (kg)	1280	
Power Supply	AC220V/110V 50/60 Hz	
Air Supply	Pressure: 0.4 Mpa \pm 2 ; Consumption: 120L/min at 0.4Mpa	
Environment	(20 \pm 2) $^{\circ}$ C 55% ~ 65%	

Function-enhanced options as below , please refer to accessories of video measuring machine.

- **Standard Zoom Lens Option**
- **Precision Zoom Lens Option**
- **Touch Probe Option**



Accessories for Video Measuring Machine

■ Standard Zoom Lens Option

Accessories	1X tube (Standard)		0.5X tube (Option)		Working Distance (mm)	
Zoom Lens	0.7X~4.5X		0.7X~4.5X			
Appending Lens	Total Magnification	Object View (mm)	Total Magnification	Object View (mm)		
0.5X (Option)	15X~95X	20~3.2	7.5X~48X	40~6.4		175
Standard	30X~190X	10~1.6	15X~95X	20~3.2		92
2X (Option)	60X~380X	5~0.8	30X~190X	10~1.6		36

■ Precision Zoom Lens Option

Accessories	1X tube (Option)		2X tube (Option)		Working Distance (mm)	
Zoom Lens	Coaxial 0.7X~4.5X (Option)		Coaxial 0.7X~4.5X (Option)			
Objectives Lens	Optical Mag.	Object View (mm)	Optical Mag.	Object View (mm)		
5X (Option)	1.74X~11.43X	4.05 ~ 0.70	3.48X~22.86X	2.30 ~ 0.35		34
10X (Option)	3.48X~22.86X	2.10 ~ 0.35	6.96X~45.72X	1.15 ~ 0.17		33
20X (Option)	6.96X~45.72X	0.91 ~ 0.17	17.40X ~ 114.30X	0.57 ~ 0.09		20
50X (Option)	17.40X ~ 114.30X	0.31 ~ 0.07	34.80X ~ 228.60X	0.23 ~ 0.04		13
150 W Halogen Lamp and Optical Fiber (Option)						

■ Touch Probe Option

Probe Model	RENISHAW MCP Touch Probe		
Sensing Directions	5 way, +/-X, +/-Y, +Z	Uni-directional Repeatability	0.75μm (2σ)
Trigger Force (Fixed)	12g Nominal	Stylus Mounting	M3
Probe Status Display	LED Display	Probe Signal Connector	5 Pin DIN
Over Travel (Z axis)	5mm	Over Travel (X/Y axis)	+/- 20度



CARMAR TECHNOLOGY CO., LTD.

CARMAR TECHNOLOGY CO.,LTD
No.6, 23rd Road., Industrial Park,
Taichung City 408, Taiwan (R.O.C.)
TEL: 886-4-23592289
FAX: 886-4-23598060
E-mail: carmar.tech@msa.hinet.net
<http://www.carmar-tech.com/>