



**BANBROS ENGINEERING PVT. LTD.**

The Precision Measurement People

# VISION MEASUREMENT MACHINE MANUAL



**BJV- SERIES**



## INTRODUCTION: -

**BANBROS** owns a complete series of Vision Measurement Machines from **Manual type** machine, **NC type** Automatic measurement machine with practice function, to **CNC type** fully automatic measurement machine with off-line programming, high speed and efficiency function in order to meet different customer's requirements. All Banbros Vision Measurement Machines are compatible with **Renishaw** high accuracy touch trigger probe to measure parts in Z- axis or simple-3D measurement. SPC statistic analysis software is a standard configuration for all Banbros Vision Measurement Machines.

It allows customers to carry out scientific analysis for the production flow to find error trend in the flow and problems in the operations. In addition, all measurement results may be outputted in popular Microsoft office software, such as MS Excel, MS Word to make customers save results conveniently for working out a quality inspection report or analyzing further.

Our Vision Measurement Software can output results in image file DXF to the popular CAD software, e.g., Auto CAD, Master CAM etc. to facility customers to copy the results. Vice visa, image files in DXF may also be loaded into Banbros Vision Measurement Software to compare measurement results visually.

The **BJV Series** Vision Measurement Machine is designed especially for large scale repeated measuring. It is with high speed, high efficiency and powerful function. BJV Series especially suits for large-amount in section which requires high speed, high efficiency and high precision. It is necessary and important equipment within a busy QC line. BJV Series uses high precision 00 class granite fixed bridged structure for the bracket, along with high precision work-table, in order to ensure the stability and precision of the machine body as long as the high precision of the measuring. Three axis adopt the Panasonic AC servo motor system, recognized by the whole industry as the most reliable system.

All the moving is controlled by a high speed 32-bit DSP controller in order to ensure a reliable high-speed measurement. The software of BJV series has learning function, users just have to measure the work piece manually for once, the software with record the measuring process, this can be used for the repeated measuring. Users do not have to write any program and this largely simplifies the measuring process.

**BJV Series** is a manual type video measuring machine with XYZ travel. It is equipped with high quality CCD, powerful 2D measuring software and computer. The machine can measure various work piece such as electronic components, punching parts, plastic and rubber parts etc effectively.



All the BVJ Series can install the Renishaw touch probe & motorized Auto-zoom lens.

#### KEY FEATURES: -

- The base and upright column adopt high precision of granite to ensure the stability of the mechanism system.
- Z-axis adopts precision linear guide with clump weight and the lens is in even force up and down to ensure the precision.
- The laser locating indicator can rapidly find the measuring position of work pieces.
- 0.7x~4.5x Step Zoom Lens.
- The grating scales that mounted on X-axis and Y-axis can make sure the high locating precision
- Z-axis when mounted with grating scale can measure height of work pieces.

#### SPC STATISTIC ANALYSIS SOFTWARE: -

All BANBROS Vision Measurement Machines are equipped with SPC analysis software to allow customers to analyze the measurement results in order to find the error trend in the production flow and have a chance to find problems in the production process on time to make a correction. This will avoid serious errors and waste in each production stage. The SPC Statistic analysis software provides a series of chart patterns & methods for management, such as Xbar-R, Xbar-S, Xmed-R, R-Rm etc, as well as a number of diagram representation methods, for example, vertical, horizontal, 3-dimension, connection diagram etc to improve quality management considerably.

#### BASIC FUNCTION OF THE SOFTWARE: -

**Basic geometry measurement:** Point, line, circle, arc, ellipse, rectangle and curves. Powerful measurement: Automatically find the best boundary point, automatically measure and identify line, circle and arc, can select the point, line, circle, arcs and ellipse with frame, can collect point. manually through a mouse.

**Combination measurement:** Combine the point, line and circle and calculate the distance, angle and intersection point among points, lines and circles.

**Geometrical error measurement:** Measure the parallelism, perpendicular, inclination, displacement, coaxiality and symmetry.

**Coordinate system setting:** Parallely move, rotate and change the original coordinate or reset the coordinate system. Dimension annotation: It can mark the length, angle, radius and diameter on the drawing window conveniently just like using AUTOCAD software.

**Inspection result output:** The drawings and measuring results can be put out in the format of WORD, EXCEL, DXT.



**Auto focusing function:** It can produce a focusing indicating curve by adjusting Z axis and then judge optimum focus distance position so as to reduce focusing error from operator.

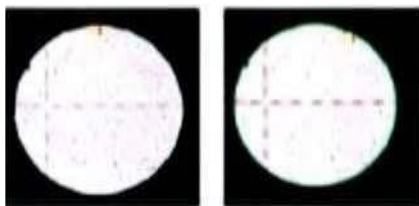
**Enlarge small window function:** It can partly enlarge the vision window through the small window on the lower right corner of software so as to accurately aim at the workpiece.

**CAD window:** Special CAD window has the same idea as three coordinates, which make customer vividly understand the test pieces.

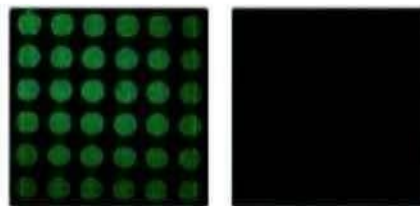
**SPC function:** Data statistics report can be edited freely according to user's measuring requirements.  
**Teaching function:** User only need to program the measuring path one time when measuring batch parts and set the number of measuring times to automatically complete the measurement.

**(The function is only for CNC type).**

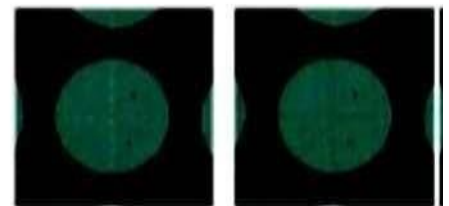
**Automatic Edge Finding**



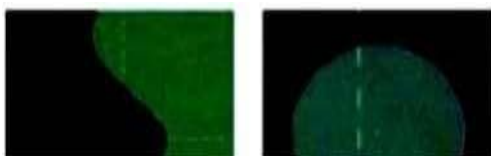
**Blocking**



**Rough edge screening & Automatic edge finding**



**Quick edge finding**

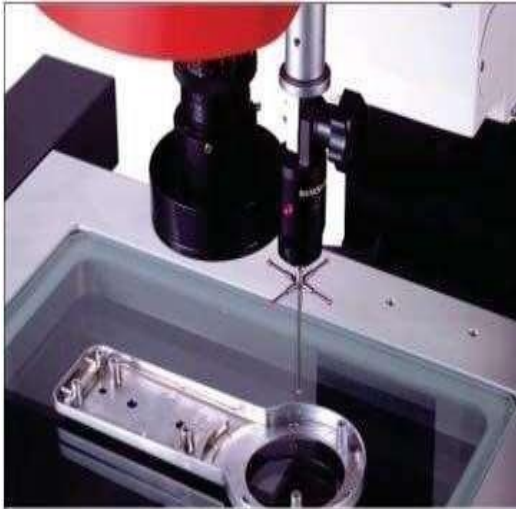


**Brightness Indicator**



**Vision ratio display**

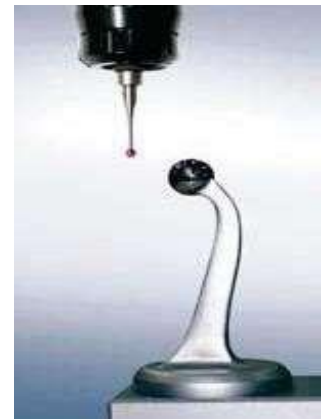




Coaxial lens / probe



Five probes compensator



- AF Auto Focus
- AZ Auto Zoom
- Lens plays critical role in vision measuring

**0.5X, 1.5X, 2X Auxiliary Lens**





Telecentric lens is the best choice for vision measuring. It is with the auto zoom function developed by the **Banbros** eagle eyes project, together with a user-friendly auto focused controller. If customers choose **Renishaw 3D probes** as option, the controller will include a one-key or Z axis probe automatic measuring function, and this can reduce the man-made damage to the probe because of the failed operation.

**TECHNICAL SPECIFICATIONS: -**

Model No	BJV-250	BJV-300	BJV-400	BJV-500
X-Travel	250mm	300mm	400mm	500mm
Y-Travel	150mm	200mm	300mm	400mm
Z-Travel	200mm	200mm	200mm	200mm
	<ul style="list-style-type: none"> <li>Supplied complete with measuring Software and Counting card</li> </ul>			
Operating Mode	Manual control			
Resolution(X/Y)	0.0005mm			
Repeatability	0.002mm			
Accuracy	(3+L/200) μm			
Stage Load Capacity	30kg			
CCD	1/3" 430,000 pixel Colour	1/3" 410,000 pixel Color		
Optical Magnify Zoom	0.7x-4.5x			
Image Magnification	28x - 180x			
Applicable Environment	Temp.20±5°C Humidity 45-75%			