

KASON VMS Series CNC Video Measuring System**KASONTTEST**[®]

(Picture just for reference)

Usage

VMS Series is a universal type of CNC Video Measuring System developed by KASON.

It has been widely applied in machinery, electronics, aerospace, automotive, military, mold, and other industries for precision automatic measurement.

Designed for rapid precision measurement & batch test in machinery, electronics, mould, etc.

1. To measure point, line, circle, arc and oval, rectangular and improve the accuracy with the multi-point positioning function with clear observation.
2. Coordinate measurement, translation and coordinates straighten out.

3. Make measurement data directly into AutoCAD drafting
4. Record user program, editing and execute command.
5. In metrology terms, the machine can test width, length, height, thickness, straightness, flatness, perpendicularity, circular degree, coaxiality, etc.
6. The machine can test products as below:
 - 1) Machinery: sheet, mould & die, gear, turning parts like bearings, shaft.
 - 2) Electronics: phone& tablet sheet, PCB, watch parts, etc.
 - 3) Plastics: mobile phone camera plate, cover, front bezel, slide plate, etc.

II. Features

1. Double closed-loop motion control performs micron-level precision motion
2. 8 regional LED surface light source
3. Grade 00 JINANQING granite base, column, high stability
4. Specific CNC software has wonderful measurement efficiency.

III. Specification

Code	04172...	001	002	003
Model		VMS-3020E	VMS-4030E	VMS-5040E
Worktable	Worktable D(mm)	500*330	606*466	706*566
	Glass Table Size(mm)	350*280	450*350	550*450
	X,Y Stroke(mm)	300*200	400*300	500*400
	Load Capacity	approx. 20 kg	approx. 30 kg	approx. 35 kg
Resolution		0.5µm	0.5µm	0.5µm
Accuracy E1*		Ex, y ≤ (3.0+L/200) µm		
Accuracy E2*		Exy ≤ (3.5+L/300) µm		
Accuracy E3*		Ez ≤ (3.5+L/150) µm		
Z Stroke (mm)	Standard	200		
	Option	250~300	250~350	250~450
Instrument Weight (kg)		250	325	500
Dimension (mm)		610*764*992	720*950*1020	800*1040*1020
Motor	Three-axis Max. Velocity	X,Y: 400mm/s Z: 200mm/s		
	Three-Axis Positioning Accuracy	0.001mm		
Imaging System	Camera	2 MP Color Camera		
	Zoom Lens	optical manual zoom lens		
	Zoom Lens Magnification	0.7-4.5X		

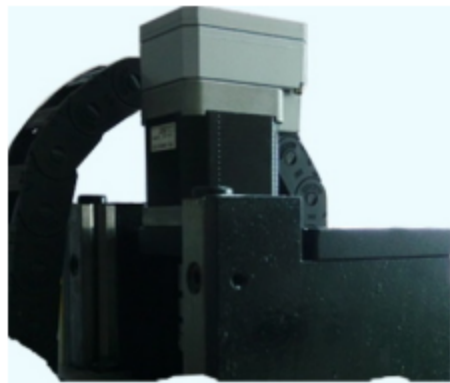
	Video Magnification		28-186X		
	FOV		11.1-1.7mm		
	Power Consumption		600W		
Instrument Accessories	1X Tube (standard)		0.5X Tube (optional)		WD
Zoom Lens	0.7-4.5X		0.7-4.5X		
Extra Lens	Video Magnification	FOV	Video Magnification	FOV	
0.5X(option)	10X-64X	22-3.4	5X-32X	44-6.8	175
1.0X(standard)	20X-128X	11.1-1.7	10X-64X	22-3.4	92
2.0X(option)	40X-256X	5.5-0.9	20X-128X	11.1-1.7	36

* All data is tested according to Standard ISO 10360-7-2011

L is measured length (units: mm)

Specification subject to change without notice

IV. Structure



**Servo motor driven
Z-axis
can automatically
achieve precision focus
with 0.5 μm resolution**



**Granite column
great stability**

2 MP

**Color CCD Camera
High Resolution and
Clear Image even during Fast
Measurement Moving**

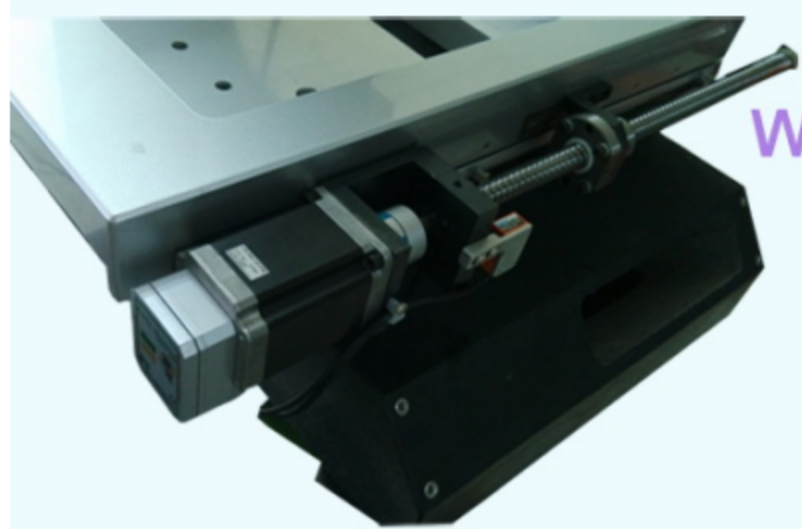
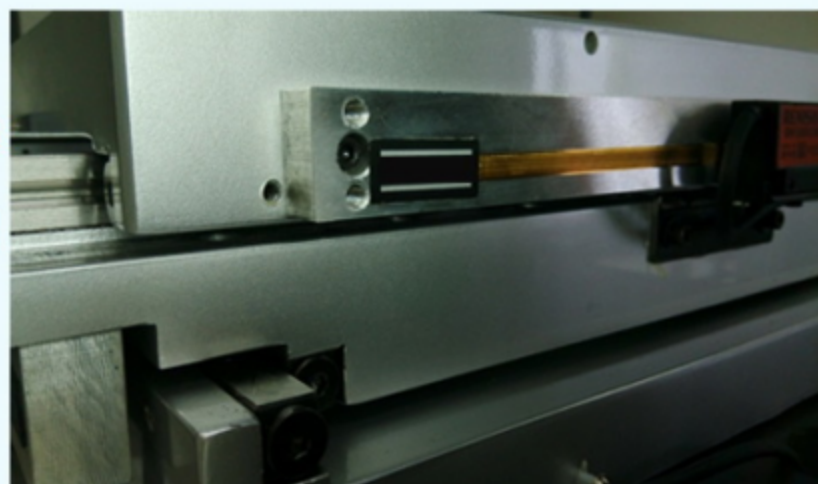




Professional Coaxial Zoom Lens

Choose the right magnification
at once!

Natural Aging
Treatment Worktable
X,Y, Z axis equipped
with Stainless
Steel Scale



Worktable driven by
original
Japan Servo Motor

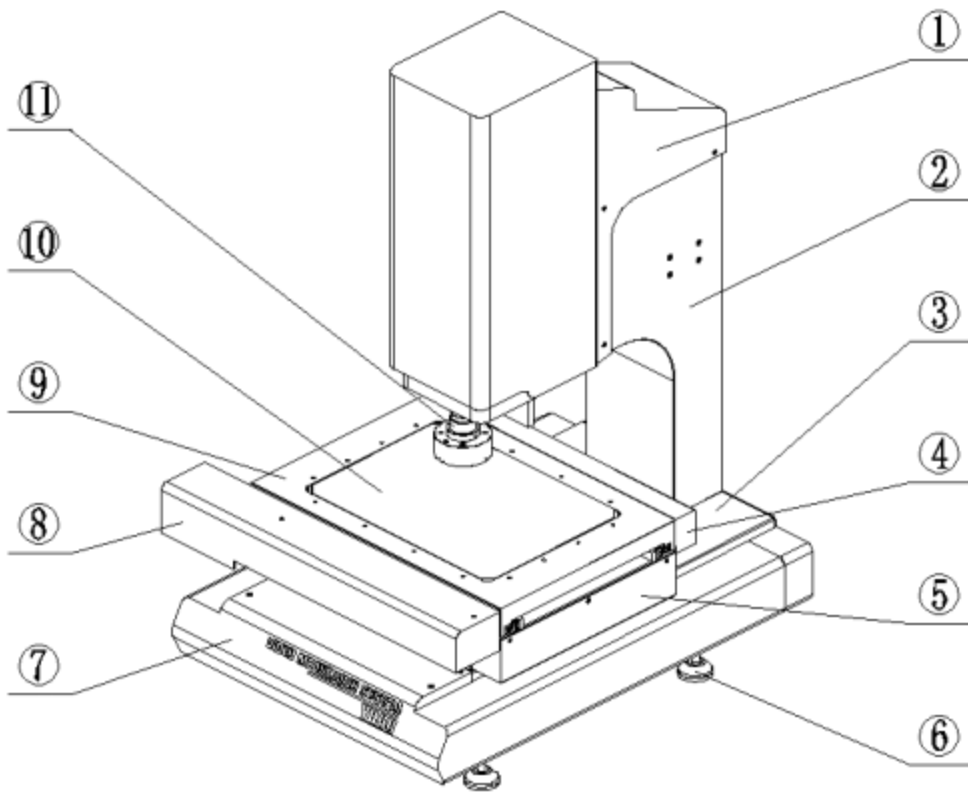
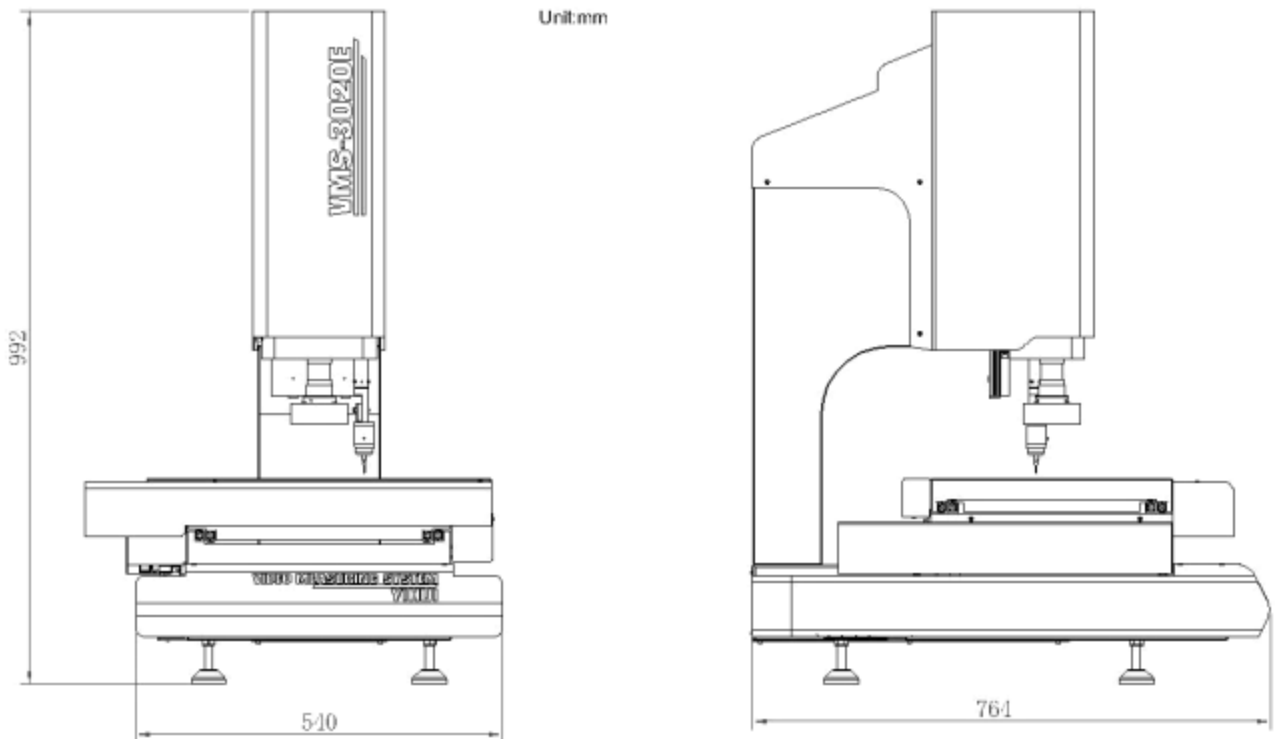
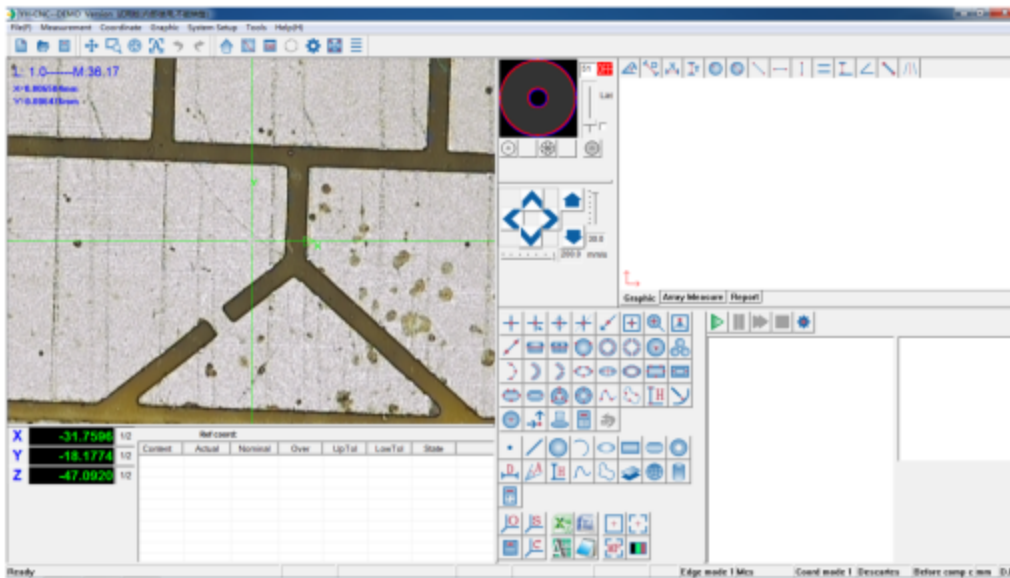


Fig. 1 Overall Structure of Machine

- | | | | |
|--------------|--------------------------|-----------------|-------------------|
| 1. Z Cover | 2. Column | 3. Granite Base | 4. X Scale |
| 5. Y Scale | 6. Adjustable Foot Screw | 7. Base Cover | 8. X Transmission |
| 9. Worktable | 10. Glass Stage | 11. Zoom Lens | |



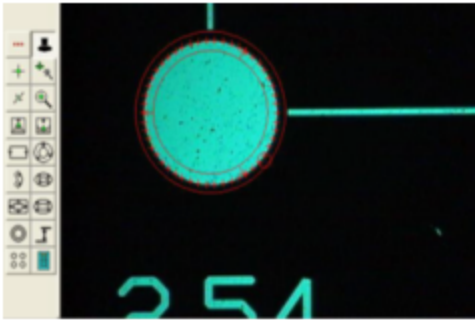
V. Part of the Measurement Software (KASON-CNC™)



KASON-CNC is a professional CNC type metrology software for Video Measuring Systems developed by KASON.

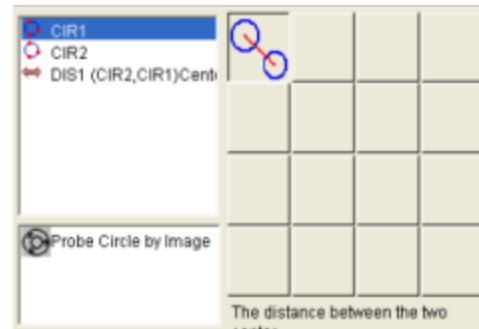
With user-friendly UI, powerful functions, it allows the users to achieve fast and precise geometry measurement.

1. 2D and 3D Measurements: can measure height, width, length, both sides of the angle, the cone angle, diameter, chamfering, straightness, flatness, roundness, cylindricity, perpendicularity, parallelism, inclination, etc.
2. Auto Focus: can automatically find the clearest point with focusing in Z axis.
3. **CNC Programming Measurement:** the user can set a click parameter, automatically measurement according to their demand (batch measurement, raise efficiency and save time)
4. Max. and Min. Limit: can set max. and min. limits, when the actual size of the product is out of range, the corresponding measurement data will have warning in red background.
5. Reverse Engineering: software draws measurement graphics, can have real direct entry into AutoCAD, also can be saved as DXF, dwg. files (can be a fast scanner, more than two times faster than general software speed).
6. Picture output: measurement or observation results can be saved as pictures in various format like BMP, Jpg.
7. Real-time sub-pixel to find the point: the first sub-pixels, advanced image processing technology into video measurement industry, greatly improves the measurement accuracy and measurement efficiency of a pixel, compared to similar software, saves at least 3/5 time, improve the accuracy of more than 2 times (in the same optical magnification).
8. Vector drawing functions: the image or fonts can be zoomed in or out steplessly.
9. Maps measurements: can capture and form a complete picture of large workpiece and directly measure on the graph.
10. The command line: directly form the command line, enter the coordinate information to generate the point, line, circle, arc, to meet the special needs of virtual measurement.
11. Line position tolerance: roundness, straightness, parallelism, perpendicularity, concentricity, etc.
12. Dimensioning Function: radius, diameter, angle, linear dimensions, alignment annotation, text annotation, etc.
13. Automatic Measurement Functions: automatically find a straight line, multi-zone, click circle marquee round, round multi-zone automatic arc.
14. SPC Statistical Analysis: CA, CP, CPK and the DRL, DRR, DR, MAX, MIN, AVG, the RANGE, the STD can be calculated, and can draw the XR diagram, line charts, bar charts, etc.
15. Data Report: measurement results can be directly converting to EXCEL, Word, CAD.
16. Language: support Chinese, English, etc.



1. Automatic Identification

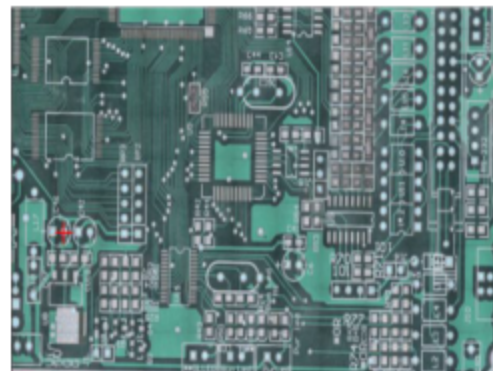
The workpiece can be found fast. Especially the edge line, circle or arc of the workpiece can be automatically and accurately



2. Macro measurement function

Macro function is measured with some of the measurements. Software provides a measurement of 16 group macro function, users can edit macro button icon.

21	22	23	24	25
16	17	18	19	20
11	12	13	14	15
6	7	8	9	10
1	2	3	4	5



3. Array Measurement





The software provides an array measurement. It can measure many workpieces placed in the units, the completion of all one-time measurement of the workpiece







4. Maps measurements

It can capture and form a complete picture of large workpiece and directly measure on the graph. Work-piece can be divided into a number of areas to take photographs, Generate large map, and dimension can be marked on the map.

VI. Appendix










Standard Accessories

No.	Name	Picture	Description
1	PC for VMS		<p>Model: Lenovo™</p> <p>a. CPU: Intel \geq 2.80GHz Dualcore</p> <p>b. RAM: \geq8 GB (DDR41600MHz)</p> <p>c. Hard drive/Flash drive: Industrial grade hard drive(\geq500GB)</p> <p>d. Graphic card and Display: chipset integrated 2D/3D graphics display, provide an on-board VGA interface, \geq21.5" LCD monitor</p> <p>e. Network: 865GV/Gon-board 10/100/1000 Base-T interface (adopt Intel82540EM network chip)</p> <p>f. USB interface: Two sets USB interface, support USB3.0, support USB boot</p> <p>g. Other I/O interface: Two sets RS-232 serial interface, one set parallel interface, four sets DE interface, support DMA33,66,100, one set floppy disk controller port, support two floppy disk controller, on-board support PS/2 mouse/keyboard interface, 13 trough PICMG PCI/ISA baseboard IM247</p> <p>h. Operation System: Official English ver. Windows System.</p> <p>i. Installed with AutoCAD, Office software customized</p>
2	Working Base		<p>Metal Table with Servo Control System</p> <p>P.S. Varies according to model size.</p>
3	Joystick		CNC Control
4	Software Key		<p>CNC™</p> <p>P.S. Including image module only.</p>
5	Software Disk		CNC™ 2D Ver. Latest Version

6	Calibration Chart		For optical calibration
7	Dust cover		Protect instrument from dust P.S. Size varies according to VMS model
8	User Files		Equipment Manual (English version), Certificates, etc.
9	Cable		Power cable, Data Cable
10	Spare Fuse		
11	Carrying Handle		

Optional Accessories

Code	Name	Photo	Description
AC2004	High Resolution Color Camera		Brand: HIK Vision, Model: 5.0MP a. Support 2592*2048 high resolution image display, capture b. USB 3.0 interface
8004101	Flexible Fixing Set		A SET 1. Comprising 48 elements 2. Supplied in a case Include 1pcs bottom plate 300*200/400*300mm P.S. Suitable for model VMS-3020E, VMS-4030E
8004200			A SET 1. Comprising 48 elements 2. Supplied in a case Include 1pcs bottom plate 500*400mm P.S. Suitable for model VMS-5040E

8004102	Flexible Fixing Set		B SET 1.Comprising 105 elements 2.Complete and highly versatile kit 3.Supplied in a case	Include 1pcs bottom plate 300*200/400*300mm P.S. Suitable for model VMS-3020E, VMS-4030E
8004201			B SET 1.Comprising 105 elements 2.Complete and highly versatile kit 3.Supplied in a case	Include 1pcs bottom plate 500*400mm P.S. Suitable for model VMS-5040E
8004801	Renishaw™ Probe Kit		Model: MCP, 3D measurement P.S. Should work together with software upgrade	
8005314	CNC 3D Software Package		CNC™ 3D ver. Professional 3D Image Measuring Software developed by	
8005321	Professional Software Package RationalVue™ 2D Ver.		RationalVue™ latest ver. Well-known U.S. CNC 2D Metrology Software Package P.S. Including image module ONLY.	
8005317	Professional Software Package RationalVue™ 3D Ver.		RationalVue™ latest ver. Well-known U.S. CNC 3D Metrology Software Package P.S. Including both image module and probe module.	
8004802	Renishaw™ Probe Kit		Model: PH6 With TP20 STD module P.S. Workable with metrology software RationalVue™ only.	
8004301	Gauge Block		Probe Calibration (1 pcs) Model: 50mm, 2um accuracy P.S. Available with software KASON-CNC™.	
8004302	Ring Gauge		Model: Ø 20mm, 2um accuracy Precision diameter calibration P.S. Available with software RationalVue™.	
8005401	Star Stylus		Renishaw™ Working dia.:30mm Ball dia.:2mm	

8004501	Calibration Sphere		0.5um Roundness, Made of Ceramic P.S. Useful only with star styli.	Dia. 10mm
8004502				Dia. 15mm
8004503				Dia. 20mm
8004504				Dia. 25mm
8004912	Coaxial Light Manual Zoom Lens		Pomeas™ Manual Zoom Lens With coaxial illumination	
8004914	Auto Zoom Lens		Pomeas™ Automatic Zoom Lens With coaxial illumination	
8004320	APO Objective		High magnification with long working distance P.S. Demand coaxial light illumination	5X, WD: 44.5mm
8004321				10X, WD: 34mm
8004322				20X, WD: 31mm
8004323				50X, WD: 20.1mm
8004324				100X, WD: 12.6mm
8004202	Glass Ruler		Mechanical calibration Model: GL300, 300mm, 1 um accuracy P.S. Suitable for 3020 models	
8004203				Mechanical calibration Model: GL500, 500mm, 1 um accuracy P.S. Suitable for 4030, 5040 models
8004413	Rotary Table		Model: RT240, Glass Size: Φ240 mm P.S. Available on 3020 models	
8004414				Model: RT310, Glass Size: Φ310 mm P.S. Available on 4030, 5040 models
8004318	Extra lens		Change magnification, 0.5X	
8004319				Change magnification, 2 X
8004327	0.1 μm Scale Resolution Upgrade		Brand: Renishaw™ Improve minimum data display to 0.1 μm P.S. X, Y, Z whole 3 axis	
8004328	Extra Z axis Height	(least)100mm per time	CNC type machine P.S. Available with limitation, pls. contact Foreign Trade Dept. KASON for detail.	
8005203	A4 Inkjet Printer		Brand: HP Print measurement reports	

P.S. For extra part not included in this list, please contact Foreign Trade Dept., KASON for detail.

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