Automated Optical Measurement System (AOM)

With VIMT technology

Focus-5000GX

Kyoritsu

TEL 1-905-764-2740 FAX 1-905-764-5648

►Featurs

■ AOM work as Process Quality Control tool throughout the manufacture process

The new generation “AOM” Automated Optical Measurement system from Kyoritsu, uses the metrology approach to measure the component position, and evaluate the solder, rather than comparing the inspected image with golden sample basing pattern matching technology. Therefore the machine is capable of measuring the component placement accuracy and solder quality to report the statistical data to previous process for the quality improvement in real time. The machine does not only finding and reporting defects, but also go further to ensure defect traceability and find root cause **before** the defects occure.

■ Quick setup and Programming simplicity

The program can be generated automatically basing on converting from CAD or pick-and-place machine data,as well as the part libraries in the system. The golden assembly PCB is not necessary at programming stage. Off-line application software is supplied for programming and repare station.

■ VIMT(Vector Imaging Mesurement Technology)

With VIMT(Vector Imaging Mesurement Technology), it picks out the part and every single solder points from flame bitmap images, treats them as vector objects. The actual positon XY **θ** of part, and sold fillet length are measured. It give the extreme high stability and robustness at the real environment of the printed circuit board.

■ SPC Tools and process monitoring tool

The software package validates process stability by measuring data across multiple boards, showing the process trends by Cpk, X-bar, histogram, and etc.

The process monitoring tool will trace trends and movements of components over time, enabling corrective action to be initiated **before** an actual defect occurs.

■ Excellent vision unit

- High resolution (15.6μm), Larger field of view(32mm x 24 mm) and 3M pixel color digital camera.
- Multi-angle dome LED array with PWM brightness control.
- Long working distance guarantees the image with extremely low distortion

■ At the standard machine

- Available to inspect PCB up to 510 x 460 mm
- High accuracy XY robot is used
- PCB convoyor is embeded

►Specification

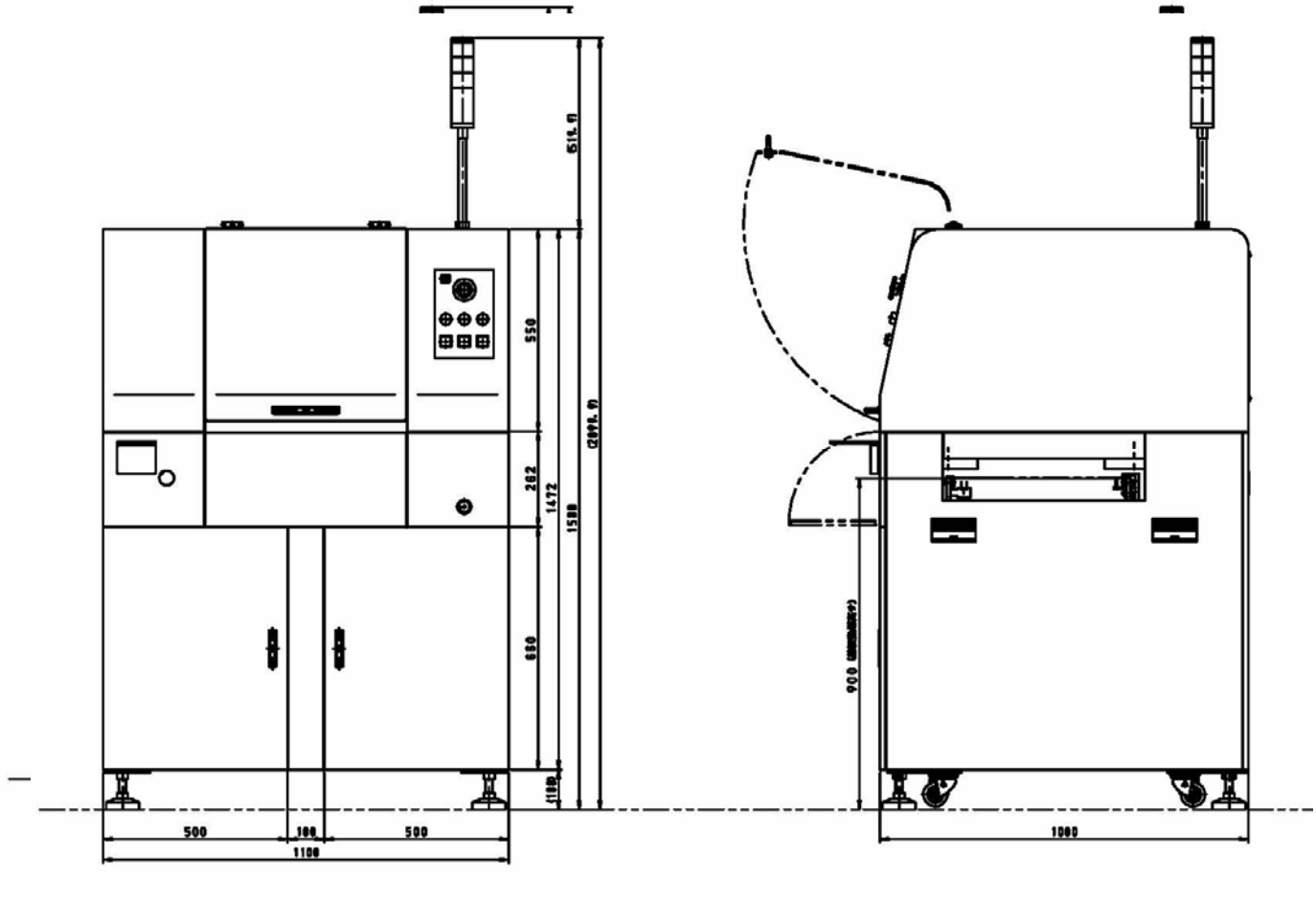
Vision input unit	
Camera	High Resolution Color 3Mega pixel
Lighting source	Multi-angle LED dome with PWM brightness control
Image Ressolution	15.6μm/pixel
Frame extent	32mm X 24mm
Image measurement and Diagnose	VITM Vector Imaging Measurement Technology
Inspectable PCBs	
Solder process	Reflow or wave solder
Size	Maximum 510x460mm minimum 50x50mm
thickness	0.5 to 2.5mm
Clearance	Top 24mm Bottom 20mm
Warp	Within 1mm (Available compensated by marks)
Measurement and inspection	
Inspectable component	Chips 0402 mm and up, LSI 0.3mm pitch and up, through-hole components
Component placement	Presence/Absence, XYΘ offset, wrong component Orientation, Lifted leads
Sloder	Solder bridges, insufficient solder, excess solder, wettablity, Throughhole pins, dropped parts and solder
OCR	Recognize the charactors at PCB or part top, compared with expected.
Speed	Up to 380ms/Frame(one frame move, one picture, analyze)
Axis position compensation	Using Fudicial mark or Feature mark
Judgement	Use embedded IPC-A-610D tolalence data set, or defined by user
XY Robot	
Maximum speed	500mm/s(Using Ball screw)
Repeatable accuracy	±10μm
Conveyor System	
PCB level	900±10mm
PCB fixturing method	Clamped at rear side
Direction	Right-Left, Left-Right, Right-Right, Left-Left, Bypass
Rail Width adjustment	By wheel handle
Interface	Support SMEMA 1.2
Computer related	
PC	DOSV PC WindowXP Professional, CPU：Dual core, RAM 2GB, HDD 350GB or up, 17” LCD with the resolution 1280X1024
Language	Japanese/ English/ Chinese

TEL 1-905-764-2740 FAX 1-905-764-5648

Programming	
Procedures	1. Read the CAD data or Mount data text file to get Part name, XYΘ, and package, rotation information 2. Using camera auto route tools to set optimal route 3. Verify the coordinate data at the machine 4. Selecting suitable decision limit value. Training and Fine tuning
Library	Including Standard Component Library Use library editor to create customized library.
Others	Offline programming supported, panelized PCB support, Top and bottom side inspection at one project file.
Defects result	
Defects detail output	Contents : Parts name, defects location, defect images etc
	Output in pdf file
Inspection result logging	Configurable
Defect review	Show the full PCB map, defects images and location, etc
SPC tools	
SPC	Statistics of part shift, solder quality value at Cpk, Xbar, and histogram
Process warning	Warnings: the measurement value is close to the defect level. The measurement value is far away from regular value trend.
Facilities and factory integration	
Dimensions	1100W x 1000D x 1600 H mm (Height of signal tower is not included)
Weight	About KG
Power requirement	100V single phase 50Hz/60Hz 10A Available for assigning others when PO.
Air	0.4 to 0.6Mpa
Working temperature	10-35
Humidity	30-80% RH
Options	
OP01 Offline software	for programming, result display at rework station and statistics report confirmation
OP02 Coder read function (Under developing)	Barcode, QR code and Data Matrix read function for board and component top recognition using the camera captured image
OP03 Barcode reader	Handy barcode reader for project switching
OP04 Ticket printer	Epson ticket printer for inspection FAIL list out

TEL 1-905-764-2740 FAX 1-905-764-5648

► Dimension (mm)



Note: Specification and other contents are subject to change without prior notice.

Doc# KC107D001V20E, 2008.2