

Rexxam Group



Kagawa Factory (Kagawa Prefecture: Development and manufacture base)



Ainan Factory (Ehime Prefecture)



Su Zhou Long Xian Electronics Co., Ltd. (China)



Shen Zhen Xian Long Electronics Industrial Co., Ltd. (China)



Rexxam Electronics Ireland Co., Ltd.



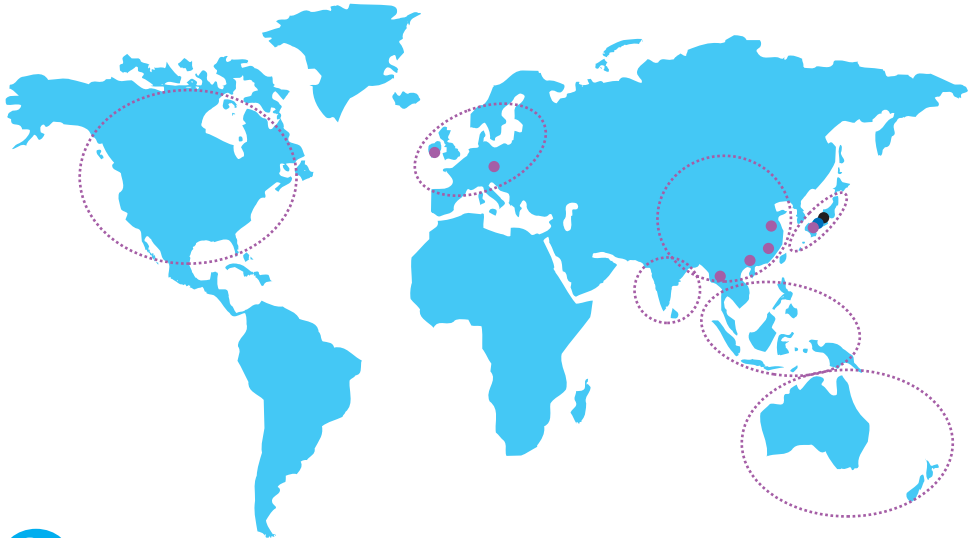
Rexxam Thailand Co., Ltd.



Rexxam Czech Co., Ltd.



Zhong Shan Long Xiang Precision Machine Co., Ltd. (China)



- Head Office
- Development and manufacture base
- Production factory
(Electronics mounted PCB /
Eye inspector /
PCB visual inspector /
Semi-conductor transfer robot /
Temperature controller, etc.)
- PCB inspector service area
(Japan / China / South-east Asia /
India / Australia / North America /
Europe)

Rexxam
Rexxam Co.,Ltd.

Contact / E-mail AOI@rexam.co.jp

★The standards, specifications and product appearance indicated in this catalog are subject to change without notice.

PCB Visual Inspector



High Specification , High Speed

Hi-SPECKER
Sherlock-300
Mystery!

surprised Sherlock Homes



Rexxam



High Specification, High Speed

Hi-SPECKER
Sherlock-300

Overwhelmingly low cost

Setting-free (desk top)
No need to open/close;
performs automatic inspection

In-line
Applicable to the inspection
before reflow!
Needs only a little space!

Compact batch-line
Released first in the industry



Sherlock-300F



Sherlock-300I



Sherlock-300B

Improves inspection capability and function
Intuitive operation using a large 21.5" touch panel

A Setting-free (desk top)

**No need to open/close;
automatic inspection**



1) Simple and intuitive operation through touch controls

- All programming and operations can be performed on the touch panel display. (Because of its optical system, you can operate it with gloved fingers.)
- You can zoom in/out the screen image, and select and move the citation data by intuitive operation with your fingertips.



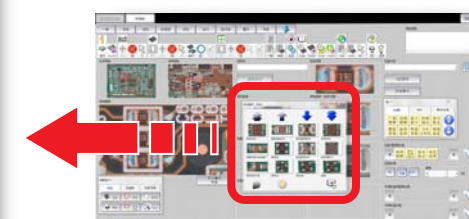
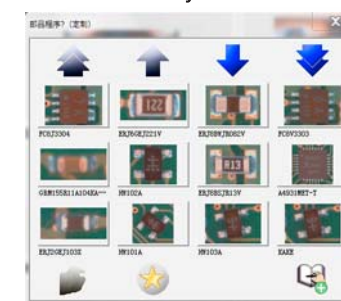
21.5" touch panel display

2) Useful teaching support tool

● Pre-installed library

It can reduce the time required for creating the teaching data to one-third by using the mount data, external CAD data and pre-installed parts data(pre-installed library). [Comparing to the previous model]

Pre-install library

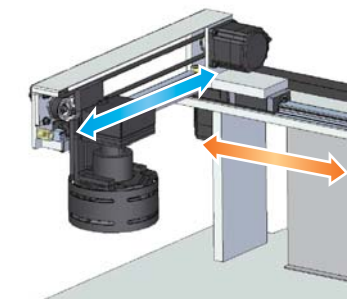


● Navigation mode

The navigation mode supports creation of the teaching data. The next operation and area are obvious at a glance because they are indicated with different colors.

B In-line

Applicable to the inspection before reflow!
Space-saving!



High stiffness biaxial drive



Fixed PCB

1) Low vibration mechanism suitable for PCB inspection before reflow

●High-stiffness camera transfer mechanism

High stiffness biaxial (X-Y) belt drive ensures high-speed, low-noise and smooth travel of the imaging unit

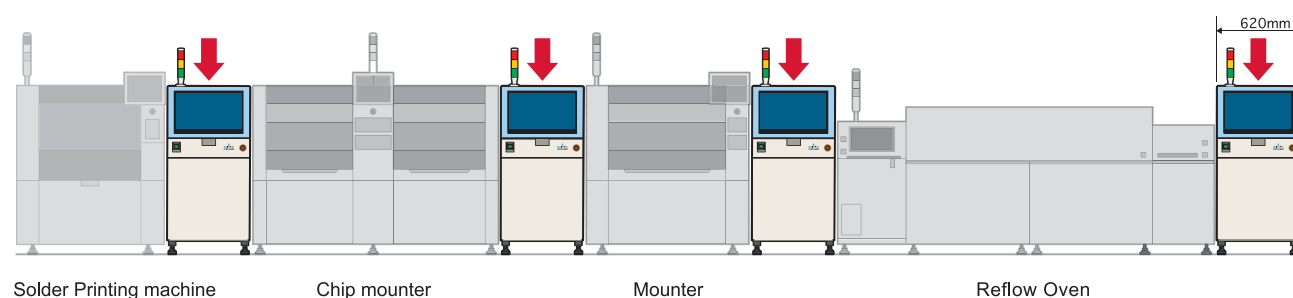
●Fixed PCB

Only the camera moves as the PCB remains stationary on the stage; therefore, this system is suitable for inspection before reflow.

●Acceleration and deceleration control technology

It adopts motion control technology for the low-vibration and high-speed drive, which is similar to that used in semiconductor wafer transfer robots. It minimizes the influence of vibration on the components before fixing.

2) Its compact body allows it to be added to the existing line.

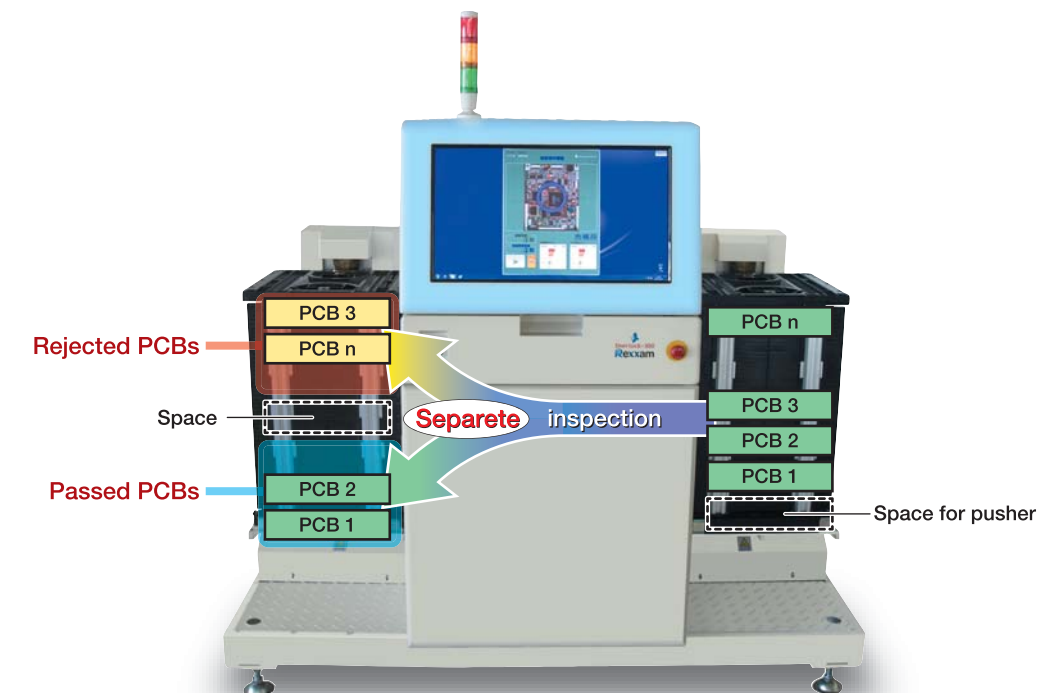


C Compact batch-line

First in the industry

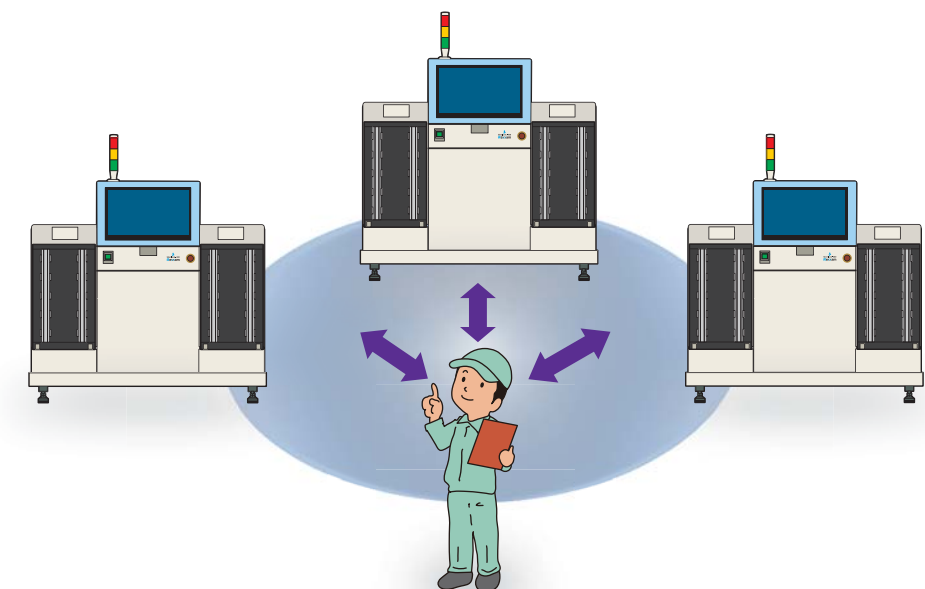
1) Automatic sorting, without requiring the operator to touch the PCB

- The operator has to only install the cassette rack on the loader and unloader sides.
- It automatically sorts the passed and rejected PCBs after inspection. The passed PCBs and rejected PCBs are separated with a space inserted between them.



2) Multiple units can be operated by a single operator.

- Improving the operating range and efficiency of the operator leads to manpower saving.
- It is compact, excellent in stability, and suitable for multiple-unit layout.



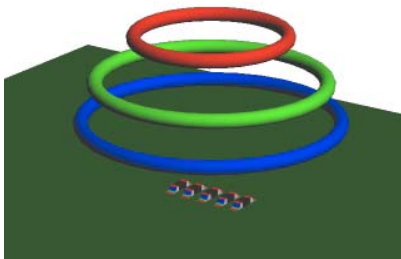
D Adopts RGB LEDs and warm white LEDs

Suitable for both solder inspection and component inspection

1) Features of RGB LED lighting

Three-dimensional shapes can be recognized based on color distribution of the reflection off the inspection subject, by irradiating RGB LED lights at different levels; therefore, it is applicable to solder inspection.

Schematic diagram of RGB LED lighting



Schematic diagram of the solder fillet

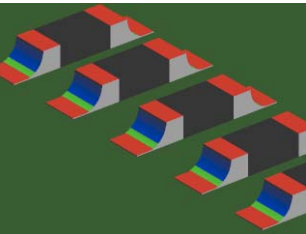


Image with RGB LED lighting (solder inspection)



Normal

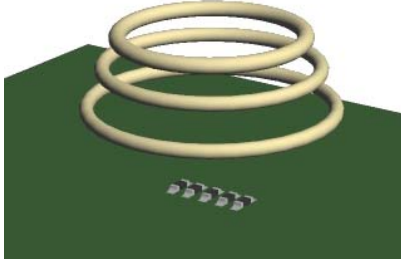


Unsoldered

2) Features of warm white LED lighting

Adopting a warm white LED with a spectrum close to that of sunlight significantly improves the accuracy of parts inspection due to its superior color discrimination ability.

Schematic diagram of the warm white LED lighting



<Component inspection: Comparison of images with different lighting>

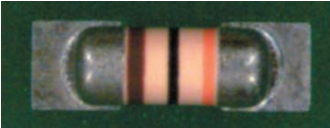


Image with warm white LED lighting

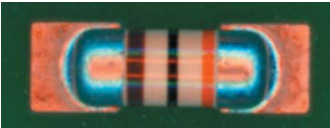


Image with RGB LED lighting

3) Adopting a self-developed telecentric lens

The adopted optical system of viewing from directly above has an advantage in detecting any bridges and balls in a gap between parts or between leads.



Imaging unit equipped with a telecentric lens

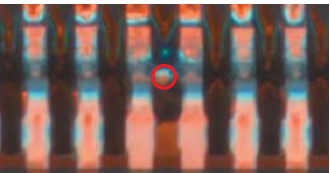
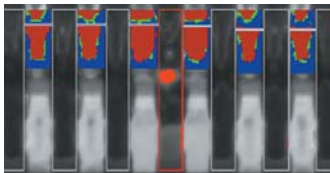


Image of a bridge between leads



4) Inspection items

Unsoldered / bridges / fillets / solder ball / missing components / displacement / inversion / rotation / protrusion / foreign material / polarity / number of poles / area / shape / clinched leads / color, direction and number of pins / displacement of bond / missing bond / insufficient solder / pinholes / OCR character recognition / color code invariable / harness color / switch setting / fuse presence / hole blockage / inclined components / amount of glue / connector / part number of relays

E Option

Editor [off-line teaching software]

Create the teaching software off-line without hindering the line operation, after acquiring the image data of the PCB under inspection.

Repair Station [repair support system]

The position and mode of the rejected point can be checked with its image: therefore, repair operation can be performed effectively and a database of the repair history can be created.




SPC System [Inspection status statistical software] *SPC (Statistical Process Control)

1) In-process failure analysis (Pareto chart analysis)

Display by failure mode, by component, by time, and by unit. It can be used for improving the process and quality.

2) Detection of process failure

Process failure recognition function, based on real time display (alarm display) of the statistical mean value (CL) and control limit values (LCL and UCL)

Sherlock-300 Series		Sherlock-300I In-line	Sherlock-300F Setting-free	Sherlock-300B Compact batch-line
				
PCBs to be inspected		50 mm (width) x 50 mm (depth) 330 mm (width) x 250 mm (depth)		50 mm (width) x 80 mm (depth) 330 mm (width) x 250 mm (depth)
PCB height limit	Top surface	25 mm (high magnification lens) 30 mm (standard lens)		
	Bottom surface	30mm		20mm
Components to be inspected		0402 [JIS] (01005 [EIA])~ (high magnification lens) / 0603 [JIS] (0201 [EIA])~(standard lens)		
Resolution		14μm(high magnification lens)/20 μm(standard lens)		
Image region		29mm×15mm(high magnification lens)/41mm×22mm(standard lens)		
Depth of field		6mm(high magnification lens)/10mm(standard lens)		
Inspection rate		25cm ² /sec(high magnification lens)/50cm ² /sec(standard lens)		
Repeatability of positioning		50μm		
Main inspection items		Solder inspection: excess, insufficient, solder skip, wetting, bridges, balled solder, solder fillets Component inspection: missing components, displacement, protrusion, polarity, foreign material, inversion, OCR character recognition		
Camera		CMOS sensor		
Lighting		RGB + warm white LEDs		
Imaging unit driving system		High stiffness biaxial belt drive (PCB is fixed on the stage during inspection)		
PCB fixing during inspection		Pneumatic clamp		
Transferring conveyor width adjustment		Automatic		
PCB flow direction		Right to left (standard) / Left to right (optional)	Right to left [cannot be set to the reverse direction]	
Operation panel		21.5” touch panel display (optical)		
Operation system		Quad Core with 4GB RAM or equivalent, Windows 7 Professional 64-bit,		
Option		“Editor” off-line teaching software, “Repair Station” repair support system, “SPC System” inspection status statistical software, and mount for installing Sherlock-300F		
Operating environment conditions		10 to 35℃ / 30 to 80% RH (no condensation)		
Storage environment conditions		-10 to 60℃ / 30 to 80% RH (no condensation)		
Power supply		AC 100V - 230V, single phase		
Compressed air consumption		0.5MPa, 5ℓ/min. (ANR)		
Dimensions of main unit (excluding PC)		W620×D758×H1294mm	W620[*]×D758×H594mm	W1496×D786×H1328mm
Weight(excluding PC)		154 kg	92 kg	252 kg

[*] W900mm(including the protruding portion)