

Inline PCB inspection system vT-S500

OMRON

Best Quality at the Minimum Q Cost!

VT-S500







Market environment Various needs surrounding the surface mount industry

Globalized issues in the surface mounting industry

Demands from the market

Intensified cost competition

Super mass-production

Diversification of mount components

OMRON presents the quality you require at the minimum cost.

The inspection system meeting the market demands.







Vertical startup of inspection

High-speed/ stable inspection Quality improvement support

Best Quality at the Minimum Q Cost

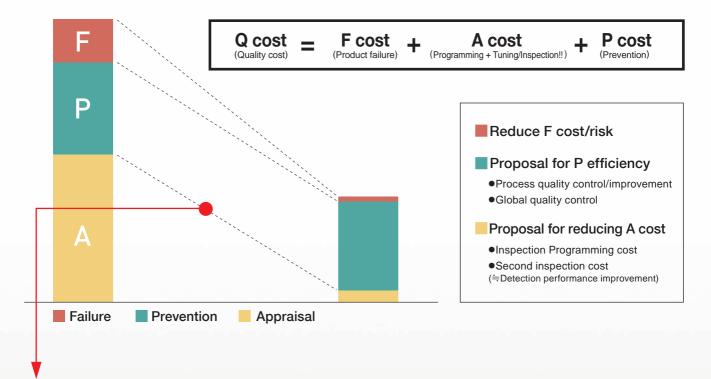
VT-S500

The VT-S500 is a new concept in AOI for "optimization of customer's quality cost".

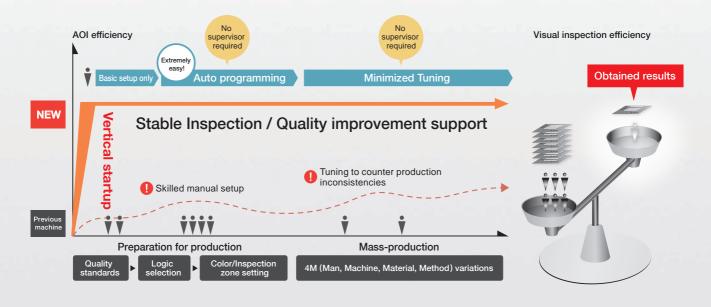
The system uses innovative technologies to greatly reduce "inspection costs," which has been a major issue in conventional AOI technologies.

Moreover, while harnessing quality improvement systems,

it facilitates efficient "defect prevention" to contribute to the reduction of "the end customer failure costs."



Minimization of A cost = "Challenge for 'true' auto inspection"



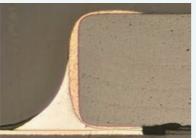
VT-S500 for realizing vertical s

Vertical startup of inspection

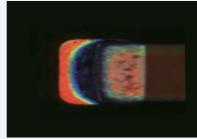
High-speed/stable inspection

Equipped with Color Highlight™ 3D









Actual image

Captured Image

Automatic extraction of "fillet features"

"The VT-S500 uses new image processing technology to automatically extract fillet features, which are quantified in numerical values and used for inspection."

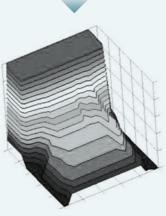
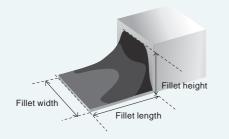


Image after internal processing

Direct input of quality standards. High-speed startup with automatic programming. Paten Pendir



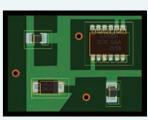


Automatic inspection programming is possible simply by setting inspection criteria for fillet features (length, height and width).



PCB position adju

Automatically detects to land position according



Before screen adjustment

Inspection accuracy has been improv at the correct position using the new p entire screen instead of the conventio

tartup and stable inspection



High-speed/stable inspection

Inspection time improves of 60% compared with conventional models

Higher-speed inspection has become possible to respond to a significant increase in productivity.



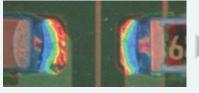
Available in dual lane

Dual lanes for reduced cycle time. Position of lanes can be selected according to the customer's production facility.



Minimize the effect of secondary reflection and shadow

Parameters have been optimally set to pick up gradations unperceived by Human Eye and automatically separate good from bad components.



Example image of secondary reflection



Without Correction



VT-S500 eliminates reflection

istment algorithm o offset position of

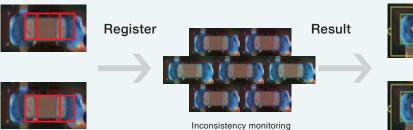
to PCB variation and warpage. ABBBBB



After screen adjustment

ed and it has become possible to inspect position adjustment method based on the nal land-based adjustment.

Auto parameter calculation to counteract the variation of components



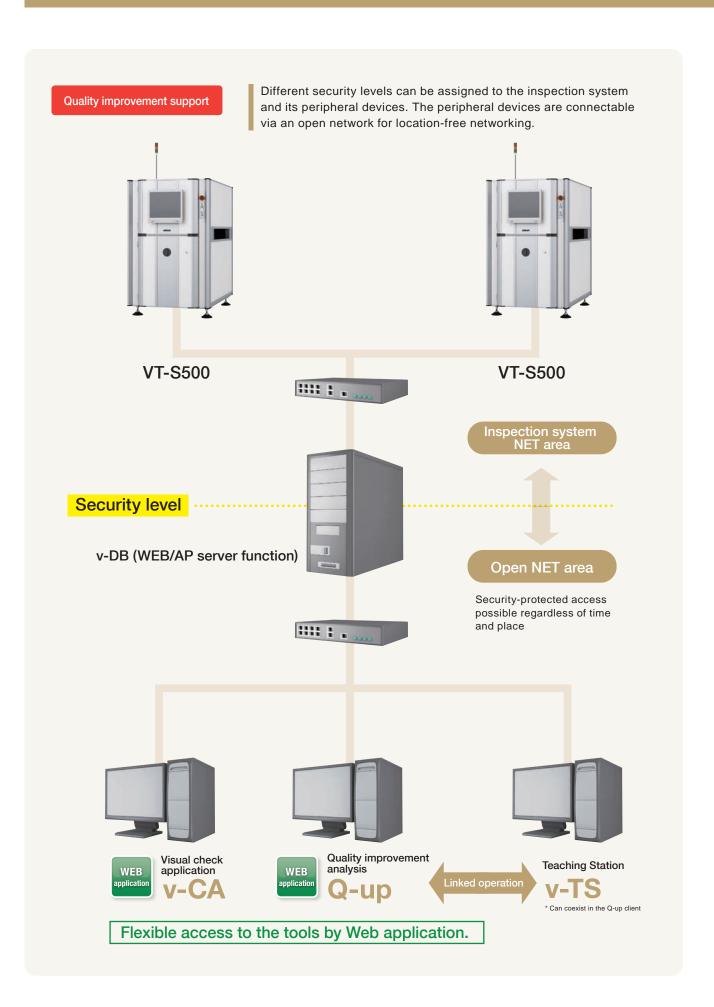






In order to cope with component inconsistencies, parameters can be automatically calculated - simply by registering required components.

System



solution

WEB application

v-CA



Visual check application NEW Inline Check

Inspection result can be obtained using production conditions such as PCB-ID and lot number as key words, facilitating visual check of defective locations.



Listing by production condition



Inspection result check screen

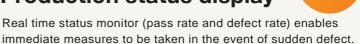
WEB application

Q-up Navi



Monitoring of production status and quantification of defect causes/ tendencies enable the acceleration of process improvement and process control cost reduction, while enhancing quality improvement support.

Production status display



Monitor

1 Production shift

2 Can select calculation units of inspection programmes from single and multiple production lines

3 Can check abnormal production conditions using preset warnings parameters

4 Can check for production anomaly using preset warning value

5 Can check in real time the production conditions such as first pass yield and real defect rate



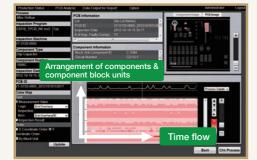


Process stability check

New feature: Color map

Check

A Unique Fast and Easy visual method, identifying trends in process control, without the need for special skill and analysis time.





Monitoring of the impact from product inconsistencies



Monitoring of process threshold adequacy



Report function

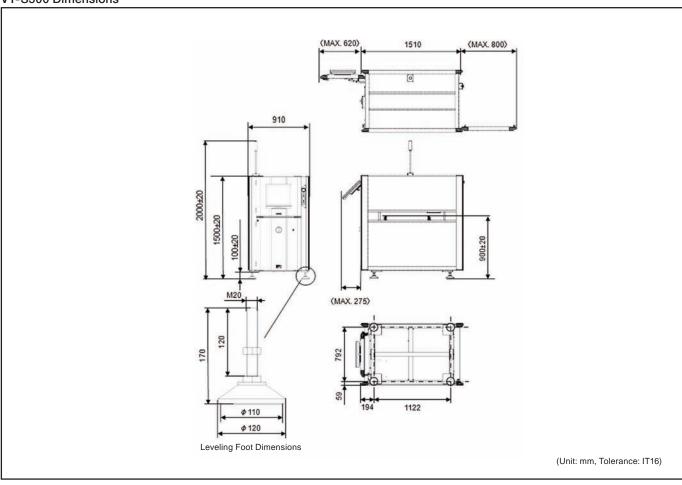
Specifications

Image signal input unit	Imaging System	5Mpixel camera / Telecentric Lens	
	Imaging Method	Color Highlight, 3D solder shape reconstruction	
	Resolution	10μm, 15μm	
Main unit	Feed method	Edge Belt Conveyor, Automatic Raid width Adjust	
	Line height	900 ±20 mm Adjustment from adjustable feet	
	PCB carrier width adjustment	Automatic	
Power supply		200 to 240 VAC (single phase)	
Ambient operating temperature		+10 to +35°C	
Ambient operating humidity		35 to 80% RH (with no condensation)	
Weight		Approx. 500kg	
Dimensions		910 (W) × 1510 (D) × 1500 (H) mm	

Functional Specifications

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Inspectable PCBs	Туре	Post-reflow/Flow/Post-placement	
	Dimensions	Single lane: $50(W) \times 50(D)$ to $510(W) \times 610(D)$ mm Dual lane: $50(W) \times 50(D)$ to $510(W) \times 300(D)$ mm	
	Thickness	0.4 to 4.0 mm	
Clearance		Above PCB: 50 mm, Below PCB: 50 mm	
Inspection items		Missing components, Wrong components, Component shifting (X/Y/skewing), Fillets (wettability length, height,width of the tip, wettability angle, length of the side), Land exposure, Polarity shifting, Polarity lifting Solder balls, Bridging, Objects,Through hole, Polarity, Inversion	
Number of inspection points		10,000 components/PCB max.	

VT-S500 Dimensions



- This catalog contains information useful for selecting a product model and does not contain precautions in usage, etc.
- For precautions in usage and other information pertinent to actual use, see the user's manual.
- · Application examples appearing in this catalog are for reference purposes only, therefore confirm equipment functioning and safety before use.
- If interested in using this product under conditions not contained in this catalog or in applications that particularly require safety because of possible serious impacts on nuclear power control, trains, aircraft, vehicles, furnaces, medical equipment, entertainment equipment, safety devices, or otherwise human life or property, take into consideration methods of use that ensure adequate rating and performance margins, fail-safes and other safety measures, etc. Contact Omron sales reps with specifications, etc.
- This product may cause electrical interference if used in residential areas.

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