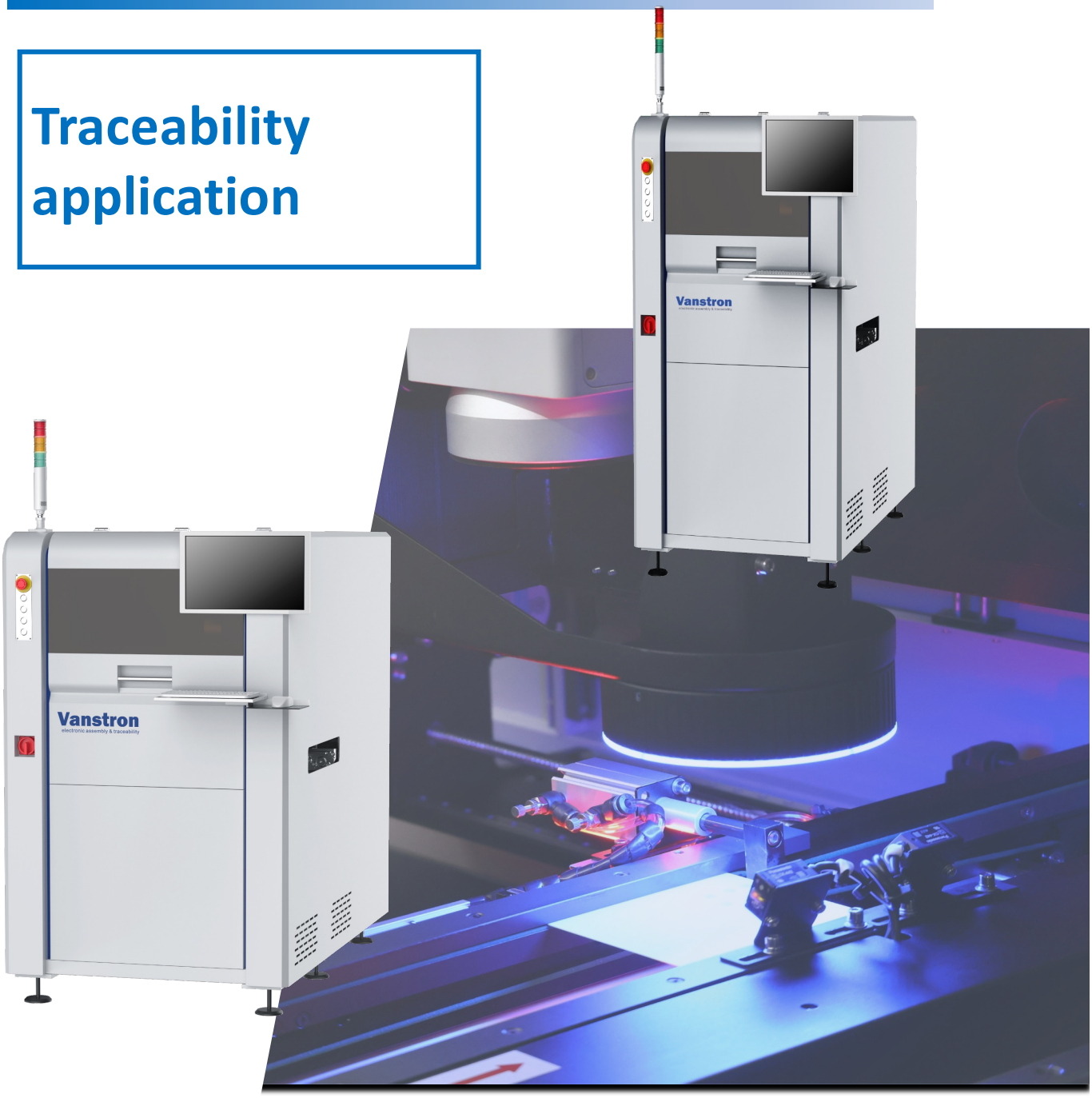
Vanstron
PCB assembly & traceability

Inline

Laser Marker Machine

Special for PCB / FPC / IC Chips / ceramic

Traceability application



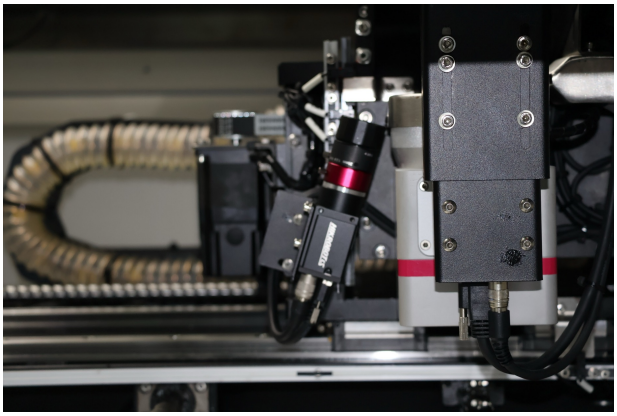
Inline Laser marker machine

Laser Marker machine, is used for direct laser marking of solder resist on PCBs.

The laser assembly is mounted above the transport system on a linear X/Y axis. The PCB to be marked is taken over onto the transport system and transported into the marking position.

The laser now moves to a pre-programmed position and marks the predefined content, such as barcode, data-matrix codes, plain text or logos onto the product.

Marking accuracy:+/-0.01mm



The right laser, whether CO2, UV or fiber laser, can be integrated for every application. A variety of materials such as solder resist, metals, plastics or ceramics can be marked.

For the traceability process, Vanstron offers standardized interfaces to MES systems or implements customer-specific connections.

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Marking Quality

The built-in camera captures an image of the target before and after marking. The images are then compared and checked for differences in contrast to identify missing markings.

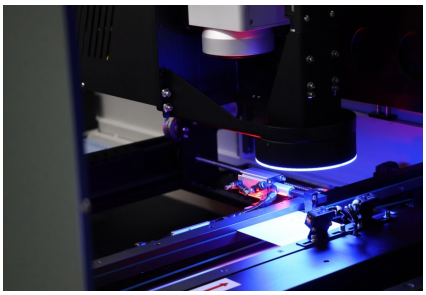
The contents of a marked code can be read by the built-in 2D code reader, then verified in accordance with marking quality standards.

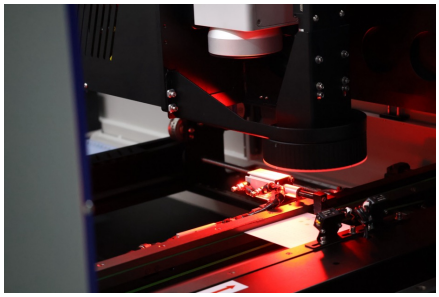
By adopting excellent graphic programming and database technology, we can accurately make different levels of judgment on the engraving quality of the QR code, and this system is **calibrated with the scanner of Keyence** to ensure that there is no error in the judgment

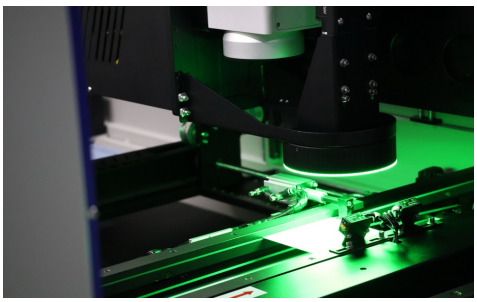
Supported standard
ISO/IEC TR 29158
(AIM DPM-1-2006)

Barcode quality verification by Keyence scanner

RGB lighting sources to improve decoding efficiency (Optional)







BEST Example – barcode on Green PCB

It has a bright pattern with dark background, so it has good contrast ratio and good scan rate. The marking quality is excellent because the size of the marking DOT and the margin are the same(equidistant interval).

Bad Contrast Example – barcode on Red PCB

Most scanners use red LEDs for lighting. At this time, the red PCB strongly reflects the red LED, so the brightness difference between the barcode and the PCB color is reduced, resulting in a lower scan rate.
If you are marking on a red PCB, the reading rate can be improved by using white illumination. However the reading rate may drop if other colors are going to be used under the same illumination. Therefore, it is very important to check the colors of the boards that are going to be used at customer's site in advance.

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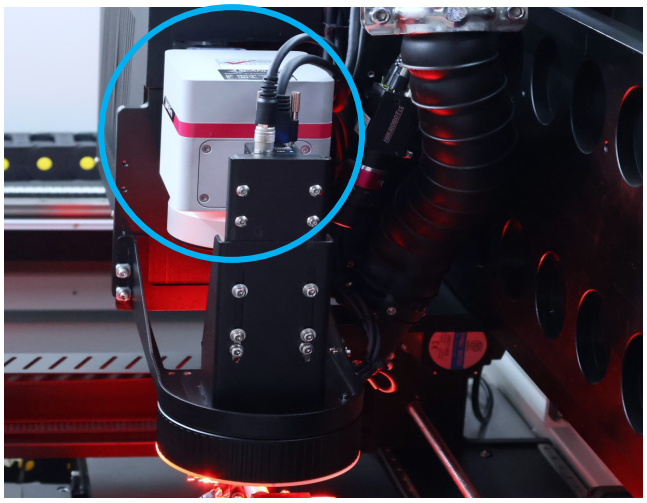
Marking stability accuracy

To ensure the marking stability accuracy, the galvanometer plays an important role in the output of laser beam, while in Vanstron ONLY selected the **Germany brand galvanometers** as the best choice, which allow us to ensure the perfect accuracy and stability of printing results



High-speed scanning & marking

A high-quality galvanometer is the important elements for a high-performance laser marker machine, when the galvanometer quickly and accurately change the propagation direction of the laser beam, which greatly improves the marking speed and meets the needs of efficient production.

In some electronic components requiring fine marking, the high precision of the galvanometer can ensure the accurate position and shape of the mark; In large-scale production, the high-speed scanning of the galvanometer can quickly complete the marking of many products and improve production efficiency.

SCANLAB innovators for industry

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Germany quality guarantee

Friendly programming software

- ✓ Fiducial positioning & marking process real-time monitoring
- ✓ Group marking for multi-panel boards
- ✓ Array marking position mode
- ✓ Data saved in XML format – excellent compatibility
- ✓ Easy model data setting (MES data link available: Option)
- ✓ Intuitive & user friendly Icons/ Access level limit (User/Operator/Engineer mode)

Customized software is acceptable

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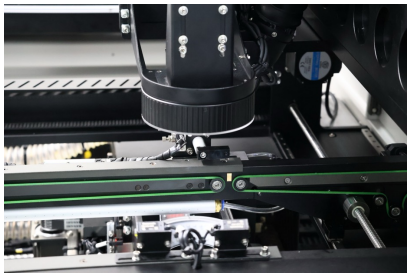
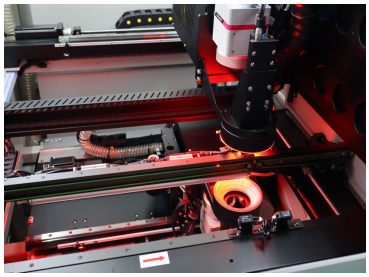
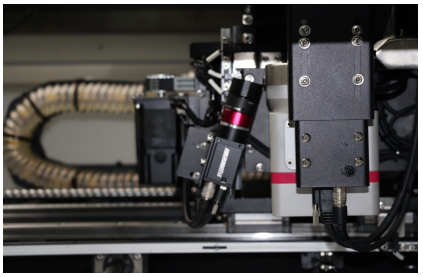
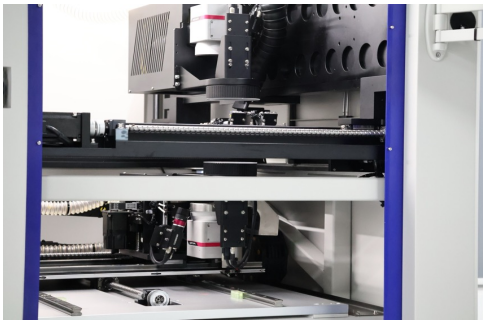






Key features:



(Optional : Double laser head)

- Fiducial recognition
- Single /Double side marking (Optional)
- 2D Barcode quality check.
- Marking positioning CPK>1.67
- Bad mark recognition
- Group marking / Array marking mode
- Anti-second marking
- Fume Extraction (Optional)
- RGB lighting (Optional)
- Available to mark on different color PCBs including the green, white, red, black, purple, blue..
- MES/ERP connection (Optional)

Model		S-330	S-460	S-600
PCB size(L*W)		50x50mm-355x330mm	50x50mm-500x460mm	50x50mm-600x460mm
Line	Clearance	Upper : 25mm and down 25mm		
	PCB thickness	0.6mm-6mm		
	Transport heights	900+/-50mm (or specify)		
	Flow direction	Left to right, right to left (as per customers request)		
Laser Head	Laser type	CO2,10W / UV, 5W / 10W / Fiber Laser 20W		
	Wave	10.6um		
	Laser level	Class 4		
	Marking max. size	CO2: 70*70mm ; Min. 1.2mm*1.2mm UV: 90*90mm; Min.:0.7mm*0.7mm Fiber: 70*70mm ; Min. 1.2mm*1.2mm		
	Character type	1D Barcode (Code39, Code128, ITF, 2of5, NW7, JAN) 2D Code (QR Code, Micro QR Code, ECC200 DataMatrix, GS1 DataMatrix) DataBar (GS1 DataBar Truncated, Stacked and Limited)		
	Graphic data	Logo Image (Customer Logo, CAD Data, BMP/JPEG/PNG/TIF formats)		

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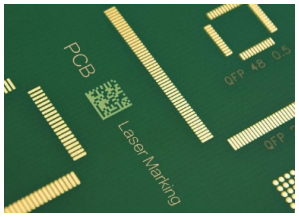
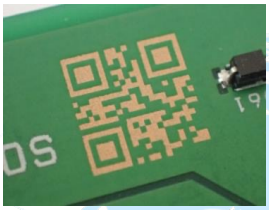
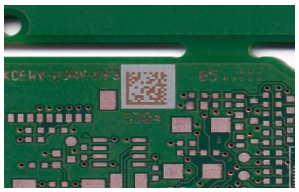
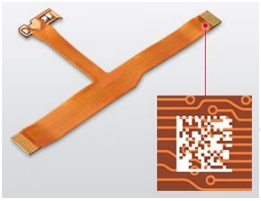
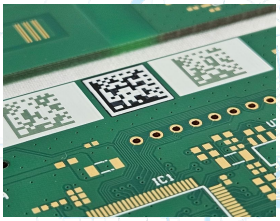
Marking example results











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