



**Laser marking
system
&
Traceability**

INLINE LASER MARKER MACHINE

Laser Marking Machine engraves 1D/2D barcodes, logos, and characters on the surface of a PCB or an object without physical or chemical damage. The laser head performs its marking by adjusting its own height in the Z axis according to the height of the objects.



Why

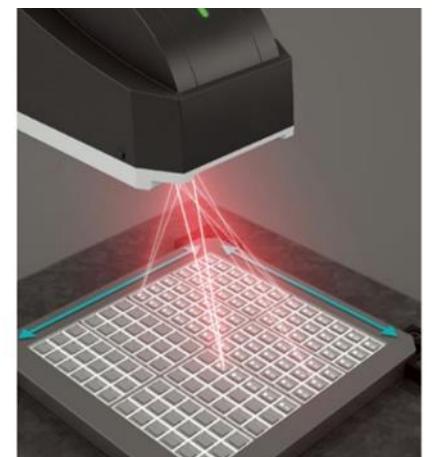
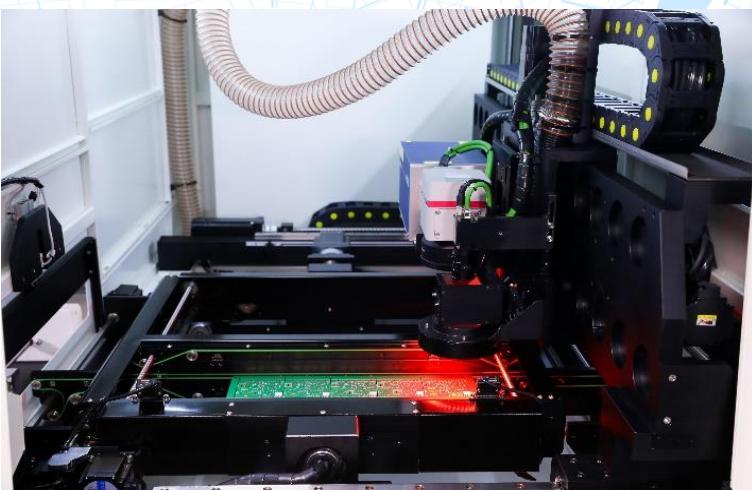
We need a inline laser marker machine in the SMT production line?

“Making the traceability available in your production line and maximise product quality with reduced costs within your manufacturing processes.”

-----Vanstron engineering team

The laser head inside the machine, it working with the a head moving in X and Y axes, the laser head marks on the abjects,and it is available to mark the 1D/2D codes, chargeers and logos on the surface of materials.

With a large marking area, our laser system is available to mark multiple target at once cover a larger area or a higher Quantity of products, which allows for improved production efficiency. (Optional)



Marking accuracy: +/-0.01mm

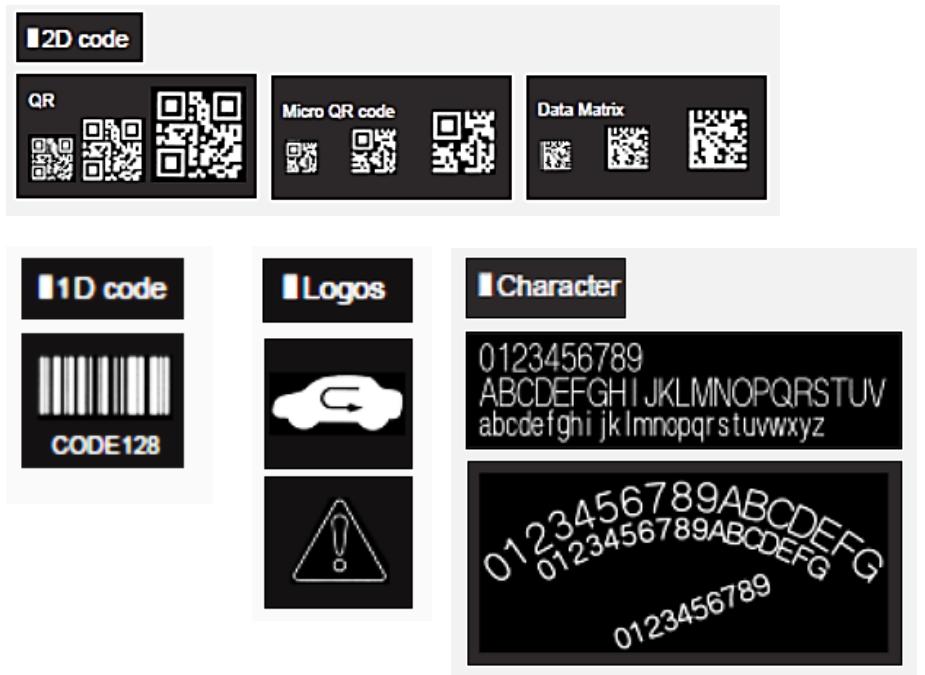
Inline Laser marker machine

Standard configuration:

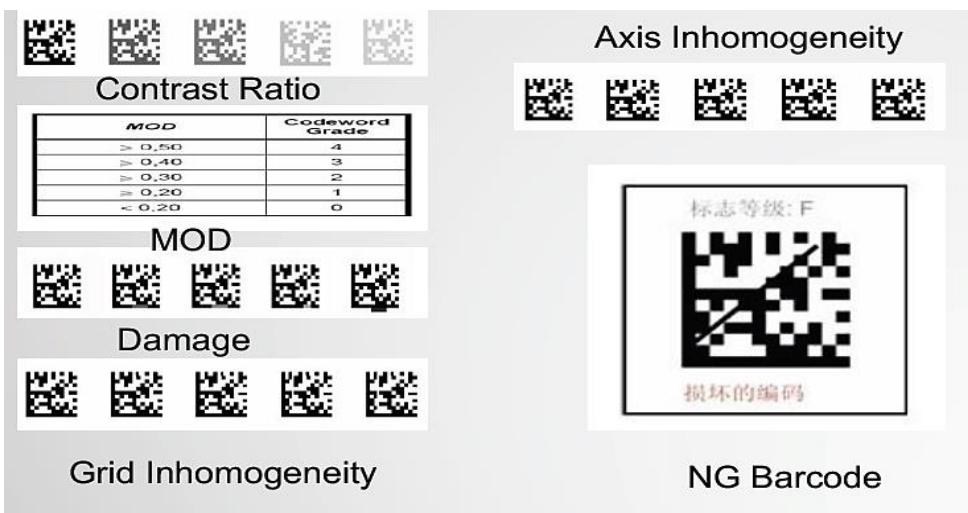
1. Double side marking
2. Fiducial recognition
3. Barcode quality verification
4. Barcode reading
5. RGB lighting
5. Fume collection

Optional Spec.:

1. Marking power detection
2. Ionizer
3. MES connection system
4. Barcode quality grade
4. Double laser head (top and down)



Barcode Grade verification



Do not flow NG barcode

DPM(Direct part mark)barcode have 5 grade :

A\B\C\D\F Element impact the barcode grade as follow.

Laser marking machine can use CCD to check the barcode grade online

Mark Quality Check

Just as a ordinary AOI function, base on the barcode database. Every barcode must be compared with the database ,such as gray scale, contrast ratio line- width, perfect circle. When the parameters is different from the database ,the machine will alarm to the engineer

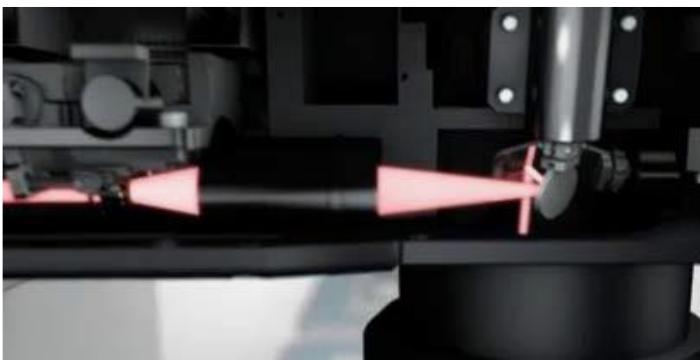


Do not produce NG barcode

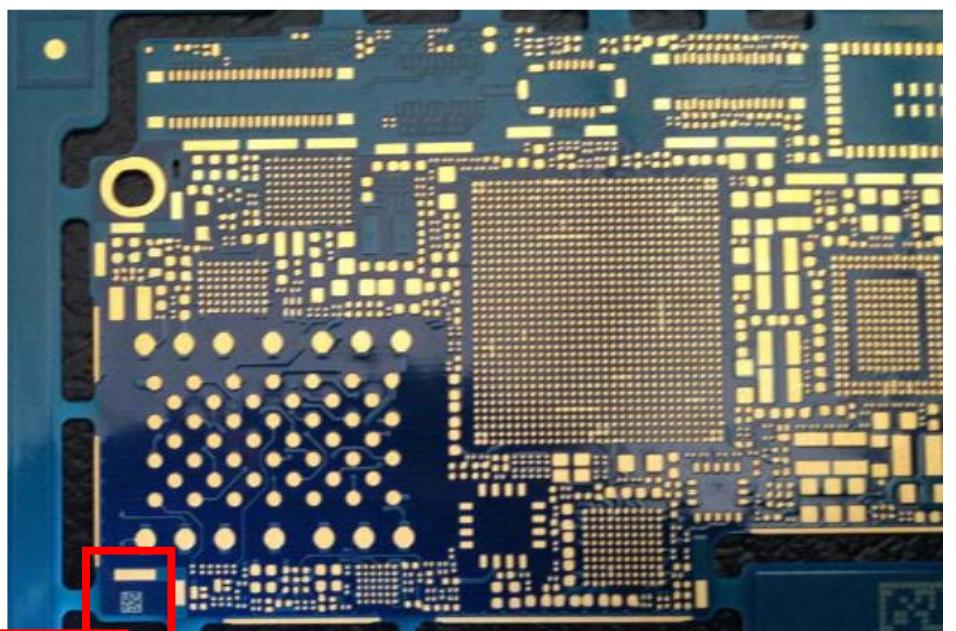
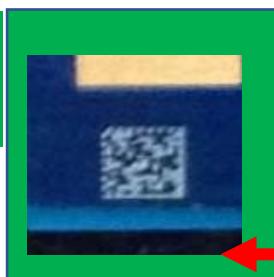
Super Small Light Spot Mark

The barcode mark effect depends on light spot,that means small light spot can bring the best mark effect ,make the barcode easy to read and good quality.

Vanstron laser head can mark 1*1mm barcode by using small light spot which is the best technology in the laser marking field.



1mm*1mm
Datamatrix Barcode



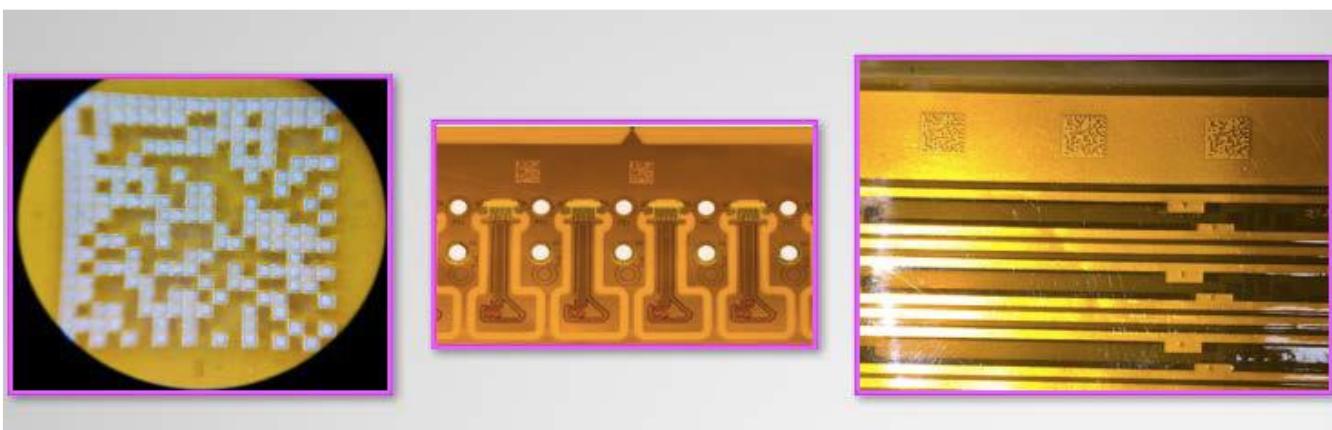
Mark on PCB with no damage copper



1. Usually, mark the PCB on the area which does not have copper under the soldermask.
2. Under the Soldermask have copper, the Soldermask thickness is 20um, mark depth maybe no damage copper.
3. Above the Soldermask have white paint, and the thickness is 20um, mark depth maybe no damage copper.

Laser type	CO2,10W, forced air cooling (or according to the customer requirements) UV, 5W, water chiller cooling.
Wave	10.6um
Laser level	Class 4
Dot size	0.11mm
Marking max. size	CO2: 70*70mm ; Min. 1.2mm*1.2mm UV: 90*90mm; Min.:0.7mm*0.7mm

Mark on FPC but not easy to deform

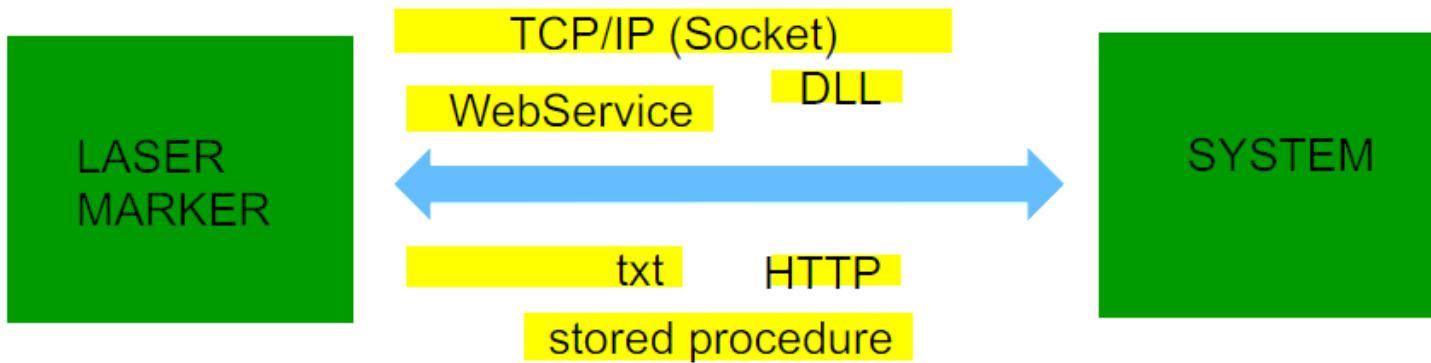


FPC use UV laser

FPC need to use the better and stable laser

Usually hard to read the barcode ,suggest use CCD to read barcode

System Link Introduce



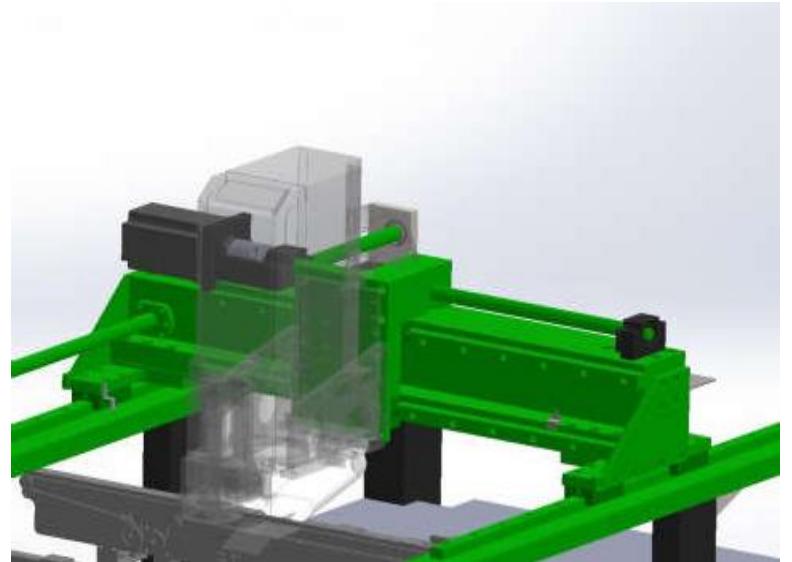
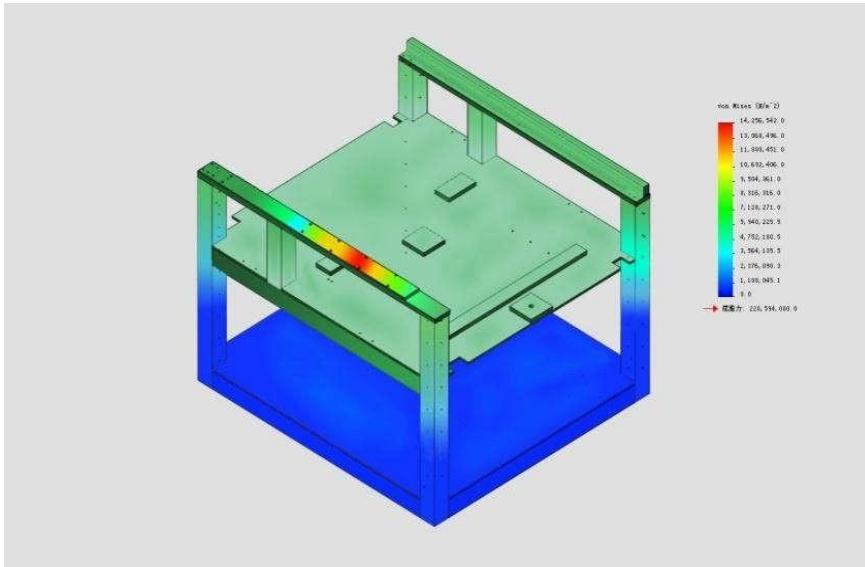
Vanstron laser machine can link to MES\FIS\SHOP FLOW\IMS\MRP\AFDS and can also used in offline mode ,the machine is the sever:

- Production order fool-proofing
Use a scanner read the barcode of the PCB package ,wrong order ,not mark
- Muti machine produce the same production order
Use machine mac address

Vanstron Laser Marking Process

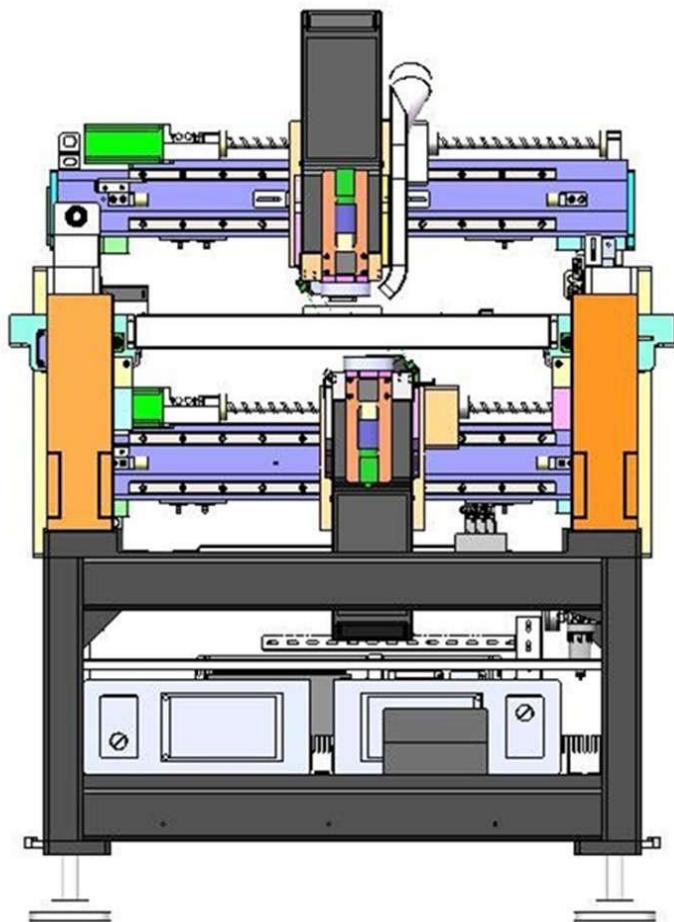


Robust machine construction Introduce

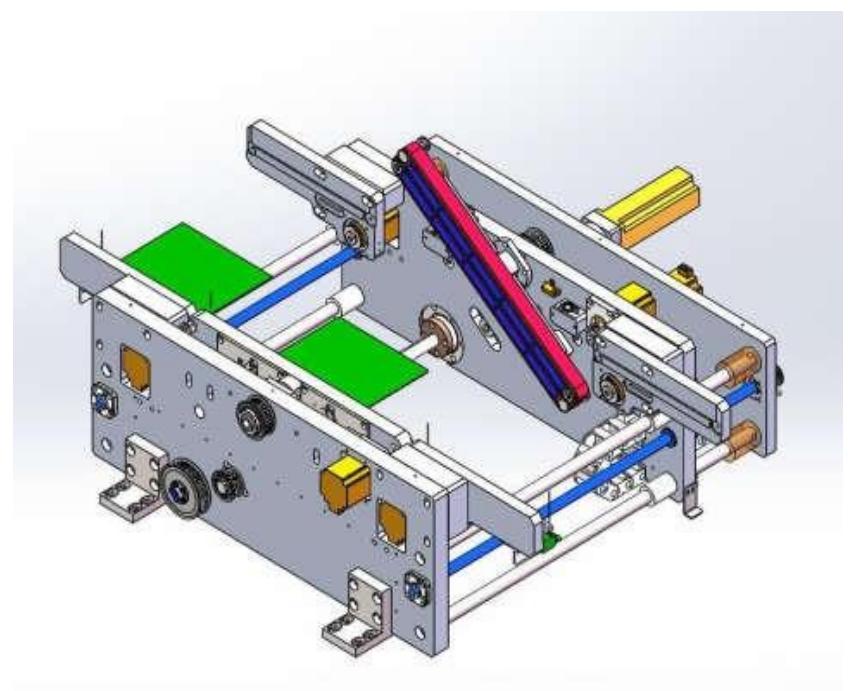


- High rigidity machine frame - ensure the accuracy and repeatability

- More than 50% rigidity compared with traditional frame
- Accuracy of structure: CPK>1.67
- Laser head position accuracy: +/-0.01mm



Top & down marking with double head



Built-in flipper device

Specifications

Model		S-460	S-650
PCB size(L*W)		50x50mm-510x460mm	50x50mm-610x460mm
Line	Clearance	Upper : 30mm and down 30mm	
	PCB thickness	0.6mm-6mm	
	Transport heights	900+/-20mm (or specify)	
	Flow direction	Left to right, right to left (as per customers request)	
Machine dimensions		W860*D1440*H1780mm	W1200*D1950*H1800mm
Weight		720KG	1108KG
Laser Head	Laser type	CO2,10W, forced air cooling (or according to the customer requirements) UV, 5W, water chiller cooling.	
	Wave	10.6um	
	Laser level	Class 4	
	Dot size	0.11mm	
	Marking max. size	CO2: 70*70mm ; Min. 1.2mm*1.2mm UV: 90*90mm; Min.:0.7mm*0.7mm	
	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) Logo Image (Customer Logo, CAD Data, BMP/JPEG/PNG/TIF formats)	
	Graphic data	VEC,DXC,BMP,HPGL,JPEG,AI,EPS	

