Why?

Reason to choose UV Laser

UV Laser Marking System
LIS-250D

Names of parts
1. Appearance inspection camera (Front face)
2. Laser scanner (Front face)
3. Marking letter inspection camera (Front face)
4. Appearance inspection camera (Back face)
5. Laser scanner (Back face)
6. Marking letter inspection camera (Back face)
7. Good product discharge conveyor

Marking with UV laser irradiation on solid preparation (tablets, soft capsules) surface is conducted to change the color of the contained titanium dioxide to grey. Non-thermal effects of UV laser allow identification marking without resulting in thermal denaturation on the solid preparation.

* Transfer mechanism of soft capsule is different from others.
No defect caused by ink

- Letter shortage
- Double printing
- Ink sticking

No letter shortage, double printing, ink sticking (stain), etc. will occur due to color change of titanium oxide with non-contact UV laser.

Flexible design

Marking letters, mark or logo can be made by CAD which allows flexible design. Test printing and printing result check are not needed before production.

Reduction of running cost

No cost for design roll reproduction and ink, and no need of storage location.

No thermal denaturation

Non-thermal effects of UV laser allow marking without resulting in thermal denaturation on the tablets by using UV laser.

Unmanned operation available

Unmanned operation is available by using the marking letter inspection system, auto loading system and auto-collecting system as an option.

Halal compliance

No usage of ink is applied to Halal compliance.

*Halal is Islamic philosophy and means what Islamic people can eat.

Mechanism of laser portion

Galvanometer mirror for X-axis scanning
Galvanometer mirror for Y-axis scanning
Expander
Laser source

Laser marking mechanism

UV Laser

\[ Ti^4+ + O_2 \rightarrow TiO_2 \] (1) The ratio of titanium (Ti) to oxygen (O) in titanium dioxide is 1:2. UV laser is irradiated on the titanium dioxide then oxygen atom is removed.
Improvement of operating rate

No need of cleaning due to no use of ink

Larger printable area

Not only alphanumeric characters but also katakana and kanji (Chinese characters) are available for printing, and resulting in excellent repeatability of details.

Contribution to ISO14000

(Environmental Management System)
Non-organic solvent usage contributes to ecology.

Prevention against counterfeit product

Laser marking on the side with large curvature could prevent the counterfeit product.
* To be applied with other system.

Other features

- Titanium dioxide is required on the surface film.
- Laser marking color is grey.
- Auto CAD software is attached to this equipment. Operation training may be conducted as option.
### Specification

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>UV Laser Imprinting Machine</td>
</tr>
<tr>
<td>Model Number</td>
<td>LIS-250D</td>
</tr>
<tr>
<td>Production capacity</td>
<td>250,000 tablets/hour</td>
</tr>
<tr>
<td>Electricity</td>
<td>3phase 200V, 75A</td>
</tr>
<tr>
<td>Compressed air</td>
<td>0.6 MPa 800 L/min (ANR)</td>
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<tr>
<td>Vacuum</td>
<td>25.0 kPa 15.0 m³/min</td>
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<tr>
<td>Installation environment</td>
<td>Temperature 20 ~ 27°C</td>
</tr>
<tr>
<td></td>
<td>Humidity 30 ~ 55%</td>
</tr>
<tr>
<td>Overall dimension</td>
<td>Main Unit Width 1,580 × Depth 1,570 × Height 1,990 (excluding hopper) mm</td>
</tr>
<tr>
<td></td>
<td>Appearance inspection control unit Width 1,500 × Depth 700 × Height 2,150 mm</td>
</tr>
<tr>
<td></td>
<td>Marking letter inspection control unit Width 800 × Depth 700 × Height 2,150 mm</td>
</tr>
<tr>
<td>Height of discharge</td>
<td>740 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>Main Unit 2,000 kg</td>
</tr>
<tr>
<td></td>
<td>Appearance inspection control unit About 500kg</td>
</tr>
<tr>
<td></td>
<td>Marking letter inspection control unit About 250kg</td>
</tr>
<tr>
<td></td>
<td>Chiller&amp;UPS About 320 kg</td>
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<tr>
<td>Noise during operation</td>
<td>up to 80 db (A weighted sound pressure level)</td>
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</table>

#### Overall size (LIS-250D) (mm)

![Front face](image1)

![Side surface](image2)

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Capsules ● Equipment ● Technology

Use this equipment correctly.

Safety
Before use, be sure to confirm the contents described in the Instruction Manual attached to this equipment. Disassembly, repair, or deformation of this equipment is strictly prohibited.

Classification of laser products
This equipment falls under 'Class 1 laser product' of JIS and IEC standard. (JIS C6902:2011, IEC 60825-1:2007)