MARKING SYSTEM

MARKING ON TOP

MARKING ON SIDE

MARKING ON INNER WALL

MARKING ON COIL

MARKING ON TOP

MARKING ON SIDE

MARKING ON INNER WALL

MARKING ON COIL

Marking on propane gas cylinders using JET MARKER

Actual markings performed by the left machine.
The marking are customer coded.
(Chinese, Hangul, and special characters available)

APPLICATIONS

Actual markings performed by the left machine.
The marking are customer coded.
(Chinese, Hangul, and special characters available)
Overview

Production lines for steel plate, coils, slabs, billets, shaped steel, pipes, and construction materials have become diversified and, accompanying the automation or streamlining of distribution, marking of information on actual articles is inevitable.

Human labor-dependent marking work is prone to problems related to the working environment, marking mistakes, work efficiency, and so forth; for this reason, automatic marking has become a universal practice. Nireco provides marking systems, paint, and ink appropriate for various marking objects for application to distribution control and product marks. All of Nireco’s safety-conscious marking systems can be linked to host PCs and are equipped with self-diagnosis functions.

Types of Marking Systems

Nireco’s marking systems are generally classified as follows.
Marking is performed in such a way that the nozzle is moved along the character shape in the X-Y stage and paint is ejected each time the nozzle is opened and closed as it moves a specified distance. Shortening the ejection timing produces continuous line characters; lengthening it produces dot characters.

- Because one nozzle is moved in the X and Y direction to from characters, it is possible to paint any size or pattern of character or mark.
- Character shapes can be set or changed using a graphical display; when an automatic reading system is used to read characters; certain characteristics can be assigned to characters of similar shape.
- Marking of small characters can be performed. (20mm(W)×15mm(H))
- Since an atomizing nozzle is used, paint consumption is reduced, even in hot material applications.
- The amount of paint ejected is controlled for the object according to the temperature information and characters having a certain thickness can be marked.
- Clog-free nozzle.

The paint the air are atomized inside.

Nireco’s laser marking system is capable of directly marking the sides and edges of thick plates in your production line. The Nireco laser marker is ideal for marking your products and materials with quality and inventory control information and is capable of printing barcodes as well. The Nireco laser marker will also help reduce your operating costs as it requires less consumables than conventional methods.

Marking nozzle

Nireco’s laser marking system is capable of directly marking the sides and edges of thick plates in your production line. The Nireco laser marker is ideal for marking your products and materials with quality and inventory control information and is capable of printing barcodes as well. The Nireco laser marker will also help reduce your operating costs as it requires less consumables than conventional methods. Drawing upon vast experience and expertise in the steel industry, Nireco has designed this laser marker to print accurately and rapidly on both hot and cold plates. The Nireco laser marker is also designed to be very durable in most work conditions to provide you with peace of mind for a long time to come.

Marking on the end face of 300 to 700 billets using JET MARKER

Marking on the end face of 300 to 700 billets using JET MARKER
The Strapping Band Laser Marker is the result of collaboration between strapping machine manufacturer Kohan Kogyo Co., Ltd. and iron & steel industry expert Nireco Corporation. The device improves the efficiency of both manufacturing & quality controls by simultaneously stripping the rolled steel coil and marking the strapping band with product management data. What’s more, unlike conventional methods which directly mark the product, the Strapping Band Laser Marker only prints on the band so that the steel coil can be delivered in pristine condition.

The Strapping Band Laser Marker is capable of printing at high speed and precision on both cold and hot-rolled sheets, while its outstanding durability ensures long-lasting stable operation even in the toughest operating environments.

**Low running costs**
Laser marker only consumes basecoat

**High-speed printing**
Clear & instantaneous printing

**Barcode printing**
Supports GS1 DataBar (formerly RSS) & 2D barcodes essential for manufacturing control

**Newly-developed basecoat nozzle**
Eliminates coating clogs for smooth operation

**Easy to install on existing strapping machines**
Simplified installation

### Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laser output</td>
<td>40W</td>
</tr>
<tr>
<td>Laser type</td>
<td>CO2</td>
</tr>
<tr>
<td>Hazard class</td>
<td>Class 4</td>
</tr>
<tr>
<td>Product life</td>
<td>10 years or 50,000 hours</td>
</tr>
<tr>
<td>Print size</td>
<td>Height: 3mm – 100 mm; Width: 0.1mm -</td>
</tr>
<tr>
<td>Printing speed</td>
<td>5 seconds (based on size of print sample below)</td>
</tr>
<tr>
<td>Print types</td>
<td>Alphanumeric characters, Chinese characters, barcodes &amp; QR codes</td>
</tr>
<tr>
<td>Print colors</td>
<td>Basecoat: white; Print: black</td>
</tr>
<tr>
<td>Coating consumption</td>
<td>Determined by print size &amp; area</td>
</tr>
<tr>
<td>Strapping band size</td>
<td>Width: 25mm – 32mm</td>
</tr>
<tr>
<td>Strapping band type</td>
<td>Kohan Kogyo’s proprietary bands etc.</td>
</tr>
</tbody>
</table>

### Comparison with Conventional Printing Methods

<table>
<thead>
<tr>
<th>Method</th>
<th>Inkjet Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Running costs</td>
<td>Inexpensive basecoat only</td>
</tr>
<tr>
<td>Print height</td>
<td>Variable to suit sheet thickness</td>
</tr>
<tr>
<td>Print contrast</td>
<td>Basecoat ablation enables high contrast</td>
</tr>
<tr>
<td>Injet Method</td>
<td>Expensive - basecoat &amp; ink combination requires cleaning fluids</td>
</tr>
<tr>
<td>Label Method</td>
<td>Expensive at both normal &amp; high operating temperatures</td>
</tr>
<tr>
<td>Print height</td>
<td>Fixed at initial value</td>
</tr>
<tr>
<td>Print contrast</td>
<td>Label size is fixed</td>
</tr>
</tbody>
</table>

### System Configuration

**Mechanical section of marking unit**
This section moves the marking head to the marking position on the marking object; the actual configuration varies depending on the object.

**Local operation panel**
Contains operation switches and LEDs used independently to operate the mechanical section from the local site. If the mechanism is simple, an operation device is provided on the front side of the terminal box. If the mechanism is complex, it is a post type panel.

**Control panel**
Contains the control devices used to control the entire system; the content varies depending on the structure of the mechanical section. If the marking machine is configured for a simple application, the control panel is installed at the local site; in this case it can also serve as the local operation control panel.

**Paint supply unit**
Depending on the type of marking object, there may be paint supply units for any combination of hot paint, cold paint, and ink. The paint tank is continually stirred and paint is also circulated inside the paint pipe using a paint pump.

**Descaling unit**
Descaling is applied as a pre-processing measure to materials that are likely to have scales on their surface. Descaling of heated objects is performed with high-pressure water; mechanical shock is applied to cold objects.

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**Legend for the configuration diagram:**
- Marking head
- Control panel
- Local operation panel
- Point supply unit
- Marking data
- Host computer
- Material code
- Weight
- etc.