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AlpSEB
Labeling System
AlpBLS
AUTOMATIC BILLET LABELLING SYSTEM

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AUTOMATIC BILLET LABELLING SYSTEM

AlpBLS is a labelling system for use with materials at both low and elevated temperatures. The machinery, designed as an alternative to the punch marking, nail-gun tagging and welding methods, uses heat-activated labels directly applied onto the surfaceof a product by means of an applicator fitted with a heat resistant pad. This flexible solution provides for extensive product information and better readability, resulting in improved traceability.

OVERVIEW

- Automatic direct labelling (Print & Apply method) or with robotic assistance (where required).
- Application at both low and high temperatures.
- Precise label positioning.
- Labelling resistant to wear, heat, and high mechanical stress.
- Information-rich and steadfast printing using Data-Matrix, QR Code and plain-text.
- Operational efficiency and versatility thanks to cutting-edge technologies.
- Reduced system, installation, and maintenance costs.

Labels applied to incandescent billets.

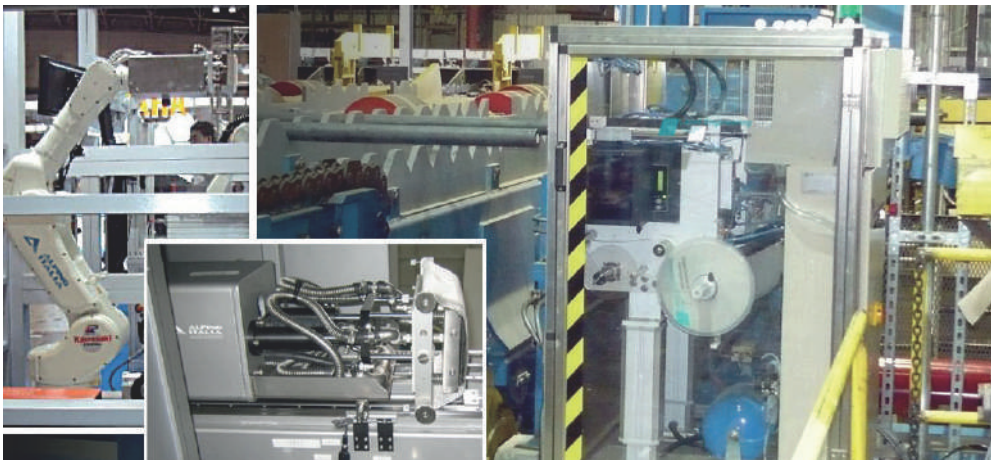
AlpBLS uses state of the art technologies that exploit the high-tech features of the most modern labels and special adhesives. This innovative system can meet the continuous challenges in product traceability and, the need to accessincreasingly broad information thanks to the use of data-rich labels designed to withstand hot temperatures and high mechanical stress. **AlpBLS** is the ideal solution to overcame various problems, for instance, the difficulty with OCR reading in the punch marking methods. Furthermore, the process does not involve the use of studs, nails or pins thus entirely avoiding the risks involved with flash welding methods such as the displacement of the stud/tag due to powerful mechanical impacts during handling hence leading to loss of critical information. The new labels, moreover, thanks to Data-Matrix, QR Code, bar-code and even plain-text characters can offer a great deal of information that is easily accessible on-site by an operator with a PDA.

[1] According to the type of installation
[2] Approximate quantities according to the label size

- ARTIFICIAL INTELLIGENCE
- MACHINE VISION
- AUTOMATION

SYSTEM ARCHITECTURE

AIpBLS is an automatic labelling system combined with a thermal transfer printer and a dedicated control panel. The installation consists of a slide type chassis mounted with a load adjustment cylinder which connects to an applicator headfitted with an heat resistant pad; Where required, a robotic arm equipped with the label applicator integrates the system; a vacuum pump, and an air blowing mechanism complete the setup. A suitable heat-resistant housing protects and insulates the machinery.



The image above shows the Print & Apply version with a detail of the applicator head fitted with the pad (see foreground insert). The insert on the left (background) pictures the anthropomorphic robot equipped with the label applicator.

HOW IT WORKS

The implementation of the Print & Apply direct system comes into effect if the position of the billet is known (e.g., the first step of the walking beam cooling bed). Alternatively, the positioning of the applicator head requires an anthropomorphic robot guided by machine vision. **AIpBLS** receives the printing information from an existing Level 2 or 3 system (MES-ERP) that it then transmits to the thermal transfer printer which in turn produces a cut-to-size duly printed label. The applicator will subsequently retrieve the label from the said unit, and it will apply it on the billet's face using the appropriate pad. The action of the vacuum pump and air blowing mechanism ensures that the label and its adhesive layer do not undergo alterations during the gluing process. Once applied, the label is then scanned to determine its correct positioning and legibility of the printed information. The scan result is then transmitted back to levels 2 or 3 for validation andcompletion of the labelling cycle.

After cooling the labels are perfectly legible.

TECHNICAL SPECIFICATIONS			
Materials operating temperature	400~1050 °C	Thermal Transfer Printer	Second optional
Labelling time	3s[1]	Protective housing	Heat resistant[1]
Full cycle	~ 15s[1]	Anthropomorphic Robot	On request
Load adjustment cylinder range (standard)	1200 mm	Robot's guide system	Machine Vision
Label capacity	~ 2000 pcs.[2]	Print verification system	Optional

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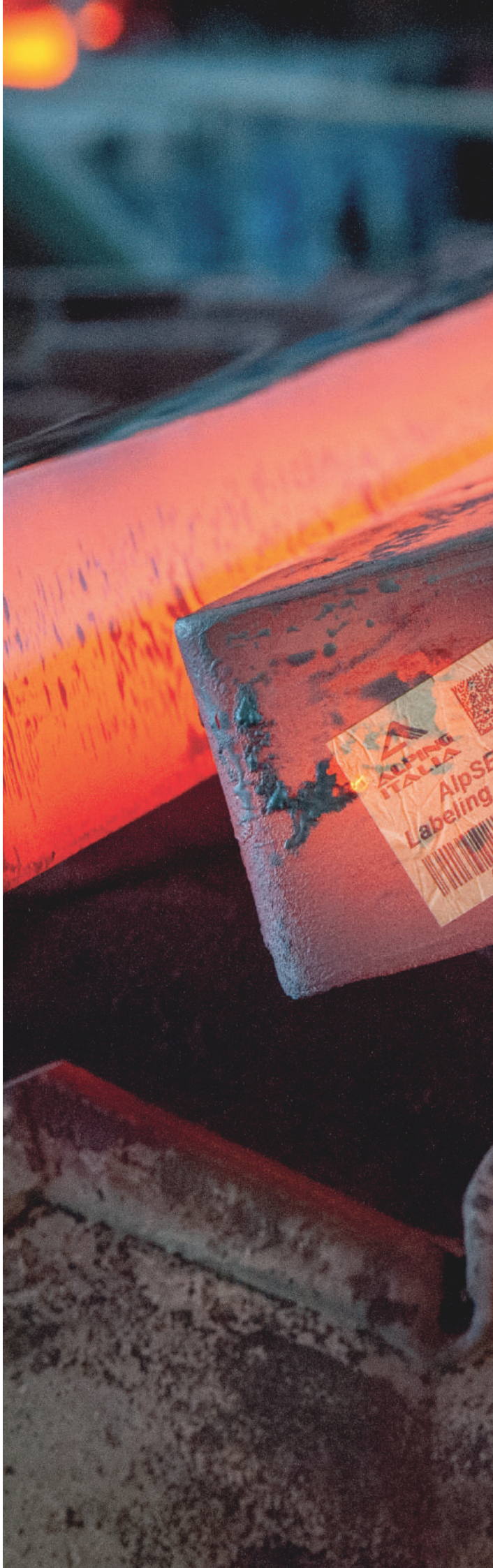

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