

AlpLOS

Billet Rhomboidity Measurement System

AlpLOS

BILLET RHOMBOIDITY MEASUREMENT SYSTEM

AlpLOS is an innovative system based on Machine Vision aimed at identifying the presence of the characteristic rhombic distortion in billets. By automatically calculating dimensional values, through image processing, it can provide timely alerts and notifications in case of a billet's non-compliance.

AlpLOS at a glance:

- Precision: high quality images and accuracy down to a tenth of a millimeter
- Ease of use: no MV knowledge required
- Live alerts: immediate notification of non-compliant billets
- Real-time communication with plant automation and system surveillance
- Data logging and image storing on a dedicated database
- Modular design: from 1 to a maximum of 4 cameras
- Ease of installation: no complex assembly required
- Operating safety: no specialist required in hazardous areas



AlpLOS automatically and continuously monitors the geometry of the billets, identifying any rhombic distortions and thus enabling prompt adjustments of the casting parameters as needed.

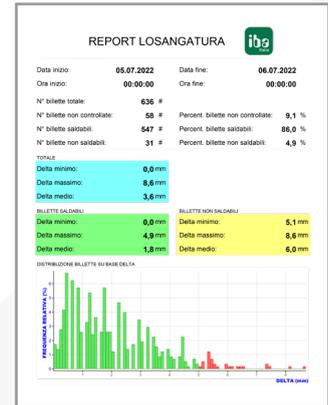
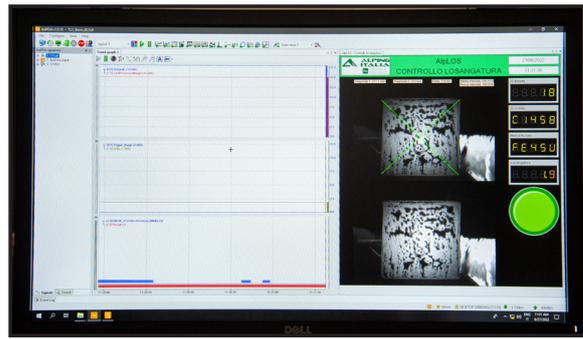
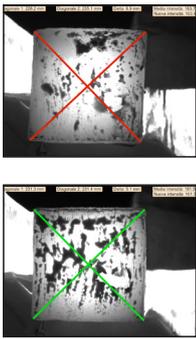
The system allows for the constant verification of the process, improving production efficiency and attaining optimal workflows. In addition, the ability to perform immediate checks at the entrance of the cooling bed reduces the number of non-compliant billets and proves to be of strategic importance

in plants that use billet welders with specific limits of work.

SYSTEM ARCHITECTURE - The basic structure of **AlpLOS** consists of a camera (it can reach up to four), a server powered with machine vision technology for image analysis and a client for the operator interface. **AlpLOS'** software architecture integrates the **iba** platform, which is widely used in the steel industry. The installation of the system requires connection with the network's automation and data exchange with the PLC that controls the movement of the billets.

HOW IT WORKS - The system captures and processes images of the face of the billet, calculates the dimensional values and verifies its compliance with the pre-established parameters. In case of significant alterations, i.e., in the presence of anomalies higher than expected, the operator then receives an alert via the user interface. The defective billet can thus be located and removed.

USER INTERFACE - The system's user interface allows the operator exhaustive control over the

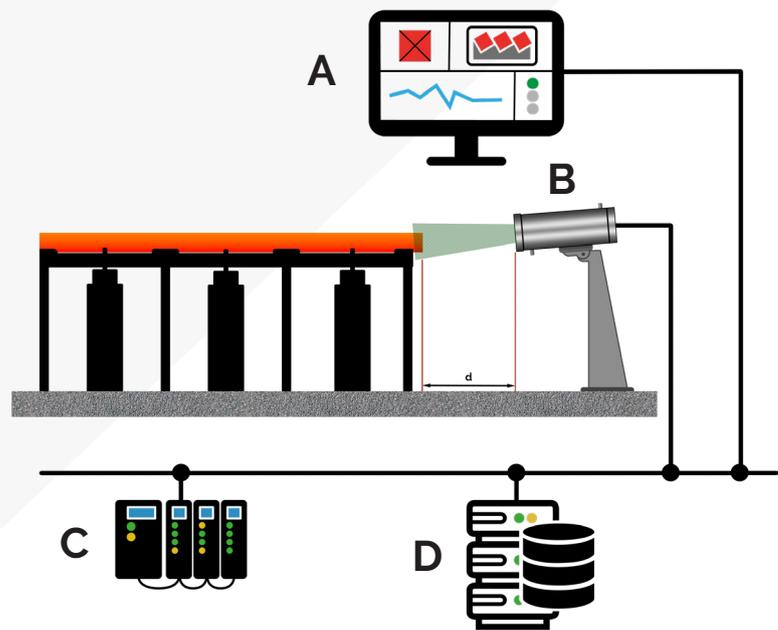


data processed by the software by displaying the image of the billet, all the applicable parameters and each data relevant to the product, such as the casting identifier, the billet ID, the line number, the steel brand and the rhomboid's delta. Traffic-light like coloured alerts immediately show the outcome of the product's screening indicating whether the billet is compliant. Completing the key features of the system are data-logging and image storing dedicated facilities and the regular release of statistical reports.

ALPLOS BASIC DESIGN

The system's basic archetype consists of the following elements:

- A) User interface
- B) HD Camera
- C) PLC (pre-existing)
- D) Server



TECHNICAL SPECIFICATIONS

Measuring resolution	0.6 ÷ 0.8 mm	Optics	75 ÷ 100 mm
Rhomboid distortion	Minimum 5 mm - Configurable parameter	LED illuminator	Optional
Acquisition interval between two billets	30 s	Liquid-cooled housing	Flow rate 2L/min (single housing)
Capture trigger	Sent via PLC at each new billet	camera distance from billet's face (d)	3500 ÷ 4500 mm
HD Camera/s	1 ÷ 4	Mechanical installation requirements	Perpendicularity to the surface to be inspected
Image resolution	1.5 MP o 5 MP	Storage capacity	3.000.000 Basic images



ALPING ITALIA SRL

Via A. Volta 18

33050 Pavia di Udine

UD - Italia

Tel. +39 0432 526331

info@alping.it

www.alping.it

