



AUTOMATED ANODE POSITIONING SYSTEM

A precise and fully automated anode positioning system

How it works

In modern aluminium smelters where prebaked anodes are used, huge amounts of anodes need to be replaced continually, and the new anodes have to be precisely positioned in electrolysis cells. However, manual positioning methods are still the norm in many of these plants, which – even with the best trained operating crews – is quite conducive to variability and lack of consistency. Another problem with manual positioning is that operators are exposed to a dangerous environment.

Alcoa and STAS have developed the AAPS / Automated Anode Positioning System, a fully automated system that can be implemented on existing or new Pot Tending Machines (PTMs). This system ensures optimal anode positioning and improves health and safety conditions for floor operators. Additionally, the duration of the anode replacement cycle could be reduced by as much as 25%.

The AAPS is a precise and fully automated positioning system based on laser measurements using, as a reference, the anodic beam instead of the pot tending machine. The load sensing devices is also used to avoid incorrect positioning related to mechanical plays.

The AAPS is also designed to minimize the period of time between the removal of the anode butts from the electrolysis cell and their storage in the transport tray. During this period, HF emissions are at their peak, and gases and particulates are released within the potroom. Using the AAPS in combination with the STAS Covered Anode Tray, the anode butts can be quickly loaded into closed containers, which will further reduce HF emissions in the potroom.

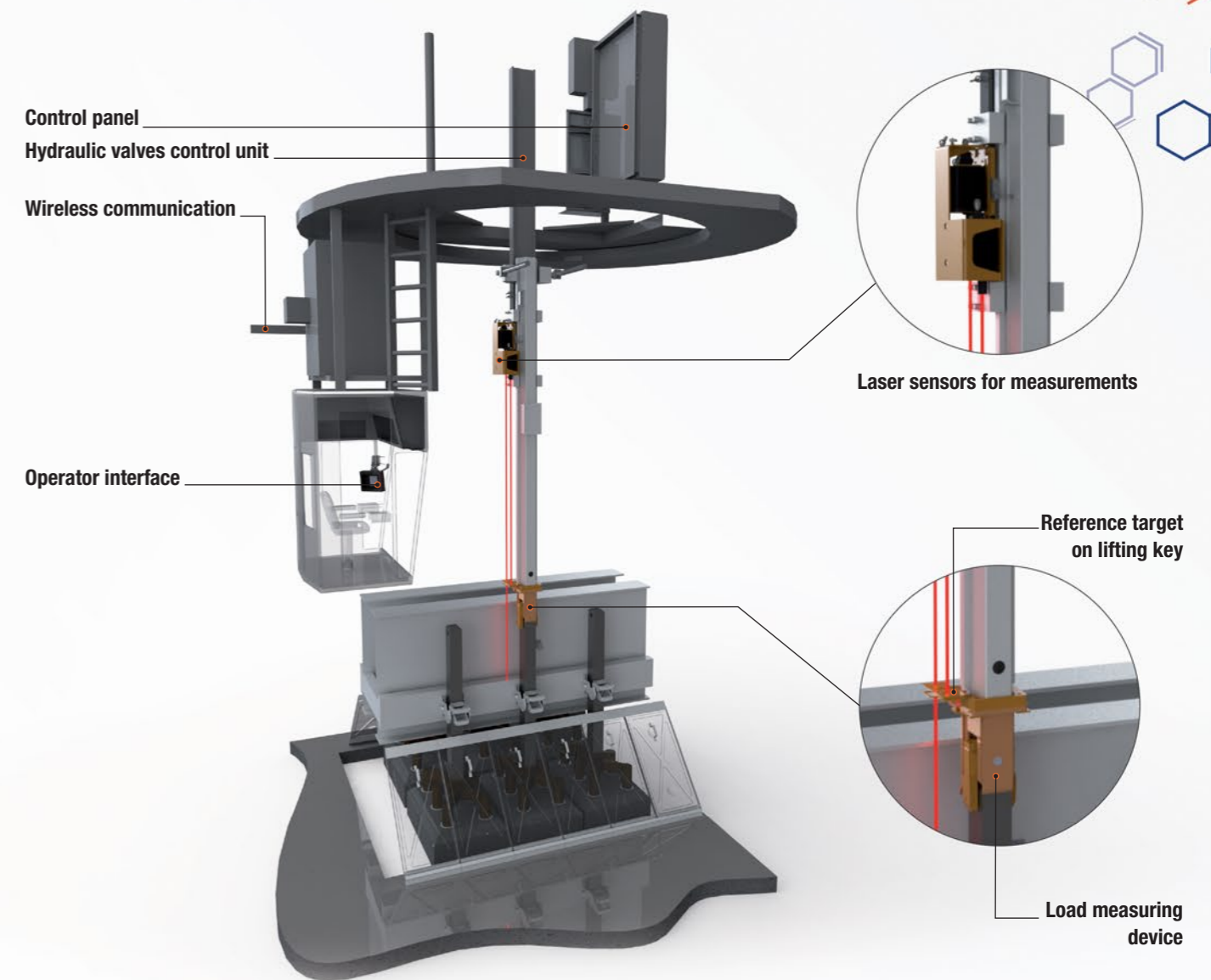
Key features

Productivity Improvement

- > Better precision in anode positioning.
- > Improved consistency in anode positioning.
- > Shorter anode replacement cycle (up to 25%).
- > Can be implemented on pot tending machine using PLC or relay control system.

Safe Operating Environment

- > Hands-off operation (measurement and positioning).
- > No need for operators close to open cells or under mechanical tools.
- > No need for operators close to the anode butts (high HF emission rate).



Typical specifications

Measurement accuracy	Operating temperature	Power requirement
±0,5 mm per measurement (laser sensor)	-40 to 70°C	24 VDC

© January 2018 All rights reserved STAS Inc. Printed in CANADA



CONTACT US:

1846, rue des Outardes,
Chicoutimi (Québec),
CANADA G7K 1H1

+ 1-418-696-0074

info@stas.com

stas.com |