3D Stub Inspection Vision System
Aluminium Smelter

The 3D Stub Inspection Vision System sorts out anodes needing alignment and repair.

Classification
Based on the measured values, the system classifies each anode in one of the following states:

- **Anode OK**
- **Anode should be aligned**
- **Anode to alignment**
- **Anode to repair**
- **Anode to repair and alignment**
- **Can not measure**

**Anode ready for stub alignment**

Measured Values
Each stub is checked for:
- Cowboy effect
- Too short stubs
- Too long stubs
- Corrosion and remains of bath, coal and iron

This is obtain by measuring in mm:
- Stub position
- Stub length
- Minimum diameter in upper region
- Maximum diameter in upper region
- Maximum diameter in lower region

Results
The system displays the following information on screen, for each anode:

- The classification state
- The measured values

In addition the system has the following features:

- Real time presentation of camera images with fault indication
- Curves for all measured parameters
- Pareto, a pareto distribution is available for the classification states
- A classification counter

For all vision tasks, the software of choice is Scorpion Vision Software®. Scorpion is an independent, configurable and open software tool for industrial vision. It is ideal for increased automation and improved quality in production output.

**Technical Data**

**Equipment**
19" cabinet IP56 and cooling device, Industrial Computer, Color Touch Screen, Scorpion Vision Software, two digital cameras, two halogen lamps, two multi line lasers, Devicenet interface, Ethernet connection for remote control

**Cabinet dimension**
W=19", L=600 mm, H=2000 mm

**Measurement area**
W=2500, L=6000, H=2500 mm

**Measurement cycle time**
15-20 sec

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Inspection result with measured values and Pareto graph.