

Rely on Fives' latest innovations to improve your equipment performance and availability while enhancing safety and environment

HSE IMPROVEMENTS

- 50% CTPV reduction
- Safer working area
- No more oil or spraying fluid leaks

OVERALL EQUIPMENT EFFECTIVENESS

- Better anode quality
- High availability
- Improved productivity

MAINTENANCE

- Maintenance cost savings
- Improved reliability



AMELIOS SUITE

The solution for a Full Carbon Digital Chain leading to Operation Excellence

Get comprehensive expert reports resulting from the study of the data collected and anticipate problems:

- Continuous Process optimization
- Dashboarding and Reporting
- Productivity monitoring (KPI and OEE)

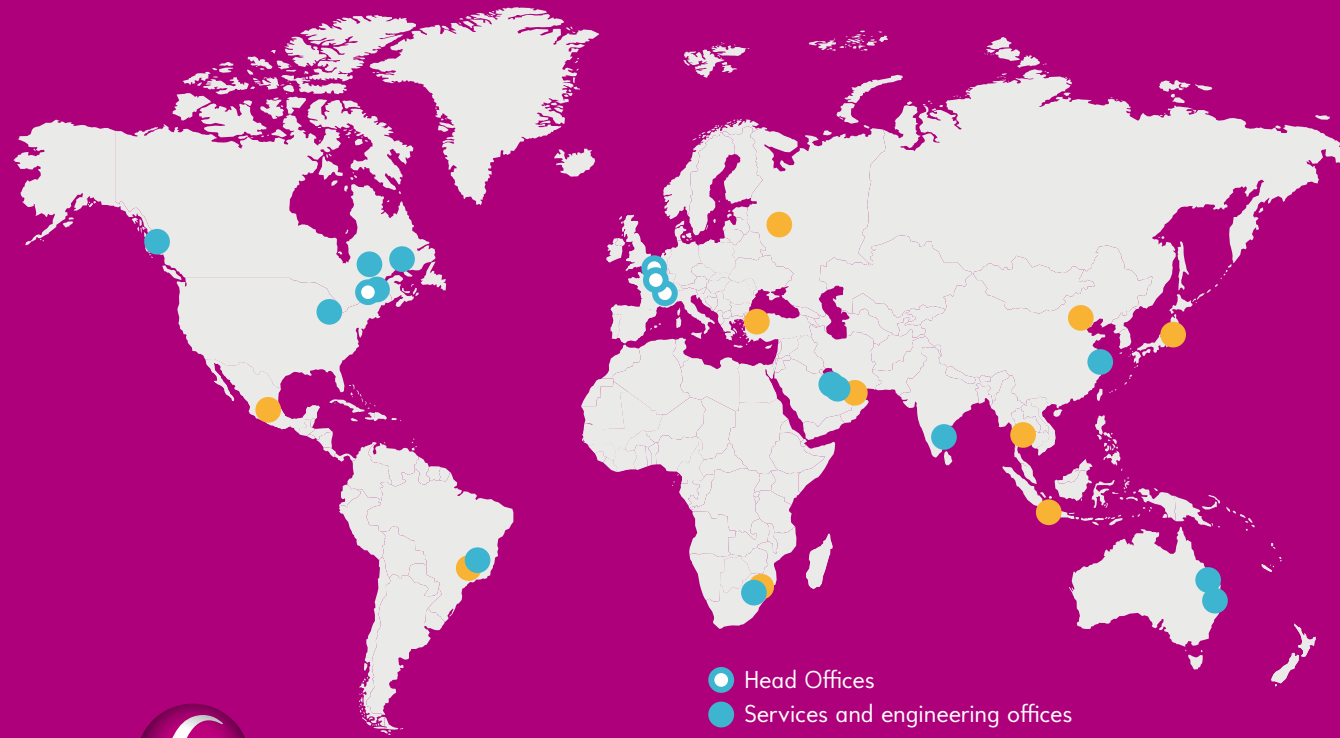
At the Green Anode Plant, the following sensors can be installed:

- Automated anode visual inspection
- Full anode block traceability
- Binder Optimizer



SOME REFERENCES

Alba, Bahrain - Sohar Aluminium, Oman - Qatalum, Qatar - Ma'aden Aluminium, Saudi Arabia - Emirates Global Aluminium Dubai, United Arab Emirates - Hindalco Aditya and Mahan, India - Xinfa, P.R. China



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Aluminium



Modernization of Vibrocompacting Units



Ultimate innovations to enhance your Green Anode Plant

- HSE improvement
- Better Overall Equipment Efficiency
- Easy maintenance



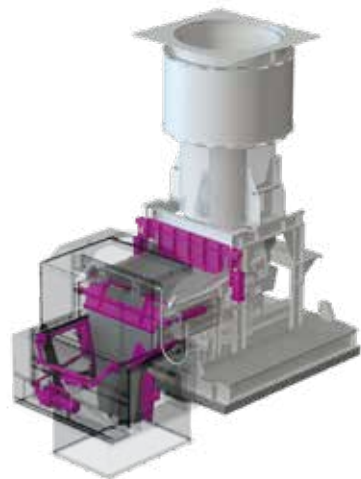
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Overview of Anode Forming upgrades

FEEDING - DOSING

Xelios vibrating feeder upgrade for improving your paste feeding system.

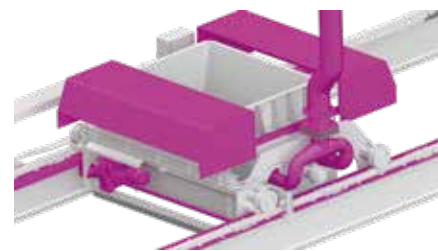
- CTPV collection improvement: casing around the feeding area and connection to the pitch fume treatment system
- Cleanliness of the area significantly improved
- Segregation reduction through secondary distribution deflector
- Adjustable layer of paste
- Improved reliability thanks to a rotating feeder actuated by VFD
- Fast response to plugging tendency
- Paste built-up prevention



TRANSFER HOPPER

An innovative way to improve the vibrocompactor cycle time while reducing emissions

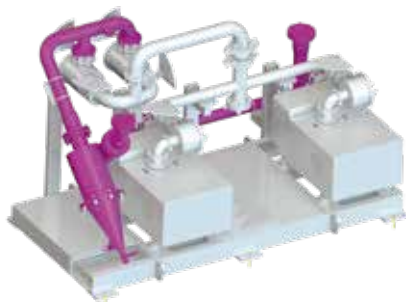
- A smart approach for the abatement of plant fume emissions:
 - Hopper covered during translation
 - Fume suction points at feeding & discharge locations
- Improved cycle time thanks to a rack & pinion technology:
 - Faster movement
 - No more slippage
 - Accuracy of positioning
- Less maintenance:
 - Individual actuator on discharge gates
 - Cover spraying moved to pusher



VACUUM UNIT

A dry pump system for more reliability

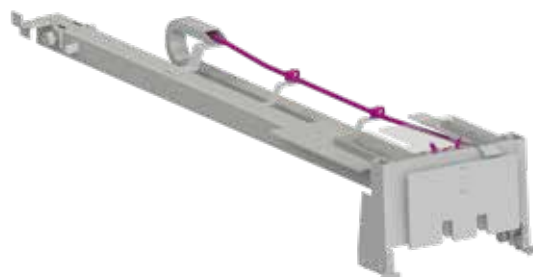
- Higher forming temperature
- Increase of anode density
- Reduction of risk of cracks
- Less maintenance
- Heavy particule collection by cyclone
- Cooling improvement
- Pollution treatment & monitoring



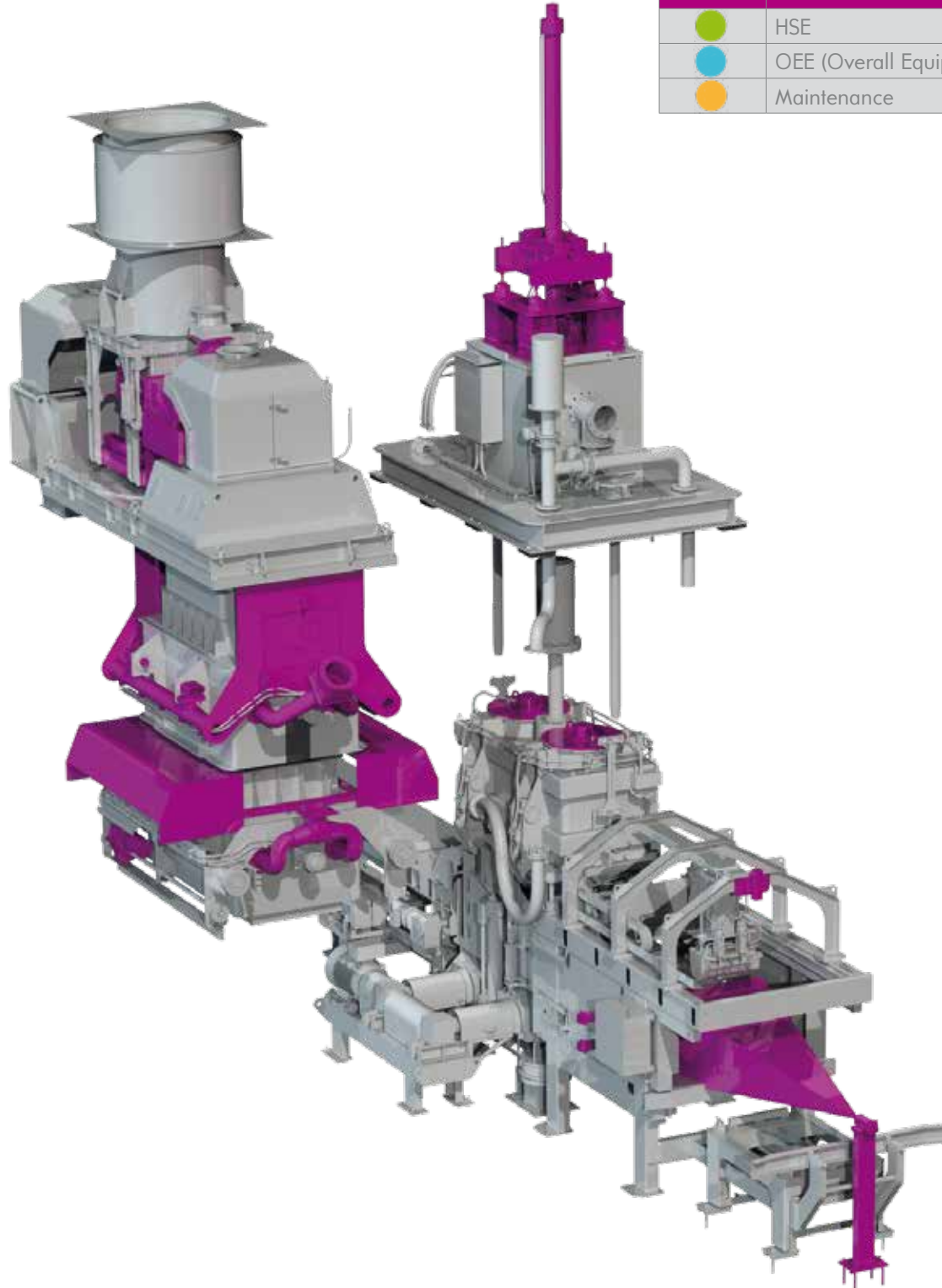
SPRAYING SYSTEM

Spraying nozzles on pusher for high HSE efficiency

- No oil spillage anymore
- Cleanliness of both transfer hopper and vibro compactor environment
- Less oil consumption
- OPEX reduction
- Easy access and maintenance



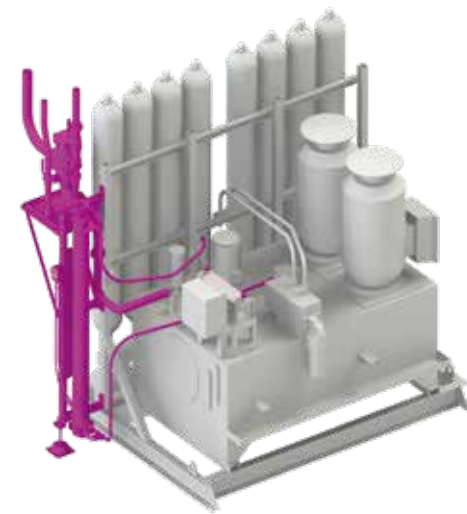
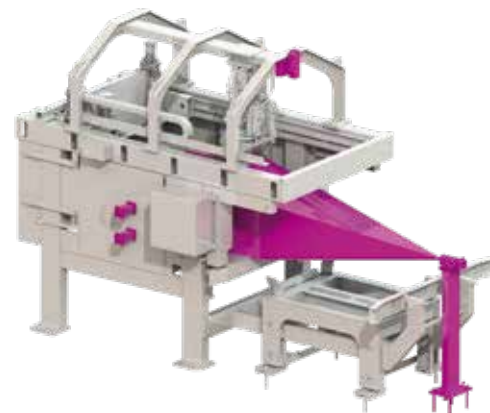
Code	Benefits
●	HSE
●	OEE (Overall Equipment Effectiveness)
●	Maintenance



DIGITAL UPGRADES

Innovative tools for better anode quality and continous anode follow-up

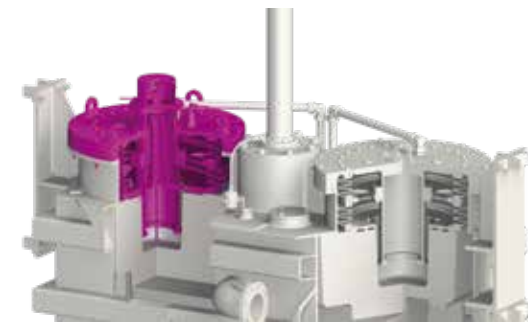
- Equipment monitoring
- Anode Vision:
 - Vision-based Identification for a digital signature
 - Vision-based Inspection for defect identification
- Tracking system to build a comprehensive and reliable data base



HYDRAULIC UNIT UPGRADE

The solution to increase hydraulic components life time and improve the exchanger maintainability

- Guaranteed cycle time thanks to 8 accumulators
- Temperature reliability thanks to a new design of cooling system
- Removable and easy to clean tubular water exchanger
- Oil quality and hydraulic component life time improvement thanks to an additional filter on the oil return line
- Real-time oil pollution monitoring through a built-in device
- Real-time accumulator pressure monitoring



XELIOS MONITORING SYSTEM, DYNPAC+

The Xelios process optimization for an accurate monitoring and control of the anode forming

- Significant reduction of rejected anodes
- Automatic adjustment of the vibrating time
- Consistency of anode height
- Equipment secured with a high anti-vibration lock
- Easy Dynpac replacement



CLAMPING UPGRADE

A new clamping system with a better distribution of forces

- Improved reliability
- Increased lifetime
- Reduced maintenance



ANODE IDENTIFICATION

A new device for the marking and visual inspection of anodes

- Better numbering reliability
- Improved anode tracking
- Reduced maintenance

TABLE UPGRADE

Four suspension bellows & bearing housing for longer lifetime

- Better control of horizontal vibrations
- Improved reliability
- No oil leakage thanks to a new bearing system
- Less maintenance
- Easier adjustment

