



Credit : Hydro

CHALLENGE: RELIABILITY IN HIGH TEMPERATURE AND HARSH ENVIRONMENT

Standard Crust breaker cylinders has short service life, substantially overpowered due to high chamber pressure when its not necessary, Chisel expose to high temperature due to dwell time which leads to elephant foot and anode effect.

SOLUTION: INTELLIGENT CRUST BREAKER CYLINDER AND BATH SENSING TECHNOLOGY

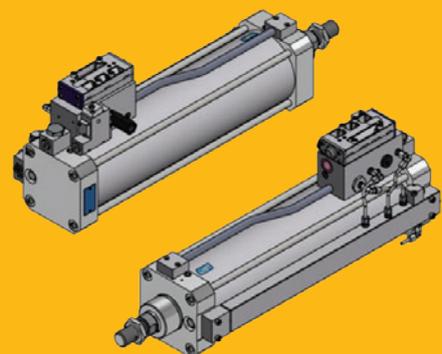
Parker has developed Intelligent crust breaker cylinder and bath sensing technology which has air saving function and other features. Parker was also engaged with customer for energy saving validation, product training and repair-maintenance training.

BENEFITS: REDUCTION IN AIR CONSUMPTION, LONGER SERVICE LIFE, PROCESS CONTROL

Parker technology has experience of 45 years in the niche market and Engagement with all customer and technology providers as a proactive approach to develop new technology. In -depth knowledge about the aluminum primary electrolysis process.

EFFICIENT CRUST BREAKING TECHNOLOGY FOR ALUMINIUM INDUSTRY

**Parker Crust Breaker
Cylinders reduce air
consumption and last long
equal to pot cell life.**



Most of the Aluminium Smelters and Technology provider recognize the Parker Intelligent Crust Breaking Technology and they adopt to upgrade existing cylinder or specify Parker Technology for the new green field projects.

Customer was confident about Parker crust breaking technology, technical support, complexity reduction in multiple plants of the same customer and better performance on a process parameter can lead to lower carbon emissions, reduced anode effect and elephant foot. To note that anode effect lead to gas emission and unstable process control.

Meet the Customer Demand

- Special features as pneumatic auto reset.
- Quick retraction at the end of stroke
- End sensing signal helps to improve process.
- Bath sensing function
- Validated air saving of 65%
- Low peak chamber pressure increases seal life.
- Shut off valve operates at home position which holds the breaker at home position.



Credit : South 32

Key Success Factors

- Parker brand and Technology

Intelligent crus breakers are reliable for high performance and proven technology in the aluminum smelters

- Engaged with customer and Technology provider.

Customers and technology provider work with Parker specialist to develop cylinder technology and complexity reduction program. Parker helps customer to choose different options and features of the crust breaker cylinders valve functions.

- Energy saving validation and Analysis.

On-site air saving validation and analysis of the data allows customer to make decision about the energy saving and performance.

- Customer support and Training

Quick technical customer support either on-site or remotely.

Business Results

- **Energy (Air) Savings**

Since, the aluminum smelter plants are using ample number of cylinders, by using Intelligent Crust breaker cylinder technology, **customer get 65% air saving.** Energy saving also benefits to compressor operating expenses (OPEX).

- **Reduce complexity**

All customer and technology providers closed work with our marketing and sales team to reduce the complexity of the Intelligent Crust Breaker cylinder and use common cylinder and spare parts for multiple plants.

Above activity reduced inventory of the customer and helps to centralize spare parts stock

- **Reduction carbon footprint**

To align with the needs of green initiatives, Parker support customer goal by reducing anode effect and carbon footprint

“ We help our customers to improve productivity in the aluminum smelters. Our focus is to develop and offer World Class Crust Breaking and Alumina Feeding System Technology for process optimization, energy saving, reliability and long service intervals.” Madhu Gaste, Global Market Development Manager - Aluminium