

Fluid handling solutions for tough mining applications



Robust pumps for sustainable and efficient mining operations

Whether transferring corrosive and abrasive slurries, dewatering or dosing chemicals in mining and mineral processing operations, pumps need to be robust, reliable and durable.

Our wide range of long-life peristaltic pumps and hoses are designed to make mining and quarrying processes more efficient, profitable, and sustainable. Our solutions help to achieve chemical and water savings, while minimizing environmental impact and maintenance downtime for companies involved in various mining applications.

Our peristaltic pumps deliver exceptional results in handling viscous fluids and overcoming the challenges

of abrasive high-solid slurries, and aggressive chemicals for a range of applications in mineral processing.

- Pilot plants
- Transferring abrasive ores
- Concentrate filter press feed
- Chemical dosing in separation, flotation and wastewater treatment
- Ore concentrates sampling
- Handling thickener underflow
- Transferring tailings slurries

Expertise from a single supplier

We are the industry leader in peristaltic pumps and associated fluid path technologies. With direct sales operations in over 40 countries worldwide, we provide comprehensive applications and product support. Our customers benefit from local knowledge and mining sector expertise.

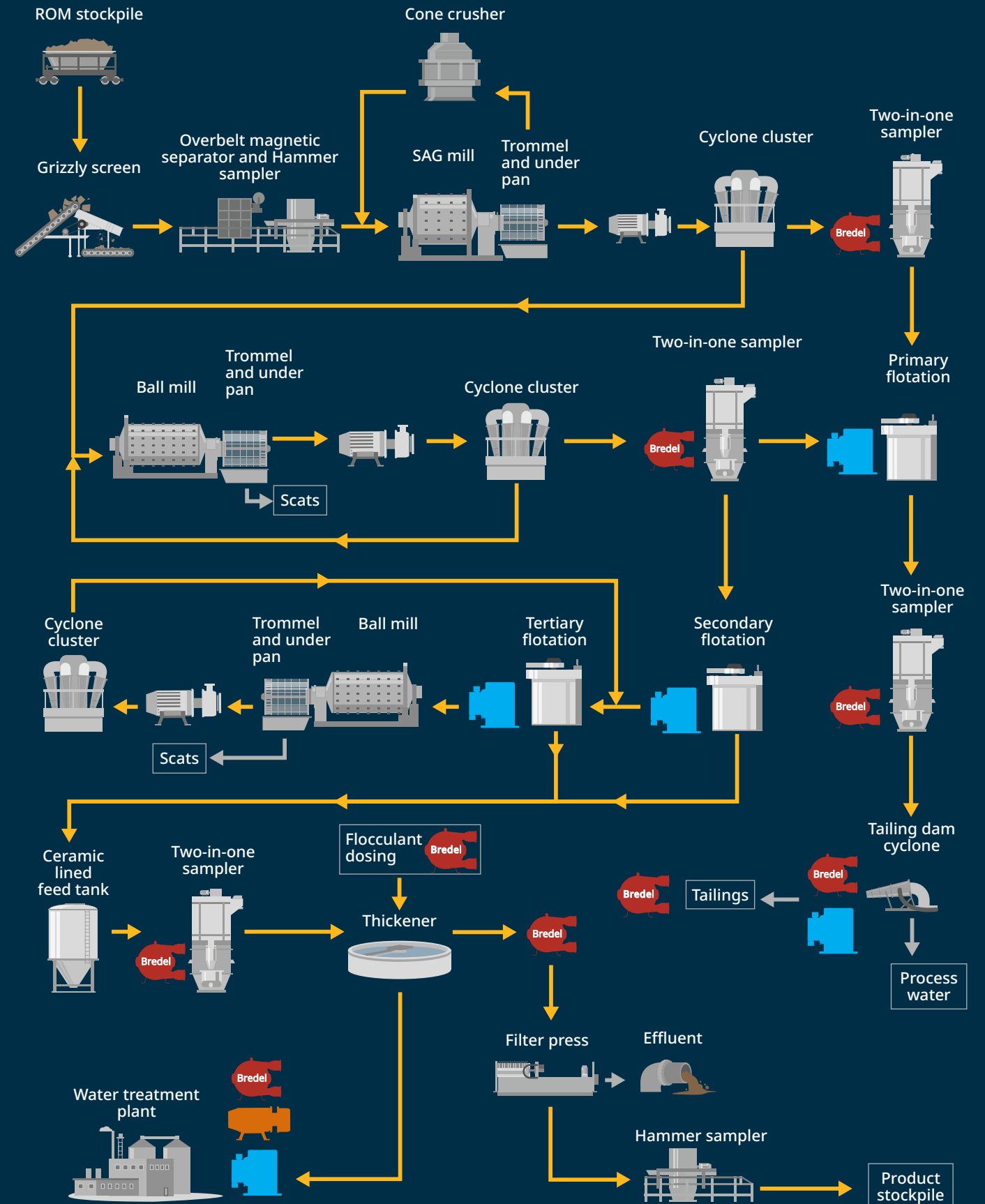
Our robust supply chain means spares are available locally at short notice, ensuring minimal impact on our customers process needs.

- Local applications and product support
- Reduce water consumption
- Lower chemical costs
- Reduce maintenance downtime

From metallic oxide to sulphide and carbon-based ore extraction, our pumps are specifically engineered for tough mining operations in harsh environments



Typical mineral processing overview



Sustainable transfer and dosing solutions in mineral processing

Reduce water consumption

Running an optimized, sustainable mining and mineral processing operation has never been so important, due to the challenges posed by water availability, rising costs and stricter environmental regulations.

Our reliable and efficient peristaltic pump technology for mining processes can achieve water savings of 71% compared to typical centrifugal pumps.

Clog-free, robust and reliable hose pumps can handle undiluted tailings and thickener underflow with up to 80% solids. As Bredel hose pumps do not have seals, they eliminate the need for water flushing, so reduce the treatment of process wastewater and the need for pump service water.

Lower chemical costs

Chemicals used in mineral processing are expensive and costly to transport to remote sites. Minimizing the risk of chemical spillage is a critical factor.

Our peristaltic pumps help engineers meet challenges in their processes. With no valves or impellers, our pumps have advantages of other pump types.

For flows up to 158.5 USGPH, Qdos chemical metering and dosing pumps ensure the optimum amount of chemical is dosed. For higher flow rates our Bredel hose pumps provide optimum chemical dosing.

- Less than 1% flow variation over the life of the pump, irrespective of pressure
- No moving parts in contact with the product or chemical
- Maintenance can be performed in-situ, in minutes, with no special tools or training required
- Self-priming and dry running without the need for ancillaries

A positive impact on the environment is created by decreasing the need for tailings storage and minimizing the number of basins required



Case Study

Bredel and Qdos pumps help to decontaminate minewater

At South Crofty tin mine in England, contaminated minewater is being pumped from underground shafts and treated before discharging into a nearby river. Cornish Metals Inc is using eight Bredel 40

hose pumps and three Qdos chemical metering and dosing pumps for vital roles at South Crofty.

Reliable, low-maintenance pumps

Qdos 120 pumps are used to dose hydrogen peroxide to oxidize the metals and cause iron and arsenic to precipitate out of the solution. Bredel hose pumps transfer excess sludge containing contaminants such as iron, manganese and arsenic from Lamella clarifiers, into a holding tank, from which a further Bredel pump pumps the sludge into a Deep Cone Thickener (DCT). The thickened sludge from the underflow of the DCT is pumped by a final Bredel pump into a holding tank, prior to disposal at a nearby tailing

storage facility. In future years it is planned that the sludge will be disposed of with tailings in the form of paste fill in the underground voids of the mine.

Sustainability benefits

Minewater treatment has led to drops in iron of around about 99%, arsenic of 95%, compared to the untreated minewater. An added sustainability benefit for South Crofty tin mine is the renewable energy the Water treatment plant generates. Water discharged from the mine powers a hydro-turbine that generates up to 15% of the power consumed by the water treatment plant.

Reliability of Bredel helps Chile-based mining company meet rising demand for lithium

One of the world's largest producers of lithium is benefiting from using Bredel hose pumps in its refining operations in Chile, with reduced leaks and downtime achieving cost savings at a time of expanding production.

Reducing maintenance downtime

The mining company is using Bredel hose pumps at its lithium processing plant, where lime dosing is the main application. The peristaltic pumps have stopped leaks and cut maintenance downtimes that were experienced with an alternative pump principal which the mining company previously used, resulting in chemical costs savings.

The Chile-based mining company uses Bredel 65 pumps to transfer lime to the reactors,

with a flow and discharge pressure of 8m³/h at 5 bar (2.2 liters/second at 72.5 psi) to:

- Avoid maintenance issues caused by lime solidification
- Eliminate leaks experienced with other pump technology
- Ensure an accurate dose according to the pH required

The Bredel 65 also transfers lime during the production of lithium hydroxide from the reaction of lithium carbonate and lime, with a flow and discharge pressure of 12m³/h at 6 bar (3.3 liters/second at 87 psi).

During lithium sulphate production in the press filter, the mining company uses Bredel 40 pumps to transfer lithium sulphate at 2m³/h at 7 bar (0.5 liters/second at 100 psi) as the pump avoids leaks and has the ability to handle low flow rate with 30-40% solids.



Case Study

Learn how peristaltic pumps work:
wmfts.com/how-do-peristaltic-pumps-work



A range of products for your processes

APEX hose pumps

- Flow rates to 27.3 USGPM
- Optimized for process uptime up to 116 psi pressure
- Seal-less, valve-less design lowers total cost of ownership
- Increased process uptime with precision machined hose elements



Bredel series hose pumps

- Flow rates up to 475 USGPM
- Handles abrasive slurries, corrosive acids and gaseous liquids up to 232 psi
- Designed for heavy-duty operation.
- Seal-less, valve-less design lowers total cost of ownership
- Minimal maintenance - just change the hose



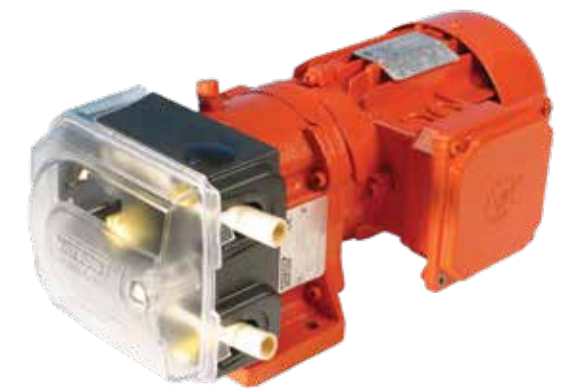
Qdos chemical metering and dosing pumps

- Flow rates from 0.001 USGPH to 158.5 USGPH
- Up to 130 psi pressure
- Cut chemical costs through higher accuracy metering
- Simple drop-in installation eliminates ancillary equipment
- One minute tool-free maintenance



Close-coupled pumps

- Flow rates from 0.02 USGPM to 5 USGPM
- Fixed or variable speed
- ATEX option available



INDUSTRIAL SOLUTIONS



Watson-Marlow Fluid Technology Solutions

Watson-Marlow Fluid Technology Solutions supports its customers locally through an extensive global network of direct sales operations and distributors

wmfts.com/global

