

Fluid handling solutions for tough mining applications



Sustainable transfer and dosing solutions in mineral processing

Reduce water consumption

Running an optimised, 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. Minimising 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 600 L/h, 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 minimising 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 oxidise 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

Case Study

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 litres/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 litres/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 litres/second at 100 psi) as the pump avoids leaks and has the ability to handle low flow rate with 30-40% solids.

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



A range of products for your processes

Bredel Heavy Duty hose pumps

- Flow rates up to 108,000 L/h
- Handles abrasive slurries, corrosive acids and gaseous liquids up to 16 bar
- Designed for heavy-duty operation.
- Seal-less, valve-less design lowers total cost of ownership
- Minimal maintenance - just change the hose



APEX hose pumps

- Flow rates to 6,200 L/h
- Optimised for process uptime up to 8 bar pressure
- Seal-less, valve-less design lowers total cost of ownership
- Increased process uptime with precision machined hose elements



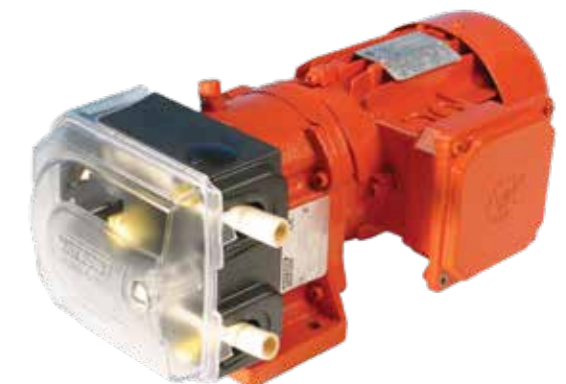
Qdos chemical metering and dosing pumps

- Flow rates from 0.1 ml/min to 600 L/h
- Up to 9 bar 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 0.09 L/min to 19 L/min
- Fixed or variable speed
- ATEX option available





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