



**Bredel**

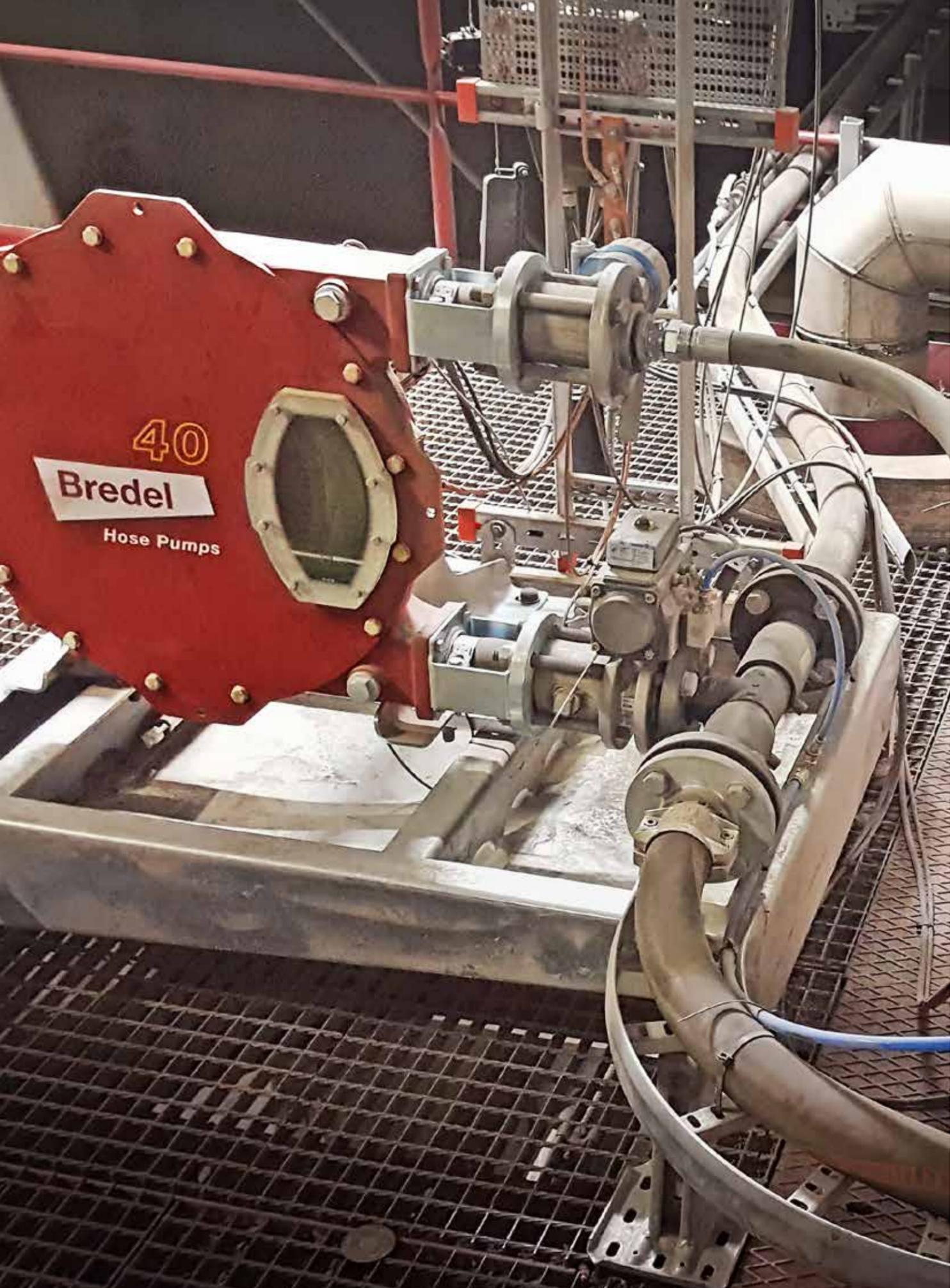
*Hose Pumps*

# Precision machined hoses from Bredel

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**WATSON  
MARLOW**

Fluid Technology Group

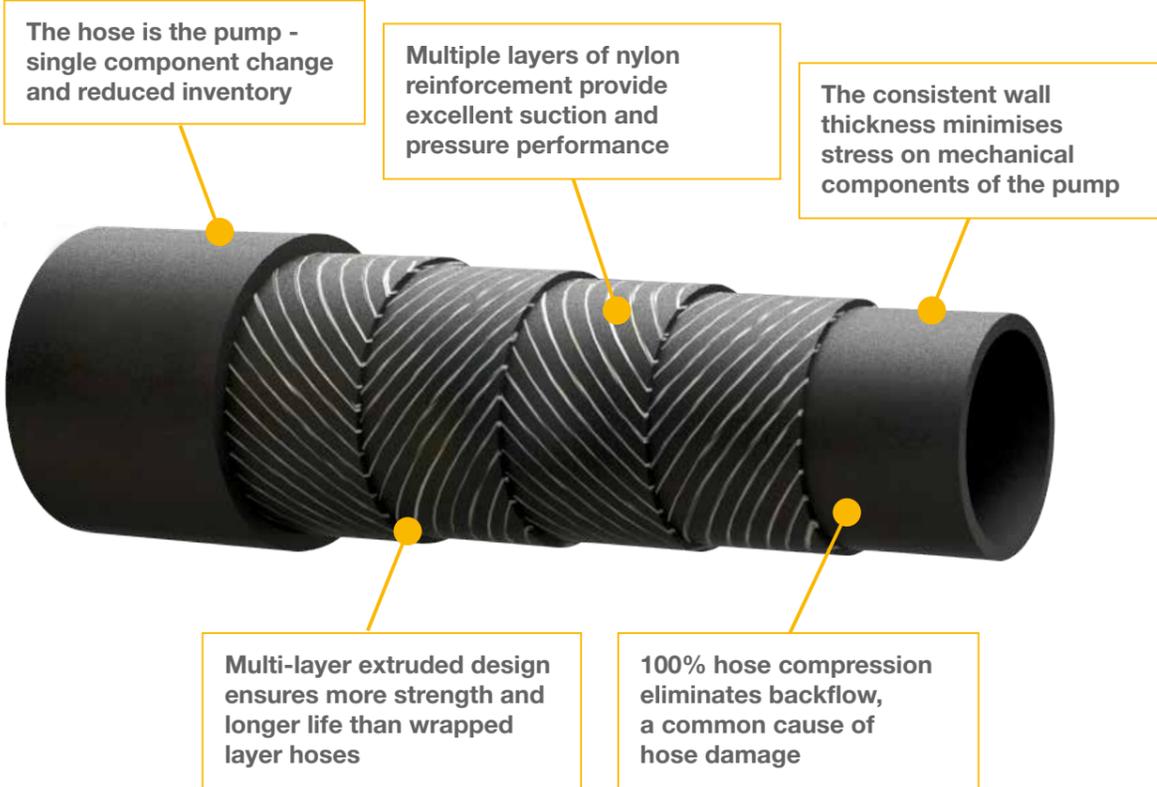


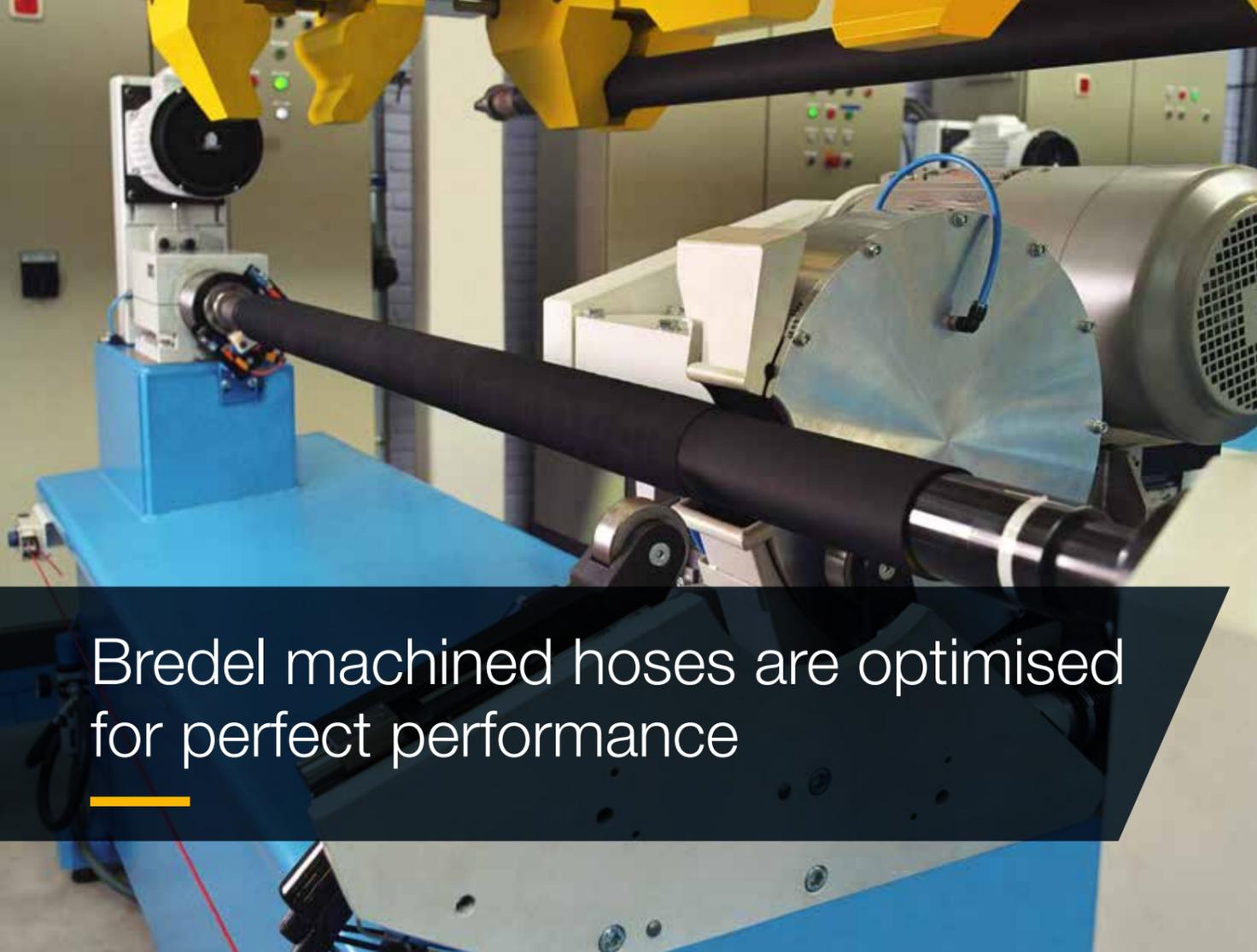
# Precision machined hoses – Maximise production uptime, minimise cost of ownership

Bredel hose pumps safely handle abrasive sludge, paste and slurries at 100% volumetric accuracy. Viscous fluids with up to 80% solids in suspension can be pumped with ease.

The fluid is fully contained within the hose, meaning no moving parts come into contact with the fluid to be pumped. This makes the hose the single most important component in the pump. Only precision machined hoses, manufactured to exacting standards, can provide accurate flow rates, long-life and 24 hour reliability.

At Bredel we are one of the only pump companies to manufacture our own high-performance hoses, specifically for use with our hose pumps, using the highest quality compounded rubbers, reinforced with layers of braided nylon.





## Bredel machined hoses are optimised for perfect performance

Bredel hoses are unmatched in quality and ensure maximum performance from our pumps. The benefits of a genuine, precision machined Bredel hose will always outweigh an alternative hose from any other manufacturer:

- Lower Total Cost of Ownership through reduced downtime
- Consistent flow rates over the life of the hose, even with varying viscosities and temperatures
- Fewer hose and lubricant changes compared to using non-machined hoses
- Lower spare parts inventory through single component change
- Using original spares protects the pump warranty



## How a machined hose works

Correct shimming minimises friction and hose wear

The hose is ground to meet the narrow tolerance in wall thickness. Re-shimming is not required when the hose is changed. This minimizes downtime and the risk of a reduced hose life.

A more equal load results in a smooth rotation and less heat generation

Consistent hose surface allows lubricant to flow between the hose and pressing shoe to maintain smooth rotation and low friction

In a hose pump, flow rate is determined by the internal diameter of the hose and the rotor speed. The precise tolerances of a machined hose ensures consistent compression with no pressure peaks. This minimises stress on the rotor, bearings or other mechanical parts.

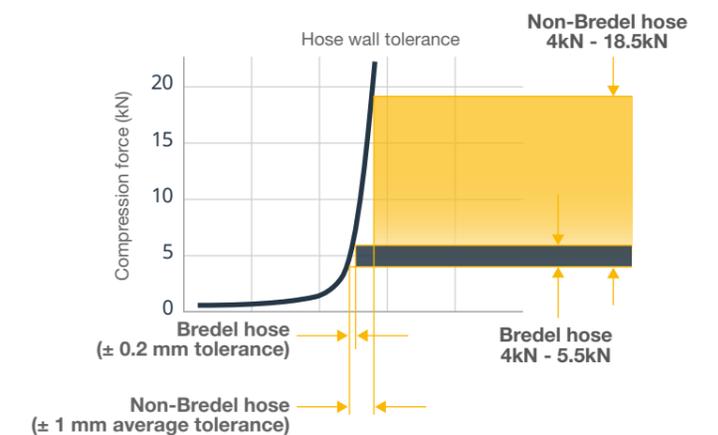
Hose restitution is determined by multiple extruded layers. In addition to maximising hose life and performance, this also serves to provide the pump with a very powerful, dry priming mechanism, allowing high viscosity fluids to be pumped with ease.

In a hose pump compression is matched to the rotation speed, discharge pressure and fluid temperature of an application, through use of shims. Correct shimming minimises friction and wear. Bredel hoses have a maximum tolerance of  $\pm 0.2$  mm wall thickness for precise hose compression. Once shims are fitted, no further adjustment will be necessary, even when the hose needs replacing.

## Non-machined hoses increase maintenance and cost

In contrast to Bredel hoses, non-machined hoses have an average tolerance of  $\pm 1$  mm in wall thickness, making uniform occlusion impossible. To prevent backflow the hose must be shimmed to match the thinnest part of the hose wall – far more than required in parts of the hose with thicker walls. This results in far higher compression than is necessary – a wall thickness variation of just 1mm will reduce hose life by at least 25%.

In the graph, it is possible to see how excessive shimming increases compression forces by over three times that of an equivalent Bredel machined hose.





## Product innovation is key to continued success

We continuously research and invest in new technology to ensure our products are best-in-class. We build strong relationships with the market to understand customer needs and ensure our solutions are matched to their applications.

As an example, at one customer visit, our Bredel specialist recommended replacing the natural rubber hose they were using in their Bredel 65 pump with a newly developed NR Endurance hose.

The Bredel 65 was installed to pump precipitated calcium carbonate waste containing sand and water in a slurry of between 100 to 1000cP.

By changing to the NR Endurance hose, the customer saw a 60% increase in hose life, reducing maintenance costs and further improving production uptime.

## The correct hose for your application

Bredel hoses are manufactured in a range of high quality materials to provide maximum chemical compatibility and outstanding resistance to abrasives for a wide a range of applications.



NR/NR Endurance	NBR	EPDM	CSM	NBR for food	F-NBR for food
Generally resistant to diluted acids and alcohols.	Resistant to oils (non-mineral), greases, alkalis and detergents.	Excellent chemical resistance, especially to ketones, alcohols and concentrated acids.	Outstanding resistance to strong, oxidising products and concentrated acids and bases.	Suitable for a wide range of food products including fatty foodstuff Compliant to EC1935/2004 Cleaned, capped and bagged.	White inner surface for food contact. Suitable for a wide range of food products including dairy.  Compliant to EC1935/2004 and FDA 21CFR177.2600 and meets 3A standards.  Cleaned, capped and bagged.
Max. 80C Min. -20C	Max. 80C Min. -10C	Max. 90C Min. -10C	Max. 80C Min. -10C	Max. 80C Min. -10C	Max. 80C (Max. CIP 60C) Min. -10C



## Customer support

Our local product experts are ready to work with you to select the correct hose for your application.

Hose material sample kits with complete hose material data, including temperature resistance, as well as instructions for immersion tests are also available on request.



## Specially formulated hose lubricant

No hose pump can function without lubricant. Genuine hose lubricant from Bredel has been specially formulated to minimise friction between the pressing shoe and the smooth surface of our machined hoses. Lower running temperatures means more production uptime. Bredel lubricant is also safe for use in the food industry.

## INDUSTRIAL SOLUTIONS



### Watson-Marlow Fluid Technology Group

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

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