RotaLube **Reduces Costs** and **Maintenance** in **Glass Fibre** Production

Case Study

Challenge

A major glass fibre manufacturer wanted to improve the performance and reliability of their manufacturing process. Due to the conditions of creating and melting sand/glass at 1,450°C the chains were also exposed to this heat, which impacted the life of the chain, resulting in downtime and increased operational costs. The customer's chains would wear to such an extreme rate that every 2 years, they were replacing them costing £66K each time.
Another issue with the lubrication system fitted was positive displacement systems.

This would spit oil onto the chain links through nozzles while the chain is operating. A common issue is that they would not lubricate the correct parts of the chain consistently, especially if the speeds are increased. A direct result of this is for the systems operation to be increased which results in over lubrication of the chain. The feed nozzles would become out of sequence if the nozzles were knocked or if there was a slight stretch of the chain. This meant there would need to be constant adjustments on the machine to ensure the lubricant hits the chain at the correct place.

- Extreme heat conditions caused the chains to wear out quickly, requiring replacements every 2 years at £66K each time.
- The ineffective system failed to consistently lubricate correct parts of the chain, leading to over-lubrication and required constant adjustments to maintain proper function.

Solution

To prevent over-lubrication and waste, we identified the need for Extreme Temperature RotaLubes, which operate at up to 320°C and are constructed from steel with RotaLube seals.

A bespoke RotaLube system was installed to replace the old system, ensuring precise lubrication even if the chain stretches. The system includes a 24V DC oil pump, a 6 litre reservoir, solenoid, regulators, and sensors. Operated by the machine's PLC, it tracks chain links and applies lubricant efficiently, enhancing operational efficiency and reducing maintenance.

+44(0)1254 311196 | sales@rotalube.com | rotalube.com
Unit 5, Greenbank Business Park, Dyneley Rd, Blackburn, BB1 3AB

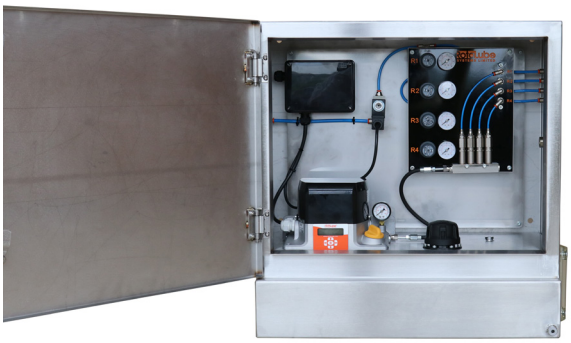

Photo: RotaLube System.

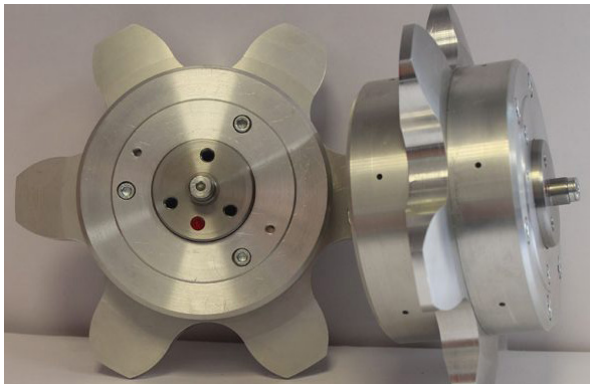

Photo: RotaLube Extreme Temperature.

Results

The customer saw immediate improvements in production after the installation of the new RotaLube system, reducing lubricant usage to just 8 litres per day, saving them over £10K annually.

Additionally, they noticed a significant decrease in scheduled maintenance stops due to the extended lifespan of the chains. The system's efficiency not only reduced lubricant waste but also lowered energy consumption, leading to further savings.

Overall, the annual cost savings, factoring in the environmental benefits and reduced power consumption, were estimated at around £38K.

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Glass Fibre Furnace System

A glass fibre furnace system is an essential part of the production of glass fibre, it is designed specifically to handle materials in extreme heat conditions.

It must be adapted to be heat-resistant, precise in its movements and speed (so all products are heated evenly) and a precise lubrication system to minimise friction and wear while in production.

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