



Case Study

Upgrade of Chain Conveyor for Corrosive Products

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A 4B customer was struggling with their drag chain conveyors transporting a corrosive by-product of crude oil processing. The chain was breaking and wearing fast, causing much downtime and production-time loss due to the repairs required on the conveyors. 4B resolved the problem with heavy duty links with corrosion-resistant pins and circlips improving the life of the chain conveyors by at least 50%.

The Challenge



A customer in Italy was struggling with the life of the chain inside their chain conveyors. (Picture: ©4B Braime Components Ltd.)

A customer in Italy was struggling with the life of the chain inside their chain conveyors. The chain conveyors were transporting a by-product of crude oil processing and were wearing extremely fast.

The wear was mainly due to the corrosive nature of the product and the strength of the chain installed. The corrosion was wearing the chain links and pins quite rapidly and the low chain strength led to rapid elongation of the links. These 2 issues combined resulted in many chain breaks and a lot of production time loss to maintenance on the conveyors.

The Solution



The chain conveyors were transporting a by-product of crude oil processing and were wearing extremely fast.

4B offered its 4B142HAD heavy duty chain links with pins in AISI420 and circlips in AISI304. These pins had a higher resistance to corrosion and the HAD link is 33% stronger than the standard HA link.

Because the link is through hardened, it remains quite strong in its core, even if the outer layer wears away. The chain solution was coupled with new sprocket segments made from Hardox 450 and treated to improve the corrosion resistance.

Results

The changes made to this chain have improved the life of the chain conveyor by at least 50%. These improvements are more substantial when the maintenance of the conveyor is more frequent.

4B Forged Chain



The Solution 4B offered its 4B142HAD heavy duty chain links with pins in AISI420 and circlips in AISI304.

4B's standard drop forged chain is made of special heat treated alloy steel, case hardened to Rockwell C57 C62 with a ductile core hardness of Rockwell C40. 4B's superior heat treatment technique provides the optimum chain link with a more resilient ductile core for shock resistance, and an extremely hard exterior surface for superior wear resistance.

4B's drop forged chain is backed by an international network of companies with over 130 years of experience, and a global team of engineers and sales professionals that can provide practical solutions for all material handling applications. 4B offers a FREE Chain Conveyor Design Service for both new and existing chain conveyors and technical support from a team of specialised engineers.