A whole lot of shaking going on

THE QUARRY INDUSTRY DEMANDS MACHINERY THAT'S TOUGH – FOR OBVIOUS REASONS. BUT IT'S NOT ONLY THE EQUIPMENT THAT HAS TO BE TOUGH. SO DO THE COMPONENTS THAT HOLD IT TOGETHER.

A premier manufacturer of aftermarket crusher wear and spare parts had tried various mechanical methods to lock threaded fasteners. Under the extreme loads experienced in quarrying applications, none was really successful. However, ultimately, Loctite threadlocking and retaining adhesives proved to provide the effective, permanent security they were looking for.

The ultimate test of an adhesive in a quarry has to be the primary crusher – doing a tough job, and expected to perform with minimum maintenance and maximum reliability. A failure of the primary crusher will soon bring production to a total standstill.

The machine comprises an eccentric crusher with manganese surfaces, rotating around a central shaft, with a counterweighted cone running on a large bronze bearing driven by a crown wheel and pinion located at the base. The bolts that fix the crown wheel to the bronze sleeve are constantly subjected to shock and severe vibration. To prevent them shaking loose, high strength, anaerobic, Loctite 2701 threadlocker is used. Applied as a liquid, it forms a 100% contact between the mating threads to provide a shock- and vibration-proof, corrosion resistant joint that permanently locks threaded fasteners.

The drive pinion from the motor shaft runs in roller or sleeve bearings. Here Loctite 641 Bearing Fit – a moderate strength retainer, ideal for parts that may subsequently be dismantled – is employed to secure the roller bearings to their housings. Applied to the shaft and housing, it solves problems caused by wear and fretting corrosion, forms a 100% contact between mating metal surfaces, and distributes loads evenly over the joint.

The crusher parts company also uses Loctite 406 Instant Bonding adhesive, to make up O-rings for oil seals, using 6mm diameter cord. Loctite 406 bonds a wide range of rubbers, plastics and elastomers, including EPDM, and used with Loctite 770 Polyolefin primer will bond 'difficult' materials including polyethylene, polypropylene, PTFE and thermoplastic rubbers.

To fill the void between the manganese wear plates and the main frame on the rock crushers, Loctite Nordbak® crusher backing is used. This allows the compressive forces to be transmitted uniformly to the machine's main frame.

As the Works Manager of the aftermarket manufacturer concludes: "We have tried alternatives, but nothing matches Loctite for performance and ease of use. Even in the quarrying industry, over many years, we have never experienced a premature failure of any Loctite product. With Loctite's track record, we no longer look anywhere else for industrial adhesives, sealants or coatings."

Bob Orme
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POSITIVE WASTE REDUCTION

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