



Energy Saving Rebuild for Industrial Tyre Shredder...

ERIKS UK has recently applied its engineering know-how to the re-manufacture of a tyre shredder used at one of the UK's largest tyre recycling centres. ERIKS' ability to provide repair services in addition to OEM component specification and supply has allowed it to provide a full service solution for machine rebuilding that few other companies can match. ERIKS specified and sourced a complete range of power transmission products for the in-house build, ensuring a more efficient and productive finished machine.

The tyre-recycling centre in question is the UK's newest and most up-to-date facility of its kind. The centre is capable of recycling up to 5 million individual tyres (50,000 tonnes) each year and reducing them to a fine quality crumb which can be used for a range of products including sports surfaces and children's playgrounds.

The operator had a requirement for a damaged tyre shredder to be fully overhauled. A large number of components needed to be repaired or replaced including the motors, gearboxes, couplings, bearings and drive chains; due to the high energy usage of the machine the client also saw this as an opportunity to up-date the shredder and make it more energy efficient.

ERIKS UK is a leading supplier of industrial products and engineering solutions working in the MRO and OEM sectors of industry. Its engineering know-how means it is one of the few companies in the UK capable of offering full rebuild solutions for large machinery - without outsourcing. With over 1,000 qualified suppliers ERIKS was able to rebuild the damaged tyre shredder using the most efficient and suitable components available.

The process started with a preliminary assessment and quote for the work. Following approval from the client, ERIKS engineers working at the company's large capacity (Transline Division) engineering workshops in Dudley completed a detailed strip-down and inspection of the entire machine. ERIKS then assessed each component and provided a replacement or repair recommendation.

Mahesh Patel, Technical Manager at ERIKS, says: "We have a lot of experience in both the supply and maintenance of industrial components. This has allowed us to develop a service that very few companies can match. Once we had seen the damage that had been caused we could identify which parts could be repaired and which needed to be replaced. We then worked with the customer throughout the project, specifying and supplying the best components for the job to rebuild and update the shredder; not having to outsource jobs to other companies allows us to drastically reduce lead times and manage costs."

Large 75kW WEG high efficiency motors were chosen to drive the main shears that reduce the tyres to a fine crumb, smaller WEG motors were also chosen to drive the primary handling rotors that feed the tyres into the shears. One of the many benefits of WEG's W22 range is its energy efficient performance, which reduces losses by between 10% and 40% when compared with typical motors.

Fenaflex Tyre Couplings were used to connect the motors to the inline gearbox. The couplings are highly efficient and will tolerate misalignment in all planes, as well as offering simple installation. The couplings also have excellent shock absorbing properties, isolating the motors from vibration and torsional oscillations. The Tyre couplings have zero backlash, which is ideal for reversing applications, especially when using geared drives. Wear can be detected through visual inspection, which means that there is no requirement for machine strip-down for maintenance checks. High-strength Falk gear couplings were used to drive the main gearbox from the two in-line primary reduction gearboxes.

The two in-line reduction gearboxes in the main drive system were stripped and assessed, due to the significant wear present on the gear teeth, all gear internals were replaced with new case carburised gears manufactured in-house. Seals and bearings were replaced or upgraded as necessary using leading brand components with high wear factors and lower friction coefficients for maximum efficiency. Right-angle Fenner gearboxes were used to drive the handling rotors and the opposing ends were mounted on SKF housed bearings, reducing the maintenance requirements and maximising robustness in the design.



In addition to the motors, couplings and gearboxes, ERIKS also supplied components such as seals, gearbox bearings, drive chain and sprockets. Each component was carefully specified to the optimum power handling and wear capacity, ensuring a long running life without the expenses associated with over specification. As all the components were supplied by ERIKS the lead-time was as short as possible and the rebuild completed on time to the customer's requirements with far less of a lead-time than would be required for a new unit.

About ERIKS UK

We offer over 90 years technical knowledge and experience from 76 nationwide industrial service centres, supplying over 500,000 unique industrial products. We have 88 integrated on site stores and procurement centres reducing the costs of all maintenance and repair products and industrial services. With 9 core competence centres and 23 fully equipped repair workshops maintaining equipment from electric motors, pumps, gearboxes, generators, transformers through to condition monitoring based preventative maintenance services, such as thermography, air leak surveys and vibration analysis.

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