

TL Turning & Locking System

AUTO SHREDDER

PROBLEM

A major US scrap metal recycler needed a replacement shaft turning and locking system for a large auto shredder at one of its facilities in central Florida. The turning/locking device is required when power to the shredder is shut off so crews can replace damaged hammers on the large mill rotor. During this maintenance operation, the rotor becomes significantly unbalanced as hammers get removed. This causes the rotor to rotate, creating a dangerous condition for workers.

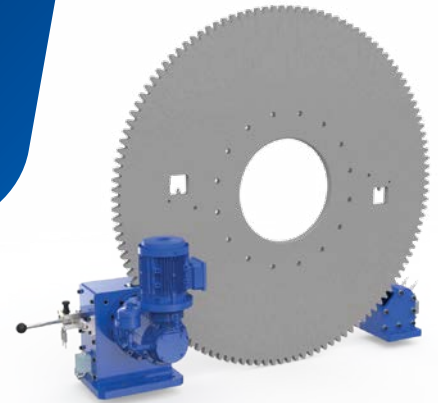
A manually-operated winch that required time-consuming movement of the rotor drive during maintenance had been previously installed on the shredder.

SOLUTION

Working closely with the facility operator, Twiflex™ engineers designed a stationary drive solution that was significantly more cost-effective than the competitive design.

The new Twiflex custom Turning/Locking (TL) System was installed on the hammer drum drive shaft near the 3000 HP drive motor. It allows continuous, bi-directional turning at slow speed so workers have easier access to damaged hammers. The remotely-operated locking device securely holds the rotor in place preventing unwanted rotation.

The compact system includes a manually engaged and disengaged turning gear drive pinion with a 1.1 kW motor to produce 21.7 kNm start-up torque, acting on a 1500mm dia. x 30mm thick, radially-split gearwheel with a nominal turning speed of 0.3 rpm. The locking device is a pneumatically engaged/disengaged tooth lock (2 teeth) which automatically engages with the gearwheel to provide 47 kNm torque.



HIGHLIGHTS

- Custom gear turning and locking system
- Multi-function, single interface
- Continuous bi-directional turning at slow speed
- Turning gear comprising gearwheel, motor and gearbox with fully monitored, remotely operated tooth locking device

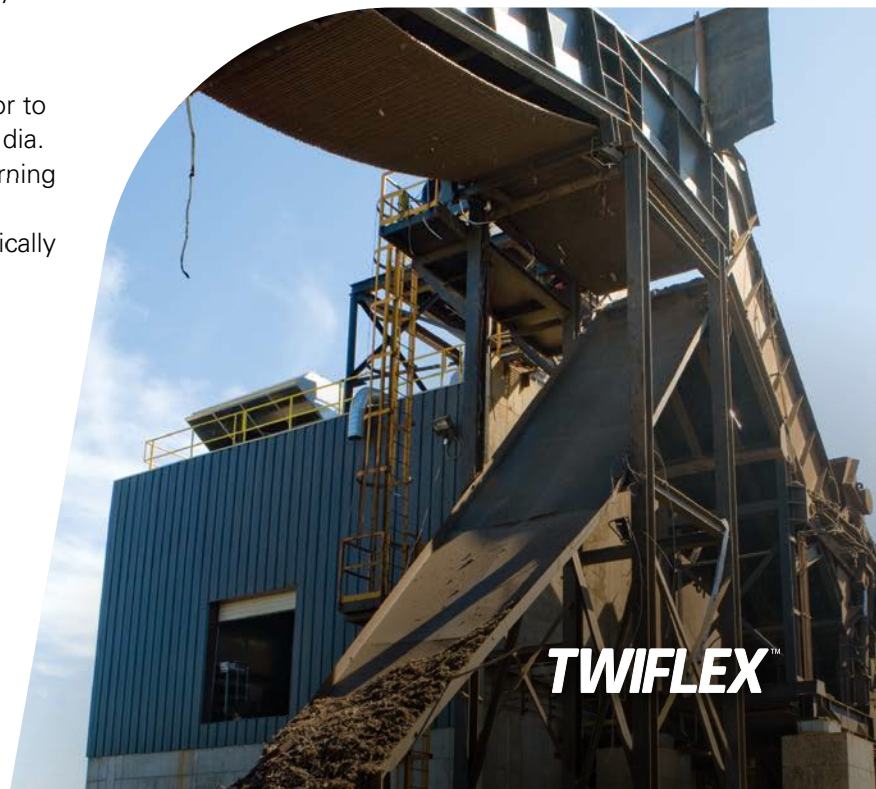
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