

Technofast hydraulic head nuts provide faster and safer liner changes for gyratory ore crushers

New EziTite Head Nut turns a 5 hour task with 5-6 personnel into a 45 minute task with 2-3 personnel.

CRESTMead, QUEENSLAND, AUSTRALIA, May 4, 2022 /EINPresswire.com/ -- Gyratory crushers handle some of the toughest ore and materials, and are therefore subject to rapid deterioration from abrasion, which means their internal wearing components need to be replaced regularly.

In order to change the mantle, which can happen as frequently as every 10 days in harsher environments, the retaining “[head nut](#)” has to be unfastened to allow removal of the worn component – a process previously done in a time-consuming and potentially hazardous way.



Technofast’s EziTite Hydraulic Head Nut being installed on a gyratory crusher

“The mantles are usually secured with standard nuts, which are often installed with hydraulic jacking hammers or flogging spanners, and removed by oxy cutting the burn ring below the nut to release the excessive force, which generally builds up during operation of the crusher,” explains Technofast Technical Solutions Manager, Matt Blundell.

“This method is not only physically demanding, but the cutting of the burn ring can be hazardous, and requires replacement after each use. Additionally, bolt load cannot be measured accurately,” he said.

A faster, safer method

To address the issues mining and quarrying operations were having with crusher mantle and liner changes, Technofast developed its EziTite® Hydraulic Head Nut, which has received an Australian Manufacturing Growth Centre grant, to commercialise the technology in Australia.

The EziTite Hydraulic Head Nut provides precise clamping forces generated by hydraulic pressure acting on a constrained area within the assembly. It is fitted with multiple in-built locking screws to retain these tensile loads after the hydraulic pressure is released.



A large diameter EziTite Head Nut at Technofast's warehouse in Queensland, as it is prepared for dispatch to a mining customer

“The old method used to take five or six personnel approximately five hours to complete the mantle change, which is a big chunk of downtime. With the EziTite Head Nut in place, the same job can be done in under an hour, with only two or three personnel. It really adds up when you consider that when they aren't crushing, they aren't making money,” says Matt.

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The EziTite Head Nut reduces machine downtime and increases operational safety for workers. It is designed to work with all major brands of gyratory crusher.”

Matt Blundell

The EziTite Head Nut is tightened using hydraulic force supplied through a pump, which means minimal physical effort is required and extremely accurate and even bolt loads can be achieved.

A maintenance supervisor for a the gold mine that implemented the Technofast EziTite Head Nut technology commented on its safety and time-saving features, saying “The EziTite Head Nut has made the job a lot easier labour-wise, faster, and also has eliminated any OH&S concerns

by getting away from using our jacking ram for the installation of Head Nuts. Using a hydraulic pump to achieve the load is also a no-brainer.”

How it works

1. The EziTite Hydraulic Head Nut assembly is screwed by hand onto the crusher shaft (replacing the original nut) until the base is tight against the working face of the mantle.
2. Hydraulic pressure is then applied through the nipple fitting on top of the nut body into the

sealed chamber, forcing the piston and the nut body apart, thus seating the mantle on to the machine's taper.

3. The force generated by the hydraulics is maintained by an array of locking screws which are tightened to take the load. The hydraulic pressure is relieved and the Sacrificial Cover which protects the mechanism against abrasion and corrosion can be easily fitted.

4. When it is time to remove the EziTite Hydraulic Head Nut, the installation procedure is reversed and the nut is removed by hand eliminating the need for large hammers and flame cutting of the burn ring, drastically reducing maintenance time and improving site safety.

5. In the unlikely situation that there is a hydraulic malfunction, the lock-screws can be released manually, and the assembly unscrewed by hand.

"The EziTite Head Nut reduces machine downtime and increases operational safety for workers. It is designed to work with all major brands of gyratory crusher, and the protective cover can be customised to suit the abrasiveness of the material being crushed," says Matt.

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