



CHALLENGE

SMS Mining Services runs a fleet of mining equipment operating in harsh environments. The company needs to change out cutting edges on its dozers regularly (every 2 - 6 weeks) due to the abrasiveness and harshness of the application.

The removal of the cutting edges on SMS's Caterpillar D10 Dozer requires the removal of 39 nuts located underneath the blade.

Removal of all nuts is attempted using large impact or powered torque wrenches. The remaining nuts are seized and require Oxy-Acetylene cutting. This results in removal tasks totalling 4-8 hours including set up and pack up.



LOCATION	Kalgoorlie, WA
YEAR	2016
INDUSTRY	Mining, Gold
COMPANY	SMS Rentals
EQUIPMENT	D10 Dozer



SOLUTION

A Segnut trial was conducted during August 2016. This involved installing 11 x 1-1/4" S9 Segnuts onto the cutting-edge of a D10 Dozer. The dozer underwent approx 300 hours of operation before the nuts were removed.

An external assessment of the productivity and efficiency gains was conducted by SECORA. **The study reported a very significant 60-80% total time savings.**

Set-up no longer involves the time to ready Oxy-Acetylene tools and put on associated PPE, plus there's no need to obtain and approve hot works permits. Nut removals are achieved in 1/12th of a turn, and pack up no longer requires a fire watch cooling period.

Industry feedback has also provided insights into certain process safety benefits. A number of hand lacerations have occurred from spinning plow bolts that have popped out of their square key recess during loosening of conventional hex nuts. Releasing the Segnut's sleeve in the TIGHTENING direction ensures that the bolt stays retained, preventing this from occurring. Fire hazards are eliminated and it's been noted that the retained (not Oxy-cut) bolts prevent the cutting edge from falling off during nut removal. There's no chance of tripping on an Oxy hose and hazardous manual handling is reduced as heavy powered wrenches are held overhead for a shorter period of time.



"The Segnut system not only reduces task duration and downtime, but eliminated health and safety issues associated with current removal methods."

SECORA



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