



COLLAR KEEPER® SYSTEM OVERVIEW

TBS Mining Solutions Collar Keeper® System (CKS) is an innovation designed to protect the pre-conditioned section at the top of each blast bench from the moment the drill bit engages with the ground surface, through to the blasthole completion.



HOW DOES THE PROCESS WORK?

The CKS is pushed into the loose ground behind the drill bit for the first 500mm (approx.) creating a temporary collar.

After the drilling of the hole is complete, the CKS module is detached to allow the insertion of a Collar Keeper® through the guide tube and then the module re-connects, and the Guide tube is retrieved, leaving the re-useable Collar Keeper® in place, protecting the blasthole for the remainder of the D&B process until stemming, where it is removed and re-used.

The Collar Keepers (CK) can be pre-scrolled (using Velcro strap) and stored in the drill cage. These are then easily deployed by the driller prior to dipping hole depth for QA/QC. After loading, the CK's can be easily retrieved by the shotcrew, re-scrolled, and placed onto the rig for continued reuse.

DIRECT BENEFITS

- » Redrill Reduction
- » Hole Depth Retention
- » Increased Drill Yield - Time
- » Lower Fuel Consumption
- » Lower CO2 Emissions
- » Collar Pipe removal (if used)
- » Design Powder Factor = Actual Powder Factor
- » Improved Energy Containment - Stemming

INDIRECT BENEFITS

- » Flat Bench to walk on
- » Safety – Slips, Trips, Falls
- » Improved Blast Outcomes
- » Fragmentation & Fines
- » No plastic Pipe in Crusher
- » No Plastic in Mill Trommel / Screens

COLLAR KEEPER SYSTEM IN ACTION

Collar & Drill Hole



Detach, Deploy & Retrieve



Protect & Control



WHY NEW TECHNOLOGY?

The Drill & Blast Function is critical for all downstream activities including the load & haul cycle through to crushing and grinding in the processing plant. Factors including retention of hole depths, reduced redrills, collar pipe reduction, consistent explosives per hole etc, all have a significant impact on Quality Assurance (QA) & Quality Control (QC) and the blast outcome for all mining operations.

WHY IS THIS TECHNOLOGY IMPORTANT FOR OUR CLIENTS?

Our clients are continually focused on delivering against their Vision & Values in everything they do. The Collar Keeper® Technology aligns to many of guiding principles that our clients are committed to such as:

- **Safety** Eliminating any unnecessary unevenness of the bench. Removing Collar Pipe manual handling. Reducing slip, trip risk around blast collars.
- **Efficiency** Reducing overall drilling time per pattern. Less rework on benches (redrills/fallback/dipping).
- **Total Cost** Improving fragmentation for Load & Haul through to processing facilities.
- **Environment** Reduction of waste. Reduction of CO2 emissions through lower drill fuel burn.

INTELLECTUAL PROPERTY (IP)

The Collar Keeper® System by TBS Mining Solutions Pty Ltd (TBS) is the subject of numerous Australian and overseas granted and pending patents owned exclusively by TBS. The patents provide exclusive rights in relation to the Collar Keeper® System including the Collar Keeper®, the Guide Tube and to methods of their use.

MORE INFORMATION

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