



RING BUILDING MSP

Multi-Step Process

Secure, standardize and optimize the TBM RING BUILDING process through an assisted, automated and fully controlled operating mode, significantly reducing human and technical risks.

The RING BUILDING MSP is engineered to optimize thrust cylinder management while continuously monitoring critical parameters such as vacuum levels and cylinder retraction. This process minimizes operator errors and enhances safety. Each phase of the ring-building process is precisely managed to ensure consistent and reliable execution, reinforcing safety standards throughout the operation. FAT and SAT performed in accordance with BYTP standards enable upstream validation of the TBM, reducing operational errors by 90%.

Safety and risk control

- › Continuous supervision of safety indicators
- › Controlled operating speeds in hazardous situations
- › Secure and repeatable operating sequences to protect operators and equipment

Typical application

- › High risk or complex TBM projects
- › Jobsites with frequent crew changes
- › Projects requiring high safety and quality standards
- › Clients seeking standardized and traceable ring erection processes



Key benefits

± Automated RING BUILDING Management

- › Ring erection sequence fully integrated into the TBM PLC
- › Supervision of segment erection based on predefined sequence requirements
- › Sequential thrust cylinder (TC) management according to ring type and key segment position
- › Automatic limitation of TC retraction (maximum 3 jacks)

± Counter Key Management

- › Ensures correct key segment positioning
- › Prevents segment misalignment
- › Guarantees ring structural integrity

± Continuous Vacuum management, safety and risk control

± Anti-Collision systems

- › Erector anti-collision logic to prevent contact with segments on the feeder
- › Segment feeder anti-collision program preventing dowel insertion into the next segment

± Assisted & Regulated Operations

- › Fully remote-controlled system (segment feeder, erector and thrust cylinders)
- › Regulated decision-making: random or arbitrary actions are not permitted
- › Each operator's action is monitored and controlled to reduce errors
- › Predefined and assisted erection and installation sequences