

Worker has thumb cut off after pinching hand in a bolting machine

On March 28, 2014, at around 2:45 p.m., a worker had been assigned to the bolting machine to do ground support. He was positioning Swellex bolts with wire mesh panels. The worker had finished positioning a bolt and pulled back the head of the bolter to proceed to the next hole. He then noticed that the steel puller (which is used to retain the steel) fell, and that the drill steel was coming out of the head of the bolter. The worker put his hand on the steel to replace it and accidentally activated the bolter rotation. The bolt pump hose coiled around the dolly and cut off the worker's left thumb.

Serious Accident

Date: March 28, 2014
Category: Underground mining
Task: Ground support
Position: Bolter operator

Causes of the Accident

- The equipment design allowed the worker to touch the steel with his hand while operating the remote control at the same time.
- The dolly steel has a hexagonal shape, which gives traction during rotation.
- The procedure does not mention how to use the steel puller. It also does not give clear instructions for when critical parts break and does not specify how to safely use the remote control, specifically when it comes to the positioning of the operator.



Photo source: Underground mine

Preventative Measures

Analyze the risks associated with the use of the bolter

- In the risk analysis, include the hazards associated with using the remote control.
- Determine whether it is possible to round the ends of the dolly steel.
- Make dollies out of only one piece of metal in order to avoid using an adapter with a hexagonal bit.
- Install an interlocking device that prevents rotation of the steel when the platform is nearby.

Train and inform workers about the risks associated with the remote control

- In the training, include the positioning of the worker and the use of remote controls when intervening on the equipment.
- Discuss the risks associated with exposure to rotating parts.
- Include the steel puller on the bolter inspection sheet or checklist.

Additional Information

Regulations

- Regulation respecting occupational health and safety, sections 172 to 193
 - Available online or for purchase at www.publicationsduquebec.gouv.qc.ca

Other documents

- *Roof Bolting Machine Operator Skills Training for a Walk-Thru Roof Bolter: Trainer's Guide*. Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health. August 2006, IC 9486 Information Circular. Pittsburgh, 52 pp.
 - Available online at <http://www.cdc.gov/niosh/mining/userfiles/works/pdfs/2006-135.pdf>
- Focus On Roof Bolter Safety: "Hands-off Drilling and Bolting." MSHA Prop 2013: Topic 2
 - Available online at <http://www.msha.gov/S&HINFO/Prop/PROP2013/PROP%20PublicationTopic%202.pdf>

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