



Universal Drill Rig Improves Productivity and Protects Workers

A universal rig for supporting large hammer drills: Reduced injury risk and improved productivity

David Rempel and Alan Barr. Safety Science, October 2015.

Overview

Drilling holes into concrete with heavy hammer and rock drills is one of the most physically demanding tasks performed in commercial construction and poses risks for musculoskeletal disorders, noise-induced hearing loss, hand-arm vibration syndrome, and silicosis. In this study, researchers designed a rig that supports heavy pneumatic or electric hammer drills, reducing worker exposure to noise, force, vibration and dust while improving productivity. Laborers and electricians conducted drilling in the field with the rig and provided feedback on seven successive iterations of the rig.

Key Findings

- The rig reduced operator fatigue in the neck, shoulders, arm, and lower back, and also reduced handle vibration.
- Workers reported that they had better stability, control, and accuracy using the rig than when using conventional, manual rock drilling methods.
- Workers cut drilling time approximately 50% by using the rig.
- Worker participation in the design of the rig was essential, leading to incremental improvements through the seven prototypes.

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See abstract:

<http://bit.ly/2j8lbNw>

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