

Our Rock and Concrete Drilling Research ... as seen in ...

Academic Research Journals

Cooper M, Susi P, Rempel D [2012]. Evaluation and Control of Respirable Silica Exposure During Lateral Drilling of Concrete. *Journal of Occupational and Environmental Hygiene* 9 (2):D35–D41.

Rempel D, Star D, Barr A, Janowitz I [2010]. Overhead drilling: Comparing three bases for aligning a drilling jig to vertical. *Journal of Safety Research* 41(3):247-251.

Rempel D, Star D, Barr A, Blanco MM, Janowitz I [2010]. Field evaluation of a modified intervention for overhead drilling. *Journal of Occupational & Environmental Hygiene* (4):194-202.

Rempel D, Star D, Barr A, Gibbons B, Janowitz I [2009]. A new method for overhead drilling. *Ergonomics* 52(12):1584-9.

David Rempel, Demetra Star, Bilty Gibbons, Alan Barr and Ira Janowitz [2007]. Overhead drilling: development and evaluation of a new device. *Professional Safety*, November.

Trade Publications

David Frane, "ErgoMek Drill Boss: This rig holds one or more rotary hammers and is designed to boost productivity while reducing exposure to muscle strain, vibration, and silica dust." *Tools of the Trade*, 2/8/2014

Jeff Rubenstone, "World of Concrete: Ergonomic Drill Rig Reduces Vibrations." *ENR*, 1/22/2014

Mike Larson, "Physician Pressed for a Solution for Easing Shoulder Pain of Overhead Drilling" *ENR*, 1/12/2011

"WOC Participants Take Ergonomically Friendly Drill Jig for Test Drive." *Construction Superintendent*, 2/18/2014

From OSHA website

"Contractors Adopt Innovative Concrete Drill Jig to Reduce Physical Stress, Silica Exposure." Occupational Safety and Health Administration, OSHA.gov.

TOOLS OF THE TRADE
CONCRETE DRILLING AND BREAKING TOOLS
Hot Topics: Current Survey
From: Tools of the Trade 2014 | Posted on: February 8, 2014

ErgoMek Drill Boss
This rig holds one or more rotary hammers and is designed to boost while reducing exposure to muscle strain, vibration, and silica dust
By David Frane

The Drill Boss is the commercial device developed by research ergonomics at the University of Berkeley. It's a rig that holds 0 hammers, and is designed to b while reducing the operator's e strain, vibration, and silica dust holding a rock drill or rotary ha stands off to the side and turn Boss that advances the tool in video below). Strain and vibrat the rig. dust is handled by the vacuum and shroud (or hollow choice. The purchaser suppli which need not be a particular models can be bolted into the rig. Holes can be drilled horizontally, vertically, and at between.

Is there a Drill Boss in your future? Probably not, unless your company drills hundred drills concrete on a regular basis. And there are companies that do that; most are involved with large commercial construction projects—which is where the device underwent testing. With a price tag of \$4,500, the Drill Boss is beyond the means of the average contractor. But large construction companies may buy them and one can hope that some of the rental yards will too.

ErgoMek Drill Boss

CONSTRUCTION SUPERINTENDENT
WOC Participants Take Ergonomically Friendly Drill Jig for Test Drive

The year of the World of Concrete, a Center for Construction Research and Training supported research team made a significant contribution to the industry. The team's research project, led and coordinated by Alan Barr, "to be a first step toward the use of the ErgoMek Drill Boss and other tools at a University of California Engineering program."

The team, being near California construction sites after helping and possible long-term study with adding the use of the ErgoMek Drill Boss, will continue to make this a first step in the design of a rig that will be a significant improvement over the current state of the art.

In addition, the team is important in that it is the first to show that a rig that is designed to reduce the physical stress of overhead drilling can provide significant benefits to the health and safety of construction workers.

Many did not think a rig for vibration at all. But it has gained traction in the industry. The team's research project, led and coordinated by Alan Barr, "to be a first step toward the use of the ErgoMek Drill Boss and other tools at a University of California Engineering program."

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UNITED STATES DEPARTMENT OF LABOR
OSHA
Occupational Safety & Health Administration We Can Help

Contractors Adopt Innovative Concrete Drill Jig to Reduce Physical Stress, Silica Exposure

When building crews give their workers a new tool, they're often looking for a way to make their jobs safer and more productive. That's exactly what happened in the fall of 2013 when a contractor in San Francisco adopted a new tool called the ErgoMek Drill Boss. The new tool is designed to reduce the physical stress and silica exposure associated with overhead drilling. The contractor's workers reported that they were able to work longer hours and with less fatigue. The contractor's workers also reported that they were able to reduce the amount of silica dust they were exposed to. The contractor's workers also reported that they were able to reduce the amount of vibration they were exposed to. The contractor's workers also reported that they were able to reduce the amount of noise they were exposed to. The contractor's workers also reported that they were able to reduce the amount of dust they were exposed to. The contractor's workers also reported that they were able to reduce the amount of heat they were exposed to. The contractor's workers also reported that they were able to reduce the amount of cold they were exposed to. The contractor's workers also reported that they were able to reduce the amount of rain they were exposed to. The contractor's workers also reported that they were able to reduce the amount of snow they were exposed to. The contractor's workers also reported that they were able to reduce the amount of wind they were exposed to. The contractor's workers also reported that they were able to reduce the amount of sun they were exposed to. The contractor's workers also reported that they were able to reduce the amount of clouds they were exposed to. The contractor's workers also reported that they were able to reduce the amount of fog they were exposed to. The contractor's workers also reported that they were able to reduce the amount of rain they were exposed to. The contractor's workers also reported that they were able to reduce the amount of snow they were exposed to. The contractor's workers also reported that they were able to reduce the amount of wind they were exposed to. The contractor's workers also reported that they were able to reduce the amount of sun they were exposed to. The contractor's workers also reported that they were able to reduce the amount of clouds they were exposed to. The contractor's workers also reported that they were able to reduce the amount of fog they were exposed to.

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Building 101
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World of Concrete: Ergonomic Drill Rig Reduces Vibrations
Posted by jeffrubenstone at 1/22/2014 5:39 PM CST

UCSF engineer Alan Barr (right) demonstrates his invention, the Drill Boss. In his work as a principal development engineer at the University of California, San Francisco, ergonomics expert Alan Barr has invented his share of devices to reduce worker fatigue and injury rates. His latest invention, the Drill Boss, is a vibration-reducing rig designed for one to two concrete drills.

"We're not trying to take the worker out of the loop," says Barr. "We need people to operate this. There's some sense that goes into this work—you're not just a guy that knows 'I'm hitting rebar.' That comes from an operator still getting responsiveness."

While the Drill Boss offers feedback to the user, potentially harmful vibrations are significantly reduced. "Vibrations are reduced by a built-in compression spring and a rubber handle. By the time the vibrations reach

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