

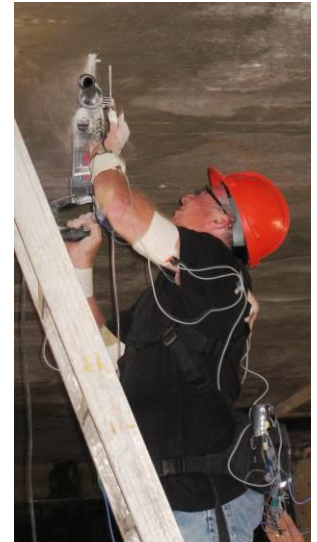


# Construction Fact Sheet

## An Innovation for the Drilling of Ceiling Anchor Holes

### The Problem

- Drilling holes in ceilings requires working on ladders or elevated work platforms.
- The work involves repeated forceful exertions while working above the shoulder.
- This task can be repeated hundreds of times throughout the work day.
- Drilling anchor holes may lead to fatigue and increases the risk of overall neck, shoulder, arm and hand injuries, such as tendonitis, bursitis and rotator cuff syndrome.
- The vibration transmitted from the drill to workers' hands, arms, and shoulders may further increase the risk of injury.



*The problem: Traditional method*

### One Solution

- Overhead work can be reduced with the **Drill Jack**, which is a foot-actuated, telescopic tool for drilling ceiling holes for anchors.

### How It Works

- The telescoping **Drill Jack**, attached to a hammer drill, is positioned directly below the drill location.
- By pressing a foot lever and simultaneously depressing the trigger, the Drill Jack forces the attached hammer drill into the ceiling to the required anchor depth.
- Overhead drilling, prolonged awkward static postures, handling of the heavy hammer drill, forceful exertions and working on an elevated work platform are reduced.



*Solution: Drill jack*

## Benefits

- Compared to the traditional method of drilling holes, this tool reduces a number of ergonomic risk factors such as repeated, overhead, forceful upper limb exertions.
- Workers have less chance of developing neck, shoulder, arm and hand injuries because the arms are kept below the shoulders and muscle forces/vibration exposure are reduced.
- Using the drill jack also increases the distance between the worker's eyes and face from the drill site which is a source of concrete dust and debris.
- In addition to these benefits, because the tool is used while the worker stands on the ground beneath the anchoring site, the use and handling of ladders, scaffolding and other elevated work platforms is entirely eliminated.
- Productivity may improve because there are no ladders, scaffolds, or lifts needed.

## For More Information

- Products related to this solution are described at [www.cpwr.com/simple.html](http://www.cpwr.com/simple.html).
- Products may also be found on the internet using the following search terms: "drill jack."
- Local contractor tool and equipment suppliers or rental companies may be another source of information on products.
- For general information on this solution, call the Infrastructure Health and Safety Association at 416-674-2726 or 1-800-781-2726.

This fact sheet is adapted from Extension Poles for Powder-Actuated Tools Tip Sheet, which we would like to give credit to the following: Albers, James T., and Estill, Cheryl F. (2007) *Simple Solutions: Ergonomics for Construction Workers*. DHHS, National Institute of Occupational Safety and Health (NIOSH) Publication Number 2007-122. <http://www.cdc.gov/niosh>. To view the full Table of Contents for the *Simple Solutions* document, please visit: <http://www.cpwr.com/simple.html>. *Construction Solutions* is an online product of CPWR – The Center for Construction Research and Training. Research used to develop and maintain *Construction Solutions* was funded by CPWR, using grant U54 OH008307 from NIOSH. The contents are the sole responsibility of the authors and do not necessarily represent the official views of NIOSH. For more information, visit [www.cpwr.com](http://www.cpwr.com) or [www.cpwrConstructionSolutions.org](http://www.cpwrConstructionSolutions.org)