

Date: Tue, 09 Feb 1999 09:11:10 -0600
From: Meredith Brown <racar@lanl.gov>
Subject: Yellow Alert: Modified Part Fails

Title: Machined Shank Disintegrates and Injures Worker

Identifier: 1999-NVO-BN-001
Date: 1/25/99

Lessons Learned Statement: Modification of parts from the original specification should be discouraged and implemented only with manufacturers approval and engineering support.

Discussion of Activities: On December 9, 1998, a worker was injured while using a stationary drill press to drill a hole in aluminum stock using a modified ½-inch shank in a Steel Hawk Arbor Assembly. When the worker turned on the drill press to make the initial cut, the assembly disintegrated at the ½-inch shank. The drill press shank was rotating at 360 rpm when the assembly disintegrated, and the aluminum stock had not been penetrated. A worker standing approximately 3 feet from the drill press was cut on the right hand by flying pieces of the Steel Hawk Arbor Assembly. The worker required 11 stitches.

Analysis: The shank was one of several 3/4-inch Steel Hawk Arbor Assembly Straight Shanks that had been machined down to a ½ inch shank. The shanks were originally machined down so they would fit into a portable metal boring cutter magnetic drill commonly used in construction areas. Apparently, the modified shanks were not compatible with drill presses.

Recommended Actions: The information was relayed to other shops within the organization and similar shanks were destroyed to prevent their inadvertent use in incompatible equipment. Site organizations were also directed to identify all old tools that have been modified and remove them from the system.

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Reviewing Official: Jeff Gordon
Priority Descriptor: Yellow Alert
DOE Functional Category: Engineering Design and Construction (Non-nuclear) User-Defined Functional Category: Health and Safety
Keywords: machined, shank, drill press, modification
References: N/A

Follow-up Actions: Information in this report is accurate to the best of our knowledge. As a means of measuring the effectiveness of this report, please contact the originator of significant action(s) taken as

a result of this report or of any technical inaccuracies you find. Your feedback is appreciated.