

Assessing the Safety of Your Machinery

Universal Gotcha Stick



Testing the allowable barrier opening size to ensure personnel safety

Regardless of whether an identified hazard is at the point-of-operation (the part of the equipment where the material or workpiece is positioned and work is performed) or another equally hazardous location of a machine, access to the hazard should be prevented.

In machine safeguarding, a guard (or barrier) is a physical method used to prevent exposure to a hazard and is one of the primary methods of protecting personnel from machine hazards. No matter what type of barrier guard is used (fixed, adjustable, movable, or interlocked), the guard should be designed to ensure that individuals cannot reach over, under, around, or through it and touch the hazard.

The “Gotcha Stick” Safe Distance Scale is based on the distance from the hazard and accurately tests the allowable barrier opening size to ensure personnel cannot reach through a barrier. This four segment stick features U.S. customary measurements on one side and Metric measurements on the other. The Gotcha Stick is the easiest means of verifying that openings in barrier guards will not allow the hazard(s) to be accessed by personnel reaching through a barrier guard.

Omron now offers an updated version of this useful tool. Previously, separate tools were required to test for conformance to the measurements set forth by either (1) OSHA regulations from 1971 or (2) by more recent anthropomorphic studies which have been adopted by ANSI and CSA standards. Those two tools were recently combined into one single tool that incorporated the most restrictive requirements to provide a combined measurement tool for conformance to both North American requirements. This tool can be used to determine the safe distance for guards with openings up to 49 mm (1.875 inches).

Now Omron has improved upon their design again. Our new tool uses the previous 3-segment design for North American compliance and adds a fourth section for compliance with measurements based on the international standard ISO 13857. This new tool also offers compliance with other U.S. standards which reference the international measurements, such as ANSI B65-1 and ANSI/SPI B151. This portion of the tool can be used to determine the safe distance for guards with openings up to 20 mm.

The new segment of this tool is colored ORANGE and is inverted to differentiate it from the North American section of the tool, which is colored YELLOW (see top of next page). Determination of which side of the tool to use is dependent upon the applicable standards for the application, including both the type of equipment as well as the region of use.

The part number for the new four segment Global Gotcha Stick (conforming to the guidelines of the OSHA, ANSI, CSA and ISO standards) is **88050-0090**.

Why Safety-Conscious Plant Operations Gotta Get a Gotcha Stick



Based on the latest regulatory data, the exclusive Gotcha Stick is used to quickly verify the mounting distances of fixed guards with gaps or openings and verify that they are the correct distance from hazardous machines and processes.

Proper Use

The Gotcha Stick is an anthropomorphic tool based on measurements of the human body, and is intended to be representative of the finger, hand and arm. The Gotcha Stick is a two-dimensional representation of these three-dimensional human body parts. As such, the tool must be used correctly to ensure barrier guards are located at a sufficient distance from the hazard.

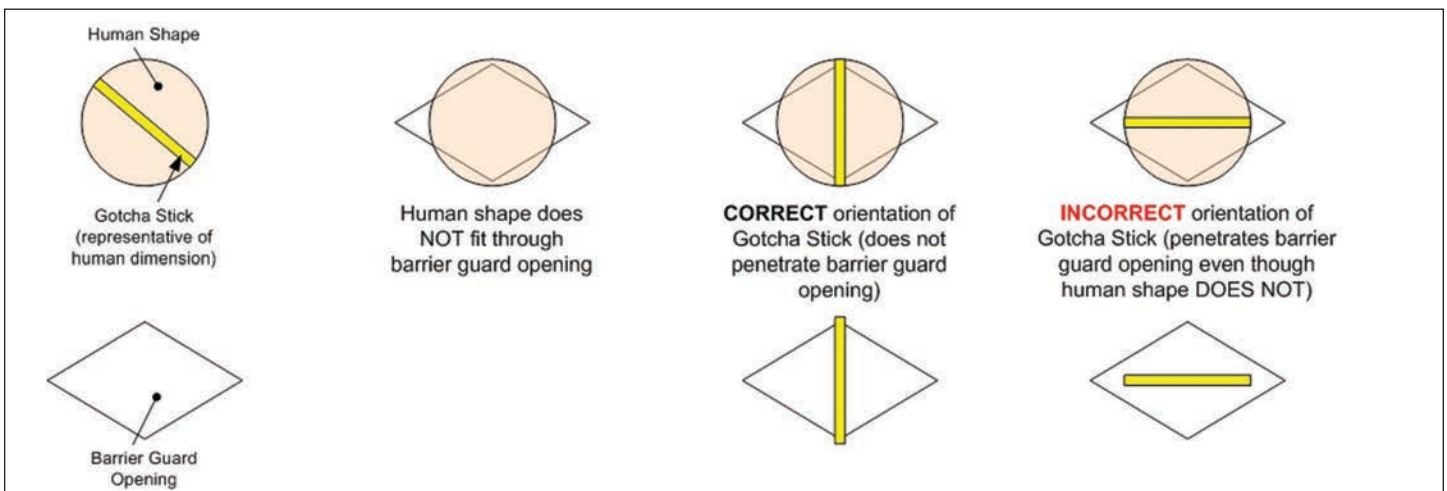
As shown below, the scaled side of the tool is placed perpendicular to the smallest dimension in the guard material and inserted toward the hazard. The guard should prevent the tip of the tool from reaching the hazard area. When multiple openings of various sizes exist in the guard, each opening should be tested with the tool according to this procedure.

History – North American Tool

The measurements set forth by Table O-10 of OSHA § CFR 1910.217 – Mechanical Power Presses only apply to mechanical power presses operated within OSHA’s jurisdiction (United States and all U.S. territories) or other equipment where machine-specific standards have adopted these values.

An updated anthropomorphic study (“A Review of Machine-Guarding Recommendations,” by Donald R. Vaillancourt and Stover H. Snook of the Liberty Mutual Research Center for Health and Safety) was published in 1995 and is based on the current U.S. workforce (consisting of more women and minorities), which therefore required adjustments to the scale. Although not officially adopted by

Orientation for Proper Use



OSHA, these measurements have been adopted by a variety of other consensus machine safeguarding standards, including:

- ANSI B11.19-2010 – Performance Criteria for Safeguarding
- ANSI/RIA R15.06-1999 (R2009) – For Industrial Robots and Robot Systems - Safety Requirements
- ANSI/ASME B15.1-2000 (R2006) – Safety Standard for Mechanical Power Transmission Apparatus
- CSA Z142-10 – Code for Power Press Operation: Health, Safety, and Guarding Requirements

- CSA Z432-04 – Safeguarding of Machinery - Occupational Health and Safety
- CSA Z434-03 – Industrial Robots and Robot Systems - General Safety Requirements

See Table 1 for a comparison of these two similar, yet different, measurement sets which apply in North America, and Table 2 for the combination of these measurements. The North American segments of the Gotcha Stick (in YELLOW) are representative of Table 2.

Table 1 — Comparison of Data Sets

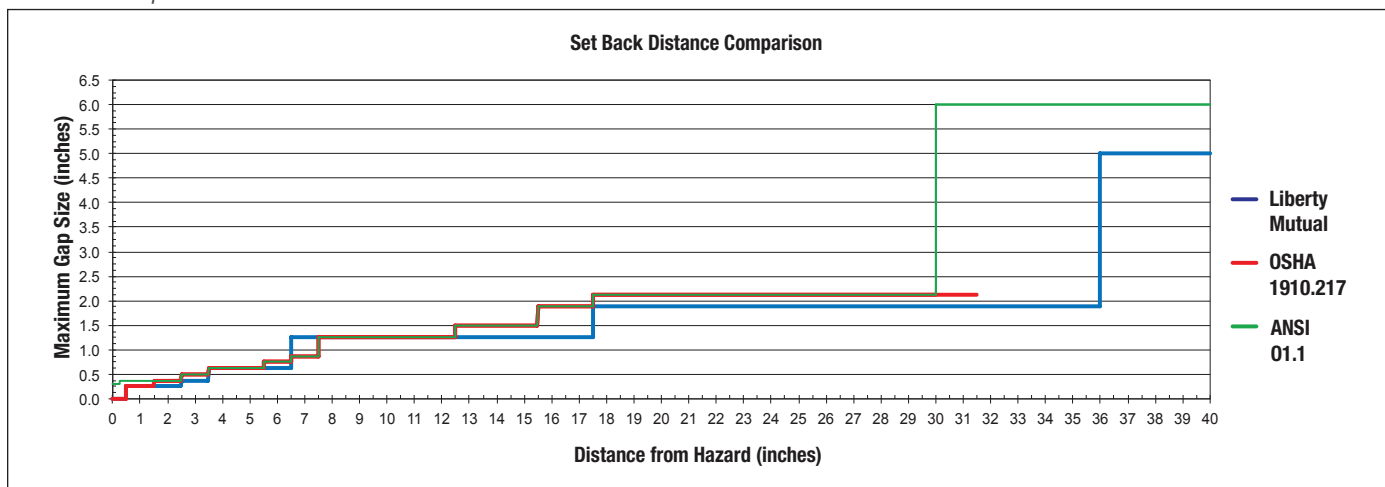
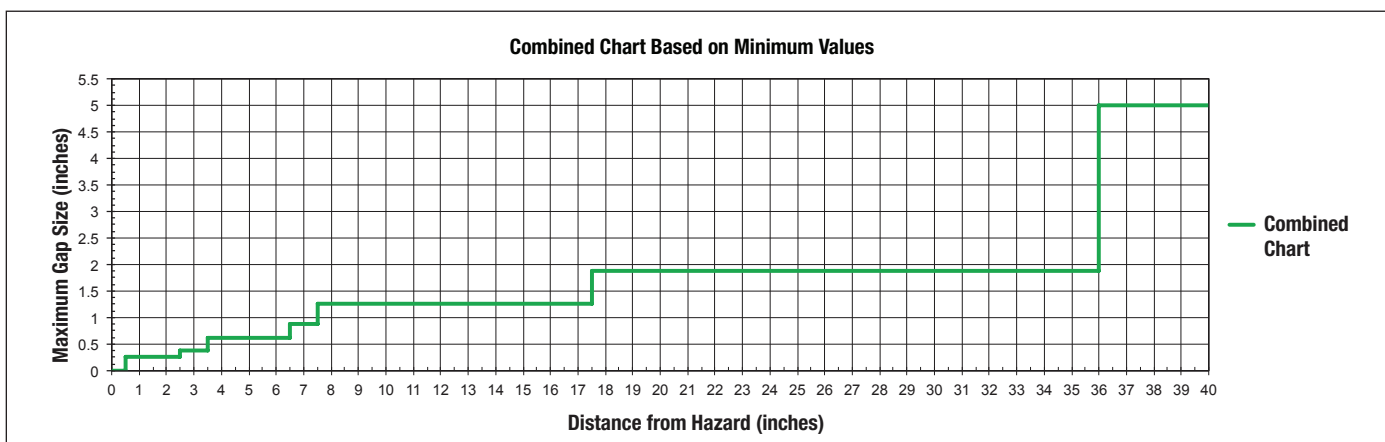


Table 2 — Combination of Data Sets



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