

**SUBJECT:** Shear Safeguarding

**Purpose:** To clarify safeguarding requirements for shears of the type designed primarily for metal shearing.

**Scope:** This policy applies MNOSHA-wide.

**Background:**

1910.212 covers general machine guarding and point of operation guarding, but does not specifically cover the safeguarding of metal shears. This instruction looks at the specific requirements for shear guarding found in ANSI B11.4-2003 R2008 and how to cite these using the 1910 standards.

- A. This policy applies to mechanical, hydraulic, or pneumatic shears designed primarily for metal shearing and operated manually, automatically, or semi-automatically. It also applies to shears designed for shearing other types of material and having the basic configuration as described. The machines covered include those constructed with a ram, bed, table, hold down and housings, utilizing one fixed moveable non-rotary blade for the shearing action, and having a constant rake (angle of one blade in relation to the other) for any one shearing stroke. Included are shears of the following types: squaring, crop shears, gap, right angle, plate, gate, pivot blade (swing beam), slitting – non-rotary, cut-to-length, and guillotine. Shears found in the stand-alone, manual; stand alone, automatic, and process line application are included. The stand-alone, manual shears may include initiation of a foot or hand control or feeding a sheet until it contacts a probe or other stroke initiating device.
- B. Shear types excluded from this policy are those which do not have one fixed and one moving non-rotary blade and do not utilize a constant rake for any one shearing stroke. Excluded are shears of the following types: slitting-rotary; nibblers; coil slitters; portable hand tools; rotary-blade slitters and shears; iron workers; angle, bar, beam, channel, and notching machines; alligator shears; rotary drum shears; and manually powered shears – a.k.a. jump shears (See Annex B, Figure 5 in the standard). Also excluded are shears used in the scrap iron and steel industry that are covered under ANSI Z268.1-1982.

- References:**
- 1. 1910.212(a)(1) states: "One or more methods of machine guarding shall be provided to protect the operator and other employees in the machine area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips and sparks." (Emphasis added.)
  - 2. 1910.212(a)(3)(i) defines the point of operation, for this subparagraph, as "the area on a machine where work is actually performed upon the material being processed." (Emphasis added.)
  - 3. 1910.212(a)(3)(ii) states: "The point of operation of machines whose operation exposes an employee to injury, shall be guarded. The guarding device shall be in conformity with any appropriate standards therefore, or in the absence of applicable specific standards, shall be so designed and constructed as to prevent the operator from having any part of his body in the danger zone during the operating cycle." (Emphasis added.)
  - 4. ANSI B11.4-2003 R2008, "Safety Requirements for Shears" defines the point of operation for a shear as: "The location in the shear where material or a workpiece is positioned and work is performed." Note that this definition differs from that given in 1910.212(a)(3)(i) and includes the hazard existing at the hold-

downs. This area is shown in Annex B, Figures 1 through 5 of the ANSI standard.

This standard specifies requirements for fixed, interlocked, or adjustable point of operation guards as well as awareness barrier devices, and presence sensing devices. It allows the use of properly applied awareness barrier safeguarding on metal cutting shears for situations in which it is impossible to employ a fixed guard or point of operation device due to the diversity of operations on the shear.

5. Federal OSHA Instruction STD 01-12-025 formerly called STD 1-12.25A, dated 7/12/94, allows the use of point of operation awareness barriers, as specified in ANSI B11.4-1993, for safeguarding metal-cutting types of shears covered by this policy.

**ACTION:**

- A. Acceptable safeguarding for the point of operation at the blade and at the hold-downs of shears is that which prevents the operator from having any part of the body in the danger zone during the operating cycle, or otherwise meets the requirements of ANSI B11.4-2003 R2008. The use of two-hand controls is recognized where both of the operator's hands on the shear hand controls with the hand controls located at such a distance from the point-of-operation such that hazardous motion stops before the operator can reach into the point-of-operation. Two-hand controls should be limited to shears with a part-revolution clutch, or hydraulic shears.
- B. Point of operation guards must prevent access to the point of operation under the blade or the hold-downs. Maximum openings for fixed guards and awareness barrier safe openings are shown in Table A.1 and Figure A.1 in the standard.
- C. 1910.212(a)(3)(ii) is to be cited if only the point of operation at the blade presents a hazard to exposed employees. The hazard at the hold-downs cannot be covered under this standard because of the definition contained in 1910.212(a)(3)(i).
- D. 1910.212(a)(1) is to be cited if the hold-downs, or the hazard at the hold-down and blade, present a hazard to which employees are exposed.

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