

ANSI B11.3 – 2002

American National Standard

for Machine Tools –
***Safety Requirements for
Power Press Brakes***



American National Standards Institute
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Designation

Approved American National Standards

ANSI–

B11.1–2001		<i>Safety Requirements for Mechanical Power Presses</i>
B11.2–1995	(R2000)*	<i>Hydraulic Power Presses – Safety Requirements for Construction, Care and Use</i>
B11.3–2002		<i>Safety Requirements for Power Press Brakes</i>
B11.4–1993		<i>Shears – Safety Requirements for Construction, Care and Use</i>
B11.5–1988	(R1994)*	<i>Iron Workers – Safety Requirements for Construction, Care and Use</i>
B11.6–2001		<i>Safety Requirements for Manual Turning Machines with or without Automatic Control</i>
B11.7–1995	(R2000)*	<i>Cold Headers and Cold Formers – Safety Requirements for Construction, Care and Use</i>
B11.8–2001		<i>Safety Requirements for Drilling, Milling, and Boring Machines</i>
B11.9–1975	(R1997)*	<i>Grinding Machines – Safety Requirements for Construction, Care and Use</i>
B11.10–1990	(R1998)*	<i>Metal Sawing Machines – Safety Requirements for Construction, Care and Use</i>
B11.11–2001		<i>Safety Requirements for Gear & Spline Cutting Machines</i>
B11.12–1996		<i>Roll Forming and Roll Bending Machines – Safety Requirements for Construction, Care and Use</i>
B11.13–1992	(R1998)*	<i>Single- and Multiple-Spindle Automatic Screw/Bar and Chucking Machines – Safety Requirements for Construction, Care and Use</i>
B11.14–1996		<i>Coil Slitting Machines/Systems – Safety Requirements for Construction, Care and Use</i>
B11.15–2001		<i>Safety Requirements for Pipe, Tube, and Shape Bending Machines</i>
B11.16–1988		<i>Metal Powder Compacting Presses – Safety Requirements for Construction, Care and Use (WITHDRAWN)</i>
B11.17–1996		<i>Horizontal Hydraulic Extrusion Presses – Safety Requirements for Construction, Care and Use</i>
B11.18–1997		<i>Machinery and Machine Systems for the Processing of Strip, Sheet, or Plate from Coiled Configurations – Safety Requirements for Construction, Care and Use</i>
B11.19–1990	(R1997)*	<i>Performance Criteria for the Design, Construction, Care and Operation of Safeguarding when Referenced by the other B11 Machine Safety Standards</i>
B11.20–1991	(R1997)*	<i>Manufacturing Systems/Cells – Safety Requirements for Construction, Care and Use</i>
B11.21–1997		<i>Machine Tools Using Lasers for Processing Materials – Safety Requirements for Construction, Care and Use</i>

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Registered Technical Reports

B11.TR1–1993		<i>Ergonomic Guidelines for the Design, Installation and Use of Machine Tools</i>
B11.TR2–1997		<i>Mist Control Considerations for the Design, Installation and Use of Machine Tools Using MetalWorking Fluids</i>
B11.TR3–2000		<i>Risk Assessment and Risk Reduction – A Guide to Estimate, Evaluate and Reduce Risks Associated With Machine Tools</i>

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ANSI B11.3

American National Standard for Machine Tools –

Safety Requirements for Power Press Brakes

Secretariat and Accredited Standards Developer:

**The Association For Manufacturing Technology
Attn.: Safety Department
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McLean, VA 22102**

Approved: FEBRUARY 14, 2002

by the American National Standards Institute, Inc.

American National Standard

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Foreword (This Foreword is not part of the requirements of American National Standard B11.3-2002)

The primary objective of this standard is to eliminate or control hazards to individuals associated with press brakes by establishing requirements for the design, construction, operation and maintenance of these machines. To accomplish this objective, responsibilities have been assigned to the supplier (e.g., manufacturer, rebuilder, reconstructor, installer, integrator), the user, and individuals in the working environment.

The words "safe" and "safety" are not absolutes. Safety begins with good design. While the goal of this standard is to eliminate injuries, this standard recognizes that risk factors cannot be practically reduced to zero in any human activity. This standard is not intended to replace good judgment and personal responsibility. Operator skill, attitude, training, job monotony, fatigue and experience are safety factors that must be considered by the user.

Press brakes and associated equipment technologies are continuously evolving. This standard is reflective of the most commonly used and time-tested state of the art at the time of its approval. The inclusion or omission of language relative to any evolving technology, either in the requirements or explanatory area of this standard, in no way infers acceptance or rejection of such technologies.

Inquiries with respect to the application or the substantive requirements of this standard, and suggestions for its improvement, are welcomed and should be sent to the AMT – The Association For Manufacturing Technology, 7901 Westpark Drive, McLean, Virginia 22102-4269, Attention: B11 Secretariat.

This standard was processed and submitted for ANSI approval by the B11 Accredited Standards Committee on Safety Standards for Machine Tools. Committee approval of this standard does not necessarily imply that all committee members voted for its approval. At the time this standard was approved as an American National Standard, the ANSI B11 Accredited Standards Committee was composed of the following member organizations:

John W. Russell, PE, CSP Chairman
Gary D. Kopps, Vice-Chairman
David A. Felinski, Secretary

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Name of Representative(s)

Delegate

Alternate

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Aluminum Extruders Council
American Institute of Steel Construction
American Society of Safety Engineers
Association For Manufacturing Technology
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U.S. Department of the Navy (NAVSEA)	William Hanna	William Thacker

At the time this standard was approved, the ANSI B11 ASC **B11.3 Subcommittee** had the following members who participated in the development of this revision:

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	Barry A. Stockton	High Tech Consulting
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Explanation of the format of the standard

This ANSI B11.3 – 2002 standard is divided into parts formerly referred to as sections or chapters and now referred to as clauses in line with the new ANSI style manual. Major divisions of clauses are referred to as subclauses and, when referenced by other text in the standard, are denoted by the subclause number (e.g., see 5.1).

The standard uses a two-column format to provide supporting information for requirements. The material in the left column is confined to “Standards Requirements” only, and is so captioned. The right column, captioned “Explanatory Information” contains information that the writing Subcommittee felt would clarify the standard. This column should not be construed as being a part of the requirements of this American National Standard.

Operating rules (safe practices) are not included in either column of this standard unless they are of such nature as to be vital safety requirements, equal in weight to other requirements, or guides to assist in compliance with the standard.

As in all American National Standards, the term “SHALL” denotes a requirement that is to be strictly followed in order to conform to this standard; no deviation is permitted. The term “SHOULD” denotes a recommendation, a practice or condition among several alternatives, or a preferred method or course of action.

Similarly, the term “CAN” denotes a possibility, ability or capability, whether physical or casual, and the term “MAY” denotes a permissible course of action within the limits of the standard.

By convention, the B11 standards do not use the term “and/or” but instead, the term “OR” is used as an inclusive disjunction, meaning *one or the other or both*.

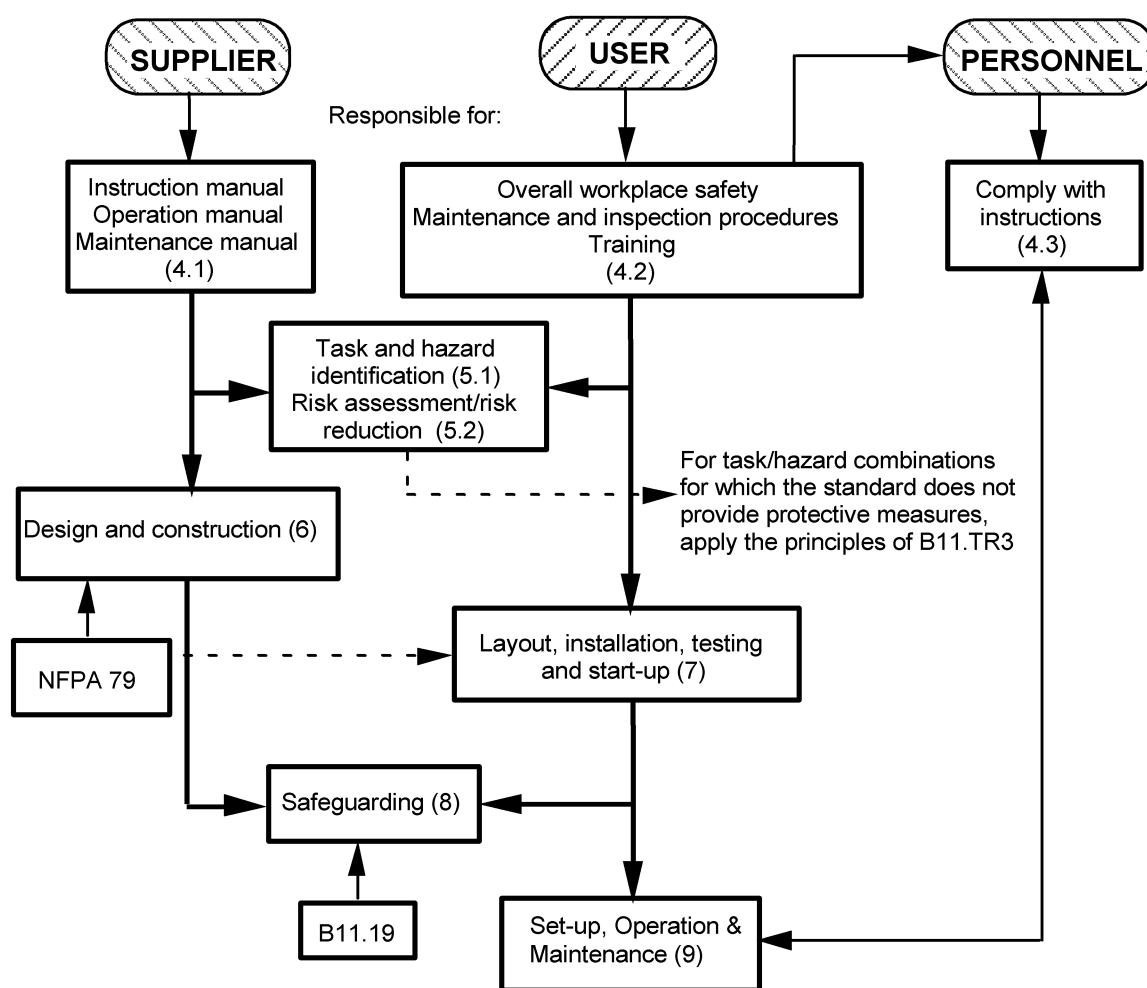
Suggestions for improvement of this standard will be welcome. They should be sent to AMT-The Association For Manufacturing Technology, 7901 Westpark Drive, McLean, VA 22102 – Attention: B11 Secretariat

Introduction

The primary purpose of every machine tool is to process parts. This is accomplished by the machine imparting process energy onto the workpiece. Inadvertent interference with, or accidental misdirection of the released energy during production, maintenance, commissioning and de-commissioning may result in injury.

The primary purpose of the ANSI B11 series of machine tool safety standards is to devise and propose ways to minimize risks of the potential hazards. This can be accomplished either by an appropriate machine design, by restricting personnel or other individuals' access to hazard areas, and by devising work procedures to minimize personnel exposure to hazardous situations. This is the essence of the ANSI B11 series of safety standards.

The responsibility for the alleviation of these risks is divided between the equipment supplier, its user and its operating personnel, as follows (numbers in parentheses refer to the clause numbers in these standards which address that responsibility):



Standard Requirements

Explanatory Information

American National Standard for Machine Tools-

Safety Requirements for Power Press Brakes

1 Scope

1.1 General

The requirements of this standard apply to those machine tools classified as power press brakes (hereinafter referred to simply as “press brakes”), which are designed and constructed for the specific purpose of bending material.

The requirements of this standard also apply to powered folding machines.

NOTE – Where used in this standard, the terms *machine* or *system* refer to the press brake or press brake production system.

1.2 Exclusions

Excluded from the requirements of this standard are: mechanical power presses; hydraulic power presses; hand brakes; tangent benders; apron brakes; and other similar types of metal-bending machines.

E1.1

To achieve this purpose, the press brake is provided with a plate-type ram and a plate-type bed with standard provisions for attaching standardized press brake tooling.

This machine is sometimes referred to as a “bending brake” or a “brake press.”

Where used in this standard, the terms “press brake” or “press brake production system” are intended to include powered folding machines.

2 Normative References

The following normative documents contain provisions that, through reference in this text, constitute provisions of this American National Standard. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements subject to this American National Standard should apply the most recent editions of the normative documents listed below.

29 CFR 1910.147: *Control of hazardous energy (lockout/tagout)* (For more information, www.osha.gov)

29 CFR 1910.333: *Selection and Use of Electrical Work Practices* (For more information, www.osha.gov)

E2 Informative References

ANSI / ASME B5.56M-1994, *Specification and Performance Standard, Power Shears*

ANSI B11.TR1–1993. *Ergonomic Guidelines for the Design, Installation and Use of Machine Tools.*