

ANSI B11.17-2004

American National Standard for Machine Tools -

Safety Requirements for Horizontal Hydraulic Extrusion Presses

Secretariat and Standards Developing Organization

The Association for Manufacturing Technology
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McLean, VA 22102
Attn: Safety Department

Approved: May 6, 2004
by the American National Standards Institute



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Foreword (This Foreword is not part of the requirements of American National Standard B11.17-2004.)

The primary objective of this standard is to eliminate, control or reduce hazards to individuals associated with horizontal hydraulic extrusion presses 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, modifier, rebuilder and integrator), the user, and individuals in the working environment.

The words "safe" and "safety" are not absolutes. An element of safety is attitude. While the objective of this standard is to eliminate, control, or reduce hazards, this standard recognizes that hazards cannot be practically reduced to zero in any human activity. This standard is not intended to replace good judgment, proper training, and personal responsibility. Operator skill, job monotony, fatigue, and experience are safety factors that should be considered by the user.

The original B11.17 Standard was approved in 1982 and reaffirmed in 1989 as originally written. B11.17 was then revised and approved in 1996. This current standard was then revised (its third) by the B11.17 Subcommittee, processed and administered by the Secretariat, and approved by the B11 Accredited Standards Committee for submittal to the ANSI Executive Standards Council as an American National Standard.

Horizontal hydraulic extrusion press technology is continuously evolving. This standard reflects 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 of the substantive requirements of this standard and suggestions for its improvement are welcomed and are to be sent to the AMT - The Association For Manufacturing Technology, 7901 Westpark Drive, McLean, Virginia 22102-4206. Attention: B11 Secretariat.

EFFECTIVE DATE

The following is informative guidance only, and not a normative part of this standard. This Subcommittee recognizes that some period of time after the approval date on the title page of this document is necessary for suppliers and users to develop new designs, or modify existing designs or manufacturing processes in order to incorporate the new or revised requirements of this standard into their product development or production system.

This Subcommittee recommends that suppliers complete and implement design changes within 30 months of the approval of this standard.

For existing or modified machines, users should confirm that the equipment / process has tolerable risk using generally recognized risk assessment methods. If the risk assessment shows that modification(s) is necessary, refer to the requirements of this standard to implement protective measures for appropriate risk reduction.

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 document was approved as an American National Standard, the ANSI B11 Accredited Standards Committee was composed of the following member organizations:

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 Gary D. Kopps, Vice-Chairman
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Organizations Represented

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 Metal Building Manufacturers Association
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At the time this standard was approved, the ANSI B11 ASC **B11.17 Subcommittee** had the following members who participated in the development of this revision:

Henry W. Dowler, Chairman, Werner Co.
 Alan Bartelt PE, Secretary, Alcoa

Jerry Burt	Chase Brass
Floyd Kent	Hydro Aluminum
David Kurtak	UBE Industries
Rich Rutkowski	SMS Eumoco Inc.
Robert Smith	R.L. Best Co.
Barry Stockton	High Tech Consulting

Explanation of the format, and ANSI B11 conventions

This ANSI B11.17 – 2004 standard is divided into parts formerly referred to as sections or chapters and now referred to as clauses in line with the current 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 believed would help to clarify the requirements contained in the standard. This column should not be construed as being a part of the requirements of this American National 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 causal, and the term “MAY” denotes a permissible course of action within the limits of the standard.

B11 conventions: 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. 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*. A distinction between the terms “*individual*” and “*personnel*” is drawn. Individual includes personnel (employees, subcontractors, consultants, or other contract workers under the indirect control of the supplier or user) but also encompasses persons who are not under the direct or indirect control of the supplier or user (e.g., visitors, vendors, etc.). Gauge refers to a measuring or testing instrument; gage refers to a limiting device (e.g., backgage).

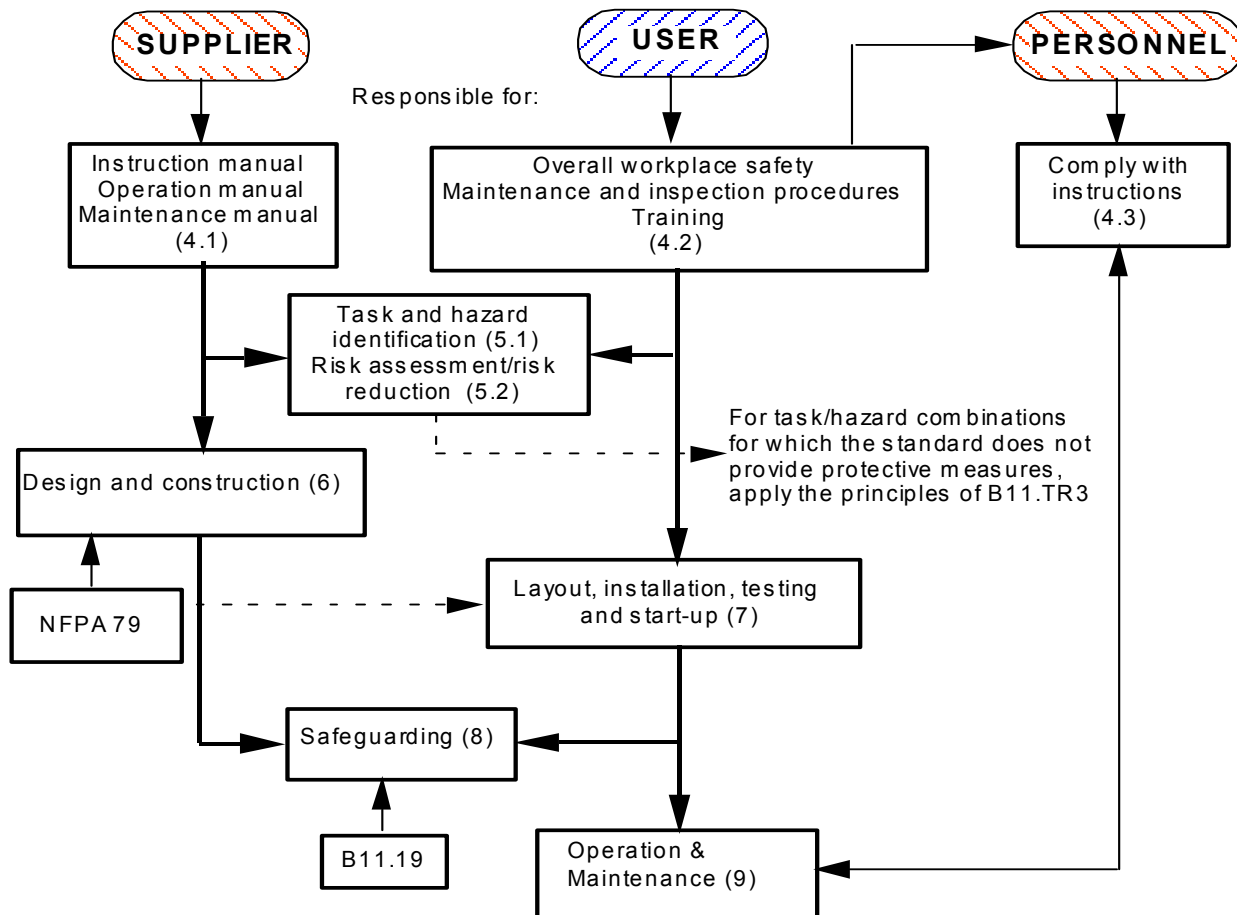
Suggestions for improvement of this standard will be welcome. They should be sent to AMT-The Association For Manufacturing Technology, 7901 Westpark Drive, McLean, VA 22102 - Attention: B11 Secretariat.

Introduction

The primary purpose of every machine tool is to process parts. Hazards exist that may result in injury during production, maintenance, commissioning and de-commissioning.

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 to reduce these risks to a tolerable level, or eliminate them 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):



As an aid to both supplier and the user, an audit checklist of important requirements has been provided in Annex C.

American National Standard for Machine Tools -

*Safety Requirements for Horizontal Hydraulic
Extrusion Presses*

STANDARD REQUIREMENTS

EXPLANATORY INFORMATION

(Not part of the requirements of American National Standard for Machine Tools—Safety Requirements for Horizontal Hydraulic Extrusion Presses- ANSI B11.17-2004)

1 Scope

1.1 General

The requirements of this standard apply only to those horizontal hydraulically powered presses that extrude metals by means of applying sufficient pressure to an individual metal billet, confined within a container, to force the metal to be extruded through the configured openings of a die. The horizontal hydraulic extrusion press, hereafter referred to as a *press*, is a hydraulically powered machine that functions to extrude metals horizontally either by the direct or indirect process. It includes components necessary to handle and process metals from the loading mechanism through the platen exit or external butt shear. Components include control systems, hydraulic power systems, main force application cylinder and ram, auxiliary hydraulic and pneumatic cylinders that move components that are an integral part of the extruding machine, material loading mechanism, material pressure containment device, tooling used to apply forces to and form the material, tool handling equipment that function with the press operating cycle, shearing mechanisms, and process and equipment lubricating devices.

1.2 Exclusions

Specifically excluded from this standard are hydrostatic extrusion presses, vertical extrusion presses, laboratory presses used to develop extrusion techniques for new materials and products, and extruding machines of unconventional design.

E1.1

See Figures 1, 2 and 10 for examples of horizontal hydraulic extrusion presses.

E1.2

Machines of unconventional design include, but are not limited to, machines that induce extrusion by using rotating circular containers, endless moving steel belts, or moving segmented containers and viscous fluids.