ANSI B11.5-1988 (R2008)

American National Standard for Machines

Ironworker

Safety Requirements for Construction, Care and Use

Secretariat and Accredited Standards Developer
AMT – The Association For Manufacturing Technology
7901 Westpark Drive
McLean, VA 22102

Approved: August 23, 1988
Reaffirmed: July 15, 2008

by the American National Standards Institute, Inc.

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Foreword

(This Foreword is not part of American National Standard B11.5-1988.)

Recognizing the uniqueness of ironworkers and the need for a safety standard for them, Accredited Standards Committee B11 on Safety Standards for Machine Tools established Subcommittee B11.5 in 1972, to develop the safety requirements for this equipment. The first standard was approved by ANSI on September 18, 1975, and reaffirmed on December 1, 1981. For the most part, this standard represents a minor revision of the original document by incorporating changes that update the standard with current references to other American National Standards and their illustrations, and the latest ANSI Style Manual.

Producing a workable safety standard treating the construction, safeguarding, care, and use of ironworkers is complicated by the wide variety and sizes of ironworkers manufactured and in use, and by the infinite combinations of methods and operations used to produce parts. Safeguarding the multiple work stations for the limitless variety of workpiece cross sections is further complicated by the need to preserve the flexibility and universal application of iron workers.

Recognizing the difficulty in defining specific guarding requirements for all applications of ironworkers without detracting from their productivity and flexibility, the committee approached its primary objective of eliminating injuries to personnel associated with ironworkers from four directions:

(1) Eliminating by design certain recognized construction hazards and establishing standard approaches to design so that the machines available from competitive manufacturers will have similar operational and control characteristics.

(2) Safeguarding the point of operation to protect personnel should they inadvertently expose themselves to hazards at the point of operation.

(3) Eliminating by design, procedure, and process the necessity of having the operator place his hands or fingers within the point of operation at any time the particular work station has not been made inoperative, thus minimizing his exposure to point-of-operation hazards.

(4) Establishing guidelines for general training and specific job-related instructions for eliminating unsafe practices and procedures.

To implement these requirements, responsibilities have been assigned to the manufacturer, the reconstructor, the modifier, the employer, the employee, and the owner.

To assist all persons concerned in complying with the requirements of this standard, all explanatory information has been placed in the right column, adjacent to the requirements to which it applies.

Recognizing the difficulty of updating equipment immediately after the approval date of the ANSI B11.5-1975 standard, a three-year period was suggested before the applicable construction requirements of this standard become effective for former installations. All grace periods have long since expired.

Suggestions for improvement of this standard will be welcome. They should be sent to the National Machine Tools Builders' Association, 7901 Westpark Drive, McLean, Virginia 22102-4269, Attention: Safety Department.

This standard was processed and approved for submittal to ANSI by the Accredited Standards Committee on Safety Standards for Machine Tools, B11. Committee approval of the standard does not necessarily imply that all committee members voted for its approval. At the time it approved this standard, the B11 Committee had the following members:

J. W. Hart, Chairman

William Atkinson, Jr, Secretary

Organization Represented	*Name of Representative*
Aerospace Industries Association of America, Inc	Gerald W. Lancour
Alliance of American Insurers	Joseph W. Hart
American Boiler Manufacturers Association	William Axtman
	Frank Perrera
American Institute of Steel Construction	John Conley

Organization Represented	*Name of Representative*
American Insurance Services Group	Charles Peshek
American Society of Safety Engineers	Alfred Auerhaan
Defense Industrial Plant Equipment Center	Garland Smith
International Union, United Automobile, Aerospace and Agricultural Implement Workers of America (UAW)	Barrie Brooks
Machinery Dealers National Association	Jack Walker
Metal Building Manufacturers Association	Gary Beck
Motor Vehicle Manufacturers Association	Kenneth Lauck
National Association of Government Labor Officials	Jerry Skeers
National Electrical Manufacturers Association	James Rice
National Machine Tool Builders' Association	Emmett McCarthy
National Safety Council	Robert Jordan
National Tooling & Machining Association	William Ruxton
Presence Sensing Device Manufacturers Association	James Kirton
Rubber Manufacturers Association	James Kendall
Sheet Metal & Air Conditioning Contractors' National Association	Charles Baxter
Society of Manufacturing Engineers	Theodore Wire
Steel Plate Fabricators Association	Earl Bratton
U. S. Department of Labor, Occupational Safety & Health Administration	James L. [illegible]ly (Not Voting) Frank A. Smith (Alt) (Not Voting)

Subcommittee B11.5 on Safety Requirements for the Construction, Care, and Use of Ironworkers, which developed this standard, had the following members:

Robert Patrick, Chairman
Thomas Boyer, Secretary

Bob Brown
Fred J. Brown
Jim Dvorak
Leon Feterl
Arthur Kroetch
Don LeTourneau
Walt Lips
Warren H. Ober

Contents

Explanation of Standard Format

American National Standard B11.5-1988 uses a two-column format to provide both specific requirements and supporting information.

The left column, designated "Standard Requirements," is confined solely to these requirements and is printed in bold type. Where supporting tables, photographs, or sketches are required, they are designated as "tables" or "figures."

The right column, designated "Explanatory Information," contains only information that is intended to clarify the standard. This column is not a part of the standard. Where supplementary photographs or sketches are required, they are designated as "illustrations."

All material designated as "tables," "figures," or "illustrations" appears at the end of the standard.

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

American National Standard for Machine Tools –

Ironworkers – Safety Requirements for Construction, Care, and Use

STANDARD REQUIREMENTS

EXPLANATORY INFORMATION
(Not part of American National Standard for Machine Tools—Ironworkers—Safety Requirements for Construction, Care, and Use, ANSI B11.5-1988)

1. Scope, Purpose, and Application

1.1 *Scope.*

***1.1.1** General.* **The requirements of this standard apply to those combination, multipurpose powered machines that punch, shear, notch, cope, and form metals or other materials, commonly referred to as ironworkers.**

***1.1.2** Specific Types of Ironworkers Included.* **The requirements of this standard also apply to those single- or multipurpose powered machines similar in construction to, and identical in the use of, an ironworker or portions thereof, such as, but not limited to, the following:**

(1) Single-end punches
(2) Double-end punches
(3) Structural shearing machines
(4) Notching machines
(5) Coping machines
(6) A combination of (1) through (5)

***1.1.3** Specific Types of Ironworkers Excluded.* **The requirements of this standard shall apply to all ironworkers or combinations as defined in 1.1.2, but excluding the following.**

(1) Alligator shears
(2) Bar shears
(3) Billet shears
(4) Manually powered machines
(5) Nibblers
(6) Portable hand tools
(7) Portable machines
(8) Power press brakes
(9) Power presses
(10) Power shears

E1.1.2 Specific Types of Ironworkers Included. Because of the numerous special names used in different segments of the industry for machines performing the same function as ironworkers, it is not feasible to list all such machines by specific names. However, this standard is intended to include machines generally referred to as beam punches, detail punches, spacing punches, etc, as long as they are similar in construction to, and identical in the use of, an ironworker or portions thereof.

E1.1.3 Specific Types of Ironworkers Excluded

(7) Portable machines. See *Portable* (3.38).

1.2 Purpose. **The purpose of this standard is to establish safety requirements with respect to the construction, safeguarding, care, and use of ironworkers.**

1.3 Application. **All ironworkers shall be in compliance with this standard.**

E1.3 Application. The grace periods listed in ANSI B11.5-1975 (R1981) have expired.

2. Referenced Publications

2.1 American National Standards. **This standard shall be used in conjunction with the following American National Standards. When these standards are superseded by a revision approved by the American National Standards Institute, Inc, the revision shall apply.**

ANSI B11.1-1988, Machine Tools — Mechanical Power Presses — Safety Requirements for Construction, Care, and Use

ANSI Z35.1-1974, Specifications for Accident Prevention Signs

ANSI Z35.2-1968 (R1974), Specifications for Accident Prevention Tags

ANSI Z53.1-1979, Safety Color Code for Marking Physical Hazards

ANSI/ASME B15.1-1984, Safety Standard for Power Transmission Apparatus

ANSI/ASME Boiler and Pressure Vessel Code, 1986

2.2 Related Standard

ANSI Z229.1-1982, Safety Requirements for Shops Fabricating Structural Steel and Steel Plate

3. Definitions

3.1 Adjustable Restricter. **An adjustable attachment that restricts entry of the hands and fingers into the point of operation.**

3.2 Angle Shear. **See *Structural Shearing Station* (3.52)**

3.3 Antirepeat. **Antirepeat limits the ironworker to a single stroke if the activating means is held operative.**

E3.3 Antirepeat. Antirepeat requires release of all activating mechanisms before another stroke can be initiated.

3.4 Awareness Barrier. **An attachment that offers resistance against entry into the point of operation.**

3.5 Bar Cutter. **See *Structural Shearing Station* (3.52).**