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Power Presses: General Purpose, Single Action, Straight Side Type

AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

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FOREWORD

Recognizing the need for a standard for mechanical power presses, the ASME Committee on Machine Tools and Components (B5) established in December 1973, Technical Committee 30 to develop an American National Standard addressing the interchangeability of bolsters, press tooling, and mounting provisions between general purpose presses of comparable bed size, capacity, and type.

The B5-TC30 membership consists of a balance between manufacturers, users, accessory suppliers and others associated with power presses. The technical committee's work was based on the Joint Industry Conference (JIC) Press Room Standards, once the most widely used document, to develop a standard for mechanical power presses, and basic data submitted by U.S. manufacturers of power presses.

In April 1983, the committee completed the final draft of "Standard for Straight Side Type Presses (Metric)." This draft was not submitted for approval before the committee became inactive.

In 1995, Technical Committee 30 was reestablished to continue the pursuit of the original objectives set forth in 1973. The scope of the Standard was expanded to include hydraulic power presses.

ASME B5.61-2003 was approved by the American National Standards Institute on July 7, 2003.

ASME B5 STANDARDS COMMITTEE
Machine Tools — Components, Elements, Performance, and Equipment

(The following is the roster of the Committee at the time of approval of this Standard.)

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General. ASME Standards are developed and maintained with the intent to represent the consensus of concerned interests. As such, users of this Standard may interact with the Committee by proposing revisions, and attending Committee meetings. Correspondence should be addressed to:

Secretary, B5 Main Committee
The American Society of Mechanical Engineers
Three Park Avenue
New York, NY 10016-5990

Proposing Revisions. Revisions are made periodically to the Standard to incorporate changes that appear necessary or desirable, as demonstrated by the experience gained from the application of the Standard. Approved revisions will be published periodically.

The Committee welcomes proposals for revisions to this Standard. Such proposals should be as specific as possible, citing the paragraph number(s), the proposed wording, and a detailed description of the reasons for the proposal, including any pertinent documentation.

Attending Committee Meetings. The B5 Main Committee regularly holds meetings, which are open to the public. Persons wishing to attend any meeting should contact the Secretary of the B5 Main Committee.

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POWER PRESSES: GENERAL PURPOSE, SINGLE ACTION, STRAIGHT SIDE TYPE

1 SCOPE, PURPOSE, AND APPLICATION

1.1 Scope

This Standard applies to hydraulic and mechanical power presses commonly referred to by the metalworking industry as *General Purpose, Single Action, Straight Side Type Power Presses* that, by means of dies or tooling attached to the slide and bolster, are used to shear, punch, form, or assemble metal or other materials.

The following types of presses are excluded from this Standard:

(a) air (pneumatic)
(b) bench
(c) eyelet machines
(d) forging
(e) four slide machines
(f) gap frame
(g) knuckle joint
(h) multiple action
(i) multiple slide
(j) spotting
(k) transfer feed
(l) turret punching

1.2 Purpose

The purpose of this Standard is to define and describe power presses and their interface, and to permit interchangeability of bolsters, dies, and tooling components between presses of comparable type, size, and capacity.

1.3 Application

Any power press described herein and referred to as an American National Standard Power Press shall comply with the applicable requirements delineated in this Standard.

2 DEFINITIONS AND TERMINOLOGY

Terms used in this Standard are defined in ASME B5.49, Glossary of Power Press Terms.

3 METRIC/U.S. CUSTOMARY RATIONALIZATION

3.1 Metrication

All units of dimension and capacity stated herein are in accordance with ASME B5.51M, Preferred SI Units for Machine Tools. Approximate U.S. Customary units are historical standards and are for reference only. Wherever used in this Standard, the unit *tons* denotes U.S. tons.

Table 1 Standard Capacity Ratings

Single-Point Press		Two-Point Press		Four-Point Press	
kN	tons	kN	tons	kN	tons
250	30	...	...	...	...
500	55	500	55	...	...
1 000	110	1 000	110	...	...
1 600	180	1 600	180	...	...
2 000	225	2 000	225	...	...
2 500	280	2 500	280	2 500	280
4 000	450	4 000	450	4 000	450
6 300	710	6 300	710	6 300	710
10 000	1,125	10 000	1,125	10 000	1,125
...	...	16 000	1,800	16 000	1,800
...	...	20 000	2,250	20 000	2,250
...	...	25 000	2,810	25 000	2,810

3.2 Metric/U.S. Customary Conversion

Nonmandatory Appendix A provides conversion multipliers applicable to this Standard.

4 PRESS CHARACTERISTICS

4.1 Rated Capacity

Standard capacity ratings shall be as specified in Table 1 (see also Fig. 1). See Nonmandatory Appendix B for historical comparison of capacity ratings.

4.2 Rating Points (Mechanical Power Press)

(a) Standard rating points shall be as specified in Table 2.

(b) Drive design shall be based on providing the torque, which produces the rated press capacity at the rating point (see Fig. 2).

(c) Press capacity at points other than the rating point are shown in

(1) Mandatory Appendix I for presses rated at 12.7 mm (½ in.)

(2) Mandatory Appendix II for presses rated at 6.3 mm (¼ in.)