ASME B5.60-2014
(Revision of ASME B5.60-2002)

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Workholding Chucks: Jaw-Type Chucks

AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

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The American Society of Mechanical Engineers
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FOREWORD

During the review, revision, and update of the existing inch-based American National Standard B5.8 on Chucks and Chuck Jaws, Technical Committee 11 of the ASME B5 Committee on Machine Tools recognized the need for an industry standard on metric-dimensioned chucks.

This Standard was developed after reviewing currently available national and international standards, which were used as its foundation.

ASME B5.60-2002 was approved by the American National Standards Institute on June 26, 2002. Addenda were approved on February 24, 2005 and February 2, 2009.

ASME B5.60-2014 was approved by the American National Standards Institute on September 15, 2014.

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Machine Tools — Components, Elements, Performance, and Equipment

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Edition:	Cite the applicable edition of the Standard for which the interpretation is being requested.
Question:	Phrase the question as a request for an interpretation of a specific requirement suitable for general understanding and use, not as a request for an approval of a proprietary design or situation. The inquirer may also include any plans or drawings that are necessary to explain the question; however, they should not contain proprietary names or information.

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WORKHOLDING CHUCKS: JAW-TYPE CHUCKS

Chapter 1
General Description and Definitions of Terms

1-1 INTRODUCTION

This Standard establishes technical requirements for workholding chucks used primarily in turning operations. It covers jaw-type chucks, whether manual or power-operated.

1-2 SCOPE

This Chapter covers the general description and definitions of terms related to jaw-type workholding chucks.

1-3 TYPES OF JAW CHUCKS BY DESIGN

compensating chuck: a chuck in which the jaw(s) moves to or away from the workpiece without altering the position of the workpiece.

independent chuck: a chuck in which each individual workholding jaw is moved to or from the workpiece without disturbing the position of any other jaw.

self-centering chuck: a chuck in which all jaws move to or away from the workpiece and maintain one common center.

An example of a power chuck assembly is presented in Fig. 1-1.

1-4 METHODS OF ACTUATION

manual: a chuck that is actuated by hand with the aid of human energy (e.g., by means of a chuck wrench). Refer to Fig. 1-2.

power: a chuck that is actuated by means of, e.g., pneumatic, hydraulic, or electrical energy. Refer to Fig. 1-3.

1-5 DEFINITIONS

actuator: a component within a chuck's body, used to operate the chuck's mechanism, e.g., a wedge, lever, or scroll.

base jaw: see *master jaw.*

centrifugal force: force generated by rotation that tends to move all parts radially away from the axis of rotation of the chuck.

chuck adapter: interface between the machine and the chuck. It can be a separate component or integral to the chuck body.

chuck body: that part of the chuck that contains the actuator and master jaws.

clamping cylinder: device that actuates the chuck through a drawbar or drawtube with the aid of pneumatic or hydraulic energy.

clamping force: algebraic sum of the individual radial forces applied by the top jaws on the workpiece.

clamping torque: product of the clamping force, clamping radius, and the coefficient of friction between the top jaw(s) and the workpiece.

countercentrifugal chuck: a chuck in which there is a system that permits compensation for the loss of clamping force due to centrifugal force.

drawbar: a bar or tube that connects the clamping cylinder to the chuck's actuator to transmit the input force to the chuck.

dynamic clamping force: actual clamping force when the chuck is rotating.

hysteresis: change in static clamping force after the chuck has been rotated at working rotational speed with a constant input force.

indicating band: a diameter on the chuck body designated for measuring runout of a chuck.

input force: force acting on the chuck's actuator, applied from an external energy source.

input torque: torque acting on the chuck's actuator, applied from an external energy source.

master jaw: radial moving part within the chuck body to which the top jaw is mounted.

maximum rotational speed: maximum rotational speed in rpm specified by the manufacturer for a chuck with