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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 33644-2025

Replacing GB/T 33644-2017

NC press brakes - Testing of the accuracy

数控板料折弯机 精度

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Table of Contents

- 1 Scope
- 2 Normative references
- 3 Terms and Definitions
- 4 Inspection Requirements
 - 4.1 General Requirements
 - 4.2 Working accuracy inspection conditions

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. This document replaces GB/T 33644-2017 "Precision of CNC Sheet Metal Bending Machines". Compared with GB/T 33644-2017, the main differences are in the structural design. Aside from integration and editorial changes, the main technical changes are as follows:

- The specimen width requirement has been changed (see 4.2.2, 3.2.2 in the 2017 version);
- The specimen thickness requirements have been changed (see Table 2 in 4.2.3, 3.2.3 in the 2017 version);
- The requirement for test specimens for thermal cutting has been removed (see 3.2.10 in the 2017 version);
- Added longitudinal tolerance requirements for the flatness of worktables with a diameter of 12000mm or more (see 5.1.1.1.1);
- The longitudinal tolerance for the parallelism between the horizontal support surface of the mating surface with the upper mold and the worktable surface has been changed (see 5.1.2.1.1, 2017 version). (4.1.2.1.1)
- The lateral tolerance for the parallelism between the horizontal support surface of the mating surface with the upper mold and the worktable surface has been changed (see 5.1.2.1.2, 2017 version). (4.1.2.1.2)
- The longitudinal tolerance inspection method for the parallelism between the horizontal support surface of the upper mold mating surface and the worktable surface has been

modified (see 5.1.2.2.1). (2017 version 4.1.2.2.1)

---The method for checking the lateral parallelism tolerance of the horizontal support surface of the upper mold contact surface to the worktable surface has been modified (see 5.1.2.2.2). (2017 version 4.1.2.2.2)

---The allowable tolerance for the X-axis positioning accuracy of the stop device has been changed (see 5.2.1.1,

1 Scope

GB/T 33644-2025 is the Chinese national standard covering how the accuracy of a press brake is checked - the straightness and parallelism of the beams, the repeatability of the ram position, and the crowning that compensates the deflection which would otherwise leave the middle of a long bend open. Issued on 31 October 2025, it has been in force since 1 May 2026, replacing GB/T 33644-2017.

This document specifies the inspection requirements and accuracy testing procedures for CNC sheet metal bending machines. This document applies to the accuracy inspection activities of CNC sheet metal bending machines.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 8170 Rules for rounding off numerical values and representation and determination of limiting values

GB/T 10923-2009 General Rules for Precision Inspection of Forging Machinery

GB/T 34376 Technical Requirements for CNC Sheet Metal Bending Machines

3 Terms and Definitions

The terms and definitions defined in GB/T 34376 apply to this document.

4.1 General Requirements

4.1.1 Before the accuracy inspection, the installation level of the sheet metal bending machine should be adjusted. After the machine tool is leveled, the deviation should not exceed 0.20/1000 in either the longitudinal or transverse direction.

4.1.2 The inspection of geometric accuracy and CNC accuracy shall be carried out under

no-load conditions.

4.1.3 Accuracy verification should be performed after the full-load test.

4.1.4 During the accuracy inspection process, no adjustments should be made to mechanisms and parts that affect accuracy.

4.1.5 The accuracy inspection and the measuring instruments used for inspection shall comply with the provisions of GB/T 10923.

4.1.6 When the actual measured length is less than the allowable length, it shall be converted to the actual measured length, and the conversion result shall be rounded according to GB/T 8170. Down to the micrometer number of bits.

4.1.7 The limit deviations for specimen length and width are $\pm 2\text{mm}$, and the limit deviations for specimen thickness are $\pm 0.3\text{mm}$.

4.1.8 For CNC bending machines with multiple machines operating in tandem, geometric accuracy and working accuracy are tested on a single machine basis.

4.2 Working accuracy inspection conditions

4.2.1 The specimen length shall meet the requirements of Table 1.