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

GB/T 29648-2026

Replacing GB/T 29648-2013

Fully automatic rotary PET bottle blow moulding machines

全自动旋转式PET瓶吹瓶机

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1 Scope

GB/T 29648-2026 is the Chinese national standard covering the rotary blow moulder - the machine that turns preforms into bottles at tens of thousands an hour, with its heating oven, the stretch and blow stations, the air recovery and the changeover. It replaces GB/T 29648-2013 and has been in force since 1 October 2026, with the low pressure blowing carbon reduction standard GB/T 47556-2026. It was issued on 31 March 2026 and takes effect on 1 October 2026, replacing GB/T 29648-2013. The document is under the responsibility of the China Machinery Industry Federation. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document defines the terms and definitions for fully automatic rotary polyethylene terephthalate (PET) bottle blowing machines, and specifies the fully automatic rotary...

Model, composition, basic parameters and working conditions, technical requirements, inspection rules, labeling, packaging, transportation and storage of rotary PET bottle blowing machines. The relevant experimental methods were described. This document applies to fully automatic rotary PET bottle blowing machines (hereinafter referred to as "blow bottle machines") that use a two-step bottle-making process to blow PET bottles. The design, manufacture, and inspection of "machines".

4.2 Composition

4.2.1 Main components of a blow molding machine.

- a) Preform storage, sorting, and conveying equipment;
- b) Preform heating device;
- c) Preform transfer device after heating;
- d) Blow molding station;
- e) Finished bottle transfer device;
- f) Bottle breakage detection and rejection device;
- g) Electrical control system;
- h) Transmission mechanism.

4.2.2 Optional accessories for blow molding machines.

- a) Air recovery device;
- b) Detection device.

4.3 Basic Parameters Names and units of basic parameters for blow molding machines.

- a) Rated production capacity. bottles/hour;

4.4 Working Conditions

4.4.1 The operating ambient temperature should be 15°C~35°C, with a fluctuation range of $\pm 3^\circ\text{C}$; the relative humidity should not exceed 85%, and the altitude should not exceed 1000m.

4.4.2 The blow molding machine workshop should be free from external airflow and heat radiation that could affect the blow molding quality, and the air cleanliness should comply with GB 50073-2013. The specifications for level N5 in Table 3.0.1.

4.4.3 The deviation between the external power supply voltage and the rated voltage shall comply with the provisions of

4.3 in GB/T 12325-2008.

4.4.4 Compressed air shall comply with the following requirements.

a) The compressed air supply pressure of the pneumatic system shall be 0.7MPa~1.0MPa, and the quality of the compressed air shall comply with GB/T 13277.1- The 2023 regulations stipulate that the particle size distribution must be no lower than level 4, the moisture and liquid water distribution must be no lower than level 4, and the total oil content distribution must be no lower than level 4. Level 2;

b) The compressed air supply pressure of the blow molding system should meet the requirements of the blow molding machine for producing finished bottles, and the pressure fluctuation value should be less than [value missing].

0.1 MPa, the quality of compressed air shall comply with the provisions of GB/T 13277.1-2023. particle size not lower than level 1, humidity and The liquid water grade is not lower than grade 4, and the total oil content grade is not lower than grade 1.

4.4.5 Cooling water shall meet the following requirements.

a) Temperature, pressure, and flow rate should meet the operating requirements of the blow molding machine;

c) Total hardness (as CaCO₃) is less than 140 mg/L;

d) The size of the pollutant particles is no greater than 0.1 mm.

4.4.6 If the mold uses oil heating, the heating oil should be heat transfer oil that can be heated to 180°C.

5.1 General Requirements

5.1.1 Blow molding machines shall be manufactured in accordance with the drawings and technical documents approved according to the prescribed procedures.

5.1.2 The blow molding machine should operate smoothly, and the moving parts should move sensitively, coordinately, and accurately, without jamming or abnormal noise.

5.1.3 The air circuit, cooling water circuit, and lubrication system of the blow molding machine should be unobstructed, without blockages or leaks.

5.1.4 When there is a shortage of preforms or when preforms are stuck, there should be an audible and visual warning.

5.2 Performance Requirements

5.2.1 The production capacity of the blow molding machine should meet the rated production capacity requirements, and the production efficiency should not be less than 97% during continuous production.

5.2.2 Finished bottles shall comply with the provisions of GB/T 41167-2021 and related standards, and the bottle blowing qualification rate shall not be less than 99.5%.

5.2.3 The preform loss rate should not exceed 0.25%.

5.2.4 The time for the preform heating device to rise from ambient temperature to operating temperature should be less than 3 minutes.

5.2.5 Blow molding should not be performed when there is no preform in the blow molding die.

5.2.6 The blow molding machine should have a single-mold blow molding test function; during the test, the preform should enter the set mold.

5.2.7 The blow molding machine should have a pre-blow bottle testing function, and the maximum diameter (or diagonal) deviation of the bottles pre-blown at each station should not exceed that of the finished bottle. The maximum height deviation of pre-blown bottles at each station should not exceed 8% of the finished bottle height, which is 8% of the diameter (or diagonal).

5.2.8 The pre-blowing pressure of each station should be consistent, with a deviation of $\pm 0.01\text{MPa}$; the deviation of the main blowing pressure should be $\pm 0.1\text{MPa}$.

5.2.9 When the blow molding machine is working normally, the noise sound pressure level should not exceed 85 dB(A).

5.3 Requirements for blow molding dies

5.3.1 The performance of blow molding dies shall comply with the provisions of

5.2.3 in GB/T 38461-2020.

5.3.2 The manufacturing quality and assembly requirements of blow molding dies shall comply with the provisions of

5.4 in GB/T 38461-2020.

5.3.3 The height deviation of the reference surface of the blow molding die at each station is $\pm 0.05\text{mm}$.

5.3.4 The mold closing clearance should be controlled within the range of 0.10mm~0.15mm (for molds requiring heating, the mold closing clearance should be the clearance at the time the mold temperature is reached). gap).

5.4 Remote Service Requirements

5.4.1 Blow molding machines should have remote service capabilities.

5.4.2 Blow molding machines with remote service capabilities should meet the following