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

JY/T 0437-2011

**Glass pistons for teaching
(English Translation)**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

Please note that some elements of this standard may involve patents. The issuer of this standard should not be held responsible for identifying these patents.

This standard was proposed by the National Technical Committee for Standardization of Teaching Instruments (SAC/TC125).

This standard is under the jurisdiction of the National Technical Committee for Standardization of Teaching Instruments (SAC/TC125).

This standard was drafted. Sichuan Longchang Glass Instrument Factory, Zhejiang Educational Technology Center, Sichuan Ziyang Glass Instrument Factory, Sichuan

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1 Scope

This standard specifies the classification and naming of glass pistons, technical requirements, test methods, inspection rules, packaging, transportation, and storage.

This standard applies to glass pistons for teaching purposes.

2 Normative references

The following documents are essential for the application of this document. For dated references, only the dated version applies to this document.

For undated references, the latest version (including all amendments) applies to this document.

GB 191-2008 packaging storage and transportation pictogram GB/T 2828.1-2003 Counting sampling acceptance procedure Part 1. Sampling plan for batch inspection for retrieval by acceptance quality limit (AQL) JY 0001-2003 General quality requirements for teaching instruments and equipment products JY 0002 Inspection rules for teaching instruments and equipment products JY 0026-1991 teaching instrument and teaching equipment product model naming method JY/T 0423-2011 General quality requirements and test methods of teaching glass instruments

3.1 Product Classification

According to the shape and quantity of the branch pipe, it is divided into three specifications of straight two-way, curved two-way and T-shaped three-way.

3.2 Model Nomenclature

The model name of the product is in accordance with the provisions of JY 0026-1991.

Models of glass valves are named.

L - HS - Z/W/T - 12/H Product specifications (standard grinding mouth code, big end diameter/valve height), unit. mm Product feature code, straight (two-way), curved (two-way), T-shaped (three-way) Product name Pinyin prefix, piston Product model classification code, glass instrument

3.3 Model example

L-HS-Z-12/H. straight two-way piston with standard ground code 12/H

4.1 Materials

It should be made of colorless borosilicate glass. The average linear thermal expansion coefficient is not more than $4.0 \times 10^{-6} \text{K}^{-1}$.

4.2 Dimensions

Dimensions and tolerances of straight, curved and T-shaped three-way pistons shall conform to Table 1, and the shapes shall conform to Figure 1, Figure 2, and Figure 3. Should be used Standard ground.

Table 1 Dimensions and tolerances in millimeters

Part name code specifications, sizes and tolerances Piston code d 12/H 14/H 19/H 21/H 24/H 29/H 34/H

1 Big end diameter D 12.5 14.5 18.8 21.5 24 29.2 34.5

2 Core diameter d 2 4 6 8 10 12 15

3 Outer pipe diameter D 1 7 ~ 8 7 ~ 8 9 ~ 10 11 ~ 12 13 ~ 14 16 ~ 17 19 ~ 20 4 branch
pipe length L 120 ± 10 120 ± 10 120 ± 10 120 ± 10 120 ± 10 120 ± 10 150 ± 10

5 Elbow length L 1 50 ± 8 50 ± 8 50 ± 8 50 ± 8 50 ± 8 50 ± 8 60 ± 10

6 Piston height H 28 30 35 37 39 43 47

Figure 1 Straight two-way piston

Figure 2 Curved two-way piston

Figure 3 T-shaped three-way piston

4.3 Appearance

4.3.1 Permitted appearance defects. The gas line width should be no more than 0.5mm, the length should be less than 2/3 of the total length of the branch tube, and no more than 3;

The maximum diameter should be no more than 1.5mm and no more than four; the maximum diameter of stones should be no more than 1mm and no more than two;

There should be no more than two air lines and no more than four nodules and stones.

4.3.2 The branch pipe mouth should be melted out.

4.3.3 There should be no appearance defects according to JY/T 0423-2011 Section 5.1.1.

4.4 Adhesiveness

Tightness should meet the first level.

4.5 Chemical stability it should meet the water resistance HGB level 1, acid resistance H1 level, and alkali resistance A2 level.

4.6 Internal stress

The internal stress should not be greater than 180 nm/cm.

4.7 Environmental test the environmental test shall be in accordance with Chapter 8 of JY/T 0423-2011.

5 Test method

5.1 The average linear thermal expansion coefficient is tested in accordance with JY/T 0423-2011 No. 6.4.2 and shall comply with the requirements of 4.1 of this standard.

5.2 Dimensions are measured with a vernier caliper with a division value of 0.02 mm and a steel ruler with a division value of 0.5 mm.

5.3 Surface finish. The wall thickness shall be tested in accordance with JY/T 0423-2011 Section 4.1.2 and shall meet the requirements of 4.2 of this standard. Length of appearance defects the mirror test shall meet the corresponding requirements of this standard.

5.4 Adhesion test The test according to JY/T 0423-2011 Section 4.3.2 shall meet the requirements of 4.4 of this standard.

5.5 Water resistance, acid resistance and alkali resistance shall be tested in accordance with JY/T 0423-2011 Section 6.5.5 and shall meet the requirements of 4.5 of this standard.

5.6 The internal stress shall be in accordance with JY/T 0423-2011 Section 6.1.2 and shall comply with this standard 4.6.

5.7 The material test shall be in accordance with Article 7.2 of JY/T 0423-2011, shall comply with 4.1 of this standard, and shall be colorless.

5.8 The remaining sensory tests shall meet the corresponding requirements of this standard.

5.9 Environmental test shall be in accordance with JY/T 0423-2011 No. 8 and shall comply with 4.7 of this standard.

6 Inspection rules

6.1 Inspection classification

The inspection of this product is divided into factory inspection, type test and quality supervision inspection.