

Standard Specification for Interchangeable Taper-Ground Stopcocks And Stoppers¹

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1. Scope

1.1 The specification provides standard dimensional requirements for obtaining, within practical limits, interchangeability in stopcocks and stoppers for ordinary laboratory and industrial applications. It covers dimensional interchangeability of the ground surfaces only and does not involve design characteristics of the item except where specified.

NOTE 1—The dimensions pertaining to stopcocks and stoppers were taken from the Commercial Standard CS 21 of the U.S. Department of Commerce.

NOTE 2—Although glass is the most commonly used material for stopcocks and stoppers, other materials may be used as specified. Stopcocks and stoppers constructed from glass should conform to Specifications E 438 and E 671.

2. Referenced Documents

2.1 ASTM Standards:

E 438 Specification for Glasses in Laboratory Apparatus²

E 671 Specification for Maximum Permissible Thermal Residual Stress in Annealed Glass Laboratory Apparatus²

E 920 Specification for Commercially Packaged Laboratory Apparatus²

E 921 Practice for Export Packaged Laboratory Apparatus²

E 1133 Practice for Performance Testing of Packaged Laboratory Apparatus United States Government Procurement²

E 1157 Specification for Sampling and Testing Reusable Laboratory Glassware²

2.2 U.S. Department of Commerce Standard:

CS 21 Interchangeable Taper-Ground Joints, Stopcocks, Stoppers, and Spherical-Ground Joints³

3. Requirements for Single Straight-Bore Taper-Ground Stopcocks

3.1 The designations and dimensions for single straight-bore stopcocks shall be as shown in Fig. 1 and Table 1.

3.2 *Taper*—All straight-bore stopcocks shall have a taper of 1 ± 0.006 mm of diameter per 10 mm of length (1 to 10).

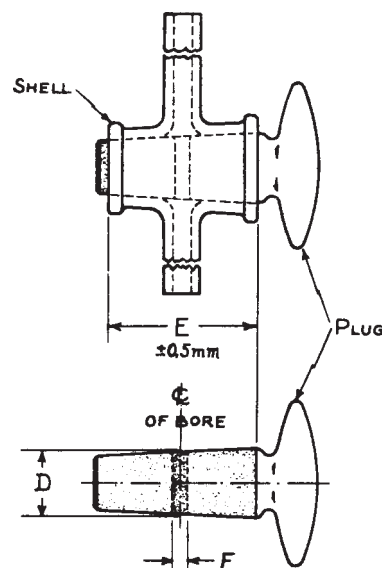


FIG. 1 Stopcock

3.3 *Master Gages*—Dimensions and tolerances for master gages shall be as shown in Fig. 2 and Fig. 3, and Table 2 and Table 3. Overall diameter of ring gage shall be approximately twice the diameter of the bore at the reference line in the window, but not less than 25 mm.

3.3.1 *Plug Gage*—Plug shall have two short axial lines $180 \pm 0.5^\circ$ apart intersecting the reference line for checking location of bore hole. In addition to the two axial lines 180° apart intersecting the reference line on the 4 and 6-mm plugs,

TABLE 1 Single Straight-Bore Stopcocks

Stopcock Designation	Diameter of Plug at Center-Line of Bore, mm <i>D</i>	Length of Shell, ± 0.5 mm <i>E</i>	Diameter of Bore Hole in Plug, mm <i>F</i>
1-M ^A	7	20	1
1	12	30	1
1½	12	30	1½
2	12	30	2
3	17	40	3
4	17	40	4
5	20	44	5
6	20	44	6
8	25	52	8
10	35	56	10

^A Micro size.

¹ This specification is under the jurisdiction of ASTM Committee E 41 on Laboratory Apparatus and is the direct responsibility of Subcommittee E41.01 on Apparatus.

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² Annual Book of ASTM Standards, Vol 14.04.

³ Discontinued 1979—U.S. Department of Commerce, Washington, DC 20234.