ROYAL MICROSCOPICAL SOCIETY STANDARDS. 531.7.

PUBLISHED BY THE AUTHORITY OF COUNCIL UPON THE RECOMMENDATION OF A COMMITTEE APPOINTED FOR THE PURPOSE.

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I.

THE Committee, having considered the information collected from microscope makers, both at home and abroad, confirms the Society's existing standards, but with slight alteration in the tolerances allowed on the internal diameters on the draw-tubes for the several eyepieces. This is made necessary by the extensive current practice amongst makers of employing mandrel-drawn tube, which cannot be relied upon to be truly circular.

II.

In view of the increasing use of apparatus above the eyepiece, and for the convenience of those employing such apparatus, the Committee has specified a standard size for the external diameter of the eyepiece end of the draw-tube, and also a limit to the outside diameter of the eyepiece shoulder. (Specification C.)

III.—R.M.S. STANDARD FOR OBJECTIVE SCREW THREAD.

The accurate cutting of interchangeable screw threads has made great advances since the days when the Microscopical Society of London drew up the original specification in 1858.* This specification was revised in 1896 and 1915, but the suitability of the tools supplied by the Society having been questioned, the Council in October 1923 appointed a Committee to investigate and report on the R.M.S. Standards.

The Committee presented their report, together with a revised specification, and this specification was adopted by the Council on April 16th, 1924.

The issue of sizing tools and workshop limit gauges hitherto supplied by the Society have served their purpose in the past, but with modern methods now at the disposal of manufacturers the makers of microscopes are now able to conform to the R.M.S. Specifications.

The Council has therefore decided to discontinue the supply of these

* The history of the Society's standard, which was first set up in 1858, will be found in the Transactions of the Society: 1858, p. 39; 1896, pp. 389, 487; 1911, p. 175; 1915, p. 230; 1920, p. 127; 1924, p. 266.

gauges, which can be made by reputable gauge manufacturers, and it is, of course, open to the maker to have his gauges verified by the National Physical Laboratory.

IV.—R.M.S. SPECIFICATION A.

Screw Thread for Objective.

Form.—Whitworth, i.e. a V-shaped thread, sides of thread inclined at an angle of 55° to each other, one-sixth of the V-depth being rounded off at the top and bottom of the thread.

Pitch.—36 threads per inch = 0·02778 in. approx. (= 0·7056 mm.).

Length of thread.—0·125 in. (3·175 mm.).

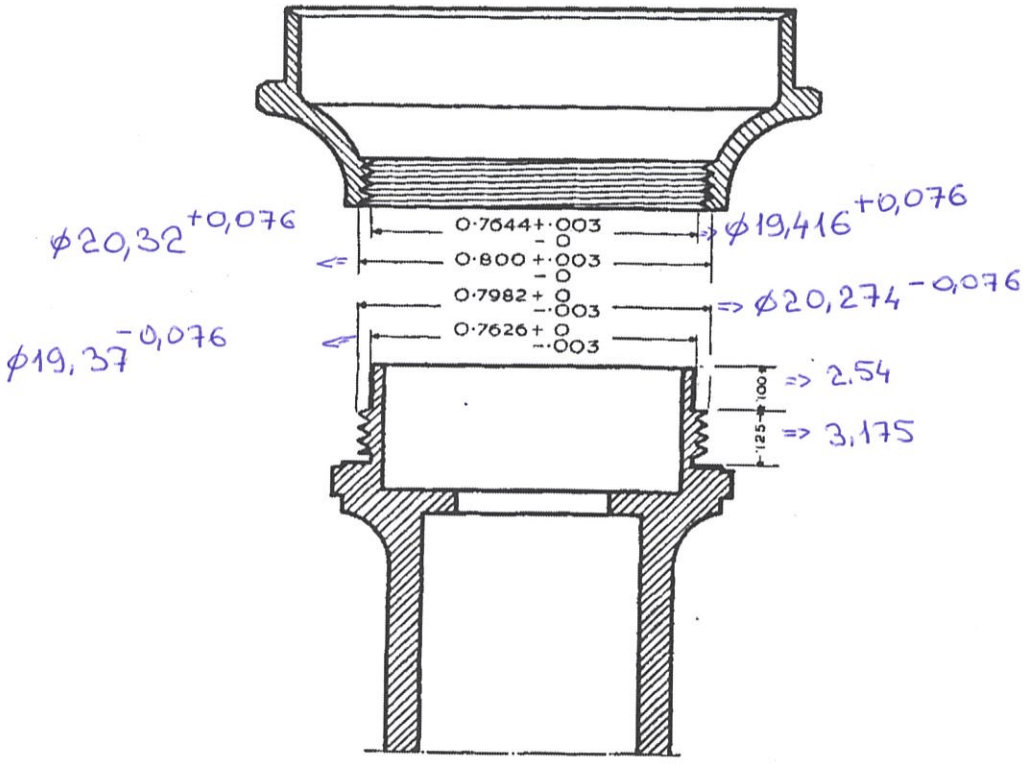

Fig. 1.

	1	2	3	4
	Maximum.		Minimum.	
	in.	mm.	in.	mm.
Full diameter	0·7982	20·274	0·7952	20·198
Effective diameter	0·7804	19·822	—	—
Core diameter	0·7626	19·370	—	—

Note.—The objective is to screw home properly to shoulder.

Plain Fitting (*Pilot*) above the thread of the objective:
Diameter is not to exceed 0·7626 in. (19·370 mm.).
Length of pilot: 0·1 in. (2·54 mm.).

V.—R.M.S. SPECIFICATION B.

Screw Thread for Nosepiece.

Form and *Pitch* as for the objective screw in Specification A.
Length of thread not to be less than 0·125 in. (3·175 mm.).

	1	2	3	4
	Minimum.		Maximum.	
	in.	mm.	in.	mm.
Full diameter	0·8000	20·320	—	—
Effective diameter	0·7822	19·868	—	—
Core diameter	0·7644	19·416	0·7674	19·492

VI.—R.M.S. STANDARDS FOR EYEPIECES AND SUBSTAGE.

(Revised 1936.)

The alterations now made in the tolerances allowed on the internal diameters of the draw-tubes are on account of the extensive practice of employing mandrel-drawn tubes for the draw-tubes of microscopes. Such tubes cannot be relied upon to be truly circular and the slightly larger tolerances allowed are to accommodate this small amount of eccentricity.

VII.—R.M.S. (1936) SPECIFICATION C.

Internal and External Diameters of Draw-Tube for Eyepiece, and of Substage Tube.

	1	2	3	4
	Nominal Size and Minimum Diameter		Maximum Diameter.	
	in.	mm.	in.	mm.
Small	0·917	23·292	0·919	23·342
Large	1·270	32·258	1·273	32·334
Extra large	1·410	35·814	1·413	35·890
Substage	1·527	38·786	1·529	38·837

Note.—The fit of the eyepiece in the draw-tube and of the substage condenser mount in its fitting are left to the manufacturers; but it should

be noted that certain well-known makes of foreign microscopes have draw-tubes with a minimum diameter of 0·914 in., and eyepieces that are not larger than this will therefore be interchangeable.

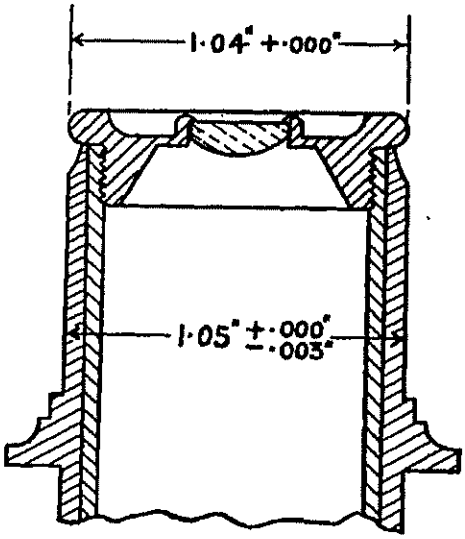

FIG. 2.—Eyepiece and Draw-tube.

	in.	mm.
Outside diameter of eyepiece draw-tube	1·05	26·670
Tolerance	+0 −0·003	0·076
Maximum outside diameter of eyepiece shoulder	1·04	26·416

Upper end of draw-tube to have outside bevel to facilitate the withdrawal of the eyepiece.