INTERNATIONAL STANDARD

ISO 8038-1

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Optics and optical instruments — Microscopes — Screw threads for objectives and related nosepieces

Part 1:
Screw thread type RMS (4/5 in × 1/36 in)

Optique et instruments d'optique — Microscopes — Filetages de fixation des objectifs et des porte-objectifs correspondants —

Partie 1: Filetage de type RMS (4/5 in × 1/36 in)

Reference number
ISO 8038-1:1997(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 8038-1 was prepared by Technical Committee ISO/TC 172, *Optics and optical instruments*, Subcommittee SC 5, *Microscopes and endoscopes*.

This first edition cancels and replaces, in part, ISO 8038:1985, which has been technically revised.

Annex A of this part of ISO 8038 is for information only.

International Organization for Standardization
Case postale 56 • CH-1211 Genève 20 • Switzerland
Internet central@iso.ch
X.400 c=ch; a=400net; p=iso; o=isocs; s=central

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Optics and optical instruments — Microscopes — Screw threads for objectives and related nosepieces

Part 1:
Screw thread type RMS (4/5 in × 1/36 in)

1 Scope

This part of ISO 8038 specifies the dimensions of screw thread type RMS as one type of thread for connecting a microscope objective to the nosepiece.

NOTE 1 The values given in this part of ISO 8038 conform, except for the length of the thread lug[1)], to the internationally used screw thread laid down by the Microscopical Society of London in 1858, and published [1] as the Royal Microscopical Society Standard (RMS Standard) in 1936.

The use of this screw thread is recommended for microscopes unless other fittings are required for optical or design reasons.

NOTE 2 A specific combination of eyepiece, objective and tube lens (if provided, e.g. infinity optics) is frequently used to correct aberrations. Therefore the combination of an objective from one manufacturer, although conforming to this part of ISO 8038, and an eyepiece from another manufacturer may cause loss of image quality.

Objectives and eyepieces of one manufacturer can be combined with microscopes of another manufacturer if they conform to this part of ISO 8038 and also to ISO 9345-1 [2].

2 Dimensions and tolerances

The definitions, basic dimensions and tolerances of the screw thread type RMS shall be as given in tables 1 and 2 and illustrated in figure 1.

Table 1 — Basic dimensions of the screw thread

Dimension	Symbol	Value
Angle of thread	α	55°
Pitch	p	0,706 mm
Height of fundamental triangle	H	0,678 mm
Nominal diameter	D	20,320 mm

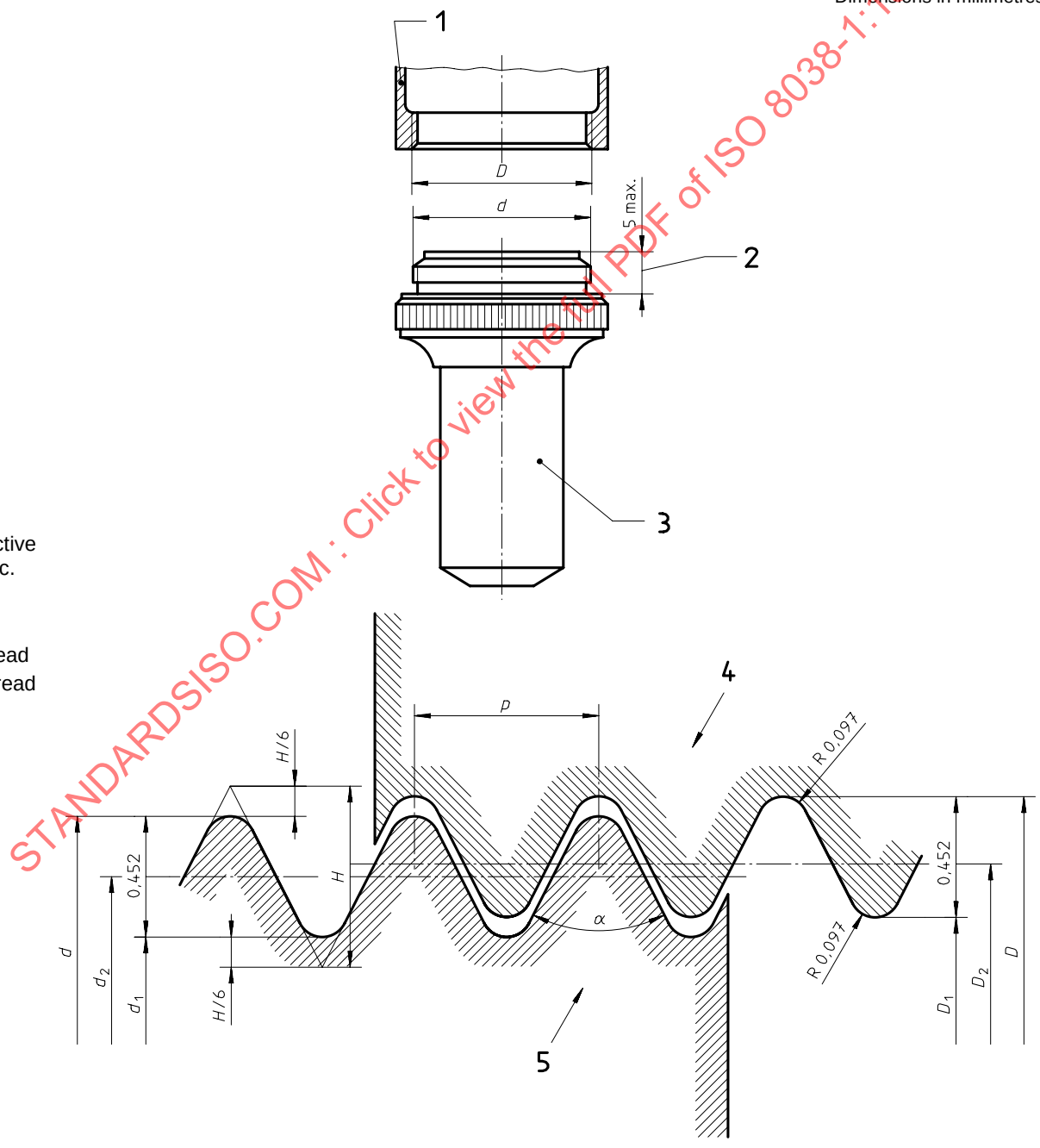
1) The maximum length of the thread lug according to this part of ISO 8038 is 5 mm. The RMS Standard specifies the length of the thread as 3,175 mm and length of the guide cylinder as 2,540 mm, giving a total of 5,715 mm.

Table 2 — Limit of size and tolerances

Dimensions in millimetres

Dimension for		Major diameter		Pitch		Minor diameter		Calculated play between internal and external threads		Allow-ances	Toler-ance
Internal thread	max.	D	20,396	D_2	19,944	D_1	19,492	Minimum play 0,046	Maximum play 0,198	+0,076	0,076
	min.		20,320		19,868		19,416			0	
External thread	max.	d	20,274	d_2	19,822	d_1	19,370			–0,046	0,076
	min.		20,198		19,746		19,294			–0,122	

Dimensions in millimetres



1 Tube, objective
1 changer, etc.
2 Thread lug
3 Objective
4 Internal thread
5 External thread

Figure 1 — Definitions and basic dimensions