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ISO 24537

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Micrographics — Dimensions for reels used for 16 mm and 35 mm microfilm

Micrographies — Dimensions des bobines utilisées pour les microfilms de 16 mm et de 35 mm

Reference number
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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 24537 was prepared by Technical Committee ISO/TC 171, *Document management applications*, Subcommittee SC 2, *Application issues*.

Introduction

There is an increasing variety of equipment available to retrieve 16 mm and 35 mm roll microfilm. Some equipment uses conventional threading from the supply reel to the take-up reel in order to drive the microfilm. Other equipment uses automatic threading techniques with reels and an ISO approved cartridge.

This International Standard is intended to provide 16 mm and 35 mm reel dimensions which will allow compatibility with readers using conventional threading, and which can also be used for microfilm storage. If a 16 mm reel is to be used in a cartridge for use in automatic threading equipment, the requirements of ISO 7761 will apply. The requirements for camera spools are specified in ISO 6148.

Micrographics — Dimensions for reels used for 16 mm and 35 mm microfilm

1 Scope

This International Standard covers the essential dimensions of lightweight reels, made of plastic or metal, used for the storage and retrieval of processed 16 mm and 35 mm microfilm that is used in manually threaded equipment.

Reels intended for use in 16 mm automated retrieval systems are outside the scope of this International Standard. The dimensions of these reels are specified in ISO 7761.

Camera spools are also frequently used for storing processed microfilm. The dimensions of these spools are outside the scope of this International Standard, but they are specified in ISO 6148.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 6196 (all parts), *Micrographics — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 6196 (all parts) and the following apply.

3.1
front flange
flange that first engages the equipment spindle

3.2
location surface
portion of the reel which meets the back location stop on the equipment spindle

4 Requirements

4.1 16 mm reels

The inside surface of the front flange, measured within 3,2 mm of the core, shall be in the same plane as the location surface around the square spindle hole. The allowable deviation from this alignment shall be ± 0,25 mm. The minimum diameter of the location surface around the square spindle hole shall be 15,9 mm, and the maximum diameter shall be 17,0 mm.

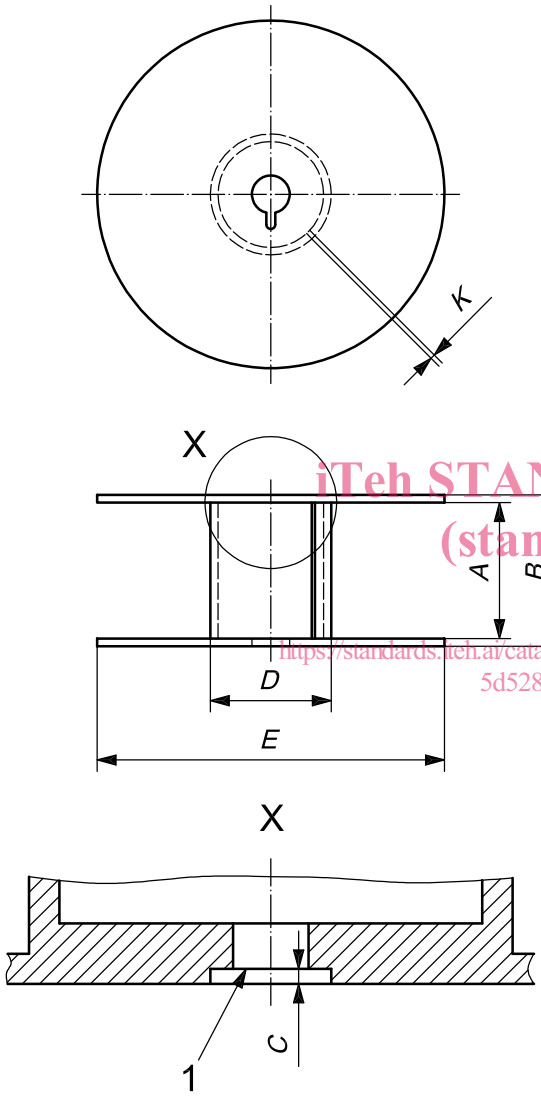
These specifications apply to front and rear flanges if both have square spindle holes (see Figures 1 and 2).

4.2 35 mm reels

The position of the inside surface of the front flange, measured within 3,2 mm of the core, shall be a further 1,0 ± 0,5 mm into the reel with respect to the location surface around the square spindle hole. The minimum diameter of the location surface around the square spindle hole shall be 15,9 mm, and the maximum diameter shall be 17,0 mm.

These specifications apply to front and rear flanges if both have square spindle holes (see Figures 1 and 2).

Dimensions in millimetres



Dimension	16 mm reels	35 mm reels
A	$17\ ^{+1,5}_{-0,9}$	$36\ ^{+1,5}_{-0,9}$
B[a]	⩽ 21,4	⩽ 40,2
C	0 + 0,25	1 ± 0,5
D	32 ± 1,0	$32\ ^{+1,0}_{0}$
E	$92\ ^{+2,0}_{-1,0}$	$92\ ^{+2,0}_{-1,0}$
K[b]	$1,3\ ^{+1,0}_{-0,5}$	$1,3\ ^{+1,0}_{-0,5}$

[a] Dimension B is the width outside the flanges including any embossed area.

[b] Optional.

Key

1 location surface

Figure 1 — Dimensions of 16 mm and 35 mm reels

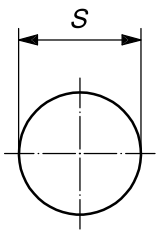
4.3 Spindle holes

The permissible designs of spindle holes are shown in Figure 2. For both 16 mm and 35 mm reels, spindle holes are oriented as seen by looking at the outer surface of each flange separately.

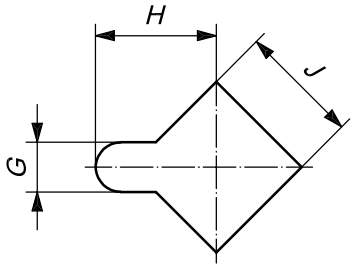
The front flange engages the equipment spindle first.

Holes are oriented as seen by looking at the outer surface of each flange separately.

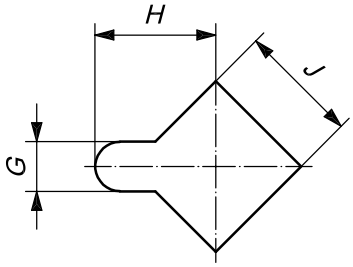
Dimensions in millimetres



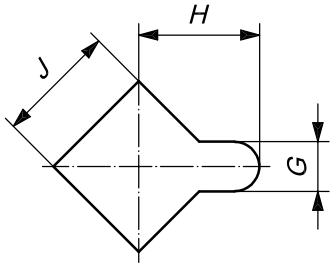
a) **Style 1** [a], **rear flange**



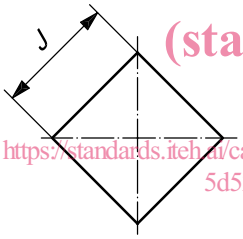
b) **Style 1** [a], **front flange**

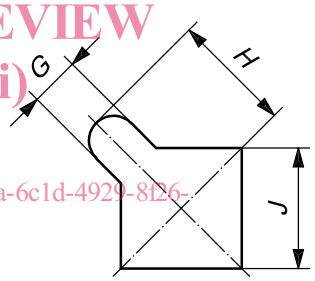


c) **Style 2** [b], **rear flange**



d) **Style 2** [b], **front flange**





e) **Style 3** [c], **rear flange**

f) **Style 3** [c], **front flange**

Dimension	16 mm reels	35 mm reels
G	3,3 ± 0,2	3,3 ± 0,2
H	8,1 ± 0,5	8,1 ± 0,5
J	$8{,}1\ ^{+0,2}_{-0,5}$	$8{,}1\ ^{+0,2}_{-0,5}$
S	$8{,}1\ ^{+0,2}_{-0,5}$	$8{,}1\ ^{+0,2}_{-0,5}$

Key

a For 16 mm and 35 mm reels.

b For 35 mm reels.

c For 16 mm reels.

Figure 2 — Dimensions of spindle holes for 16 mm and 35 mm reels

4.4 Lateral runout

The lateral runout (wobble) of the reel from the intended plane of rotation shall not exceed 1,3 mm. The "intended plane" is a plane perpendicular to the axis of the spindle and coincident with the outer surface of the flange at points adjacent to the spindle. When the reel is rotated on an accurate tight-fitting spindle, the total outward and inward deviation of the flange from this intended plane shall not exceed 1,3 mm.

4.5 Flanges

The flanges may be either solid or spoked (with open areas).

4.6 Finish

The reel shall be free from any flashing or moulding lines on its inner surfaces that would interfere with the film transport or cause damage to the film.

4.7 Optional features

An optional film loading slot is allowed in the reel core. If used, the width of this slot shall conform to dimension K (see Figure 1). An optional film loading slot is also permitted in either one or both flanges. If used, the width of this slot shall also conform to dimension K.

4.8 Colour

Spools may be any colour, or translucent, but shall not be black, in order to avoid confusion with camera reels.

Bibliography

[1] ISO 6148, *Photography — Micrographic films, spools and cores — Dimensions*

[2] ISO 7761, *Micrographics — Single-core cartridge for 16 mm processed microfilm — Dimensions and operational constraints*