

ISO

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 1858

GENERAL PURPOSE HUBS AND REELS,
WITH 76 mm (3 in) CENTREHOLE,
FOR MAGNETIC TAPE USED IN
INTERCHANGE INSTRUMENTATION APPLICATIONS

1st EDITION

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BRIEF HISTORY

The ISO Recommendation R 1858, *General purpose hubs and reels, with 76 mm (3 in) centrehole, for magnetic tape used in interchange instrumentation applications*, was drawn up by Technical Committee ISO/TC 97, *Computers and information processing*, the Secretariat of which is held by the American National Standards Institute (ANSI).

Work on this question led to the adoption of Draft ISO Recommendation No. 1858, which was circulated to all the ISO Member Bodies for enquiry in April 1970. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Australia	Italy	Sweden
Belgium	Japan	Switzerland
Czechoslovakia	New Zealand	Thailand
France	Portugal	United Kingdom
Germany	South Africa, Rep. of	U.S.A.
Greece	Spain	U.S.S.R.

No Member Body opposed the approval of the Draft.

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided to accept it as an ISO RECOMMENDATION.

FOREWORD

An inter-related series of ISO Recommendations is in preparation in the field of instrumentation recording.

The series covers :

- reels;
- unrecorded magnetic tape;
- recorded magnetic tape;
- recording methods;
- vocabulary.

This ISO Recommendation is part of that series and should be read accordingly.

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**GENERAL PURPOSE HUBS AND REELS,
WITH 76 mm (3 in) CENTREHOLE,
FOR MAGNETIC TAPE USED IN
INTERCHANGE INSTRUMENTATION APPLICATIONS**

1. SCOPE

This ISO Recommendation specifies the dimensions of general purpose hubs and reels, with 76 mm (3 in) centrehole, designed for use with magnetic tape in interchange instrumentation applications.

2. HUB AND REEL DIMENSIONS

- 2.1 The dimensions of the hubs and reels shall be as specified in Figures 1 and 2 and Tables 1 and 2.
- 2.2 Reels are to be so constructed that any profile section taken through the centre axis of the reel will fall within the cross-hatched envelope of Figure 1. This includes lateral runout of the flanges.
 - 2.2.1 Bosses, ribs, or raised designs are permitted on the outside surfaces of the flanges provided that they do not extend beyond the cross-hatched envelope when the reel is rotated on its centre axis.
 - 2.2.2 The surfaces of the flanges between diameters L and B shall lie between the planes defined by dimensions H and J (see Figure 1).
 - 2.2.3 Between diameters A and L , the outside surfaces of the reel, including any flange fastening devices employed, shall not extend beyond the surfaces defined by dimension M (see Figure 1).
 - 2.2.4 The reel surfaces defined by dimension M , or the hub surfaces defined by dimension S (see Figure 2), shall be parallel within 0.0025 mm per millimetre (or inches per inch) of diameter.
- 2.3 Flanges may have holes of convenient size, shape, and location to facilitate threading, but neither the holes nor the optional threading slots shown in Figure 2 are required by this ISO Recommendation.
- 2.4 Reels and hubs shall be symmetrical to permit mounting from either side.
- 2.5 The outside cylindrical surface of the hub (diameter C) shall be concentric with the centre bore (diameter A) within 0.25 mm (0.010 in) TIR, i.e. the deviation of the centre of diameter C with respect to the centre of diameter A shall not exceed 0.125 mm (0.005 in).
- 2.6 The outside diameter of the flanges (diameter B) shall be concentric to the centre bore of the hub (diameter A) within 1.27 mm (0.050 in) TIR, i.e. the deviation of the centre of diameter B with respect to the centre of diameter A shall not exceed 0.64 mm (0.025 in).

TABLE 1 – Reel and hub dimensions

Dimension	Metal			Plastic		
	millimetres	inches	degrees	millimetres	inches	degrees
<i>A</i>	$76.25^{+0.15}_0$	$3.002^{+0.006}_0$		$76.45^{+0.38}_0$	$3.010^{+0.015}_0$	
<i>B</i>	266.70 or ± 0.51 355.60	10.500 or ± 0.020 14.000		266.70 ± 0.51	10.500 ± 0.020	
<i>C</i> *	114.30 ± 0.25	4.500 ± 0.010		114.30 ± 0.38	4.500 ± 0.015	
<i>D</i>	$82.55^{+0.20}_{-0.05}$	$3.250^{+0.008}_{-0.002}$		$82.55^{+0.51}_0$	$3.250^{+0.020}_0$	
<i>E</i>	$5.56^{+0.25}_0$	$0.219^{+0.010}_0$		$5.56^{+0.33}_0$	$0.219^{+0.013}_0$	
<i>G</i>	—	—	120 ± 0.25	—	—	120 ± 0.25
<i>H</i>	0.64 max.	0.025 max.		1.52 max.	0.060 max.	
<i>J</i>	2.03 max.	0.080 max.		2.87 max.	0.113 max.	
<i>L</i>	114.30 min.	4.500 min.		114.30 min.	4.500 min.	
<i>M</i> (reels only)	See Table 2			12.57 ± 0.51	0.495 ± 0.020	
<i>S</i> (hubs only)	See Table 2			8.89 ± 0.13	0.350 ± 0.005	
Taper of outside cylindrical surface of hub	See Table 2			0.08 max.	0.003 max.	

* Exclusive of friction rings.

TABLE 2 – Standard widths for metal reels and hubs

Standard tape width*		Dimension <i>M</i> (Reels)		Dimension <i>S</i> (Hubs)		Maximum taper of outside cylindrical surface of hub	
millimetres	inches	millimetres	inches	millimetres	inches	millimetres	inches
6.25	0.246	11.73 ± 0.51	0.462 ± 0.020	8.89 ± 0.13	0.350 ± 0.005	0.05	0.0020
12.70	0.500	18.08 ± 0.51	0.712 ± 0.020	15.24 ± 0.13	0.600 ± 0.005	0.08	0.0030
19.05**	0.750	24.43 ± 0.51	0.962 ± 0.020	21.59 ± 0.13	0.850 ± 0.005	0.08	0.0030
25.40	1.000	30.78 ± 0.51	1.212 ± 0.020	27.94 ± 0.13	1.100 ± 0.005	0.08	0.0030
50.80	2.000	56.18 ± 0.51	2.212 ± 0.020	53.34 ± 0.13	2.100 ± 0.005	0.16	0.0063

* The values given in this column are nominal.
See ISO Recommendation R 1859, *Unrecorded magnetic tapes for interchange instrumentation applications – General dimensional requirements*.

** Although shown in this table, this dimension is not a preferred width.