INTERNATIONAL STANDARD 1858

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION · МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ · ORGANISATION INTERNATIONALE DE NORMALISATION

Information processing — General purpose hubs and reels, with 76 mm (3 in) centrehole, for magnetic tape used in interchange instrumentation applications

Traitement de l'information — Noyaux et bobines à usage général, avec alésage de 76 mm (3 in), pour les bandes magnétiques utilisées dans l'enregistrement de mesures

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 1858 was developed by Technical Committee ISO/TC 97, *Computers and information processing,* and was circulated to the member bodies in October 1975.

It has been approved by the member bodies of the following countries :

Belgium	Italy	South Africa, Rep. of
Brazil	Japan	Switzerland
Czechoslovakia	Korea, Rep. of	Turkey
France	Mexico	United Kingdom
Germany	New Zealand	U.S.S.R.
Hungary	Romania	Yugoslavia

No member body expressed disapproval of the document.

This International Standard cancels and replaces ISO Recommendation R 1858-1971, of which it constitutes a technical revision.

Printed in Switzerland

Sub-committee ISO/TC 97/SC 12 is concerned with the preparation of International Standards in the field of magnetic tape for instrumentation applications. The programme of work envisages an inter-related series of International Standards concerning I) reels, II) unrecorded magnetic tape, III) recorded magnetic tape and IV) recording methods. This International Standard forms part of that series and should be read accordingly.

STANDARDS PUBLISHED AND IN PREPARATION

ISO 1859, *Information processing — Unrecorded magnetic tapes for interchange instrumentation applications — General dimensional requirements.*

ISO 1860, *Information processing — Precision reels for magnetic tape for interchange instrumentation applications.*

ISO 2690, *Unrecorded magnetic tapes for instrumentation applications — Physical properties and test methods.*

ISO 3413, *Information processing — Recorded magnetic tapes for interchange instrumentation applications — Standard tape speeds and track configurations.*

ISO 3515, *Magnetic tape for instrumentation applications — Standardization of analogue modes of recording.*

ISO . . ., *Interchange practices and test methods for unrecorded instrumentation magnetic tape.*

ISO . . ., *Interchange practices and test methods for recorded magnetic tape.*

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Information processing — General purpose hubs and reels, with 76 mm (3 in) centrehole, for magnetic tape used in interchange instrumentation applications

1 SCOPE AND FIELD OF APPLICATION

This International Standard 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 dimensions *S* (see figure 2), shall be parallel within 0,002 5 mm per millimetre (or 0.002 5 in per inch) of diameter.

2.3 Flanges may have holes of convenient size, shape, and location to facilitate threading, but neither the holes nor optional threading slots shown in figure 2 are required by this International Standard.

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 hole (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 with the centre hole of the hub (diameter *A*) within 1,3 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 0,65 mm (0.026 in).

TABLE 1 — **Reel and hub dimensions**

Dimension	Metal			Plastics		
	millimetres	inches	radians / degrees	millimetres	inches	radians / degrees
A	76,2 $^{+0,2}_{0}$	3.000 $^{+0.008}_{0}$		76,4 $^{+0,4}_{0}$	3.008 $^{+0.015}_{0}$	
B	267 $^{0}_{-1}$ or 356 $^{0}_{-1}$	10.500 $^{+0.01}_{-0.03}$ or 14.000 ± 0.02		267 $^{0}_{-1}$	10.500 $^{+0.01}_{-0.03}$	
*C**	114,0 $^{+0,6}_{0}$	4.500 ± 0.010		114 $^{+1}_{0}$	4.500 ± 0.015	
D	82,5 $^{+0,3}_{0}$	3.250 $^{+0.008}_{-0.002}$		82,5 $^{+0,3}_{0}$	3.248 $^{+0.022}_{0}$	
E	5,6 $^{+0,2}_{0}$	0.220 $^{+0.010}_{0}$		5,6 $^{+0,3}_{0}$	0.220 $^{+0.013}_{0}$	
G			2,094 ± 0,004 / 120 ± 0,25			2,094 ± 0,004 / 120 ± 0,25
H	1,3 max.	0.050 max.		1,5 max.	0.060 max.	
J	2,0 max.	0.080 max.		2,8 max.	0.110 max.	
L	115 min.	4.500 min.		115 min.	4.500 min.	
M (reels only)	See table 2			12,6 ± 0,5	0.495 ± 0.020	
S (hubs only)	See table 2			8,9 ± 0,15	0.350 ± 0.005	
Taper of** outside cylindrical surface of hub	See table 2			0,08 max.	0.003 max.	

* Exclusive of friction rings.

** Taper equals the permissible variation of diameter *C* from one side of the hub to the other, irrespective of the limits of size.

TABLE 2 — **Standard widths for metal reels and hubs**

Standard tape width*		Dimension *M* (Reels)		Dimension *S* (Hubs)		Maximum taper of outside cylindrical surface of hub	
millimetres	inches	millimetres	inches	millimetres	inches	millimetres	inches
6,3	0.248	11,7 ± 0,5	0.462 ± 0.020	8,9 ± 0,15	0.350 ± 0.005	0,05	0.002
12,7	0.500	18,1 ± 0,5	0.712 ± 0.020	15,2 ± 0,15	0.600 ± 0.005	0,08	0.003
25,4	1.000	30,8 ± 0,5	1.212 ± 0.020	27,9 ± 0,15	1.100 ± 0.005	0,08	0.003
50,8	2.000	56,2 ± 0,5	2.212 ± 0.020	53,3 ± 0,15	2.100 ± 0.005	0,16	0.006

* The values given in this column are nominal.

See ISO 1859.

NOTE — Some of the nominal metric values have been rounded and the respective tolerances have been adjusted to provide compatibility with imperial sizes.