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# International Standard



# 8064

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

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## Information processing — Reels for 12,7 mm (0.5 in) wide magnetic tapes — Sizes 16, 18 and 22

*Traitement de l'information — Bobines pour bandes magnétiques de 12,7 mm (0,5 in) de large — Types 16, 18 et 22*

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**Descriptors** : data processing, information interchange, data storage devices, magnetic tapes, half-inch magnetic tapes, bobbins, specifications, dimensions, labelling.

## 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.

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. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 8064 was prepared by Technical Committee ISO/TC 97, *Information processing systems*.

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# Information processing — Reels for 12,7 mm (0.5 in) wide magnetic tapes — Sizes 16, 18 and 22

## 1 Scope and field of application

This International Standard specifies the characteristics of three sizes of reels for 12,7 mm (0.5 in) wide magnetic tape to allow physical interchangeability of such reels. The sizes are

- size 16
- size 18
- size 22

Their dimensions differ only in the overall diameter of their flanges. All other requirements of this International Standard apply equally to all three sizes. All requirements refer to empty reels, except for 8.2 which refers to full reels.

Reels specified in this International Standard are intended for applications where the larger reel (size 27) specified in ISO 1864 is not used.

Reels complying with this International Standard cannot be used with the self-loading cartridge specified in ISO 6098.

NOTE — Numeric values in the SI and/or Imperial measurement system in this International Standard may have been rounded off and therefore are consistent with, but not exactly equal to, each other. Either system may be used, but the two should be neither intermixed nor reconverted. The original design was made using the Imperial measurement system.

## 2 References

ISO 1864, *Information processing — Unrecorded 12,7 mm (0.5 in) wide magnetic tape for information interchange — 32 ftpmm (800 ftpi) NRZ1, 126 ftpmm (3 200 ftpi) phase encoded and 356 ftpmm (9 042 ftpi) NRZ1.*

ISO 6098, *Information processing — Self-loading cartridges for 12,7 mm (0.5 in) wide magnetic tape.*

## 3 Conformance

A reel is in conformance with this International Standard when it has one of the three diameters specified in 6.3 and meets all other mandatory requirements of this International Standard.

## 4 Description

A reel, in accordance with this International Standard is shown in the figure, for illustrative purposes. The reel shall comprise a hub and two flanges. The front flange shall exhibit a circular relieved area. The rear flange shall exhibit a circular groove for a write-enable ring.

## 5 Construction

### 5.1 Cross-section

Reels shall be constructed such that any cross-section taken through the central axis of the reel conforms to the cross-section shown in the figure.

The ring groove may have a recess to accommodate the write-enable ring tab, as an option. This recess shall not interfere with normal tape transport performance.

### 5.2 Symmetry of reel

Reels shall not be symmetrical, the flanges differing from each other as to the presence or absence of a relieved area or the write-enable ring groove, which shall be adjacent to the mounting pedestal for correct machine operation.

### 5.3 Hub and flanges

Hub and flanges need not be integral, but may be separate parts at the manufacturer's option as long as all requirements of this International Standard are met.

### 5.4 Outside surfaces of flanges

Bosses, ribs or raised designs are permitted on the outside surface of the flanges, provided that they do not extend beyond the cross-hatched envelope of the cross-section shown in the figure.

## 6 Dimensions

NOTE — The symbols used in this International Standard are the same as those used to identify the dimensions of the larger reel specified in ISO 1864.

### 6.1 Reference surface

The axial dimensions are referred to a reference surface U. This reference surface U shall be used for reel mounting. It is a circular surface within diameters  $A$  and  $D$  on the rear flange (see 6.2 and 6.5.1).

### 6.2 Inside diameter of the hub

The inside diameter  $A$  of the hub shall be

$$93,68 \begin{matrix} + 0,13 \\ - 0,08 \end{matrix} \text{ mm } (3,688 \begin{matrix} + 0,005 \\ - 0,003 \end{matrix} \text{ in})$$

### 6.3 Overall diameter of the flanges

The overall diameter  $B$  of the flanges shall be either

$$\text{size 16 : } 160,5 \pm 0,5 \text{ mm } (6,32 \pm 0,02 \text{ in})$$

$$\text{size 18 : } 177,8 \pm 0,5 \text{ mm } (7,00 \pm 0,02 \text{ in})$$

$$\text{size 22 : } 215,9 \pm 0,5 \text{ mm } (8,50 \pm 0,02 \text{ in})$$

### 6.4 Outside diameter of the hub

The outside diameter  $C$  of the hub shall be

$$130,18 \text{ mm } (5,125 \text{ in})$$

The tolerance on this dimension shall be

$$\text{in ranges } N : \pm 0,20 \text{ mm } (0,008 \text{ in})$$

$$\text{in range } W : \pm 0,13 \text{ mm } (0,005 \text{ in})$$

### 6.5 Dimensions of the groove for the write-enable ring

6.5.1 The inside diameter  $D$  of the groove shall be

$$98,42 \pm 0,13 \text{ mm } (3,875 \pm 0,005 \text{ in})$$

6.5.2 The outside diameter  $E$  of the groove shall be

$$111,46 \pm 0,13 \text{ mm } (4,388 \pm 0,005 \text{ in})$$

6.5.3 The angle  $\alpha$  of the wall of the groove with the axis of the reel shall be

$$4^\circ \pm 15'$$

6.5.4 The depth  $F$  of the groove shall be

$$6,35 \begin{matrix} + 0,25 \\ 0,00 \end{matrix} \text{ mm } (0,250 \begin{matrix} + 0,010 \\ 0,00 \end{matrix} \text{ in})$$

### 6.6 Distances of the flange surfaces from the reference surface

6.6.1 The distance  $J_f$  of the inside surface of the front flange from the reference surface U shall be

$$15,80 \begin{matrix} + 0,64 \\ - 0,13 \end{matrix} \text{ mm } (0,622 \begin{matrix} - 0,025 \\ - 0,005 \end{matrix} \text{ in})$$

6.6.2 The distance  $J_r$  of the inside surface of the rear flange from the reference surface U shall be

$$2,46 \begin{matrix} + 0,13 \\ - 0,64 \end{matrix} \text{ mm } (0,097 \begin{matrix} - 0,005 \\ - 0,025 \end{matrix} \text{ in})$$

6.6.3 The distance  $K_f$  of the outside surface of the front flange from the reference surface U shall be

$$21,54 \text{ mm max. } (0,848 \text{ in max.})$$

6.6.4 The distance  $K_r$  of the outside surface of the rear flange from the reference surface U shall be

$$2,03 \text{ mm max. } (0,080 \text{ in max.})$$

### 6.7 Relieved area of the front flange

6.7.1 The diameter  $L$  of the relieved area of the front flange shall be

$$104,78 \text{ mm min. } (4,125 \text{ in min.})$$

6.7.2 The distance  $M$  of the bottom surface of the relieved area from the reference surface U shall be

$$18,24 \pm 0,13 \text{ mm } (0,718 \pm 0,005 \text{ in})$$

### 6.8 Relations between dimensions

#### 6.8.1 Relation between dimensions $A$ and $C$

The outside cylindrical surface of the hub shall be concentric with the bore of the hub within 0,50 mm (0,020 in) Total Indicator Reading (TIR).

#### 6.8.2 Relation between dimension $C$ and the reference surface U

Within ranges  $N$  the perpendicularity of the outside cylindrical surface and the reference surface U shall be within

$$0,100 \text{ mm } (0,004 \text{ in})$$

Within range  $W$  it shall be within

$$0,065 \text{ mm } (0,003 \text{ in})$$

The nominal length of ranges  $N$  shall be

$$1,5 \text{ mm } (0,06 \text{ in})$$

## 7 Other physical characteristics

### 7.1 Moment of inertia

The moment of inertia of the full reel is not specified by this International Standard. The maximum moment of inertia of an empty reel shall not exceed

0,68 g·m<sup>2</sup> for size 16 (37.2 oz·in<sup>2</sup>)

0,68 g·m<sup>2</sup> for size 18 (37.2 oz·in<sup>2</sup>)

1,34 g·m<sup>2</sup> for size 22 (73.3 oz·in<sup>2</sup>)

### 7.2 Rigidity of the hub

Dimension *A* shall not be reduced to less than 93,6 mm (3.685 in) when the reel is fully loaded with tape wound at a constant tension of 3,6 N (13 ozf).

## 8 Identification of ownership

An identification area shall be provided on the front flange of the reel for ownership identification.

## 9 Manufacturer's reel identification

The manufacturer's identification may be placed on the reel.

## 10 Interchange label

A labelling area or card holder may be provided on the front flange. Adhesive labels, if employed, shall be of the type which leave no residue when removed and their addition shall not inhibit any dimensional or physical characteristics. The use of pencil or similar erasable marking is not allowed.

## 11 Write-enable ring

### 11.1 Outer surface

When installed in the write-enable ring groove, the outer surface of the write-enable ring shall not protrude above the mounting reference surface *U* within a radius of 54,03 mm (2.127 in).

### 11.2 Tab

The write-enable ring shall have a tab to facilitate removal from the groove.

### 11.3 Construction

Dimensions and materials used shall be such that the write-enable ring may be inserted and removed with reasonable effort and remain inserted during normal use. Furthermore, the ring shall be constructed so as not to interfere with normal tape transport performance.

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Table – Reel dimensions

Dimensions in millimetres		Symbol	Dimensions in inches	
Nominal	Tolerance		Nominal	Tolerance
93,68	+ 0,13 - 0,08	<i>A</i>	3.688	+ 0.005 0.003
160,5	± 0,05	<i>B</i> Size 16	6.32	± 0.02
177,8	± 0,05	<i>B</i> Size 18	7.00	± 0.02
215,8	± 0,05	<i>B</i> Size 22	8.50	± 0.02
130,18	( <i>N</i> ) ± 0,20 ( <i>W</i> ) ± 0,13	<i>C</i>	5.125	( <i>N</i> ) ± 0.008 ( <i>W</i> ) ± 0.005
98,42	± 0,13	<i>D</i>	3.875	± 0.005
111,46	± 0,13	<i>E</i>	4.388	± 0.005
6,35	+ 0,25 0,00	<i>F</i>	0.250	+ 0.010 0.000
15,80	+ 0,64 - 0,13	<i>J<sub>f</sub></i>	0.622	+ 0.025 - 0.005
2,46	+ 0,13 - 0,64	<i>J<sub>r</sub></i>	0.097	+ 0.005 - 0.025
21,54	Maximum	<i>K<sub>f</sub></i>	0.848	Maximum
2,03	Maximum	<i>K<sub>r</sub></i>	0.080	Maximum
104,78	Minimum	<i>L</i>	4.125	Minimum
18,24	± 0,13	<i>M</i>	0.718	± 0.005
1,5	not applicable	<i>N</i>	0.06	not applicable
10,34	not applicable	<i>W</i>	0.405	not applicable
Angles in degrees				
4°	± 15'	<i>α</i>	4°	± 15'

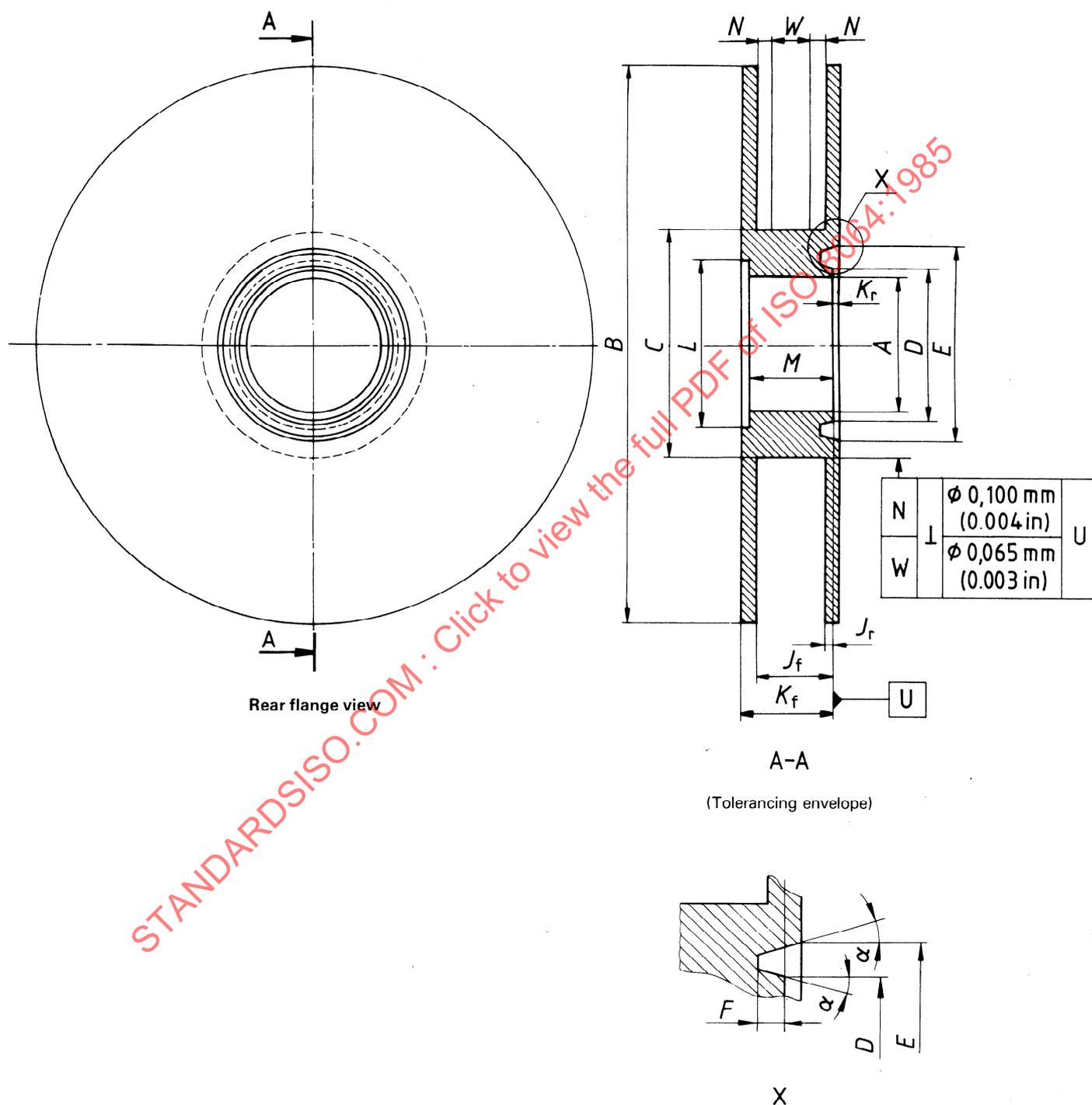


Figure — Reel characteristics