

Reels for magnetic tape for instrumentation applications —

Part 1: Specification for precision reels with 76 mm (3 in) centre hole

[ISO title: Information processing — Precision reels for magnetic
tape used in interchange instrumentation applications]

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- British Gas plc
- British Tape Industry Association
- Electronic Engineering Association
- Engineering Integrity
- Fulmer Research Laboratory
- GAMBICA (BEAMA Ltd.)
- Institution of Electronic and Radio Engineers
- Ministry of Defence
- Tape Recorder and Instrumentation Users and Manufacturers' Forum

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Contents

	Page
Committees responsible	Inside front cover
National foreword	ii
0 Introduction	1
1 Scope and field of application	1
2 Compatibility	1
3 Reference	1
4 Requirements	1
Annex Protecting collars for precision reels used in interchange instrumentation applications	5
Figure 1 — Dimensions of reels	2
Figure 2 — Dimensions for wraparound band for precision reels	8
Figure 3 — Temperature/humidity profile for environment test	11
Figure 4 — Dynamic flexure test	12
Table 1 — Reel dimensions and tolerances	3
Table 2 — Standard diameters	3
Table 3 — Standard widths and related dimensions	4
Table 4 — Maximum moments of inertia for empty reels	4
Table 5 — Label holder dimensions	7
Table 6 — Drop test requirements	8
Table 7 — Dimension <i>B</i> (inner diameter of the groove)	9
Table 8 — Dimensions	10
Publication referred to	Inside back cover

National foreword

This Part of BS 3732, having been prepared under the direction of the Information Systems Technology Standards Committee, supersedes BS 3732-1:1980, which is withdrawn.

Part 1 of BS 3732 is identical with ISO 1860:1986 “*Information processing — Precision reels for magnetic tape used in interchange instrumentation applications*”, published by the International Organization for Standardization (ISO).

Part 1 specifies requirements for precision reels with a 76 mm (3 in) centre hole.

Part 2 is identical with ISO 1858 “*Information processing — General purpose hubs and reels, with 76 mm (3 in) centre hole, for magnetic tape used in interchange instrumentation applications*”.

Part 3 is identical with ISO 3802 “*Information processing — General purpose reels with 8 mm (5/16 in) centre hole for magnetic tape for interchange instrumentation applications*”.

Terminology and conventions. The text of the International Standard has been approved as suitable for publication as a British Standard without deviation. Some terminology and certain conventions are not identical with those used in British Standards; attention is drawn especially to the following.

Wherever the words “International Standard” appear, referring to this standard, they should be read as “Part of BS 3732”.

For metric units, the comma has been used as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

Cross-reference. The reference, in clause 1, to ISO 370 “*Toleranced dimensions — Conversion from inches into millimetres and vice versa*”, is given for information only. Attention is drawn to the related BS 2856 “*Precise conversion of inch and metric sizes on engineering drawings*”.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 12, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

0 Introduction

The performance levels contained in this International Standard represent the minimum acceptable levels of performance for interchange purposes. They, therefore, represent the performance levels which the interchange media are expected to meet or surpass during their useful life and thus define end-of-life criteria for interchange purposes. The performance levels in this International Standard are not intended to be used for purchase specifications.

Quantitative limits for some of the requirements falling within the scope of this International Standard are not stated but are left to agreement between interchange parties. Standard test methods and measurement procedures should be used to establish such quantities.

The Annex, which does not form part of this International Standard, gives recommended characteristics for wraparound reel bands.

1 Scope and field of application

This International Standard specifies the recorder/reproducer interface or envelope requirements for metal- and glass-flanged precision reels with 76 mm (3 in) centrehole, for magnetic tape used in interchange instrumentation applications.

NOTE Numeric values in the S.I. 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.

Conversions of toleranced dimensions from Imperial units to S.I. units have been performed, according to ISO 370.

2 Compatibility

Except as indicated in clause 0, interchange parties conforming to this International Standard should be able to achieve compatibility with a minimum need for additional exchange of technical information.

3 Reference

ISO 370, *Toleranced dimensions — Conversion from inches into millimetres and vice versa*.

4 Requirements

4.1 Dimensions

For measurement purposes, dimensions are referred to the reference plane (see Figure 1) which is defined as the mounting surface of the reel.

The dimensions of the reels shall be as specified in the Figure 1, Figure 2, Figure 3, Figure 4, Table 1, Table 2, Table 3 and Table 4.

4.2 Symmetry

Reels and hubs shall be symmetrical to permit mounting from either side.

NOTE In the section view in Figure 1, the mounting surface and the reference plane are shown on the right side. For left side mounting the same dimensions apply with the reference plane taken on the left mounting surface. Thus, designation of left and right sides is arbitrary and is not intended to imply asymmetry.

4.3 Construction

Reels shall be so constructed that any profile section taken through the centre axis of the reel falls within the cross-hatched envelope of Figure 1.

4.3.1 Flange surface

The surface of the two flanges, considered between diameters L and B , shall lie between the planes defined respectively by dimensions H_1 and J_1 , for the flange closest to the reference plane, and between H_2 and J_2 for the other flange.

NOTE For metal flanges only, holes of convenient size, shape and location to facilitate threading may be provided.

For glass flanged reels, a means of restraining glass particles in the event of breakage shall be provided.

NOTE The glass commonly used for glass-flanged reels is strengthened to resist breakage in normal use. However, the limits of this strength may be exceeded under certain conditions of abnormal use, resulting in fracture and the generation of glass fragments. A means of restraining glass particles in the event of breakage has been specified in order to promote safety, data integrity, and convenience. Such means may take the form of a tough, plastic film over the glass surfaces. To be effective, such a film should, at the time breakage occurs, retain its coherency and largely remain adhered to the glass substrate. One such type of film is in the form of a coating at least 0,03 mm (0.001 2 in) thick. Equally effective results may be achieved by other means. The choice and specific definition is left as a matter for agreement between interchanging parties. However, the glass flanges themselves, including any plastic protective or other retaining material used over them, should be clear and permit substantially unrestricted viewing of any tape contained between them.

4.3.2 Hub surface

4.3.2.1 The mounting faces shall be parallel over their entire surface area within 0,000 4 mm per millimetre (0.000 4 in per inch)

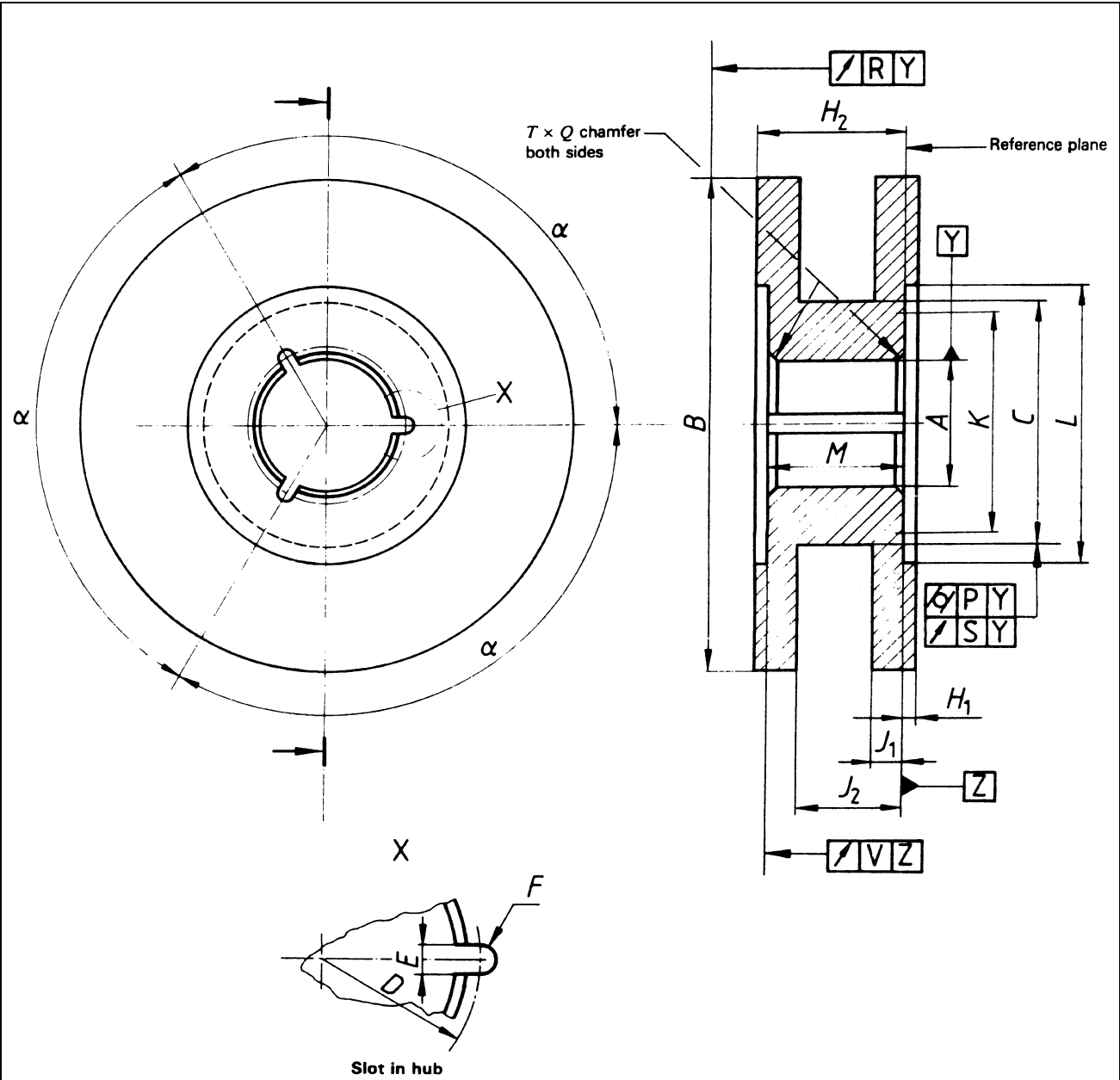
NOTE The mounting faces are the hub surfaces that mate with the transport reel drive and are within the circles bounded by the concentric dimensions A and K and separated by the dimension M (see Figure 1).

4.3.2.2 The cylindrical outer surface of the hub shall provide a means whereby the threading of the tape onto the hub does not damage or contaminate the hub or tape, or permanently affix the tape to the hub.

NOTE This may be achieved by utilizing an electrostatic charge on the hub.

4.4 Inertia

The moments of inertia shall not exceed the maximum values listed in Table 4.



NOTE Dimensions J_1 , H_1 , J_2 and H_2 define the envelope within which the flanges should lie and do not define the thickness of the flanges. Dimension D represents a radius.

Figure 1 — Dimensions of reels