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**Plain bearings — Wrapped bushes —  
Part 3:  
Lubrication holes, grooves and  
indentations**

*Paliers lisses — Bagues roulées —  
Partie 3: Trous de graissage, rainures de graissage et creux de  
graissage*

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## 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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 3547-3 was prepared by Technical Committee ISO/TC 123, *Plain bearings*, Subcommittee SC 3, *Dimensions, tolerances and construction details*.

This second edition cancels and replaces the first edition (ISO 3547-3:1999), which has been technically revised.

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ISO 3547 consists of the following parts, under the general title *Plain bearings — Wrapped bushes*:

- *Part 1: Dimensions* <https://standards.iteh.ai/catalog/standards/sist/28bf4251-7068-4c1b-a6ee-b33415749b22/iso-3547-3-2006>
- *Part 2: Test data for outside and inside diameters*
- *Part 3: Lubrication holes, grooves and indentations*
- *Part 4: Materials*

The following parts are under preparation:

- *Part 5: Checking the outside diameter*
- *Part 6: Checking the inside diameter*
- *Part 7: Measurement of wall thickness of thin-walled half-bearings and thin-walled bushes*

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# Plain bearings — Wrapped bushes —

## Part 3: Lubrication holes, grooves and indentations

### 1 Scope

This part of ISO 3547 specifies dimensions of lubrication holes, grooves and bore indentations on wrapped bushes made of solid and multi-layer bearing material for plain bearing applications.

NOTE Wrapped bushes with lubrication holes, grooves or bore indentations in accordance with this part of ISO 3547 can be ordered with dimensions in accordance with ISO 3547-1 and made from materials in accordance with ISO 3547-4.

### 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 3547-1:2006, *Plain bearings — Wrapped bushes — Part 1: Dimensions*

<https://standards.iteh.ai/catalog/standards/sist/28bf4251-7068-4c1b-a6ee->

ISO 4378-1, *Plain bearings — Terms, definitions and classification — Part 1: Design, bearing materials and their properties*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4378-1 apply.

## 4 Symbols and units

See Table 1.

Table 1 — Symbols and units

Symbol	Description	Unit
$B$	Width of the bush	mm
$c$	Edge length of the diamond-shaped lubrication indentation	mm
$D_i$	Inside diameter of the bush	mm
$d_b$	Diameter of the lubrication indentation	mm
$d_L$	Diameter of the lubrication hole	mm
$D_o$	Outside diameter of the bush	mm
$e$	Distance between the lubrication grooves	mm
$n_1, n_2$	Width of lubrication groove	mm
$R$	Radius	mm
$s_3$	Wall thickness	mm
$s_4$	Residual wall thickness	mm
$t$	Depth of the lubrication indentation	mm
$\alpha$	Layout of the lubrication indentation	°

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## 5 General

Lubrication holes, grooves and bore indentations may be carried out in the flat strip prior to forming. Dimensional changes brought about by the forming of the strip are permissible. Marks of lubrication grooves and bore indentations produced by stamping may appear on the back of the bush. Small cracks in the bearing material in lubrication grooves and bore indentations are permissible, provided that no pieces become detached.

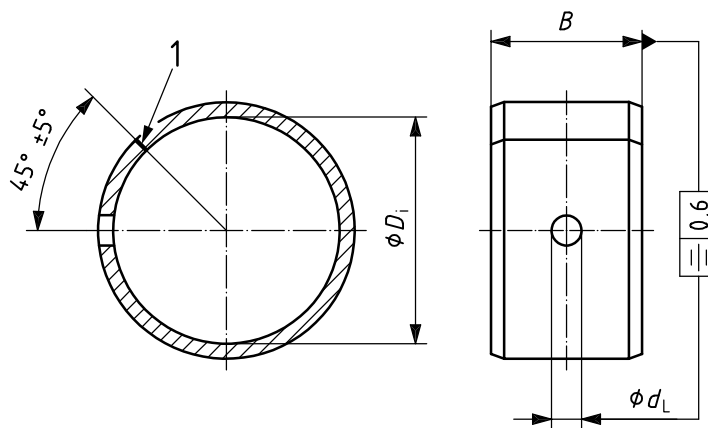
Untoleranced and unspecified dimensions may be specified differently subject to agreement between the user and supplier.

## 6 Lubrication holes

See Figures 1 and 2.

For the nominal dimensions, see Table 2.

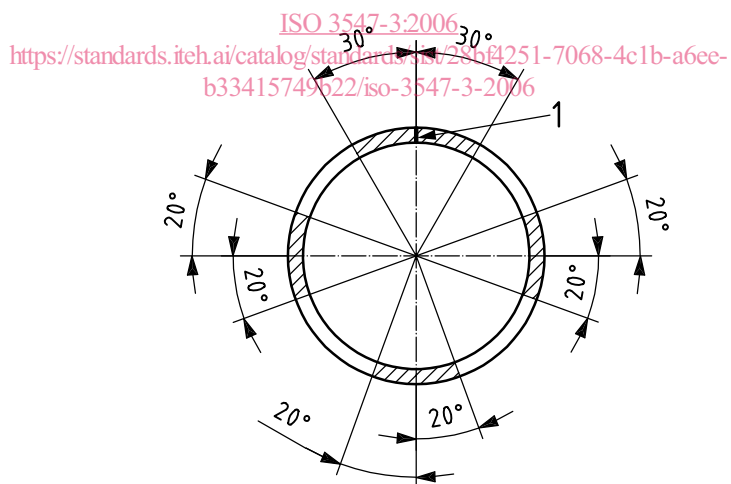
Dimensions in millimetres



**Key**

- 1 split

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**Figure 1 — Lubrication holes (Type L) — Dimensions** (see Table 2)



**Key**

- 1 split

Lubrication holes in the hatched areas should be avoided as far as possible.

**Figure 2 — Lubrication holes (Type L) — Areas of bush not recommended for holes**

**Table 2 — Nominal dimensions of lubrication holes**

Dimensions in millimetres

$D_i$		$d_L^a$
> 14	≤ 22	3
> 22	≤ 40	4
> 40	≤ 50	5
> 50	≤ 100	6
> 100		7
<sup>a</sup> Minimum dimension after forming.		

## 7 Lubrication grooves

### 7.1 General

Lubrication grooves types M1 and M2 are used for lubrication. See Figures 3 to 8 and Tables 3 to 6.

NOTE The grooved cross-section of Figures 4 and 5, and 7 and 8, are shown on an enlarged scale.

Widening of the lubrication grooves in the area of the lubrication holes, at the split and at the end faces of the bush, is permissible.

Lubrication grooves are normally represented on the developed shape of the bush.

Distortions to the groove form can occur during the subsequent manufacturing operations.

In order to facilitate measurement, the dimensions of the bush thickness remaining at the base of the groove may be specified on the drawing as the control dimension.



7.2 Type M1

7.2.1 General

See Figure 3 and Table 3.

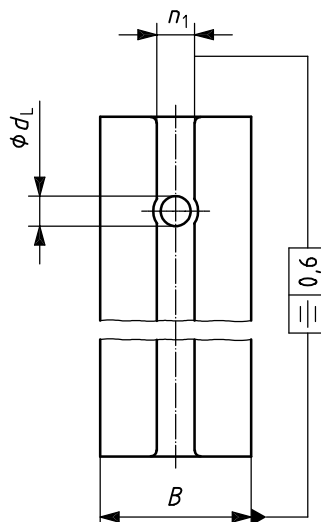


Figure 3 — Type M1 — Dimensions (see Table 3)  
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Table 3 — Nominal dimensions of lubrication grooves type M1

ISO 3547-3:2006 Dimensions in millimetres

$D_i$ nominal		$d_L^a$	$n_1$ $\pm 0,5$	
			Series (in accordance with ISO 3547-1)	
		A, B, D, W		C, E
> 14	$\leq 22$	3	4	5
> 22	$\leq 40$	4	5	6
> 40	$\leq 50$	5	6	7
> 50	$\leq 100$	6	7	8
> 100		7	8	9

<sup>a</sup> Minimum dimension after forming.