INTERNATIONAL STANDARD

ISO 2795

Fourth edition
1991-11-01

Plain bearings — Sintered bushes — Dimensions and tolerances

Paliers lisses — Coussinets frittés — Dimensions et tolérances

Reference number
ISO 2795:1991(E)

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.

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.

International Standard ISO 2795 was prepared by Technical Committee ISO/TC 123, *Plain bearings*, Sub-Committee SC 3, *Dimensions, tolerances and construction details*.

This fourth edition cancels and replaces the third edition (ISO 2795:1986), of which it constitutes a minor revision.

International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Introduction

The sizes given in this International Standard are based on a range of shaft diameters which are considered to correspond to the requirements of industry. For all except the smallest sizes, a thin-wall series is provided in addition to the normal series in order to introduce an element of choice and, more importantly, to provide for the possibility of the same sizes being adopted for plain bearings made from other materials. It is envisaged that as far as possible the same outside diameters will be recommended for all types of plain bearings.

Plain bearings — Sintered bushes — Dimensions and tolerances

1 Scope

This International Standard specifies the dimensions and tolerances[1)] applicable to sintered bearings for the following ranges of inside diameters:

— Cylindrical bearings: 1 mm to 60 mm

— Flanged bearings: 1 mm to 60 mm

— Spherical bearings: 1 mm to 20 mm

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 286-1:1988, *ISO system of limits and fits — Part 1: Bases of tolerances, deviations and fits.*

ISO 286-2:1988, *ISO system of limits and fits — Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts.*

ISO 5755-1:1987, *Sintered metal materials — Specifications — Part 1: Materials, for bearings, impregnated with liquid lubricant.*

3 Materials

Materials used for manufacturing sintered bearings shall conform to ISO 5755-1.

4 Cylindrical bearings

4.1 Dimensions

See figure 1 and tables 1 and 2.

1) See ISO 286-1 and ISO 286-2 for the limit deviations and tolerance grades specified in this International Standard.

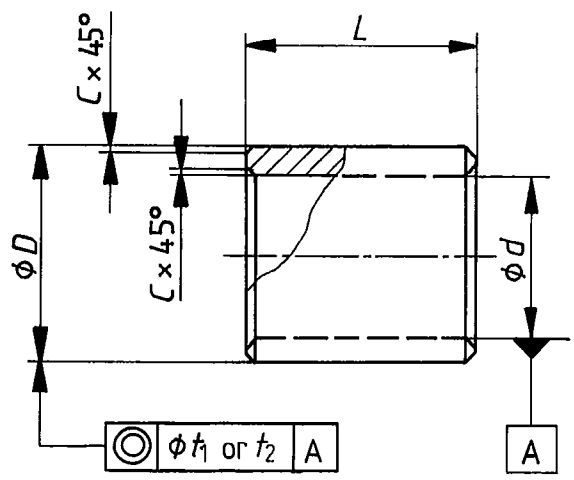

Figure 1

Table 1

Dimensions in millimetres

Inside diameter d	Outside diameter, D		Length[1] L
	Normal series	Thin series[2]	
1	3	—	1-2
1,5	4	—	1-2
2	5	—	2-3
2,5	6	—	2-3
3	6	5	3-4
4	8	7	3-4-6
5	9	8	4-5-8
6	10	9	4-6-10
7	11	10	5-8-10
8	12	11	6-8-12
9	14	12	6-10-14
10	16	14	8-10-16
12	18	16	8-12-20
14	20	18	10-14-20
15	21	19	10-15-25
16	22	20	12-16-25
18	24	22	12-18-30
20	26	25	15-20-25-30
22	28	27	15-20-25-30
25	32	30	20-25-30-35
28	36	33(34)	20-25-30-40
30	38	35(36)	20-25-30-40
32	40	38	20-25-30-40
35	45	41	25-35-40-50
38	48	44	25-35-45-55
40	50	46	30-40-50-60
42	52	48	30-40-50-60
45	55	51	35-45-55-65
48	58	55	35-50-70
50	60	58	35-50-70
55	65	63	40-55-70
60	72	68	50-60-70

1) As from inside diameter 20 mm (included), the last value for the length is not applicable to the thin series.

2) Dimensions in parentheses shall be used as "2nd choice".

Table 2

Dimensions in millimetres

Wall thickness $\frac{D-d}{2}$ above	Wall thickness $\frac{D-d}{2}$ up to and incl.	Chamfer C max.
—	1	0,2
1	2	0,3
2	3	0,4
3	4	0,6
4	5	0,7
5	—	0,8

4.2 Tolerances

The tolerances on the bearings after fitting and the tolerances on the housing and insertion pin are given below. In addition, tolerances on the inside and outside diameters of the bearing before fitting are given.

NOTE 1 Since the actual tolerances and combinations of tolerances in the as-delivered state depend upon the characteristics of the materials and the manufacturing methods, they should be discussed with the manufacturer.

As-delivered:

— on outside diameter D: in the ranges

r6 to s7, for $D \leqslant 50$ mm
r7 to s8, for $D > 50$ mm

— on inside diameter d: in the ranges

F7 to G7, for $D \leqslant 50$ mm
F8 to G8, for $D > 50$ mm

— on bearing length L: js13

— on coaxiality of the outside diameter with respect to the inside surface diameter (tolerance based on the outside diameter, D):

t_1 = IT 9 for $D \leqslant 50$ mm
t_2 = IT 10 for $D > 50$ mm

Insertion pin: in the range m5 to m6

Housing: H7

Bearing bore after fitting (assuming the housing is rigid):

H7, for $D \leqslant 50$ mm
H8, for $D > 50$ mm

5 Flanged bearings

5.1 Dimensions

See figure 2 and tables 3 to 5.

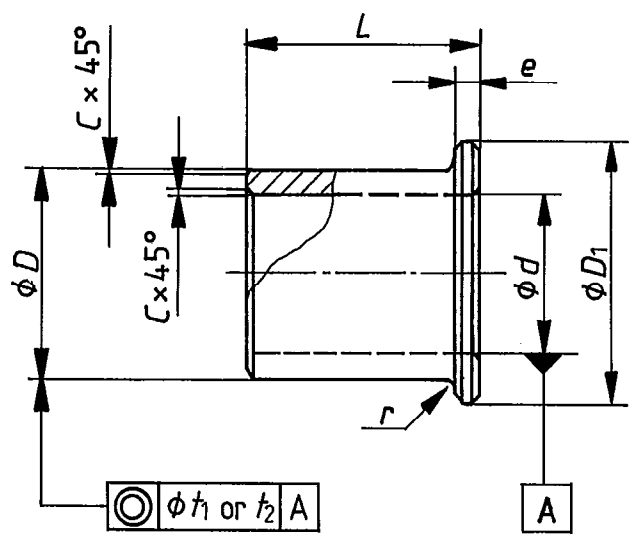

Figure 2

Table 3

Dimensions in millimetres

Inside diameter d	Outside diameter D	Flange diameter D_1	Flange thickness e	Length L
Normal series				
1	3	5	1	2
1,5	4	6	1	2
2	5	8	1,5	3
2,5	6	9	1,5	3
3	6	9	1,5	4
4	8	12	2	3-4-6
5	9	13	2	4-5-8
6	10	14	2	4-6-10
7	11	15	2	5-8-10
8	12	16	2	6-8-12
9	14	19	2,5	6-10-14
10	16	22	3	8-10-16
12	18	24	3	8-12-20
14	20	26	3	10-14-20
15	21	27	3	10-15-25
16	22	28	3	12-16-25
18	24	30	3	12-18-30
20	26	32	3	15-20-25-30
22	28	34	3	15-20-25-30
25	32	39	3,5	20-25-30
28	36	44	4	20-25-30
30	38	46	4	20-25-30
32	40	48	4	20-25-30
35	45	55	5	25-35-40
38	48	58	5	25-35-45
40	50	60	5	30-40-50
42	52	62	5	30-40-50
45	55	65	5	35-45-55
48	58	68	5	35-50
50	60	70	5	35-50
55	65	75	5	40-55
60	72	84	6	50-60
Thin series				
10	14	18	2	8-10-16
12	16	20	2	8-12-20
14	18	22	2	10-14-20
15	19	23	2	10-15-25
16	20	24	2	12-16-25
18	22	26	2	12-18-30
20	25	30	2,5	15-20-25
22	27	32	2,5	15-20-25
25	30	35	2,5	20-25-30

Table 4

Dimensions in millimetres

Wall thickness $\frac{D-d}{2}$		Chamfer C
above	up to and incl.	max.
—	1	0,2
1	2	0,3
2	3	0,4
3	4	0,6
4	5	0,7
5	—	0,8

Table 5

Dimensions in millimetres

Outside diameter D		r
above	up to and incl.	max.
—	12	0,3
12	30	0,6
30	—	0,8

5.2 Tolerances

The tolerances on the bearings after fitting and the tolerances on the housing and insertion pin are given below. In addition, tolerances on the inside and outside diameters of the bearing and on the flange before fitting are given.

NOTE 2 Since the actual tolerances and combinations of tolerances in the as-delivered state depend upon the characteristics of the materials and the manufacturing methods, they should be discussed with the manufacturer.

As-delivered:

— on outside diameter D: in the ranges

r6 to s7, for $D \leqslant 50$ mm
r7 to s8, for $D > 50$ mm

— on inside diameter d: in the ranges

F7 to G7, for $D \leqslant 50$ mm
F8 to G8, for $D > 50$ mm

— on bearing length L: js13

— on flange diameter D_1: js13

— on flange thickness e: js13

— on coaxiality of the outside diameter with respect to the inside surface diameter (tolerance based on the outside diameter, D):

t_1 = IT 9, for $D \leqslant 50$ mm
t_2 = IT 10, for $D > 50$ mm

Insertion pin: in the range m5 to m6

Housing: H7

Bearing bore after fitting (assuming the housing is rigid):

H7, for $D \leqslant 50$ mm
H8, for $D > 50$ mm

6 Spherical bearings

6.1 Dimensions

See figure 3 and table 6.

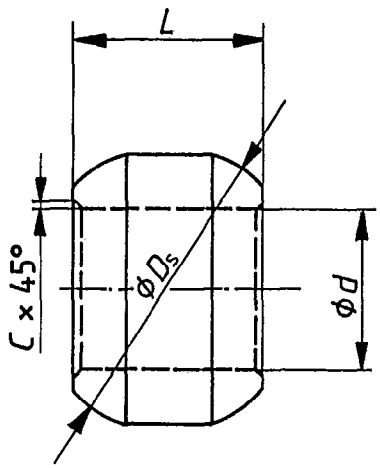

Figure 3

NOTE 3 A cylindrical surface is permissible on the sphere at the centre of the bearing length, the diameter of which should be agreed between the user and the manufacturer.

Table 6

Dimensions in millimetres

Inside diameter d	Spherical diameter D_s	Length L	Chamfer C max.
1	3	2	0,3
1,5	4,5	3	
2	5	3	
2,5	6	4	
3	8	6	
4	10	8	
5	12	9	0,5
6	14	10	
7	16	11	
8	16	11	
9	18	12	
10	20	13	
10	22	14	
12	22	15	
14	24	17	
15	27	20	
16	28	20	
18	30	20	
20	36	25	

6.2 Tolerances

Inside diameter, d: H7

Spherical diameter, D_s: h11

Bearing length, L: js13

Tolerance for the housing diameter should normally be H10 but this depends on the method of assembly. Where an easier fit is preferred for lighter self-alignment, G10 is suggested.

UDC 621.822.5:621.762.5

Descriptors: bearings, plain bearings, sintered products, dimensions, dimensional tolerances.

Price based on 5 pages