
**Rolling bearings — Accessories —
Part 1:
Dimensions for adapter sleeve
assemblies and withdrawal sleeves**

Roulements — Accessoires —

Partie 1: Dimensions des manchons de serrage et de démontage
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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 2982-1 was prepared by Technical Committee ISO/TC 4, *Rolling bearings*.

This second edition cancels and replaces the first edition (ISO 2982-1:1995), which has been technically revised. In particular, the title has been corrected and approximate values for B_2 are indicated.

ISO 2982 consists of the following parts, under the general title: *Rolling bearings — Accessories*:

- *Part 1: Dimensions for adapter sleeve assemblies and withdrawal sleeves*
- *Part 2: Dimensions for locknuts and locking devices*

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Rolling bearings — Accessories —

Part 1: Dimensions for adapter sleeve assemblies and withdrawal sleeves

1 Scope

This part of ISO 2982 specifies:

- boundary dimensions of adapter sleeves with taper 1:12 and withdrawal sleeves with tapers 1:12 and 1:30 for rolling bearings of a number of dimension series as specified in ISO 15;
- the outside diameter of suitable locknuts;
- distance from bearing small bore face to outer face of locknut;
- distance from bearing small bore face to outer face of bolt head;
- overall length of withdrawal sleeve and bearing ring.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 15, *Rolling bearings — Radial bearings — Boundary dimensions, general plan*

ISO 2982-2, *Rolling bearings — Accessories — Part 2: Dimensions for locknuts and locking devices*

ISO 5593, *Rolling bearings — Vocabulary*

ISO 15241, *Rolling bearings — Symbols for physical quantities*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5593 and the following apply.

3.1

adapter sleeve assembly

assembly comprising an adapter sleeve, a locknut, and a locking device

3.2

locking clip

part in C-shape for securing a locknut

3.3

locking clip assembly

assembly comprising a locking clip and a bolt

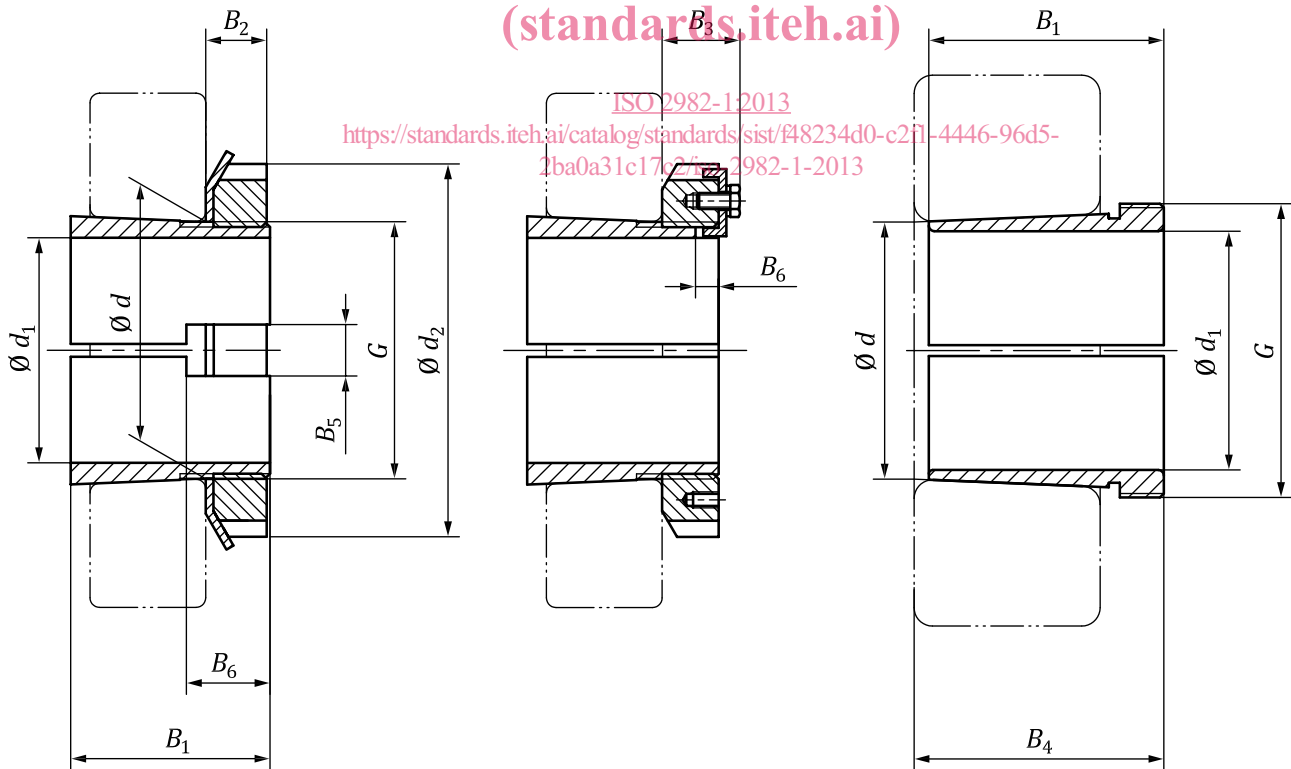
4 Symbols

For the purposes of this document, the symbols given in ISO 15241 and the following apply.

The symbols shown in [Figure 1](#) and the values given in [Table 1](#), [Table 2](#), [Table 3](#), [Table 4](#) and [Table 5](#) denote nominal dimensions, unless specified otherwise.

- B_1 adapter sleeve length or withdrawal sleeve length
- B_2 distance from bearing small bore face to outer face of locknut
- B_3 distance from bearing small bore face to outer face of bolt head
- B_4 overall length of withdrawal sleeve and bearing ring
- B_5 slot width (for lockwasher inner tab or locking clip)
- B_6 slot length
- d bearing bore diameter
- d_1 bore diameter of sleeve
- d_2 outside diameter of locknut
- G designation of screw thread

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a) Adapter sleeve with locknut and lockwasher

b) Adapter sleeve with locknut and locking clip assembly

c) Withdrawal sleeve

Figure 1 — Adapter sleeve assemblies and withdrawal sleeve

5 Dimensions

5.1 General

Dimensions of adapter sleeve assemblies and boundary dimensions of withdrawal sleeves and overall lengths of withdrawal sleeve and bearing ring are given in [Table 1](#), [Table 2](#), [Table 3](#), [Table 4](#) and [Table 5](#).

Thread lengths are not specified but shall be appropriate for securing adapter sleeve with locknut or for withdrawing a rolling bearing on the withdrawal sleeve with locknut. Dimensions of locknuts, lockwashers, and locking clip assemblies for the adapter sleeves are given in ISO 2982-2. The locknuts are also suitable for the dismounting of the withdrawal sleeves.

5.2 Adapter sleeve assemblies with taper 1:12

Dimensions of adapter sleeve assemblies with taper 1:12 are given in [Table 1](#), [Table 2](#) and [Table 3](#). Slot lengths, B_6 , are not specified but

- shall be at least long enough that lockwasher or locking clip can be installed when rolling bearing, adapter sleeve, and locknut are secured onto a shaft, and
- shall not be longer than 1,3 times thread lengths.

Table 1 — Dimensions of adapter sleeve assemblies with taper 1:12 ($15 \leq d \leq 110$)

Dimensions in millimetres

d	d_1	B_2 ≈	B_5 min.	d_2	B_1					G
					Suitable for bearing dimension series					
					02	22, 03	31	32	23	
15	12	6	5	25	19	22	—	—	25	M15 × 1
17	14	6	5	28	20	24	—	—	27	M17 × 1
20	17	7	5	32	24	28	—	—	31	M20 × 1
25	20	8	6	38	26	29	—	—	35	M25 × 1,5
30	25	8	6	45	27	31	—	—	38	M30 × 1,5
35	30	9	7	52	29	35	—	—	43	M35 × 1,5
40	35	10	7	58	31	36	—	—	46	M40 × 1,5
45	40	11	7	65	33	39	—	—	50	M45 × 1,5
50	45	12	7	70	35	42	—	—	55	M50 × 1,5
55	50	12	9	75	37	45	—	—	59	M55 × 2
60	55	13	9	80	38	47	—	—	62	M60 × 2
65	60	14	9	85	40	50	—	—	65	M65 × 2
70	60	14	9	92	41	52	—	—	68	M70 × 2
75	65	15	9	98	43	55	—	—	73	M75 × 2
80	70	17	11	105	46	59	—	—	78	M80 × 2
85	75	18	11	110	50	63	—	—	82	M85 × 2
90	80	18	11	120	52	65	—	86	86	M90 × 2
95	85	19	11	125	55	68	—	90	90	M95 × 2
100	90	20	13	130	58	71	76	97	97	M100 × 2
105	95	20	13	140	60	74	80	101	101	M105 × 2
110	100	21	13	145	63	77	81	105	105	M110 × 2

Table 2 — Dimensions of adapter sleeve assemblies with taper 1:12 ($120 \leq d \leq 440$)

Dimensions in millimetres

<i>d</i>	<i>d</i> ₁	<i>B</i> ₂ ≈	<i>B</i> ₃ max.	<i>B</i> ₅ min.	<i>d</i> ₂	<i>B</i> ₁		<i>d</i> ₂	<i>B</i> ₁		<i>G</i>
						Suitable for bearing dimension series			Suitable for bearing dimension series		
						39	30, 02, 12		31, 22, 03, 13	32, 23	
120	110	22	—	15	145	60	72	155	88	112	M120 × 2
130	115	23	—	15	155	65	80	165	92	121	M130 × 2
140	125	24	—	17	165	66	82	180	97	131	M140 × 2
150	135	26	—	17	180	76	87	195	111	139	M150 × 2
160	140	28	—	19	190	78	93	210	119	147	M160 × 3
170	150	29	—	19	200	79	101	220	122	154	M170 × 3
180	160	30	—	21	210	87	109	230	131	161	M180 × 3
190	170	31	—	21	220	89	112	240	141	169	M190 × 3
200	180	32	—	21	240	98	120	250	150	176	M200 × 3
220	200	—	41	20	260	96	126	—	—	—	Tr220 × 4
220	200	35	—	25	—	—	—	280	161	186	Tr220 × 4
240	220	—	46	20	290	101	133	—	—	—	Tr240 × 4
240	220	37	—	25	—	—	—	300	172	199	Tr240 × 4
260	240	—	46	20	310	116	145	—	—	—	Tr260 × 4
260	240	39	—	29	—	—	—	330	190	211	Tr260 × 4
280	260	—	50	24	330	121	152	—	—	—	Tr280 × 4
280	260	41	—	29	—	—	—	350	195	224	Tr280 × 4
300	280	—	54	24	360	140	168	—	—	—	Tr300 × 4
300	280	—	53	24	—	—	—	380	208	240	Tr300 × 4
320	300	—	55	24	380	140	171	—	—	—	Tr320 × 5
320	300	—	56	24	—	—	—	400	226	258	Tr320 × 5
340	320	—	58	24	400	144	187	—	—	—	Tr340 × 5
340	320	—	72	28	—	—	—	440	254	288	Tr340 × 5
360	340	—	58	28	420	144	188	—	—	—	Tr360 × 5
360	340	—	75	28	—	—	—	460	259	299	Tr360 × 5
380	360	—	62	28	450	164	193	—	—	—	Tr380 × 5
380	360	—	77	32	—	—	—	490	264	310	Tr380 × 5
400	380	—	66	28	470	168	210	—	—	—	Tr400 × 5
400	380	—	82	32	—	—	—	520	272	328	Tr400 × 5
420	400	—	66	32	490	168	212	—	—	—	Tr420 × 5
420	400	—	90	32	—	—	—	540	304	352	Tr420 × 5
440	410	—	77	32	520	189	228	—	—	—	Tr440 × 5
440	410	—	90	36	—	—	—	560	307	361	Tr440 × 5

Table 3 — Dimensions of adapter sleeve assemblies with taper 1:12 ($460 \leq d \leq 1\ 060$)

Dimensions in millimetres

d	d_1	B_3 max.	B_5 min.	d_2	B_1		d_2	B_1		G
					Suitable for bearing dimension series			Suitable for bearing dimension series		
					39	30		31	32	
460	430	77	32	540	189	234	—	—	—	Tr460 × 5
460	430	95	36	—	—	—	580	326	382	Tr460 × 5
480	450	77	36	560	200	237	—	—	—	Tr480 × 5
480	450	95	36	—	—	—	620	335	397	Tr480 × 5
500	470	85	36	580	208	247	—	—	—	Tr500 × 5
500	470	100	40	—	—	—	630	356	428	Tr500 × 5
530	500	90	40	630	216	265	—	—	—	Tr530 × 6
530	500	105	40	—	—	—	670	364	447	Tr530 × 6
560	530	97	40	650	227	282	—	—	—	Tr560 × 6
560	530	110	45	—	—	—	710	377	462	Tr560 × 6
600	560	97	40	700	239	289	—	—	—	Tr600 × 6
600	560	110	45	—	—	—	750	399	487	Tr600 × 6
630	600	97	45	730	254	301	—	—	—	Tr630 × 6
630	600	120	50	—	—	—	800	424	521	Tr630 × 6
670	630	102	45	780	264	324	—	—	—	Tr670 × 6
670	630	131	50	—	—	—	850	456	558	Tr670 × 6
710	670	112	50	830	286	342	—	—	—	Tr710 × 7
710	670	135	55	—	—	—	900	467	572	Tr710 × 7
750	710	112	55	870	291	356	—	—	—	Tr750 × 7
750	710	141	60	—	—	—	950	493	603	Tr750 × 7
800	750	112	55	920	303	366	—	—	—	Tr800 × 7
800	750	141	60	—	—	—	1 000	505	618	Tr800 × 7
850	800	115	60	980	308	380	—	—	—	Tr850 × 7
850	800	147	70	—	—	—	1 060	536	651	Tr850 × 7
900	850	125	60	1 030	326	400	—	—	—	Tr900 × 7
900	850	154	70	—	—	—	1 120	557	660	Tr900 × 7
950	900	125	60	1 080	344	420	—	—	—	Tr950 × 8
950	900	154	70	—	—	—	1 170	583	675	Tr950 × 8
1 000	950	125	60	1 140	358	430	—	—	—	Tr1000 × 8
1 000	950	154	70	—	—	—	1 240	609	707	Tr1000 × 8
1 060	1 000	125	60	1 200	372	447	—	—	—	Tr1060 × 8
1 060	1 000	154	70	—	—	—	1 300	622	—	Tr1060 × 8

5.3 Withdrawal sleeves with taper 1:12

Boundary dimensions of withdrawal sleeves with taper 1:12 and overall lengths of withdrawal sleeve and bearing ring are given in [Table 4](#).