
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



STANDARDSISO.COM : Click to view the full PDF of ISO 2982-1:2013



COPYRIGHT PROTECTED DOCUMENT

© ISO 2013

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

	Page
Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Symbols	2
5 Dimensions	3
5.1 General	3
5.2 Adapter sleeve assemblies with taper 1:12	3
5.3 Withdrawal sleeves with taper 1:12	5
5.4 Withdrawal sleeves with taper 1:30	7

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*

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

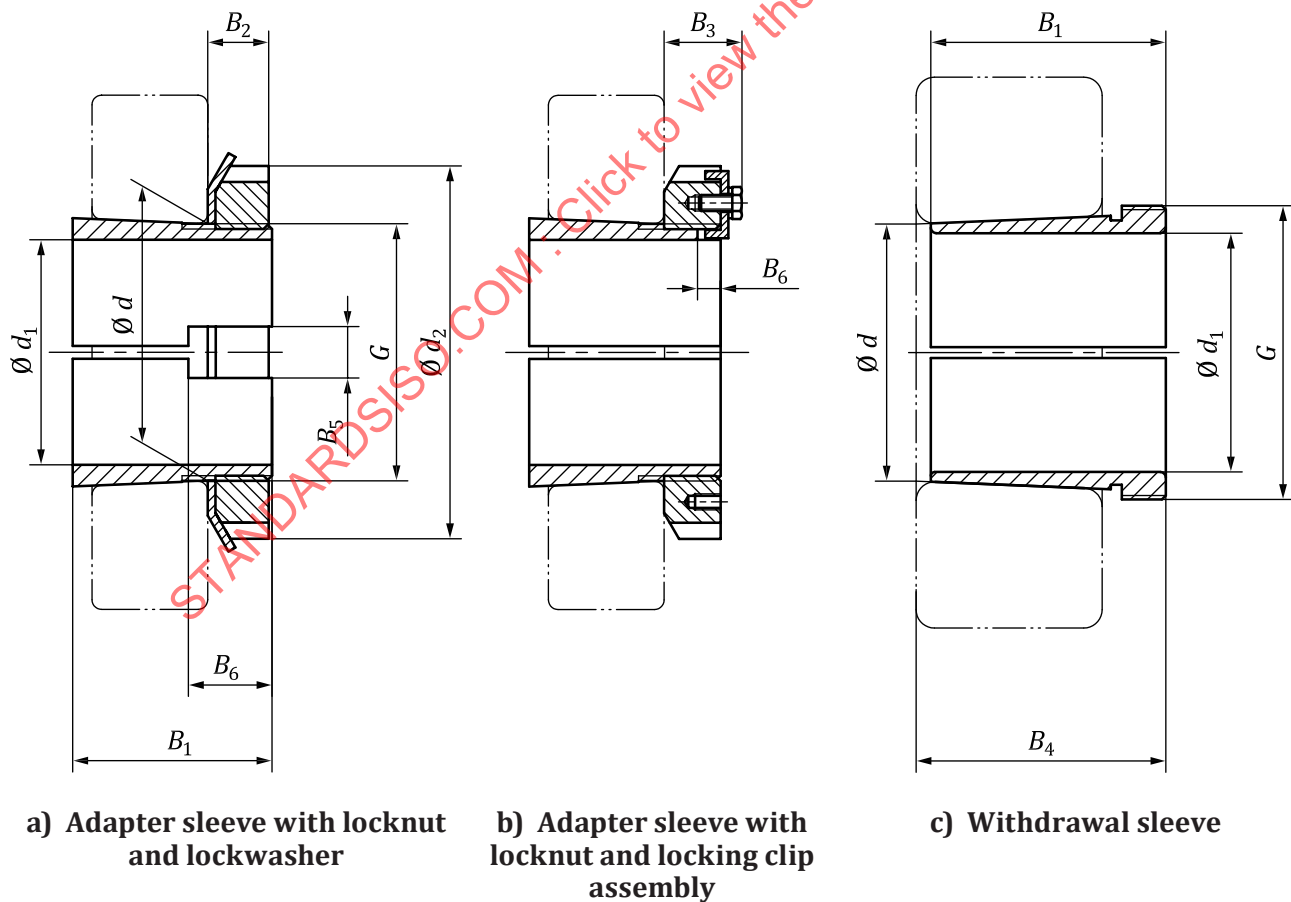


Figure 1 — Adapter sleeve assemblies and withdrawal sleeve

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 $\approx$	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 $\times$ 1
17	14	6	5	28	20	24	—	—	27	M17 $\times$ 1
20	17	7	5	32	24	28	—	—	31	M20 $\times$ 1
25	20	8	6	38	26	29	—	—	35	M25 $\times$ 1,5
30	25	8	6	45	27	31	—	—	38	M30 $\times$ 1,5
35	30	9	7	52	29	35	—	—	43	M35 $\times$ 1,5
40	35	10	7	58	31	36	—	—	46	M40 $\times$ 1,5
45	40	11	7	65	33	39	—	—	50	M45 $\times$ 1,5
50	45	12	7	70	35	42	—	—	55	M50 $\times$ 1,5
55	50	12	9	75	37	45	—	—	59	M55 $\times$ 2
60	55	13	9	80	38	47	—	—	62	M60 $\times$ 2
65	60	14	9	85	40	50	—	—	65	M65 $\times$ 2
70	60	14	9	92	41	52	—	—	68	M70 $\times$ 2
75	65	15	9	98	43	55	—	—	73	M75 $\times$ 2
80	70	17	11	105	46	59	—	—	78	M80 $\times$ 2
85	75	18	11	110	50	63	—	—	82	M85 $\times$ 2
90	80	18	11	120	52	65	—	86	86	M90 $\times$ 2
95	85	19	11	125	55	68	—	90	90	M95 $\times$ 2
100	90	20	13	130	58	71	76	97	97	M100 $\times$ 2
105	95	20	13	140	60	74	80	101	101	M105 $\times$ 2
110	100	21	13	145	63	77	81	105	105	M110 $\times$ 2

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

Dimensions in millimetres

d	d_1	B_2 $\approx$	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, 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	
460 460	430 430	77 95	32 36	540 —	189 —	234 —	— 580	— 326	— 382	Tr460 × 5 Tr460 × 5
480 480	450 450	77 95	36 36	560 —	200 —	237 —	— 620	— 335	— 397	Tr480 × 5 Tr480 × 5
500 500	470 470	85 100	36 40	580 —	208 —	247 —	— 630	— 356	— 428	Tr500 × 5 Tr500 × 5
530 530	500 500	90 105	40 40	630 —	216 —	265 —	— 670	— 364	— 447	Tr530 × 6 Tr530 × 6
560 560	530 530	97 110	40 45	650 —	227 —	282 —	— 710	— 377	— 462	Tr560 × 6 Tr560 × 6
600 600	560 560	97 110	40 45	700 —	239 —	289 —	— 750	— 399	— 487	Tr600 × 6 Tr600 × 6
630 630	600 600	97 120	45 50	730 —	254 —	301 —	— 800	— 424	— 521	Tr630 × 6 Tr630 × 6
670 670	630 630	102 131	45 50	780 —	264 —	324 —	— 850	— 456	— 558	Tr670 × 6 Tr670 × 6
710 710	670 670	112 135	50 55	830 —	286 —	342 —	— 900	— 467	— 572	Tr710 × 7 Tr710 × 7
750 750	710 710	112 141	55 60	870 —	291 —	356 —	— 950	— 493	— 603	Tr750 × 7 Tr750 × 7
800 800	750 750	112 141	55 60	920 —	303 —	366 —	— 1 000	— 505	— 618	Tr800 × 7 Tr800 × 7
850 850	800 800	115 147	60 70	980 —	308 —	380 —	— 1 060	— 536	— 651	Tr850 × 7 Tr850 × 7
900 900	850 850	125 154	60 70	1 030 —	326 —	400 —	— 1 120	— 557	— 660	Tr900 × 7 Tr900 × 7
950 950	900 900	125 154	60 70	1 080 —	344 —	420 —	— 1 170	— 583	— 675	Tr950 × 8 Tr950 × 8
1 000 1 000	950 950	125 154	60 70	1 140 —	358 —	430 —	— 1 240	— 609	— 707	Tr1000 × 8 Tr1000 × 8
1 060 1 060	1 000 1 000	125 154	60 70	1 200 —	372 —	447 —	— 1 300	— 622	— —	Tr1060 × 8 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](#).

Table 4 — Boundary dimensions of withdrawal sleeves with taper 1:12, and overall lengths of withdrawal sleeve and bearing ring

Dimensions in millimetres

<i>d</i>	<i>d</i> ₁	<i>B</i> ₁ max.	<i>B</i> ₄	<i>B</i> ₁ max.	<i>B</i> ₄	<i>B</i> ₁ max.	<i>B</i> ₄	<i>B</i> ₁ max.	<i>B</i> ₄	<i>B</i> ₁ max.	<i>B</i> ₄	<i>B</i> ₁ max.	<i>B</i> ₄	<i>B</i> ₁ max.	<i>B</i> ₄	<i>B</i> ₁ max.	<i>B</i> ₄	<i>G</i>
		Suitable for bearing dimension series																
		39		02		30		03, 13		22		31		32		23		
40 45 50	35 40 45	— — —	— — —	25 26 28	27 29 31	— — —	— — —	29 31 35	32 34 38	29 31 35	32 34 38	— — —	— — —	— — —	— — —	40 44 50	43 47 53	M45 × 1,5 M50 × 1,5 M55 × 2
55 60 65	50 55 60	— — —	— — —	29 32 32,5	32 35 36	— — —	— — —	37 40 42	40 43 45	37 40 42	40 43 45	— — —	— — —	— — —	— — —	54 58 61	57 61 64	M60 × 2 M65 × 2 M70 × 2
70 75 80	65 70 75	— — —	— — —	33,5 34,5 35,5	37 38 39	— — —	— — —	43 45 48	47 49 52	43 45 48	47 49 52	— — —	— — —	— — —	— — —	64 68 71	68 72 75	M75 × 2 M80 × 2 M90 × 2
85 90 95	80 85 90	— — —	— — —	38,5 40 43	42 44 47	— — —	— — —	52 53 57	56 57 61	52 53 57	56 57 61	— — —	— — —	— 63 67	— 67 71	74 79 85	78 83 89	M95 × 2 M100 × 2 M105 × 2
100 105 105	95 100 100	— — —	— — —	45 47 —	49 51 —	— — —	— — —	59 62 —	63 66 —	59 62 —	63 66 —	64 68 —	68 72 —	73 78 —	77 82 —	90 — 94	94 — 98	M110 × 2 M115 × 2 M120 × 2
110 120 130	105 115 125	— — —	— — —	50 53 53	54 57 57	— 60 67	— 64 71	63 69 74	67 73 78	68 75 78	72 79 82	68 75 78	72 79 82	82 90 98	86 94 102	98 105 115	102 109 119	M120 × 2 M130 × 2 M140 × 2
140 150 160	135 145 150	— — —	— — —	56 60 64	61 65 69	68 72 77	73 77 82	77 83 88	82 88 93	83 96 103	88 101 108	83 96 103	88 101 108	104 114 124	109 119 130	125 135 140	130 140 146	M150 × 2 M160 × 3 M170 × 3
170 180 190	160 170 180	59 66 66	64 71 71	69 69 73	74 74 78	85 92 96	90 98 102	93 — —	98 — —	104 105 112	109 110 117	104 116 125	109 122 131	134 140 145	140 146 152	146 154 160	152 160 167	M180 × 3 M190 × 3 M200 × 3
200 200 220	190 190 200	77 — 77	83 — 83	77 — 85	82 — 91	102 — 111	108 — 117	— — —	— — —	— 118 —	— 123 —	— 134 —	— 140 —	— 153 —	— 160 —	— 170 —	— 177 —	Tr210 × 4 Tr220 × 4 Tr230 × 4
220 240 240	200 220 220	— 77 —	— 83 —	— — 96	— — 102	— — 116	— — 123	— — —	— — —	130 — 144	136 — 150	145 — 154	151 — 161	181 — 189	189 — 197	181 — 189	189 — 197	Tr240 × 4 Tr250 × 4 Tr260 × 4
260 280 300	240 260 280	94 94 112	100 100 119	105 105 —	111 113 131	128 113 139	135 131 153	— — —	— — —	155 155 170	161 163 178	172 175 192	179 183 200	205 212 228	213 220 236	205 212 —	213 220 —	Tr280 × 4 Tr300 × 4 Tr320 × 5
320 340 360	300 320 340	112 112 112	119 119 119	— — —	— — —	149 162 167	157 171 176	— — —	— — —	180 — —	190 — —	209 225 229	217 234 238	246 264 274	254 273 283	— — —	— — —	Tr340 × 5 Tr360 × 5 Tr380 × 5
380 400 420	360 380 400	130 130 130	138 138 138	— — —	— — —	170 183 186	180 193 196	— — —	— — —	— — —	— — —	232 240 266	242 250 276	284 302 321	294 312 331	— — —	— — —	Tr400 × 5 Tr420 × 5 Tr440 × 5
440 460 480	420 440 460	145 145 158	153 153 167	— — —	— — —	194 202 205	205 213 217	— — —	— — —	— — —	— — —	270 285 295	281 296 307	330 349 364	341 360 376	— — —	— — —	Tr460 × 5 Tr480 × 5 Tr500 × 5
500 530 560	480 500 530	162 175 180	172 185 190	— — —	— — —	209 230 240	221 242 252	— — —	— — —	— — —	— — —	313 325 335	325 337 347	393 412 422	405 424 434	— — —	— — —	Tr530 × 6 Tr560 × 6 Tr600 × 6
600 630 670	570 600 630	192 210 216	202 222 228	— — —	— — —	245 258 280	259 272 294	— — —	— — —	— — —	— — —	355 375 395	369 389 409	445 475 500	459 489 514	— — —	— — —	Tr630 × 6 Tr670 × 6 Tr710 × 7
710 750 800	670 710 750	228 234 245	240 246 257	— — —	— — —	286 300 308	302 316 326	— — —	— — —	— — —	— — —	405 425 438	421 441 456	515 540 550	531 556 568	— — —	— — —	Tr750 × 7 Tr800 × 7 Tr850 × 7

Table 4 (continued)

d	d_1	B_1 max.	B_4	B_1 max.	B_4	B_1 max.	B_4	B_1 max.	B_4	B_1 max.	B_4	B_1 max.	B_4	B_1 max.	B_4	B_1 max.	B_4	G
		Suitable for bearing dimension series																
		39		02		30		03, 13		22		31		32		23		
850	800	258	270	—	—	325	343	—	—	—	—	462	480	585	603	—	—	Tr900 × 7
900	850	265	277	—	—	335	355	—	—	—	—	475	495	585	605	—	—	Tr950 × 8
950	900	282	297	—	—	355	375	—	—	—	—	500	520	600	620	—	—	Tr1000 × 8
1 000	950	296	311	—	—	365	387	—	—	—	—	525	547	630	652	—	—	Tr1060 × 8
1 060	1 000	310	325	—	—	385	407	—	—	—	—	540	562	—	—	—	—	Tr1120 × 8

5.4 Withdrawal sleeves with taper 1:30

Boundary dimensions of withdrawal sleeves with taper 1:30 and overall lengths of withdrawal sleeve and bearing ring are given in [Table 5](#).