INTERNATIONAL STANDARD

ISO 2982-2

First edition
1995-09-01

Rolling bearings — Accessories —

Part 2:
Locknuts and locking devices — Dimensions

Roulements — Accessoires —

Partie 2: Écrous à encoches et dispositifs de blocage — Dimensions

Reference number
ISO 2982-2:1995(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 2982-2 was prepared by Technical Committee ISO/TC 4, *Rolling bearings*.

This first edition of ISO 2892-2 cancels and replaces ISO 2982:1972, which has been technically revised.

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

— *Part 1: Tapered sleeves — Dimensions*

— *Part 2: Locknuts and locking devices — Dimensions*

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

Printed in Switzerland

Rolling bearings — Accessories —

Part 2:
Locknuts and locking devices — Dimensions

1 Scope

This part of ISO 2982 specifies dimensions for locknuts and locking devices for tapered sleeves in accordance with ISO 2982-1.

In particular,

— locknuts for adapter sleeves and for axial location of bearing inner rings on shafts; they are also suitable for dismounting of withdrawal sleeves;

— lockwashers with straight inner tab with 4-slot locknuts for adapter sleeves;

— locking clip assemblies with 8-slot locknuts for adapter sleeves.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 2982. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO 2982 are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

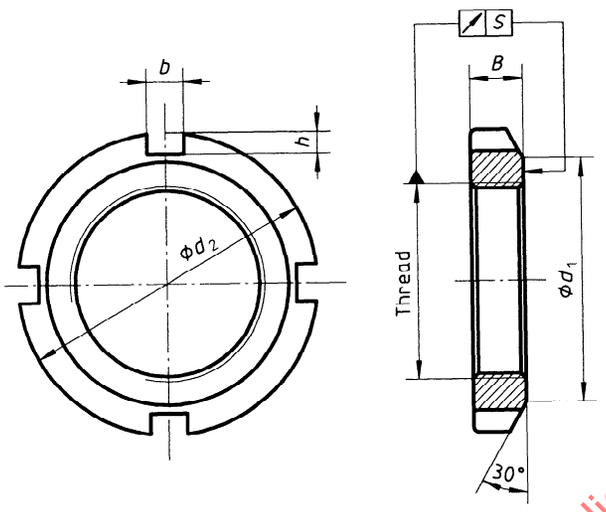
ISO 2982-1:1995, *Rolling bearings — Accessories — Part 1: Tapered sleeves — Dimensions.*

3 Symbols and dimensions

The dimensions given in tables 1 to 4, corresponding to the symbols shown in figures 1 to 4, are nominal dimensions unless specified otherwise.

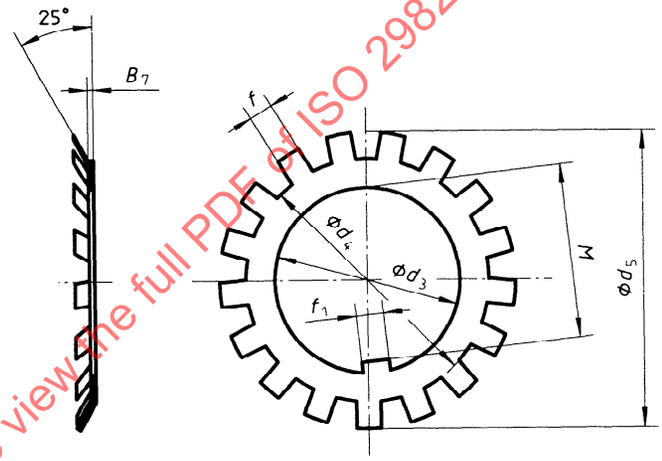
3.1 Locknuts (4 slots) and lockwashers

See figures 1 and 2 and tables 1 and 2.



b = width of locknut slot
B = locknut width
d_1 = outside diameter of locknut clamp face
d_2 = outside diameter of locknut
h = depth of locknut slot
S = run-out tolerance of locknut clamp face with respect to the thread pitch diameter

Figure 1 — Locknut (4 slots)



B_7 = lockwasher material thickness
d_3 = bore diameter of lockwasher
d_4 = root diameter of lockwasher outer tab
d_5 = outside diameter of lockwasher
f = width of lockwasher outer tab
f_1 = width of lockwasher inner tab
M = d_3 – height of inner tab
N = number of lockwasher outer tabs

Figure 2 — Lockwasher

Table 1 — Locknuts (4 slots)

Dimensions in millimetres

Thread[1]	d_2	d_1	B	b	h	S [2]
M10 × 0,75	18	13,5	4	3	2	
M12 × 1	22	17	4	3	2	
M15 × 1	25	21	5	4	2	
M17 × 1	28	24	5	4	2	
M20 × 1	32	26	6	4	2	
M25 × 1,5	38	32	7	5	2	0,04
M30 × 1,5	45	38	7	5	2	
M35 × 1,5	52	44	8	5	2	
M40 × 1,5	58	50	9	6	2,5	
M45 × 1,5	65	56	10	6	2,5	
M50 × 1,5	70	61	11	6	2,5	
M55 × 2	75	67	11	7	3	
M60 × 2	80	73	11	7	3	
M65 × 2	85	79	12	7	3	
M70 × 2	92	85	12	8	3,5	
M75 × 2	98	90	13	8	3,5	
M80 × 2	105	95	15	8	3,5	
M85 × 2	110	102	16	8	3,5	
M90 × 2	120	108	16	10	4	0,05
M95 × 2	125	113	17	10	4	
M100 × 2	130	120	18	10	4	
M105 × 2	140	126	18	12	5	
M110 × 2	145	133	19	12	5	
M115 × 2	150	137	19	12	5	
M120 × 2	145	135	20	12	5	
M120 × 2	155	138	20	12	5	
M125 × 2	160	148	21	12	5	
M130 × 2	155	145	21	12	5	
M130 × 2	165	149	21	12	5	
M135 × 2	175	160	22	14	6	
M140 × 2	165	155	22	12	5	
M140 × 2	180	160	22	14	6	
M145 × 2	190	171	24	14	6	
M150 × 2	180	170	24	14	5	
M150 × 2	195	171	24	14	6	
M155 × 3	200	182	25	16	7	
M160 × 3	190	180	25	14	5	0,06
M160 × 3	210	182	25	16	7	
M165 × 3	210	193	26	16	7	
M170 × 3	200	190	26	16	5	
M170 × 3	220	193	26	16	7	
M180 × 3	210	200	27	16	5	
M180 × 3	230	203	27	18	8	
M190 × 3	220	210	28	16	5	
M190 × 3	240	214	28	18	8	
M200 × 3	240	222	29	18	8	
M200 × 3	250	226	29	18	8	
Tr210 × 4	270	238	30	20	10	
Tr220 × 4	280	250	32	20	10	
Tr230 × 4	290	260	34	20	10	0,12
Tr240 × 4	300	270	34	20	10	
Tr250 × 4	320	290	36	20	10	
Tr260 × 4	330	300	36	24	12	
Tr280 × 4	350	320	38	24	12	

1) Tolerance class 5H for metric threads and 7H for metric trapezoidal threads.

2) Measurements taken at a radius = $\frac{\text{thread outside diameter} + d_1}{4}$

Table 2 — Lockwashers

Dimensions in millimetres

d_3	d_4	d_5 ≈	f_1 max.	M	f [1]	B_7 [2] ≈	N [3]
10	13,5	21	3	8,5	3	1	9
12	17	25	3	10,5	3	1	
15	21	28	4	13,5	4	1	11
17	24	32	4	15,5	4	1	
20	26	36	4	18,5	4	1	
25	32	42	5	23	5	1,25	
30	38	49	5	27,5	5	1,25	
35	44	57	6	32,5	5	1,25	
40	50	62	6	37,5	6	1,25	13
45	56	69	6	42,5	6	1,25	
50	61	74	6	47,5	6	1,25	
55	67	81	8	52,5	7	1,5	
60	73	86	8	57,5	7	1,5	
65	79	92	8	62,5	7	1,5	
70	85	98	8	66,5	8	1,5	
75	90	104	8	71,5	8	1,5	
80	95	112	10	76,5	8	1,8	
85	102	119	10	81,5	8	1,8	
90	108	126	10	86,5	10	1,8	
95	113	133	10	91,5	10	1,8	
100	120	142	12	96,5	10	1,8	
105	126	145	12	100,5	12	1,8	
110	133	154	12	105,5	12	1,8	
115	137	159	12	110,5	12	2	17
120	135	151	14	115	12	2	
120	138	164	14	115	12	2	
125	148	170	14	120	12	2	
130	145	161	14	125	12	2	
130	149	175	14	125	12	2	
135	160	185	14	130	14	2	
140	155	171	16	135	12	2	
140	160	192	16	135	14	2	
145	171	202	16	140	14	2	
150	170	188	16	145	14	2	
150	171	205	16	145	14	2	
155	182	212	16	147,5	16	2,5	
160	180	199	18	154	14	2,5	
160	182	217	18	154	16	2,5	
165	193	222	18	157,5	16	2,5	
170	190	211	18	164	16	2,5	
170	193	232	18	164	16	2,5	
180	200	221	20	174	16	2,5	
180	203	242	20	174	18	2,5	
190	210	231	20	184	16	2,5	
190	214	252	20	184	18	2,5	19
200	222	248	20	194	18	2,5	
200	226	262	20	194	18	2,5	
210	—	—	—	—	—	—	
220	250	292	24	213	20	3	
230	—	—	—	—	—	—	
240	270	312	24	233	20	3	
250	—	—	—	—	—	—	
260	300	342	28	253	24	3	
280	320	362	28	273	24	3	

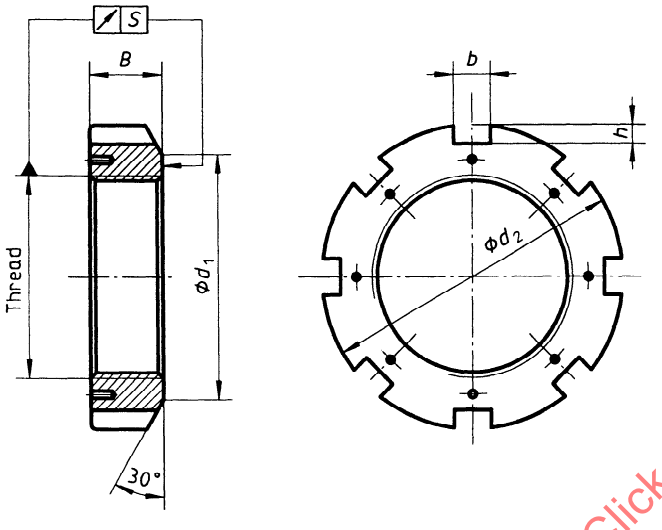
1) f must be $< b$ (see figure 1 and table 1).

2) The thickness is only approximate, and small variations are permissible.

3) N = minimum number of outer tabs; since the locknut has 4 slots, N must be an odd number.

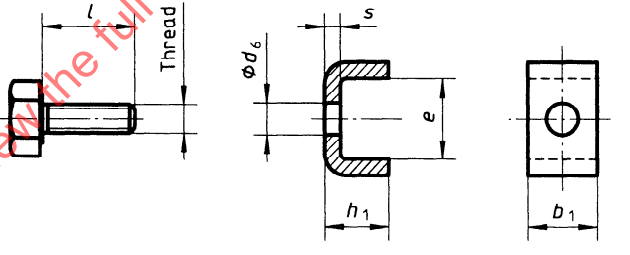
3.2 Locknuts (8 slots) and locking clip assemblies

See figures 3 and 4 and tables 3 and 4.



b = width of locknut slot
B = locknut width
d_1 = outside diameter of locknut clamp face
d_2 = outside diameter of locknut
h = depth of locknut slot
S = run-out of locknut clamp face with respect to the thread pitch diameter

Figure 3 — Locknut (8 slots)



b_1 = locking clip width
d_6 = diameter of locking clip hole
e = inner width of locking clip
h_1 = locking clip height
l = length of screw
s = locking clip material thickness

NOTE — The screw may or may not be secured.

Figure 4 — Locking clip assembly