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ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 888

NOMINAL LENGTHS FOR BOLTS, SCREWS AND STUDS

THREAD LENGTHS FOR GENERAL PURPOSE BOLTS

1st EDITION
December 1968

For each individual country the only valid standard is the national standard of that country.

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Also issued in French and Russian. Copies to be obtained through the national standards organizations.

BRIEF HISTORY

The ISO Recommendation R 888, *Nominal lengths for bolts, screws and studs – Thread lengths for general purpose bolts,* was drawn up by Technical Committee ISO/TC 2, *Bolts, nuts and accessories,* the Secretariat of which is held by the Deutscher Normenausschuss (DNA).

Work on this question by the Technical Committee began in 1959 and led, in 1965, to the adoption of a Draft ISO Recommendation for nominal lengths up to and including 200 mm.

This first Draft ISO Recommendation (No. 950) was circulated in May 1966 to all the Member Bodies for enquiry and was approved by a majority of ISO Member Bodies. However, at a meeting held in October 1966, the Technical Committee recommended the establishment of a second Draft ISO Recommendation, in which nominal lengths above 200 mm up to and including 300 mm should be added.

In August 1967, this second Draft ISO Recommendation was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Austria	Iran	Romania
Belgium	Ireland	South Africa, Rep. of
Canada	Israel	Spain
Chile	Italy	Sweden
Czechoslovakia	Japan	Switzerland
Denmark	Korea, Rep. of	Thailand
Finland	Netherlands	Turkey
Germany	New Zealand	U.A.R.
Greece	Norway	United Kingdom
Hungary	Poland	U.S.S.R.
India	Portugal	Yugoslavia

Two Member Bodies opposed the approval of the second Draft :

France
U.S.A.

The second Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in December 1968, to accept it as an ISO RECOMMENDATION.

ISO Recommendation R 888 December 1968

NOMINAL LENGTHS FOR BOLTS, SCREWS AND STUDS

THREAD LENGTHS FOR GENERAL PURPOSE BOLTS

1. NOMINAL LENGTHS FOR BOLTS, SCREWS AND STUDS

The basic dimensions shown in Table 1 apply to the nominal lengths of bolts and screws (e.g. hexagon bolts, slotted head screws, cross recess head screws) and studs of both metric and inch sizes. Table 1 indicates the comparable basic lengths in the two systems, but values are not intended to be identical.

TABLE 1 – **Basic dimensions in millimetres and in inches**

Nominal length l	
millimetres	inches
2	1/16
2.5	3/32
3	1/8
4	5/32
5	3/16
6	1/4
(7)	–
8	5/16
(9)	–
10	3/8
(11)	7/16
12	1/2
14	9/16
16	5/8
(18)	–
20	3/4
(22)	7/8
25	1
(28)	1 1/8
30	1 1/4
(32)	–
35	1 3/8
(38)	–
40	1 1/2
45	1 3/4
50	2
55	2 1/4

Nominal length l	
millimetres	inches
60	–
65	2 1/2
70	2 3/4
75	3
80	3 1/4
85	–
90	3 1/2
(95)	3 3/4
100	4
(105)	4 1/4
110	4 1/2
(115)	–
120	4 3/4
(125)	–
130	5
140	5 1/2
150	6
160	–
170	6 1/2
180	7
190	7 1/2
200	8
220	9
240	–
260	10
280	11
300	12

Lengths in brackets should be avoided if possible.

For dimensioning of nominal lengths see ISO Recommendation R 225, *Bolts, screws and studs – Dimensioning.*

2. THREAD LENGTHS FOR GENERAL PURPOSE BOLTS

The thread lengths shown in Tables 2, 3 and 4 apply to bolts (e.g. hexagon bolts) of both metric and inch sizes. Table 2 contains the formulae on which the calculation of the thread lengths indicated in Tables 3 and 4 was based.

TABLE 2 – Formulae – Dimensions in millimetres and inches

millimetres		
Nominal length l		Formulae for thread length b
over	to	
–	125	$2d + 6$
125	200	$2d + 12$
200	–	$2d + 25$

d = nominal diameter of the bolt

inches		
Nominal length l		Formulae for thread length b
over	to	
–	5	$2d + 1/4$
5	8	$2d + 1/2$
8	–	$2d + 1$

TABLE 3 – Allocation of the thread lengths to the bolt diameters
Dimensions in millimetres

Thread diameter d		1.6	2	2.5	3	4	5	6	7	8	10	12
Thread length b	$l \leqslant 125$	9	10	11	12	14	16	18	20	22	26	30
	$125 < l \leqslant 200$	–	–	–	–	–	–	–	–	28	32	36
	$l > 200$	–	–	–	–	–	–	–	–	–	–	–

Thread diameter d		14	16	18	20	22	24	27	30	33	36	39
Thread length b	$l \leqslant 125$	34	38	42	46	50	54	60	66	72	78	84
	$125 < l \leqslant 200$	40	44	48	52	56	60	66	72	78	84	90
	$l > 200$	–	57	61	65	69	73	79	85	91	97	103

Thread diameter d		42	45	48	52	56	60	64	68	72	76	80
Thread length b	$l \leqslant 125$	90	96	102	–	–	–	–	–	–	–	–
	$125 < l \leqslant 200$	96	102	108	116	124	132	140	148	156	164	172
	$l > 200$	109	115	121	129	137	145	153	161	169	177	185

Thread diameter d		85	90	95	100	105	110	115	120	125	130	140	150
Thread length b	$l \leqslant 125$	–	–	–	–	–	–	–	–	–	–	–	–
	$125 < l \leqslant 200$	182	192	–	–	–	–	–	–	–	–	–	–
	$l > 200$	195	205	215	225	235	245	255	265	275	285	305	325