

# ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

## ISO RECOMMENDATION R 272

HEXAGON BOLTS AND NUTS  
WIDTHS ACROSS FLATS, HEIGHTS OF HEADS,  
THICKNESSES OF NUTS

METRIC SERIES

2nd EDITION

February 1968

This second edition supersedes the first edition

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## BRIEF HISTORY

The ISO Recommendation R 272, *Hexagon bolts and nuts – Widths across flats, heights of heads, thicknesses of nuts*, 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 1953 and led, in 1959, to the adoption of a Draft ISO Recommendation.

In June 1960, this Draft ISO Recommendation (No. 383) was circulated to all the ISO Member Bodies for enquiry. It was approved by 22 Member Bodies. Five Member Bodies opposed the approval of the Draft.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in September 1962, to accept it as an ISO RECOMMENDATION.

## BRIEF HISTORY CONCERNING THE 2nd EDITION

The Secretariat of Technical Committee having drawn up a draft proposal for the revision of ISO Recommendation R 272, *Hexagon bolts and nuts – Widths across flats, heights of heads, thicknesses of nuts – Metric series*, circulated it to Technical Committee Members. The draft proposal was approved as a Draft ISO Recommendation.

In May 1966, the Draft Revision (No. 947) was submitted 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 :

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

No Member Body opposed the approval of the Draft.

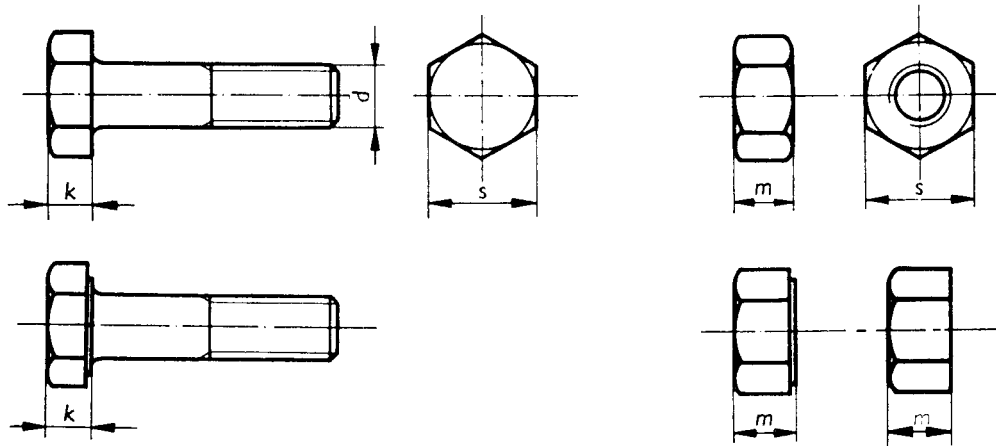
The basic dimensions of the inch series contained in the first edition of the ISO Recommendation have not been taken over in the second edition, since Technical Committee ISO/TC 2 intends to develop a separate ISO Recommendation for the inch series.

The Draft Revision was therefore submitted by correspondence to the ISO Council, which decided, in February 1968, to accept it as an ISO RECOMMENDATION.

The second edition supersedes the first edition of ISO Recommendation R 272.

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Dimensions in millimetres

Thread diameter <i>d</i>	Width* across flats		Height of head <i>k</i>	Thickness of nut <i>m</i>
	normal	small		
1.6	3.2	—	1.1	1.3
2	4	—	1.4	1.6
2.5	5	—	1.7	2
3	5.5	—	2	2.4
4	7	—	2.8	3.2
5	8	—	3.5	4
6	10	—	4	5
7	11	—	5	5.5
8	13	12	5.5	6.5
10	17	14	7	8
12	19	17	8	10
14	22	19	9	11
16	24	22	10	13
18	27	24	12	15
20	30	27	13	16
22	32	30	14	18
24	36	32	15	19
27	41	36	17	22
30	46	41	19	24
33	50	46	21	26
36	55	50	23	29
39	60	55	25	31

Thread diameter <i>d</i>	Width across flats <i>s</i>	Height of head <i>k</i>	Thickness of nut <i>m</i>
42	65	26	34
45	70	28	36
48	75	30	38
52	80	33	42
56	85	35	45
60	90	38	48
64	95	40	51
68	100	43	54
72	105	45	58
76	110	48	61
80	115	50	64
85	120	54	68
90	130	57	72
95	135	60	76
100	145	63	80
105	150	66	84
110	155	69	88
115	165	72	92
120	170	76	96
125	180	79	100
130	185	82	104
140	200	88	112
150	210	95	120

\* Where larger metric hexagons are required, the next larger width across flats for any given diameter, as shown in the normal metric series, should be chosen, leaving the other dimensions unchanged.