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ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 1173

ASSEMBLY TOOLS FOR BOLTS AND SCREWS

HEXAGON DRIVE ENDS FOR POWER TOOLS

1st EDITION

January 1970

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

Printed in Switzerland

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

BRIEF HISTORY

The ISO Recommendation R 1173, *Assembly tools for bolts and screws – Hexagon drive ends for power tools,* was drawn up by Technical Committee ISO/TC 29, *Small tools,* the Secretariat of which is held by the Association Française de Normalisation (AFNOR).

Work on this question led to the adoption of a Draft ISO Recommendation.

In October 1968, this Draft ISO Recommendation (No. 1705) 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 :

Australia	India	Switzerland
Belgium	Ireland	Thailand
Brazil	Israel	Turkey
Czechoslovakia	Italy	U.A.R.
France	Poland	United Kingdom
Germany	Portugal	U.S.S.R.
Greece	Spain	Yugoslavia
Hungary	Sweden	

No Member Body opposed the approval of the Draft.

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in January 1970, to accept it as an ISO RECOMMENDATION.

ISO Recommendation | R 1173 | January 1970

ASSEMBLY TOOLS FOR BOLTS AND SCREWS

HEXAGON DRIVE ENDS FOR POWER TOOLS

1. SCOPE

This ISO Recommendation, relating to assembly tools for bolts and screws, deals with hexagon drive ends for power tools.

It includes two tables, the first showing the dimensions of male hexagons and the other the dimensions of female hexagons.

2. INTERCHANGEABILITY

Hexagon maximum and minimum dimensions have been selected so as to allow for interchangeability between metric and inch productions.

Deviations between maximum and minimum dimensions of s_1 and s_2 correspond to tolerances of grade 10 *.

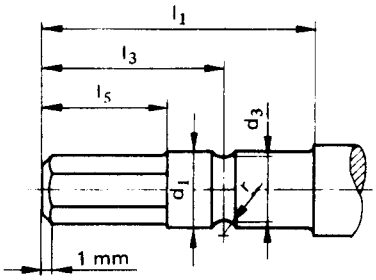
Sizes e have been calculated by using the formula $e = 1.13\ s$.

* See ISO Recommendation R 286, *ISO system of limits and fits – Part 1 : General, tolerances and deviations.*

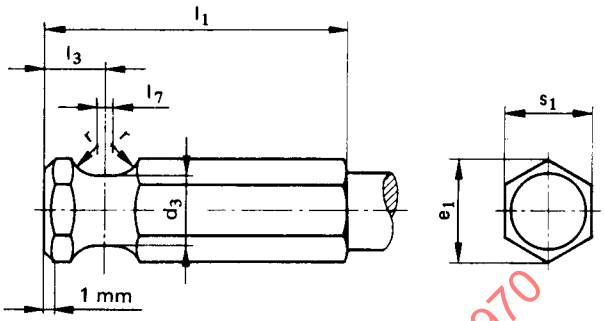
3. DIMENSIONS

3.1 Male hexagons

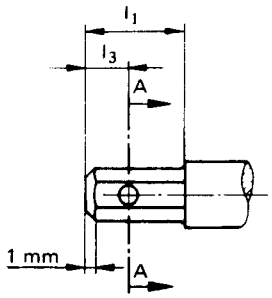
Form A



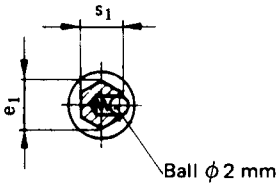
Form E

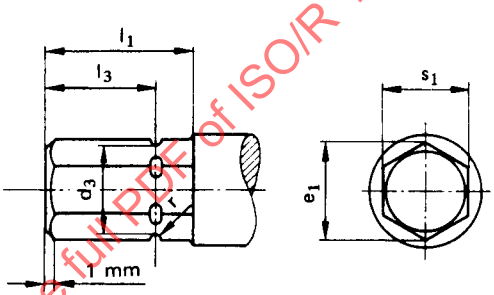


Form C



Nominal dimension 4





Nominal dimensions 6.3 and 8

Dimensions in millimetres

Form	Nominal dimensions	s_1 max.	s_1 min.	d_1 h9	d_3 h12	e_1 max.	e_1 min.	l_1 min.	l_3	l_3 Tolerance	l_5 ± 0.1	l_7	r	Nominal dimensions in inches
A	3	3.000	2.960	3.6	3.0	3.39	3.34	19.5	11.9	± 0.11	7.5	–	1.0	–
	5.5	5.500	5.452	6.7	5.7	6.21	6.16	24.0	16.0	± 0.11	11.0		1.25	
C	4	3.962	3.914	–	–	4.48	4.42	9.0	4.0	± 0.07			–	$\frac{5}{32}$
	6.3	6.350	6.292		6.7	7.18	7.11	11.0	8.2	± 0.09	–	–	0.3	$\frac{1}{4}$
	8	7.930	7.872		8.2	8.96	8.90	13.5	10.2	± 0.11			0.3	$\frac{5}{16}$
E	6.3	6.350	6.292		4.7	7.18	7.11	25.0	9.5	± 0.09		1.0	2.4	$\frac{1}{4}$
	(8)	7.930	7.872		6.3	8.96	8.90	27.0	5.4	± 0.07		1.2	2.4	$\frac{5}{16}$
	11.2	11.112	11.042	–	8.7	12.56	12.48	31.5	6.7	± 0.09	–	1.2	2.8	$\frac{7}{16}$
	16	15.875	15.805		13.5	17.94	17.86	44.0	8.7	± 0.09		1.6	4.0	$\frac{5}{8}$
	(20)	19.050	18.966		16.7	21.53	21.43	50.0	8.7	± 0.09		1.6	4.0	$\frac{3}{4}$

Dimensions placed between parentheses should be avoided as far as possible.