INTERNATIONAL STANDARD 1174

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Assembly tools for bolts and screws — Driving squares for power socket wrenches and hand socket wrenches

Outils de manœuvre pour vis et écrous — Carrés d'entraînement pour douilles à machine et douilles à main

First edition — 1975-04-01

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Descriptors : tools, assembly tools, driving squares, wrenches, dimensions.

Price based on 5 pages

FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up 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.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

Prior to 1972, the results of the work of the Technical Committees were published as ISO Recommendations; these documents are now in the process of being transformed into International Standards. As part of this process, Technical Committee ISO/TC 29 has reviewed ISO Recommendation R 1174 and found it technically suitable for transformation. International Standard ISO 1174 therefore replaces ISO Recommendation R 1174-1970 to which it is technically identical.

ISO Recommendation R 1174 was approved by the Member Bodies of the following countries :

Australia	Hungary	Spain
Austria	India	Sweden
Belgium	Israel	Switzerland
Brazil	Italy	Thailand
Czechoslovakia	Korea, Rep. of	Turkey
Egypt, Arab Rep. of	New Zealand	United Kingdom
France	Poland	Yugoslavia
Germany	Portugal	
Greece	South Africa, Rep. of	

No Member Body expressed disapproval of the Recommendation.

No Member Body disapproved the transformation of ISO/R 1174 into an International Standard.

Printed in Switzerland

Assembly tools for bolts and screws — Driving squares for power socket wrenches and hand socket wrenches

1 SCOPE AND FIELD OF APPLICATION

This International Standard relating to assembly tools for bolts and screws specifies the dimensions of driving squares for power socket wrenches and hand socket wrenches.

For each type of tool two numerical tables are given, the first one relating to millimetre and inch dimensions of male squares, the other to millimetre and inch dimensions of female squares.

Nominal dimensions in millimetres have been selected from the values of the R 10 series of preferred numbers.

2 INTERCHANGEABILITY

Square maximum and minimum dimensions have been selected, for each type of tool, so as to allow for interchangeability, whatever the measurement system used.

Deviations between maximum and minimum dimensions refer,

a) for power socket wrenches,

- for s_1 to tolerances of grade 10*,
- for s_2 to tolerances of grade 11*;

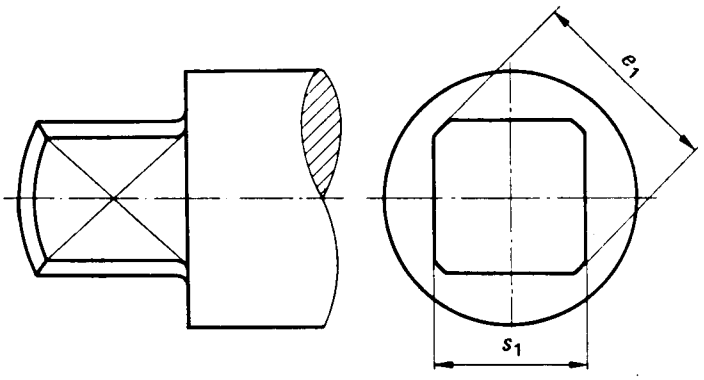
b) for hand socket wrenches,

- for s_1 to tolerances of grade 11*,
- for s_2 to tolerances of grade 13*.

* See ISO/R 286, *ISO system of limits and fits — Part I : General, tolerances and deviations.*

3 DRIVING SQUARES FOR POWER SOCKET WRENCHES

3.1 Male squares

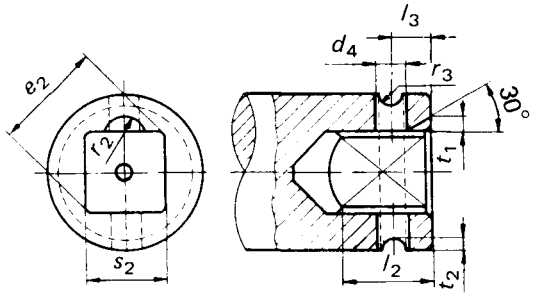


Nominal dimensions		s_1				e_1			
		mm		in		mm		in	
mm	in	max.	min.	max.	min.	max.	min.	max.	min.
6,3	$\frac{1}{4}$	6,350	6,292	0.250	0.248	8,4	8,0	0.331	0.315
10	$\frac{3}{8}$	9,525	9,467	0.375	0.373	12,7	12,2	0.500	0.480
12,5	$\frac{1}{2}$	12,700	12,630	0.500	0.497	16,9	16,3	0.665	0.642
16	$\frac{5}{8}$	15,875	15,805	0.625	0.622	21,2	20,4	0.835	0.803
20	$\frac{3}{4}$	19,050	18,966	0.750	0.747	25,4	24,4	1.000	0.961
25	1	25,400	25,316	1.000	0.997	34,0	32,4	1.339	1.276
40	$1\frac{1}{2}$	38,100	38,000	1.500	1.496	50,0	48,0	1.969	1.890
63	$2\frac{1}{2}$	63,500	63,380	2.500	2.495	84,0	82,0	3.308	3.228

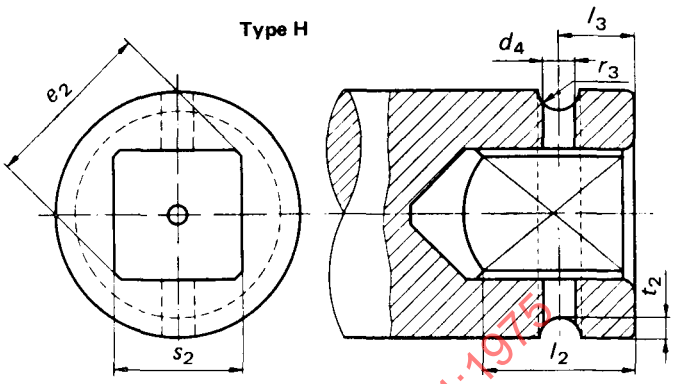
Male squares should be made in such a way that they fit the female squares perfectly. Special care shall be taken that the locking device is not subject to any torsional or axial load during use.

3.2 Female squares

Type G



Type H



Dimensions in millimetres

Type	Nominal dimensions mm	Nominal dimensions in	s_2 max.	s_2 min.	d_4 min.	e_2 min.	l_2 min.	l_3	l_3 tol.	r_2	r_3	t_1	t_2
G	6,3	$\frac{1}{4}$	6,495	6,405	3,0	8,5	8,0	4,0	± 0,18	2	1,2	1,5	1
G	10	$\frac{3}{8}$	9,670	9,580	5,0	12,9	11,2	5,5	± 0,18	3	2	2,5	1,6
G	12,5	$\frac{1}{2}$	12,865	12,755	5,6	17,1	15,9	7,9	± 0,22	4	2,5	3	2
G (H)	16	$\frac{5}{8}$	16,040	15,930	5,6	21,4	16,7	7,9	± 0,22	4	2,5	3	2,5
H	20	$\frac{3}{4}$	19,235	19,105	6,0	25,6	23,9	10,2	± 0,27	–	3	–	3
H	25	1	25,585	25,455	6,5	34,3	28,6	15,0	± 0,27	–	4	–	4
H	40	$1\frac{1}{2}$	38,350	38,190	8,0	50,4	41,3	16,1	± 0,27	–	5	–	5
H	63	$2\frac{1}{2}$	63,790	63,600	10,0	85,0	57,6	38,1	± 0,39	–	6	–	6

Dimensions in inches

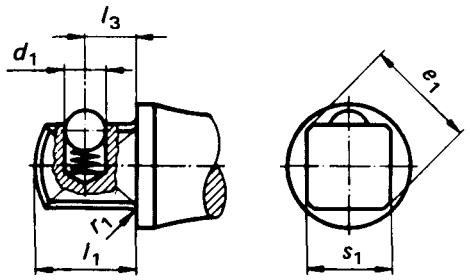
Type	Nominal dimensions mm	Nominal dimensions in	s_2 max.	s_2 min.	d_4 min.	e_2 min.	l_2 min.	l_3	l_3 tol.	r_2	r_3	t_1	t_2
G	6.3	$\frac{1}{4}$	0.256	0.252	0.118	0.335	0.315	0.157	± 0.007	0.079	0.047	0.059	0.039
G	10	$\frac{3}{8}$	0.381	0.377	0.197	0.508	0.441	0.217	± 0.007	0.118	0.079	0.098	0.063
G	12.5	$\frac{1}{2}$	0.506	0.502	0.220	0.673	0.626	0.311	± 0.009	0.157	0.098	0.118	0.079
G (H)	16	$\frac{5}{8}$	0.631	0.627	0.220	0.843	0.657	0.311	± 0.009	0.157	0.098	0.118	0.098
H	20	$\frac{3}{4}$	0.757	0.752	0.236	1.008	0.941	0.402	± 0.011	–	0.118	–	0.118
H	25	1	1.007	1.002	0.256	1.350	1.126	0.591	± 0.011	–	0.157	–	0.157
H	40	$1\frac{1}{2}$	1.510	1.504	0.315	1.984	1.626	0.634	± 0.011	–	0.197	–	0.197
H	63	$2\frac{1}{2}$	2.511	2.504	0.394	3.346	2.268	1.500	± 0.015	–	0.236	–	0.236

The use of types shown between parentheses should be avoided.

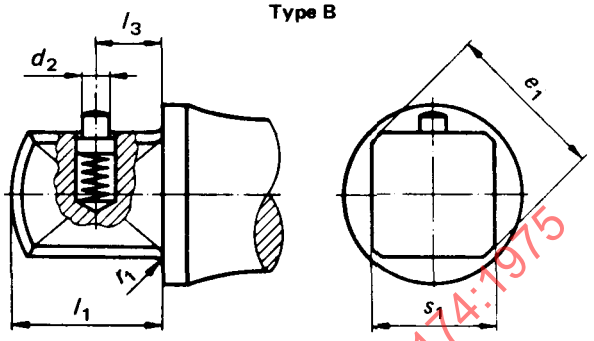
4 DRIVING SQUARES FOR HAND SOCKET WRENCHES

4.1 Male squares

Type A



Type B



Dimensions in millimetres

Type	Nominal dimensions mm	Nominal dimensions in	s_1 max.	s_1 min.	d_1 ≈	d_2 max.	e_1 max.	e_1 min.	l_1 max.	l_3	l_3 tol.	r_1 max.
A (B)	6,3	$\frac{1}{4}$	6,350	6,260	3	–	8,4	8,0	7,5	4,0	±0,18	0,5
A (B)	10	$\frac{3}{8}$	9,525	9,435	5	–	12,7	12,2	11,0	5,5	±0,18	0,6
A (B)	12,5	$\frac{1}{2}$	12,700	12,590	6	3,0	16,9	16,3	15,5	8,0	±0,22	0,8
B (A)	20	$\frac{3}{4}$	19,050	18,920	7	4,3	25,4	24,4	23,0	10,2	±0,27	1,2
B	25	1	25,400	25,270	–	5,0	34,0	32,4	28,0	15,0	±0,27	1,6

Dimensions in inches

Type	Nominal dimensions mm	Nominal dimensions in	s_1 max.	s_1 min.	d_1 ≈	d_2 max.	e_1 max.	e_1 min.	l_1 max.	l_3	l_3 tol.	r_1 max.
A (B)	6,3	$\frac{1}{4}$	0.250	0.246	0.118	–	0.331	0.315	0.295	0.157	±0.007	0.020
A (B)	10	$\frac{3}{8}$	0.375	0.371	0.197	–	0.500	0.480	0.433	0.217	±0.007	0.024
A (B)	12,5	$\frac{1}{2}$	0.500	0.496	0.236	0.118	0.665	0.642	0.610	0.315	±0.009	0.031
B (A)	20	$\frac{3}{4}$	0.750	0.745	0.276	0.169	1.000	0.961	0.906	0.402	±0.011	0.047
B	25	1	1.000	0.995	–	0.197	1.339	1.276	1.102	0.591	±0.011	0.063

The use of types shown between parentheses should be avoided.

It is not recommended that types B and C be used together.

INTERNATIONAL STANDARD ISO 1174-1975/AMENDMENT 1

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION•МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ•ORGANISATION INTERNATIONALE DE NORMALISATION

Assembly tools for bolts and screws — Driving squares for power socket wrenches and hand socket wrenches

AMENDMENT 1

Foreword

Amendment 1 to International Standard ISO 1174-1975 was developed by Technical Committee ISO/TC 29, *Small tools*. It was submitted directly to the ISO Council, in accordance with clause 5.10.1 of part 1 of the Directives for the technical work of ISO.

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Replace the tables in clause 4.2 "Female squares" by the following tables :

Dimensions in millimetres

Type	Nominal dimensions		s_2		d_3	e_2	l_2	l_3		r_2	t_1
	mm	in	max.	min.	min.	min.	min.		tol.		
C D	6,3	$\frac{1}{4}$	6,625	6,405	—	8,5	8,0	4,0	± 0,18	—	—
C (D)	10	$\frac{3}{8}$	9,800	9,580	—	12,9	11,5	5,5	± 0,18	—	—
C (D)	12,5	$\frac{1}{2}$	13,025	12,755	5,6	17,1	16,0	8,0	± 0,22	4	3,0
D (C)	20	$\frac{3}{4}$	19,435	19,105	6,0	25,6	24,0	10,2	± 0,27	4	3,5
D	25	1	25,785	25,455	6,5	34,3	29,0	15,0	± 0,27	6	4,0

Dimensions in inches

Type	Nominal dimensions		s_2		d_3	e_2	l_2	l_3		r_2	t_1
	mm	in	max.	min.	min.	min.	min.		tol.		
C D	6.3	$\frac{1}{4}$	0.261	0.252	—	0.335	0.315	0.157	± 0.007	—	—
C (D)	10	$\frac{3}{8}$	0.386	0.377	—	0.508	0.453	0.217	± 0.007	—	—
C (D)	12,5	$\frac{1}{2}$	0.513	0.502	0.220	0.673	0.630	0.315	± 0.009	0.157	0.118
D (C)	20	$\frac{3}{4}$	0.765	0.752	0.236	1.008	0.945	0.402	± 0.011	0.157	0.138
D	25	1	1.015	1.002	0.256	1.350	1.142	0.591	± 0.011	0.236	0.157

The use of types shown between parentheses should be avoided.

It is not recommended that types B and C be used together.

UDC 621.922-1981 **Ref. No. ISO 1174-1975/A1-1981 (E)**

Descriptors : tools, assembly tools, driving squares, wrenches, socket wrenches, dimensions, dimensional tolerances.

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