INTERNATIONAL STANDARD

ISO 10664

Third edition
2014-10-01

Hexalobular internal driving feature for bolts and screws

Empreinte à six lobes internes pour vis

Reference number
ISO 10664:2014(E)

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 2, *Fasteners*, Subcommittee SC 11, *Fasteners with metric external thread*.

This third edition cancels and replaces the second edition (ISO 10664:2005), which has been technically revised with the following changes:

— several sizes of the driving feature have been added with respective values in Tables 1 to 5.

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Hexalobular internal driving feature for bolts and screws

1 Scope

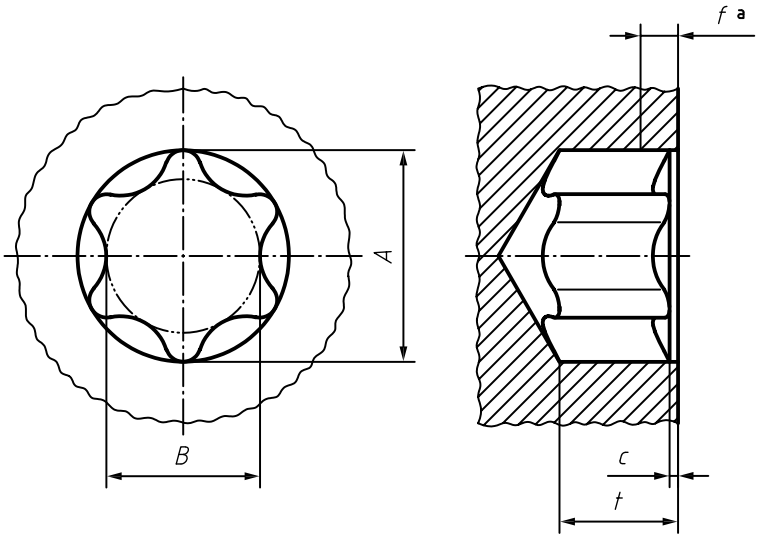
This International Standard specifies the shape and basic dimensions of the hexalobular internal driving feature for bolts and screws, including the gauging method.

The curvature of the contour of the hexalobular internal driving feature is defined by the gauges specified in Tables 3, 4, and 5. Additional information which can be used when drawing the contour is given in Annex A.

The intent of this International Standard is to provide the details necessary for inspection of the hexalobular driving feature. It is not suitable for, nor intended to be used as, a manufacturing standard.

2 Basic dimensions

See Figure 1 and Table 1.



Counterbore: $c \leq 0{,}13$ mm up to socket no. 15

$c \leq 0{,}25$ mm over socket no. 15

Penetration depth, t: see relevant product standard.

[a] See Table 2.

NOTE The contour of the bottom of the socket beyond the gauge is at the option of the manufacturer.

Figure 1 — Basic dimensions

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Table 1 — Basic dimensions

Dimensions in millimetres

Hexalobular socket no.	Nominal dimensions[a]	
	A	*B*
1	0,9	0,6
2	1,0	0,7
3	1,2	0,85
4	1,35	1,0
5	1,5	1,1
6	1,75	1,27
7	2,1	1,5
8	2,4	1,75
9	2,6	1,9
10	2,8	2,05
15	3,35	2,4
20	3,95	2,85
25	4,5	3,25
27	5,1	3,68
30	5,6	4,05
40	6,75	4,85
45	7,93	5,64
50	8,95	6,45
55	11,35	8,05
60	13,45	9,6
70	15,7	11,2
80	17,75	12,8
90	20,2	14,4
100	22,4	16

[a] The curvature of the contour of the hexalobular internal driving feature is defined by the gauges specified in Tables 3, 4, and 5.

3 Gauging

3.1 Principle

The hexalobular internal driving feature shall allow the GO gauge (see 3.2) to enter freely to the penetration depth, *t*, as specified in the relevant product standards.

The NO GO gauges (see 3.3.1 and 3.3.2) shall not enter the hexalobular internal driving feature to a depth greater than the fallaway allowance specified in Table 2.

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Table 2 — Fallaway allowance

Dimensions in millimetres

Socket no.	1	2	3	4	5	6	7	8	9	10	15	20
Fallaway allowance f	0,064	0,070	0,114	0,13	0,22	0,35	0,41	0,48	0,51	0,56	0,67	0,79
Socket no.	25	27	30	40	45	50	55	60	70	80	90	100
Fallaway allowance f	0,90	1,02	1,12	1,18	1,39	1,56	1,98	2,35	2,75	3,11	3,53	3,92

All gauging is performed with reference to the top surface of the head. In the case of oval or round top heads, measurements are taken from the actual intersection of the top surface of the head and the hexalobular internal driving feature counterbore.

When using a dial penetration gauge, this should be adjusted to zero while the gauge is pressed against a flat surface, thereby compressing the plunger to make it flush with the gauge reference surface (see Figure 2).

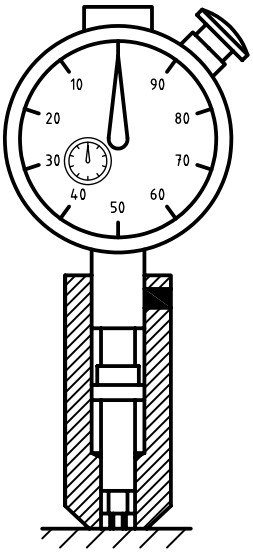
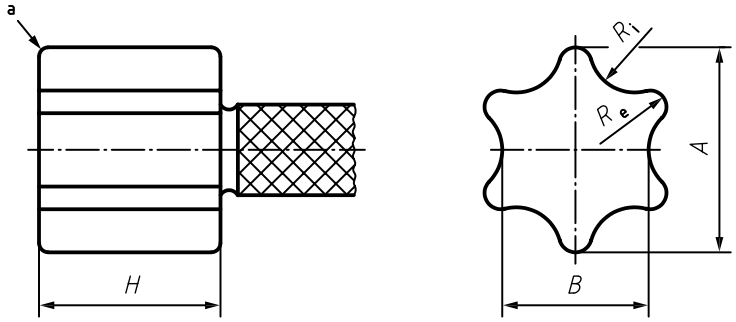


Figure 2 — Dial gauge (zero position)

3.2 GO gauge

The GO gauge dimensions (see Figure 3) shall be within the limits specified in Table 3.

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a Radius max. 0,076 mm at juncture of side and face to gauge sizes ≥ no. 10 and max. 0,025 4 mm for gauge sizes < no. 10.

Figure 3 — Dimensions of GO gauge

Table 3 — Limiting sizes of GO gauge dimensions

Dimensions in millimetres

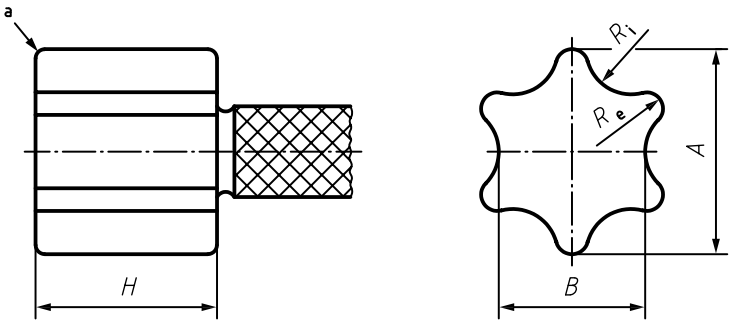
Socket no.	*A*		*B*		R_i		R_e		*H*	
	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.
1	0,841	0,855	0,592	0,607	0,198	0,204	0,055	0,062	0,64	1,14
2	0,953	0,967	0,674	0,688	0,221	0,227	0,065	0,072	1,15	1,65
3	1,131	1,145	0,800	0,815	0,263	0,270	0,078	0,085	1,15	1,65
4	1,291	1,305	0,912	0,927	0,305	0,312	0,087	0,093	1,15	1,65
5	1,415	1,430	1,013	1,028	0,318	0,342	0,107	0,111	1,15	1,65
6	1,695	1,709	1,210	1,224	0,371	0,396	0,130	0,134	1,33	1,82
7	2,012	2,026	1,437	1,453	0,442	0,450	0,157	0,165	2,54	3,05
8	2,335	2,349	1,672	1,686	0,498	0,523	0,188	0,193	2,54	3,05
9	2,520	2,534	1,809	1,823	0,542	0,566	0,204	0,210	2,79	3,30
10	2,761	2,776	1,979	1,993	0,585	0,609	0,227	0,231	3,05	3,56
15	3,295	3,309	2,353	2,367	0,704	0,728	0,265	0,269	3,30	3,81
20	3,879	3,893	2,764	2,778	0,846	0,871	0,303	0,307	3,56	4,07
25	4,451	4,465	3,170	3,185	0,907	0,932	0,371	0,378	3,94	4,45
27	5,009	5,024	3,564	3,578	1,095	1,120	0,387	0,393	4,19	4,70
30	5,543	5,557	3,958	3,972	1,182	1,206	0,448	0,454	4,44	4,95
40	6,673	6,687	4,766	4,780	1,415	1,440	0,544	0,548	5,08	5,59
45	7,841	7,856	5,555	5,570	1,784	1,808	0,572	0,576	5,71	6,22
50	8,857	8,872	6,366	6,380	1,804	1,828	0,773	0,777	5,97	6,48
55	11,245	11,259	7,930	7,945	2,657	2,682	0,765	0,769	6,22	6,73
60	13,302	13,317	9,490	9,504	2,871	2,895	1,065	1,069	7,68	8,17
70	15,588	15,603	11,085	11,099	3,465	3,489	1,192	1,196	8,46	8,96
80	17,619	17,635	12,646	12,661	3,625	3,629	1,524	1,529	9,4	9,9
90	20,021	20,035	14,232	14,246	4,456	4,480	1,527	1,534	10,06	10,56
100	22,231	22,245	15,820	15,834	4,913	4,937	1,718	1,724	10,85	11,35

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3.3 NO GO gauge

3.3.1 Gauging the fallaway of dimensions A and R_e

The NO GO gauge for dimensions A and R_e (see Figure 4) shall have dimensions within the limits specified in Table 4.



a Radius max. 0,076 mm at juncture of side and face for gauge sizes ≥ no. 10 and max. 0,025 4 mm for gauge sizes < no. 10.

Figure 4 — NO GO gauge for dimensions A and R_e

Table 4 — Limiting sizes of dimensions of NO GO gauge for dimensions A and R_e

Dimensions in millimetres

Socket no.	A		B	R_i		R_e		H
	min.	max.	max.	min.	max.	min.	max.	±0,25
1	0,899	0,907	0,587	0,107	0,114	0,084	0,094	0,89
2	1,011	1,019	0,663	0,124	0,132	0,094	0,104	1,4
3	1,214	1,222	0,790	0,137	0,145	0,119	0,130	1,4
4	1,374	1,382	0,917	0,180	0,191	0,132	0,140	1,4
5	1,499	1,506	1,044	0,208	0,221	0,147	0,157	1,4
6	1,778	1,785	1,181	0,231	0,241	0,173	0,180	1,57
7	2,096	2,103	1,359	0,259	0,267	0,203	0,211	2,8
8	2,419	2,425	1,664	0,360	0,370	0,231	0,238	2,79
9	2,604	2,611	1,664	0,323	0,333	0,248	0,257	3,05
10	2,845	2,852	1,956	0,431	0,441	0,269	0,276	3,3
15	3,379	3,385	1,956	0,398	0,408	0,307	0,315	3,56
20	3,963	3,970	2,616	0,602	0,614	0,345	0,353	3,81
25	4,560	4,566	2,868	0,637	0,647	0,429	0,436	4,19
27	5,118	5,126	3,275	0,735	0,747	0,445	0,452	4,45
30	5,652	5,659	3,886	0,939	0,949	0,505	0,513	4,7
40	6,807	6,814	4,661	1,112	1,125	0,612	0,619	5,33
45	7,976	7,983	4,661	1,110	1,123	0,640	0,648	5,97
50	8,992	8,999	6,413	1,628	1,640	0,840	0,848	6,22
55	11,405	11,412	7,684	2,176	2,189	0,845	0,853	6,48
60	13,488	13,495	7,684	2,153	2,164	1,158	1,165	7,92
70	15,774	15,781	10,262	2,545	2,557	1,285	1,292	8,71
80	17,831	17,838	11,760	2,608	2,621	1,628	1,635	9,52

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